

MEMORANDUM

To: Sue Reyneri
From: Brian Canepa
Date: October 24, 2013
Subject: Castilleja School Transportation Demand Management (TDM) Plan

INTRODUCTION

Castilleja School, located in the City of Palo Alto, CA, is an independent girls' school for grades 6 through 12. Castilleja currently operates under a conditional use permit (CUP) from the City of Palo Alto. The key CUP regulations that apply to transportation are:

- **Enrollment:** Limited to 415 students.
- **Pick-up and drop-off:** The School is required to maintain an updated pick-up/drop-off policy and inform parents of this policy regularly. Parents must be instructed on when and where they can pick up and drop off, as well as areas on-street where they are not allowed to park or pick up/drop off.
- **Traffic monitors:** The School must provide traffic monitors to educate students and parents, oversee pick up/drop off at the School, and to monitor the parking situation around the School.
- **Carpooling:** The school is required to provide information to facilitate car/vanpooling in their immediate geographic area.

An *Existing Transportation Analysis*, a *Campus Expansion Transportation Analysis*, and a *Focused Transportation Impact Analysis* for Castilleja School were conducted in 2012 and 2013 by Fehr & Peers. Relevant key findings of these studies include:

- Drop-off and pick-up activities "generally occur with minimal conflicts both off and on-street". The exception is "some on-street vehicle queuing, particularly during the afternoon pick-up," on Kellogg Avenue, which only has one through lane.¹ The driveway on Bryant Street has less back-up because it has two lanes, but some delay can occur when there are too many vehicles in the queue (EC 8). This can cause vehicles to back-up onto Embarcadero Road, a busy arterial street.
- Fehr & Peers recommended alleviating queuing during pick-up and drop-off by "designating the driveways by classroom or enabling the security personnel and teachers to communicate with radios" to improve coordination. To encourage carpooling, Fehr & Peers also recommended providing priority pick-up/drop-off locations on Bryant Street and/or Kellogg Avenue to vehicles with more than one Castilleja student.

¹ Fehr & Peers Existing Transportation Analysis, November 2012.

- Fehr & Peers still recommended that Castilleja expand its Transportation Demand Management (TDM) program to reduce the number of vehicle trips generated by the school. Some of the TDM measures may include organizing school carpools and providing a campus carshare vehicle for staff and faculty (FC, p. 6-7)

Castilleja contracted with Nelson\Nygaard in the spring of 2013 to develop this Transportation Demand Management Plan in response to Fehr & Peers' recommendation. This TDM plan briefly analyzes existing conditions at Castilleja, including the results of a recently completed online transportation survey conducted by Fehr & Peers, and describes pilot programs introduced by the school in the 2013-2014 academic year to ensure that the number of vehicle trips are no greater than would be expected with a population of 385 students.

Transportation Survey

In May 2012, Castilleja School conducted an online survey of faculty, staff and students to better understand commute patterns and programs that might encourage the campus population to not drive alone to campus. The findings of this survey can help inform the selection of strategies that may have the greatest impact on reducing future vehicle trips to campus and parking demand.

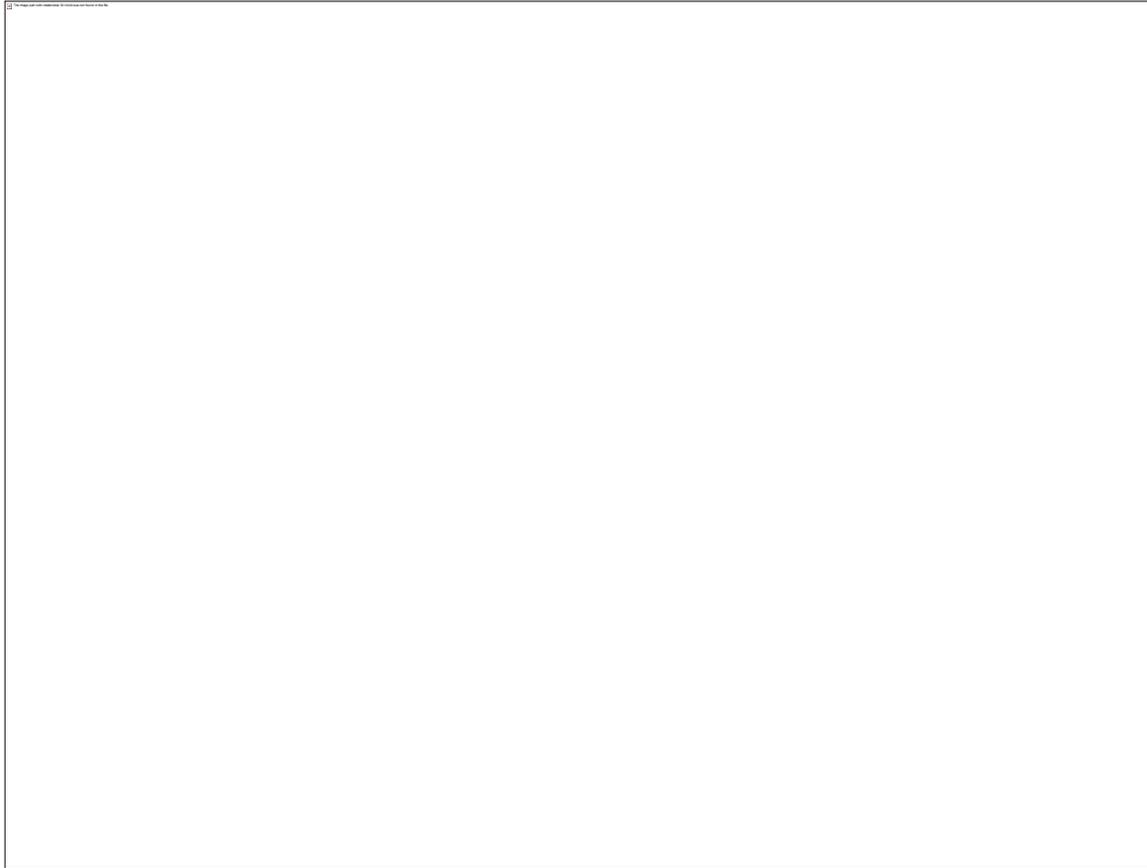
All teachers, staff, and students were asked to complete the survey. A total of 268 surveys were completed, including 48 faculty responses, 33 staff member responses, 171 parents of student responses, and 16 student responses. This represents a response rate of 6% for students, 18% percent for faculty, 12% for staff, and 64% for parents of students. For the purposes of the TDM recommendations that follow, the key findings from the survey include:

