

# SCOPE OF SERVICES

## Attachment 1

### Project 17-41

City of Mountain View Stierlin Road Bicycle & Pedestrian Improvements,  
Prepared by TJKM Transportation Consultants  
March 20, 2019

#### PROJECT UNDERSTANDING

The City of Mountain View is seeking qualified consultants to prepare a full set of construction drawings related to traffic signal modification, signage, striping, and civil improvements along Shoreline Boulevard, between Stierlin Road to Middlefield Road, and Stierlin Road, from Shoreline Boulevard to Washington Street.

Back in 2014, the City completed the Shoreline Boulevard Corridor Study with special emphasis on bicycle and pedestrian improvements. The study was approved by the Council in November 2014 and TJKM was part of the consultant team that prepared the corridor study.



TJKM's design team will utilize the concepts developed as part of that study for improvements and modifications at the intersection of Shoreline Boulevard and Montecito Avenue/Stierlin Road, and also along Shoreline Boulevard, between Middlefield Road and Montecito Avenue, the Stierlin Road Slip Ramp, and Stierlin Road. Broken out below are the anticipated improvements on each roadway segment and the City's overall goals for the project.

#### Shoreline Boulevard at Montecito Avenue/Stierlin Road

- Upgrade existing signal operation to be eight phases for improved traffic flow
  - Evaluate the optimal signal operation for the new signal
  - Collecting latest traffic volumes and perform an operational analysis
  - Evaluate the need for separate bike phases and make recommendations as required
  - Recommend the optimal signal timing for new signal
- Upgrade to protected intersection for better bicyclists and pedestrian safety
  - Provide buffered bike lanes on Stierlin Road approaches by reducing one travel lane in the southbound direction on Stierlin, just east of Shoreline Blvd.
  - Corner refuge islands to provide a protected zone for bicyclists
  - Green bike lane treatments to clearly define bike areas for better safety
  - High visibility markings to denote pedestrian areas for better safety
- Bulb-outs and ADA-compliant ramps at all corners, including sidewalk, curb, and gutter work

Stierlin Road Bicycle & Pedestrian Improvements,  
Project 17-41

- Realigning Stierlin Road and Montecito Avenue approaches across Shoreline Boulevard to avoid the P.U.C easement.

### Shoreline Boulevard (between south of Stierlin Road to Middlefield Road)

1. Modify striping to account for new buffered bike lanes (no roadway widening anticipated)
2. Median adjustments, as required, to fit the new buffered bike lanes on both sides of the roadway
3. Restripe the Stierlin Road right turn slip lane approach to have a one-way protected bike lane with a raised or striped buffer. Design should include maintaining vehicular access to the Buddhist Temple and Hetch Hetchy right-of-way.

TJKM shall evaluate two potential options including several cross sections and develop the two options to a 35% design level:

- a) With a bike buffer
- b) Without a bike buffer

### Stierlin Road (between Shoreline Boulevard to Washington Street)

- Add Class II bike lanes by reducing travel lanes down to 10'
- Install green bike lane treatments to announce bikes and vehicles at right-turning conflicts
- Prohibit parking on the east side of the street
  - Conduct parking occupancy survey for five days (Tuesday, Wednesday, Thursday, Saturday, and Sunday) for the segment
- Install bulb-outs and high visibility crosswalks, including drainage inlets, sidewalks, curb, and gutter modifications, if needed, at all cross streets
- Augment existing street lights, or install new ones, at crosswalks and intersections, and at Central Avenue and Stierlin Avenue (near the park), as required
  - Perform lighting analysis to understand existing photometrics and make upgrades, as required, to match pedestrian-scale lighting levels
- Provide shared lane markings and speed tables on Central Avenue, between Stierlin Road and Moffett Boulevard
- Install a raised intersection at Fountain Park Lane (optional task)

### Evaluate the Segment of Shoreline Boulevard from Stierlin Road Slip Lane to Middlefield Road

The City has a concern over unsafe behavior, plus jaywalking, in the segment mentioned above as pedestrians going to and from the Baily Park Plaza shopping center tend to cross midblock instead of walking to the adjacent signal. As a result, the preliminary design (35%) shall include the following three potential options:

1. Fully signalized intersection at Mountain Shadows Drive
2. Fully signalized intersection near the shopping center and the Buddhist Temple
3. Pedestrian-activated crossing near the shopping center

As part of the project, the TJKM Team will evaluate the most feasible/practical



improvement, out of the three alternatives, to enhance the safety of pedestrians. Based on these findings, the Team will develop preliminary design plans up to 35%.

