#### **PROJECT UNDERSTANDING**

The City wishes to construct the Shoreline Boulevard Interim Bus Lane and Utility Improvements Project (Project) which has been identified in the City's CIP as Project 16-58. The Project includes interim bus lane, traffic signal and utility improvements from Middlefield Road to Space Park Way along Shoreline Boulevard. Interim bus lane and traffic signal improvements will run along the length of the project from Middlefield Road to Space Park Way, whereas utility improvements will be constructed from Middlefield Road to the edge of the Caltrans right of way just south of the US-101 southbound on-ramp.

The interim bus lane improvements will be based upon the recommendations included in the Shoreline Boulevard Transportation Corridor Study (Corridor Study) completed in November 2014. While the Corridor Study identified the ultimate corridor improvements in detail and presented a preliminary phasing plan, the study did not develop or present a detailed concept plan for the interim bus lane or a plan for how such improvements could be constructed within existing roadway right of way. As part of this scope of services, MTCo will work with the City to identify and develop an interim improvement plan to construct the reversible bus lane and minimize throw-away costs. This initial scope of service will include consideration of bicycle and pedestrian intersection improvements at all corners of each intersection along Shoreline Boulevard from Middlefield Road to Space Park Way.

As part of this scope of services, MTCo will provide project management; surveying; geometric refinement and phasing development; preliminary roadway and signal design; CEQA documentation services, and initial Caltrans coordination to obtain Caltrans concurrence for use of the Caltrans Streamlined PEER Process for improvements within State right of way right of way.

#### **SCOPE OF WORK**

# **Task 1. Project Management**

This task shall include general project administration and management.

### 1.1 General Project Management

This task will include ongoing general project management activities, including coordinating subconsultant activities and submittals. General project management will also include obtaining the Caltrans encroachment permit for field investigations as necessary. MTCo will organize and maintain project files. MTCo will maintain records to track correspondence, contractual matters, data requests, transmittals and other project data. MTCo will prepare a monthly invoices including a monthly progress report which will be included as part of the monthly invoice package. A transmittal letter will briefly highlight the overall project status and any significant scope, schedule or budget issues on the horizon.

#### 1.2 Project Coordination

MTCo will coordinate design activities with consultant team members and stakeholders through regular communication via telephone calls, emails and other correspondence. Stakeholder coordination may include VTA, Transit Operators, various Stakeholders and Developers, Caltrans functional units, other design consultants, adjacent property owners and other individuals. MTCo will prepare and distribute conversation minutes and action items list as necessary. Preliminary coordination with the developer for the interim bus lane tie-in at La Avenida Street is also included in this task.

#### 1.3 Meetings

MTCo will attend a project kick off meeting as well as four (4) ongoing monthly coordination meetings [five Project Development Team (PDT) meetings total] and two (2) various stakeholder meetings. PDT meetings may include representatives from the City, Caltrans, VTA, transit operators, and other stakeholders as appropriate and as directed by the City. This task includes preparation of agendas,

meeting minutes, log of action items, data request log, and design decision log. The project Critical Path Method (CPM) schedule identified below will be distributed and reviewed during PDT meetings.

### 1.4 Project Schedule

MTCo will prepare, update, maintain and distribute a CPM schedule on a monthly basis. The project schedule will include design activities, major milestones, quality control activities and agency review times. MTCo will submit updated electronic progress schedule on a monthly basis. MTCo will notify the City of impacts that may affect schedule milestones in a timely manner. The initial project schedule will be prepared for and approved by the City at the outset of the project.

# 1.5 Risk Management Plan

MTCo will prepare and distribute an initial project Risk Management Plan (RMP) consistent with Caltrans District 4 policies. The RMP will be prepared within four months of the start of the project.

# 1.6 Quality Assurance / Quality Control

MTCo will prepare and maintain a Quality Assurance Plan during the life of the project. MTCo team members, both internal and subconsultants shall adhere to the established processes included in the plan. The plan will include conducting quality control reviews and checks of submittals prior to submitting to the City and Caltrans. Quality Assurance Plan shall contain design checklists to be used during quality control reviews.

