

STATEMENT OF QUALIFICATIONS On-Call Professional Services - Transportation

City of San Pablo, California
March 29, 2023



CITY OF SAN PABLO
City of New Directions



Consulting Group

Table of Contents

1. Letter of Interest/Cover Letter	1
2. Firm(s) Statement of Qualifications	2
3. Staff Statement of Qualifications or Resumes.....	6
4. References	7
5. Project Approach.....	8
6. Approach to Schedule of Work.....	9
7. Rate Schedule	10
Appendix: Subconsultant Rates.....	a
Appendix: Resumes.....	b

March 29, 2023

Submitted to the City of San Pablo, electronically via Planet Bids

RE: Statement of Qualifications—On-Call Engineering and Professional Services
Category 9: Transportation

CHS Consulting Group (CHS) is pleased to submit its qualifications to provide on-call services to the City of San Pablo. We have assembled a team of consultants who will be able to complete any tasks required under the Transportation category. The CHS team includes a number of CHS senior staff persons as well as RSE Corporation for railroad coordination and design. All the senior staff on the CHS team offer specific expertise related to the skills called for in this RFQ and are all fully committed to serving the City of San Pablo and its residents.

CHS has a long, successful track record managing on-call contracts for cities and agencies throughout California, including on-going contracts with the cities of South San Francisco, San Bruno, El Cerrito, Union City, Redwood City, Menlo Park, Mountain View, Dublin, San Francisco, San José, and Los Angeles.

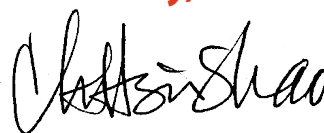
As-needed, on-call, and task-order-based contracts often require quick mobilization of staff and resources. I will serve as Project Manager, offering 40 years of experience in traffic engineering and transportation planning. I will be responsible for assigning the right team members for each project, based on both expertise and availability. Key CHS team members include:

- **Migi Lee** will lead Traffic Planning & Engineering, Complete Streets, and Transportation Impact Study projects. Migie has 16 years' experience and has led multi-modal impact and VMT analysis for more than 100 development projects, encompassing a wide range of land uses and sizes and more than 50 roadway and infrastructure projects. She has also managed transportation analyses for more than 70 CEQA documents.
- **Roxannabelle Perfecto, PE** will lead Traffic Engineering and Traffic Signal projects. Roxannabelle offers more than 9 years' experience in traffic engineering design, including signal design, signing and striping design, lighting design, safety design, and bikeway design. She is currently serving as the CHS Project Manager for the East Bay Greenway traffic engineering PS&E and a current signal modification project in San Rafael.
- **Jorge Sanchez, PE** from RSE will lead railroad coordination and design assignments. Jorge has 27 years of overall experience, including 10 years' experience working with Caltrain, the Union Pacific Railroad, and CPUC. He has also managed numerous railroad grade-crossing and grade-separation projects.
- **Siqing Yi** will lead Signal Timing projects. Siqing is a transportation planner and engineer with a focus on GIS analysis and traffic operations who recently served as the Lead Planner for the Monterey Road signal retiming project for the City of San José.
- **Ben Miller** will support Migie on Transportation Impact Studies (TIS). Ben has managed more than 50 small- to medium-size TIS projects and supported the technical work for more than 10 large-scale development and infrastructure projects throughout the Bay Area.

I am authorized to negotiate a contract for proposed services with the City on behalf of the CHS Consulting Group team. I have also reviewed the sample Professional Services Agreement and find it acceptable without any changes.

Please contact me if you have any questions or would like additional information.

Sincerely,



Chi-Hsin Shao

President, Principal-In-Charge

2. Firm(s) Statement of Qualifications

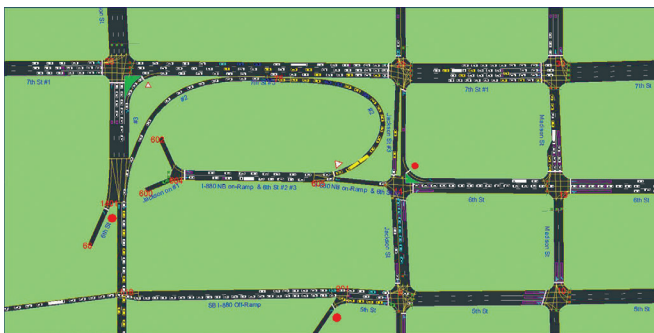
The CHS team is fully capable of successfully delivering projects in all of the subcategories in Discipline #9, Transportation. Our experience in each subcategory is briefly described below. We have provided further information for key projects in the Reference section, including client name and contact information, description of work, year of completion, and key personnel involved.

Traffic Planning and Engineering

CHS has completed more than 500 traffic studies, ranging in scale from a few intersections for a development project to more than 100 intersections for major roadway and surface-running transit and transportation facilities that require multi-modal access. CHS also has extensive experience working with Caltrans on arterial roads, highways and freeways, and freeway ramps.

Another area of expertise is in traffic operations analyses. While typical analysis involves intersection levels-of-service, warrant analysis, and safety analysis, much of our expertise also involves finding solutions to over-saturated conditions with significant queueing impacts. Representative recent projects involved extensive SYNCHRO and SimTraffic simulation analyses. Projects include:

- Oakland-Alameda Access PA/ED Project**—This highly controversial project required a more than 10-year effort to agree upon strategies to address long vehicle queueing from local streets in Oakland and Alameda to I-880. Stakeholders included the Alameda CTC, the cities of Oakland and Alameda, and the Oakland Chinatown community. CHS led traffic operations analyses for three rounds of the project's planning effort. CHS's extensive



SYNCHRO/SimTraffic network included 56 intersections as well as I-880 ramp junction intersections to test various geometric options to address the issue of vehicle queueing caused by the I-880 freeway on- and off-ramps. CHS's analyses enabled the stakeholders to reach a consensus.

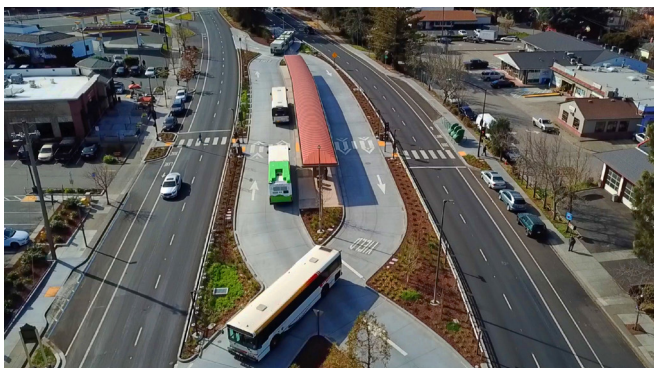
- San Francisco Great Highway Closure and Zoo Parking and Access Project**—The project began with a need to close the Great Highway south of Sloat Boulevard due to continuous shoreline erosion. This closure would affect access to the San Francisco Zoo parking lot. The initial analyses focused on establishing detour routes, assessing opportunities to calm traffic in the area with two proposed roundabouts, and alternative ways to access the SF Zoo. CHS created an extensive SYNCHRO network, including Great Highway, Upper Great Highway, and SR-35. CHS then developed a detailed VISSIM micro-simulation model to assess both inbound and outbound vehicle queueing during the Zoo's peak hour of operation. The CEQA document for the Great Highway closure was certified, and CHS is now assisting the SF Zoo in assessing its parking demand for both existing and future needs.
- SFPUC Sewer Line Replacement Project in San Francisco**—This project involved adding a new 10' diameter auxiliary sewer line along Industrial Boulevard and Alemany Boulevard that crosses two US-101 as well as I-280 on- and off-ramps and other arterial roads. CHS developed an extensive SYNCHRO/ SimTraffic network to assist SFPUC and SFMTA staff in understanding potential traffic impacts and using this data to modify the proposed sewer line alignment and construction sequence. The SYNCHRO model output was used to estimate MUNI bus travel delays.
- East Bay Greenway Project**—CHS prepared two rounds of traffic impact analyses for a proposed cycle track project from Lake Merritt to the San Leandro BART Station. The need for the 2nd round of analyses was due to a change in project alignment from 12th Street-San Leandro Avenue to Fruitvale-High Street. The challenges include protected cycle track design and protected intersection design for several non-standard intersections. CHS performed signal warrant analyses

and determined whether a Rectangular Rapid-Flashing Beacon (RRFB) and Protected Hybrid Beacon (PHB) is viable for these intersections. CHS also performed detailed SYNCHRO/ SimTraffic analyses for the project and authored a traffic impact report from Lake Merritt to South Hayward station, including a three-second advanced crossing time for pedestrians and bicyclists. CHS is now producing signal design work for the final design team.

- **I-680 and King Road Project, San José**—CHS led traffic engineering studies and signal design for this ramp junction intersection that has had a history of numerous collisions due to tight geometry and an inadequate current signal design. CHS worked closely with staff members from the City of San José and Caltrans to modify the intersection geometry and signal design. While Caltrans has approved the 100% design plan, the project is temporarily on hold due to the need for coordination with a newly developed project in the vicinity.

Traffic Signals

CHS has extensive experience in traffic signal design, including High-Intensity Activated crosswalk beacons (HAWK), both Pedestrian Hybrid Beacons (PHB) and Rectangular Rapid Flashing Beacons (RRFB), signal priority systems (TSP) and interconnection with various ITS elements. Sample projects included some of the largest infrastructure projects in California, as well as a transit hub with an innovative circulation approach:



- **Downtown Novato Transit Hub Project**—CHS was added to the project design team at the request of Marin Transit to address safety- and access-related concerns expressed by agency stakeholders. The project involved the creation of a transit center in the median of Redwood Boulevard in Novato with contra-flow operation. CHS was instrumental in signal design that resolved safety concerns for pedestrians crossing Redwood Boulevard and traffic operations with buses entering and exiting

from the center median. The project was eventually built and become an award-winning project.

- **California High Speed Rail Construction Package #1 (CAHSR CP1) Design-Build Project**—Over the past five years, CHS has led the traffic engineering design work for the California High Speed Rail CP1 from Madera to Fresno. Most of the work is in the City of Fresno. CHS worked extensively with the City of Fresno to get approval for reconfiguration of at-grade crossings to over-crossings and tunnels within the City, including signal design, ITS design, lighting design, and traffic control plans to enable the individual crossings to be constructed on time, enabling the design-build team to continue construction of this initial segment of the high speed rail project.
- **San Francisco Mission Bay Project**—Mission Bay is San Francisco's largest in-fill development and took more than 20 years to complete. Over the past two decades, CHS has served as the traffic engineering lead for several civil engineering firms. We have completed six Major Phase Studies and signal design and modification for 32 intersections, including several I-280 ramp junction intersections, as well as intersections with MUNI light rail crossings and bicycle crossings with bicycle signals and signing and striping design for 35 city blocks.
- **Oakland Airport Connector Design-Build Project**—CHS was responsible for signal design and a traffic management plan for the project alignment from the BART Oakland Coliseum Station to the Oakland International Airport. The project required approval from the City of Oakland for signal modifications and striping changes and from Caltrans for TMP for the segment of the structure over I-880.