The conceptual and design plans will be circulated with various stakeholders for input. Specifically the Bicycle/Pedestrian Advisory Committee (B/PAC) and Council Transportation Committee (CTC), TJKM Team will provide additional support as required.

Based on stakeholder input, conceptual plans will be further refined and the design plans will move forward to a full construction set incorporating feasible stakeholder suggestions.

## APPROACH

Based on our initial field review of the project sites and knowledge of the area, we will carry out all of the tasks required for this project as described on the following pages.

### **Task 1: Project Management/Meetings**

TJKM shall provide project management and administration services including monitoring subconsultants activities, coordinating with City staff, subconsultants and others, implementing quality control and quality assurance procedures, submitting monthly invoices and progress reports, preparing and maintaining the project schedule, and developing a workplan to ensure the project remains on budget and on schedule.

TJKM shall attend and prepare for the following meetings:

1. Kickoff meeting
2. 35% review meeting
3. B/PAC meeting
4. CTC meeting
5. 65% review meeting
6. 95% review meeting
7. Final check meeting
8. Meetings with SFPUC and Hetch Hetchy

During the planning and design phases, TJKM will have a biweekly conference call with the City Project Manager to provide an update on work that was conducted the previous week, and work that is planned this week, as well as any outstanding issues to resolve. Meeting minutes will be prepared and submitted to the City after each meeting.

TJKM will invoice the City monthly and provide a progress report with each invoice.

### **Task 1 Deliverables:**

- ✓ *Monthly invoices and progress reports*
- ✓ *Updated project schedule*
- ✓ *Meeting agendas and meeting minutes*

### **Task 2: Preliminary Investigation/Data Gathering**



The TJKM Team will conduct field reconnaissance surveys within the project limits. Surveys will include collecting all the relevant information necessary to complete the final design, including but not limited to, curbs, poles, signs, trees, fences, existing utility manholes, drainage inlets, driveways, pavement marking, traffic

signal equipment, street lights, valves, bus stop locations, parking restrictions, road conditions where improvements are proposed and existing electric service points.

### **Task 2.1: Topographic Survey**

The TJKM Team will perform topographic field survey to confirm existing grades and physical features. The survey will be based on City control, presumably NAD 1983 Coordination System and NAVD 1988 Vertical Datum. Additionally, we will conduct independent field site visits involving site reconnaissance to verify existing conditions.

Once topographic field survey information is available, we will work to develop intersection alternatives and prepare preliminary intersection layouts as well as other requested roadway improvements.

Since pavement rehabilitation or reconstruction is not required for the improvements, geotechnical investigations will not be conducted. It is assumed that existing pavement structural sections, based on City as-builts or the City's recommendations, will be used for pavement work related to the proposed improvements.

The goal during the preliminary investigation is to gather all existing and new information and create a basis of design necessary to move forward with development of a refined intersection and roadway improvements, and address any issues before proceeding further with the PS&E at 35%, 65%, 95%, and 100%.

### **Task 2.2: Right-of-Way Mapping & Utility Research**

Immediately after receiving the NTP, the TJKM Team will coordinate to contact utility companies without delay to request utility as-built plans, record right-of-way maps, block maps, and planned/proposed utility work in the area. During this phase of work, we will compile available information, confirm work performed to date, perform investigative studies to progress the design to a level and identify potential right-of-way or utility conflicts for each proposed alternative.

Utility investigation is an important task to identify potential utility conflicts and to provide mitigation of any impacts. This level of effort will minimize construction costs and ensure the correct placement of the proposed improvements.

TJKM Team will coordinate with the City construction crew to call USA for marking all utilities in the project limits. TJKM Team to go out in the field and show the City construction crew where to mark the limits for USA. Based on the USA utility markings marked in the field, TJKM shall consider the marked utility locations in the design of the improvements proposed.

If we identify a potential conflict during design, we will request a quote from a potholing company for potholing services to be provided as an additional scope of work. As part of the utility investigation work, we will:

- Request utility record maps from utility owners
- Update base mapping with existing utility information
- Coordinate with City construction crew to call in USA for marking all the utilities in the project limits
- Identify potential utility conflicts and mitigate with project improvements

### **Task 2.2 Deliverables:**

- ✓ *Survey Mapping in AutoCAD format*
- ✓ *Utility Mapping*

✓ *AutoCAD basemaps with supplemental survey info showing r/w and property lines*

### **Task 2.3: Traffic Operations Analysis**

This subtask is comprised of collecting intersection traffic count data at the intersection of Shoreline Boulevard and Montecito Avenue to determine the appropriate phasing and storage lengths for the turn pockets at the traffic signal and also evaluate the effects of adding a separate phase for bicycles on the LOS, and overall intersection delay.

