

To: Kevin Mitchell, Holcim
From: Rob Wanless
Subject: Paris Pit – Traffic Analysis Update

Date: June 19, 2012
Job No.: 1412212-002-TP1
CC: Chris Tyrrell, MMM

Holcim has retained MMM Group to review existing traffic conditions and the designated truck routes that could be used when the Paris Pit is opened for gravel operations. MMM has been asked to comment on any likely traffic concerns that could arise as a result of operations commencing at this pit.

This memo provides an update in bullet format of our work progress and includes our general observations of existing conditions and preliminary observations of traffic volumes.

Work Progress

- A site visit was conducted on Thursday, May 3, 2012, to observe existing conditions and land uses along the proposed haulage routes and observe existing traffic operational conditions. Observations included:
 - Other than Watts Pond Road, the proposed haulage routes follow currently designated truck routes;
 - Three existing gravel / sand pits are in operation along the haulage routes;
 - Many trucks, including dump trucks, presently using the haulage routes;
 - Other than Watts Pond Road, the haulage routes are adequately designed for trucks with appropriate radii, turning lanes and adequate sight distance;
 - Moderate traffic volumes with minimal congestion were evident at the intersections in the study area;
 - All intersections appeared to have adequate capacity to handle existing traffic volumes; and
 - Trucks were able to make left turns from a full stop with little delay due to oncoming traffic.
- Turning Movement Counts were completed (TMCs) during one day for two hours in the AM peak and 2 hours in the PM peak at 10 intersections from May 8 – 10, 2012. The TMCs were classified into 3 classes of vehicles (cars, trucks and buses).
- Automated Traffic Counts were completed (ATCs) at 9 locations from May 7 – 13, 2012. The ATCs were collected for 24 hours a day for the seven consecutive days. The ATCs were classified into 13 classes of vehicles. The ATC counts also were grouped based on the length of available gap between consecutive vehicles.

Preliminary Observations

- Table 1 summarizes some of the preliminary analysis of the traffic volumes.
 - The data in the table show the existing volumes during the AM and PM peak hour at five locations along the truck route (the locations are indicated on the attached map).
 - Forecast Holcim truck volumes (based on our current information – subject to further discussion) also are shown to indicate the expected increase in truck traffic on each road segment.
- In all cases, traffic volumes will remain light even with the addition of the Holcim truck traffic.
- Even along some segments where existing truck volumes are low, the addition of Holcim truck traffic represents a modest additional number of trucks, and the total traffic volumes will remain well within the capacity of the road segment.
- An expanded version of Table 1, which provides additional details on the calculations and analyses, is attached to this memo.

Table 1: AM and PM Existing and Forecast Traffic Volumes (including Holcim Truck Traffic)