Complete Streets

CHS has collaborated with urban design firms on a number of Complete Street projects, including Redwood City's Theater Square, Novato's Grant Avenue, Oakland Chinatown, Downtown Yuba City, and currently the Central Avenue and Clement Avenue Complete Street projects in Alameda. For most of these projects, CHS's role involved early planning tasks to assess gaps and needs, opportunities and constraints, then options to redesign the street to enhance pedestrian and bicycle safety, accessibility, and amenities. CHS has also prepared the transportation section of CEQA documents. For the final design phase, CHS has been responsible for safe pedestrian and bicycle crossings, special pavements, signal design, lighting design, and signing and striping design. Sample projects include:

- **Revive Oakland**—CHS developed a plan that targeted pedestrian safety improvements and also helped

the City of Oakland obtain an MTC grant for project implementation. We were also responsible for the design that involved a pedestrian scramble crossing at four critical intersections in Oakland Chinatown.

- **City of Alameda Central Avenue Complete Street Project**—CHS was responsible for a traffic study, traffic management plan, and signal design for this project that involves a cycle track, two roundabouts, and lighting improvements. The project is ongoing. The 100% design plan has been submitted and construction is expected to begin later in 2023.
- **Redwood City Theater Square Project**—CHS was responsible for traffic analyses for various options involving road diet, pedestrian corner bulbouts, diagonal parking, street trees, and sidewalk amenities. This award-winning project has contributed to the revitalization of Redwood City's Downtown area.
- **Novato Grant Avenue Project**—CHS created a concept plan for the entire downtown portion of Grant Avenue and worked with merchants and the City to prioritize expenditures. Our final design included corner bulbout, tree planting, and flexible zones (angled parking areas to be used for both parking and outdoor displays or dining).
- **City of Berkeley Shattuck Avenue Complete Street Project**—This project involved changing the one-way couplet of Shattuck Avenue to a one-way street northbound with diagonal parking and reduced roadway capacity, and two-way in the southbound direction with changes to improve pedestrian crossings to the Downtown Berkeley BART Station. CHS was responsible for the traffic study, traffic control plan, and signal design.

Railroad Crossings

Both CHS and RSE have extensive experience in rail grade crossing analyses. CHS prepared Caltrain grade crossing analyses for 10 crossings from Redwood City to Gilroy and recently used VISSIM to perform detailed micro-simulation analysis for the 16th Street grade crossing in San Francisco.

RSE's projects range in size and scope from conceptual track alignment and station studies to complex stations and corridor extensions including systems, trackwork, intermodal stations, bridges, tunnels, grade crossings, and grade separations throughout the State of California. Selected Northern California experience includes:

- **Ralston, Harbor, and Holly Grade Separation Alternatives Study, Belmont to Redwood City**—RSE studied a proposed 4-track alignment study from 42nd Avenue in Belmont to Whipple Street in Redwood City. The design included track alignment plan and profile

plans, station layouts, track typical sections, roadway plan & profile plans, and grade separated structural sections.

- **Caltrain Grade Crossing Improvements Design**—RSE conducted hazard analysis and provided preliminary and final engineering design for safety improvements on 42 crossings along the Caltrain corridor in the cities of Redwood City, San Mateo, and Palo Alto.



- **Caltrain Signal Preemption Project**—RSE provided railroad signal preemption and local city intersection enhancement improvements for five railroad crossings along the Caltrain corridor. In addition to civil design and railroad/roadway signal design, RSE provided stakeholder coordination, obtained approval from CUCP, and obtained permits from affected agencies including the County of Santa Clara, as well as local city jurisdictions.

Signal Timing

CHS has completed numerous signal timing projects that involved major arterial roads and areawide improvements. Sample projects included:

- **Monterey Road Signal Optimization Project**—This project seeks to re-time 24 traffic signals along Monterey Road in San José to minimize delay and to maximize pedestrian safety. CHS completed signal retiming plans for the weekday AM peak, Midday, and PM peak, and weekend periods. CHS fully engaged City of San José DOT staff in the development of retiming strategies, final fine tuning in the field, and development of final signal timing plan. Scenarios tested included safe pedestrian crossings at a speed of three feet per second and grouping adjacent intersections for progressing, additional signals and left turn pockets to balance left turn volumes, and a focus on peak direction progressing.
- **Oakland-Alameda Access PA/ED Project**—This project involves traffic analyses for 56 intersections. Key issues involve maintaining proper progression along 7th Street, special timing treatment to reduce vehicle queueing

at freeway ramp intersections (6th and Jackson, 5th and Jackson, and 5th and Oak). CHS developed an extensive SYNCHRO/SimTraffic network for the 56 study intersections and tested over 20 different options for potential direct connection from the Posey Tube to the City of Oakland's street network. After a 10-year struggle, the project preferred alternative was finally selected and agreed to by stakeholders.



- Van Ness BRT Project, San Francisco**—CHS used SYNCHRO and SimTraffic for signal timing analysis for six major arterial roads for the Van Ness BRT Project. Key challenges involved applying signal priority system (TSP) for buses along Van Ness Avenue, while reducing delay to general vehicular traffic along Van Ness and five parallel streets. We participated in this project from the initial planning study to final design. During the initial planning study, CHS was responsible for assessing design options, including side running BRT, center running, center platform BRT, and center running and side platform. After completing a comprehensive multi-modal transportation impact analysis for the transportation section of both the NEPA and CEQA documents, CHS was responsible for construction packaging analyses for the project, including determining whether the construction should begin from the north to the south or vice versa, or start from the mid-section in both directions.

CHS also recently served as on-call consultant for the City of Mountain View and one key responsibility was signal timing plan development.

Transportation Impact Studies & Peer Review

CHS has prepared multi-modal traffic impact studies (TIS) for more than 500 developments with a wide range of uses and sizes as well as major infrastructure projects. We also have provided peer review of TISs for local jurisdictions, including the Cities of Menlo Park, Dublin, and Mountain View, and served as client representative to peer review TISs prepared by other firms hired by local jurisdictions.

CHS staff also has extensive experience in detailed SYNCHRO/SimTraffic and VISSIM micro-simulation analyses, which would

be valuable when conducting peer reviews of projects that are controversial and with challenging site access and congestion issues. Our hands-on experience working with other local cities would potentially be of value as well.

CHS also offers extensive experience with VMT projects, including the development of VMT strategies for the Cities of San Francisco and Menlo Park. We also recently completed VMT analysis for the 17-mile-long Ventura/Cahuenga Boulevard Specific Plan Project in Los Angeles.

Since 2018, CHS has prepared more than 50 traffic impact studies involving VMT analysis, covering the typical residential, office, and retail uses identified by SB 743. We have also prepared VMT analysis for unique land uses, such as parking garages, and industrial uses that required developing approaches not typically included in a City's VMT calculator. We will be able to share our experience on approaches and methodologies for estimating VMT compliance for unique land uses.

- City of Dublin and Menlo Park Peer Reviews**—CHS performed peer reviews of traffic studies, signal operations and signal design for the Kaiser Permanente Hospital expansion project for the City of Dublin and traffic impact studies for the City of Menlo Park
- John Muir Hospital Expansion Project Peer Reviews**—CHS represented John Muir Hospital, reviewing a traffic study performed by the consultant for the City of Concord, including proposed mitigation measures.
- California Pacific Medical Center (CPMC) Cathedral Hill Hospital and Medical Office Building Project Peer Review**—CHS represented CPMC, reviewing a traffic study performed by the consultant for the City of San Francisco, including proposed mitigation measures. For this project, CHS developed project trip generation data for the City's consultant.

Engineering and Traffic Surveys

CHS uses specialty subconsultants for engineering and traffic surveys. For traffic, pedestrian, and bicycle volumes, speed, vehicle queuing, and parking, CHS has maintained close working relationship with three specialty traffic survey firms, IDAX, Quality Counts, and National Data and Surveying Services (NDS).

CHS has managed traffic data collection for the San Francisco Municipal Transportation Agency (SFMTA) and San Francisco Public Works Department (SFPDW). CHS was responsible for managing the locations and approaches for data collection and performs quality controls on the data before they are used for traffic studies. For origin-destination data, CHS has worked with StreetLight, using either a current license from a local city or a newly purchased one.

3. Staff Statement of Qualifications or Resumes

Chi-Hsin Shao will serve as main coordinator and point of contact for all the other consultants and sub-consultants and will oversee project updates under the direction of City staff. Chi-Hsin will monitor timelines, review and evaluate products, ensure quality control and assist in facilitating meetings.

Traffic Planning & Engineering—Chi-Hsin will also lead traffic operations assignments. Chi-Hsin has extensive experience in SYNCHRO/SimTraffic and VISSIM. He managed the SYNCHRO/SimTraffic analyses for the Van Ness BRT project (120 intersections), Oakland/Alameda Access Project (56 Intersections), San José Monterey Road Signal Retiming Project (24 Intersections), and Los Angeles International Airport Access Project. He also managed VISSIM analyses for the James Herman Cruise Terminal, SF Zoo Access Study, and NoHo to Pasadena BRT Project. Chi-Hsin will be supported by Siqing Yi, who has more than six years of hands-on experience in performing these analyses with him.

Traffic Signals—Roxannabelle Perfecto, PE will lead this task. Roxannabelle offers more than 9 years' experience in traffic engineering design, including signal design, signing and striping design, lighting design, safety design, and bikeway design. She is currently the CHS Project Manager for the East Bay Greenway traffic engineering PS&E.

Complete Streets—This task will be led by Roxannabelle Perfecto, PE and supported by Magnus Barber on planning tasks. Roxannabelle is currently the CHS Project Manager for the City of Alameda Central Avenue and Clement Street Complete Street Project, and East Bay Greenway Final Design, which includes protected intersections and right-of-way and numerous intersections with rectangle rapid flashing beacons (RRFB) and pedestrian hybrid beacons (PHB). Magnus is well suited to lead active transportation planning projects. He is an active bicyclist and led CHS's involvement in the Colma Creek Resiliency Project, which required a bike lane feasibility study. He also led bicycle-related improvements for the Genentech Campus in South San Francisco.

Railroad Crossings—Jorge Sanchez from RSE will lead these tasks. Jorge has 27 years of engineering and construction experience in commuter rail, freight railroad, light rail, rapid transit, and high-speed rail projects. He has worked on many

planning and final design projects for various Class I and local railroad agencies including Caltrain, UPRR, Metrolink, BNSF, LA Metro, VTA, and Spanish rail agencies. He has served as Project Manager and Technical Lead for various projects including new starter rail lines, main line/controlled siding extensions, track and station rehabilitations, mixed intercity passenger/freight operations, commuter line/station expansions, freight yards/terminals, maintenance facilities, grade separations, and grade crossing improvements. RSE is currently collaborating with CHS on a railroad track design project for the Union Pacific Niles Subdivision, including an at-grade crossing analyses and design modification.

Signal Timing—Roxannabelle Perfecto, PE will lead traffic engineering and safety design tasks. She has 12 years of experience in signal design, signing and striping design, lighting design, and safety design. She is currently the CHS Project Manager for the California High Speed Rail Construction Package 1 traffic engineering design. In addition, she is completing the final design for the Clement Avenue and Central Avenue Complete Street projects in Alameda. Roxannabelle will be supported by Frank Feng, an Associate Traffic Engineer. Any roadway-related design work will be led by RSE civil engineers.