#### **Deliverables**

- ➤ Monthly Project Progress Reports/Invoices (6)
- ➤ PDT and other Meeting Agendas, Minutes, and Action Item Lists, Data Request Log, Design Decision Log (7 meetings)
- > CPM Schedule, updated monthly (4 total)
- Risk Management Plan
- Quality Assurance Plan

### Task 2 (Phase I). Preliminary Investigation and Refinement of Conceptual Design

#### 2.1 Site Visit

The MTCo team and City staff will conduct a project site visit to investigate existing site conditions and identify opportunities, constraints, conflicts and other conditions visually apparent in the field. MTCo shall collect site photographs and prepare notes of site visit.

## 2.2 Data Gathering

MTCo will collect and review available data and reference materials pertinent to the project, including but not limited to, CCTV logs, record drawings, right of way documents and City standards, codes, ordinances and policies pertaining to the proposed project design. MTCo shall prepare a memorandum of materials requested and collected, including date of request, agency and materials received with date. Data gathering shall include existing utility facility request letters, which may be used later as part of the Caltrans utility A-B-C relocation process. (Caltrans Utility A-B-C process is excluded from this scope of work).

### 2.3 Prepare Topographic Base Map

MTCo shall perform survey control work and engineering surveys necessary to produce the mapping for final design. MTCo shall perform the necessary work to establish the project design file and CADD base maps. MTCo will seek to obtain record of surveys, topographic data, aerial mapping, and maps and plans of major utilities and proposed utilities within the Project area.

MTCo shall prepare an aerial topographic survey at 1"=40' scale for the project design and shall supplement the aerial mapping with field surveys and cross sections. Aerial mapping will be drafted generally to Caltrans standards, but mapping shall not be prepared consistent with Caltrans A-B-C process. Caltrans review of aerial mapping and control is not included in this scope of work. Aerial mapping and supplemental field surveys will locate existing features, including but not limited to, visible surface utility features, pothole markings, curb and gutter, back-of-walk, trees and other visible features needed to complete the design. Trees with diameter greater than 4-inches shall be surveyed. Survey of shrubs and other smaller vegetation as well as irrigation systems are not included in this scope of work.

MTCo shall prepare a record right of way retracement along Shoreline Boulevard to establish existing right of way, easements and other property features pertinent to the project. This scope of work does not include preparation of Caltrans right of way mapping documents, records of survey or corner records. Should those documents be necessary, MTCo shall prepare such necessary documents as a supplemental service.

MTCo shall combine aerial mapping, supplemental field survey data and record right of way information into a single file.

### 2.4 Geometric Design Refinement and Interim Alternatives Development

Based upon available information, previous studies and base mapping, MTCo shall develop up to three alternative interim bus lane plans (from Middlefield Road to Space Park Way) and one utility (sewer and water) improvement layout from Middlefield Road to the Caltrans right of way. Plans shall consider alignment, right of way requirements and throw-away costs. Issues to be considered are lane widths, left turn pockets, bike lanes, pedestrian facilities, location and placement of median bus platforms (if any), impacts to Caltrans facilities, consideration of signal design and layout, and other pertinent factors. MTCo will develop the ultimate design as well as two interim alignment alternatives as part of the three options. MTCo shall prepare layout drawings of each alternative at 1"=50' scale with annotation and alignment information generally consistent with Geometric Drawings (GeD's) as used for Caltrans projects.

Alignment alternatives will be prepared and submitted to the City with an alternative comparison memorandum, identifying the pertinent features, order of magnitude costs, throw-away costs, opportunities and impacts identified. MTCo will identify any potential Caltrans or City design exceptions associated with each alternative and will identify any potential challenges with gaining approval for identified non-standard features. A summary of the results of each alternative will be presented in a comparison matrix. Order of magnitude construction cost estimates in Caltrans 6-page format will be attached to the memorandum.

As part of Task 1.3, MTCo will meet with City to review alternatives and this scope assumes that the City will provide MTCo direction on which alternative to proceed for the project or seek clarifications on the information presented within 2 weeks of the preparation and submittal of the GeD's.