#### **Task 2.3.1: Traffic Count & Data Collection**

The TJKM Team will collect weekday two-hour AM, midday, and PM peak period intersection movement counts at the intersection. The City will provide the existing timing sheet at the intersection and phasing to create the Synchro model and optimize the timings.

#### **Task 2.3.2: Parking Occupancy Surveys**

The TJKM Team will collect parking occupancy surveys along Stierlin Road, between Shoreline Boulevard and Washington Street, to determine whether it is feasible to prohibit parking on the east side of the street to allow for the installation of a Class II bicycle lane in both directions.

Data collection will consist of the following:

- Parking occupancy surveys for both sides along Stierlin Road, Shoreline Boulevard and Washington Street.
- Twice a day occupancy (one hour in the morning and one hour in the evening) for five days (Tuesday, Wednesday, Thursday, Saturday, and Sunday) on Stierlin Road. The appropriate time to survey will need to be approved by the City.

#### **Task 2.3.3 Stierlin Street Lighting Circuits**

TJKM will collect all the relevant street light information and data on Stierlin Road. TJKM will meet with the City's street lighting system maintenance staff to identify in the field the circuits for each street lighting pole and their power source and perform a lighting analysis to augment or install new street lights to match pedestrian-scale lighting levels. City to provide TJKM with the pedestrian scale lighting level guidelines to follow or TJKM will use *IES Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting* ANSI/IES RP-8-18 guidelines.

#### **Task 2.3.4: Technical Memorandum**

The TJKM Team will prepare a technical memorandum summarizing the methodology, findings, and recommendations of the operations and parking occupancy study. A draft technical memorandum will be provided for review, which will include the proposed timing plan sheet. The report's appendices will contain detailed calculations, count and parking occupancy data, and other information used in the memo. We will respond to one set of comments and finalize the technical memorandum.

### **Task 2.3 Deliverables:**

- ✓ *Draft Signal Operations and Parking Occupancy Technical Memorandum*
- ✓ *Final Signal Operations and Parking Occupancy Technical Memorandum*
- ✓ *Photometric Analysis Exhibit Along Stierlin*
- ✓ *Fieldwork notes on existing street lighting circuits along Stierlin Rd.*

## Task 3: Design

### Task 3: 35% Design Plans & Estimates

TJKM Team shall prepare (35%) preliminary design plans and construction cost estimate of all the improvements and modifications. The 35% plans will be designed in sufficient detail and will include general engineering fundamentals, proposed roadway and traffic signal improvements, roadway features, pavement delineation, existing utilities and drainage facilities.

We will work with the team to prepare the intersection layout concepts at the new signalized location and the two alternatives for the bicycle facilities along Shoreline Boulevard (buffered bike lane and no buffer for the bike lane). This will create the opportunity to open the dialogue and communication with City staff early on regarding key elements and constrains of the project to make sure the project's goal and needs will be met.

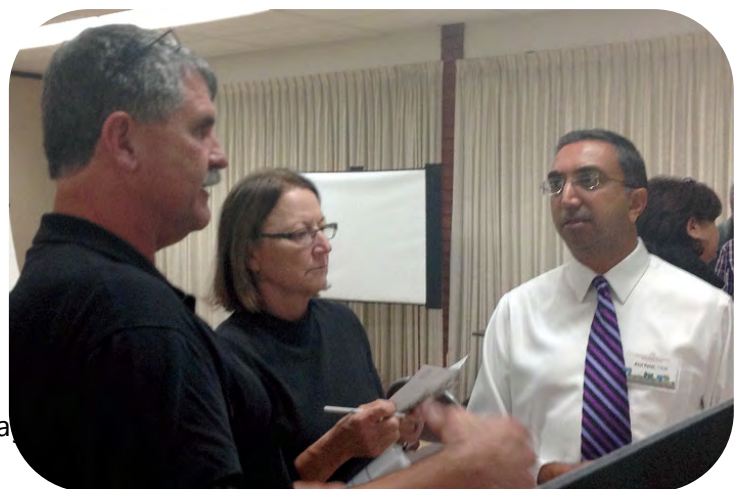
The TJKM Team will prepare two options for bicycle facilities along Shoreline Blvd. and up to three signalized options for the 35% submittal, including a fully signalized intersection at Mountain Shadows Drive, a fully signalized intersection near the shopping center and the Buddhist Temple, and a pedestrian-activated crossing near the shopping center. We will prepare layout sheets showing the roadway layout of the proposed improvements, including the intersection layout, accessible ramp locations, pavement work and driveway conforms, bulb-outs, catch basins, and utilities. As part of 35% design, the TJKM Team will coordinate traffic signal pole locations and equipment.