Traffic Impact Analyses and Peer Review—This task will be led by Migi Lee. Migi has a comprehensive knowledge and hands-on experience of design requirements and how they affect the review process for development projects. Migi has led multi-modal impact and VMT analysis for more than 100 development projects, covering a wide range of land uses, from single use to mixed-use, and sizes. Migi is an expert in preparing the transportation section of CEQA documents to proceed from Initial Study to EIR. Chi-Hsin will provide technical support if needed.

Migi will be supported by Ben Miller, an associate planner who can also serve as a Project Manager for small to median-scale project analyses and review. Ben has managed more than 40 similar-size projects and supported the technical work for more than 10 large-scale development and infrastructure projects throughout the Bay Area.

Engineering and Traffic Surveys—CHS uses specialty subconsultants for engineering and traffic surveys.

4. References

SFMTA Alemany Blvd. Sewer Line Replacement Project

a. Reference name, with current contact information

Daniel Padilla, Project Manager, SFMTA
(415) 642-2115
Daniel.padilla@sfmta.com

b. Type of project/work: Detailed SYNCHRO and SimTraffic analyses for the project, which involves installing a major 10 foot diameter sewer line along Alemany Boulevard, a major access roadway to both US-101 and I-280.

c. Client type (clarifying role of private sector client, if any)

Public Sector Client

d. Size and scale of the project

\$250,000 budget

e. Current status

Completed on-time and within budget

CHS Staff Roles: Chi-Hsin Shao, Principal; Ben Miller, Transportation Planner; Siqing Yi, Transportation Planner

City of Menlo Park Projects

a. Reference name, with current contact information

Kristiann Choy, Senior Transportation Engineer
(650) 330-6772
kchoy@menlopark.org

b. Type of project/work:

- Revision of Menlo Park's Transportation Impact Analysis Guidelines to incorporate new requirements under SB 743 that vehicle miles traveled (VMT) replace LOS as the metric for transportation impacts under the California Environmental Quality Act (CEQA)
- Successfully obtaining a \$150,000 Caltrans Sustainable Planning grant for a shuttle bus study.

c. Client type (clarifying role of private sector client, if any)

Public Sector Client

d. Size and scale of the project

\$125,000

e. Current status

Both projects have been completed.

CHS Staff Roles:

- *Transportation Impact Analysis Guidelines:* Chi-Hsin Shao, Principal; Magnus Barber, Project Manager; Siqing Yi, Associate Transportation Planner
- *Grant Writing:* Chi-Hsin Shao, Principal; Gary Hsueh, Project Manager

San Francisco Municipal Transit Agency TDM Program

a. Reference name, with current contact information

John Knox White, Planning Section Programs Manager for TDM and Vision Zero
(510) 277-2089
John.KnoxWhite@sfmta.com

b. Type of project/work: Developed an agency-wide TDM program for the San Francisco Municipal Transportation Agency (SFMTA), including a pilot project for carpools and micro-mobility that includes a platform for incentives dissemination, tracking, and monitoring of employee travel behavior.

c. Client type (clarifying role of private sector client, if any)

Public Sector Client

d. Size and scale of the project

\$450,000

e. Current status

Project completed in 2022.

CHS Staff Roles: Chi-Hsin Shao (PM), Migi Lee (Deputy PM), Gary Hsueh (Pilot Project Development and Implementation), Magnus Barber (Best Practices), Ben Miller, Siqing Yi (Support)

5. Project Approach

Approach to On-Call Project Management

As-needed, on-call, and task-order-based services often entail projects that focus on a specific issue, have short time frames and limited budgets, and require quick mobilization of staff and resources.

CHS has a long and successful history serving the needs of municipalities and agencies under on-call contracts, including transportation planning, traffic engineering, and environmental contracts, all with varying scopes and sizes.

Many on-call contracts are unsuccessful because of communication breakdown issues—we've received excellent customer feedback for our technical expertise, responsiveness, and high standards of customer care. We reply in person either with phone calls or by email the same day whenever possible.

CHS stresses “hands-on” project management, clear communication, schedule adherence, efficient team management, tight cost control, high quality work products, and effective stakeholder coordination. We offer tools and protocols specifically designed to deliver expert service quickly and with added value.

Developing A Work Plan

A clearly defined work plan is one important factor in ensuring successful project completion. CHS's approach emphasizes a clear understanding of the project's goals, objectives, and stakeholder needs to guide analysis and design. A work plan should consist of the following key elements:

- **Scope of Services**—Clearly describe project issues, goals and objectives, technical tasks to be performed, and deliverables for each task.
- **Schedule**—Clearly delineate start and end dates for each task, City review periods, project meeting dates, milestones, and City Project Manager meeting dates.
- **Budget**—Consists of two parts: person-hours by task and project budget by task and key staff. This enables us to track person hours spent and task budget concurrently.

- **Project Management Approach**—Outline project staffing, communications protocols, and quality assurance/quality control (QA/QC) procedures.

Quality Assurance/Quality Control

CHS will maintain a Quality Assurance Plan (QAP) during the performance of every task order to ensure that reports, documents, and all other material submitted to the City have been thoroughly reviewed. The submitted documents will include identification of the preparer and QA/QC checker. We will provide the following QA/QC process for deliverables:

- All deliverables will be independently checked, corrected, and backchecked.
- All pertinent project-related correspondence will be routed to the appropriate personnel, then bound in project files and electronically filed.
- Deliverables will be clearly marked as being fully checked, signifying that the preparation of the material followed the Quality Assurance Plan established for the project.
- Technical data will be thoroughly checked/reviewed for errors and edited before submittal to the client.

A copy of CHS's Quality Assurance Plan will be available for City review upon assignment of any task order.

Scope of Services

For on-call assignments, CHS will work with San Pablo's Project Manager to understand project goals and key technical and community issues prior to submitting a scope of services customized to meet the City's goals.

Experience with Public Agencies

CHS provides transportation planning and traffic engineering services for California cities and transit agencies. Many of these projects were performed as an on-call consultant. In addition, CHS Consulting Group was recently selected as an on-call traffic and transportation consultant by the Cities of San Bruno, South San Francisco, and El Cerrito, as well as the East Bay Regional Parks District.

6. Approach to Schedule of Work

This sample schedule illustrates CHS Consulting Group's general approach to project management. Customized schedules will be created for each new project.

TASKS	START	FINISH	JULY '22	AUG '22	SEP '22	OCT '22	NOV '22	DEC '22	JAN '23	FEB '23	MARCH '23	APRIL '23	MAY '23	JUNE '23	JULY '23
Project Management & Coordination	8/29/2022	6/5/2023													
Kickoff Meeting	8/29/2022	8/29/2022													
Ongoing Coordination	8/30/2022	6/5/2023													
Existing Conditions	8/30/2022	11/15/2022													
Review of Planning and Policy Context	8/30/2022	9/19/2022													
Data Collection and Analysis	9/20/2022	10/17/2022													
Parking Utilization Analysis	10/18/2022	11/14/2022													
Deliverable: Technical Memorandum of Existing Parking Conditions and System Performance	11/15/2022	11/15/2022													
Assessment of Parking Policies & Practices	11/15/2022	12/27/2022													
Assessment of Parking Enforcement Policies and Practices	11/15/2022	12/5/2022													
Parking Best Practices and Market Trends	12/6/2022	12/26/2022													
Deliverable: Technical Memorandum of Parking Operational Practices and Best Practices/Market Trends	12/27/2022	12/27/2022													
Supply Evaluation	11/15/2022	2/28/2023													
Existing Parking Demand and Land Use Assessment	11/15/2022	12/26/2022													
Future Demand Assessment	12/27/2022	2/27/2023													
Deliverable: Technical Memorandum of Future Parking Demand	2/28/2023	2/28/2023													
Key Findings & Recommendations	2/28/2023	5/9/2023													
Management Strategies	2/28/2023	3/20/2023													
TDM Strategies	2/28/2023	3/20/2023													
Zoning Strategies	2/28/2023	3/20/2023													
Funding Strategies	2/28/2023	4/10/2023													
Implementation Guidance	4/11/2023	5/8/2023													
Deliverable: Strategy Matrix	3/21/2023	3/21/2023													
Deliverable: Funding Strategies Memo	4/11/2023	4/11/2023													
Deliverable: Implementation Guidance Memo	5/9/2023	5/9/2023													
Parking Management Plan	5/10/2023	7/19/2023													
Draft PMP (Deliverable)	5/10/2023	6/20/2023													
Final PMP (Deliverable)	6/21/2023	7/18/2023													
City Council Presentation	7/19/2023	7/19/2023													
Community & Stakeholder Engagement	9/20/2022	5/2/2023													
Outreach Communications Options/Alternatives	9/20/2022	10/31/2022													
Option 1. Project Calendar, Public Noticing and Promotional Strategy	9/20/2022	10/10/2022													
Option 2. Interactive Project Website	9/20/2022	10/31/2022													
Key Stakeholder Focus Groups (City staff, business, property owners)	9/20/2022	10/7/2022													
City Staff	9/20/2022	9/20/2022													
Business Owners	9/20/2022	9/20/2022													
Property Owners	10/7/2022	10/7/2022													
Community Groups	10/7/2022	10/7/2022													
Community Parking Survey (online)	11/1/2022	12/12/2022													
Community Meeting Options/Alternatives	3/21/2023	3/27/2023													
Option 1. Pop-ups (2)	3/21/2023	3/27/2023													
Option 2. Community Meeting (in-person)	3/21/2023	3/21/2023													
Deliverable: Summary of Outreach Findings	3/22/2023	5/2/2023													

7. Rate Schedule

Labor Categories (e.g., Consultant, Sr. Consultant, etc.)	Hourly Rate
Principal	\$405–\$460
Principal Engineer	\$255–\$390
Principal Planner	\$250–\$380
Project Manager	\$200–\$250
Senior Engineer	\$155–\$235
Senior Planner	\$150–\$230
Associate Engineer	\$125–\$155
Associate Planner	\$120–\$150
Assistant Engineer	\$110–\$125
Assistant Planner	\$105–\$120
Graphic Designer	\$130–\$165
Technical Editor	\$150–\$185
Administrative	\$100–\$140

Rates are subject to escalation on January 1 of each calendar year. These increases reflect increases for merit or inflation.

Reimbursable expenses billed at cost include transportation charges, reproduction (including blueprints, photocopies, photography, etc.), and miscellaneous expenses such as postage, overnight mail, messengers, etc.



