

Donore Project

Public Transport Capacity Assessment

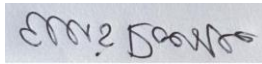
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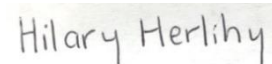
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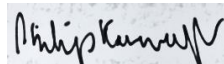
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Table of Contents

1.	Introduction.....	6
1.1	Survey Introduction	6
2.	Existing Public Transport Network.....	7
2.1	Future Public Transport Network.....	9
2.1.1	Changes to Luas Services.....	9
2.1.2	Changes to Dublin Bus Network of Services.....	10
3.	Survey Results.....	12
3.1.1	Luas Services	12
3.1.1.1	Fatima Luas Stop Eastbound Service AM and PM Survey Results	12
3.1.1.2	Fatima Luas Stop Westbound Service AM and PM Survey Results	13
3.2	Bus Services.....	14
3.2.1	AM and PM Survey Results Stop 1382.....	14
3.2.2	AM and PM Survey Results for Stop 1365.....	15
3.2.3	AM and PM Survey Results for Stop 1381.....	16
3.2.4	AM and PM Survey Results for Stop 2315.....	17
3.2.5	AM and PM Survey Results for Stop 2379.....	19
3.2.6	AM and PM Survey Results for Stop 4857.....	21
3.3	Conclusion	22
4.	Sensitivity Test.....	23
4.1	Overview.....	23
4.2	Assumptions	23
4.3	Sensitivity Test	24
4.4	Sensitivity Test Conclusion.....	28
5.	Conclusion.....	29

Figures

Figure 1.1	Location of Development of Site and Location of Surveyed Luas and Bus Stop	6
Figure 2.1	Location and Walking Distance of Bus and Luas Stops	9
Figure 2.2	– Planned Future Luas Network up to 2040 (Draft Greater Dublin Area Transport Strategy 2022-2042)	10
Figure 2.3	– Bus Connects Network Redesign	11
Figure 3.1	– Luas Eastbound AM Survey Results.....	12
Figure 3.2	– Luas Eastbound PM Survey Results.....	13
Figure 3.3	Luas Westbound AM Survey Results.....	13
Figure 3.4	– Luas Westbound PM Survey Results.....	14
Figure 3.5	– Stop 1382 AM Peak Survey Results	15
Figure 3.6	– Stop 1382 PM Peak Survey Results	15
Figure 3.7	- Stop 1365 AM Peak Survey Results.....	16
Figure 3.8	- Stop 1365 PM Peak Survey Results.....	16
Figure 3.9	- Bus Stop 1381 AM Survey Results.....	17
Figure 3.10	- Bus Stop 1381 PM Survey Results.....	17
Figure 3.11	- Bus Stop 2315 AM Survey Results	18
Figure 3.12	- Bus Stop 2315 PM Survey Results.....	18
Figure 3.13	- Bus Stop 2379 AM Survey Results.....	19
Figure 3.14	- Bus Stop 2379 PM Survey Results.....	20
Figure 3.15	- Bus Stop 4587 AM Survey Results.....	21
Figure 3.16	– Bus Stop 4587 PM Survey Results	21
Figure 4.1	- Bus Stop 1365 Overall Peak Capacity Assessment.....	24
Figure 4.2	– Bus Stop 1381 Overall Peak Capacity Assessment.....	25
Figure 4.3	– Bus Stop 1382 Overall Peak Capacity Assessment.....	26

Figure 4.4 – Bus Stop 2315 Overall Peak Capacity Assessment..... 26
 Figure 4.5 – Bus Stop 2379 Overall Peak Capacity Assessment..... 27
 Figure 4.6 – Bus Stop 4857 Overall Peak Capacity Assessment..... 27
 Figure 4.7 – Luas Eastbound Overall Peak Capacity Assessment..... 28
 Figure 4.8 – Luas Westbound Overall Peak Capacity Assessment..... 28

Tables

Table 2.1 – Frequency of Luas Service Serving Fatima Luas Stop..... 7
 Table 2.2 - Frequency of Bus Service Serving Bus Stops Within the Study Area of the Proposed Development Site 8
 Table 3.1 – Public Transport Trips Rates from TRICS 22
 Table 4.1 - TRICS Stress Test Trip Rate..... 23
 Table 4.2 – Allocation of Trips to Bus stops 23

1. Introduction

1.1 Survey Introduction

On 13.10.22 and 18.10.22, surveyors assessed public transport capacities at various public transport stops surrounding the Donore project proposed development site. These stops were monitored between the peak hours of 07:00-10:00 and 16:00-19:00 . The Surveys included the Fatima Luas stop and the following bus stops:

- Stops 1365, 1381and 1382 on the South Circular Road;
- Stops 2315 and 2379 on Cork Street; and
- Stop 4857 on Rutledge Terrace.

Surveyors were able to calculate the departing capacities of each of these services as well as analyse timetables and the overall frequency of services in the area. Figure 1.1 illustrates each stop monitored and surveyed. The results of this survey as well as a brief analysis of each stop is outlined in the following report.

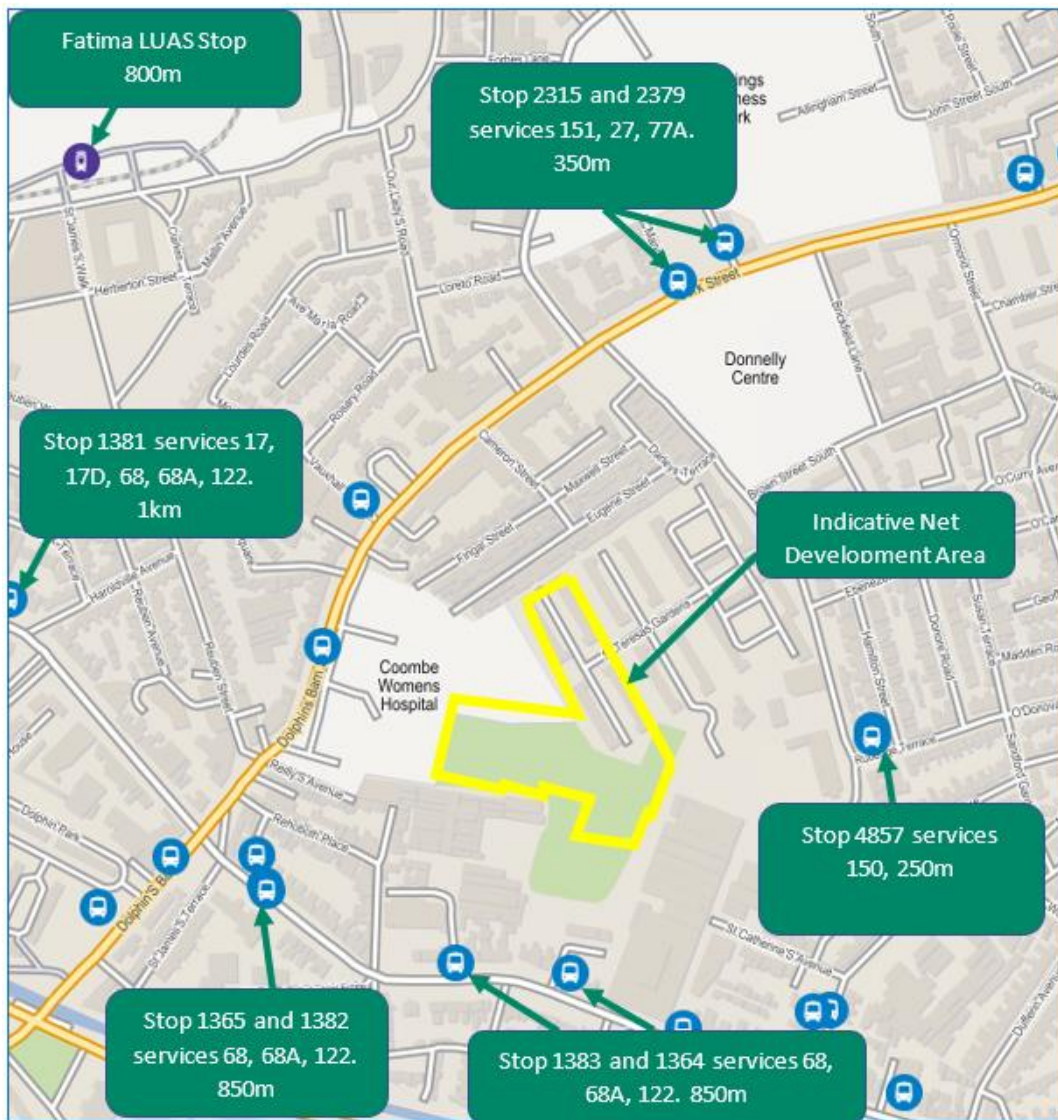


Figure 1.1 Location of Development of Site and Location of Surveyed Luas and Bus Stop

2. Existing Public Transport Network

There are a variety of public transport services in the study area surrounding the proposed development Table 2.1 and Table 2.2 details the existing public transport services in the area and the frequency of these services during peak hours both on weekdays and at weekends. Figure 2.1 shows the location of bus stops and their walking distance from the Development site.

Table 2.1 – Frequency of Luas Service Serving Fatima Luas Stop

Fatima Luas Stop			Services AM and PM Peak Hours			
Direction	Distance to Proposed Development Site	Service	Monday to Friday (Peak 08:00 - 10:00 and 17:00 - 19:00)	Monday to Friday (Off Peak)	Saturday	Sunday
Eastbound - Inbound	900m - 11 min walk	to The Point	1 service every 3 - 5 minutes	1 service every 12 - 15 minutes	1 service every 12 - 15 minutes	1 service every 12 - 15 minutes
Westbound - Outbound		to Tallaght				
Eastbound - Inbound		to Connolly				
Westbound - Outbound		to Saggart				

Table 2.2 - Frequency of Bus Service Serving Bus Stops Within the Study Area of the Proposed Development Site

Route	Operator	Distance to Proposed Development Site	Route	Services Am and PM Peak Hours		
				Monday to Friday	Saturday	Sunday
17	Go Ahead Ireland	1km (12 min walk)	Rialto -Crumlin - Nutgrove -UCD- Blackrock	1 service every 20 mins	1 service every 20 mins	1 service every 20 mins
27	Dublin Bus	350m (4 min walk)	Jobstown – Blessington Road – Cork Street- Malahide Road	1 service every 10 mins	1 service every 10 mins	1 service every 15 mins
56A	Dublin Bus	350m (4 min walk)	Tallaght – Ballymount Road – St. Luke’s Avenue- Ringsend road.	1 service every 1 hours and 15 mins	1 service every 1 hours and 15 mins	1 service every 1 hours and 15 mins
68	Dublin Bus	850m (11 min walk)	Hawkins Street – Dolphins Barn -Rialto – Bluebell-Clondalkin - Greenogue	1 service every 1 hour	1 service every 1 hour	1 service every 1 hours and 15 mins
77A	Dublin Bus	350m (4 min walk)	Citywest Road – Old Blessington Road – Cork Street – Ringsend Road	1 service every 20 mins	1 service every 20 mins	1 service every 30 mins
150	Dublin Bus	250m (3 min walk)	Hawkins Street – Patrick Street – Donore Avenue - Rossmore	1 service every 20 mins	1 service every 20 mins	1 service every 30 mins
151	Dublin Bus	350m (4 min walk)	Docklands (East Road)- Dolphins Barn – Parkwest - Foxborough	1 service every 20 mins	1 service every 20 mins	1 service every 30 mins
122	Dublin Bus	850m (11 min walk)	Drimnagh Road – Herberton Road – South Circular Road – Dorset Street – Ashington Park	1 service every 15 mins	1 service every 20 mins	1 service every 20 mins