As part of the 35% design, an order of magnitude engineer's estimate will be initiated to reflect the preferred design option. This will be developed to assist the City with the verification of overall projects costs; a higher contingency (15% to 20%) will be used at this submittal. The 35% engineer's estimate will be used as a basis to develop the schedule of bid items for all subsequent PS&E submittals throughout the project. Specific bid items and precise quantities will be taken off, and directly linked and supported by the project technical specifications, to be provided in the 65% PS&E.

It is anticipated that permanent stormwater treatment will not be required for this project.

The three signalized options and two bicycle options for Shoreline will be further evaluated by the City during the review stage and a preferred option will be selected in the preliminary design and engineering (35%) phase.

The Team will assist City staff to present (35%) preliminary plans to B/PAC and CTC by preparing slides and exhibits that can be understood by the general public (not engineering drawings). The TJKM Team will



participate in at least one B/PAC and one CTC meeting with public participation. TJKM will meet with City staff to discuss the City comments.

The TJKM Team will also prepare an online PG&E service application and submit the application on behalf of the City. We will coordinate with PG&E and other utility companies, as necessary, for the proposed improvements and will coordinate with PG&E for additional information requested by PG&E for executing the application.

**Task 3 Deliverables:**

- ✓ *Project Schedule*
- ✓ *List of Utility Facilities Requiring Adjustment*
- ✓ *Eight 11"x17" and Four 24"x36" Full Size Hardcopies of 35% Plans and Estimate*
- ✓ *Electronic .pdf of the Plan Set and Cost Estimate*
- ✓ *B/PAC and CTC Slides and Exhibits*
- ✓ *PG&E Application*

**Task 4: Detailed Design Phase**

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This task entails preparing the PS&E for bidding the project based on the approved preliminary design.

**Task 4.1: Preparation of 65% Submittal PS&E**

In this stage of the design submittal to the bid package, the TJKM Team will prepare the project plans for all the improvements and modifications, which will include the following sheets:

- Cover Sheet
- General Note Sheet
- Demolition Plans
- Layout Plans
- Typical Sections
- Civil Construction Details
- Drainage Plans, Profiles, and Details
- 3 Cross sections at each corner
- Utility Composite Plans and Relocations
- Traffic Signal Removal Plans
- Traffic Signal Modification Plans
- Conductor and Equipment Schedules
- Signing and Striping
- Electrical Detail Sheets
- Traffic Handling and Stage Construction Plans
- Stierlin Street Lighting Sheets

Our design approach entails the following design tasks:

- Prepare 65% design plans in AutoCAD format. At this stage, detail sheets, utility relocations or service points will still be in development along with some outstanding design issues requiring further refinement.
- Prepare civil design detail plan sheets for the ADA curb ramp improvements, including construction details with elevations, grades, and curb geometry, and conforms at each accessible ramp.
- Prepare traffic signal improvement plans including Stierlin Road Street Lighting Improvement Plans
- Prepare Traffic Handling and Stage Construction Plans
- Prepare an Engineer's construction cost estimate and technical specifications describing each item on the bid schedule and their requirements and measurement and payment provisions, a list of submittals required during construction, and list of information available to Bidders, with disclaimer.
- Verify that construction costs are within the existing City budget; the Engineer's construction cost estimate will be prepared in electronic Excel format. Any revisions to the technical special provisions will be recommended to the City.
- Prepare a bid schedule.
- Prepare 3 cross sections at each corner at all the intersection improvements.
- Striping along Shoreline Blvd will conform with the reversible transit lane project. The City and their Consultant for the project will provide TJKM with the CAD striping basefile from the reversible transit lane project.

At this point, it is expected that utility conflicts, including PG&E, will have been resolved, and a timeline for resolution of issues determined. If no utility relocations are anticipated for this Project, the TJKM Team will prepare the existing utilities as part of the drainage plans.

We will perform an in-house QA/QC review of the documents submitted. Our quality control review for the 65% submittal will include the review of the design package for compliance with the governing jurisdictional standards and completeness. The review will focus on ensuring that the plan elements are clearly delineated and coordinated. The different project sheets will present the design in a common manner with no contradictions or variances.

Each PS&E review submittal set will also address any comments or revisions required from the City in the previous plan check submittal. Responses to comments will be documented and included with the submittal. The TJKM Team will meet with City staff, as needed, to review comments and recommendations. A comment matrix will be prepared showing how we addressed each review comment. The original redline markup of the previous submittal will be returned back to the City with the next submittal round.