2023 Hourly Billing Rates

Labor Classification	Base Hourly Rate Range (Note 1)	Fully Loaded Hourly Rate Range
Engineering		
Principal Manager, PE	\$110 - \$120	\$272 - \$300
Engineer III	\$80 - \$115	\$198 - \$284
Engineer II	\$50 - \$80	\$125 - \$198
Engineer I	\$30 - \$50	\$75 - \$125
Admin III / Project Controls	\$75 - \$100	\$186 - \$248
Admin II	\$50 - \$75	\$125 - \$186
Admin I	\$25 - \$50	\$65 - \$125
Surveying		
Survey Manager, PLS	\$80 - \$100	\$198 - \$250
Engineer Technician III	\$75 - \$90	\$185 - \$225
Engineer Technician II	\$55 - \$75	\$136 - \$185
Engineer Technician I	\$30 - \$55	\$75 - \$136
2-Man Survey Crew		\$275

Other Direct Costs

Description of Items	Unit	Cost
Printing and Reproductions		
A. Outside Reproduction		Actual Cost
Computer		
A. Personal Computer		N/C
B. CADD Computer		N/C
C. Field Computer		N/C
Vehicle Expenses		
A. Company Vehicles		N/C
B. Personal Vehicles	MILE	IRS Rate
C. Rental Vehicle		Actual Cost
Delivery Services		
Overnight and Courier Delivery Services		Actual Cost
Communications		
A. Facsimile		N/C
B. Telephone		N/C
C. Cell Phone - (field staff only)		N/C
Miscellaneous		
A. Travel and Per diem	EA	Note 2
B. Special supplies/equipment		Actual Cost

NOTES:

- (1) Hourly rates are subject to a 3.5% annual increase beginning January 1 of each year
- (2) Travel related costs should be reimbursed in accordance with Caltrans' Travel and Expense Claims Guidelines for Consultants.

Chi-Hsin Shao, TE, AICP

President | Project Manager/Traffic Operations Analyses



Chi-Hsin has 40 years of experience in traffic engineering and transportation planning, specializing in multimodal transportation planning and systems. He is a visionary transportation planner noted for his ability to understand and articulate project and client needs and forge consensus among diverse groups using creative strategies and approaches.

He has served as Project Manager and hands-on Principal-in-Charge for many CHS Consulting Group projects, covering transportation analyses for development and infrastructure projects, detailed traffic operations analyses, and design projects. He often provides technical guidance and client services to CHS Project Managers. He is fully committed to all CHS clients and makes sure all their needs are fully accommodated.

Education

MS, Infrastructure Planning and Management, Stanford University

BE, Architecture, Chung Yuan University, Taiwan

Professional Registrations/Certifications

- Traffic Engineer, California, #TR2150
- American Institute of Certified Planners

Relevant Experience

- **Oakland Alameda Access Project**, Oakland/Alameda, CA

Chi-Hsin was the CHS Project Manager for three rounds of planning efforts for this highly controversial project. On the most recent phase, he managed the SYNCHRO/SimTraffic analyses for a larger network covers 56 intersections in both the Cities of Oakland and Alameda. Working closely with the project design lead, clients, and stakeholders, CHS tested the traffic operations benefits and impacts for a long list of options and sub-options to guide the stakeholders in their decision-making process. Eventually, a preferred option was selected.

- **Monterey Road Signal Optimization Project**, San José, CA

Chi-Hsin was the Project Manager, leading this effort to improve pedestrian and bicycle safety and signal progression. Due to conflicting study objectives, CHS developed an iterative process to work with City staff. The process began with a thorough assessment of the current green band and the impacts of increases in pedestrian and bicycle crossing time upon signal progression. Once this was completed, CHS studied various creative options to optimize signal operation with longer crossing times, such as additional signals to address oversaturated left-turn pockets, grouping longer signal cycles for major intersections only, and optimizing for the peak direction only. A final optimized signal timing was accepted by City staff and was implemented.

- **BART North Berkeley and Fremont Station Bicycle & Pedestrian Improvements**, Berkeley & Fremont, CA

Chi-Hsin served as CHS's Principal-in-Charge for the final design of two BART Station areas. The North Berkeley station included a safety assessment for

the Ohlone Greenway connection and proposed bike lane along Delaware Street to the south of the station and modification to the design of the existing parking lot to better accommodate pedestrian and bicycle access. At the Fremont station, the project focused on pedestrian safety improvements, including additional pedestrian access through an existing parking lot and bus parking area. The North Berkeley Street station project was completed and the Fremont Station is on hold.

- **LAMetro North Hollywood to Pasadena BRT Project,** Los Angeles, CA

Chi-Hsin was the CHS Project Manager for both the initial feasibility study and CEQA phase as well as a detailed operational analyses phase. During the second phase, he led VISSIM micro-simulation analyses for several segments in Burbank where vehicle queueing was a key concern with local stakeholders as well as SYNCHRO/SimTraffic analyses for two segments in the Eagle Rock neighborhood where traffic diversion was a major concern. The results of both analyses were instrumental in helping stakeholders to gain a clear understanding and to achieve consensus for the proposed design.

- **LA City Planning Department, Ventura-Cahuenga Boulevard Specific Plan Transportation Project,** Los Angeles, CA

Chi-Hsin served as Project Manager, leading the transportation analysis for an update of the 20-year old Specific Plan for the 17-mile-long Ventura-Cahuenga Boulevard Corridor. The project elements included development of a sidewalk management plan, an on-street parking management plan, VMT analyses for the CEQA document, and parking in-lieu fee and project impact fees. The project involved many stakeholders, including staff in LADCP headquarters and San Fernando Valley offices, LADOT headquarters and San Fernando Valley offices, and the City Attorney and City Council offices. The project is now 80 percent complete, with full approval of parking and sidewalk management plans.

- **Downtown Precise Plan,** Redwood City, CA

Chi-Hsin was the Project Manager for the planning phase and the Principal-in-Charge for the design phase. For the planning phase, Chi-Hsin worked with the urban design team to assess opportunities for traffic calming, pedestrian bulb-outs, enhanced pedestrian crosswalks, potential lane

reductions, and changes to circulation patterns. After the concept plan was approved, Chi-Hsin worked with the team on final design to further evaluate potential changes to the parking configuration and further enhance the pedestrian experience. This project received the 2007 Congress for the New Urbanism Charter Award, Block, Street, and Building Scale category; a 2008 California Redevelopment Association Award of Excellence for Public Space & Linkages; and a 2008 American Public Works Association, South Bay Chapter Project of the Year Award.

- **Redwood City Ferry Terminal Feasibility Study,** Redwood City, CA

Chi-Hsin was the Project Manager for this project that required the assessment of traffic, site access, parking, and bus connections to two proposed ferry terminal sites at the end of Seaport Boulevard. Various site access options and shared parking options were explored and pros and cons were analyzed. The study was finalized and submitted to the City.

Migi Lee

Senior Transportation Planner | Traffic Planning, Complete Streets, & Transportation Impact Studies



Migi has 16 years of experience in transportation planning, transit service planning, and traffic analysis. She has extensive experience as a Project Manager for transportation projects and frequently creates the transportation sections of California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) documents.

Her project management experience includes successful completion of transportation impact studies (TISs) for more than 100 development, utility, and infrastructure planning projects, most of which required a CEQA clearance. Her hands-on experience in working with local city planning and review processes has enabled her to be successful on numerous projects for local cities, Caltrans, and transit agencies. In the past five years, she has also managed TIS for many projects involving VMT analyses for a wide variety of land uses.

Education

M.S., Urban Planning, Columbia University, New York

B.A., Architecture, University of California at Berkeley, Berkeley, CA

Relevant Experience

- SFPUC, South Ocean Beach Coastal Erosion and Wastewater Infrastructure Protection Project Transportation Study**, San Francisco, CA
 The project would permanently close the Great Highway south of Sloat Boulevard, diverting more than 1,000 vehicles during the peak hour and displacing an existing Muni bus stop and coastal parking lots. Migi worked with multi-agency stakeholders including the SFPUC, San Francisco Planning Department, SFMTA, and the San Francisco Zoo to develop analysis methodologies and a data collection plan (e.g., intercept survey, parking occupancy survey, multi-day traffic counts). She conducted extensive analyses to address diversion issues along Sloat and Skyline boulevards, explored a roundabout for the unsignalized intersection of Sloat and Skyline boulevards, and assessed the transition of bicycle and pedestrian crossing at the reconfigured Sloat Boulevard and Great Highway intersection. She also assessed five project variants to accommodate vehicle, bicycle, and pedestrian access options for the neighboring San Francisco Zoo. The results of her analyses were summarized and presented to the SFPUC, SF Planning, and SFMTA and were incorporated into the CEQA document.
- Sabercat Pedestrian-Bike Path Trail Extension Project**, Fremont, CA
 The City of Fremont, in cooperation with the California Department of Transportation (Caltrans), would construct a pedestrian/bike bridge over I-680 connecting the City's Irvington District neighborhoods and the future Irvington BART Station to the Sabercat Historical Park east of I-680. As Project Manager, Migi completed traffic, transit, bike, and parking analyses

for the Transportation Section of EIR. She qualitatively assessed the impacts of this active transportation project (i.e., walking or bicycling) potentially causing a mode shift away from automobile use, resulting in a reduction in VMT. Because the project would require a partial closure of I-680 during construction, the traffic study included a freeway volume assessment and impacts analyses along detour routes as part of the Transportation Management Plan for Caltrans review.

- **SFPUC Southeast Treatment Plant New Headworks Facility IS/MND**, San Francisco, CA

The project will replace or improve facilities at SFPUC's Main Headworks Facility involving the closure of travel lanes, bicycle lanes, and sidewalks. The project would also generate extensive truck trips in and out of the facility over the 5-year construction period. Migi prepared a Transportation Impact Study including measures for the Transportation Management Plan. She analyzed potential traffic, bicycle, and pedestrian detour routes during construction and assessed potential safety and circulation impacts related to traffic, transit, bicycles, pedestrians, freight rail, loading, emergency vehicle access, and parking conditions.

- **SFPW, Islais Creek Bridge Rehabilitation Project Transportation Study**, San Francisco, CA

Rehabilitation and seismic repair of the Islais Creek Bridge in San Francisco would temporarily close the bridge for approximately 18 months. The bridge is a major link between the Central Waterfront and the Bayview/Hunters Point neighborhoods with a T-Third light rail facility in the median of the bridge. Migi estimated traffic diversion during the bridge closure using the countywide model; prepared a traffic study analyzing potential traffic, transit, bicycle, pedestrian, loading, and emergency access impacts; and developed a Muni T-Third Bus Bridge Plan in collaboration with San Francisco Public Works and San Francisco Municipal Transportation Agency (SFMTA) staff to transport passengers from T-Third light rail vehicles to buses when the bridge would be fully closed. The plan included potential service limits, service hours, laydown area, and passenger boarding and alighting areas for bus bridge service.

- **SFPUC Crystal Springs/San Andreas Transmission Line Upgrade Environmental Impact Report**, San Mateo County, CA

Migi prepared the transportation section of the EIR for the proposed seismic upgrade of a 4.2-mile-long pipeline that runs along the eastern shore of Crystal Springs Reservoir and outlet structures located along the pipeline. She conducted transportation planning and traffic analyses; estimated truck traffic volumes and parking demand during the construction period; and analyzed potential traffic impacts at 20 study intersections, 35 freeway mainline segments and 30 ramps along I-280 and SR-92. She also worked with SFPUC staff to prepare traffic control plans as a mitigation measure for construction impacts.

- **EBMUD Leland Reservoir Replacement Project Environmental Impact Report**, Lafayette, CA

This project involves replacement of the existing 18.3-million-gallon (MG) open-cut Leland Reservoir with two 8.0-MG pre-stressed concrete tanks and pipelines connecting to the reservoir, and construction of a 30-foot-long sewer main along public rights-of-way. Migi worked with EBMUD and public stakeholders to identify truck and worker access routes around the residential neighborhood that would minimize vehicle/ pedestrian/ bicycle conflicts. She estimated construction period truck traffic volumes and parking demand and analyzed potential traffic impacts at up to six study intersections. She prepared a preliminary traffic management plan in collaboration with EBMUD staff. She produced a Transportation Impact Study and the transportation section of the Draft EIR summarizing the data collection and results of the analyses.