- In the morning, 48% of students are dropped off by a parent, and another 26% carpool. In the afternoon, 63% of students are picked up by a parent, and another 14% carpool.
- Approximately 6-7% of students bike to and from school. A small number of students take transit, 100% of whom reported taking Caltrain.
- Driving alone accounts for 70-80% of faculty/staff trips.
- Most students (78%) participate in activities that require arriving early or staying late on campus.
- Among all survey respondents, the most common reason for not walking, biking, taking transit or carpooling to school was having activities before or after school (33%). Other factors that were frequently cited as potentially increasing non-auto trips to school include more convenient transit options (18%), school-organized carpools (11%), a guaranteed ride home program in the case of an emergency (9%), safer biking conditions (7%), and having someone else to bike with (7%).

Student and Faculty Home Locations

In order to develop TDM recommendations that will meet the needs to Castilleja students, faculty and staff, such as a shuttle program, home locations of faculty, staff and students were analyzed (Figure 1).

Figure 1 Student and Faculty/Staff Home Locations



Students and faculty/staff home addresses are spread across the San Francisco Peninsula, with some outliers as far as San Francisco and the East Bay, but many of the addresses are clustered together, which could facilitate van/carpooling. A large concentration of students also live in Palo Alto (27%) or Menlo Park (12%), and may be able to bike or walk to school if clear, safe routes are available. Staff generally live farther from campus.

PREVIOUS TDM MEASURES

Prior to the discussion of a TDM plan with Nelson\Nygaard, Castilleja already had in place the following measures:

- **Education:** Families are educated as to the importance of limiting the School's traffic impact on the surrounding neighborhood. Carpooling is encouraged for all students, and students who live near campus are encouraged to walk, bike, or take the free Palo Alto shuttle to school.
- **Traffic Management:** Castilleja staff monitors morning drop-offs and afternoon pick-ups to ensure smooth efficient movement of vehicles into and out of the School, preventing queuing on neighborhood streets.
- **Multiple Drop-off and Pick-up Points:** Morning drop-offs and afternoon pick-ups are done in separate locations depending on grade and the number of students being picked-up/dropped-off, as follows: grades 6-8 - in front of the Arrillaga Family Campus

Center at 255 Kellogg Avenue; grades 9-10 - in front of the carved green doors on Bryant Street; grades 11-12 - in the Emerson Street parking lot by the pool, entering on Kellogg and exiting on Emerson; carpools >3: In the Emerson St. parking lot by the pool, entering on Kellogg and exiting on Emerson.

- **Staggered Drop-offs and Pick-ups:** To alleviate congestion, Castilleja has a staggered bell schedule depending on grade levels. However, the staggered start times are still close enough together that significant overlap occurs.

TDM MEASURES IMPLEMENTED FOR 2013-14 SCHOOL YEAR

Since working with Nelson\Nygaard, Castilleja has taken the proactive step of implementing several recommended TDM measures as pilot programs. These measures have shown great success in reducing vehicle trips since counts were conducted by Fehr & Peers during the 2012-2013 academic year. The TDM measures include:

Shuttles

Program Design: Castilleja offers two free shuttle routes to campus in the morning hours.

