

Appendix C15

Traffic Impact Assessments

Ferry Traffic Impact Assessment



Stantec

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September 19, 2007
File: 160960180

Canadian Hydro Developers, Inc.
c/o 190 Collingwood Street
Kingston, ON K7L 3X8

Attention: Mr. Rob Miller, P.Eng., Project Engineer

Dear Mr. Miller:

Reference: Wolfe Island Wind Project—Wolfe Island Ferry Traffic Study (Revised)

Canadian Renewable Energy Corporation's (CREC's) proposed Wolfe Island Wind Project on Wolfe Island, ON will result in construction traffic using the Ontario Ministry of Transportation (MTO) Wolfe Island Ferry to construct the wind generators and the island-side transmission lines for at least a portion of the construction phase. Construction is scheduled to commence in the spring/summer of 2008, after obtaining regulatory approvals.

CREC has committed to using alternative transportation methods for workers, materials, and supplies, and to use the Wolfe Island Ferry during off-peak demand periods. A detailed Transportation and Logistics Management Plan is provided as Technical Appendix I of the final Environmental Review Report.

Stantec has completed this traffic analysis to determine the spare capacity on the ferry to accommodate the construction labour-force traffic.

Mr. Stuart Jones, Manager, Operational Services, Ministry of Transportation in a letter dated June 20, 2007, requested that the following issues be addressed:

- Define the method to control the number of vehicles that will be used to transport the labour force and will use the ferry.
- Clarify the results of the ferry capacity analysis.
- Address more specifically how the labour force traffic would be accommodated on Tuesday and Fridays during the AM peak hour when the 6:15 AM sailings are not available, and during the PM peak hour in the summer when there is no spare capacity.
- Consider the maximum peak demand in the analysis.

This traffic study has been revised to address these issues.

WIND PLANT CONSTRUCTION TRAFFIC DEMAND

The construction of the Project will require approximately 3,090 person-months of labour, including a peak labour force of about 225 people, and an average labour force of roughly 175 people over a twelve to fourteen-month period. The flow of construction labour passenger car traffic would be from Kingston to Wolfe Island in the morning, returning in the late afternoon. Labourers would be contractually required to van-pool.

In addition, there would be the transportation of construction equipment and materials by truck expected to be delivered predominantly within the first three months of construction, with equipment returning to Kingston at

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Reference: Wolfe Island Wind Project—Wolfe Island Ferry Traffic Study (Revised)

the completion of the project. CREC has examined the possibility to source alternate private transportation to the Island for materials, equipment, supplies, as well as labourers. It is estimated that 460 tractor-trailer loads will need to be moved, comprised of, for example, re-bar, electrical cable, transformers, etc. The large turbine components like blades, nacelles, and towers will also be moved under private contract by ship or barge.

CONSTRUCTION CONTRACT COMMITMENTS

We understand that the use of van-pools or potentially buses to transport the labour force to/from the Wolfe Island Ferry terminal can be controlled through special provisions in the construction contract. This would include requiring the contractor to locate a van-pool parking area where the labour force would be marshaled to the vans outside the downtown Kingston area. Thus the volume of traffic entering the downtown and using the ferry can be controlled specifically through the contract with appropriate penalties, if required.

A traffic management plan would be part of the contract outlining any time of day, day of week, or monthly restrictions to the use of the ferry, and strategies or alternatives for those situations. This plan could limit the number of van-pool vehicles permitted to transport the labour force using the ferry and the sailings that they would be permitted to use. Further discussion of the alternatives that could be used when the ferry is at capacity is provided following the ferry capacity analysis.

WOLFE ISLAND FERRY SERVICE

The Wolfe Island Ferry runs from the Kingston Terminal located at the intersection of Ontario Street and Barrack Street in downtown Kingston to Marysville (Wolfe Island Village) dock in the summer and Dawson's Point dock in winter on an approximately hourly schedule from 6:15 AM (to Wolfe Island) to 1:20 PM (from Wolfe Island). The ferry operates on a 'first come, first serve' basis, and as noted by MTO, no special arrangements would be made to ensure access to labourers during normal sailings.

The Wolfe Islander III Ferry capacity is as follows:

- 55 cars, end-loading
- Length of car deck—61 metres
- Vehicle height restriction—4.4 metres
- Maximum gross load—as per Highway Traffic Act



IBI Group completed the *Wolfe Island Ferry Service Study* (November 27, 2003) for the MTO examining current ferry usage patterns and establishing future demands for service. The report concluded:

- The total number of vehicles carried per year has been relatively stable from 1980 to 2002—approximately 380,000 to 400,000 vehicles per year
- The existing monthly traffic pattern shows a defined peak in July and August and defined shoulders in May and October
- The ferry service peak periods generally occur weekday mornings to the mainland, weekday afternoons to the island, Saturday morning to the island and Sunday evening to the mainland

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Reference: Wolfe Island Wind Project—Wolfe Island Ferry Traffic Study (Revised)

- Minor changes could be made to improve access intersections at Kingston and Marysville, but the improvements would not be of sufficient magnitude to significantly impact ferry operations
- During the summer and shoulder months, vehicle volumes are slightly decreasing but passenger volumes are increasing; moderate increases in off-peak demands; and peak spreading during the peak periods and seasons
- Growth in demand was established to range from a low of 0.5% per annum to a high of 1.0% per annum, based on population growth rates for Wolfe Island and the City of Kingston

The MTO provided electronic daily and monthly summaries of trips to and from Wolfe Island by vehicle type for the years 2004, 2005 and 2006, and hardcopy daily traffic logs by vehicle type and trip for the year 2006.

MTO confirmed the following information at a meeting held on March 20, 2007:

- There are vehicle and passenger maximum limits as follows: vehicle capacity of 55 and passenger capacity of 339 under their Transport Canada license. The 339 passenger limit includes drivers, passengers, and pedestrians but excludes crew
- Truck traffic, outside the Tuesday and Friday 6:15 AM Dangerous Goods sailings, are typically straight trucks, not tractor trailers
- MTO staff the ferry 24 hours a day, seven days a week for maintenance and in case of emergencies. Additional sailings outside of the regular schedule have been added previously. There could then be potential issues with noise early in the morning or later at night
- Management of the construction labour force transportation that would increase parking demand at the Kingston or Wolfe Island docks are not reasonable given the high demand that already exists at these facilities. On Wolfe Island, parking demand in Marysville spills over to the adjacent streets and to parking lots within the village such as at the Catholic Church. Parking at the Kingston terminal and Dawson's Point are limited to the dock. At Dawson's Point parking spills onto the shoulders of the adjacent roadway

FERRY CAPACITY FOR LABOURER TRIPS

The 2004, 2005 and 2006 monthly summaries on ferry traffic were reviewed to determine the peak month of travel on the ferry. The truck traffic volumes were converted to passenger car units (pcu's) using a factor of 2.5, i.e. the length of the trucks using the ferry are equivalent to 2.5 passenger cars lengths. The monthly variation in ferry traffic for the years 2004, 2005 and 2006 are illustrated on the attached graphs. As indicated by the IBI report, the peak months are July and August, the shoulder months May and September and the winter months January and February. We selected August 2006, May 2006 and January 2006 to analyze on a trip basis.

The traffic and passenger volumes on the ferry for the trips from Kingston to Wolfe Island for the 6:15 AM, 7:15 AM and 8:30 AM sailings, and for the trips from Wolfe Island to Kingston for the 5:30 PM, 6:30 PM and 7:30 PM sailings were analyzed. MTO confirmed that the Tuesday and Friday 6:15 AM trip to Wolfe Island is for dangerous goods only; no other vehicles are taken on this sailing so these trips were excluded from the analysis (eight trips out of a total of twenty-two weekday trips in August 2006).

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Reference: Wolfe Island Wind Project—Wolfe Island Ferry Traffic Study (Revised)

The 50th, 85th, and 100th (capacity) percentile passenger car units and passengers using the ferry for each sailing during the weekdays and weekends were calculated. In comparing construction traffic to passenger vehicle capacity, it is assumed that the construction labour force would van-pool with a minimum vehicle occupancy of 7 persons (including the driver). The average labour force of 175 people would require 25 vans to transport them to/from Wolfe Island and the peak labour force of 225 people would require 32 vans. Graphs attached to this letter illustrate the passenger car demand, and passenger demand during weekdays and weekends compared to the capacity of the ferry and with the addition of the average and peak labour force traffic.

In August, May and January, the passenger vehicle capacity is more critical than the passenger capacity of the ferry and is reviewed below.

AUGUST 2006—PEAK FERRY DEMAND

Weekdays

During the weekday summer period, the Wolfe Island Wind Farm Project peak labour force could be transported from Kingston to Wolfe Island on the Wolfe Island ferry during the 6:15 AM sailing. On Tuesdays and Fridays, when the 6:15 AM sailing is only available for Dangerous Goods, the labour force could be accommodated by the combination of the 7:15 and 8:30 AM sailings on average demand days. During peak demand days, even these two sailings provide insufficient capacity to accommodate the peak labour force.

From Wolfe Island to Kingston, the labour force would have to be accommodated by the combination of the 6:30 and 7:30 PM sailings half of the time. During some peak weekdays, it would be difficult to accommodate any of the labour force trips given that the existing 85th percentile weekday demand meets the capacity of the ferry during August.