- **EBMUD Chabot Dam Seismic Upgrade Environmental Impact Report**, Alameda County, CA

Migi prepared a Constructability Report and the transportation section of the EIR for this project located in a regional park in Oakland. She evaluated the feasibility of proposed haul routes based on safety concerns. She conducted transportation traffic analyses; estimated truck traffic volumes and parking demand during the construction period; analyzed traffic, parking, and construction impacts; and worked with EBMUD staff to

prepare traffic control plans as a mitigation measure for construction impacts.

- **1105 Market Street Hotel Development Project TIS**, San Francisco, CA
Migi completed a TIS for a 155-room hotel development project. Key transportation issues included estimating project travel and demand and evaluating commercial and passenger loading operation along the project frontage on Stevenson Street. She evaluated the project design features aimed at improving circulation and safety for commercial and passenger loading operation.
- **2465 Van Ness Avenue Mixed-Use Residential Project Circulation Memo**, San Francisco, CA
As Project Manager, Migi led the transportation impacts analysis for a proposed mixed-use residential development, with emphasis on loading constraints due to neighboring land uses and potential conflicts with transit operations on Union Street. She proposed a range of TDM measures for the residents to reduce single-occupancy vehicle trips. They included, but were not limited to, unbundled parking with reduced parking supply at less than 90 percent of the neighborhood parking rate and increased bicycle parking supply.
- **HOPE-SF Sunnydale-Velasco Affordable Housing Development EIS/EIR (HUD-Funded)**, San Francisco, CA
Migi prepared a transportation study for a proposed mixed use, affordable housing development. She evaluated impacts for two project scenarios: one with 1,700 new housing units, and one with 1,638 new units. She conducted a transportation impact analysis including vehicular delays, transit capacity utilization rates, parking supply and loading, and pedestrian and bicycle safety and circulation.
- **SFPUC Pier 94 Asphalt Plant/ Port of San Francisco Auto Import Project**, San Francisco, CA
Migi prepared a transportation study for the proposed asphalt plant and auto import facility in the Pier 94/96 area of San Francisco, within the San Francisco Southern Waterfront Area. The transportation study served as part of an addendum to the San Francisco Southern Waterfront Supplemental EIR. She documented the changes in the existing transportation condition since the Supplemental EIR in 2001 and assessed any potential

transportation impacts to ensure consistency with the previous impact findings. The study was completed in accordance with the San Francisco Planning Department's latest Transportation Impact Analysis Guidelines, including SB743 compliance. Because the project included atypical land uses which were not part of the City's map-based screening tool, CHS worked with City staff to develop a program-based VMT estimation for the project.

- **El Cerrito Transit-Oriented Development Parking Study**, El Cerrito, CA
Migi developed a comprehensive parking management plan, including assessment of the existing parking conditions and future parking demand for the opportunity sites, compilation of a Best Practices research study for the TOD areas, and development of specific strategies for each subarea for both new developments and existing conditions. Recommendations included reducing minimum parking requirements and implementing a prioritized suite of 15 parking management strategies to alleviate parking shortages around BART stations and reduce parking demand throughout the City. High-priority recommendations include instituting unbundled parking, introducing metered parking, establishing a Transportation Management Association, and allowing BART patrons to use metered on-street parking spaces. She made two presentations to City Council (one presenting findings and the other presenting recommendations); both presentations were positively received.

Roxannabelle Perfecto, PE

Senior Traffic Engineer | Traffic Engineering/Traffic Signals



Roxannabelle has more than nine years of experience in transportation and traffic engineering. She has worked with both public and private sector clients throughout California. Her experience includes traffic signal design, signing and striping design, traffic control plans, street lighting design, and ITS design, such as fiber optic and signal interconnect. She also has worked with Caltrans District offices on many projects.

Relevant Experience

- **City of Alameda Clement and Central Avenue Complete Street PS&E Project**, Alameda, CA

Roxannabelle is currently the CHS project manager for both of these Complete Street PS&E projects. The projects included signal design, lighting design, signing and striping design, and preparation of a Transportation Management Plan (TMP). The 100 percent designs for both projects were recently submitted and an updated TMP was also recently submitted, incorporating comments from Caltrans.

- **California High Speed Rail Construction Package 1 (CP 1) Design Build Project**, Fresno, CA

Roxannabelle is currently CHS Project Manager for the California High Speed Rail CP 1 Project from Madera to Fresno. CHS has been working closely with the design-build team over the past seven years and the current focus involves preparing additional updates that resulted from changes in field conditions and/or were requested by the City of Fresno. Most of the work involve signal modification, lighting design, and signing and striping design.

- **East Bay Greenway Project**, Alameda, CA

Roxannabelle is currently serving as the CHS Project Manager for preliminary design and PS&E. CHS has been involved in the East Bay Greenway Project since 2016, beginning with a feasibility study and traffic impact study. The project boundary extends from Lake Merritt BART station in Oakland to South Hayward BART and involves creation of a cycle track mostly along the BART alignment, with a focus on protected intersections and bikeway design along the entire alignment. Roxannabelle will lead signal design and signing and striping design tasks.

- **Lincoln Avenue Signal Design and Modifications**, Oakland, CA

Roxannabelle is currently CHS Project Manager for several signal upgrades and redesigns for Head Royce School's extensive expansion projects along Lincoln Avenue in the Oakland hills. The master plan involves changes in parking locations and site access and the expansion requires improvements to pedestrian access connecting both sides of Lincoln Avenue. Roxannabelle is working closely with the project team and the City of Oakland in

Education

California State Polytechnic University,
Pomona, B.S. Civil Engineering, March 2014

Certifications

- Professional Engineer, California, Civil, No. 88942
- Safety Assessment Program (SAP) Evaluator, Cal OES

Skills

Standards: MUTCD, HCM, HDM, Caltrans Standard Plans, AASHTO, W.A.T.C.H. Manual

Computer Software: AutoCAD, Microstation, AGI32, Micropaver, Synchro, GIS, Bluebeam, MS Office Suite, Google Suite

Fluent in Spanish

developing signal design and signing and striping design plans.

- **Traffic Control Plans**, Various locations
Roxannabelle has managed many traffic control plan projects, including review of traffic control plans on behalf of the cities of Agoura Hills, Diamond Bar, and Napa. Current projects include the design of a traffic control plan for SFPUC GSR Phase 2B TCP.
- **City of Rancho Cucamonga, Flashing Yellow Arrow Project**, Rancho Cucamonga, CA*
Project Engineer, leading the analysis and design of flashing yellow arrow traffic signal improvements at seven high speed intersections within the City of Rancho Cucamonga. The design team conducted left turn visibility studies, modified medians, restriped intersections as necessary, and modified traffic signal equipment to implement flashing yellow arrow vehicle heads.
- **Lowe, Ivy Station Transit-Oriented Development**, Culver City, CA*
Project Engineer (Traffic), leading design of traffic signal, striping, and street lighting plans for three major intersections bordering a proposed mixed-use transit-oriented development that included 216,000 square feet of office use, 25,000 square feet of retail space, 200 residential units, and a 148-room hotel on a 5.7 acre site at the downtown Culver City Metro Station.
- **City of Norwalk, Alondra Boulevard Traffic Signal & Fiber Optic Improvements (HSIP)**, Norwalk, CA*
Project Engineer, leading the design of traffic signal and fiber optic design plans for a major corridor within the City of Norwalk. To improve safety and traffic operations along Alondra Boulevard from Piuma Avenue to Shoemaker Avenue, the design team replaced existing wireless communications with fiber-optic cable, upgraded traffic signal controllers, installed ADA compliant curb ramps and pedestrian heads, and installed new video detection at three intersections.
- **City of Norwalk, Traffic Signal Improvements Along Studebaker Road (HSIP)**, Norwalk, CA*
Project Engineer, leading the design of traffic signal and fiber optic design plans for a major corridor within the City of Norwalk. To improve safety and traffic operations along Studebaker Boulevard from Cecilia Street to Rosecrans Avenue, the design team replaced existing wireless and copper communications with fiber-optic cable, upgraded traffic signal controllers, and installed ADA compliant curb ramps and ped heads.
- **City of Oxnard, Oxnard Boulevard and Saviers Road Traffic Signal Improvements (HSIP)**, Oxnard, CA*
Project Engineer, leading the design of traffic signal, communication, signing and striping, and civil (median) design plans for five intersections within the City of Oxnard. To improve safety and five intersections, the design team implemented protected-left turn phasing, removed existing signals in medians, upgraded existing traffic signal poles and mast arms to current standards, upgraded existing luminaries to LED, and implemented ADA improvements.
- **City of Irvine, Design for Kazan Walnut Traffic Signal Improvements**, Irvine, CA*
Project Engineer, responsible for identifying appropriate traffic control at all left-turns, through and right turn lanes as well as detection systems for vehicles, pedestrians and bicyclists. The scope included preparation of infrastructure plans, including traffic signal improvement plans, intersection improvement plans, construction details, Right-of-Way (ROW) engineering, street light modification plans, traffic striping and signing plans, landscaping/irrigation plans, utility coordination/mapping, specifications, and construction cost estimates for the signalization of the Kazan/Walnut intersection.
- **Intersection Warrant Analysis and Traffic Signal Evaluation and Design Services for Workman Avenue and Hollenbeck Avenue Intersection**, Covina, CA*
Analyst, responsible for completing an intersection evaluation and providing recommendations to the City staff on improving safety and operations. Based on the study recommendation for installing separate left-turn lanes at north and south approaches, the City awarded the intersection design contract, including signing and striping and traffic signal design to the team. The scope of work included site survey, utility coordination, preparing PS&E plans, and providing bidding and construction support.
- **Newport/Orange County Fiber Design**, Newport/Orange County, CA
Developed conceptual and final design plans, and communication details to close a 4-mile gap to connect County of Orange traffic signals to the County Traffic Management Center.

Magnus Barber

Senior Transportation Planner | Active Transportation Planning



Education

MEng, Automotive Engineering,
Loughborough University, United Kingdom

* Experience prior to joining CHS

Magnus has 14 years of experience in multimodal transportation planning and engineering, specializing in transportation and climate modeling, pedestrian and bicycle facility design, and Parking and Transportation Demand Management (PTDM) programs. His background combines strong data management and quantitative analysis skills with an understanding of multimodal planning. He has worked on multimodal and Complete Streets projects around the U.S. and has helped corporate clients implement parking and TDM programs that optimize their transportation investments and take the pain out of employee commutes.