Program Impacts: In July 2013, Castilleja performed a survey of families to determine if there would be demand for a morning shuttle service. The survey supported the pilot of two morning shuttles; one from Los Altos and one from Woodside. The morning shuttle service began on the second day of school, August 30, 2013. On average, between 20 and 30 girls are now arriving each morning on each of the buses. Each shuttle costs \$300/trip (approximately \$100,000 for the year for the two buses).

Alternative Mode Encouragement

Program Design: Employees and students have been asked to consider alternate modes of transportation to school at least one day per week, with the target of a 20% reduction in traffic and resulting impact on the neighborhood. Families and employees within one mile of campus have also been asked to consider walking to school. In addition, parents have been asked to consider dropping off their daughters at one of several Palo Alto Shuttle stops (either end of Embarcadero, Palo Alto Train Station, etc.), so that they could be dropped off at the Bryant/Embarcadero intersection.

Program Impacts: The net impact of this has been a large increase in the number of bikes, meriting the installation of another bike rack to contain the bikes. Parents have embraced this idea as well, and are often seen biking to meetings. The school has anecdotally seen an increase in the number of people walking, but has not surveyed yet to confirm the numbers. The number of girls getting off the shuttle appears to have increased, although no survey figures are available.

Carpool to School

Program Design: Carpool to School has been launched with a link on the school's website and a parent representative has been selected to maintain the website and facilitate carpools.

Program Impacts: Carpool to School has been shown to effectively link bikers, walkers or drivers. The effectiveness of the program can be extracted from the site once more data is available.

Drop-Off Redistribution

Program Design: Castilleja has reconfigured the locations and use of various drop-off points to better balance the circulation points.

Program Impacts: Instead of distributing students at each location by grade, the school has distributed by alphabet and put 3/5 of the load on the double-wide drop off on Bryant Street, and 2/5 of the distribution on Kellogg Street. Carpools were shifted to drop off in the employee parking lot. This re-distribution, combined with fewer cars in general, has resulted in smooth flow of traffic in the neighborhood. In addition, the re-distribution by alphabet has allowed the school to take advantage of the middle school's early dismissal before the upper school, which provides for two waves of dismissal through the driveways.

Transportation Coordinator

Program Design: Castilleja has designated 25% of a staff person's time to overseeing and managing transportation measures for the school.

Program Impacts: As with many transportation programs, the transportation coordinator position is critical in managing transportation measures and responding to necessary changes. The school's transportation coordinator staff time is estimated to cost roughly \$22,000 per year.

Traffic Rules Enforcement

Program Design: Castilleja has aggressively enforced the right turn only rule onto streets surrounding the campus.

Program Impacts: This change has required intensive manpower necessitating two security guards to manage flow at each driveway, and six maintenance staff (two on each block) to monitor left turns in and out of driveways, and to prevent double parking by parents. It has had a significant impact on traffic flow with back-ups now rarely occurring. Maintenance staff used to monitor parking and traffic have been estimated to cost approximately \$28,000 per year.

Employee Campaign

Program Design: The school has implemented a "1-day-a-week" campaign for employees to not drive alone at least once per week.

Program Impacts: Anecdotal evidence has shown increases in carpooling, walking, biking, and transit use. The school has also asked employees to take alternative transportation due to events on campus with high parking needs. On these days, employees park at Gamble Gardens and walk in order to leave spaces near the school for visitors. In addition, the school has opened dedicated visitor parking in the main lot for more guest parking to reduce impacts on the neighborhood.

Event Management

Program Design: The school has made a concerted effort to coordinate events, stagger start times and move activities to different days to every extent possible, in order to minimize the impact on the neighborhood.

Program Impacts: During the 2013-2014 academic year, the school opened the softball field to parking (approximately 150 cars), and hired staff to manage parking (\$650/event) on two high impact days.

Parking Management

Program Design: The school has added several parking spaces as a result of re-striping (two in the admin lot and one in the senior lot). In addition, the school has created dedicated visitor parking (12 spaces) in the admin parking lot to allow parents and guests to park at the front of the school throughout the day.

Program Impacts: The increase in the number of on-campus spaces and the provision of visitor spaces has minimized the number of school affiliates parking in the surrounding neighborhood.

MONITORING

In order to determine if Castilleja is meeting its vehicle trip goals, it is recommended that a monitoring program be established. In order to ensure vehicle counts represent typical conditions, vehicle counts should be taken once per semester and averaged. Vehicles both entering campus and dropping off students or employees along the streets surrounding the campus should be included in the counts.

PERFORMANCE STANDARDS

It is recommended that Castilleja continue to operate a TDM program resulting in a number of vehicle trips no greater than the conditions evaluated when the school was at an enrollment of 385 students, which would put it in compliance with the 2000 Conditional Use Permit.