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Re: Trip Generation and Access Review for the North Loop Center 3 Project

This letter report presents the results of a trip generation analysis and a review of access for the proposed North Loop Center 3 Project.

Project Description

The proposed project would involve construction of five two-story office buildings. The North Loop 3 campus is planned to include approximately 187,000 square feet of building space in five flex buildings ranging in size from 29,000 to 50,000 square feet. The project is proposing to have seven vehicular access points onto North Point Road.

Project Trip Generation

The standard reference used by traffic engineers to estimate trip generation is the Institute of Transportation Engineers (ITE) Trip Generation Manual. The vehicle trip generation for the project is shown in **Table 1**. The trip generation rates are based on the ITE rates for a single-family detached housing (Land Use 210) taken from the 10th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. As shown in the attached **Table 1**, the five buildings are forecast to generate about 40 to 50 trips each during both the AM and PM peak hours.

Driveway Intersection Traffic Operations

Existing operational conditions at the proposed driveways were evaluated according to the requirements set forth by the City of Alameda. Analysis of traffic operations was conducted using the 2010 *Highway Capacity Manual (HCM)* Level of Service (LOS) methodology with Synchro software.¹ A preliminary review of operations and level-of-service based on the forecast traffic volumes indicates the project is not forecast to cause any driveway intersections to exceed the City's established standards. Please note for intersections in the City of Alameda the general plan establishes a minimum standard of LOS D.

Combining Project Driveways

During review of the draft plans the potential for eliminating driveways was reviewed and it was noted that there were two proposed driveways located directly adjacent to each other in between Buildings D and E. Based on comments that were provided on the plans the applicant agreed redesign the parking lots in this area to create one shared driveway for access to both buildings.

¹ 2010 *Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2011

Design Review of Project Access Driveways

The project's preliminary plan for the internal circulation and access to North Loop Road has been reviewed with City staff and no significant issues with driveway design or location have been identified that would cause internal safety problems or any unusual traffic congestion or delay. The Caltrans Highway Design Manual specifies that for unsignalized public road intersections (on roadways with a 35 mph design speed) the recommended minimum sight distance "*shall*" be 250 feet, according to the Highway Design Manual.² As per the field measurements conducted for this study there is at least 250 feet of sight distance in each direction, meeting Caltrans' minimum sight distance. Based on our review the proposed entrances have been properly designed to meet City and Caltrans roadway design and sight distance standards and should operate safely. However, it should be noted that this assumes the landscaping adjacent to the driveways will be properly maintained to ensure maximum visibility. This normally involves trimming all groundcover adjacent to the driveways to below two feet and removing limbs from any trees that could obstruct sight distance up to at least eight feet.

Based on the existing traffic volumes on North Loop Road and the forecast peak project trip generation the proposed access driveways would not be expected to result in any traffic operational issues. With the proposed side street stop control the driveways would operate well within the established LOS standards and the intersections have been properly located so that they would meet the established sight distance standards. However, it is important to note these conclusions are preliminary and would be subject to review and approval by the City.

Please don't hesitate to contact me if you have any questions or need additional information.

Sincerely,



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² Highway Design Manual, Caltrans, Sacramento, CA, December 16, 2016.

Table 1
North Loop Center 3
TRIP GENERATION CALCULATIONS

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
General Office Building Trip Rates	710		9.74	1.00	0.16	1.16	0.18	0.97	1.15
<i>Buildings A and B Trip Generation</i>		<i>47,000 sq. ft.</i>	<i>458</i>	<i>47</i>	<i>8</i>	<i>55</i>	<i>9</i>	<i>45</i>	<i>54</i>
<i>Building C Trip Generation</i>		<i>35,300 sq. ft.</i>	<i>344</i>	<i>35</i>	<i>6</i>	<i>41</i>	<i>6</i>	<i>34</i>	<i>41</i>
<i>Building D Trip Generation</i>		<i>29,400 sq. ft.</i>	<i>286</i>	<i>29</i>	<i>5</i>	<i>34</i>	<i>5</i>	<i>28</i>	<i>34</i>
<i>Building E Trip Generation</i>		<i>37,400 sq. ft.</i>	<i>364</i>	<i>37</i>	<i>6</i>	<i>43</i>	<i>7</i>	<i>36</i>	<i>43</i>
<i>Buildings F Trip Generation</i>		<i>38,000 sq. ft.</i>	<i>370</i>	<i>38</i>	<i>6</i>	<i>44</i>	<i>7</i>	<i>37</i>	<i>44</i>
Net New Project Trip Generation		187,100 sq. ft.	1,822	186	31	217	34	180	216

Source: 1) ITE Trip Generation, 10th Edition, 2018.