

FEHR & PEERS

March 28, 2018

Martin Alkire
City of Mountain View
500 Castro Street
Mountain View, CA 94039

Subject: Proposal to Conduct the Spring 2018 North Bayshore District Monitoring in Mountain View, California

Dear Mr. Alkire:

Fehr & Peers is pleased to submit this proposal to conduct the Spring 2018 North Bayshore District Monitoring. This scope of work is to conduct, analyze and report the results of the Spring 2018 North Bayshore District Monitoring.

We propose the attached scope of work (Attachment A) for the North Bayshore District Monitoring. The time-and-materials cost to conduct this analysis is not-to-exceed \$47,200 (see Attachment B). This scope of work assumes that the counts will be collected by City staff. The fee estimate includes all professional and support time as well as direct expenses.

Should you have any questions, please call Daniel Rubins at (408) 550-7338. The terms of this proposal are valid for a period of 30 days. Please send a contract for our review at your earliest convenience. We appreciate the opportunity to submit this proposal and look forward to working with you on this project.

Sincerely,

FEHR & PEERS


Daniel Rubins
Associate


Julie Morgan
Principal

P18-3366-SJ



Attachment A

SCOPE OF WORK

Spring 2018 North Bayshore District Monitoring in Mountain View, California (March 26, 2018)

ANALYSIS APPROACH

City staff will use this North Bayshore District Monitoring to evaluate how North Bayshore development is conforming to the North Bayshore Precise Plan gateway trip cap. With the anticipated addition of residential uses in North Bayshore, it will be necessary to expand the monitoring scope to include the evening peak period in addition to the morning peak, and to use additional data sources, which can be integrated into future North Bayshore analysis and planning studies. This scope of work is to conduct, analyze and report the results of the Spring 2018 North Bayshore District Monitoring.

SCOPE OF WORK

The base scope of services for this phase of work will evaluate and present travel data at the North Bayshore gateway for the morning peak period (7:00 to 11:00 AM) and evening peak period (3:00 to 7:00 PM), using the data sources and collection techniques that have been used in previous monitoring efforts. Optional tasks are presented to visualize the travel data and/or collect additional travel data using big data sources. This scope of work assumes that the gateway count data will be collected by City staff under a separate contract.

TASK 1 – DAILY COUNT OBSERVATIONS

The City of Mountain View will collect daily roadway and shared-use path segment counts at the North Bayshore gateways; Santiago Villa; and the Shoreline at Mountain View Regional Park. This daily data will be collected for two consecutive weeks. The morning peak period (7:00 to 11:00 AM) and the evening peak period (3:00 to 7:00 PM) average for a typical mid-week day (e.g., Tuesday, Wednesday or Thursday) will be reported. The North Bayshore gateway street locations include:

1. San Antonio Road between Bayshore Parkway and Casey Avenue
2. Bayshore Parkway between San Antonio Road and Garcia Avenue
3. Rengstorff Avenue between US 101 Northbound Ramps and Garcia Avenue-Charleston Road
4. Shoreline Boulevard between US 101 Northbound Ramps-La Avenida and Pear Avenue
5. La Avenida between Shoreline Boulevard and Inigo Way

The shared-use path locations include:

6. Permanente Creek Trail between Old Middlefield Way and Charleston Road
7. Stevens Creek Trail between Moffett Boulevard and La Avenida

Additional count locations for Santiago Village and the Shoreline at Mountain View Regional Park include:

8. Shoreline Boulevard north of North Road
9. Space Park Way at the entrance to Santiago Villa
10. Armand Avenue at the entrance to Santiago Villa

TASK 2 – GATEWAY VEHICLE CLASSIFICATION OBSERVATIONS

Vehicle classification counts (e.g., single occupant vehicles, carpool vehicles, trucks, transit vehicles, bicyclists and pedestrians) will be collected by City Staff during the morning and evening peak periods for one day at the North Bayshore Gateway locations 1 through 7 listed above.

TASK 3 – BUS OCCUPANCY OBSERVATIONS

Bus occupancy of employer commuter shuttles and VTA buses will be observed at up to 19 bus stops for one day during the morning and evening peak periods. Some of the data will be collected from the appropriate agencies in spreadsheet format, while other data will be collected via in-person field observations. For many of the in-person field observations, a local count vendor will collect the data under a separate City of Mountain View contract. However, some of the in-person bus occupancy data collection efforts will be performed by Fehr & Peers staff. For MVgo and VTA buses, staff will board the bus at bus stops and count the number of riders on board. For employer commuter shuttles, staff will be stationed at bus stops recording the bus license plate number, the type of bus and the number of persons boarding and alighting; this will be focused on inbound buses during the morning peak period and outbound buses during the evening peak period. Using this bus occupancy data, Fehr & Peers will determine the number of persons entering North Bayshore on buses during the morning peak period and exiting during the evening peak period.