Weekends

During the weekend summer period, the Wolfe Island Wind Farm Project peak labour force could be transported from Kingston to Wolfe Island on the Wolfe Island ferry during the 6:15 AM sailing during average demand. During peak demand, the 6:15 AM and 7:15 AM sailings could accommodate the average and peak labour force.

From Wolfe Island to Kingston, the labour force would have to be accommodated by the combination of the 6:30 and 7:30 PM sailings half of the time. During some peak weekends, it would be difficult to accommodate any of the labour force trips given that the existing 85th percentile weekend demand meets the capacity of the ferry during August.

MAY 2006—SHOULDER FERRY DEMAND

Weekdays

During the weekday shoulder period, the Wolfe Island Wind Farm Project peak labour force could be transported from Kingston to Wolfe Island on the Wolfe Island ferry during the 6:15 AM sailing. On Tuesdays and Fridays, when the 6:15 AM sailing is only available for Dangerous Goods, the labour force could be accommodated by the combination of the 7:15 and 8:30 AM sailings on average demand days. During peak demand days, even these two sailings provide insufficient capacity to accommodate the peak labour force.

Reference: Wolfe Island Wind Project—Wolfe Island Ferry Traffic Study (Revised)

From Wolfe Island to Kingston, the labour force would have to be accommodated by the combination of the 6:30 and 7:30 PM sailings most of the time. During the peak weekdays of the shoulder months, a third sailing (8:30 PM) would have to be used to accommodate the labour force.

Weekends

During the weekend shoulder period, the Wolfe Island Wind Farm Project peak labour force could be transported from Kingston to Wolfe Island on the Wolfe Island ferry during the 6:15 AM sailing during average and peak demand.

From Wolfe Island to Kingston, the labour force would have to be accommodated by the combination of the 6:30 and 7:30 PM sailings during average and peak demand.

JANUARY 2006—WINTER FERRY DEMAND

Weekdays

During the weekday winter period, the Wolfe Island Wind Farm Project peak labour force could be transported from Kingston to Wolfe Island on the Wolfe Island ferry during the 6:15 AM sailing. On Tuesdays and Fridays, when the 6:15 AM sailing is only available for Dangerous Goods, the labour force could be accommodated by the combination of the 7:15 and 8:30 AM sailings on average and peak demand days.

From Wolfe Island to Kingston, the labour force can be accommodated by the 6:30 PM sailings most of the time. During the peak weekdays of the winter months, a second sailing (7:30 PM) would have to be used to accommodate the peak labour force.

Weekends

During the weekend winter period, the Wolfe Island Wind Farm Project peak labour force could be transported from Kingston to Wolfe Island on the Wolfe Island ferry during the 6:15 AM sailing during average and peak demand.

From Wolfe Island to Kingston, the average labour force could be transported during the 6:15 AM sailing during average and peak demand. During the peak weekends of the winter months, a second sailing (7:30 PM) would have to be used to accommodate the peak labour force.

SUMMARY

The matrix below summarizes when the average and peak labour force can be accommodated on the ferry, and the number of sailings required during weekdays and weekends of the winter, shoulder and summer months.

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Reference: Wolfe Island Wind Project—Wolfe Island Ferry Traffic Study (Revised)

Season	Time Period	Existing Passenger Car Demand on the Ferry	Wolfe Island Wind Farm Project			
			Average Labour Force		Peak Labour Force	
			AM	PM	AM	PM
Winter Months	Mon, Wed., Thurs.	Average (50 th %ile)	✓6:15	✓6:30	✓6:15	✓6:30
		Higher than Average (85 th %ile)	✓6:15	✓6:30	✓6:15	✓6:30
		Peak (100 th %ile)	✓6:15	✓6:30	✓6:15	✓6:30, 7:30
	Tues., Fri.	Average (50 th %ile)	✓7:15	✓6:30	✓7:15	✓6:30
		Higher than Average (85 th %ile)	✓7:15	✓6:30	✓7:15, 8:30	✓6:30
		Peak (100 th %ile)	✓7:15	✓6:30	✓7:15, 8:30	✓6:30, 7:30
	Weekends	Average (50 th %ile)	✓6:15	✓6:30	✓6:15	✓6:30
		Higher than Average (85 th %ile)	✓6:15	✓6:30	✓6:15	✓6:30, 7:30
		Peak (100 th %ile)	✓6:15	✓6:30, 7:30	✓6:15	✓6:30, 7:30
Shoulder Months	Mon, Wed., Thurs.	Average (50 th %ile)	✓6:15	✓6:30	✓6:15	✓6:30, 7:30
		Higher than Average (85 th %ile)	✓6:15	✓6:30, 7:30	✓6:15	✓6:30, 7:30
		Peak (100 th %ile)	✓6:15	x	✓6:15	x
	Tues., Fri.	Average (50 th %ile)	✓7:15, 8:30	✓6:30	✓7:15, 8:30	✓6:30, 7:30
		Higher than Average (85 th %ile)	x	✓6:30, 7:30	x	✓6:30, 7:30
		Peak (100 th %ile)	x	x	x	x
	Weekends	Average (50 th %ile)	✓6:15	✓6:30, 7:30	✓6:15	✓6:30, 7:30
		Higher than Average (85 th %ile)	✓6:15	✓6:30, 7:30	✓6:15	✓6:30, 7:30
		Peak (100 th %ile)	✓6:15	✓6:30, 7:30	✓6:15	✓6:30, 7:30
Summer Months	Mon, Wed., Thurs.	Average (50 th %ile)	✓6:15	✓6:30, 7:30	✓6:15	✓6:30, 7:30
		Higher than Average (85 th %ile)	✓6:15	✓6:30, 7:30	✓6:15	x
		Peak (100 th %ile)	✓6:15	x	✓6:15, 7:15	x
	Tues., Fri.	Average (50 th %ile)	✓7:15	✓6:30, 7:30	✓7:15, 8:30	✓6:30, 7:30
		Higher than Average (85 th %ile)	x	✓6:30, 7:30	x	x
		Peak (100 th %ile)	x	x	x	x
	Weekends	Average (50 th %ile)	✓6:15	✓6:30, 7:30	✓6:15	x
		Higher than Average (85 th %ile)	✓6:15	x	✓6:15	x
		Peak (100 th %ile)	✓6:15, 7:15	x	✓6:15, 7:15	x

Legend:

✓6:15	Passenger car demand does not exceed the ferry capacity for that sailing and can accommodate the construction labour-force van pools in one sailing
✓6:30, 7:30	Two sailings are required to accommodate the construction labour-force van pools
x	Existing passenger car demand exceeds ferry capacity and construction labour-force van pools cannot be accommodated on two sailings

It appears that the average labour force can generally be accommodated on the Wolfe Island ferry during the winter months. The peak labour force requires two sailings in the PM, and two sailings on Tuesdays and Fridays (Dangerous Goods only transported on the 6:15 AM sailing) in the AM when demands are higher than average.

During the shoulder months, it would be difficult to accommodate the average and peak labour force on Tuesdays and Fridays when demand is higher than average, and on Mondays, Wednesdays and Thursday during peak demand only. At other times, one sailing in the AM and two sailings in the PM would be required.

Reference: Wolfe Island Wind Project—Wolfe Island Ferry Traffic Study (Revised)

Summer months are problematic generally during higher than average demand. The average labour force can be accommodated during average weekday demand on one sailing in the AM and two sailings in the PM. The trip from Wolfe Island to Kingston is, in particular, operating near capacity and would generally not be able to accommodate the labour force.

TRAFFIC MANAGEMENT DURING CONSTRUCTION

Other techniques to manage the construction traffic demand are being considered. One example is the restriction of construction traffic on the ferry during peak periods such as the Friday before or Monday after a statutory holiday weekend. The contractor should be advised that car/van pooling will be required if the Wolfe Island ferry is to be used to transport the construction labour force. Other strategies that will be considered include busing, work camps, pedestrian-access only, charter/private ferry service, additional pre- 6:15 AM ferry sailing, various hours and staggered shift work, etc.

CONCLUSIONS AND RECOMMENDATIONS

The passenger vehicle capacity of the Wolfe Island Ferry is more critical than the passenger capacity. The Wolfe Island Ferry can generally accommodate the labour force construction traffic associated with the Wolfe Island Wind Project on one or two sailings if van-pooling is employed accommodating 7 passengers per vehicle. The exception to this is during peak summer months for the trips from Wolfe Island to Kingston in the afternoon. When demand is higher than average, three or more sailings may be required to accommodate the labour force. There is currently no spare capacity during the summer weekends in the afternoon at the 85th percentile demand level.

The bidding contractors will be asked to respond to the transportation management plan, which may include:

- Car/van pooling or buses will be required if the Wolfe Island ferry is to be used to transport the construction labour force
- Arrangements for a private parking area not located in downtown Kingston to allow for car/van pooling or bus pick-up/drop-off will be necessary
- During the peak summer months, two or more sailings will be required to return to Kingston in the afternoon/evening, and summer weekends have no spare capacity to accommodate the construction labour force so alternatives will be required
- Other strategies as an alternative to using the ferry may be more convenient or cost effective and may be proposed by the Contractor

The use of van-pools or potentially buses to transport the labour force to/from the Wolfe Island Ferry terminal can be controlled through special provisions in the construction contract. This would include requiring the contractor to locate a van-pool parking area where the labour force would be marshaled to the vans outside the downtown Kingston area. Thus the volume of traffic entering the downtown and using the ferry can be controlled specifically through the contract.