Relevant Experience

- City of Menlo Park, Transportation Impact Analysis Guideline Update,** Menlo Park, CA.
 Project Manager, developed and guided Menlo Park's adoption of vehicle miles traveled (VMT) as a new metric for assessing transportation impacts. The project includes evaluation of pros and cons of current LOS-based TIA guidelines and approaches to adopting VMT as a new TIA metric, such as threshold for assessing impacts, methodologies, and approaches. The project also included an evaluation of how this change would affect various types of development projects by location and by stakeholders (residents, local businesses, and developers). The final recommendation included using VMT as the new guideline, while maintaining LOS for information purposes. The project required approval from the Complete Streets Commission and the City Council.
- City of Fremont, Fremont Mobility Action Plan,** Fremont, CA*.
 Project Manager for this short-term plan to improve multimodal transportation within the city. Magnus led a year-long process of meetings and outreach with a 14-member taskforce of Fremont residents and stakeholders representing a wide range of constituents and concerns, uniting them behind an ambitious plan that emphasizes public transit and active transportation to achieve a 50 percent drive alone mode share. The plan received an overwhelmingly positive response from residents and was approved unanimously by the City Council.
- SFMTA Facilities Transportation Demand Management Plan,** San Francisco, CA.
 Magnus developed best practices trip reduction strategies for the SFMTA's bus operators and maintenance staff, many of whom face long commutes outside transit operating hours. Several facilities have limited parking in or around the facility, so reducing parking demand will benefit staff as well as neighbors. The project draws on a mix of established and innovative TDM strategies to provide staff with more transportation options.

- **Colma Creek Resiliency Project**, South San Francisco
Parts of Colma Creek will be reimagined as a linear park providing a recreational amenity to adjacent neighborhoods, as part of a sea-level rise resiliency project. Magnus led the development of easy and safe bicycle and pedestrian access to the creek, which also has the potential to be a car-free east-west route connecting western residential areas with the employment center east of Highway 101.
- **Genentech Master Plan, Impact Analysis, and EIR**, South San Francisco, CA*
As the Project Manager, Magnus led the work on transportation, access, parking, and transportation demand management strategies (TDM) for the Master Plan and EIR update. Parking management is a critical component of Genentech's TDM program, enabling Genentech to keep employees happy and continue densifying the campus and making it more pedestrian-oriented.
- **Genentech Transportation Assistance**, South San Francisco, CA*
Magnus managed various projects related to parking and TDM programs, shuttle operations, GHG reporting, campus planning, and street design. He redesigned several bus stops to reduce peak hour queueing and improve passenger safety, as well as redesigning several internal streets to better accommodate full-size shuttles while maintaining Complete Street features to minimize the speeds of smaller vehicles and maintain the safety of all user groups.
- **BART, Multimodal Access Design Guidelines Project**, San Francisco Bay Area, CA*
Deputy Project Manager, providing engineering and design input to create guidelines that ensured all modes have safe access to BART stations. As a proof of concept, he applied the draft design guidelines to an example station, producing concept drawings of recommended design changes to improve safety and convenience for transit and active transportation users.
- **City of South San Francisco, Transportation Emissions Reductions for AHSC Cap-and-Trade Grant Applications**, South San Francisco, CA*
Managed the transportation emissions analysis for several rounds of grant applications, modeling emissions reductions associated with transportation improvements and land use changes.
- **City of Alameda, Development of SB743 VMT Model**, Alameda, CA*
Contributed trip reduction and land use entropy modeling for the City's VMT model. Magnus was also the PM for modeling transportation impacts for the Shipways development, using the new VMT model.
- **Potrero Power Station Redevelopment Project**, San Francisco, CA*
Guided design for bicycle and pedestrian facilities for the Potrero Power Station redevelopment, in close coordination with the San Francisco Planning Department.
- **El Camino Real Corridor Specific Plan**, Sunnyvale, CA*
Developed Complete Streets concept designs to make El Camino Real a safe and welcoming street for all users. Magnus worked with City staff and stakeholders to create implementation strategies.
- **Complete Streets Plan for Buchanan Street and San Pablo Avenue**, Albany, CA*
Project Planner, contributing street designs and traffic analyses. Based on the input from a series of focus group meetings and public workshops, the team developed street design plans to incorporate the addition of bicycle facilities and enhanced pedestrian crossings, while maintaining access to commercial facilities.
- **LinkedIn TDM Program Management**, Mountain View*
Magnus has worked on several aspects of LinkedIn's transportation programs, including performance analysis of their transportation services, analysis of parking performance, Complete Street design, and their campus bicycle share program.
- **Ventura-Cahuenga Boulevard Specific Plan Transportation Project**, Los Angeles, CA
Deputy Project Manager, leading the transportation analysis for an update of the 20-year old Specific Plan for the 17-mile-long Ventura-Cahuenga Boulevard Corridor as well as preparing a plan Environmental Impact Report (EIR). Includes development of parking management guidelines, sidewalk management recommendations to incorporate new uses such as outdoor dining and micromobility, and reviewing and amending parking in-lieu and supply fees, as well as project impact fees.



Jorge Sanchez, PE

SENIOR CIVIL ENGINEER

Jorge Sanchez has over 25 years of engineering and construction experience in commuter rail, freight railroad, light rail, rapid transit, and high-speed rail projects. He has worked on many planning and final design projects for various Class I and local railroad agencies including Metrolink, Caltrain, UPRR, BNSF, LA Metro, VTA, and Spanish Rail Agencies. He has led projects as project manager and technical lead for various projects including new starter rail lines, main line/controlled siding extensions, track and station rehabilitations, mixed intercity passenger/freight operations, commuter line/station expansions, freight yards/terminals, maintenance facilities, grade separations, and grade crossing improvements.

In addition to engineering and construction, Mr. Sanchez also provides support and analysis of operations including rail network modeling and simulation to ensure optimal efficiency for operations during and after construction.

Project Experience

City of Union City, UPRR At-Grade Crossing Safety Improvements Project, Union City.

Project Engineer responsible for engineering services for calculating preemption warning times and preparing engineering exhibits for 3 Union Pacific Railroad (UPRR) crossings at 5 intersection and adjacent preempted traffic signals at Decoto Road Crossing (MP26.2) – 11th Street, Decoto Road Crossing (MP26.2) – Station Way, Whipple Road Crossing (MP25.60) – Ithaca Street, Whipple Road Crossing (MP25.60) – Railroad Ave, and Smith Street Crossing (MP25.20) – Tidewater Drive. RSE developed a technical memo containing measurement exhibits, preemption calculation forms, back-up information, and results; prepared preliminary engineering layouts for the three crossings and five intersections; and provided support and coordination with UPRR to obtain final approval and agreement for the grade crossing improvements.

Caltrain South San Francisco Station, Brisbane, CA. As Senior Engineer, responsible for rail operations, construction staging, trackwork, and oversight of various disciplines for the project including future systems/communications, and OCS under Caltrain's modernization program. The overall project included major rearrangement of the trackwork configuration of the railroad mainlines, future high speed rail operations, and UPRR freight railroad yard operations. The project also included major coordination with UPRR to develop an operational plan for the yard operations during construction.

Quint Street Lead Reconstruction Project, San Francisco, CA. Project Engineer: Responsible for realignment of tracks, and design of grade crossings within the project area. Work includes surveys of grade crossings, and design including signing, striping, grading, relocation of utilities, and coordination with CPUC and Caltrain for approvals.

Caltrain, Grade Crossing Improvements Project, Caltrain Corridor, CA. As the Project Engineer, led the project in preparing final design plans for a number of grade crossings along the Caltrain Corridor. The work includes evaluation of existing intersections, recommendations for safety improvements, and prepare the final construction plans including intersection geometry improvements, addition of safety devices and signs, and other miscellaneous improvements. Provided coordination with the local agencies, FRA, CPUC and stakeholders.

SJRR/ACE, Sunol Quiet Zone Quad Gates Project, Sunol, CA. Project Engineer. RSE was selected to provide preliminary and final design services to prepare a PS&E package for the installation of 4-quadrant gates at the Main Street crossing located in the City of Sunol. The scope of work included civil design of 4 - quadrant gates; site civil



Years of Experience:

27 years

Education:

MS/BS, Civil Engineering, Polytechnic University of Valencia, Spain

Registration:

Civil Engineer (CA #86790)



improvements necessary for the installation; performing utility investigation for conflict with the proposed improvements; field survey and topographic mapping; and stakeholder coordination with SJRRR, the City of Sunol, and UPRR.

ACPWA, Lewelling Blvd. Grade Crossing, Ashland, CA. Project Engineer for the Plans, Specifications and Estimates for the design to improve multimodal access and safety east and west of an existing at grade railroad crossing. The East Lewelling Boulevard Project extends from Meekland Avenue to Langton Way and provides for multimodal transportation improvements with enhanced safety features including wider sidewalks, Class IV bike lanes, improved railroad crossing, as well as high visibility crosswalks and bulb-outs.

Caltrain, Broadway Burlingame Grade Separation, Burlingame, CA. Lead Project Engineer. The purpose of this project is to prepare Final Design/PS&E to improve safety at the Broadway/Caltrain crossing in Burlingame by replacing the existing at-grade crossing at Broadway with a grade-separated crossing. As part of the design team, RSE is responsible for all railroad surveying and mapping; right-of-way engineering; preparing track plans; preparing track utility plans; railroad utility relocation coordination; preparing railroad signal plans; prepare electrification (OCS and traction power) plans; construction cost estimating and scheduling; project renderings; and as-needed construction support including construction staking and design services during construction.

LA Metro, West Santa Ana Branch (WSAB) Transit Corridor Project, Los Angeles, CA. Technical Lead. The West Santa Ana Branch (WSAB) Transit Corridor is a new, 19-mile, light rail transit (LRT) line that will connect southeast LA County to downtown Los Angeles. Under LA Metro's Supplemental Engineering Services ("SES") contract, RSE is currently providing engineering design services including freight track relocation; LRT alignment analysis, construction staging plans; rendering and visualization, field surveying and mapping, and right-of-way engineering.

High Speed Rail Authority, Environmental On-Call Service Contract Task Order No. 9, Merced Station ReExamination, Merced, CA. Civil Engineer Lead. The Merced Station was originally approved as an at-grade station in the 2012 Merced – Fresno (M-F) EIR/EIS. However, around 2016, the City of Merced proposed an aerial Merced Station between O and R Street, which requires evaluation under the environmental reexamination. The Merced Station Extension (MSX) project scope includes revising the originally approved alignment; changing the location/configuration of the Merced HSR Station from at-grade to aerial; revising the 2012 and 2017 preliminary engineering design and developing the design for its use in the environmental reexamination; and preparing an Environmental Reexamination. RSE is responsible for the engineering design including:

- | | |
|---|---|
| ♦ Preparation and submittal of Design Variances Request | ♦ Structures |
| ♦ Preparing Design Baseline Report | ♦ Seismic |
| ♦ Permitting and Third-Party Agreement | ♦ Earthwork, Retaining Walls |
| ♦ Survey and Mapping | ♦ Hydrology, Hydraulics and Drainage |
| ♦ Right-of-Way Engineering | ♦ Utilities |
| ♦ Track Alignment (Plan and Profile) | ♦ Overhead Contact System |
| ♦ Roadway Work | ♦ Trackside Services and Train Control System |
| ♦ Temporary Construction Facilities and Constructability Review | ♦ Communications |
| ♦ Stations | ♦ System Safety Requirements |
| | ♦ Construction Cost Estimate |
| | ♦ Project Schedule |

Caltrain Marin St. and Napoleon St. Bridges Replacement, San Francisco, CA. Project Engineer for the replacement of the Napoleon St. Bridge and rehabilitation of the Marin St. Bridge. The project includes the replacement of an existing three span steel and precast concrete box girder bridge with a new design incorporating a single span, precast box girder superstructure supported on existing pier walls, and cellular concrete embankment backfill at the other spans. In addition to the replacement of the bridges, also performed design for improving the track alignment and developed construction staging plans to minimize impacts to rail operations.