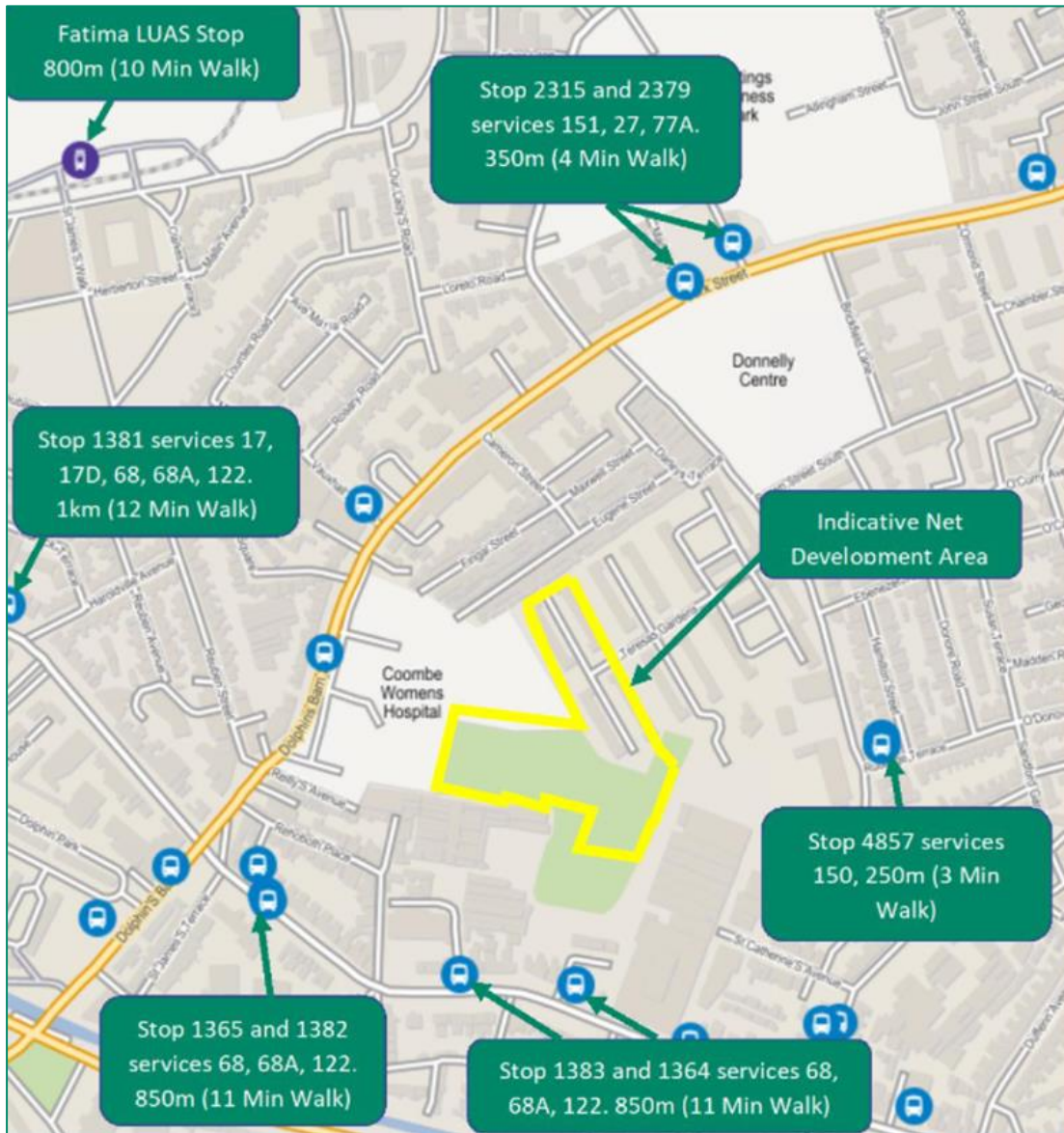


Figure 2.1 Location and Walking Distance of Bus and Luas Stops

2.1 Future Public Transport Network

There are a variety of public transportation enhancement initiatives taking place across the Greater Dublin Area (GDA) that have the potential to enhance transportation access around the proposed development site these are detailed within this section. The public transport proposals are set out within the Draft Greater Dublin Area Transport Strategy 2022-2042.

2.1.1 Changes to Luas Services

There are a number of expansions to the Luas Network Planned as outlined within the GDA Transport Strategy.

Of the proposals planned it is the Luas Lucan Line which will likely pass within close proximity of the proposed development site. However, there is no detailed route alignment published for this route as of yet. The indicative alignment for Luas Lucan is shown in Figure 2.2 below. The timeframe for the delivery of Luas Lucan is schedule for between 2031-2042. Luas Lucan is Measure LRT3 of the GDA strategy;

'Measure LRT3 – Luas Lucan It is intended to develop a light rail line from Lucan to the City Centre, supplementing and complementing the planned bus system, to serve the overall public transport needs in this area.'

It is unlikely that the current Luas Red Line services will change, and it is assumed service patterns will largely remain the same.

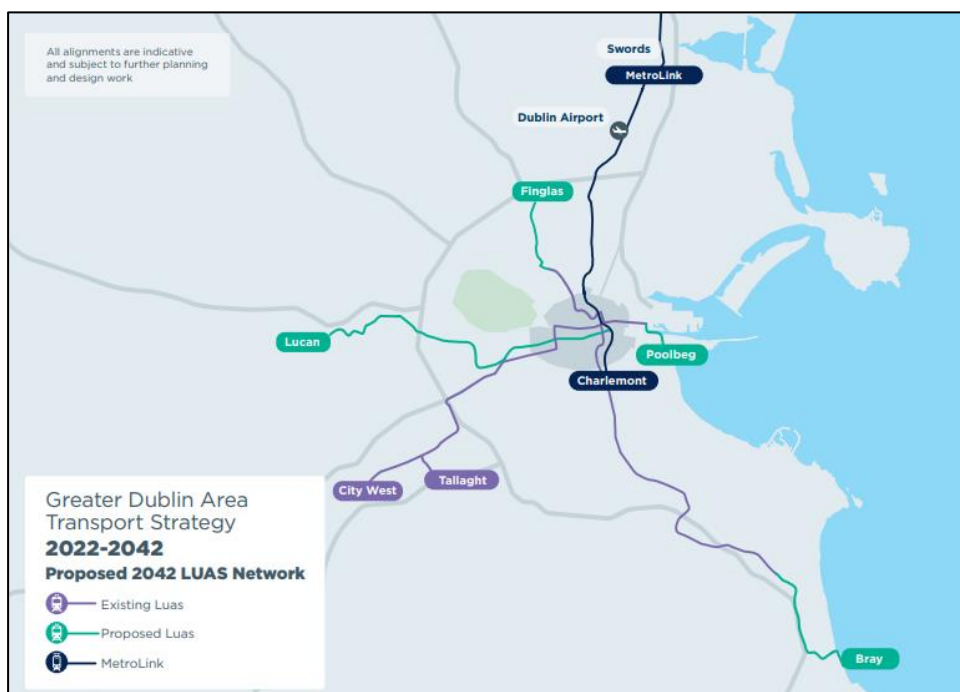


Figure 2.2 – Planned Future Luas Network up to 2040 (Draft Greater Dublin Area Transport Strategy 2022-2042)

2.1.2 Changes to Dublin Bus Network of Services

The Network of Dublin Metropolitan Bus Services are undergoing a major redesign in the form of the Dublin BusConnects program. The program includes a number of different work packages all aimed at improving bus services within the Dublin Metropolitan area, the packages include features such as;

- Improved bus Corridors;
- Network Redesign;
- Next Generation Ticketing;
- New Buses and Livery;
- Improved bus stops and shelters;
- Zero emissions bus fleet;
- New bus park and rides; and
- A simpler fare structure .

There are a variety of changes being made to the Dublin Bus system that are important to highlight. BusConnects, an initiative by the National Transport Authority aims to improve bus services throughout Ireland.

Bus connects will have a positive impact on the proposed development site greatly improving access to bus services and increase overall frequency of services in the study area.. The map below highlights the proposed routes and service frequencies of the BusConnects initiatives in the area surrounding the proposed development site.

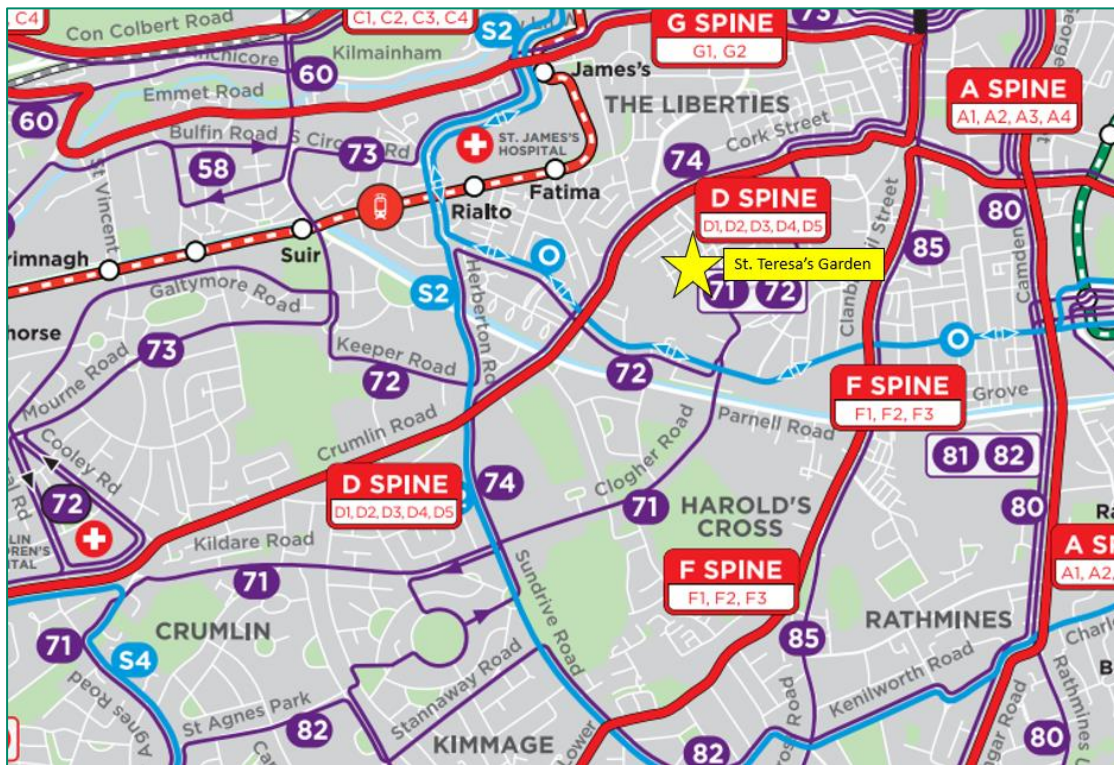


Figure 2.3 – Bus Connects Network Redesign

The proposed development site is clearly labelled on the map above just below the 'D Spine' route and just left of the 'F Spine' route. The improved service frequencies on the D and F spines through the BusConnects initiative would greatly enhance access to public transport services for those in the study area.

According to BusConnects, buses along the D-Spine would see a frequency of services every 4-8 minutes, seven days of the week. Buses on the F-Spine would see a frequency of services every 5-10 minutes, seven days of the week. Currently, services in this area are running every 10-20 minutes. In addition to the D and F spine the proposed development site will benefit from the new O route service operating an inner orbital service largely around the North and South Circular Roads operating at an 8 minute frequency from 07:00 to 18:00 Monday to Friday and 10 and 15 minute frequencies on Saturday and Sundays respectively. The 71 Tallaght - Ballymount - Warrenmount - East Wall and 72 Drimnagh - Warrenmount - East Wall will also serve the proposed development site at a 30 min frequency 7 days a week.

The implementation of BusConnects initiatives in this area could greatly improve overall frequency and reliability of bus services in this study area.

3. Survey Results

3.1.1 Luas Services

The Fatima Luas stop is located on the service’s Red Line. It travels both Eastbound and Westbound, completing its Eastbound trip either at The Point or Connolly station, and completing its Westbound trip either at Tallaght or Saggart. Surveyors collected departing capacities, departing times, and analysed this data in conjunction with Luas carriage seating, standing, and overall capacity. This survey was conducted on 13.10.22 between the hours of 7:00-10:00 and 16:00-19:00.

The maximum capacity of a Luas Red Line Tram is 292 people this is indicated by way of a red line within each of the figures.