November 6, 2007

Mr. Rob Miller, P.Eng., Project Engineer

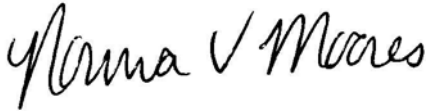
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Reference: Wolfe Island Wind Project—Wolfe Island Ferry Traffic Study (Revised)

Please contact me if you have any questions regarding our analysis.

Sincerely,

STANTEC CONSULTING LTD.



Norma Moores, P.Eng.

Project Manager, Transportation

Tel: (905) 381-3228

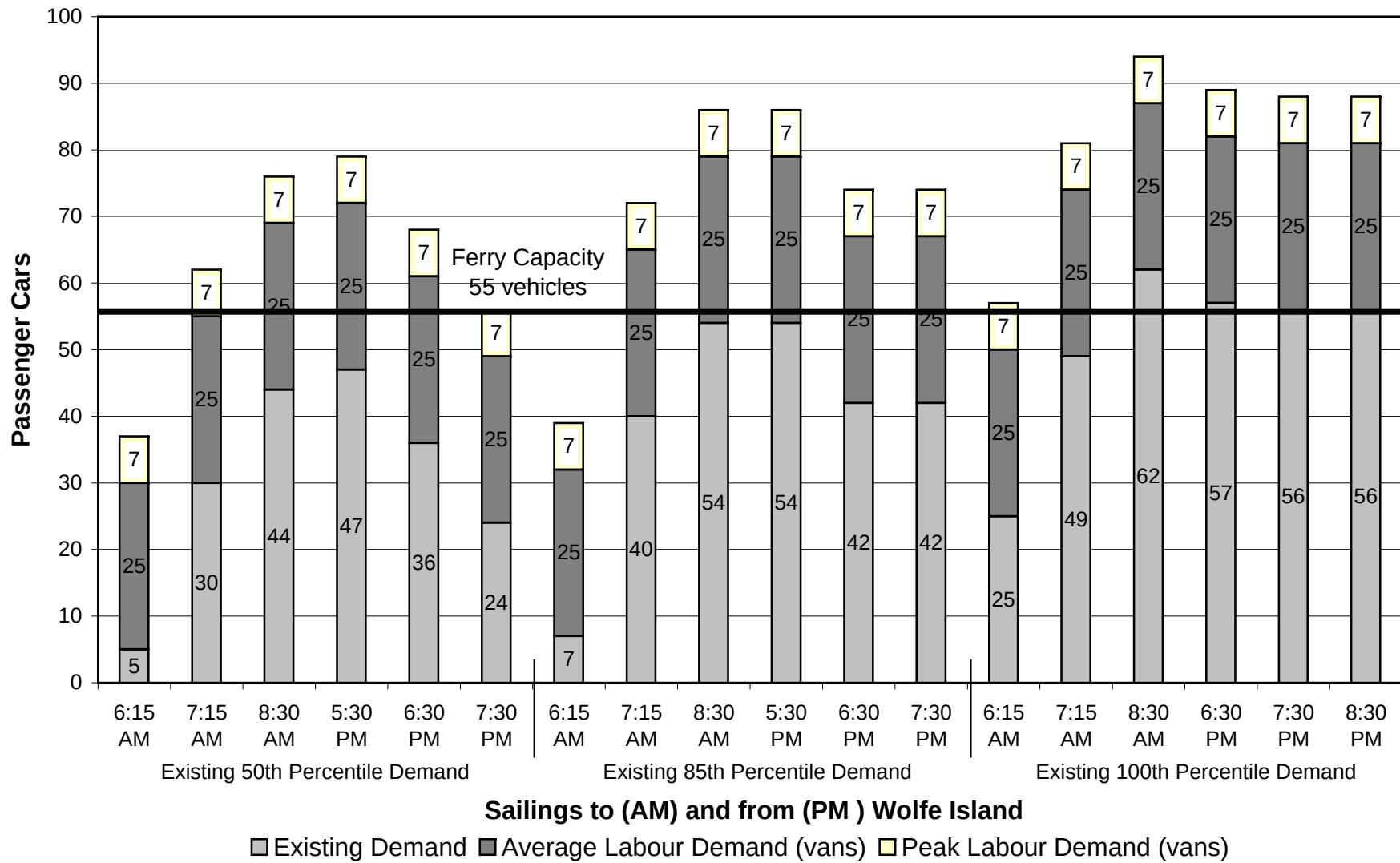
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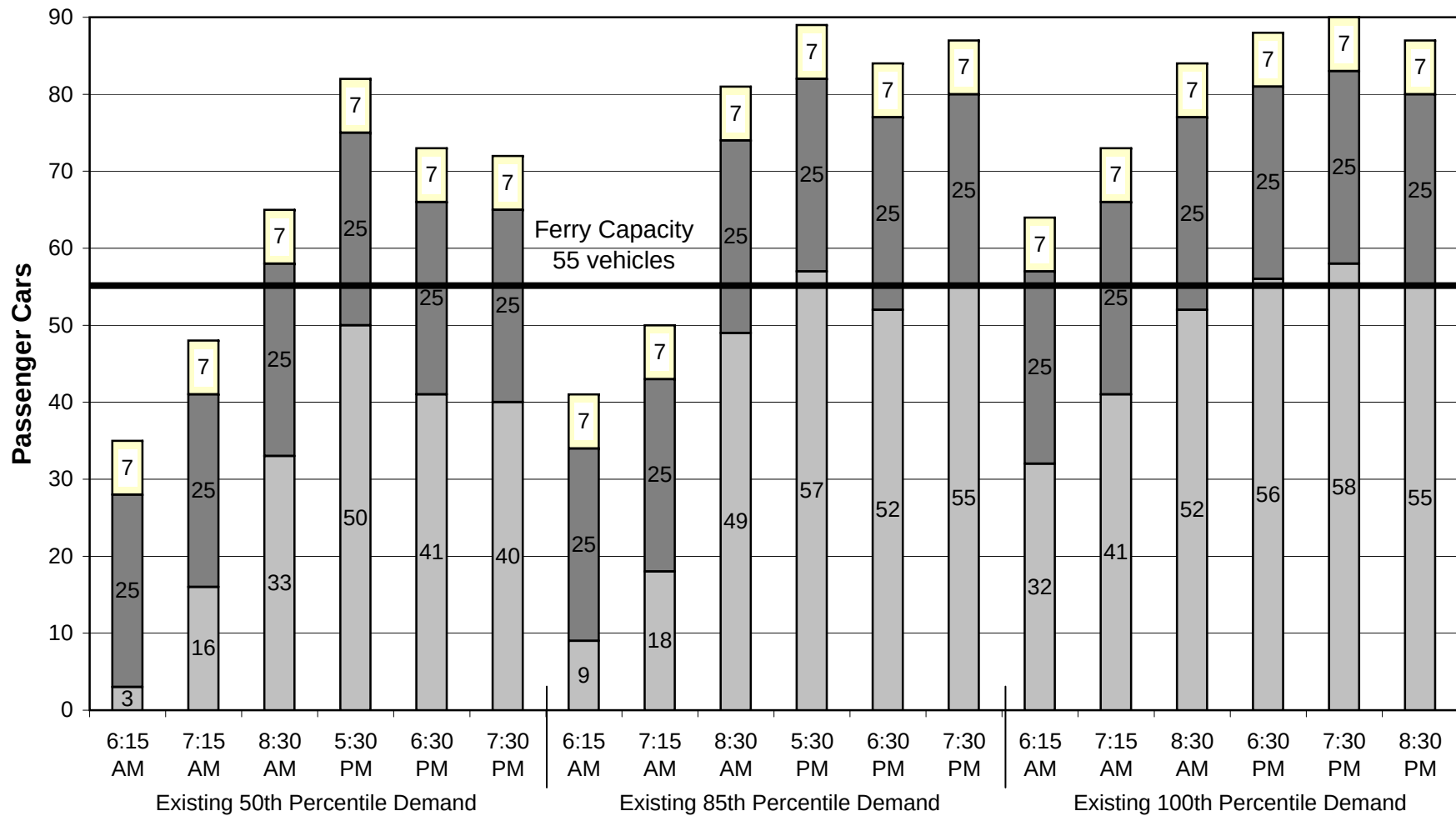
Attachment: Graphs of Ferry Demand versus Capacity

- c. Kara Hearne, Stantec, Guelph
- Roger Harrison, Head, Marine Services, MTO
- Terry MacRae, Ferry Supervisor, Wolfe Island Ferry, MTO
- Dave McAvoy, Supervisor, Environmental Unit, MTO
- Bill Grant, Environmental Planner, MTO