Terri O'Connor, AICP

Principal Planner | Innovative Parking Strategies



Education

MS, Transportation Engineering/City Planning, UC Berkeley

MEM, Engineering Management, Dartmouth College

BS, Civil and Environmental Engineering, Northeastern University

Professional Affiliations

- American Institute of Certified Planners

* Experience prior to joining CHS

Terri has 20 years of experience as a transportation planner in California and the western United States, including award-winning work for the Metropolitan Transportation Commission (MTC), the City of San Diego, and BART. Her consulting work emphasizes a community-based consensus-building process to develop guiding principles, which are used to steer the development of future parking, TDM, and multimodal access plans. She has worked in urban, suburban, small-town, and college-town communities, for affordable housing and market-rate developers, as well as public agencies and private employers.

Relevant Experience

- Berryessa BART Urban Village Parking and TDM Plan, San José, CA***
 As Project Manager. Terri led the team developing a parking management and TDM plan to support a very low SOV mode share goal for the City's 1st Urban Village for 2040. Terri developed the project scope and PTDM methodology and managed the District Working Group (DWG) feedback process, comprised of VTA, developer(s), and delegates from the City Council district playing a key role in strategy selection and outlining the preliminary TMA business plan.
- Residential Parking Capacity Study and Curb Loading Analysis, Berkeley, CA***
 Project Manager, evaluating the actual demand for residential parking to help the City of Berkeley to "right size" its parking requirements for multifamily housing. This enabled the City to meet the goals of developing more housing at all affordability levels and encouraging more sustainable transportation modes. Based on the parking analysis, the Berkeley City Council eliminated parking minimums and required TDM for new 10+ unit residences.
- SMARTSpace Residential Shared Parking Pilot & Community Engagement, Berkeley, CA,***
 Project Manager, worked with the City of Berkeley and project stakeholders on two zones where the City plans to implement a residential shared parking pilot. Led the engagement methodology in partnership with an outreach partner. A particular challenge was reaching underrepresented stakeholders comprised of restaurant and retail shift workers in the Elmwood and South Telegraph neighborhoods. Solutions included focus group stipends and childcare for intensive participation commitment and tactical urbanism events and interactive games (designed by BlinkTag) to intercept the public at all times of day and days of week. The project's

interactive website and virtual open house became essential after all engagement went online in March 2020.

- **Windsor Downtown Parking Study, Windsor, CA***
As Project Manager, developed parking management plan in advance of SMART rail service to downtown Windsor. Included internal stakeholder and public engagement, development of guiding principles; evaluation of planning context, and data collection and assessment of parking usage and parking demand to determine trends and impact of downtown growth. Stakeholders were included throughout the process to share issues, understand data, and provide feedback regarding potential strategies. The parking management plan included short-, medium-, and long-term strategies organized under policy, mobility, and code improvements.
- **Tri-Valley Transit Park-Ride Study, Alameda County***
Project Manager, evaluating improvements in park-ride facilities and local transit to reduce SOV trips and VMT and improve the Tri-Valley's transportation system. Project included development and evaluation of park-ride & bus service options and a parking management approach. Terri was responsible for the development of a parking payment strategy and technology evaluation for integrated paid parking and enforcement.
- **SolTrans Curtola Parking and Transit Hub, Vallejo, CA***
Project Manager, developed a parking management plan for the agency's Curtola Park and Ride facility which encompassed a parking utilization analysis, a user (transit rider and carpooler) survey, the development of a parking pricing and enforcement strategy, evaluation of parking payment and enforcement technologies, and the development of a parking access and revenue collection (PARC) system plan.
- **Redwood City Streetcar and Transit Center, Redwood City, CA***
Deputy Project Manager, managed the feasibility analysis for a streetcar/urban circulator to facilitate connections from downtown to outlying employment and residential areas. Examined economic feasibility of transit design of the streetcar, potential stops, rubber or steel wheels, funding, startup, and operational costs. In parallel, station area improvements were analyzed for the Downtown Transit Center and future High Speed Rail Station to improve multimodal connections and increase layout and design efficiency.
- **Downtown Transportation Study, Fresno, CA***
Transportation Planner on this study that addressed multimodal access, circulation, pedestrian safety, traffic calming, parking, and wayfinding policies. Prior study area planning efforts were considered in the implementation strategies for improvements.
- **Shoreline Transportation Study, Mountain View, CA***
Deputy PM, analyzed how multimodal transportation policies/investments would affect the Shoreline area accommodating planned growth and achieve General Plan objectives through transit & alternative modes.
- **Sacramento Valley Station (SVS) Master Plan, Sacramento, CA***
Task Manager, led the multimodal access and parking needs analysis for the master plan and supported the City's renovations at the SVS and street and infrastructure improvements, as well as the current development plans for the 240-acre Railyards site.
- **University of Utah Research Park Master Plan, Salt Lake City, UT***
Task Manager, led the transportation planning staff in the development of a mobility strategy in support of the Research Park's Master Plan. This included a new improved "permeable" campus grid, a shared parking district with a park-once strategy supported with tiered mobility hubs.
- **Stanford University Residential TDM Strategy, Palo Alto, CA***
As Project Manager, led the effort to develop a residential-based TDM strategy to reduce VMT in support of the updating the University's General Use Permit (GUP). Led a multi-consultant team to assist the University in preparing for their appeal to Santa Clara County.
- **Diridon Station Area Parking Analysis and Plan for City of San José, San José, CA***
Project Manager, developing parking management strategies to improve alternative modes access and support the city's desired goal of transit oriented development at the Diridon Station and 2040 mode split.

Siqing Yi

Associate Transportation Planner | Traffic Signal Timing



Education

M.S. in Transportation Engineering,
University of California, Berkeley

Master of Urban Planning, Certificate
in Transportation Planning, Texas A&M
University

B.S. in GIS, Beijing Normal University

Siqing is a transportation planner and engineer with a focus on GIS analysis and traffic operations. At CHS, she has conducted numerous spatial analyses using ArcGIS and QGIS and as a lead traffic operations specialist for SYNCHRO and VISSIM analyses. She also has been involved in several transit corridor projects and parking analyses.

Relevant Experience

- Monterey Road Signal Optimization Project, San José, CA**
 Lead Planner. Siqing was responsible for developing an extensive SYNCHRO/SimTraffic model for this project and testing various signal timing and phasing options. She was also involved in working with City staff and field review post-implementation. Due to conflicting study objectives, CHS developed an iterative process to work with City staff. The process involves 1) a thorough assessment of the current green band and impacts of increases of pedestrian and bicycle crossing time to signal progression and 2) various creative options to optimize signal operation with longer crossing time, such as additional signals to address oversaturated left-turn pockets, grouping longer signal cycles for major intersections only, or optimizing for the peak direction only. A final optimized signal timing was accepted by City staff and was implemented.
- Alemany Corridor SFPUC Major Sewer Replacement Project TMP, San Francisco, CA**
 Lead Planner. CHS worked collaboratively with SFPUC and SFMTA to develop a TMP for a 10-foot diameter sewer replacement project along this major arterial with ramps connecting US-101 and I-280. Siqing developed an extensive SYNCHRO/SimTraffic analysis along Alemany Boulevard to test how the sewer replacement project can be implemented without interrupting access to bike lanes and Muni bus services during construction. The project provided a necessary tool for the SFPUC to understand potential impacts and to modify project design. SFMTA was closely involved in the project to make this collaborative effort function smoothly.
- LA Metro North Hollywood to Pasadena Bus Rapid Transit Parking Study, Los Angeles, Burbank, Pasadena, CA**
 Lead Planner. This project proposes a 20-mile-long bus rapid transit corridor from North Hollywood to Pasadena via Burbank and Glendale. Siqing has worked on multiple phases of the project, including building a VISSIM microsimulation model to assess impacts of dedicated BRT lanes along sections of Colorado Boulevard and later extensive SYNCHRO/

SimTraffic analyses in the Eagle Rock neighborhood along Colorado Boulevard and four parallel roads and side streets. Both of these are needed for stakeholder consensus building.

- **San Francisco Great Highway Closure and Zoo Parking and Access Project**, San Francisco, CA

Lead Planner. Siqing was responsible for developing a detailed VISSIM micro-simulation model to assess both inbound and outbound vehicle queuing during the peak hours of zoo operation. She also tested benefits and impacts of various types of parking gate control: pre-paid with token vs. paper ticket, and no control. She also developed traffic engineering options to address potential safety concerns for existing vehicles.

- **Los Angeles International Airport (LAWA) Ramp Access Improvement Project**, Los Angeles, CA

Lead Planner. Siqing was responsible for developing a detailed SYNCHRO/SimTraffic model to assess various access improvements for both inbound and outbound ramps. The SYNCHRO model results was validated to reasonably match the results for the EIR and for the VISSIM model for the internal access loop roads (arrival and departure levels). Once the model was created, it was used to iteratively test improvements along Sepulveda Boulevard north and southbound and along Century Boulevard. The results were critical for LAWA staff to determine appropriate modifications to the current ramping system.

- **Ventura-Cahuenga Boulevard Specific Plan Update—Parking Analysis**, Los Angeles, CA

Lead Planner. Siqing led the parking analysis for the update to the Specific Plan Area, which include parking inventory and occupancy of both on-street and off-street parking spaces. Siqing developed methodology of occupancy analysis for metered parking using historic parking transaction payment data, established parking typologies based on occupancy and turnover profiles, and visualized results using QGIS for each subarea.

- **San Francisco Municipal Transportation Agency Transportation Demand Management Program**, San Francisco, CA

Support Planner. This project includes the launch of the SFMTA Ride and Reward Pilot Program, designed

to reward up to 2,000 SFMTA employees at four field offices/bus yards for their alternate commutes, reducing greenhouse gas emissions (GHG), Vehicle Miles Traveled (VMT), and parking impacts in the neighborhoods around the field offices. Siqing compiled case studies of creative TDM programs, assessed existing conditions of each SFMTA facility, and developed a customized TDM strategy toolkit that SFMTA could adopt to meet these goals. She also led the task of pilot program evaluation, including analyzing VMT, GHG, and parking reductions. GIS tools were used for visualizing employees' trips.

- **Alameda County Transportation Commission, SR-262 Mission Boulevard Cross-Connector Project**, Alameda County, CA

Lead Planner. Analyzed traffic conditions in the study area including the I-880 and I-680 corridors and Mission Boulevard using traffic counts at more than 60 ramp locations and 12 intersections. Siqing's role included validating the existing Alameda County travel demand model, performing collision analysis using the TASAS database, and developing future traffic forecasts for no build and several different design scenarios for the SR 262 cross-connector.