TASK 4 – SUMMARY OF EXISTING TRAVEL PATTERNS

The vehicle traffic counts and vehicle classification data will be summarized in tables and figures to show vehicle travel patterns by time of day, and mode share and vehicle usage for the morning and evening peak periods. This information will describe the current usage of the three North Bayshore Gateways.

TASK 5 – GATEWAY OPERATIONS OBSERVATIONS

Vehicle queues will increase under conditions where the gateway demand exceeds capacity. To estimate peak demand, peak period observations of vehicle queues will be observed at the Shoreline Boulevard and Rengstorff Boulevard gateways during the morning and evening peak periods for one day. Queue lengths, start time of queue formation, start time of queue dissipation, and the maximum queue length will be reported to help understand when the demand exceeds capacity at the observed locations, and the extent of the vehicle queue formed by unserved vehicles. Noting the extent of the queues, and times at which the queues begin to increase and decrease in length, will help describe the North Bayshore gateway operations throughout the morning and evening peak periods.

These queue observations will be conducted using 15 camera locations, recording the queues during the peak periods. Fehr & Peers' staff will then watch the recorded videos to determine queue extents and times at which the queues begin to increase and decrease in size. The cameras will be used to record the inbound and outbound queues for all relevant legs of the Rengstorff and Shoreline gateways. Using this information, we can capture the demand from the approaches at the Rengstorff and Shoreline gateways.

TASK 6 – NEAR-TERM GROWTH ASSESSMENT BY NORTH BAYSHORE GATEWAY

For the Fall 2017 Monitoring, Fehr & Peers described the Near-Term Growth developments planned for North Bayshore, the estimated change in the gateway demand with occupancy of these new developments soon, and the estimated completion of the planned transportation improvements. This scope assumes the information about Near-Term Growth developments from the Fall 2017 monitoring has not changed and can be used as-is. The Near-Term Growth demand volumes by each gateway will be developed using the North Bayshore VISUM travel model and the Near-Term Growth trip estimates from the Fall 2017 monitoring report.

TASK 7 – PREPARE DOCUMENTATION

A North Bayshore District Monitoring report will be prepared that summarizes the person and vehicle trips for each North Bayshore gateway, and person mode share during the morning peak period (7:00 to 11:00 AM) and the evening peak period (3:00 to 7:00 PM). This report will also compare the gateway observations to the morning peak period gateway capacity trip cap policy. A summary of the gateway demand with the approved development will also be presented for the morning peak period. The draft report will be submitted to the City staff for review and comment. Review comments will be incorporated into the final

report and submitted to City staff. Our fee estimate includes 40 staff hours to respond to comments on the draft and prepare a final report. Responding to comments requiring additional technical analysis or requiring more than 40 staff hours will be conducted as an additional service. Formatting of the report into the transportation section of an environmental impact report, if needed, will be considered an additional service.

Deliverable: Draft and Final Report documenting the North Bayshore District Monitoring report.

TASK 8 – MEETINGS

Fehr & Peers will be available to attend two staff-level meeting as part of this effort. Additional meetings or hearings can be accommodated on an as-needed basis, subject to scope and budget amendments.

OPTIONAL TASK – ENHANCED DATA VISUALIZATION OR WEBSITE

The North Bayshore monitoring effort has been underway since 2015, and is accumulating a database of travel data. Some of this data has been presented in tables as a part of the gateway monitoring, but much of the data has not been formally presented. More comprehensive data visualization could help staff, decision makers and members of the public understand travel patterns and see the trends being observed over time. This could take the form of a larger set of graphics and figures printed and presented to the public. An alternative option would be to develop a dedicated website to contain the observed data and allow users to query the data and create their own graphics. The scope and budget for this effort would depend on the option selected and the level of detail desired.

