Exhibit C-16: Traffic Peer Review: Review Memorandum, Prepared by: HDR (April 28, 2020)

Memo

Date:	Tuesday, April 28, 2020
Project:	Concrete Nor'West Grip Road Gravel Pit Project
To:	Michael Cerbone, Assistant Director, Skagit County Planning and Development Services
From:	Kevin Stankiewicz, PE
Subject:	Grip Road Gravel Pit Traffic Impact Analysis by Applicant
Copy to:	Joe Amaro and Hal Hart, Skagit County; Rona Spellecacy, HDR; Project file

Introduction

This memo documents a review of the Concrete Nor'West Grip Road Gravel Pit project traffic impact analysis performed by the applicant's traffic engineer (Gary Norris of DN Traffic Consultants) as documented in the three memos:

- Grip Road Gravel Pit - Preliminary Traffic Information – February 2016
- Grip Road Gravel Pit - Maximum Daily Truck Traffic – November 2016
- Grip Road Gravel Pit – June 2019

Level of Analysis Required by Skagit County

The Skagit County Road Standards (Version 5.2) states that "Developments that are small and generate less than 25 AM or PM peak hour trips may be reviewed for concurrency without an in-depth TIA by identifying influence zones for roads that are approaching or have exceeded their capacity." A Level I Traffic Impact Analysis (TIA) is not required for this project because PM peak hour trip generation is estimated to be less than the TIA threshold of 25 PM peak hour trips. The Concrete Nor'West Grip Road Gravel Pit project is estimated to typically generate eight trips per hour in the PM peak. The trip generation is well documented in the memos provided by the applicant. A maximum trip generation of 30 trips per hour was determined by the number of dump trucks available in Skagit County; not by the expected trip generation of the Grip Road Gravel Pit. According to the traffic operations analysis that was performed, none of the study area roadways are approaching or have exceeded their capacity (LOS C or better).

Based on public interest in the project, Skagit County requested some additional traffic analysis from the applicant beyond what is required by County Road Standards, although the County stopped short of requiring a Level I TIA.

Components Missing from a Level I TIA

The applicant did not provide a comprehensive Concrete Nor'West Grip Road Gravel Pit TIA document. Instead, three separate traffic analysis memos cover parts of what would be required in a TIA document. The required components of a Level I TIA that are missing from documentation provided by the applicant to date include:

- Site plan (in a separate document)

- Proposed zoning, phasing and timing of project
- Existing zoning and land uses
- Area roadway system, transit service, pedestrian and bicycle facilities, and trip distribution

One of the traffic memos (Grip Road Gravel Pit - Preliminary Traffic Information – February 2016) states the results from a traffic operations Level of Service analysis. This analysis would typically be required in a Level II TIA, but is not required because the Concrete Nor'West Grip Road Gravel Pit project generates fewer trips (8 trips) than the Level II TIA threshold of 50 trips in the PM peak Hour. Two intersections (Prairie Road / Old Highway 99 and Prairie Road / Grip Road) are evaluated with only existing volumes based on the 2013 counts.

Review of Traffic Impact Analysis

Traffic Counts

The original 2013 traffic counts (referred to in the "Preliminary Traffic Information" memo – February 2016) were requested. The applicant stated that these counts were not provided due to the original count data no longer being available. A new Old Highway 99/Prairie Road and Prairie Road/Grip Road PM peak period count, conducted in 2019, was provided. The 2019 Prairie Road/Grip Road PM peak period count is very similar to the Prairie Road/Grip Road PM peak period count conducted in 2013. There does not seem to be a clear traffic growth trend between 2013 and 2019. The 2019 Old Highway 99/Prairie Road PM peak period count had an error in the formula that calculates the peak hour volume for each turning movement. We fixed this error in our copy of the spreadsheet. After fixing the error, the 2019 Old Highway 99/Prairie Road PM peak period count is very similar to the Old Highway 99/Prairie Road PM peak period count conducted in 2013. The corrected calculation supported the finding that there does not seem to be a clear traffic growth trend between 2013 and 2019. Without a clear volume growth trend, reanalysis of the intersections with updated counts seems unwarranted.

Level of Service Calculations

The Old Highway 99/Prairie Road intersection and Prairie Road/Grip Road intersection existing level of service calculations (referred to in the "Preliminary Traffic Information" memo February 2016) were inspected. This Synchro analysis seems to be correct. The volume match the counts (2013), the lane geometry matches the field conditions and the LOS results are reported correctly in the memo.

Sight Distance

The applicant's intersection site distance analysis for the intersections of Grip Road/Prairie Road and Grip Road/Site Access was examined. The Applicant's traffic engineer should adjust the sight distance for Grip Road left turn to Prairie Road from stop (entering sight distance) to account for the combination truck (dump truck and trailer) that will serve the Grip Road Gravel Pit, per AASHTO time gaps (AASHTO A Policy on Geometric Design of Highways and Streets, 6 Edition 2011, Table 9.5 Time Gap for Case B1, Left Turn from Stop).

The traffic memos propose several mitigation measures for the insufficient stopping sight distance on southbound Prairie Road approaching Grip Road and insufficient left turn entering sight distance from Grip Road onto Prairie Road. The memos propose either flaggers or an advanced warning sign with flashing beacons for southbound Prairie Road activated by approaching Grip Road vehicles. A warning

sign with flashing beacon should also be considered for installation on Prairie Road facing Grip Road, activated by southbound traffic on Prairie Road. The applicant should demonstrate how power will be provided to the traffic activated flashing beacons attached to the advanced warning signs, and describe how maintenance of the traffic activated flashing beacons will be addressed.

The eastbound and westbound stopping sight distance and entering sight distance on Grip Road at the project access road intersection seem to be switched. The curve in Grip Road to the east of the project access road intersection is closer than the curve in Grip Road to the west of the project access road intersection. There is no proposed mitigation for the insufficient entering sight distance from project access road. The applicant's traffic engineer should propose a sight distance mitigation for this project access road intersection.

Findings and Recommendations

The trip generation calculation and the traffic operations analysis performed by the applicant is sufficient to conclude that the proposed project will not have any significant negative impacts to traffic operations at the affected intersections.

The intersection site distance analysis at the intersections of Grip Road/Prairie Road and Grip Road/Site Access shows that insufficient stopping and entering site distance currently exists at these intersections. The intersection sight distance should be reanalyzed to take into account the large combination trucks that the project will generate. The applicant proposes that vehicle actuated flashing warning signs be installed to provide warnings to intersection approaches with insufficient sight distance at the Grip Road/Prairie Road, but not the Grip Road/Site Access Road intersection. The approval of the Concrete Nor'West Grip Road Gravel Pit project should be conditioned on the design and installation of all the required vehicle actuated flashing warning signs at all locations with insufficient sight distance.