3.1.1.1 Fatima Luas Stop Eastbound Service AM and PM Survey Results

During the AM period, overall capacity averaged approximately 108 passengers per train, with a low of 28 passengers and a high of 270. During the PM period, overall capacity averaged approximately 138 passengers per train, with a low of 42 passengers, and a high of 256 passengers. Survey results are shown in Figure 3.1

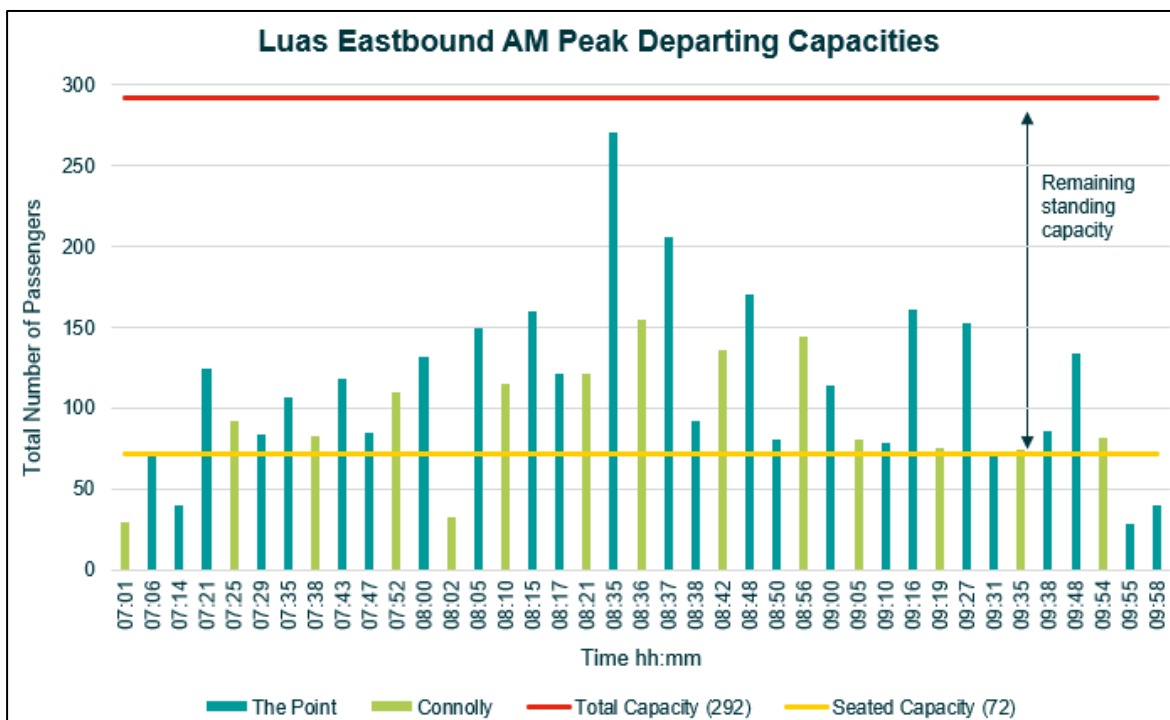


Figure 3.1 – Luas Eastbound AM Survey Results

Overall, the survey revealed that average PM departing capacities were higher than average AM departing capacities. During the AM period, the longest interval between services was 10 minutes, and the shortest interval was 1 minute. During the PM period, the longest interval between services was 14 minutes, and the shortest interval between services was 1 minute. Survey results are shown in Figure 3.2

It should be noted that the Eastbound PM service experienced some delays due to a technical issues at Jervis Station, which caused an infrequency of service and likely increased overall capacities.

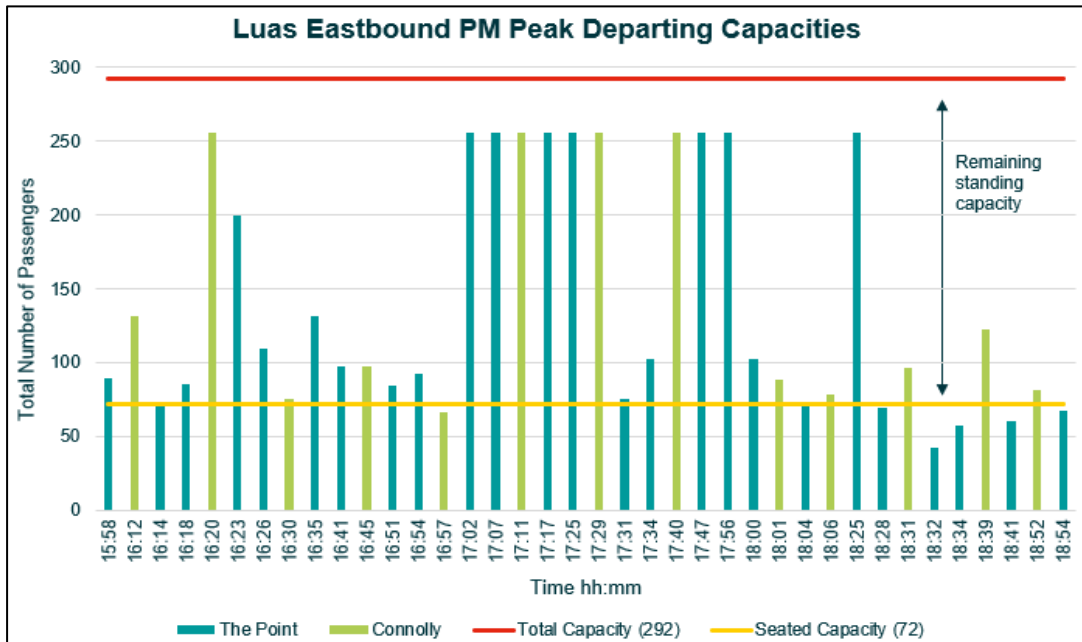


Figure 3.2 – Luas Eastbound PM Survey Results

3.1.1.2 Fatima Luas Stop Westbound Service AM and PM Survey Results

During the PM period, overall capacity averaged approximately 58 passengers per train, with a low of 7 passengers and a high of 115. During the PM period, overall capacity averaged approximately 171 passengers per train, with a low of 83 passengers, and a high of 256 passengers. Survey results are shown in Figure 3.3 Luas Westbound AM Survey Results

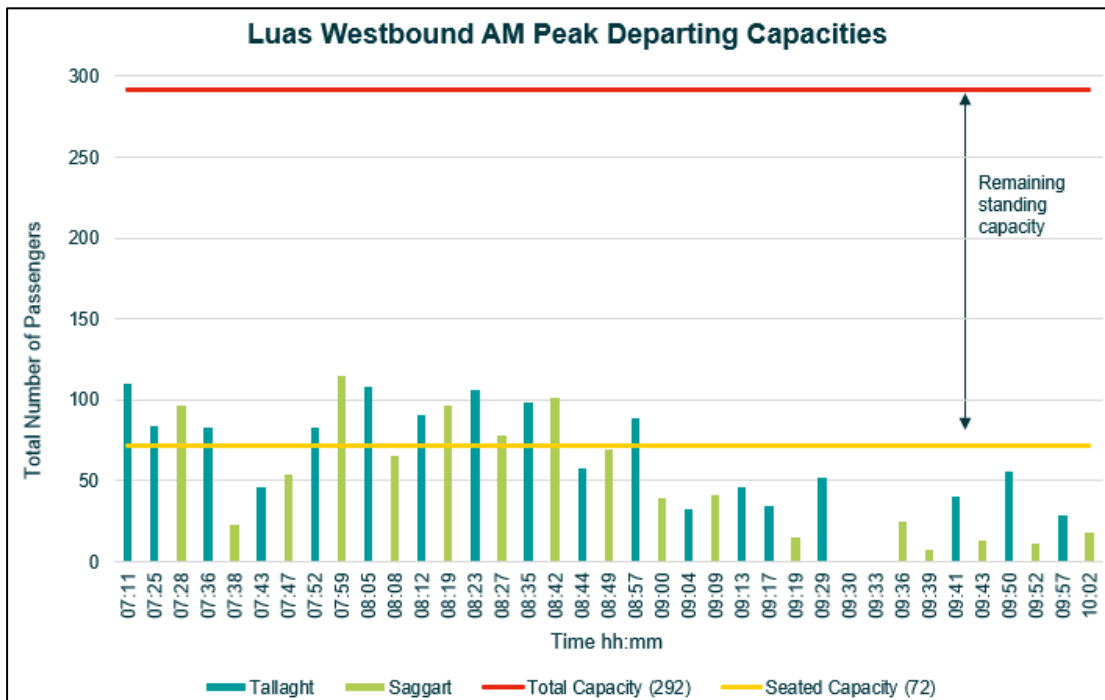


Figure 3.3 Luas Westbound AM Survey Results

Overall, the survey revealed that average PM departing capacities were higher than average AM departing capacities. During the AM period, the longest interval between services was 14 minutes, and the shortest interval was 2 minutes. During the PM period, the longest interval between services was 15 minutes, and the shortest interval between services was 1 minute. Survey results are shown in Figure 3.4.

However, it should be noted that the Westbound PM service likely experienced increased capacities and some delays due to a Shamrock Rovers v. Molde FK match taking place at Tallaght Stadium at 19:00.

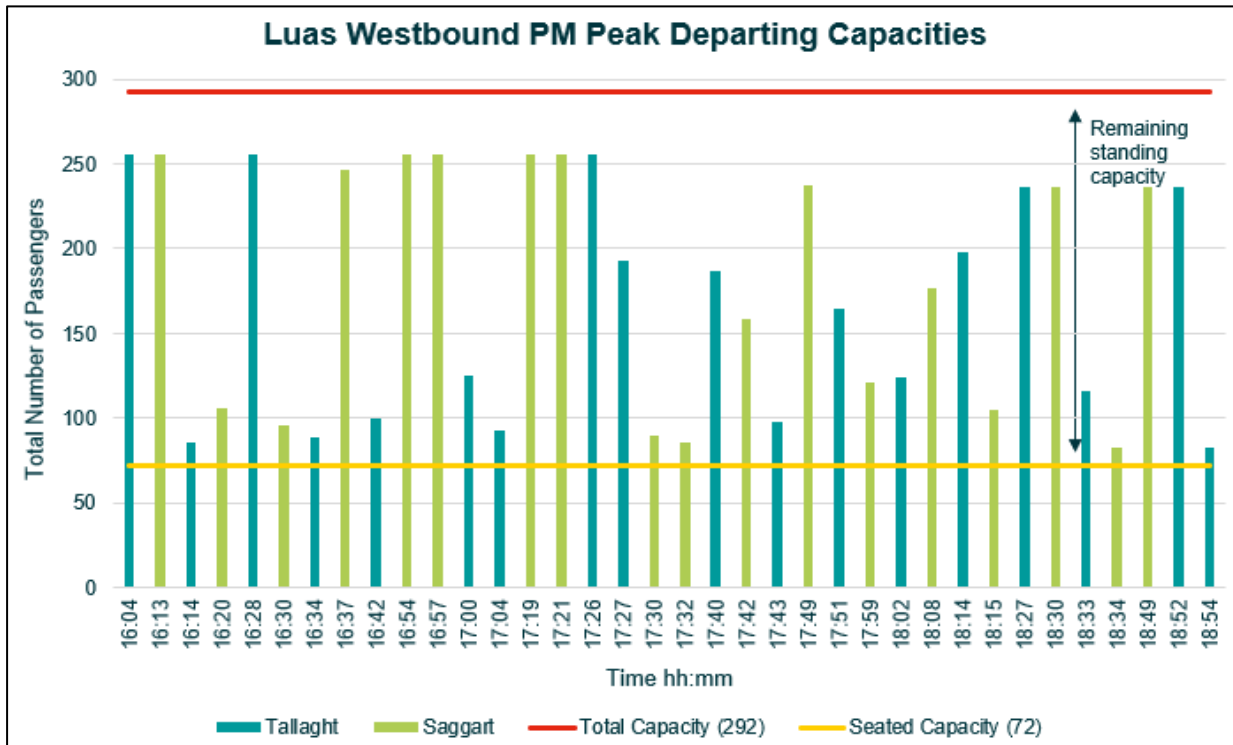


Figure 3.4 – Luas Westbound PM Survey Results

3.2 Bus Services

The maximum capacity of a the buses surveyed is 99 people and the total seated capacity is 75 people this is indicated by way of a red line and yellow line respectively within each of the figures.

3.2.1 AM and PM Survey Results Stop 1382

Bus stop 1382 is located directly in front of Dolphin’s Barn Church and services routes 122 (destination Ashington), 68 (destination Poolbeg Street) and 68A (destination Poolbeg Street). This stop was surveyed on 13.10.22.

The survey data compares the departing AM/PM capacities of buses servicing stop 1382 at Dolphin’s Barn. During the AM period, overall capacity averaged 63 passengers per bus, with a low of 0 passengers and a high of 94. During the PM period, overall capacity averaged 16 passengers per bus, with a low of 3 passengers, and a high of 34 passengers.

Overall, the survey revealed that average AM departing capacities were higher than average PM departing capacities. During the AM period, the longest interval between services was 16 minutes, and the shortest interval was 1 minute. During the PM period, the longest interval between services was 21 minutes, and the shortest interval between services was 0 minutes, meaning the buses followed one after the other. Survey results are shown in Figure 3.5 and Figure 3.6.