Ben Miller

Associate Transportation Planner | Traffic Impact Analysis



Education

MS, Urban and Environmental Planning,
Arizona State University

BS, Urban Studies, University of Minnesota

* Experience prior to joining CHS

Ben is a transportation planner adept in geographic information systems (GIS) and spatial analysis, with a passion for urban planning and design, environmental systems, economics, and social and environmental justice. At CHS, he is providing multi-modal transportation impact analyses, transit service planning, and parking and transportation demand management (TDM) programs. Ben has worked on projects ranging from the 1.5 million square foot mixed-use development project at 400 Second Street in San Francisco to more modest developments. Prior to joining CHS, he worked with a private developer to coordinate with engineers, builders, city planners, and parks departments.

Relevant Experience

- City of Napa Downtown Parking Management Plan, Napa, CA**
 Lead Planner helping the City of Napa develop a detailed parking management and mobility strategy based on existing policy and transportation context and anticipated parking demand in partnership with existing planned efforts in the City's Downtown and Oxbow neighborhoods. Identified and prepared an inventory of relevant and applicable policies and regulations pertaining to transit-oriented/supportive land use practices, parking requirements, and transportation demand management strategies with a focus on potential changes to parking requirements to ensure they produce the "right" amount of parking. Evaluated existing occupied land uses and parking occupancy to develop a location specific shared parking demand model. Estimated future parking demand based on proposed buildout of the City's Downtown Specific Plan. Developed a GIS based map evaluating the five-minute walkshed for a potential eShuttle program that could serve Downtown Napa, bridging visitor destinations to the greater parking supply in order to reduce the need for new public parking facilities.
- Sabercat Pedestrian-Bike Trail Extension Project, Fremont, CA**
 The project would construct a pedestrian and bicycle path that crosses the Union Pacific Railroad and BART rail corridor, Interstate-680, and Sabercat Creek to enhance accessibility between neighborhoods within the City of Fremont and connect with the future Irvington BART station. The project also included the construction of a paleontological museum. Ben was the project planner responsible for preparing the Transportation Assessment Memorandum in accordance with CEQA Statute and Guidelines. The analysis focused on transportation related impacts to VMT, public transit, bicycle and pedestrian access, emergency access, parking, and construction.
- Alameda CTC, East Bay Greenway PA/ED, Oakland, San Leandro, and Hayward, CA**
 Project Planner responsible for preparing SYNCHRO analysis to evaluate the circulation effects of the proposed East Bay Greenway Project, a 16-mile

bicycle and pedestrian path that runs along the BART alignment, connecting seven BART stations as well as downtown areas, schools, and other major destinations. The analyses focused on potential impacts on key arterial roads and needs for pedestrian and bicycle signals.

- **Berkeley City College Traffic Study**, Berkeley, CA
Project planner responsible for preparing the Transportation Technical Memorandum in accordance with CEQA Guidelines and in support of the project Environmental Impact Report. The analysis focused on program-based multimodal trip generation and VMT estimates, including weekly, daily, and hourly student, visitor, and staff activities, trip origins, and mode share to campus.
- **Colma Creek Pedestrian and Bike Path Project**, South San Francisco, CA
The project will convert the existing Colma Creek Canal in South San Francisco into a public amenity, including returning portions of the concrete canal to a natural condition to provide a linear park experience, and focusing on ensuring the public has good pedestrian and bicycle access to the new amenity. Ben was responsible for reviewing the existing infrastructure and planning documents to identify gaps in active transportation infrastructure that might limit pedestrian or bicycle access to the canal or across US101, evaluating existing traffic data to determine the best possible route for closing gaps in the active transportation network, and helped develop and review concept alternatives for walking and bicycling connectivity to the canal.
- **Embarcadero Seawall Project**, San Francisco, CA
The Port of San Francisco has established the Waterfront Resilience Program to assess seismic and sea-level rise risks along the City's seawall and ensure the waterfront is resilient to hazards and accessible to everyone. Ben was the project planner responsible for preparing the NEPA Transportation Section of the San Francisco Waterfront Flood Resiliency Study Integrated Feasibility Report / Environmental Impact Report.
- **Guild Theatre Parking Study**, San Carlos, CA
Assisted in the preparation of a parking study for a proposed conversion of a 266-seat movie theatre in Menlo Park to a performance-based venue that would increase the total capacity to up to 550 seats. Conducted project travel demand estimates for mode of access, origins/destinations, and estimated arrival and departure

times to estimate project parking demand. Conducted on-street and off-street parking surveys within one-quarter mile of the theatre between 6:00 and 8:00 p.m. when performances are anticipated to occur 2-3 times per week to determine adequacy of area parking supply to meet increased demand. Analyzed curbside passenger loading demand during venue post-evening period to determine adequacy of curbside passenger loading operations. Provided recommendations and strategies to manage project parking demand.

- **Chariot Shuttle/Ford, Chariot Vehicle Dispatch Project Transportation Study**, South San Francisco, CA
Ben worked with the client to assist in the temporary relocation of transit fleet vehicle operations from San Francisco to a proposed site in South San Francisco for a period of two to five years. Chariot's charter buses served commuters to and from San Francisco, the Peninsula, the East Bay, and the South Bay, and supplemented San Francisco's public transit routes, offering service to residents who reside in areas lacking conventional transit service. Provided comprehensive transportation services addressing South San Francisco's concerns, including a TDM plan that would minimize local impacts during peak commute hours, meeting City of South San Francisco and C/CAG guidelines and requirements.

Frank Feng, TE

Associate Traffic Engineer | Signal Design



Frank is a licensed traffic engineer in the State of California, focused on traffic signal design, signing and striping design, lighting design, and traffic control plans. He has five years of experience and has served as the Project Engineer for design projects for many public agencies such as BART, SFMTA, CAHSRA, LA Metro, and several cities in California. He is proficient in AutoCAD, Civil 3D, Synchro, Crossroad Collision Database, PlanSwift, Bluebeam, Visual Lighting, ArcGIS, and has field experience in surveying and traffic data collection.

Frank has been involved in several large-scale infrastructure projects, such as California High Speed Rail Construction Segment #1 (CP #1) and various BART projects. His experience covers preliminary design to PS&E for signal design, signing and striping design, traffic management plans, and traffic control plans. He was also involved in several traffic study and signal timing projects, including the use of SYNCHRO/SimTraffic software to perform signal timing analyses.

Education

MS, Transportation Engineering, University of California at Berkeley

BS, Civil and Environmental Engineering, University of California at Los Angeles

Professional Registrations/Certifications

- Traffic Engineer, California, #2988

Relevant Experience

- **BART North Berkeley Station Access Improvements & Fremont Access Improvements Project**, Berkeley and Fremont, CA

Frank assisted in analyzing existing roadway geometry and designed signing, striping, traffic control, vehicle/pedestrian/bicycle access routes by following traffic guidelines from Caltrans, MUTCD, HDM, City of Berkeley, and BART. Deliverables include sight distance analysis, truck turning template, signing and striping plans, temporary traffic control plans, and construction phasing plans.

- **San Francisco International Airport—Proposal for Lot DD Vehicular Circulation Plan**, San Francisco, CA

Frank assisted in designing graphics to identify deficiencies and design gaps associated with the ongoing project that would impact Lot DD. Deliverables include general vehicular circulation into and out of garages, off-airport parking shuttle ingress and egress routes within Lot DD, and SFO shuttle bus pick-up/drop-off needs and zones.

- **BART A-Line Operability Seismic Retrofit Project**, Alameda County, CA

Frank assisted in preparing draft typical application traffic handling plans in accordance with the typical retrofit conditions to depict both standard condition and special design condition for the closure of sidewalks, shoulder, lanes, or roadways at intersections or along roadways.

- **BART Traction Power Substation Replacement Projects**, Alameda and Contra Costa Counties, CA

Frank assisted in developing Maintenance of Traffic plans for maintaining traffic flow around BART traction power substation work zones. Plans

depict schematically numbered open travel lanes, corresponding pavement delineation, temporary ADA-compliant pedestrian walkway, temporary bus zones, temporary ADA parking, and necessary signage in construction zones identifying travel routes and times for specific zones of construction activity.

- **California High-Speed Rail Initial Construction Segment 1**, City of Fresno, CA

Frank assisted in the traffic signal modification design for the intersections impacted by grade separation and road closure (across tracks) by following traffic manuals from Caltrans, MUTCD, and the City of Fresno. Modified signals are located along Belmont Avenue, Church Avenue, Herndon Avenue, Shaw Avenue, Fresno Street, McKinley Avenue, and Divisadero Street. He modified the intersection signal layout including equipment and pole locations, detection, signal phasing, and related details. Frank also performed the photometric lighting analysis in terms of average luminance level and average uniformity ratio.

- **Clement Avenue Safety Improvements**, City of Alameda, CA

Frank assisted the traffic signal modification design for the intersection of Clement Avenue and Park Street. He modified the intersection signal layout including equipment and pole locations, detection, and related details. Frank modified the traffic signal phasing diagram to work with the signal modification. He also assisted designing the installation of Rectangular Rapid Flashing Beacons (RRFBs) at the intersection of Clement Avenue and Broadway.

- **Old County Road Traffic Signal Design**, San Carlos, CA

Frank assisted in the traffic signal modification design for the intersection of Old County Road & Commercial Street and Old County Road & PG1 Access. He modified intersection signal layout including equipment and pole locations, detection, and related details. Frank also modified the traffic signal phasing diagram to work with the signal modification.

- **Central Avenue Lighting Study**, City of Alameda, CA

Frank assisted in the photometric lighting analysis in terms of average luminance level and average uniformity ratio for a two-mile segment of Central Avenue which is subject to roadway improvements.

- **Canyon Del Rey Utility Replacement Project Traffic Control Plan**, Seaside County, CA

Frank assisted in developing Traffic Control Plans for maintaining traffic flow around sewer main and lateral replacement work zones on Canyon Del Rey Boulevard.

- **City of Mountain View Traffic Signal Timing Plan**, Mountain View, CA

Frank assisted in digitizing 85 existing signal timing cards by cross-referencing traffic signal layout at these signalized intersections. He also assisted in modifying the signal timing by calculating the required time duration for minimum vehicle green, minimum bicycle green, pedestrian crossing, yellow, red clearance, and pedestrian clearance.

- **King Rd/I-680 Off Ramp Signal Rehabilitation Project**, City of San José, CA

Frank is assisting in the traffic signal modification design for the intersection of King Road and the Westbound I-680 Ramps. He analyzed truck turning movements and existing curb ramp geometry to propose alternative roadway improvements. He is modifying the intersection signal layout including equipment and pole locations, detection, signal phasing, and related details. He is also delivering Plans, Specifications, and Estimates (PS&E) for demolition, construction layout, signing and striping, and traffic signal modification.

- **SR-29 & Grayson Avenue Signal Design**, City of St Helena, CA

Frank is assisting in the traffic signal modification design for the intersection of State Route 29 & Grayson Avenue & Mills Lane (realigned). He is modifying the intersection signal layout including equipment and pole locations, detection, and related details.



Consulting Group

801 South Grand Avenue, 11th Floor
Los Angeles, CA 90017
(510)707.6330

1617 Clay Street Oakland, CA 94612
Oakland, CA 94608
(510) 272.9597

170 Maiden Lane, Fifth Floor
San Francisco, CA 94108
(415) 392.9688

300 S. 1st Street, #315
San José, CA 95113
408-516-2090

www.chsconsulting.net
chshao@chsconsulting.net