October 21, 2016

Ms. Katherine Waugh, AICP
Senior Project Manager
Dudek
853 Lincoln Way, Suite 208
Auburn, CA 95603

Proposal for a Transportation Impact Analysis of the Castilleja School project in Palo Alto

Dear Ms. Waugh;

W-Trans is pleased to provide this proposal to prepare a traffic impact analysis (TIA) for the Castilleja School project in Palo Alto. Our proposal is based on the Request for Proposal from Amy French of the City of Palo Alto and the project description contained therein, as well as, our understanding of the project issues and experience with similar school projects in the Bay Area. The objective of the traffic study is to evaluate the probable traffic impacts that the proposed project would have on the adjacent roadway network, and to make recommendations to mitigate any significant impacts to the roadway network.

The proposed project is an evaluation of the potential impacts of the school expanding its enrollment from 438 to 540 students. We will confirm with City of Palo Alto staff the nearby approved projects, trip generation estimate, trip reduction factors associated with transportation demand management (TDM), and trip distribution patterns prior to evaluating intersection level of service. In addition, the TIA will address project-specific issues.

Scope of Services

Task 1: Traffic Impact Analysis

Field Reconnaissance

W-Trans will conduct field reconnaissance visits for this site during the a.m. (drop-off) and mid-afternoon (pick-up) peak periods on a typical school day (Tuesday, Wednesday or Thursday with no special event, field trips, assemblies, etc.). The purpose of this task is to confirm available data and information. We will observe and note the following:

- Drop-off and pick-up operations
- On-site circulation, access and parking
- Multimodal access (bicycles, pedestrians, and transit)
- Roadway cross-section
- Intersection lane geometry and configuration
- Traffic control devices
- Surrounding land uses
- Sight distance
- Existing traffic operations' consistency with the LOS analysis calculated for this project for existing conditions

Trip Generation and Land Use Inventory

W-Trans will estimate the number of net new daily, a.m. peak hour and mid-afternoon peak hour trips that the project will add to the study area based on a three-step process; trip generation, trip distribution, and trip assignment.

The proposed development's trip generation for the weekday daily, a.m. and mid-afternoon peak hours will be calculated based on a site-specific trip generation survey. The survey will include vehicle counts on two typical school days (no field trips or special events, and when nearby PAUSD schools are in session). The surveys will be conducted between 6:00 a.m. and 7:00 p.m. to establish the a.m. and mid-afternoon peak period of generator.

To capture on-site trip generation, the surveys will be conducted via video cameras placed in strategic locations to capture all school access points (for vehicles, pedestrians and bicyclists) on Bryant Avenue, Kellogg Avenue, Emerson Street and Embarcadero Road.

To count the off-site drop-off and pick up activity, we will also set up cameras to monitor both sides of the follow street segments:

1. Embarcadero between Emerson Street and Bryant Street
2. Emerson Street (Embarcadero to Melville, Melville to Kellogg, and Kellogg to Churchill)
3. Melville Avenue (Alma Street to Emerson Street)
4. Kellogg Avenue (Alma Street to Emerson Street, Emerson Street to Bryant Street, Bryant Street to Waverly Street)
5. Bryant Street (Embarcadero to Kellogg Avenue, and Kellogg Avenue to Churchill Avenue)

The survey data will be compared to standard trip generation rates for a K-8 private school published in the latest edition of ITE's *Trip Generation*, and then a recommended trip generation rate will be reviewed with City staff prior to analysis.

Trip distribution will be based on the school attendance area and zip code data if made available.

Transportation Demand Management (TDM) Program and Surveys

We will review the school's current TDM program, and assess its effectiveness via any prior monitoring surveys, the current trip generation survey, and a new mode choice survey of the school students, faculty and staff that we will administer twice on two typical school days.

The TDM surveys will be done via a paper survey in order to gain a higher response rate compared to an electronic survey. W-Trans will work with school staff to administer the survey in classrooms, which we will prepare, deliver, and collect from the school prior to processing. Results of the two TDM surveys will inform or confirm any potential trip deductions (note that any current trip deductions will be built into the trip generation rate calculated form the trip generation survey; the TDM surveys will be used to verify the trip totals from the trip generation survey).

Study Intersections

The TIA will include analysis of the following intersections:

1. Embarcadero Road/Alma Street
2. Kingsley Avenue/Alma Street
3. Embarcadero Road/Emerson Street
4. Embarcadero Road/Bryant Street
5. Churchill Avenue /Alma Street
6. El Camino Real/Embarcadero Road
7. Middlefield Road/Embarcadero Road

Turning Movement Counts

Intersection turning movement data will be collected for all study intersections during a.m. (7:00 a.m. – 9:00 a.m.) and mid-afternoon (2:00 p.m. – 4:00 p.m.) and p.m. (4:00 p.m. – 6:00 p.m.) peak periods, including vehicle, pedestrian and bicycle counts. Note that school trips are only anticipated for the a.m. and mid-afternoon peak periods.