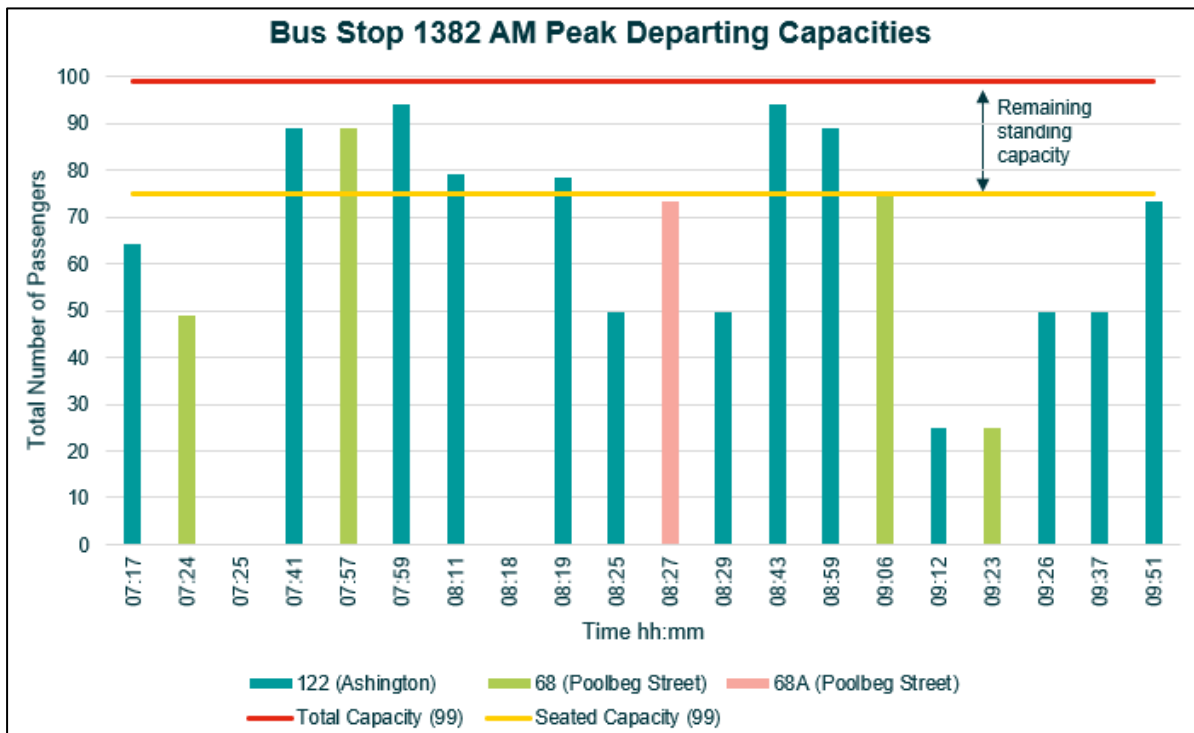


Figure 3.5 – Stop 1382 AM Peak Survey Results

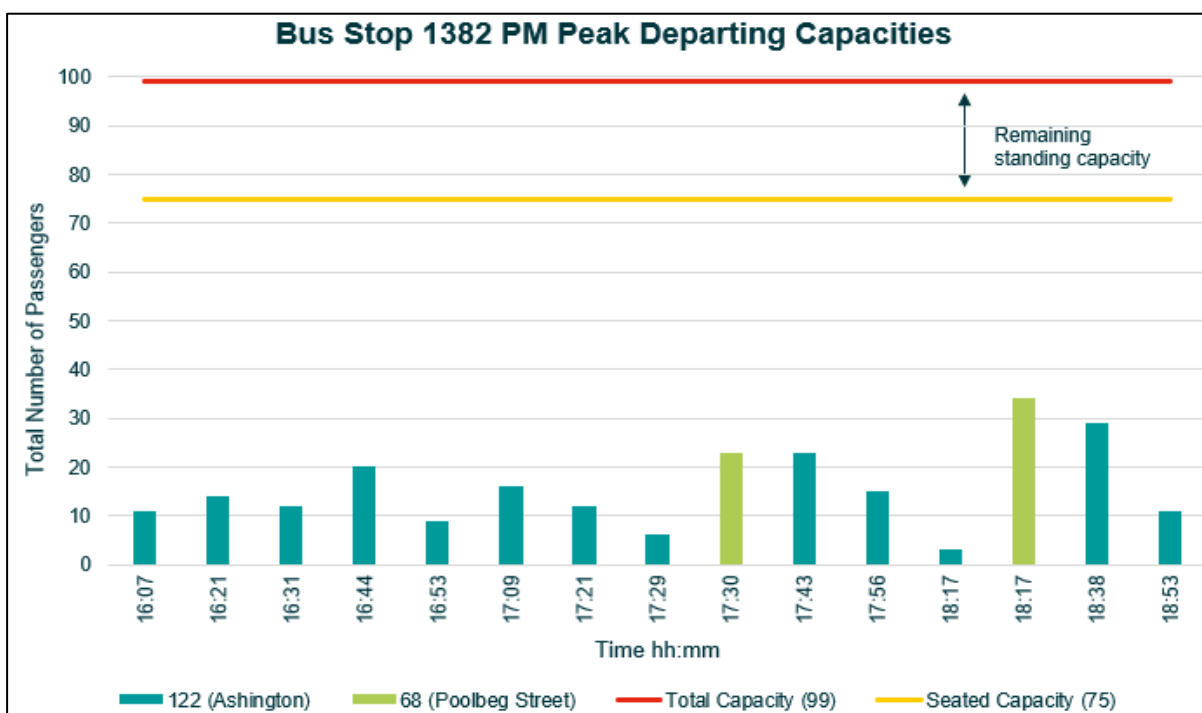


Figure 3.6 – Stop 1382 PM Peak Survey Results

3.2.2 AM and PM Survey Results for Stop 1365

Bus stop 1365 is located directly across from Dolphin’s Barn Church and services routes 122 (destination Drimmagh Road) and 68 (destination Greenogue). This stop was surveyed on 13.10.22.

The data compares the departing AM/PM capacities of buses servicing stop 1365. During the AM period, overall capacity averaged 18 passengers per bus, with a low of 0 passengers and a high of 78. During the PM period, overall capacity averaged 25 passengers per bus, with a low of 5 passengers, and a high of 56.

Overall, the survey revealed that average PM departing capacities were higher than average AM departing capacities. During the AM period, the longest interval between services was 22 minutes, and the shortest interval was 3 minutes. During the PM period, the longest interval between services was 20 minutes, and the shortest

interval between services was 0 minutes, meaning the buses followed one after the other. Survey results are shown in Figure 3.7. and Figure 3.8

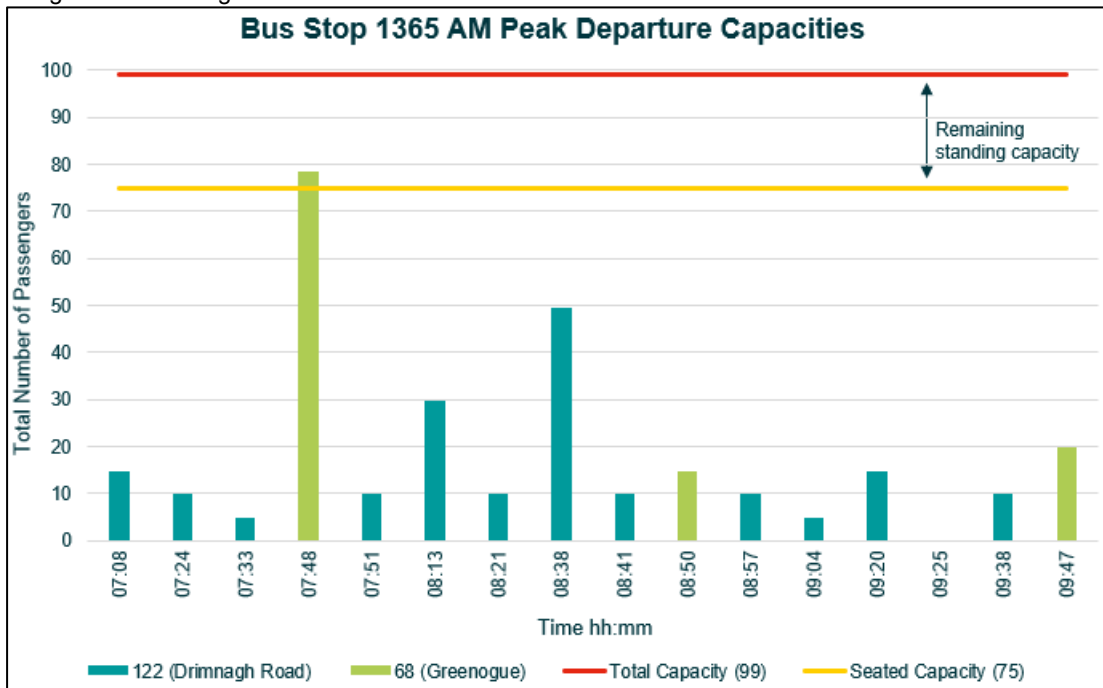


Figure 3.7 - Stop 1365 AM Peak Survey Results

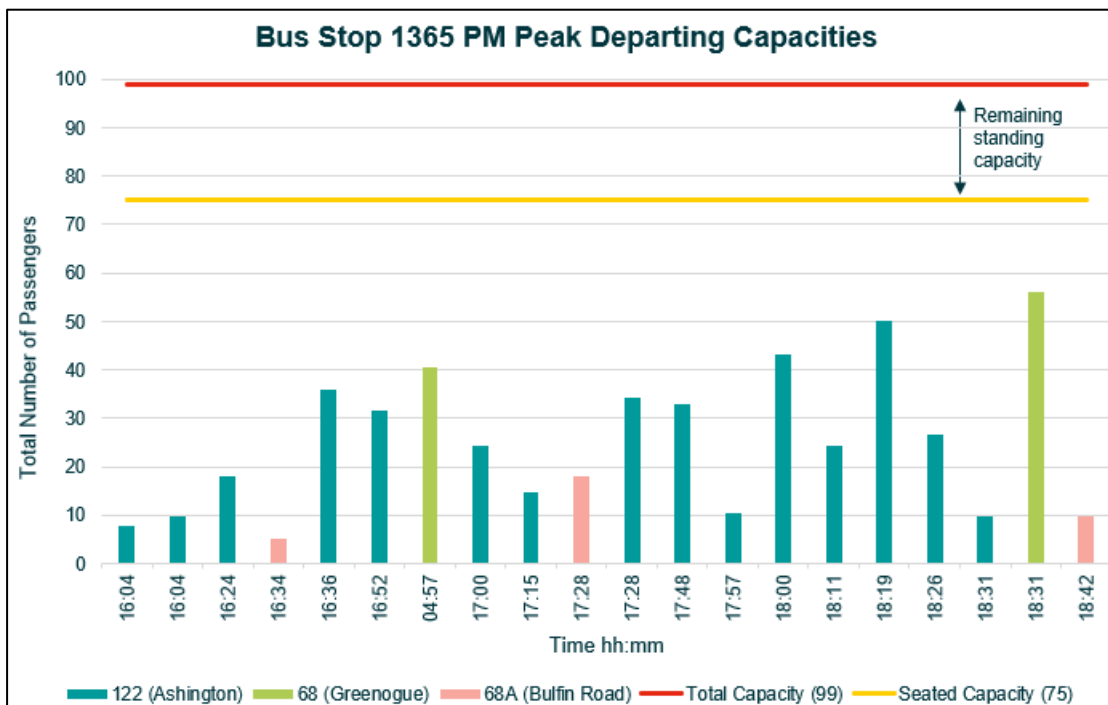


Figure 3.8 - Stop 1365 PM Peak Survey Results

3.2.3 AM and PM Survey Results for Stop 1381

Bus stop 1381 is located at St. Andrew’s Centre and services routes 122 (destination Ashington), 17 (destination Blackrock Station), 68 (destination Poolbeg) and 17D (destination Dundrum). This stop was surveyed on 18.10.22.

The below data compares the departing AM/PM capacities of buses servicing stop 1381 at St. Andrew’s Centre. During the AM period, overall capacity averaged 44 passengers per bus, with a low of 5 passengers and a high of 99. During the PM period, overall capacity averaged 23 passengers per bus, with a low of 0 passengers, and a high of 88.