| Location | A.M. Peak Hour ¹ | | P.M. Peak Hour ² | | |
|---|--------------------------------------|-------------------|-----------------------------|-------------------|------------|
| | Inbound to Pit | Outbound from Pit | Inbound to Pit | Outbound from Pit | |
| Pinehurst Road – North of Paris Plains Church Road | | | | | |
| | <i>Existing Volumes</i> | | | | |
| | Cars | 139 | 336 | 371 | 205 |
| | Buses | 4 | 4 | 1 | 4 |
| | Trucks | 11 | 4 | 4 | 14 |
| | Total | 154 | 344 | 376 | 223 |
| | <i>Holcim Truck Volumes</i> | | | | |
| | Number of Trucks | 8 | 8 | 2 | 2 |
| | <i>Volumes with Pit Trucks Added</i> | | | | |
| | Trucks | 19 | 12 | 6 | 15 |
| | Total | 162 | 352 | 378 | 225 |
| Ayr Road – North of Silver Street | | | | | |
| | <i>Existing Volumes</i> | | | | |
| | Cars | 67 | 65 | 60 | 126 |
| | Buses | 1 | 1 | 1 | 0 |
| | Trucks | 3 | 3 | 3 | 2 |
| | Total | 71 | 69 | 63 | 129 |
| | <i>Holcim Truck Volumes</i> | | | | |
| | Number of Trucks | 23 | 23 | 5 | 5 |
| | <i>Volumes with Pit Trucks Added</i> | | | | |
| | Trucks | 26 | 26 | 7 | 7 |
| | Total | 94 | 92 | 68 | 134 |
| Brant-Oxford Road – North of Governors Road | | | | | |
| | <i>Existing Volumes</i> | | | | |
| | Cars | 216 | 149 | 193 | 266 |
| | Buses | 5 | 4 | 3 | 1 |
| | Trucks | 10 | 17 | 8 | 9 |
| | Total | 230 | 170 | 204 | 276 |
| | <i>Holcim Truck Volumes</i> | | | | |
| | Number of Trucks | 23 | 23 | 5 | 5 |
| | <i>Volumes with Pit Trucks Added</i> | | | | |
| | Trucks | 33 | 40 | 13 | 14 |
| | Total | 253 | 193 | 209 | 281 |
| Highway 2 – West of Cleaver Road | | | | | |
| | <i>Existing Volumes</i> | | | | |
| | Cars | 100 | 115 | 139 | 142 |
| | Buses | 1 | 8 | 3 | 2 |
| | Trucks | 11 | 13 | 12 | 12 |
| | Total | 113 | 136 | 155 | 157 |
| | <i>Holcim Truck Volumes</i> | | | | |
| | Number of Trucks | 23 | 23 | 5 | 5 |
| | <i>Volumes with Pit Trucks Added</i> | | | | |
| | Trucks | 34 | 36 | 17 | 17 |
| | Total | 136 | 159 | 160 | 162 |

| Location | A.M. Peak Hour ¹ | | P.M. Peak Hour ² | | |
|--|-----------------------------|--------------------------|-----------------------------|--------------------------|------------|
| | <i>Inbound to Pit</i> | <i>Outbound from Pit</i> | <i>Inbound to Pit</i> | <i>Outbound from Pit</i> | |
| Rest Acres Road – North of Powerline Road | | | | | |
| <i>Existing Volumes</i> | | | | | |
| | Cars | 316 | 399 | 368 | 300 |
| | Buses | 6 | 9 | 4 | 1 |
| | Trucks | 30 | 26 | 15 | 9 |
| | Total | 352 | 434 | 387 | 311 |
| <i>Holcim Truck Volumes</i> | | | | | |
| | Number of Trucks | 23 | 23 | 5 | 5 |
| <i>Volumes with Pit Trucks Added</i> | | | | | |
| | Trucks | 53 | 49 | 20 | 14 |
| | Total | 375 | 457 | 392 | 316 |

Assumptions: (1) A.M. peak hour: 30 loaded trucks outbound (100% of maximum hourly truck volume)
 30 unloaded trucks inbound (100% of maximum hourly truck volume)
 (2) P.M. peak hour: 8 loaded trucks outbound (25% of maximum hourly truck volumes)
 20 unloaded trucks inbound (65% of maximum hourly truck volume)
 (Assumptions subject to confirmation)

