

**Traffic Management Plan and Queuing Analysis**  
**Cristo Rey College Prep Z \_\_\_ - \_\_\_**  
**1064 N. St. Augustine Drive, Dallas, TX**  
**November 19, 2015**

**Organization and Schedule:**

Cristo Rey College Prep is a private Catholic high school located at the northeast corner of St. Augustine Drive and San Leon Avenue. The current school has approximately 130 students in grade 9, operating under the existing SUP. One class will be added each year as facilities are built in accordance with the new site plan, resulting in a buildout student population of up to 600. The grades and schedule are as follows:

Grade	Proposed Students	Start Time	Dismissal Time
9	150	7:30 AM	5:05 PM
10	150	7:30 AM	5:05 PM
11	150	7:30 AM	5:05 PM
12	150	7:30 AM	5:05 PM
<b>Total</b>	<b>600</b>		

Morning drop-off is before 7:30 AM for all students. Morning buses will arrive by 7:15 AM. Afternoon dismissal is at 5:05 PM. Afternoon buses leave at 5:30 PM. Afternoon dismissals and buses are one hour earlier at 4:05 PM and 4:30 PM respectively. Bus usage is expected to be 120 students at buildout. Student drivers are projected to be less than usual at only 100. There is an after school program which extends one hour past dismissal, and sports activity into the evening each day as well.

The school's corporate work study program uses buses to transport students to their jobs on a rotating schedule of 150 students per day. The buses leave at 7:45 AM, after the school drop-off is completed, and return students at 5:15 PM.

**TMP Operation:**

The TMP operates with the same vehicle routes in both morning drop-off and afternoon pick-up time periods. Students for all grades are dropped off and picked up at the designated *East Loading Area*. Loading is performed on the passenger side and no students have to cross vehicle paths. The specified path to the *East Loading Area* provides a total of 960' of available queue length, or 48 vehicles. Starting from the eastern entrance of the school on San Leon Avenue to right before the *East Loading Area*, vehicles will be queued in a double-stack manner. Just before the *East Loading Area*, the traffic administrator manages the conversion back to a single queue. The loading area is staffed to supervise the students, but the high school students have no need for individual staffers to help load at each loading position. Once loaded or unloaded, the vehicles exit to San Leon Avenue and return to St. Augustine Drive.

With a queue length of 960' (48 vehicles) a total of 480 high school students being dismissed at one time can be accommodated. Anything greater than 480 students dismissed at one time, after

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reduction for buses, student drivers, and extracurricular activities, needs to be accommodated by dividing the pick-up into at least two groups that are separated by at least 20 minutes.

The *West Loading Area* operates in the parking lot adjacent to St. Augustine Drive. Vehicles enter from San Leon Avenue, travel north and then west through the parking lot, and then exit to St. Augustine Drive. The *West Loading Area* is proposed to be used for the bus activity, both the normal bus drop-off/pick-up and the corporate work study program transportation. The *West Loading Area* can accommodate a queue length of 220', which is 11 automobiles or 5 buses.

**Queuing Analysis:**

KHA typically uses a design standard for projecting queue demands at similar sites, which is based on observations of queuing at other private and public charter schools in the DFW area. In the typical case at high schools, expected maximum queue in vehicles is equal to 10% of the largest number of students dismissed at one time. This is a shorter queue than is observed for schools with elementary and middle school students, since the loading demands at high schools are more spread out than for lower grades. Students using buses, walking/biking, or driving themselves are deducted from the student number since they do not attract personal vehicles through the loading area. This method accounts for the differences in how schools divide up the pick-up time period, as some dismiss all students in one group and therefore have higher vehicle demands in a short time period, while some spread out the dismissals over two or more groups.

The school dismisses all students in one group, which is then reduced by busing, student drivers, and after school activities. For a conservative analysis, no assumption is made for after school activities. Therefore, using a 10% queuing factor and the projected busing and driving numbers, the projected queue length is:

$$(600 \text{ students dismissed} - 120 \text{ Students using buses} - 100 \text{ students driving}) * 0.10 = 38 \text{ vehicles in queue}$$

The projected queue of 38 vehicles translates to 760' of queuing distance. The 960' of queue distance provided is within the range of recommended values for equivalent Texas high schools found in the Texas Transportation Institute (TTI) research report 0-4286 *Operations and Safety Around Schools* published in January 2004.

The maximum queue demand that can be reasonably accommodated within the *East Loading Area* is 960' or 48 vehicles. The following table shows the projected conditions at school buildout:

Pick-Up Queuing Summary - East Loading Area - 600 Student Buildout Condition								
Group Grades Dismissed	Dismissal Time	Students Dismissed	Bus / Bike / Walk	Student Drivers	Parent Pickup	Maximum Queue	Available Queue	Surplus (Deficiency)
HS Group 1 9, 10, 11, 12	5:05 PM	600	120	100	380	38 Vehicles 760'	48 Vehicles 960'	10 Vehicles 200'

The *West Loading Area* is used by buses and can accommodate the expected 4 buses within its 220' of available queuing distance. Since the bus activity is separated in time from the carpool operation, the *West Loading Area* could also be used for automobile activity if necessary. However, the analysis shows that the space within the *East Loading Area* is sufficient for all the automobile activity.

**Summary:**

This TMP defines the drop-off and pick-up procedures for the Cristo Rey College Prep school with a maximum of 600 students. The TMP vehicle routes provide an available queue distance within the site that is greater than projected maximum expected queue for the school's operations. **No queuing is allowed in City of Dallas ROW.** The school traffic will never be allowed to queue vehicles in the ROW of any City street or alley, nor will the traffic on any City street be stopped or diverted. The property owner/school administrator is responsible for the administration of the TMP and ensuring that the vehicle queue does not affect the City streets. Only uniformed police officers are be allowed to direct and control traffic operating within the public right-of-way.

Based on the vehicle queuing analysis conducted and the resulting Traffic Management Plan, I, Scot A. Johnson, P.E. #92615, certify that the results indicate that no queuing of vehicles dropping off or picking up students at Cristo Rey College Prep will extend onto City of Dallas rights-of-way as a result of internal queuing constraints.

In order to ensure that all queuing of vehicles is completely accommodated on school property, the school administrative officials should implement the proposed Traffic Management Plan, monitor the operation on a continuing basis, and if any vehicle queuing should begin to occur on public right-of-way, take the necessary action to mitigate it.

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