**Task 4.1 Deliverables:**

- ✓ *Eight 11"x17" and Four 24"x36" full size Sets of the 65% Plans and Electronic .pdf of the Plan Set*
- ✓ *Electronic Copy of the Technical Specifications, Bid Schedule, and Cost Estimate*
- ✓ *Review Comment Matrix*
- ✓ *Redline Markup from Previous Round*



#### **Task 4.2: 95% Final Design Submittal (PS&E)**

At this stage, the plans and special specifications will be close to being ready for the construction bidding process. The cost estimate will be refined based on any comments received from the City and the front-end boilerplate specifications, such as insurance forms, and supplemental general provisions from the City will be incorporated into one complete specification package.

The Team will:

- Meet and review the 65% PS&E comments with City staff and revise based on comments and discussions.
- Prepare 95% construction drawings, contract technical specifications and special provisions, and a 95% opinion of probable construction cost estimate (in Excel format). These documents will be construction ready.
- Coordinate with Rhythm Engineering, as necessary.
- Other supporting documentation, as necessary.

The TJKM Team will perform an in-house QA/QC review of the documents submitted to TJKM. Our quality control review for the 95% submittal will include the review of the design package for compliance with the governing jurisdictional standards and completeness. The review will focus on ensuring that the plan elements are clearly delineated and coordinated. The different project sheets will present the design in a common manner with no contradictions or variances.

#### **Task 4.2 Deliverables:**

- ✓ *Eight 11"x17" and four 24"x36" Full-Size Sets of the 95% Plans and Electronic .pdf of the Plan Set*
- ✓ *Electronic Copy of the Technical Specifications, Bid Schedule, and Cost Estimate*
- ✓ *Review Comment Matrix*
- ✓ *Redline Markup from Previous Round*
- ✓ *Updated Timing Plan Sheet*

#### **Task 4.3: 100% Final Check Design Submittal (PS&E)**

At this stage, the City will review the plans and make minor editorial comments to the design package. The cost estimate will be refined based on any comments received from the City and the front-end boilerplate specifications, such as insurance forms, and supplemental general provisions from the City will be incorporated into one complete specification package. Changes to the signal timing parameters for configuring the new phasing will be updated and provided to the City.

The Team will:

- Meet and review the 95% PS&E comments with City staff and revise based on comments and discussions.
- Prepare final check construction drawings, contract technical specifications and special provisions, and a final construction cost estimate (in Excel format). These documents will be construction ready.
- Finalize other supporting documentation, as necessary.

#### **Task 4.3 Deliverables:**

- ✓ *Eight 11"x17" and four 24"x36" Full-Size Sets of the 100% Plans and Electronic .pdf of the Plan Set*
- ✓ *Electronic Copy of the Technical Specifications, Bid Schedule, and Cost Estimate*
- ✓ *Review Comment Matrix*

#### **Task 4.4: Bid Package**

At this stage, the contract documents are ready for bidding. Once the City has approved the final check set for bidding, the TJKM Team will coordinate the plans and technical specifications with the City's front-end bid instructions, standard provisions, and revised special provisions ready for the City to bid for construction. Comments on final check submittal will be minor editorial comments only. Comments that are significant design revisions will be discussed with the City and an amendment to the contract will be requested.

The Team will:

- Meet and review with City staff their comments of the final check package.
- Prepare bid package, including a bid schedule and list of submittals.
- Submit final plans and specifications, and disk with the electronic files to City staff. Final plans will be provided as an electronic file in AutoCAD format and in .pdf format. One hardcopy will be in 24"x36" size. Each plan sheet will be stamped and signed by the Engineer of Record registered civil engineer, in accordance with California state law.
- Prepare complete special provisions, technical specifications stamped and signed on the table of contents sheet by the Engineer of Record, one hard copy, and printed single sided only. If there is more than one Engineer of Record, the engineer will stamp and sign the table of contents for only that/those section(s) that applies to each engineering discipline.
- Provide digital copies of all work products and supporting work.
- Provide a final opinion of probable construction cost estimate.

The TJKM Team will perform an in-house QA/QC review of the documents submitted. Our quality control review for the 100% submittal will include the review of the design package for compliance with the governing jurisdictional standards and completeness. The review will focus on ensuring that the plan elements are clearly delineated and coordinated. The different project sheets will present the design in a common manner with no contradictions or variances.

For the Final 100% signed submittal, we will incorporate or resolve any remaining comments received as a result of the 95% submittal review. Assumptions, in lieu of verifications, are not acceptable; all remaining aspects of the design will be finalized in order to prepare a complete, checked and bid-ready set of documents. Schedules for utility relocations will be confirmed. The construction cost estimate will be updated and formatted to its final form. We will conduct a final quality control review on all documents to ensure that all design elements are thoroughly addressed prior to their submission to the City.