Client Confirmation on Assumptions

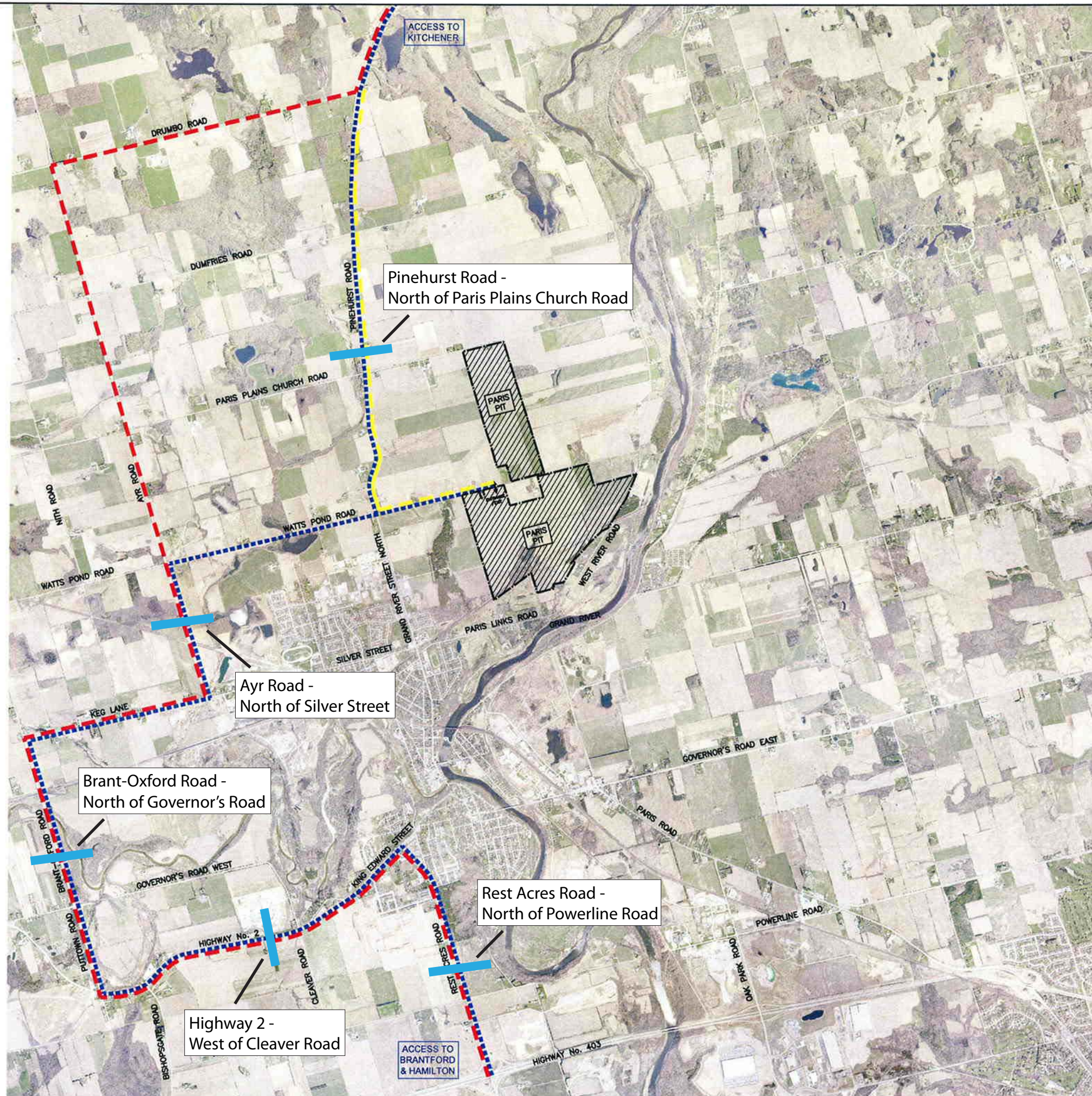
Before moving forward with the analysis, confirmation and direction on the items listed below are required:

- At peak production, the maximum hour truck volume will be 30 loaded outbound trucks (as we understand)
 - This will result in 30 trucks outbound and 30 trucks inbound during the a.m. peak hour.
 - An estimate of the inbound and outbound truck volumes at other hours of the day requires information from Holcim on the projected truck departure and return pattern during hours of pit operation (7am – 6pm?).
 - The PM volumes shown above are based on our “guestimate”: Holcim data on projected hourly volumes (or from comparable pit operations) will be used to adjust this estimate.
- The pit truck traffic is expected to be distributed 75% to/from Highway 403 and 25% to/from points north via Pinehurst Road (based on Holcim estimate).
- For the traffic analysis, in what year should it be assumed that the Paris Pit will be at full operation (30 loaded trucks outbound per hour)?
- What is the expected hourly distribution of loaded and unloaded trucks during the expected hours of pit operation? Would the number of trucks be consistent for each hour of the day? The analysis will consider a typical afternoon peak hour (between 4-6pm) and the total daily truck volumes.
- What types of truck (maximum loaded weight, weight when not loaded) are expected to be used? (Please provide photos or identify types that correspond to the attached typical truck classifications.)