Passenger Car Demand - August 2006 Weekdays



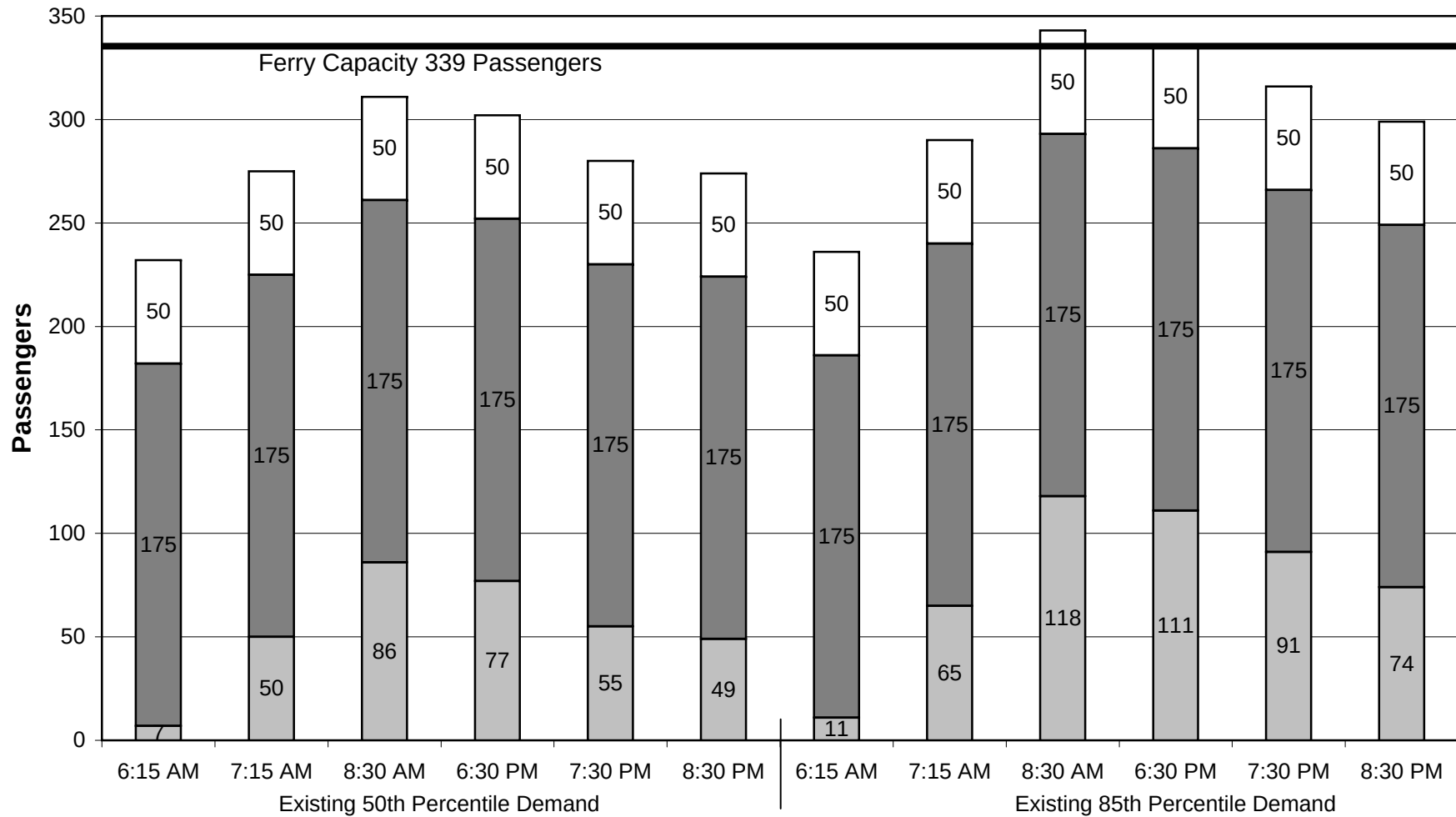
Passenger Car Demand - August 2006 Weekends



Sailings to (AM) and from (PM) Wolfe Island

Existing Demand Average Labour Demand (vans) Peak Labour Demand (vans)

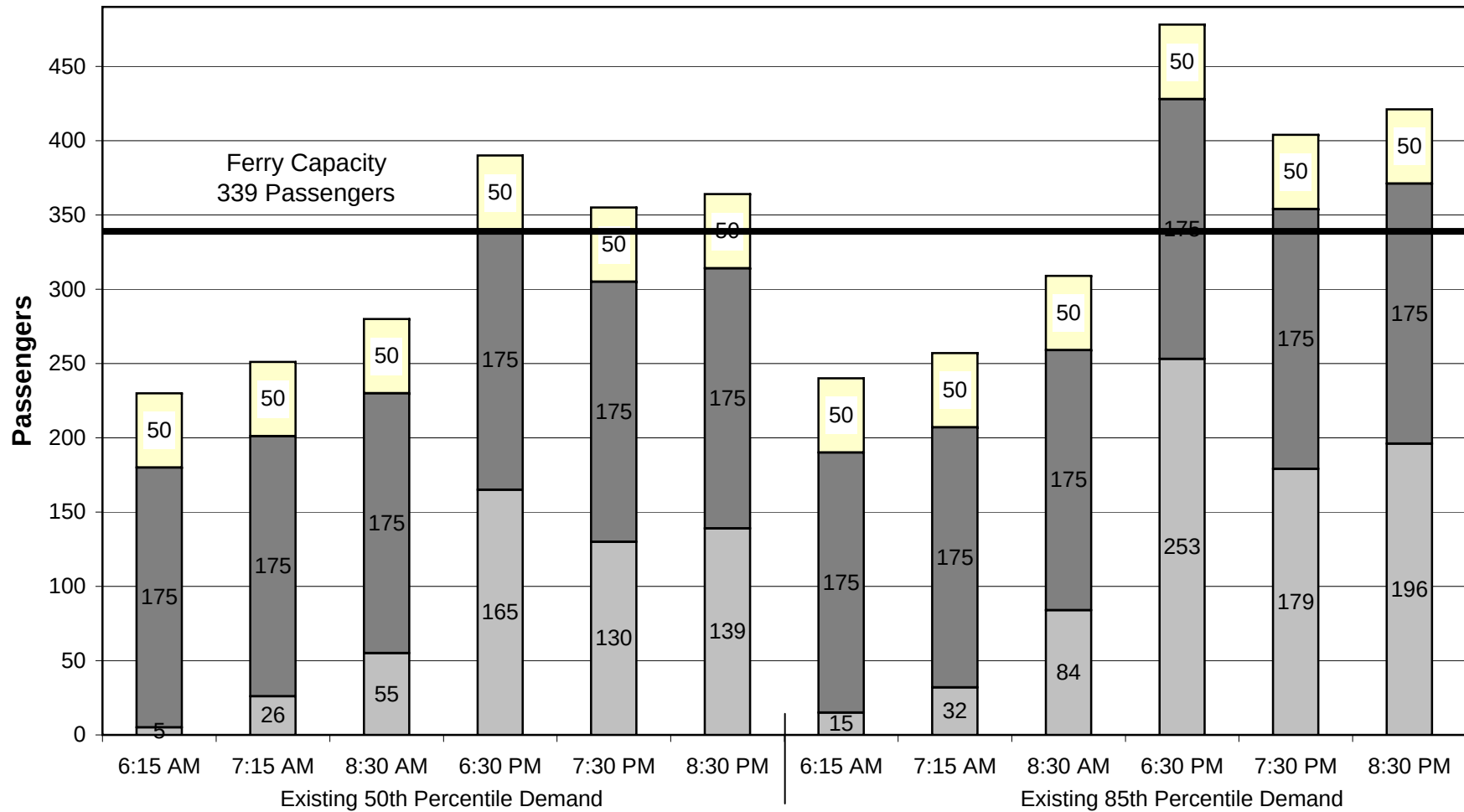
Passenger Demand - August 2006 Weekdays



Sailings to (AM) and from (PM) Wolfe Island

Existing Demand
 Average Labour Demand (passengers)
 Peak Labour Demand (passengers)