Overall, the survey revealed that average AM departing capacities were higher than average PM departing capacities. During the AM period, the longest interval between services was 15 minutes, and the shortest interval

was 1 minute. During the PM period, the longest interval between services was 19 minutes, and the shortest interval between services was 0 minutes, meaning the buses followed one after the other. Survey results are shown in Figure 3.9 and Figure 3.10.

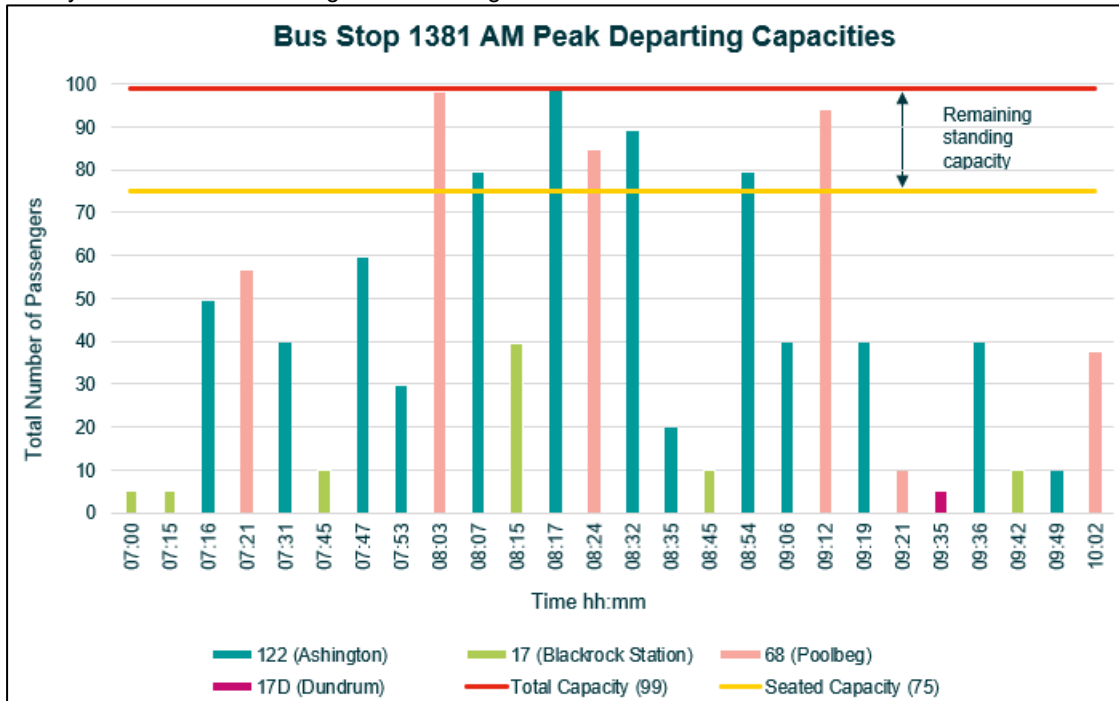


Figure 3.9 - Bus Stop 1381 AM Survey Results

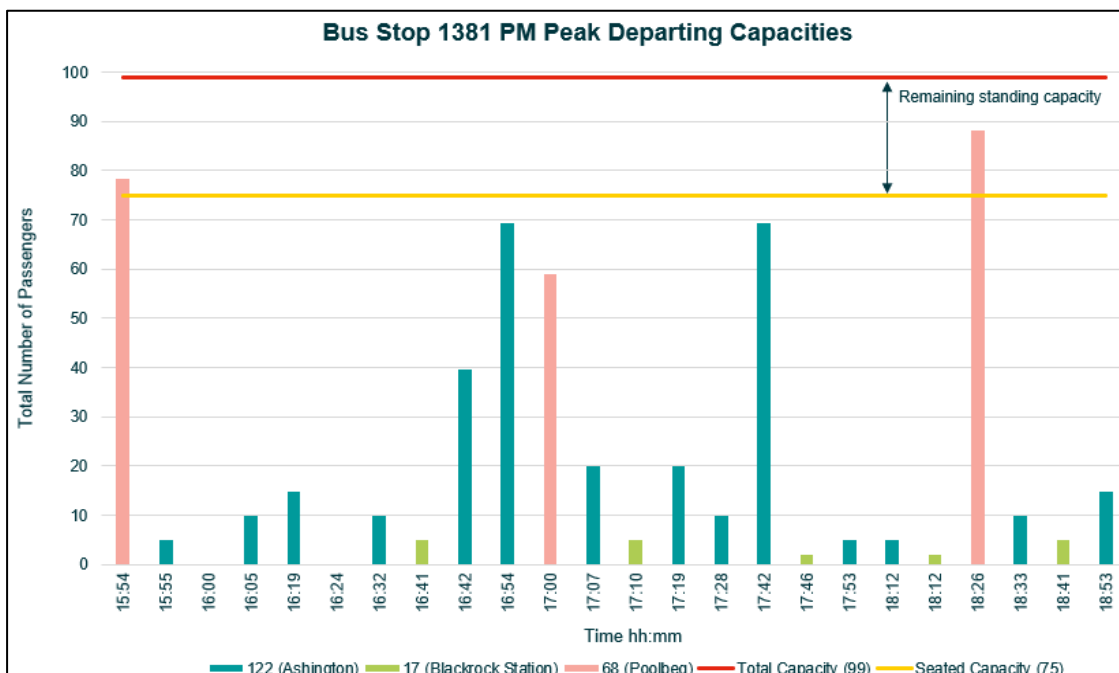


Figure 3.10 - Bus Stop 1381 PM Survey Results

3.2.4 AM and PM Survey Results for Stop 2315

Bus stop 2315 is located at The Coombe/Brickfield Lane and services routes 27 (destination Fortunestown Road), 151 (destination Foxborough Estate), 77A (destination Bianconi Avenue) and 56A (destination Bianconi Avenue). This stop was surveyed on 18.10.22.

The data compares the departing AM/PM capacities of buses servicing stop 2315. During the AM period, overall capacity averaged 17 passengers per bus, with a low of 1 passenger and a high of 65. During the PM period, overall capacity averaged 54 passengers per bus, with a low of 14 passengers and a high of 80.

Overall, the survey revealed that average PM departing capacities were higher than average AM departing capacities. During the AM period, the longest interval between services was 14 minutes, and the shortest interval was 0 minutes, meaning the buses followed one after the other. During the PM period, the longest interval between services was 13 minutes, and the shortest interval was 0 minutes, meaning the buses followed one after the other. Survey results are shown in Figure 3.11 and Figure 3.12

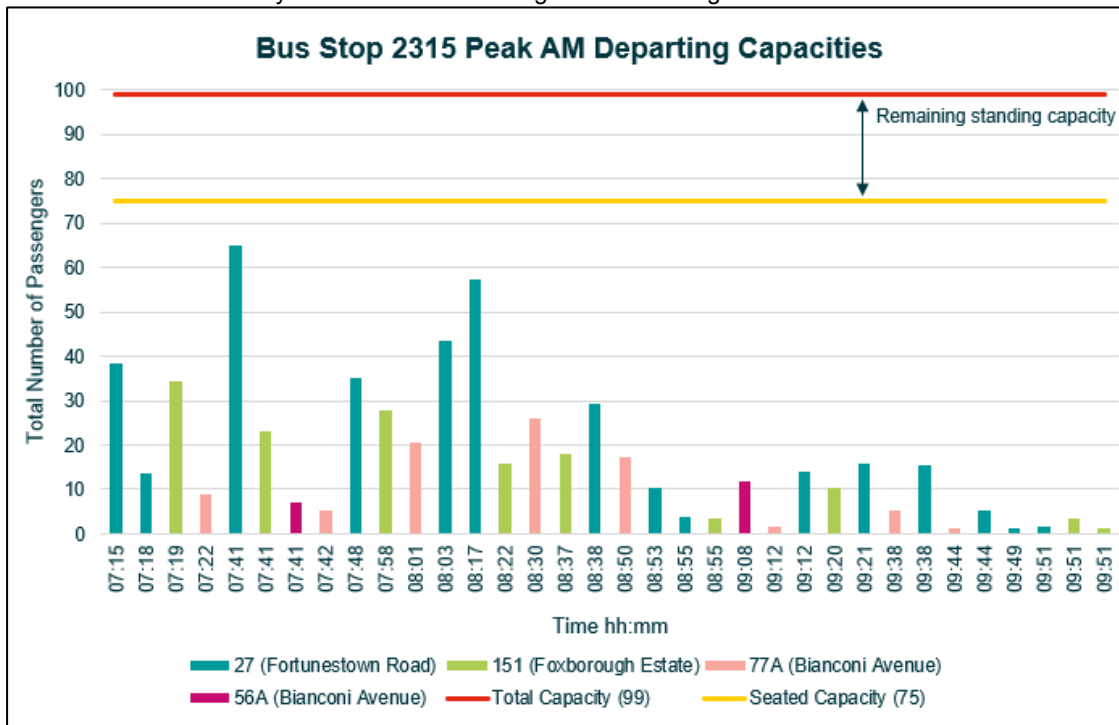


Figure 3.11 - Bus Stop 2315 AM Survey Results

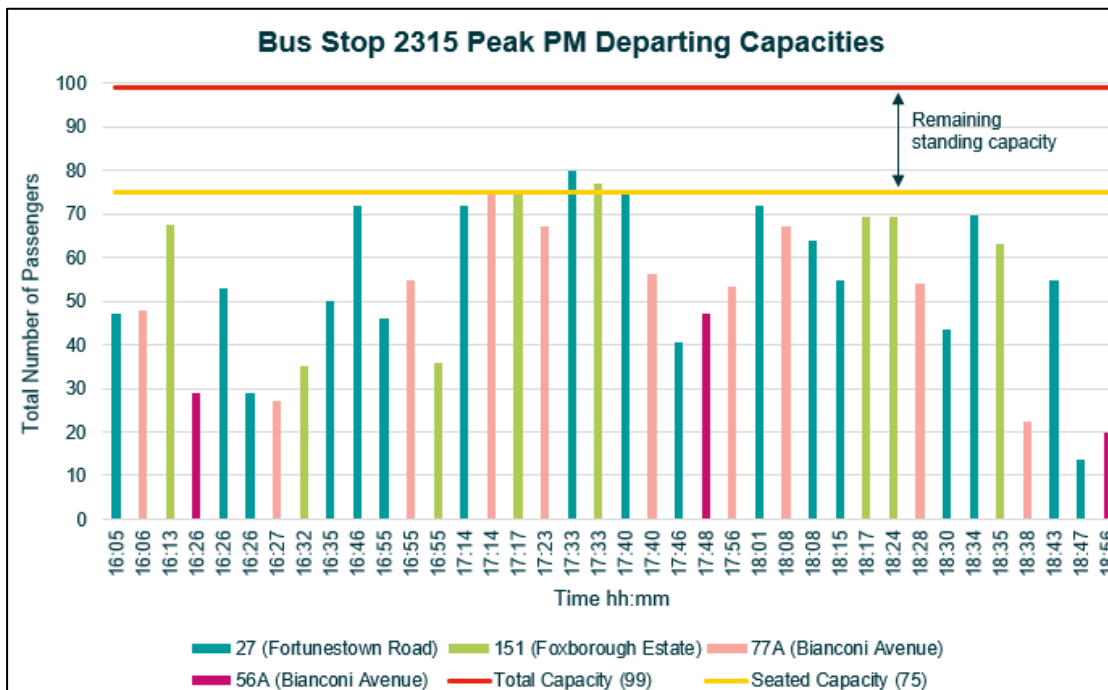


Figure 3.12 - Bus Stop 2315 PM Survey Results

3.2.5 AM and PM Survey Results for Stop 2379

Bus stop 2379 is located at The Coombe/Marion Villas and services routes 27 (destination Temple view Avenue), 151 (destination Bargy Road), 77A (destination Ringsend Road) and 56A (destination Ringsend Road). This stop was surveyed on 18.10.22.

The data compares the departing AM/PM capacities of buses servicing stop 2379. During the AM period, overall capacity averaged 51 passengers per bus, with a low of 4 passengers and a high of 98. During the PM period, overall capacity averaged 28 passengers per bus, with a low of 4 passengers and a high of 64.

Overall, the survey revealed that average AM departing capacities were higher than average PM departing capacities. During the AM period, the longest interval between services was 19 minutes, and the shortest interval was 0 minutes, meaning the buses followed one after the other. During the PM period, the longest interval between services was 17 minutes, and the shortest interval between services was 0 minutes, meaning the buses followed one after the other.

Survey results are shown in Figure 3.13 and Figure 3.14.