#### **Task 4.4 Deliverables:**

✓ *Bid Package, as required and Approved by the City*

#### **Task 5: Bidding Support Phase**

During the bid process, the TJKM Team will answer bidder's questions and provide clarifications to the bid questions. We will respond to RFIs and will prepare addenda, as necessary. We will also prepare conformed documents, as necessary.

The bid support cost for three parts of the project has been broken down in the fee provided in a separate sealed envelope.

**Task 5 Deliverables:**

✓ *Addendum(s), Clarifications, and Conformed Documents, as necessary*

**Task 6: Construction and Post-Construction Support Phase**

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During construction, the TJKM Team will assist City staff as follows:

- Prepare responses to contractors' RFIs during the construction phase, as needed.
- Prepare new signal timing sheets, including coordinating with Rhythm Engineering for InSync configuration timing parameters and implementing the timing plans in the controller/cabinet.
- Review contractor submittals and assist the City inspector with specific design issues during construction.
- Attend three site visits to answer design questions and clarify design elements when requested by City staff.
- Prepare record drawings from Contractor redline as-builts in AutoCAD format and .pdf format and provide one signed stamped set of record drawings on Mylar.

The construction and post construction support cost for three parts of the project has been broken down in the fee provided in a separate sealed envelope.

**Task 6 Deliverables:**

✓ *Mylar, AutoCAD, and .pdf of the Record Drawings, Clarifications, and Response to Submittals*

**Task 7: San Francisco Public Utilities Commission (SFPUC) Coordination**

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The TJKM Team will assist the City in coordinating with the San Francisco Public Utilities Commission (SFPUC) for improvements within the SFPUC and Hetch Hetchy right-of-way. Placing traffic signal pole foundations above the Hetch-Hetchy pipeline or within the SFPUC boundary may be a challenge. Out-of-the box thinking will be required to install traffic signal improvements within the intersection of Shoreline Boulevard at Montecito Avenue. The TJKM Team will attend meetings with the Land Engineering (LE) department of the SFPUC and Hetch Hetchy to review proposed improvements for the Project, including preparing any exhibits for discussion.

**Task 8: Aerial Topographic Survey**

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The TJKM Team will obtain aerial topographic mapping of the project site. The survey team will set flight crosses in order to integrate the aerial topograph to the City's horizontal and vertical datum. In the office, we will tie the field survey to the aerial topograph.

**Task 8 Deliverable:**

✓ *Aerial Topographic Survey (Aerial Topograph)*

**Task 9: Raised Intersection**

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The TJKM Team will prepare the final (100% ) design including cost estimate for a raised intersection at Stierlin Road/Fountain Park Lane. Our design will include geometric layout, limits, grading and drainage, drainage profiles, and construction details.

**Task 9 Deliverable:**

- ✓ *▶ Raised Intersection Drawings*
- ✓ *▶ Raised Intersection Cost Estimate*

**Task 10 Additional Services**

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This task includes additional services that may be required during design or bidding and construction phases of the project, such as additional traffic operational analysis, additional traffic engineering design, additional civil engineering design, additional bid and construction support, additional data collection, additional analysis, additional potholing, or additional meetings with stakeholders, utilities, or public outreach meetings. TJKM shall only provide such services if requested and authorized by the City in writing. Approved additional services will be compensated on an hourly basis for an agreed-upon not-to exceed amount in accordance with the rate set forth in the submitted fee schedule.



**TJKM Rate Schedule**

Principal .....	\$250/hour
Director.....	230/hour
Senior Project Manager .....	210/hour
Project Manager .....	180/hour
Senior Transportation Engineer.....	165/hour
Transportation Engineer.....	145/hour
Assistant Transportation Engineer.....	125/hour
Transportation Planner.....	120/hour
Assistant Transportation Planner .....	115/hour
Graphics Designer .....	110/hour
Designer .....	100/hour
Technical Staff II .....	90/hour
Administrative Staff.....	80/hour
Production Staff.....	55/hour

**Reimbursable Expenses**

Plotting (per sheet) .....	\$18.00
Travel Cost (per mile, subject to change; based on IRS standard mileage rates).....	0.58

*All outside services are billed at cost plus a ten percent margin for handling.*

*Expert Witness charges available upon request.*

*Invoices are due and payable within 30 days. Invoices paid after 30 days will be subject to separate billings of one and one half percent per month of unpaid balance. Late charges are not included in any agreement for maximum charges.*

