Ref. No. 171-06694

July 31, 2017

Mr. David Quilichini, Vice President
Fares & Co. Developments Inc.
31 Kings Wharf Place
Keelson Sales Centre
DARTMOUTH NS B2Y 0C1

Sent Via Email to David@faresinc.com

RE: Trip Generation Estimate, Kings Wharf Development Plans - 2017

Dear Mr. Quilichini:

Further to our recent Email and telephone contacts, this is the trip generation estimate for the proposed 2017 development plan for build-out of Kings Wharf.

Background - Planning for the Kings Wharf development has been on-going for more than 10 years with proposed land uses being revised from time to time as the development evolves based on market trends. *Traffic Impact Study - King's Wharf Development Dartmouth Marine Slips*, (WSP Canada Inc., June 2007) and *Addendum to Traffic Impact Study - King's Wharf Development Dartmouth Marine Slips* (WSP Canada Inc., April 2008) were completed to consider impacts of developing with a higher concentration of office space and less intensive retail space as illustrated in Table 1. *Fares & Co. Development Inc.* is now planning to redesign the development with an increase in the number of residential units, reduced office space, and significant increase in retail space, as illustrated for Current Proposal May 2017 in Table 1.

Table 1 - Land Use Comparisons - Proposed King's Wharf Development

Study	Land Use				
	Residential (Units)	Office (Square Feet)	Retail (Square Feet)	Hotel (Rooms)	Marina (Slips)
Traffic Impact Study June 2007 [1]	1,200	100,000	40,000	200	-
Addendum April 2008 [2]	1,292	159,660	70,488	200	-
Current Proposal May 2017	1,500	50,148	180,000	200	100

NOTE:
1. *Traffic Impact Study - King's Wharf Development Dartmouth Marine Slips, Halifax Regional Municipality* (WSP Canada Inc., June 2007)
2. *Addendum to Traffic Impact Study - King's Wharf Development Dartmouth Marine Slips, Halifax Regional Municipality* (WSP Canada Inc., April 2008)

Trip Generation - AM and PM peak hour trip generation estimates for the proposed redesigned land uses, prepared using published data from *Trip Generation, 9th Edition,* are included in Table 2. Trip generation equations are considered to be appropriate for residential and commercial land uses, while average trip generation rates have been used for hotel, office and marina land uses, as described in the notes in Table 2.

Since the large mixed use Kings Wharf development will have significant on-site synergies, and synergistic relations with other existing and planned developments near the site, as well as excellent accessibility to transit and the Halifax Harbour Ferry, a large percentage of site trips can be expected to be made by transit, bicycle or walking, and other non-vehicle modes. Discussions with Paul Burgess, M.Eng, P. Eng., during 2016 concerning the appropriate percentage of non-vehicle trips for the Dartmouth Cove area, concluded that 50% of the site generated trips estimated using ITE published trip generation rates for this area would be considered non-vehicle trips.

It is estimated that the development will generate 447 two-way vehicle trips (200 entering and 247 exiting) during the AM peak hour and 823 two-way vehicle trips (419 entering and 404 exiting) during the PM peak hour.

Table 2 - Trip Generation Estimates for King's Wharf - Proposed 2017 Land Use

Land Use [1]	Number Units [3]	Trip Generation Rates [1]				Estimate of Trips Generated [2]			
		AM Peak		PM Peak		AM Peak		PM Peak	
		In	Out	In	Out	In	Out	In	Out
High Rise Apt (Land Use 222)	1100 Units	Equations from Pages 376 and 377				82	246	222	142
Mid-Rise Apt (Land Use 223)	400 Units	Equations from Pages 387 and 388				47	104	105	76
Hotel (Land Use 310)	200 Rooms	0.31	0.22	0.31	0.29	62	44	62	58
Marina (Land Use 420)	100 Slips	0.03	0.05	0.11	0.08	3	5	11	8
Office [4] (Land Use 710)	50.148 KGFA	1.37	0.19	0.25	1.24	69	10	13	62
Commercial [5] (Land Use 820)	180.0 KGLA	Equations from Pages 1562 and 1563				138	85	426	462
Total Estimated Trips for Full Site Development (Revised Residential)						401	494	839	808
50% Trip Reduction for Non-Vehicle Trips [6]						201	247	420	404
Adjusted Trip Generation Estimates for 2017 Land Uses						200	247	419	404

NOTES:
1. Trip generation rates are 'vehicles per hour per unit' for AM and PM peak hours per unit. Rates and equations are for indicated Land Use Codes, *Trip Generation*, *9th Edition*, Institute of Transportation Engineers, 2012.
2. Vehicles per hour for peak hours.
3. Units are as indicated; KGFA is '1000 square feet gross floor area'; KGLA is '1000 square feet gross leasable area'.
4. Since the proposed office space is significantly less than the average sized facility published in *Trip Generation, 9th Edition* (215,000 SF and 222,000 SF) and the regression curves would produce illogical trip-end estimates, average published AM and PM peak hour rates have been used.
5. Shopping centre trip generation equations have been used for commercial (retail, restaurants, etc.) land use. Since a large percentage of trips to / from a shopping center are usually made by vehicle, the equations would probable over estimate trips to the Kings Wharf location during the peak hours, however, the reduction for non-vehicle trips (Note 6) should result in reasonable trip estimates for this land use.
6. Since the trip generation estimates for the 2007 and 2008 land uses were calculated, it has been recognized that additional synergies between King Wharf and other Downtown Dartmouth developments, as well as increased walking, transit and ferry trips by residents of Kings Wharf over the project build-out during the next 10 to 15 years, justify a 50% reduction from trip generation estimates prepared using published rates

Trip Generation Comparisons - Trip generation estimates included in the 2007 Traffic Study, the 2008 Addendum, and those for the current 2017 proposed land use are compared in Table 3. It is noted that the significant reduction in office space with the accompanying increase in retail space in the current 2017 land use proposal, has resulted in a large reduction in AM peak hour trips and a small increase in the number of PM peak hour trips.

Table 3 - Comparison of Trip Generation Estimates

Land Use	Trip Generation Estimates (veh. / hr.)					
	AM Peak			PM Peak		
	In	Out	Two-Way	In	Out	Two-Way
Traffic Study (2007)	230	294	524	299	302	601
Addendum (2008)	313	333	646	352	401	753
Current Proposal (2017)	200	247	447	419	404	823
Difference Addendum to Current	(113)	(86)	(199)	67	3	70

Conclusions -

1. It is estimated that the land uses proposed in the current 2017 development plan will generate 447 two-way vehicle trips (200 entering and 247 exiting) during the AM peak hour and 823 two-way vehicle trips (419 entering and 404 exiting) during the PM peak hour.

2. The significant reduction in office space with the accompanying increase in retail space in the current 2017 land use proposal, has resulted in a large reduction in AM peak hour trips and a small increase in the number of PM peak hour trips, compared to those evaluated during both the 2007 and 2008 studies.

3. It can be considered that the conclusions reached in the 2007 and 2008 Studies are still applicable to the current 2017 proposed land use.

If you have any questions, please contact me by Email to ken.obrien@wsp.com or telephone 902-452-7747.

S[redacted]

K n, P. Eng.
Senior Traffic Engineer
WSP Canada Inc.