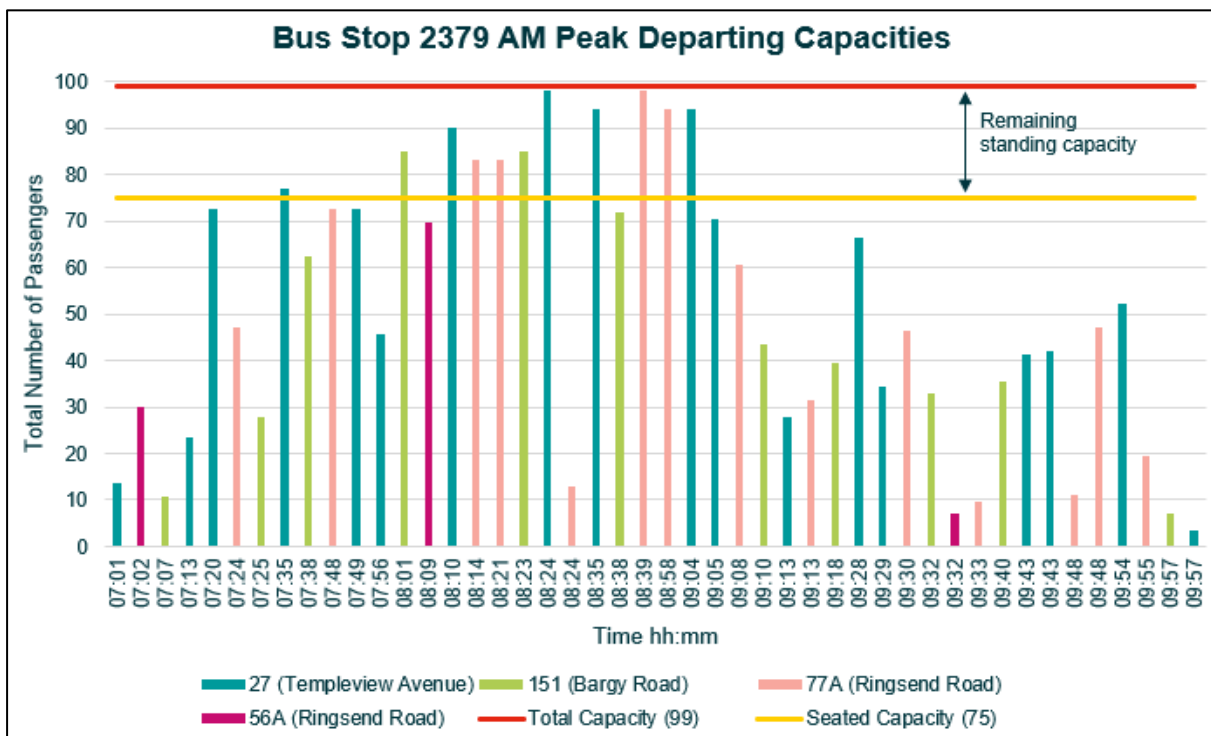


Figure 3.13 - Bus Stop 2379 AM Survey Results

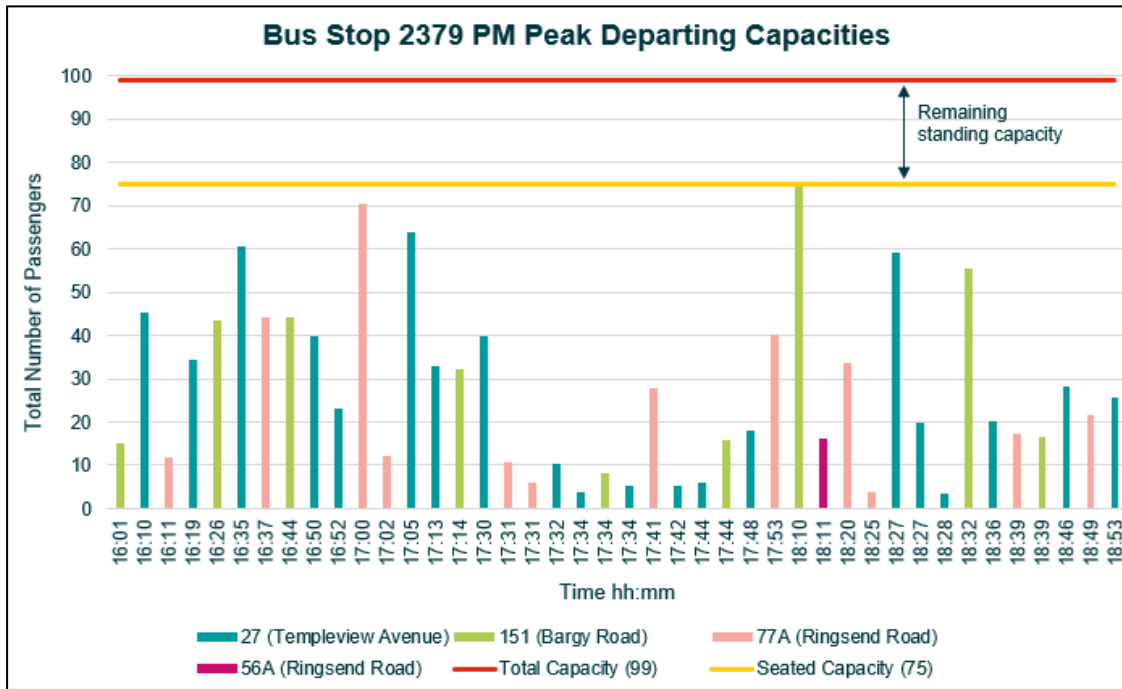


Figure 3.14 - Bus Stop 2379 PM Survey Results

3.2.6 AM and PM Survey Results for Stop 4857

Bus stop 4857 is located at Warrenmount/Rutledge Terrace and services route 150 (destination Hawkins Street). This stop was surveyed on 18.10.22.

The data compares the departing AM/PM capacities of bus route 150, servicing stop 4857. During the AM period, overall capacity averaged 40 passengers per bus, with a low of 5 passengers and a high of 99. During the PM period, overall capacity averaged 49 passengers per bus, with a low of 5 passengers and a high of 99.

Overall, the survey revealed that average PM departing capacities were higher than average AM departing capacities. During the AM period, the longest interval between services was 40 minutes, and the shortest interval was 2 minutes. During the PM period, the longest interval between services was 31 minutes, and the shortest interval was 4 minutes.

Survey results are shown in Figure 3.15 and Figure 3.16.

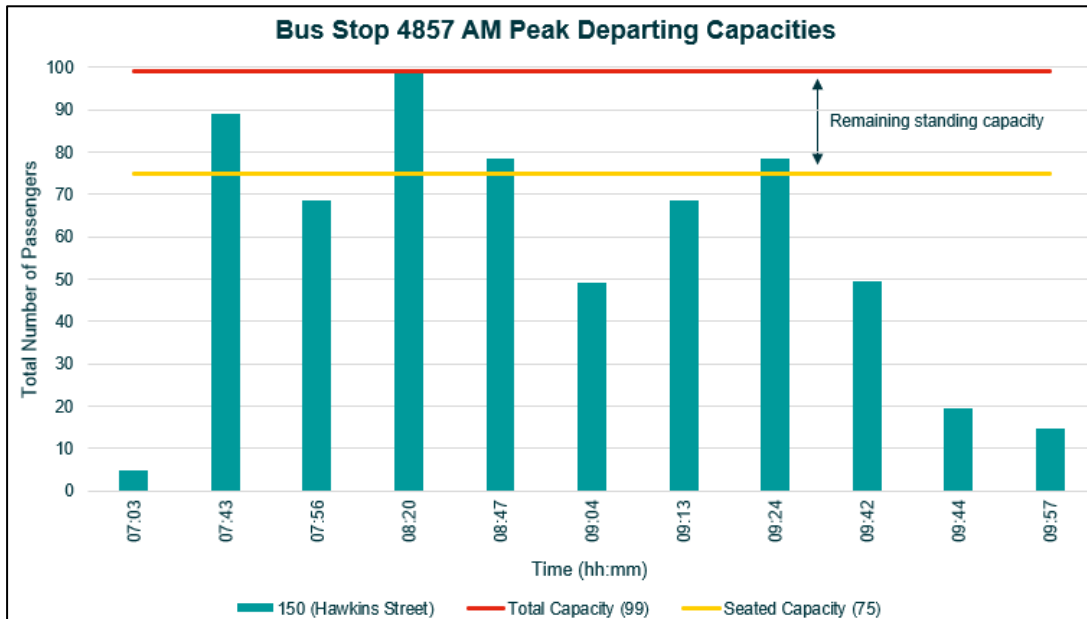


Figure 3.15 - Bus Stop 4857 AM Survey Results

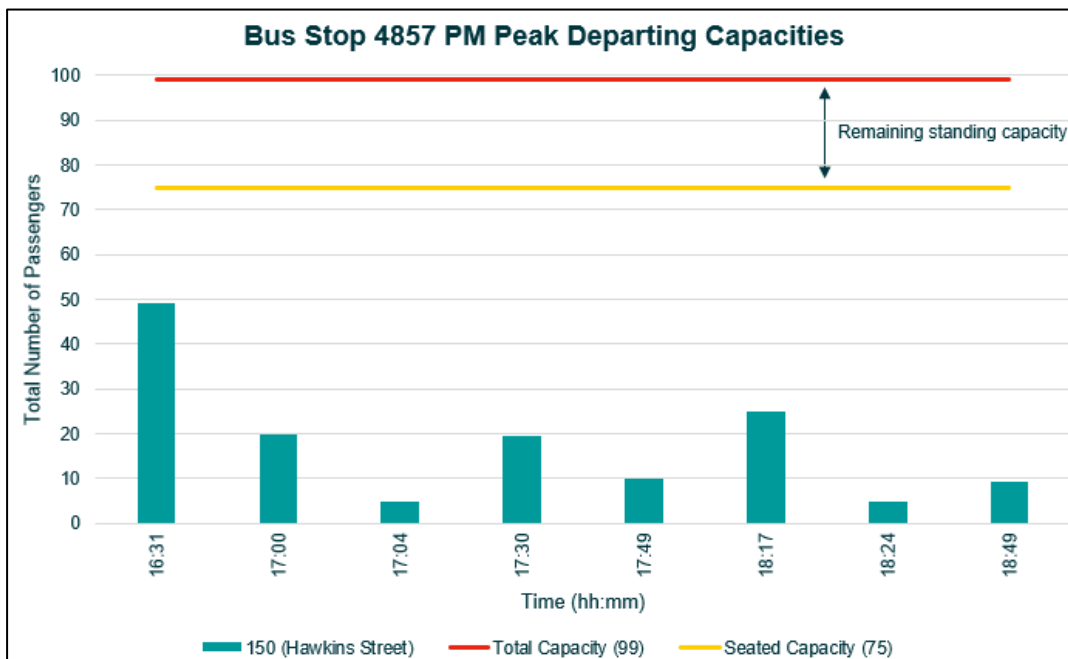


Figure 3.16 – Bus Stop 4857 PM Survey Results

3.3 Conclusion

The stop surveys and analysis highlight that there is spare capacity on all services surveyed during the AM and PM time periods with some services have significant level of spare capacity.

In addition, the survey data highlights that there is adequate spare capacity on Luas and bus in both directions during both time periods to meet the increased demand arising from the public transport trips generated from the TRICS analysis, as outlined within the AECOM Transport and Traffic Assessment (TTA).

The level of public transport trips forecast in the TRICS analysis are relatively low for this site and having regard to the survey results there is more than enough capacity to cater for this level of additional trip demand within both the AM and PM periods. Table 4.1 contains the public transport tips forecast in the TRICS analysis.

Table 3.1 – Public Transport Trips Rates from TRICS

Mode of Travel	Morning (08:00 - 09:00)		Evening (17:00 - 18:00)	
	Arrivals	Departures	Arrivals	Departures
Public Transport	9	3	30	13

4. Sensitivity Test

4.1 Overview

A public transport capacity sensitivity test was undertaken for St. Teresa's Garden site to assess if there is currently spare capacity on surveyed bus and Luas services to cater for a greater than forecast use of public transport by those departing the proposed development site. The test uses outputs of the TRICS analysis contained within the TTA prepared by AECOM for the AM peak period focusing on departures during the morning peak period of 08:15 - 09:15. This time period was chosen as it has the highest level of departures from the site in the TRICS analysis. The TRICS has forecast 1 public transport trip departing the site in the AM peak period which as shown in Section 2 there is more than sufficient capacity to cater for this trip.