Auto Level of Service Analysis

The analysis time periods for this study will be the weekday a.m. and mid-afternoon peak hours. The level of service (LOS) analysis will be based on the VTA 2003 *Traffic LOS Analysis Guidelines*. The analysis of study intersections will be conducted using the 2000 *Highway Capacity Manual* (HCM) methodologies and Traffix Analysis Software using the VTA default database. The LOS results will be compiled in a table format. Comparison LOS tables will be included showing all of the LOS results for the various analysis scenarios. The traffic study will include the following traffic study scenarios with the existing intersection controls and configurations:

1. Existing Conditions
2. Existing Conditions plus Project Trips
3. Background Conditions (Existing Conditions plus Approved Project Trips)
4. Project (Background plus Project Trips)
5. Cumulative
6. Cumulative plus Project

For those intersections operating at LOS E or F under the project conditions scenario a separate LOS analysis will be conducted using mitigated conditions in order to compare the no mitigation scenario to the mitigated conditions scenario. A LOS table will be prepared showing operating conditions of all study intersections for each of the study scenarios, along with "Project plus mitigated conditions" (if mitigations required).

Project Specific Issues

For each of the scenarios listed above, W-Trans will evaluate the drop-off and pick-up circulation in and around the school campus. Also, changes (if any) to the multimodal access (bicycles, pedestrians and transit) will be evaluated and circulation will be evaluated. Sight distance at project driveways and parking adequacy (Code, demand and supply comparison) will be evaluated. The potential for neighborhood parking issues will be qualitatively discussed in the TIA.

Residential Streets (TIRE) Analysis

We will prepare a TIRE analysis to evaluate increases in vehicle trips on local residential streets. The following adjacent residential streets will be analyzed:

1. Waverley Street (Lincoln to Kingsley, Kingsley to Whitman, Whitman to Melville, Melville to Embarcadero, Embarcadero to Kellogg, Kellogg to Churchill)
2. Bryant Street (Lincoln to Kingsley, Kingsley to Whitman, Whitman to Embarcadero, Embarcadero to Kellogg, and Kellogg to Churchill)
3. Emerson Street (Lincoln to Kingsley, Kingsley to Embarcadero, Embarcadero to Melville, Melville to Kellogg, and Kellogg to Churchill)
4. Churchill Avenue (Waverly to Bryant, Bryant to Emerson, Emerson to Alma)
5. Alma Street (Lincoln to Embarcadero, Embarcadero to Kingsley, Kingsley to Melville, Melville to Kellogg, and Kellogg to Churchill)
6. Lincoln Avenue (Waverly to Bryant, Bryant to Ramona, Ramona to Emerson, Emerson to High, High to Alma)
7. Kingsley Avenue (Waverly to Bryant, Bryant to Ramona, Ramona to Emerson, Emerson to High, High to Alma)
8. High Street (Lincoln to Embarcadero)
9. Ramona Street (Lincoln to Kingsley)

To conduct the TIRE analysis, 24-hour traffic counts will be taken on each of the street segments noted above. The TIRE analysis will be conducted for each project scenario.

Bike Boulevard Analysis

We will assess Bryant Street as it is an established bicycle boulevard and principle north-south city bike corridor. The TIA shall include a qualitative and quantitative assessment of potential impacts to the bicycle boulevard, as follows:

1. We will observe and summarize interactions between motorized vehicles and cyclists on Bryant Street during the site reconnaissance periods and provide qualitative assessments of the existing and existing plus project conditions based on bike boulevard guidelines.

2. We will provide quantitative speed and volume (vehicle, bicycle, pedestrian) analysis for the existing scenario, and volume analysis for the existing plus project scenario (speed prediction for existing plus project scenario is assumed not to change). We will compare the findings to established bike boulevard speed and volume thresholds. The focus of the analysis will be on Bryant Street between Embarcadero Kellogg, and also from Kellogg to Churchill.
3. We will summarize our findings in the TIA and include potential off-site improvements to address potential project-generated impacts associated with motorized vehicle speed and/or volumes.

Special Events

We will note the potential for increases in special events at the school, including their frequency and event size. This will be a qualitative narrative analysis that includes the potential increases in traffic and parking demand. If needed we will recommend adjustments to the school's TDM program to address special events.

Task 2: TIA for Administrative Draft EIR

W-Trans will prepare one Administrative Draft TIA report, including text, tables, figures and technical appendices.

Task 3: Respond to Agency Comments and Preparation of TIA for Draft EIR

W-Trans will respond to one set of consolidated non-contradictory comments on the Administrative Draft TIA and prepare a TIA for the DEIR.

Task 4: Respond to Public Comments and Preparation of Final EIR

W-Trans will respond in writing to comments received on the Draft EIR Transportation/Circulation Chapter. We have assumed preparation of comment responses as well as revisions to the responses based on City staff review, up to the allocated budget resources for this task.

Task 5: Project Administration and Meetings (5)

This work scope includes up to five meetings related to this project. These could be with project team members, public hearings, or other formal meetings.

Exclusions

Any services not explicitly identified above in Tasks 1-5 are excluded. Should any additional time be necessary to prepare the Final EIR beyond the budgeted hours (as it is unknown how many comments or the level of effort that will be required to respond to Draft EIR comments) we will request additional budget at that time, and proceed only after receiving written authorization for additional services;

Schedule

The Administrative Draft TIA report will be completed approximately twelve weeks after completion of data collection and receipt of all required project materials.

Budget

W-Trans will provide services on a time and materials basis at our current standard billing rates. The estimated maximum fee is $90,500.

Thank you for considering W-Trans for this project. We look forward to working with you.

Sincerely,

Mark Spencer, PE
Principal
mspencer@w-trans.com

MES/PAL015.P1-4