#### **Deliverables**

- Data Gathering Memo
- Aerial Base Mapping (AutoCAD format) and Supplemental Field Survey Data (notes and point files)
- ➤ Existing Shoreline Record Right of Way Retracement (AutoCAD format)
- ➤ GeD equivalent drawings (3 interim bus lane, 1 utility improvement) and Alternative Comparison Memorandum

### Task 3 (Phase II). Schematic Design, Prepare Base Maps and Plan Sheets

Based upon the interim bus lane alternative selected by the City as part of Task 2.6, MTCo shall prepare and submit 35% plans, bid item list and construction cost estimates.

### 3.1 Schematic Design Plans (35% Design)

MTCo shall prepare 35% design plans for the interim bus lane and utility improvements. 35% plans shall include the following sheets:

- Title page
- Typical cross sections
- Layouts
- Profiles (as necessary)
- Drainage system layout
- Utility plan and profile
- Pavement delineation
- Signal modification layout
- Stage construction plan

The following sheet count is anticipated.

SHEET COUNT	SHEET TYPE
1	Title
2	Typical Sections
1	Key Map
4	Layouts
2	Profile/ Superelevations
4	Drainage Layouts
2	Utility Plan and Profile
4	Stage Construction
4	Sign Plans
4	Pavement Delineation
10	Electrical Plans and Details
1	Structure Plans
6	Landscape Plans
45	Total

35% Plans will be prepared in general conformance with Caltrans drafting and design standards as is appropriate for 35% design. 35% plans will be prepared to confirm project geometrics and major design features so that once confirmed, the major design elements may be detailed efficiently and effectively at later design stages without costly redesign and/or project delay. To this end, the 35% plans will focus on the major physical improvements (layout and alignment of lanes, turn pockets, striping, intersection improvements, utility alignment and profile, and traffic signal layouts). Plans will be cut and drafted focusing on the gross level physical improvements without detail, enabling the identification of primary construction elements and bid items. Roadway plans (layout, typical cross section, pavement delineation) will show proposed roadway, bus, bicycle and pedestrian improvements. As this is a roadway modification/interim project, profile plans are unlikely to be necessary. Utility plans will focus on utility alignment location of major utility elements such as blow-offs valves, air release valves, manholes and

utility connections. Traffic signal plans will consist of the basics of the proposed traffic signals at each intersection including the placement of new signal heads, signal indications (including special bus-only indications for TSP and queue jumps/transit signals), and signal phasing with TSP operations. Our scope assumes that existing signal poles and mast arms on the side streets will not require relocation, and will remain in place. Along the main street (Shoreline Boulevard), the signal modifications will only consist of adding new signal heads and potential relocation of existing signal poles. Our scope also assumes that existing cabinets will be reused, and will not require relocation or modification. While detailed stage construction and traffic handling will not be prepared, MTCo will prepare initial stage construction plans to demonstrate the construction sequencing and confirm preliminary constructability of the project improvements. Temporary signals and/or stage construction for traffic signals are not anticipated to be necessary and will not be developed.

## 3.2 Prepare Draft Design Exception Fact Sheets

MTCo shall prepare draft advisory and mandatory design exception fact sheets for improvements not meeting Caltrans standards within Caltrans right of way. This scope assumes up to three (3) non-standard advisory and three (3) non-standard mandatory exceptions. MTCo will prepare and submit fact sheet exceptions with the 35% design submittal to Caltrans. Design exceptions within Caltrans right of way will be documented according to Caltrans format and requirements. Design exceptions outside of State right of way will be documented in an abbreviated format for City approval. This scope excludes comment resolution and any resubmittals for design exception fact sheets.