4.2 Assumptions

In order to stress the existing public transport capacity and determine if there is the necessary capacity to cater for a higher than forecast public transport trips from the site it was assumed that 15% of all departure from the site in the AM peak period would depart on public transport which equates to 38 public transport trips as shown in Table 4.1.

Table 4.1 - TRICS Stress Test Trip Rate

Mode of Travel	Morning (08:15 - 09:15)	
	Arrivals	Departures
Vehicle	41	77
Vehicle Passenger	54	112
Cyclist	4	12
Pedestrian	58	106
Public Transport	9	3
Total People	122	231
Total One Way Flows	41	77
Total Two Way Flows	118	
15% of Total People	18	35

The following assumptions were used in carrying out the sensitivity stress test:

- 15% of total people leaving the site in the AM peak hour are made by public transport, a marked increase on the TRICS output.
- These trips are split 65% to bus and 35% to Luas to match census analysis for travel in this area of the city.
- The Luas and bus trips are again split 80:20 into Inbound (towards town): outbound (away from Town) direction.
- 60% of both bus and Luas trips are assigned to vehicles in the busiest 30 minutes, as determined in the survey (part of the peak hour for bus travel), recognising a "peak within a peak".
- The trips are then spread evenly over the buses in this busy 30-minute time-band.

For bus stops, the trips were assigned to each individual stop based on the level of services calling at that stop between 08:00 - 09:00. Table 4.2 contains the assignment of trips to bus stops within the survey area.

Table 4.2 – Allocation of Trips to Bus stops

Stop No.	No. of Services	% Breakdown of Services per Stop	No. of Trips per stop
Bus Inbound Direction			
1381	9	25%	5
1382	9	25%	5

4587	4	11%	2
2379	14	39%	7
Total Inbound	36		18
Bus Outbound Direction			
1365	6	33%	2
2315	12	67%	3
Total Outbound	18		5
Luas Inbound Direction			
Fatima	14	80%	10
Luas Outbound Direction			
Fatima	12	20%	2

4.3 Sensitivity Test

The following graphs were created to express the results of the TRICS analysis. During the hour of highest level of departure from the site (08:15-09:15). The graphs below show passenger capacity data at the highest hour of frequency, with the peak half-hour highlighted. The TRICS trip rates were assigned to a data point at random during the peak frequency period.

The TRICS trip rates were applied in a block however in reality it is highly unlikely that the trips would disperse the site in this manner within the AM peak period. Applying trips in this block fashion to services within the busiest half hour period for each stop represents a worst-case scenario. Figure 4.1 to Figure 4.8 present the results of the TRICS Sensitivity Analysis

