

Duntroon Quarry Operations Fact Sheet: Traffic Study

July 2008

According to the Ontario Trucking Association, “Trucks dominate in the short-haul, small shipment of time-sensitive freight.” The impact of trucks on local traffic movement and the safety of our neighbourhoods is a concern across the Province. When any industry expands production, there is a potential to increase the traffic to and from the site. As an aggregate operator, assessing the potential impacts on traffic is an important aspect in our ability to expand. Our traffic consultant, iTRANS, has prepared a traffic study, the results of which are summarized in this fact sheet. The traffic impact study considered a study area bounded by 30/31 Side Road to the north, Simcoe Road 124 to the south and east and Grey Road 31 to the west. We are constantly seeking new and innovative ways to improve our operations in ways that benefit the environment, our neighbours, and our business. Please continue to ask questions, raise concerns and share ideas.

Arterial Roads

The County of Simcoe Official Plan (4.8.2.1) states that all County Roads are considered arterial roads. Arterial roads are primary transportation corridors designed for the movement of goods. They generally link Local Municipalities, Provincial Highways and County Roads, Settlement Designations, and Transportation Corridors outside the County, as well as providing service to commercial, industrial and major recreational areas.

County Roads 91, 124 and 95/31 are Arterial Roads.

Any County of Simcoe Road that does not have posted truck restrictions can be used as a truck route. Haul routes for the existing quarry and quarry expansion are Simcoe Road 91, Simcoe Road 124 and Grey Road 31.

Level of Service (Intersections)

There are two separate measurements of performance for intersections. One is the level of service and the other is the capacity of the intersection. The level of service is based on the average delay per vehicle for movements through the intersections. The levels of service are given grades of A to F. For a signalized intersection, a level of service of F is > 80 seconds and for an unsignalized intersection is > 50 seconds.

All intersections in the study area currently operate with a level of service of B or better (10-20 second delay at signalized intersection and 10-15 second delay at unsignalized intersection), and will continue to do so with the proposed expansion. This is considered a “good” level of service.

	Simcoe Rd 91	Simcoe Rd 124	Simcoe Rd 95 / Grey Rd 31	Concession 10 not a haul route
Jurisdiction	Simcoe County	Simcoe County	Simcoe and Grey Counties	Township of Clearview
Road Classification	Primary Arterial from Highway 26 to Simcoe Road 124 Secondary Arterial from Simcoe Road 124 to Grey County	Primary Arterial	Secondary Arterial	Municipal or Town Road
Posted Speed Limit	80 km/h (with exceptions in Duntroon and Stayner)	80 km/h (with exceptions in Duntroon and Stayner)	70 km/h (with exception in Singhampton)	80 km/h

Ongoing Maintenance and Mitigation

Walker has hired a retired police officer who monitors and enforces haul routes, speeds, and the use of engine (Jake) brakes in the vicinity of the quarry. Walker also pays the OPP for focused enforcement of the Highway Traffic Act in the area. Truck drivers are reminded through signage at the quarry, letters and drivers’ meetings of the importance of driving safely and avoiding the use engine brakes.

Volume to Capacity (Intersections)

The volume to capacity ratio is an indication of how close the intersection is operating relative to its capacity. This measure is sometimes used to determine if improvements to the road or intersections are needed to service current or future traffic. For new or expanded developments, the municipality may establish a threshold volume to capacity ratio (0.85 to 0.9 for example) that will require consideration of road-related improvements and upgrades.

The signalized intersection of Simcoe Road 124/Simcoe Road 91 is currently operating with an overall intersection volume to capacity ratio of 0.42 or better during weekday peak hours. This volume to capacity ratio indicates that the intersection is operating at less than half of its capacity and therefore without congestion.

All unsignalized intersections within the study area are operating with a volume capacity ratio of 0.28 or better.

The traffic impact report assesses future traffic flows with the proposed traffic volume from the quarry expansion. The volume to capacity ratio indicates that the Simcoe Road 124/91 intersection will continue to operate with an overall volume to capacity ratio of 0.67 or better.

The unsignalized intersection will also continue to operate without congestion with volume to capacity ratio of 0.46 or better.

An assessment was also done of the cumulative impacts of the Duntroon expansion and the proposed MAQ Highland Quarry and concludes that the road network is able to accommodate both quarry operations and will provide adequate road capacity.



walker
industries

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Walker Quarry Traffic Characteristics and Truck Volumes

- Destinations: 85% east on Simcoe Road 91, 15% west on Simcoe Road 91 (established from truck ticket and job description information)
- Average weight of truck load: 30.5 tonnes (based on 2006 data for all truck types)
- Peak hour percentage of Walker trucks (10% AM and 4.4% PM average of the total 24 hour truck volume) established from automated traffic recorder counts
- To calculate future truck volumes, peak month of extraction was used (15.8% of annual extraction amount), based on historical extraction data; assumed 20 shipping days per month
- The 2006 annual extraction was 1.3M tonnes. The proposed expansion extraction is to a maximum of 3.0M tonnes. The traffic assessment report is based on this worst case scenario. Actual volumes extracted depend on the markets; demand is unlikely to jump immediately to 3.0M tonnes upon quarry expansion.