*Rates Effective January 1, 2019*

*Rates Subject to Change*

## BKF ENGINEERS RATE SCHEDULE

### PROFESSIONAL PERSONNEL SERVICE FEES JANUARY 1, 2019 - DECEMBER 31, 2019

<u>PERSONNEL</u>	<u>HOURLY RATES</u>
<b>ENGINEERING</b>	
Senior Associate	\$220.00
Associate	\$214.00
Project Manager	\$204.00 - \$210.00
Engineer IV	\$189.00
Engineer I, II, III	\$134.00 - \$154.00 - \$174.00
Engineering Assistant	\$82.00
Junior Engineer	\$70.00
<b>PLANNING</b>	
Planner I, II, III, IV	\$134.00 - \$154.00 - \$174.00 - \$189.00
<b>SURVEYING</b>	
Senior Associate	\$220.00
Associate	\$214.00
Project Manager	\$204.00 - \$210.00
Surveyor I, II, III, IV	\$134.00 - \$154.00 - \$174.00 - \$189.00
Survey Party Chief	\$175.00
Survey Chainman	\$113.00
Apprentice I, II, III, IV	\$70.00 - \$93.00 - \$103.00 - \$109.00
Instrumentman	\$150.00
Surveying Assistant	\$82.00
Junior Surveyor	\$70.00
Utility Locating Superintendent	\$176.00
Utility Locator I, II, III	\$91.00 - \$129.00 - \$155.00
BIM Specialist I, II, III	\$134.00 - \$154.00 - \$174.00
<b>DESIGN AND DRAFTING</b>	
Technician I, II, III, IV	\$128.00 - \$136.00 - \$148.00 - \$161.00
Drafter I, II, III, IV	\$100.00 - \$110.00 - \$118.00 - \$132.00
<b>CONSTRUCTION ADMINISTRATION/QSP-QSD</b>	
Senior Construction Administrator	\$198.00
Resident Engineer	\$147.00
Field Engineer I, II, III	\$134.00 - \$154.00 - \$174.00
Senior Consultant	\$229.00
<b>SERVICES AND EXPENSES</b>	
Project Assistant	\$82.00
Clerical/Administrative Assistant	\$70.00

Principals' time on projects is chargeable at \$246.00 per hour.

Charges for outside services, equipment, and facilities not furnished directly by BKF Engineers will be billed at cost plus 10%. Such charges may include, but shall not be limited to printing and reproduction services; shipping, delivery, and courier charges; subconsultant fees and expenses; special fees, permits, and insurance; transportation on public carriers, meals, and lodging; and consumable materials. Mileage will be charged at the prevailing IRS rate per mile. Monthly invoices are due within 30 days from invoice date. Interest will be charged at 0.833% per month on past due accounts. Expert witness/litigation rates are available upon request.

City of Mountain View  
 Cost of Services for Stierlin Ave Bicycle and Pedestrian Improvements, Project 17-41  
 Prepared by TJKM Transportation Consultants  
 4/18/2019