Next Steps

A proposed work plan was set out in the proposal for this assignment. It may be appropriate to wait until you have met with the Town / County representatives to confirm or adjust the work plan to ensure it will address the issues of concern to the County.

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SCALE: N.T.S.

LEGEND

- TRUCK ROUTE
- - - - - PARIS TRUCK BYPASS ROUTE AS PER COUNTY OF BRANT
- TRUCK ROUTE DURING HALF LOAD PERIOD
- / / / / / PARIS PIT BOUNDARY

NOTES:

1. LOCAL DELIVERIES MAY USE OTHER ROUTES.

PARIS PIT TRUCK ROUTE

DATE: FEBRUARY 2012

Holcim Paris Pit - Truck Volume Assignment

Number of Trucks - Maximum Hour @ Peak Production

Inbound to Pit 30
Outbound from Pit 30

| Location | | A.M. Peak Hour | | Mid-day Peak Hour | | P.M. Peak Hour | | Hours of Operation (7am - 7pm) | | |
|--|--|-----------------------------|-------------------|-------------------|-------------------|----------------|-------------------|--------------------------------|-------------------|--|
| | | Inbound to Pit | Outbound from Pit | Inbound to Pit | Outbound from Pit | Inbound to Pit | Outbound from Pit | Inbound to Pit | Outbound from Pit | |
| Pinehurst Road - North of Paris Plains Church Road | Existing Volumes | | | | | | | | | |
| | | Cars | 139 | 336 | | | 371 | 205 | | |
| | Direction of Traffic | Buses | 4 | 4 | | | 1 | 4 | | |
| | Inbound: Southbound | Trucks | 11 | 4 | | | 4 | 14 | | |
| | Outbound: Northbound | Total | 154 | 344 | | | 376 | 223 | | |
| | | Truck % of Total Traffic | 7% | 1% | | | 1% | 6% | | |
| | Holcim Truck Volumes | | | | | | | | | |
| | | % of Maximum Hour | 100% | 100% | | | 20% | 20% | | |
| | | Distribution | 25% | 25% | | | 25% | 25% | | |
| | | # of Trucks | 8 | 8 | | | 2 | 2 | | |
| | | Truck Volume Increase (%) | 70% | 175% | | | 34% | 11% | | |
| | Summary Statistics | | | | | | | | | |
| | | FUTURE Truck Volume | 18 | 12 | | | 6 | 15 | | |
| | | FUTURE Total Traffic | 161 | 351 | | | 378 | 225 | | |
| | FUTURE Truck % of Total Traffic | 11% | 3% | | | 2% | 7% | | | |
| Ayr Road - North of Silver Street | Existing Volumes | | | | | | | | | |
| | | Cars | 67 | 65 | | | 60 | 126 | | |
| | Direction of Traffic | Buses | 1 | 1 | | | 1 | 0 | | |
| | Inbound: Northbound | Trucks | 3 | 3 | | | 3 | 2 | | |
| | Outbound: Southbound | Total | 71 | 69 | | | 63 | 129 | | |
| | | Truck % of Total Traffic | 4% | 5% | | | 4% | 2% | | |
| | Holcim Truck Volumes | | | | | | | | | |
| | | % of Maximum Hour | 100% | 100% | | | 20% | 20% | | |
| | | Distribution | 75% | 75% | | | 75% | 75% | | |
| | | # of Trucks | 23 | 23 | | | 5 | 5 | | |
| | | Truck Volume Increase (%) | 744% | 708% | | | 168% | 181% | | |
| | Summary Statistics | | | | | | | | | |
| | | FUTURE Truck Volume | 26 | 26 | | | 7 | 7 | | |
| | | FUTURE Total Traffic | 93 | 92 | | | 68 | 134 | | |
| | FUTURE Truck % of Total Traffic | 27% | 28% | | | 11% | 5% | | | |