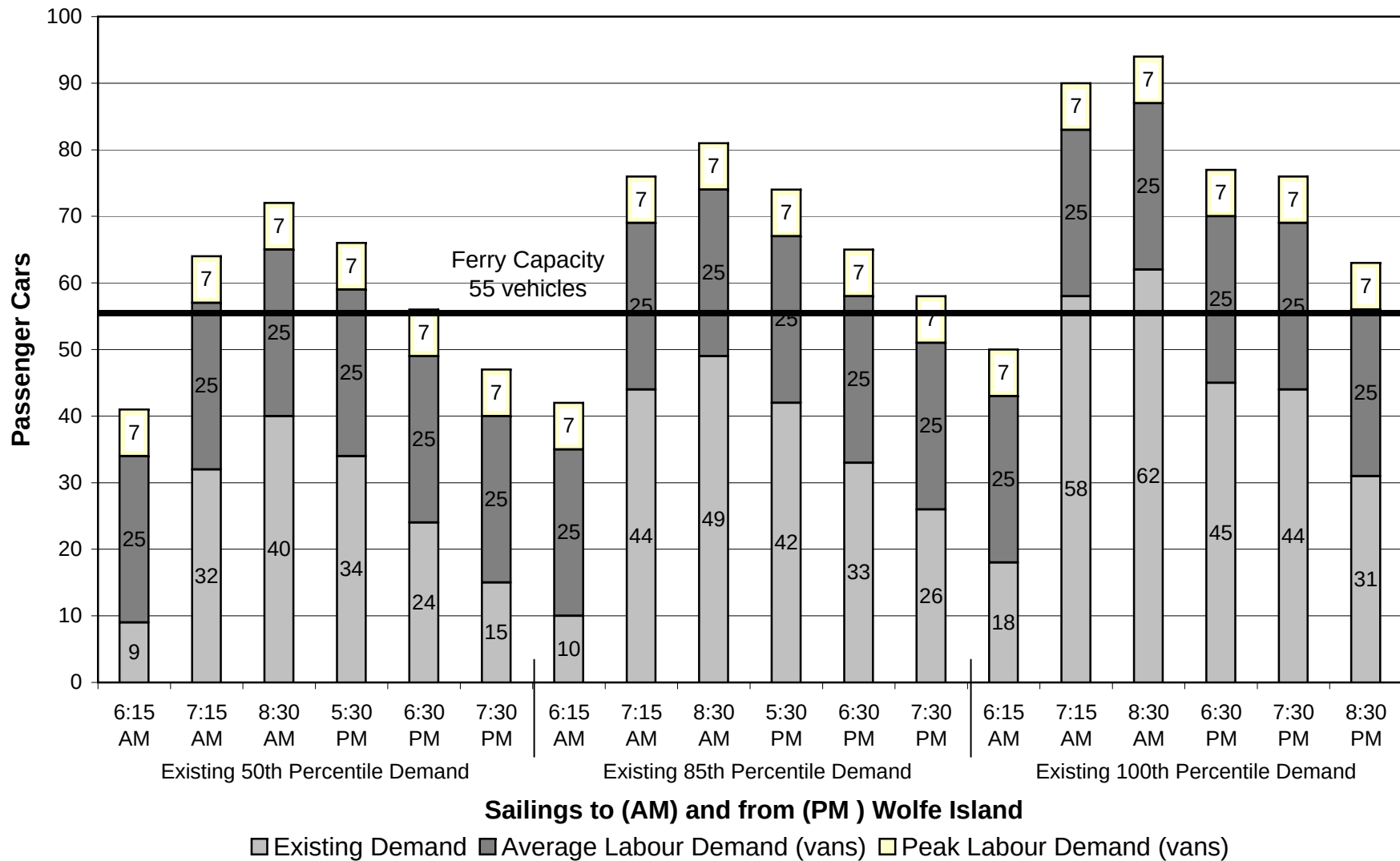
Passenger Demand - August 2006 Weekends



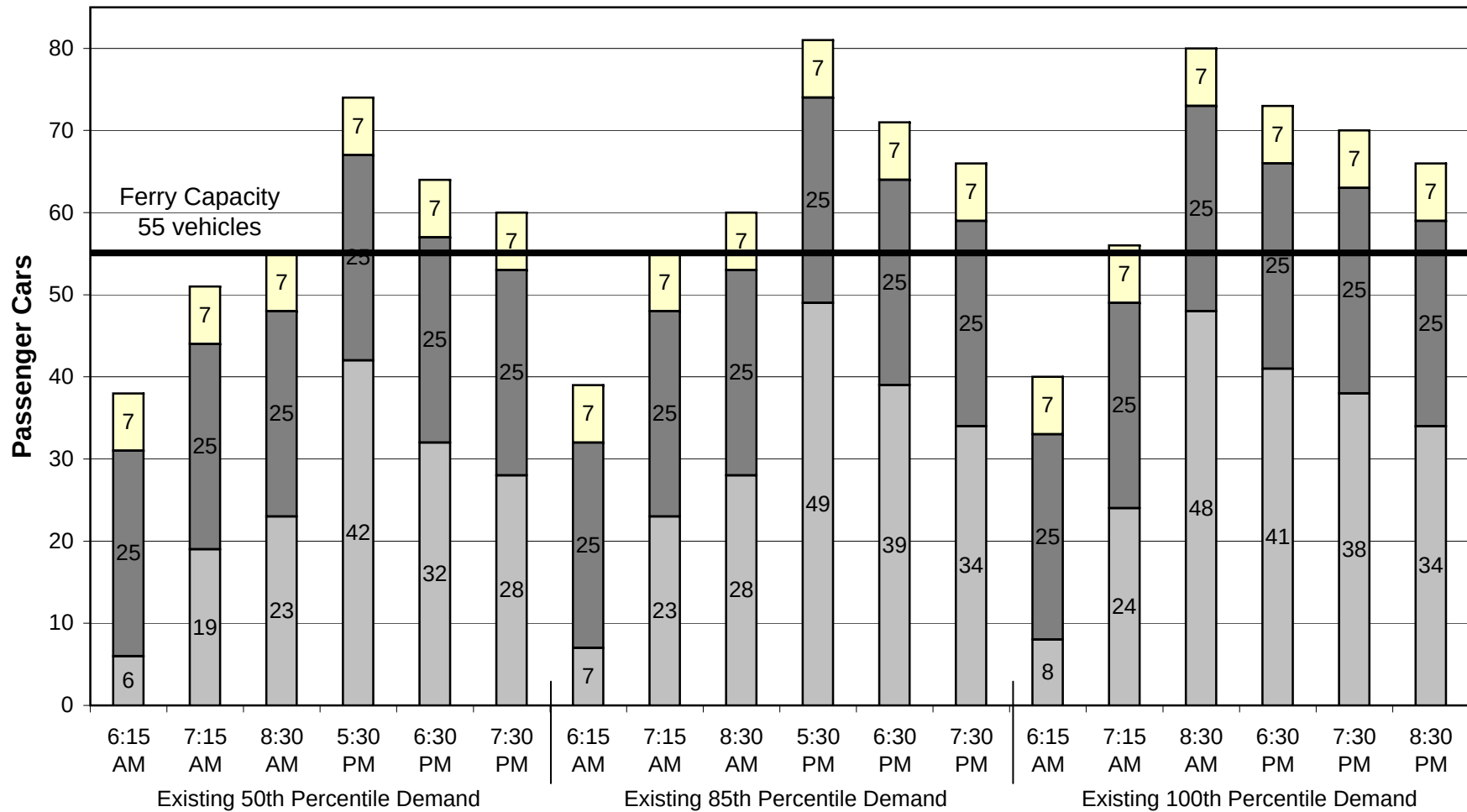
Sailings to (AM) and from (PM) Wolfe Island

Existing Demand
 Average Labour Demand (passengers)
 Peak Labour Demand (passengers)

Passenger Car Demand - May 2006 Weekdays



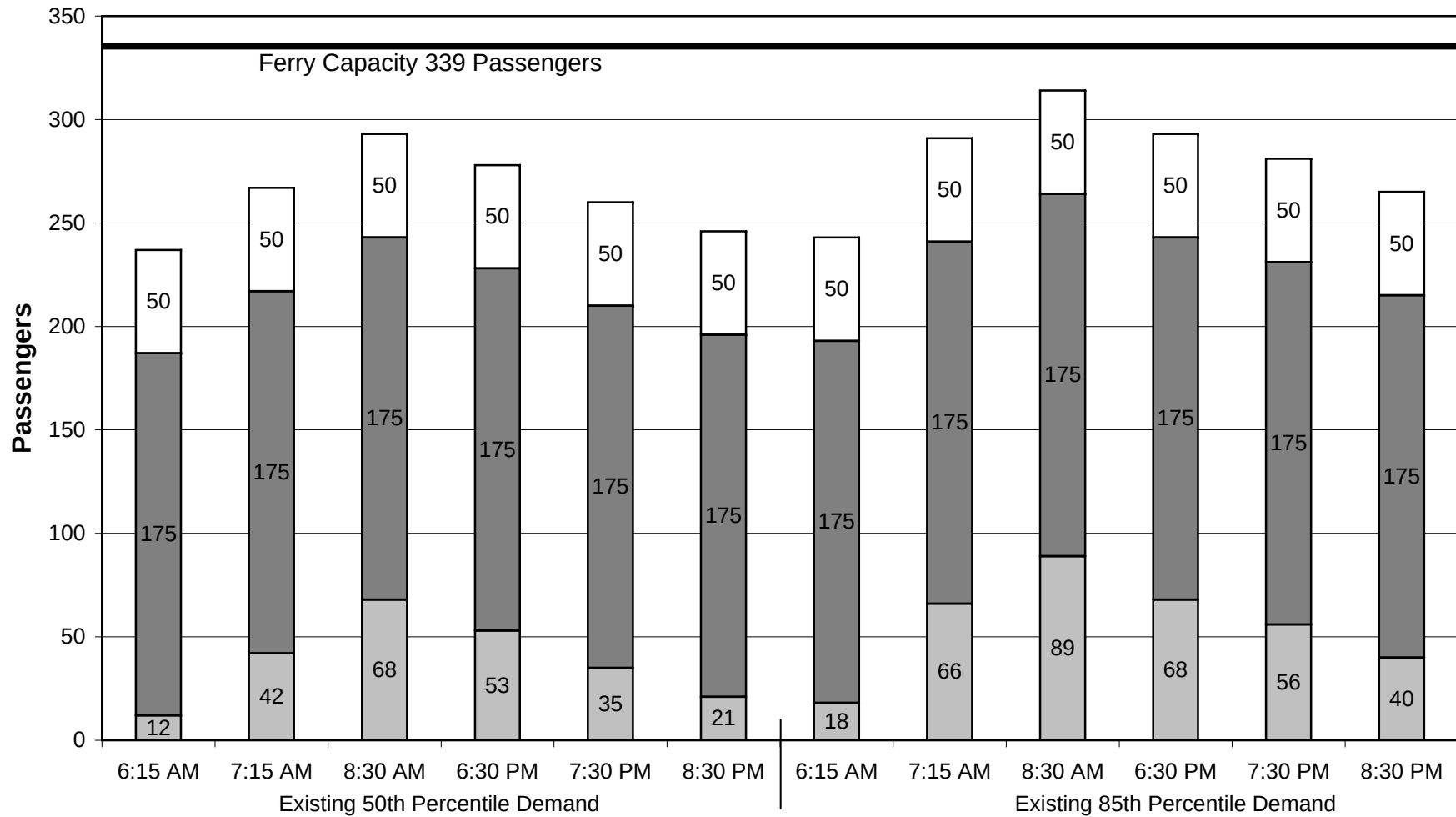
Passenger Car Demand - May 2006 Weekends