Tasks	TJKM Transportation Consultants (TJKM)											BKF											Total												
	PIC	Project Manager	QA/QC	Task Lead	Task Lead	Project Engineers	Admin	Total Hours	Total Labor Costs	Other Direct Costs (ODC)	Total	PIC	Project Manager	QA/QC	Engineer/Surveyor III	Engineer/Surveyor II	Engineer/Surveyor I	Tech III	2 - Man Field Crew	Admin	Total Hours	Total Labor Costs	Other Direct Costs	Total Fee											
	Nayan Amin	Atul Patel	Ruta Jariwala	Rutvij Patel	Erik Bjorklund							Natalina Bernardi	Marcelo Cosentino	Jeff Wang	Blake Silkwood																				
	\$ 250.00	\$ 230.00	\$ 250.00	\$ 180.00	\$ 180.00	\$ 145.00	\$ 90.00					\$ 220	\$ 204	\$ 214	\$ 174	\$ 154	\$ 134	\$ 148	\$ 288	\$ 70															
1	Project Management/Meetings (7)											2	60	16	40		24		142	\$ 28,980	\$ 1,000	\$ 29,980		20			10				30	\$ 5,620	\$ 169.00	\$ 35,769	
2	Preliminary Investigation/Data Gathering											0	8	16	16	0	96	0	136	\$ 22,640	\$ 5,500	\$ 28,140	2	6	0	0	52	0	50	64	0	174	\$ 35,504.00	\$ 1,065.00	\$ 64,709
2.1	Topographic Survey														8				8	\$ 1,440		\$ 1,440	2	2				10		50	64	128	\$ 28,220	\$ 846.00	\$ 30,506
2.2	Right-of-Way Mapping & Utility Research														8				8	\$ 1,440		\$ 1,440		4				42			46	\$ 7,284	\$ 219.00	\$ 8,943	
2.3	Traffic Operations Analysis												4	8			40		52	\$ 8,720		\$ 8,720								0	\$ -		\$ 8,720		
2.3.1	Traffic Count & Data Collection																8		8	\$ 1,160	\$ 3,500	\$ 4,660								0	\$ -		\$ 4,660		
2.3.1.1	Parking Occupancy Surveys																8		8	\$ 1,160	\$ 2,000	\$ 3,160								0	\$ -		\$ 3,160		
2.3.2	Technical Memorandum												4	8			40		52	\$ 8,720	\$ -	\$ 8,720								0	\$ -		\$ 8,720		
3	Design											0	174	56	340	0	510	40	1120	\$ 192,770	\$ 1,300	\$ 194,070	4	34	10	72	114	150	162	0	6	552	\$ 84,536	\$ 2,533.00	\$ 281,139
3.1	Prepare 3 conceptual design options + 2 striping Shoreline options (35% submittal)												40	24	60		100		224	\$ 40,500	\$ 200	\$ 40,700		4	2	12	20	24	36			98	\$ 14,956	\$ 448.00	\$ 56,104
3.2	65% Design Submittal PS&E												40	8	100		160	16	324	\$ 53,840	\$ 200	\$ 54,040		10	2	24	32	48	48			164	\$ 25,108	\$ 752.00	\$ 79,900
3.3	95% Design Submittal PS&E												40	8	80		120	8	256	\$ 43,720	\$ 200	\$ 43,920		8	2	18	22	36	36		2	124	\$ 18,872	\$ 566.00	\$ 63,358
3.4	100% Final Check Design Submittal PS&E												30	8	60		90	8	196	\$ 33,470	\$ 200	\$ 33,670	2	6	2	10	28	24	24		2	98	\$ 15,052	\$ 451.00	\$ 49,173
3.5	Bid Package												24	8	40		40	8	120	\$ 21,240	\$ 500	\$ 21,740	2	6	2	8	12	18	18		2	68	\$ 10,548	\$ 316.00	\$ 32,604
4	Bidding Support											0	10	0	0	15	0	0	25	\$ 5,000	\$ 600	\$ 5,600	0	6	0	12	0	0	0	0	0	18	\$ 3,312	\$ 116	\$ 9,028
4.1	Part a: Intersection Improvements												2			5			7	\$ 1,360	\$ 200	\$ 1,560		2		4					6	\$ 1,104	\$ 48.00	\$ 2,712	
4.2	Part b: Improvements Along Stierlin Road and Slip Ramp												2			5			7	\$ 1,360	\$ 200	\$ 1,560		2		4					6	\$ 1,104	\$ 34.00	\$ 2,698	
4.3	Part c: Improvements Along Shoreline Boulevard												6			5			11	\$ 2,280	\$ 200	\$ 2,480		2		4					6	\$ 1,104	\$ 34.00	\$ 3,618	
5	Construction and Post Construction											0	20	10	0	30	0	0	60	\$ 12,500	\$ 600	\$ 13,100	0	12	0	10	52	0	21	0	0	95	\$ 15,304	\$ 1,075	\$ 29,479
5.1	Part a: Intersection Improvements												12	5		10			27	\$ 5,810	\$ 200	\$ 6,010		4		4	16		9			33	\$ 5,308	\$ 451.00	\$ 11,769
5.2	Part b: Improvements Along Stierlin Road and Slip Ramp												4			10			14	\$ 2,720	\$ 200	\$ 2,920		4		3	20		7			34	\$ 5,454	\$ 332.00	\$ 8,706
5.3	Part c: Improvements Along Shoreline Boulevard												4	5		10			19	\$ 3,970	\$ 200	\$ 4,170		4		3	16		5			28	\$ 4,542	\$ 292.00	\$ 9,004
6	SFPUC Coordination												40		40				80	\$ 16,400	\$ 500	\$ 16,900		40			40					80	\$ 14,320	\$ 150.00	\$ 31,370
7	Aerial Topographic Survey														8				8	\$ 1,440		\$ 1,440					2	4			8	\$ 3,268	\$ 6,160.00	\$ 10,868	
8	Raised Intersection (Design)												20		24				44	\$ 8,920	\$ 500.00	\$ 9,420		4	2	10	20	24	36			96	\$ 14,608	\$ 430.00	\$ 24,458
9	Additional Services																													0	\$ -		\$ 67,724		
TOTALS												2	332	98	468	45	630	40	1615	\$ 288,650	\$ 10,000	\$ 298,650	6	122	12	106	292	174	269	72	6	1059	\$ 176,472	\$ 11,698	\$ 554,544