# 3.3 Basis of Signal Design Memorandum

As part of the MTCo team, KHA will prepare a Basis of Signal Design (BOSD) Technical Memorandum detailing the operations, design assumptions and considerations in developing the preliminary designs. This BOSD will cover specifics related to the City and Caltrans requirements and specifications, including signal head placements, transit head placements, detection, traffic controllers and cabinets, communications, conduits, signing, striping, and recommendations for spares and maintenance equipment. The recommendations will be consistent with the City's Standard Specifications and will conform to the Qualified Products List (QPL) to the extent possible. Where new equipment is proposed, KHA will work with the City to attain approved status for the QPL (e.g., new phase selectors for TSP and queue jumps).

The BOSD will be submitted as part of the Schematic Design submittal for review and comment. The intention is for the City and Caltrans to review the operations and design assumptions at this early stage in preparation for the later design stages.

# 3.4 Schematic Design Bid Item Schedule and Preliminary Construction Cost Estimate

MTCo will identify the primary bid items and quantities required to construct the improvements as shown in the 35% plans using standard Caltrans bid items and methods of payment according to Caltrans 2010 Standard Specifications. Because plans are not detailed, appropriate allowances for likely but as yet unidentified construction elements will be accounted for in the bid item schedule.

MTCo will use the bid item schedule, bid item quantities, likely bid unit prices, appropriate contingencies and allowances to develop a 35% construction cost estimate. The bid item summary, quantities, and unit prices will be detailed on a construction cost estimate to be submitted with the 35% submittal.

In addition, MTCo will prepare a Monte Carlo Cost estimation model for the 35% estimate to help understand the probable range of construction and project cost values and to identify likely project risk drivers on the project. MTCo will collect ranges of likely construction cost values to be used as part of the model development. As part of one of the above scoped project team meetings, MTCo hold a model development workshop with the City team to build the model by developing consensus on uncertainties

and model input values. The resultant model can then be used to understand and manage project cost uncertainties and risks.

#### **Deliverables**

- > 35% Plans, Bid Item Schedule, Construction Cost Estimate
- ➤ Advisory and Mandatory Design Exception Fact Sheets
- Basis of Signal Design Memorandum

### Task 4 (Part of Phase III). Caltrans PEER Process Approval Request

#### 4.1 Peer Process

This scope assumes that the project will be approved through the Streamlined PEER process as outlined in Caltrans Project Delivery Procedures Manual. Upon direction from the City, MTCo will contact Caltrans to initiate the PEER process by scheduling a meeting to confirm the use of the PEER process and MTCo will prepare a signature ready PEER Process Request letter for the City to send to Caltrans.

#### **Deliverables:**

- > Caltrans Initiating Meeting Minutes
- > PEER Request Letter
- > A copy of all deliverables are available to the City in PDF format and original format

### **Task 5 CEQA Clearance Support**

The reversible bus lane will be constructed on Shoreline Boulevard between Middlefield Road and Plymouth Street/Space Park Way in the space currently occupied by the roadway median. The median will be removed, as will the existing left-turn lane from northbound Shoreline Boulevard to the SR 85 on ramp. It is assumed that right of way needed to accommodate the construction of the bus lane will be minimal (i.e., limited to narrow strips along Shoreline Boulevard that will not affect adjacent land uses and/or sensitive habitats).

The reversible bus lane is part of the comprehensive Transportation Demand Management (TDM) program adopted by the City as part of the approval of the North Bayshore Precise Plan. Its purpose is to reduce the number of single-occupancy vehicle trips by improving transit alternatives. In this case, the bus lane will reduce travel time for buses traveling along the Shoreline Boulevard corridor, a major gateway to the North Bayshore area. As such, it is assumed that the North Bayshore Precise Plan EIR provides program-level review for the reversible bus lane. This means that the "macro" topic of a reduction in vehicle trips and corresponding decreases in emissions of air pollutants and use of energy are covered by the Precise Plan EIR.

Given the above, the project-level impacts of the reversible bus lane need to be disclosed. Our environmental subconsultant, David J. Powers & Associates (DJP&A), proposes to provide project-level CEQA review by preparing an Addendum to the Precise Plan EIR. The addendum will focus on the impacts of the footprint of the bus lane, namely the following:

- Visual/Aesthetic/Biological Impacts associated with the removal of the median and the trees that are in the median.
- Traffic impacts on the operations of the intersections along Shoreline Boulevard to be crossed by the bus lane including Middlefield Road, Terra Bella Avenue, US 101 SB Ramp, and US 101 NB Ramp/La Avenida Street.
- Traffic impacts associated with the redistribution of vehicle trips due to the elimination of left-turns to the SR 85 onramp from northbound Shoreline Boulevard.