Sailings to (AM) and from (PM) Wolfe Island

Existing Demand Average Labour Demand (vans) Peak Labour Demand (vans)

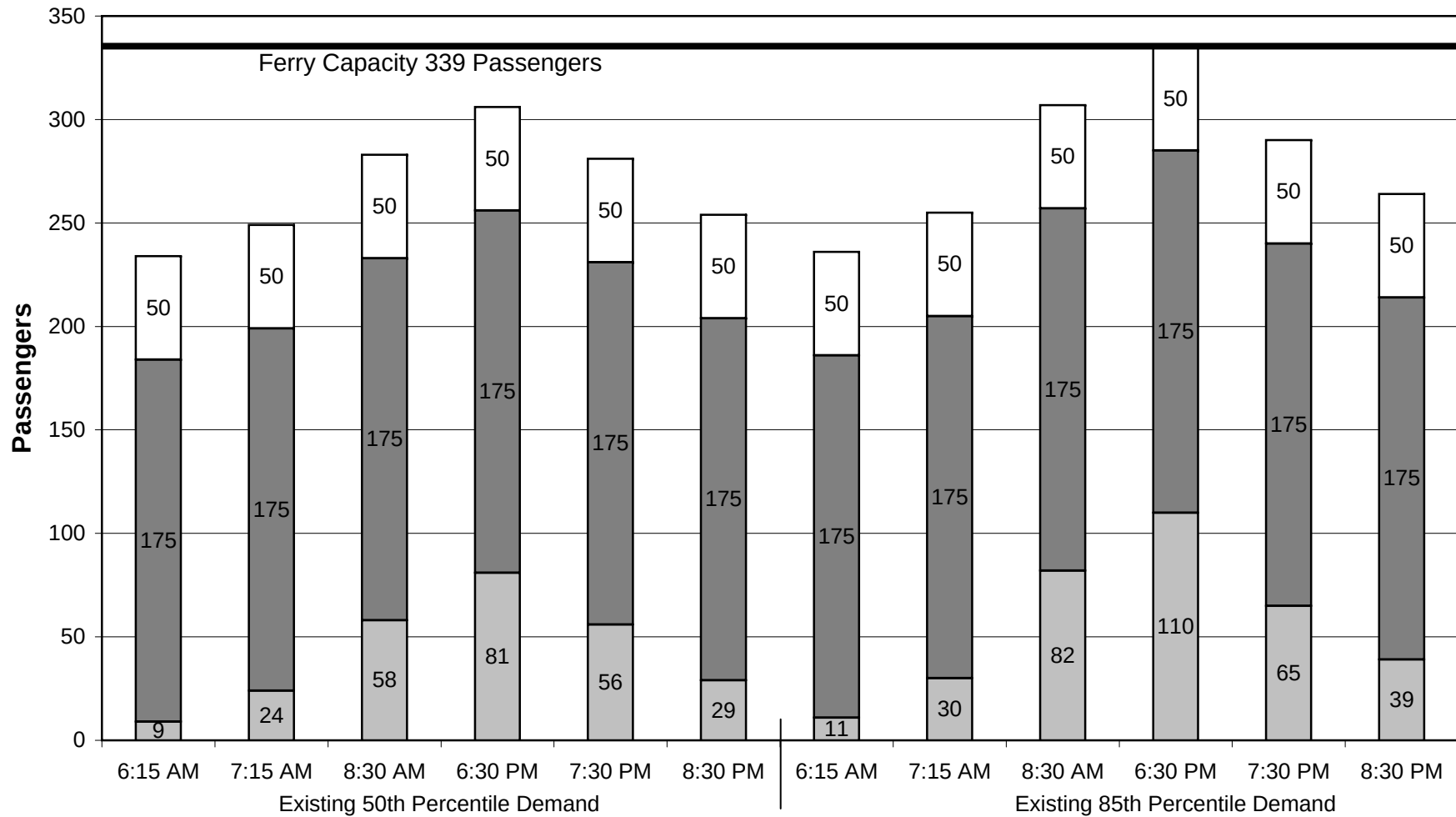
Passenger Demand - May 2006 Weekdays



Sailings to (AM) and from (PM) Wolfe Island

Existing Demand
 Average Labour Demand (passengers)
 Peak Labour Demand (passengers)