OPTIONAL TASK – COLLECT ORIGIN-DESTINATION DATA FOR NORTH BAYSHORE USING BIG DATA SOURCES

Fehr & Peers could collect origin-destination (OD) data specific to North Bayshore (or to the City of Mountain View as a whole) to inform City staff and decision-makers about travel patterns and to support the on-going North Bayshore gateway monitoring. The primary purpose of the OD data would be to identify the locations where the trips to/from North Bayshore come from. The traditional approach to collecting this information would involve conducting a license plate-matching study whereby the license plates of vehicles entering or leaving North Bayshore are matched to plates observed at a few important roadway locations nearby. This type of study is time-consuming and expensive, and can only identify general directional patterns rather than the specific communities where the trips originate.

Recently, some mobile device data providers have developed the capabilities of producing OD data with enough spatial and temporal accuracy to be useful in transportation planning applications. The City can choose to purchase such OD data in order to better understand the travel patterns of vehicles entering and leaving the North Bayshore gateways.

OPTIONAL TASK – COLLECT FREEWAY SPEED DATA USING A BIG DATA SOURCE

The operations of the US 101 and SR 85 freeways have a direct influence on the flow of vehicles to/from the North Bayshore gateways. Freeway bottleneck hotspots can be observed over multiple days by using a Big Data provider that collects roadway travel speed from in-vehicle GPS devices or smart phone applications. The speeds for passenger and commercial vehicles can be reported separately. Level of aggregation can be at the roadway segment or corridor level, and can range from individual minutes of a single day to a typical day within a full year. Weather, collision, and construction notifications are also included so non-recurring congestion locations can be identified separately from recurring congestion. Accessing freeway big data would require coordination with the VTA to purchase a data set that meets the data provider's minimum purchase requirements.

OPTIONAL TASK – EVALUATION OF PERMANENT COUNT LOCATIONS

With the North Bayshore District monitoring occurring regularly, it may be useful for City staff to establish permanent count locations. Fehr & Peers will evaluate different equipment options for establishing permanent count locations, and summarize the costs and capabilities of the different options. By installing permanent count locations, City staff can save time on the coordination and preparation of temporary count locations. The results of this comparison would be summarized in a brief memorandum.

**Attachment B: North Bayshore Precise Plan
Spring 2018 North Bayshore District Monitoring Fee Estimate (March 26, 2018)**

Task	Principal-In-Charge	Associate-In-Charge	Technical Leads	Project Manager	Engineer	Graphics	Support	Total Hours	Total Labor	Direct Costs	Counts	Task Total
	JM	DR	IB/KJ	SA	Other	MC	MT					
Billing Rate-->	\$300	\$225	\$185	\$150	\$135	\$120	\$120					
1. Daily Count Observations	0	0	0	2	0	0	0	2	\$300	\$0	\$0	\$300
2. Gateway Vehicle Classification Observations	0	0	0	2	0	0	0	2	\$300	\$0	\$0	\$300
3. Bus Occupancy Observations	0	2	0	4	32	0	4	42	\$5,850	\$350	\$0	\$6,200
4. Summary of Existing Travel Patterns	0	4	0	16	8	0	4	32	\$4,860	\$240	\$0	\$5,100
5. Gateway Operations Observations	0	2	0	12	18	0	4	36	\$5,160	\$340	\$0	\$5,500
6. Near-Term Growth Assessment by North Bayshore Gateway	2	12	0	36	0	0	8	58	\$9,660	\$440	\$0	\$10,100
7. Prepare Documentation												
Draft Report	2	8	0	24	0	16	6	56	\$8,640	\$460	\$0	\$9,100
Final Report (40 hrs)	2	10	0	16	0	8	4	40	\$6,600	\$310	\$0	\$7,000
8. Attend Meetings/Hearings												
Project Meetings (2)	0	8	0	8	0	0	2	18	\$3,240	\$360	\$0	\$3,600
Total (without optional task)	6	46	0	120	58	24	32	286	\$44,700	\$2,500	\$0	\$47,200
Optional Tasks												
Data Visualization or Website												\$5,000 to \$20,000
Collect Origin-Destination Data for North Bayshore Using Big Data Sources												\$45,000 to \$55,000
Collect Freeway Speed Data Using a Big Data Source												\$10,000 to \$20,000
Evaluation of Permanent Count Locations												\$10,000 to \$15,000

Notes:
 Other Direct Costs / Reimbursable expenses are invoiced at cost plus 10% for handling.
 Personal auto mileage is reimbursed at the then current IRS approved rate (\$4.5 cents per mile as of Jan 2018).
 Voice & Data Communications (Telephone, fax, computer, e-mail, etc.) are invoiced at cost as a percentage of project labor.
 Fehr & Peers, March 2018.