# 5.1 Prepare Environmental Addendum

The above-described traffic impacts will be summarized in the Addendum based on a traffic analysis to be provided to DJP&A by others.

DJP&A will prepare the Addendum based on project plans to be provided by the design team.

The administrative draft version of the Addendum will be submitted to the City for review and comment. The Addendum will be revised based on the City's comments.

The CEQA process will require coordination with the Caltrans District 4 environmental staff and DJP&A proposes to undertake that coordination on behalf of the City. This effort will include attendance by DJP&A Staff at up to two meetings at Caltrans' offices in Oakland.

This scope of work assumes that DJP&A staff will attend up to six team meetings plus three public meetings. This scope also includes up to 40 hours of project management time over the course of the project.

Important: The viability of this approach, namely the use of an Addendum to the Precise Plan EIR, is predicated on the assumption that there will be no new significant impacts. In the event that the analyses determine that the bus lane would result in new significant impacts, preparation of a Supplemental EIR or a new stand-alone EIR would be warranted.

#### Deliverables:

- Administrative draft and final EIR Addendum
- > Technical memorandums (as necessary) for the documentation of Visual/Aesthetic/Biological impacts

# 5.2 Supplemental Traffic Analysis

Fehr & Peers will provide supplemental traffic analysis in support of the preparation of an EIR addendum. Supplemental traffic analysis will be based upon existing traffic models and forecasts used to prepare the North Bayshore Precise Plan EIR. Traffic analysis will focus on the traffic impacts on the intersection operations along Shoreline Boulevard to be crossed by the bus lane including Middlefield Road, Terra Bella Avenue, US 101 SB Ramp, US 101 NB Ramp/La Avenida Street and Pear Avenue. Fehr & Peers will assess whether the construction of the reversible bus lane will result in any undisclosed significant traffic impacts along Shoreline Boulevard. In addition, the traffic impacts associated with the redistribution of vehicle trips due to the elimination of left-turns to the SR 85 on ramp from northbound Shoreline Boulevard will be evaluated. Specific consideration for the redistribution of the trips to the Moffett Boulevard/SR 85 Interchange southbound on ramp will be evaluated. Findings of the traffic analysis will be presented in a Technical Memorandum.

This scope specifically excludes preparation of a Traffic Operations Assessment Report. This scope does not include detailed review or validation of the traffic model or forecasts by Caltrans. Supplemental Traffic Analysis will be used to support the preparation of the EIR Addendum which will be adopted by the City.

The supplemental traffic analysis scope is based upon the following assumptions:

- Intersection analysis will be completed in Traffix. More detailed VISSIM microsimulation analysis or evaluation of transit signal phasing changes to accommodate dedicated bus phases or transit signal priority can be completed as an optional task.
- Up to seven study intersections will be evaluated for existing and cumulative plus project conditions.
- Responses to comments on the draft memorandum for the EIR Addendum are limited to eight professional hours.

• We will attend one project team meeting. Attendance at additional meetings or public meetings can be accommodated as an optional task.

### Deliverable:

Administrative Draft and Final Supplemental Traffic Analysis Memorandum

# **ASSUMPTIONS/EXCLUSIONS**

- Preparation of a cooperative agreement between the City and Caltrans is not included.
- Project topographic mapping will not follow Caltrans A-B-C process.
- Median platforms design and layout are excluded.

# MARK THOMAS & COMPANY, INC.

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	TOTAL COST	\$3,575	\$39,600	\$4,225	\$1,390	\$10,080	\$28,800	\$29,370	\$24,016	\$31,152	\$4,000	\$15,120	\$0		\$191,328	\$15,000	\$206,328	\$(	\$31,000	\$34,160	\$24,965	\$5,735	\$302,188

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