| Brant-Oxford Road (Puttown Road) - North of Governor's Road | Existing Volumes | | | | | | | | | |
| | | Cars | 216 | 149 | | | 193 | 266 | | |
| | Direction of Traffic | Buses | 5 | 4 | | | 3 | 1 | | |
| | Inbound: Northbound | Trucks | 10 | 17 | | | 8 | 9 | | |
| | Outbound: Southbound | Total | 230 | 170 | | | 204 | 276 | | |
| | | Truck % of Total Traffic | 4% | 10% | | | 4% | 3% | | |
| | Holcim Truck Volumes | | | | | | | | | |
| | | % of Maximum Hour | 100% | 100% | | | 20% | 20% | | |
| | | Distribution | 75% | 75% | | | 75% | 75% | | |
| | | # of Trucks | 23 | 23 | | | 5 | 5 | | |
| | | Truck Volume Increase (%) | 230% | 136% | | | 59% | 50% | | |
| | Summary Statistics | | | | | | | | | |
| | | FUTURE Truck Volume | 32 | 39 | | | 12 | 14 | | |
| | | FUTURE Total Traffic | 253 | 192 | | | 209 | 280 | | |
| | FUTURE Truck % of Total Traffic | 13% | 20% | | | 6% | 5% | | | |
| Highway 2 (King Edward Street) - West of Cleaver Road | Existing Volumes | | | | | | | | | |
| | | Cars | 100 | 115 | | | 139 | 142 | | |
| | Direction of Traffic | Buses | 1 | 8 | | | 3 | 2 | | |
| | Inbound: Westbound | Trucks | 11 | 13 | | | 12 | 12 | | |
| | Outbound: Eastbound | Total | 113 | 136 | | | 155 | 157 | | |
| | | Truck % of Total Traffic | 10% | 10% | | | 8% | 8% | | |
| | Holcim Truck Volumes | | | | | | | | | |
| | | % of Maximum Hour | 100% | 100% | | | 20% | 20% | | |
| | | Distribution | 75% | 75% | | | 75% | 75% | | |
| | | # of Trucks | 23 | 23 | | | 5 | 5 | | |
| | | Truck Volume Increase (%) | 202% | 172% | | | 36% | 36% | | |
| | Summary Statistics | | | | | | | | | |
| | | FUTURE Truck Volume | 34 | 36 | | | 17 | 17 | | |
| | | FUTURE Total Traffic | 135 | 159 | | | 159 | 161 | | |
| | FUTURE Truck % of Total Traffic | 25% | 22% | | | 11% | 11% | | | |
| Rest Acres Road - North of Powerline Road | Existing Volumes | | | | | | | | | |
| | | Cars | 316 | 399 | | | 368 | 300 | | |
| | Direction of Traffic | Buses | 6 | 9 | | | 4 | 1 | | |
| | Inbound: Northbound | Trucks | 30 | 26 | | | 15 | 9 | | |
| | Outbound: Southbound | Total | 352 | 434 | | | 387 | 311 | | |
| | | Truck % of Total Traffic | 8% | 6% | | | 4% | 3% | | |
| | Holcim Truck Volumes | | | | | | | | | |
| | | % of Maximum Hour | 100% | 100% | | | 20% | 20% | | |
| | | Distribution | 75% | 75% | | | 75% | 75% | | |
| | | # of Trucks | 23 | 23 | | | 5 | 5 | | |
| | | Truck Volume Increase (%) | 76% | 87% | | | 30% | 48% | | |
| | Summary Statistics | | | | | | | | | |
| | | FUTURE Truck Volume | 52 | 48 | | | 19 | 14 | | |
| | | FUTURE Total Traffic | 374 | 456 | | | 392 | 316 | | |
| | FUTURE Truck % of Total Traffic | 14% | 11% | | | 5% | 4% | | | |

FHWA – Scheme F Classification (13 Classes)

Class 1 -

Motorcycles: All two- or three-wheeled motorized vehicles. Typical vehicles in this category have saddle type seats and are steered by handle bars rather than wheels. This category includes motorcycles, motor scooters, mopeds, motor-powered bicycles, and three-wheeled motorcycles.