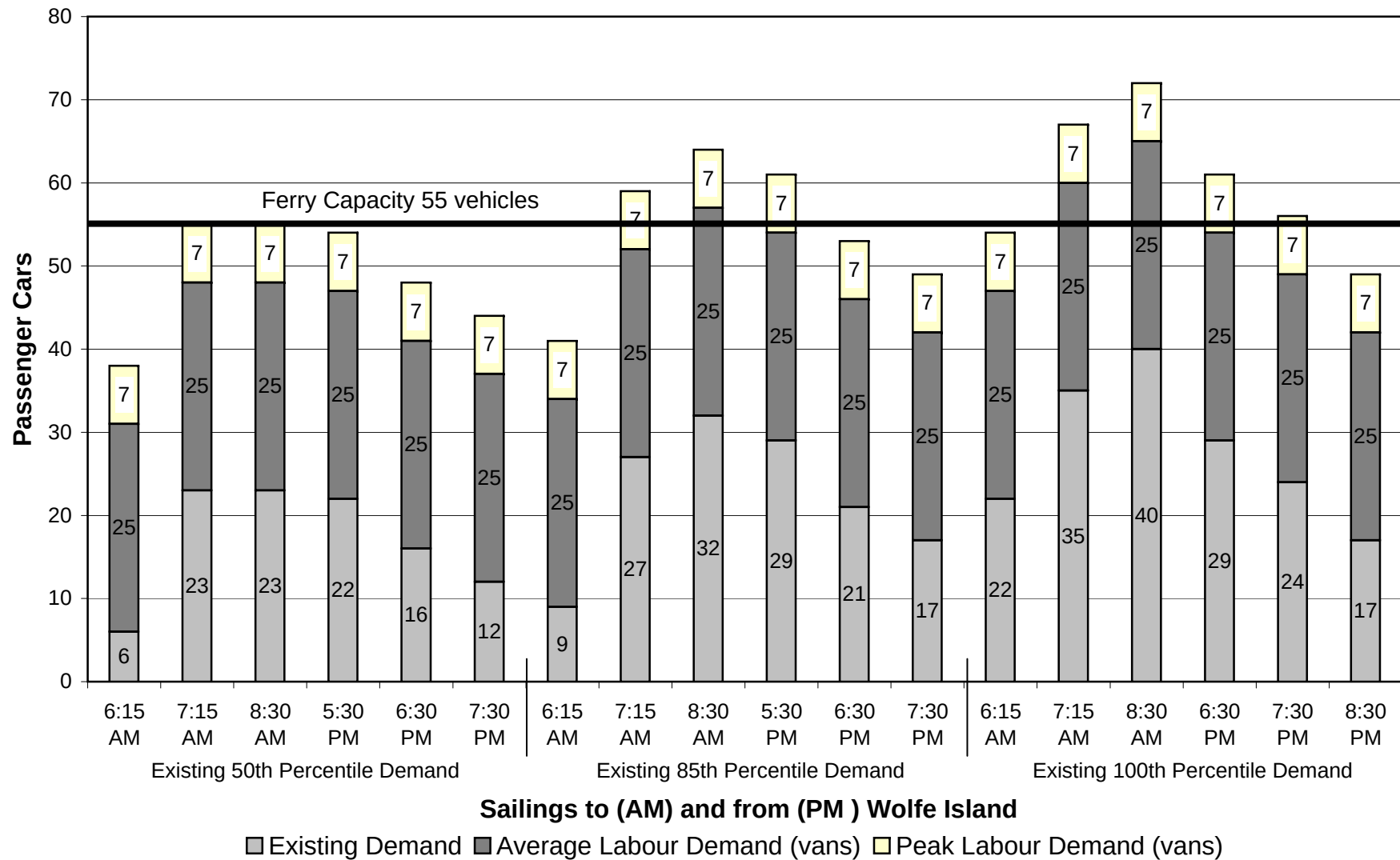
Passenger Demand - May 2006 Weekends



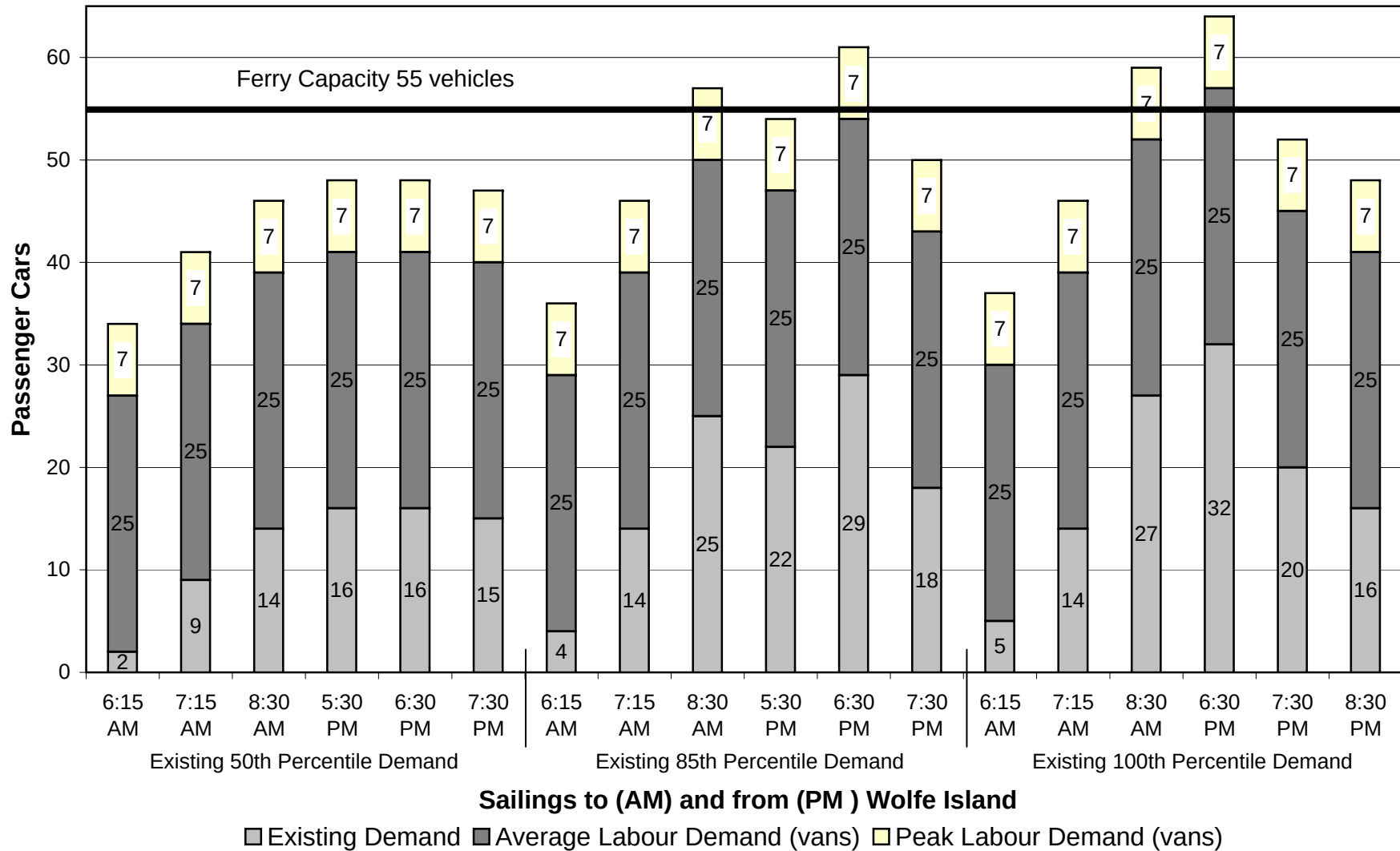
Sailings to (AM) and from (PM) Wolfe Island

Existing Demand
 Average Labour Demand (passengers)
 Peak Labour Demand (passengers)

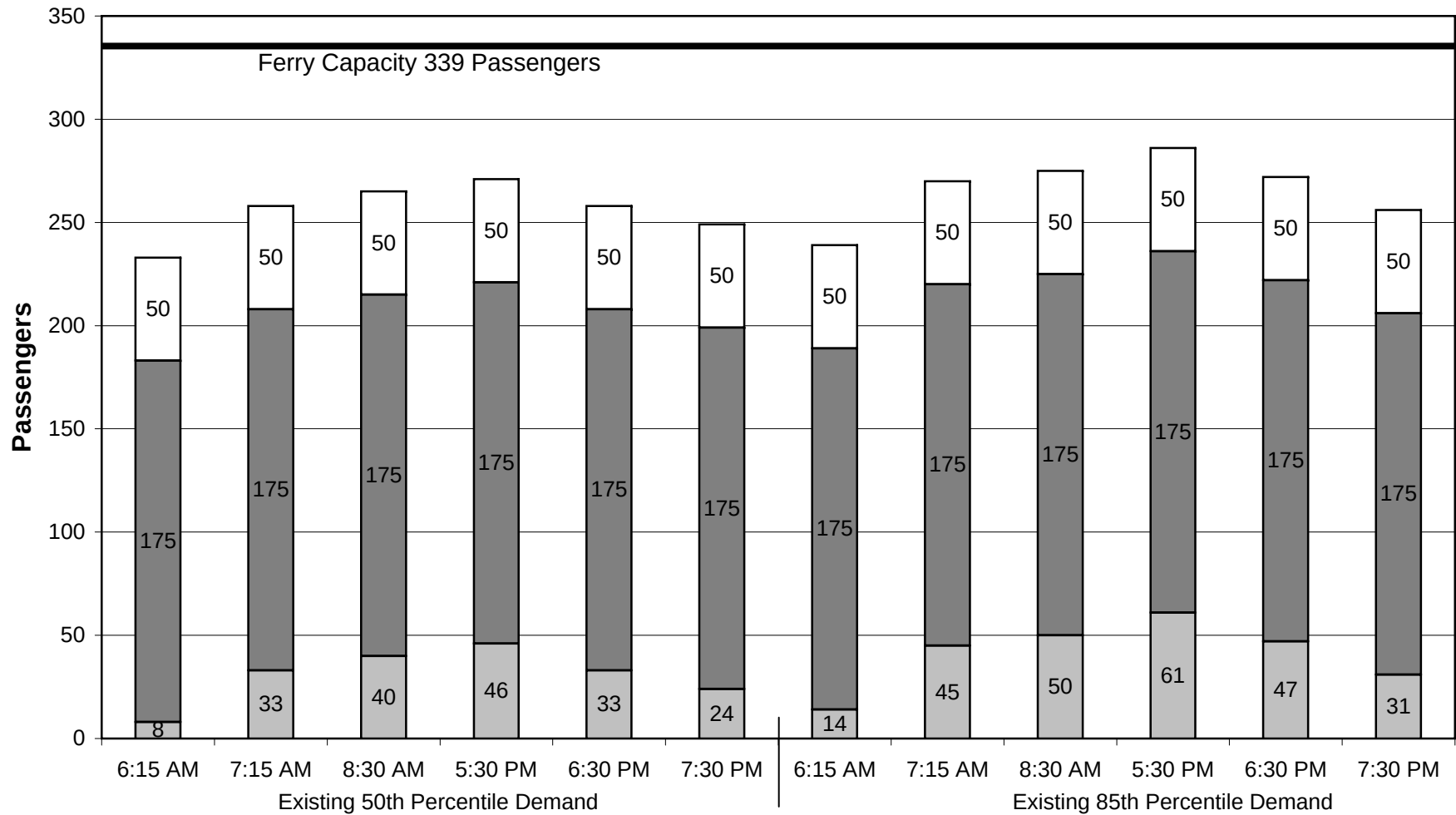
Passenger Car Demand - January 2006 Weekdays



Passenger Car Demand - January 2006 Weekends



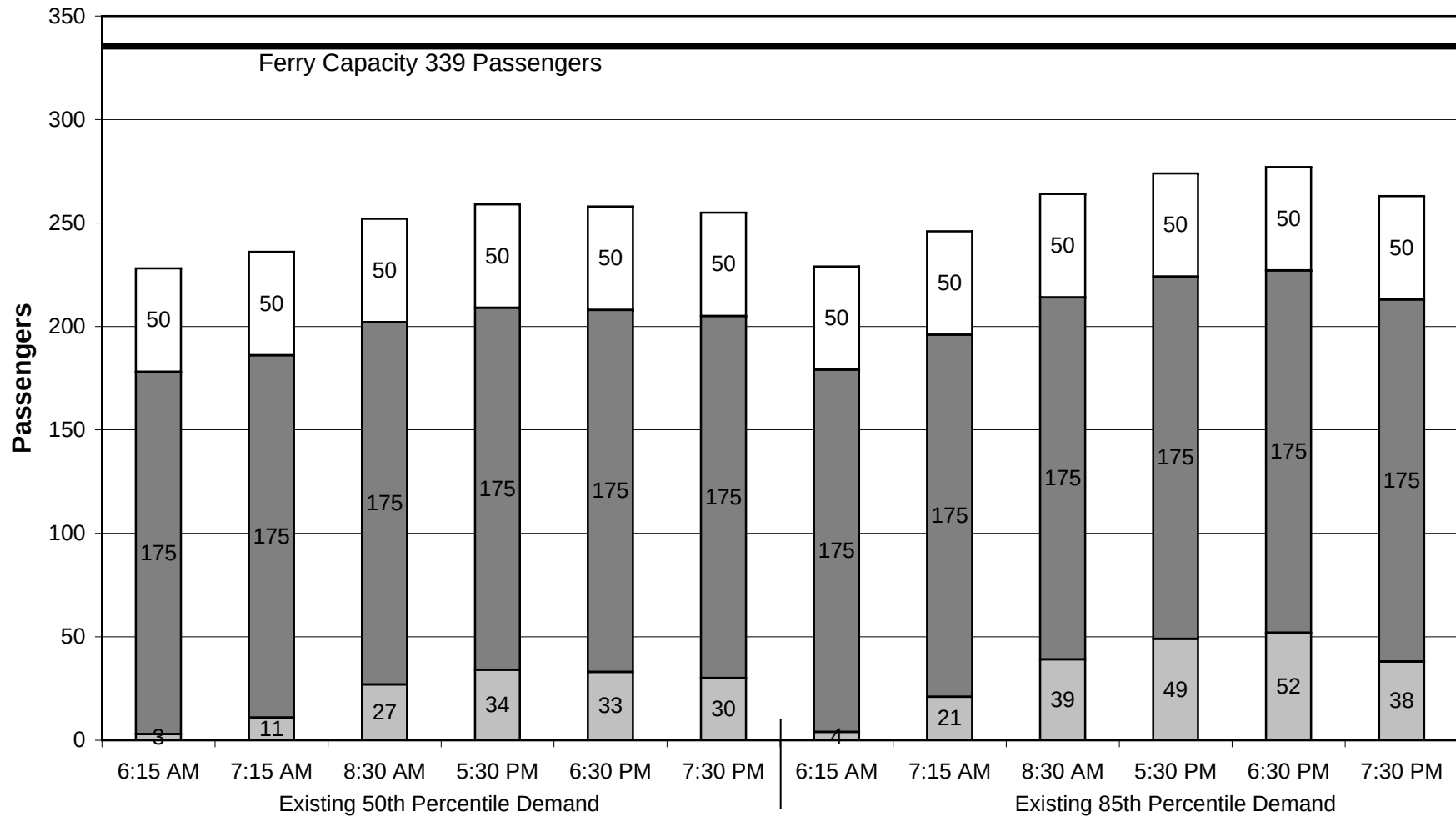
Passenger Demand - January 2006 Weekdays