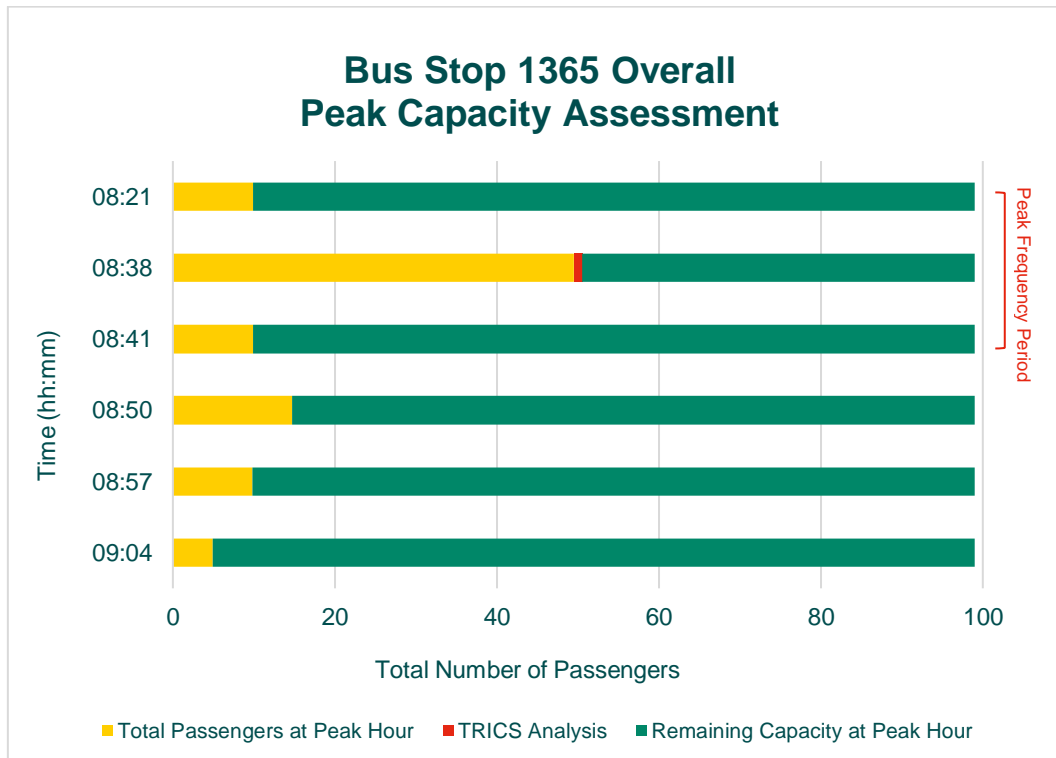


Figure 4.1 - Bus Stop 1365 Overall Peak Capacity Assessment

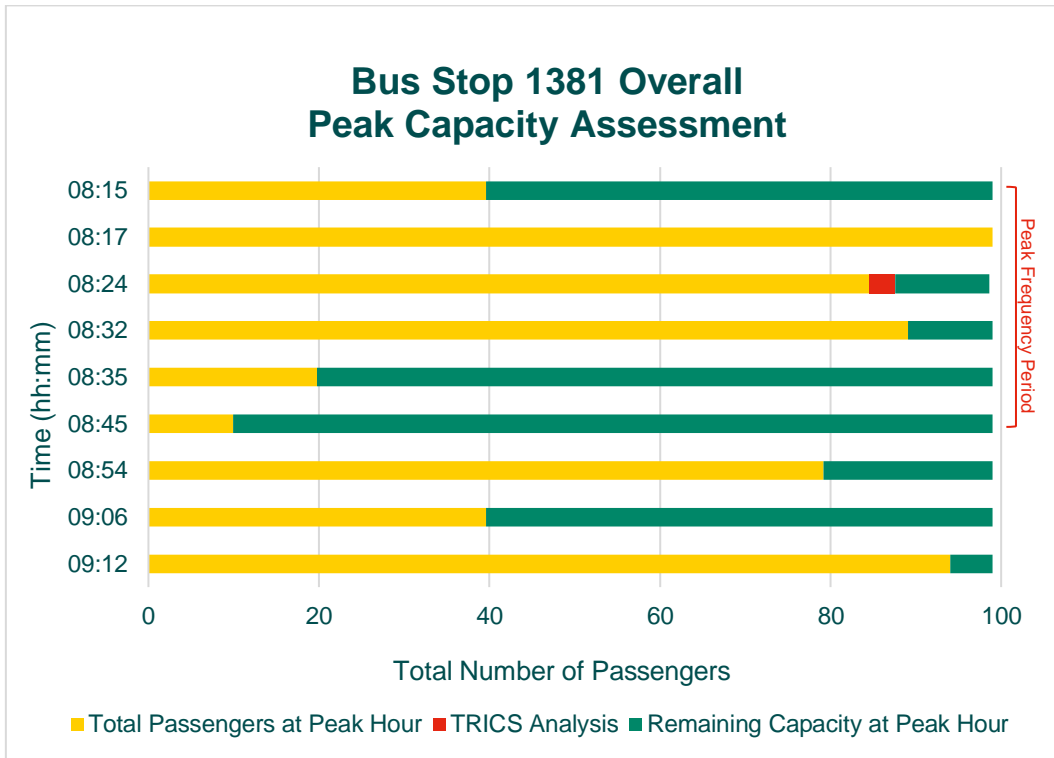


Figure 4.2 – Bus Stop 1381 Overall Peak Capacity Assessment

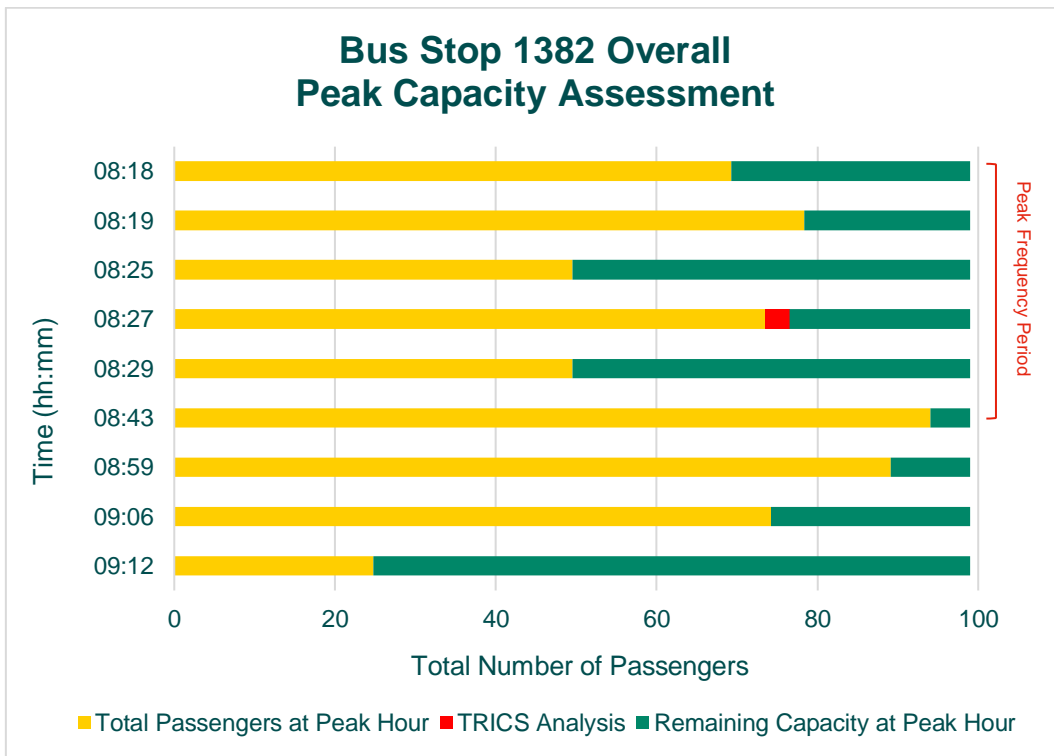


Figure 4.3 – Bus Stop 1382 Overall Peak Capacity Assessment

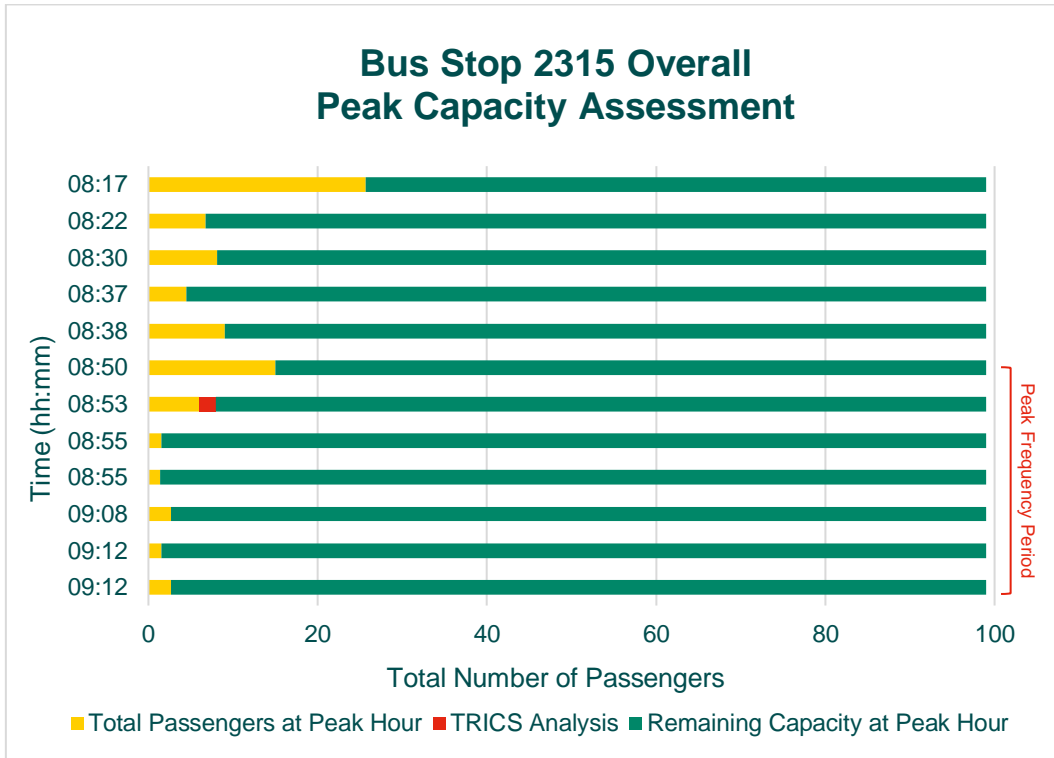


Figure 4.4 – Bus Stop 2315 Overall Peak Capacity Assessment

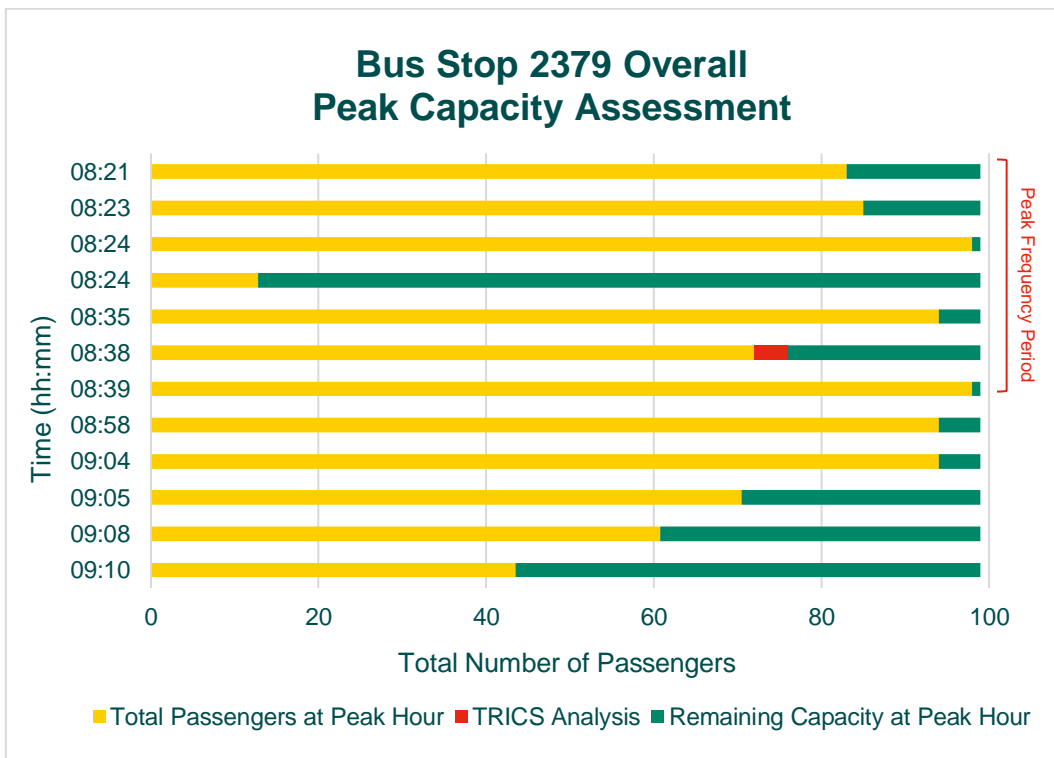


Figure 4.5 – Bus Stop 2379 Overall Peak Capacity Assessment

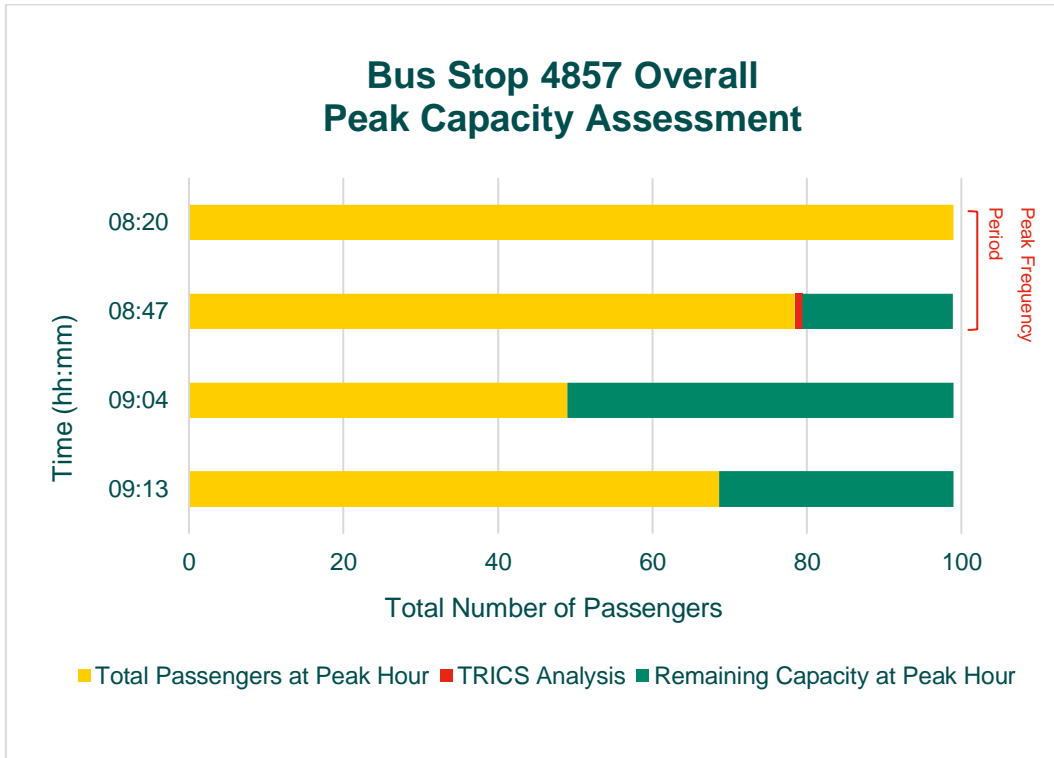


Figure 4.6 – Bus Stop 4857 Overall Peak Capacity Assessment

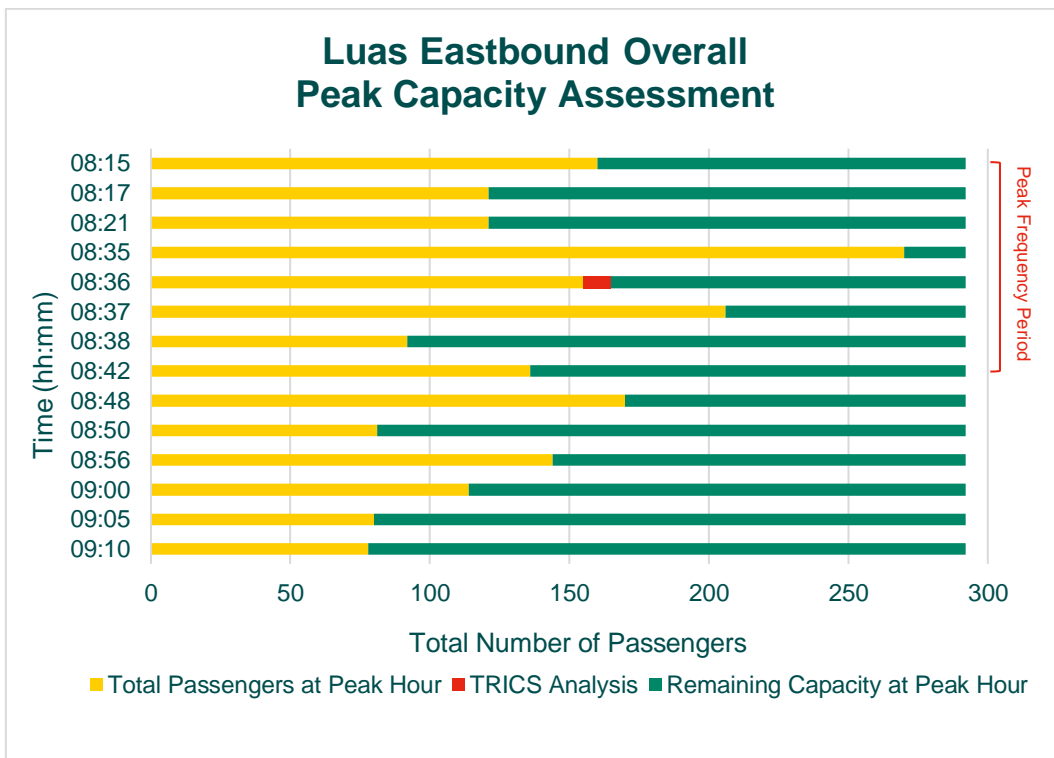


Figure 4.7 – Luas Eastbound Overall Peak Capacity Assessment

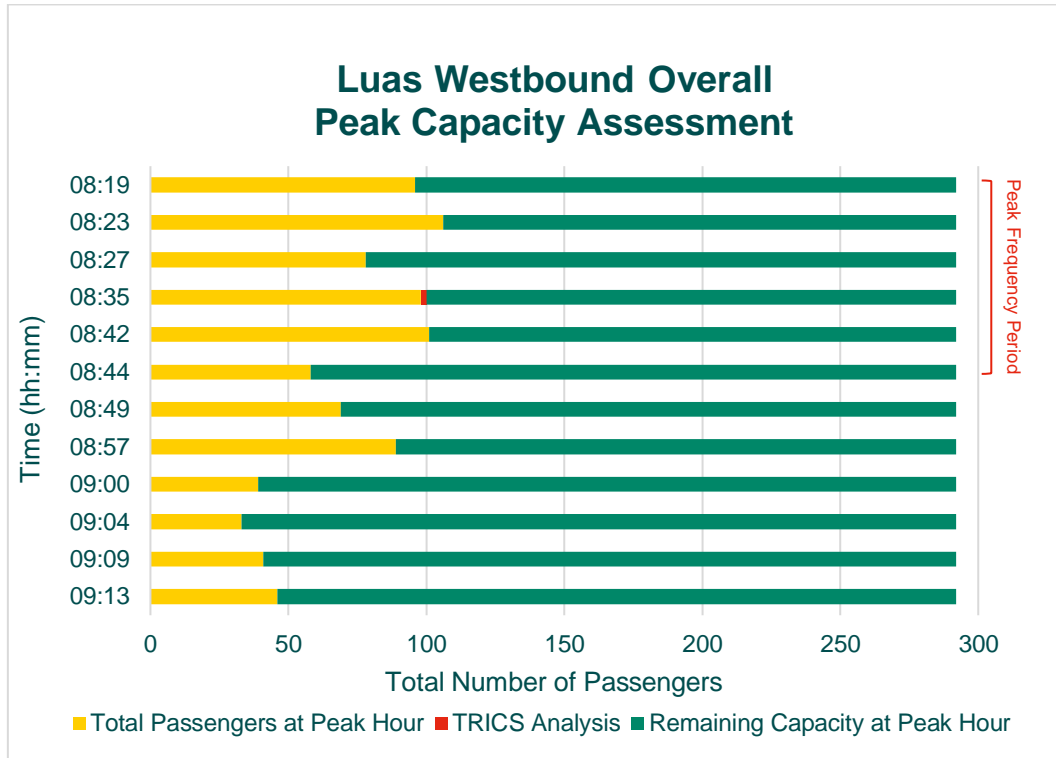


Figure 4.8 – Luas Westbound Overall Peak Capacity Assessment

4.4 Sensitivity Test Conclusion

The sensitivity analysis highlights that there is adequate capacity on all services, Luas and bus, for a higher than forecast level of public transport trips to depart Donore development site within the AM peak period the busiest period for departure from the site.

5. Conclusion

This public transport capacity assessment has assessed the capacity of existing transport services passing within close proximity to the proposed development site. The assessment has highlighted that there is more than enough capacity on existing service to cater for the forecast level of public transport trips from the site. The sensitivity analysis has also shown that there is sufficient capacity to accommodate a greater than forecast level of public transport trips from the site. It should also be noted the site will benefit from a significant increase in bus frequencies under BusConnects Network Redesign proposal which are currently being rolled out within the Dublin Metropolitan area on a phased basis.

It is therefore the conclusion of this assessment that there is sufficient capacity on existing public transport services to cater for the level of forecast trip demand from the Donore development site.