Class 2 -

Passenger Cars: All sedans, coupes, and station wagons manufactured primarily for the purpose of carrying passengers and including those passenger cars pulling recreational or other light trailers.

Class 3 -

Other Two-Axle, Four-Tire, Single Unit Vehicles: All two-axle, four-tire, vehicles other than passenger cars. Included in this classification are pickups, panels, vans, and other vehicles such as campers, motor homes, ambulances, hearses, carryalls, and minibuses. Other two-axle, four-tire single unit vehicles pulling recreational or other light trailers are included in this classification.

Class 4 -

Buses: All vehicles manufactured as traditional passenger-carrying buses with two axles and six tires or three or more axles. This category includes only traditional buses (including school buses) functioning as passenger-carrying vehicles. Modified buses should be considered to be trucks and be appropriately classified.

Note: In reporting information on trucks the following criteria should be used:

- a. Truck tractor units traveling without a trailer will be considered single unit trucks.
- b. A truck tractor unit pulling other such units in a "saddle mount" configuration will be considered as one single unit truck and will be defined only by axles on the pulling unit.
- c. Vehicles shall be defined by the number of axles in contact with the roadway. Therefore, "floating" axles are counted only when in the down position.
- d. The term "trailer" includes both semi- and full trailers.

Class 5 -

Two-Axle, Six-Tire, Single Unit Trucks: All vehicles on a single frame including trucks, camping and recreational vehicles, motor homes, etc., having two axles and dual rear wheels.

Class 6 -

Three-axle Single unit Trucks: All vehicles on a single frame including trucks, camping and recreational vehicles, motor homes, etc., having three axles.

Class 7 -

Four or More Axle Single Unit Trucks: All trucks on a single frame with four or more axles.

Class 8 -

Four or Less Axle Single Trailer Trucks: All vehicles with four or less axles consisting of two units, one of which is a tractor or straight truck power unit.

Class 9 -

Five-Axle Single Trailer Trucks: All five-axle vehicles consisting of two units, one of which is a tractor or straight truck power unit.

Class 10 -

Six or More Axle Single Trailer Trucks: All vehicles with six or more axles consisting of two units, one of which is a tractor or straight truck power unit. .

Class 11 -










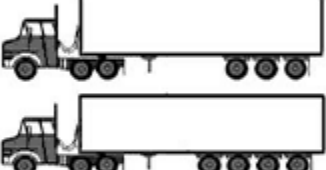






Five or Less Axle Multi-Trailer Trucks: All vehicles with five or less axles consisting of three or more units, one of which is a tractor or straight truck power unit .

Class 12 -

Six-Axle Multi-Trailer Trucks: All six-axle vehicles consisting of three or more units, one of which is a tractor or straight truck power unit.

Class 13 -

Seven or More Axle Multi-Trailer Trucks: All vehicles with seven or more axles consisting of three or more units, one of which is a tractor or straight truck power unit.

| | | | | |
|--|---|---|--|---|
| (1) Motorcycle  | (2) Passenger Car  | (3) Two Axle, 4-Tire Unit  | (4) Buses  | |
| (5) Two Axle, 6-Tire Unit  | (6) Three Axle Single Unit  | (7) Four or More Axles Unit  | (8) Three or four Axles Trailer  | |
| (9) Five Axle Single Trailer  | | (10) Six or More Axles, Single Trailer  | |  |
| | | | |  |
| (11) Five or Less Axles, Multi-Trailer  | | | (12) Six Axles, Multi-Trailer  | |
| (13) Seven or More Axles, Multi-Trailer  | | |  | |