Peak MAQ Truck Volumes

(1.0 Million Tonnes):

- Peak season of operation, 145 trucks per day (each direction)
- 18 trucks per hour (each direction)
Based on anticipated markets, MAQ predicts its traffic will be directed south on 31 rather than east on 91.

Collision Analysis

A typical time frame for a collision history analysis is either 3 or 5 years. For anything earlier than 5 years, it is difficult to establish a representative pattern because road conditions may have changed. Simcoe County only maintains a 5-6 year history of records.

2000 – 2002 (and part of 2003):

- 113 total collisions
- 4 collisions involving trucks
- No collisions involving Walker aggregate trucks

2005 – 2006:

- 61 total collisions
- 7 collisions involving trucks
- No collisions involving Walker aggregate trucks

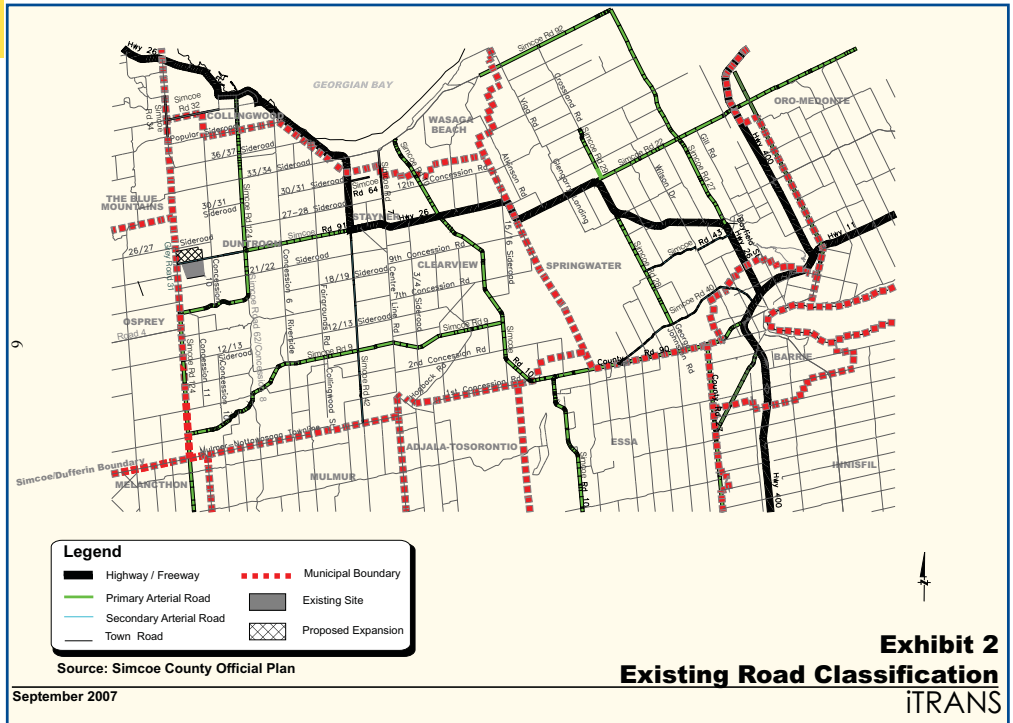


Exhibit 2
Existing Road Classification
ITRANS

Peak Walker Truck Volumes		AM peak hour	PM peak hour
Extraction Rate (annual)	# of Trucks (per day) each direction	# of Trucks (per hour)	# of Trucks (per hour)
1.3 Million Tonnes	345	34	15
1.8 Million Tonnes	466	47	21
3.0* Million Tonnes	777	78	34

*worst-case scenario on which traffic assessment is based

Conclusions of Traffic Impact Assessment

- ✓ Relocate the site entrance to ensure sufficient sight turning distance is provided
- ✓ Truck climbing lane is not warranted on Simcoe Road 91
- ✓ Limit truck use of Concession 10, recommend that the Township place truck restriction signs on C10
- ✓ Place directional signage to clarify turning movements at the site access
- ✓ Place truck entrance signs on Simcoe Road 91
- ✓ Install a stop sign at the existing south site access and the new north site access
- ✓ There are adequate turning radii at all intersections along haul routes
- ✓ When warranted construct a westbound turnlane into the existing south entrance
- ✓ Once north entrance is constructed, install a westbound right turn lane
- ✓ New north entrance should be designed with a two-lane cross-section, one lane inbound and one shared right/through/ left lane outbound

Please refer to Duntroon Quarry Expansion Traffic Impact Study, September 2007 for more details.



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