Sailings to (AM) and from (PM) Wolfe Island

Existing Demand
 Average Labour Demand (passengers)
 Peak Labour Demand (passengers)

Passenger Demand - January 2006 Weekends



Sailings to (AM) and from (PM) Wolfe Island

Existing Demand
 Average Labour Demand (passengers)
 Peak Labour Demand (passengers)

Downtown Kingston Traffic Assessment



Stantec

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November 6, 2007
File: 160960180

Canadian Hydro Developers, Inc.
c/o 190 Collingwood Street
Kingston, ON K7L 3X8

Attention: Mr. Rob Miller, P.Eng., Project Engineer

Dear Mr. Miller:

Reference: Wolfe Island Wind Project—Traffic Study for Downtown Kingston

The City of Kingston in their letters from Mr. George Wallace, Director of Planning & Development dated June 6 and 19, 2007 to Ms. Kara Hearne, Stantec, recommends that a traffic impact study be carried out for the local road network surrounding the Wolfe Island Ferry terminal should it be used for this Project to transfer the construction labour force to/from Wolfe Island. In our opinion, the traffic associated with transporting the labour force is too low to warrant a traffic impact study, as outlined below.

CONSTRUCTION LABOUR TRAFFIC

The construction of the Project will require approximately 3,090 person-months of labour, including a peak labour force of about 225 people, and an average labour force of roughly 175 people over a seven-month period. We know that if the existing Wolfe Island Ferry were to be used to transport the labour force to/from Wolfe Island on a daily basis, this labour force is too large to be accommodated in single occupant motor vehicles. Van-pooling or busing would be required so that passenger and vehicle capacities of the ferry are not exceeded most months out of the year. There would be peak summer months when even van-pooling would not be sufficient. This is documented in our letter to you dated November 6, 2007 referenced Wolfe Island Wind Project—Wolfe Island Ferry Traffic Study (Revised).

Based on recent developments we understand that Canadian Renewable Energy Corporation (CREC) has developed a "Transportation and Logistics Plan", that will include the use of private resources in order to alleviate capacity constraints on the Wolfe Island Ferry. A private barge will be used to transport workers to and from the Island during the peak periods of the Wolfe Island Ferry. It is currently proposed that the barge would dock at the Wolfe Island Ferry Terminal during periods of vacancy (i.e., when the ferry is not docked there).

In order to alleviate stakeholder and agency concerns regarding periods of limited capacity on the Wolfe Island Ferry, the project intends to operate a bus service from various collection and drop-off points around and outside the City of Kingston. Bus transport capacity will range from 15- 40 passengers per bus.

This analysis and report is provided to detail what the impact would be (call it a very conservative case) if CREC did not employ private or independent transportation and logistics resources. Assuming a maximum vehicle occupancy of 7 persons (including the driver), the average labour force of 175 people would require 25 vans to transport them to/from Wolfe Island using the ferry. The peak labour force of 225 people would require 32 vans. These van trips would occur to the ferry terminal for the 6:15 AM sailing, possibly the 7:15 or 8:15 AM sailings and return from the 6:30, 7:30 or 8:30 PM sailings.

Reference: Wolfe Island Wind Project—Traffic Study for Downtown Kingston

REGIONAL SPORTS AND ENTERTAINMENT CENTRE TRANSPORTATION STUDY

The City of Kingston provided a copy of the *Kingston Regional Sports and Entertainment Centre Transportation Study* (IBI, July 2006). The site is located on Ontario and Barrack Streets across from the ferry terminal. The study reports that:

- The eastbound Barrack Street volumes demonstrate typical weekday AM and PM peak hours from 7 to 8 AM and 4 to 5 PM.
- The westbound volumes on Barrack Street coincide with the arrival of the Wolfe Island Ferry and are less indicative of general traffic patterns on the road network.
- The Saturday and Sunday counts are significantly lower with a peak hour from 1 to 2 PM

Traffic counts provided in the report indicate that generally the traffic volumes in the area peak after the labour van-pools would be arriving at the ferry terminal for the morning sailings and before the van-pools would be departing from the ferry terminal for the afternoon sailings.

The report indicates:

The ferry service to and from Wolfe Island is operated from the dock at the base of Barrack Street. Vehicles enter the ferry terminal at a wide unsignalized entrance approximately 30 metres south of the signalized Ontario Street/Barrack Street intersection. The entrance to the ferry terminal operates well, although the southbound left turn entry from Ontario Street does become blocked periodically by northbound queued vehicles on Ontario Street during peak travel periods. The westbound approach to the Ontario Street/Barrack Street intersection provides a one-way two-lane exit from the ferry dock, allowing traffic to turn onto Ontario Street or proceed straight through on Barrack Street. The westbound approach and pedestrian movements are actuated and will only be called when there is demand. Video detection has recently been implemented at this intersection to facilitate the egress movement from the ferry by pre-empting traffic control signal to permit additional green time to the westbound approach. When vehicles are not detected at this approach the traffic control signal does not designate any green time to this movement but rather runs in coordination with the adjacent traffic signals.

The study findings indicate that “the primary constraint in the study area is at the Ontario Street/Barrack Street intersection during the PM peak hour, coincident with vehicle demands to the LaSalle Causeway and peaks from the Wolfe Island Ferry exits.” However, it concludes that:

Little impact on the Wolfe Island Ferry operations will occur due to the operation of the Kingston Regional Sports and Entertainment Centre. The event peak periods will not coincide with summer daytime peak ferry demands. In addition, the majority of the main parking opportunities are located away from the Wolfe Island mainland facility.

The traffic signal at the intersection of Barrack Street and Ontario is noted in the report as operating at a good level of service B during the AM peak hour and a satisfactory level of service D during the PM peak hour with the eastbound left and northbound through movements approaching capacity. The total existing traffic volume entering the intersection was 1,910 vph during the PM peak hour.

November 6, 2007

Mr. Rob Miller, P.Eng., Project Engineer

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Reference: Wolfe Island Wind Project—Traffic Study for Downtown Kingston

OPINION OF IMPACTS

In our opinion, the potential labour force trips to/from the Wolfe Island Ferry terminal consisting of 25 to 35 van-pool vehicles is not sufficient to affect the overall traffic operations of the intersections in downtown Kingston. The Institute of Transportation Engineer's *Transportation Impact Analysis for Site Development: An ITE Proposed Recommended Practice* (2005) recommends that a transportation impact study be conducted whenever a proposed development will generate 100 or more added (new) trips during the adjacent peak hour. This site trip generation threshold is appropriate for the following reasons:

- An additional 100 vehicles per hour can change the level of service or appreciably increase the volume-to-capacity ratio of an intersection approach.
- Left- or right-turn lanes may be needed to satisfactorily accommodate site traffic without adversely impacting through (non-site) traffic.

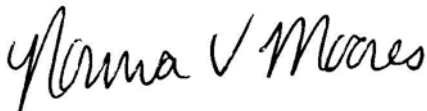
Thus, the 25 to 35 van-pool trips generated to transport the construction labour force to/from the Wolfe Island Ferry terminal in downtown Kingston are well below the threshold warranting a detailed traffic impact study.

We understand that the use of van-pools or potentially buses to transport the labour force to/from the Wolfe Island Ferry terminal can be controlled through special provisions in the construction contract. This would include requiring the contractor to locate a van-pool parking area where the labour force would be marshaled to the vans outside the downtown Kingston area. Thus the volume of traffic entering the downtown can be controlled specifically through the contract with appropriate penalties, if required.

Please contact me if you have any questions regarding our review of the impacts of the construction labour force traffic on downtown Kingston.

Sincerely,

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