5.0 Access Arrangements

The access strategy for the Basin is clearly illustrated on the Masterplan prepared by Bennetts Associates, shown on figures C5 and C6.

A number of vehicular points of access are proposed to serve the Masterplan site, with four on Graham Street and four from Wharf Road. Given its status and proximity to the bridge, vehicular access onto City Road is not considered to be appropriate.

The northern-most Graham Street access is proposed to serve the Graham Street North residential development only. To the south of this a similarly designed access will be provided for the Graham Street Centre residential development. The southern-most access would provide access to the residential element of the Fidelity Investments development. All three of these accesses would service vehicle lifts to basement car parking. A detailed review of Fidelity car park access has been carried out by WSP in their Transport Assessment for the site proposals. In general terms any lift approach must be designed to ensure no waiting takes place on the public highway and additional capacity is designed in with the introduction of two lifts.

It is proposed that the four Graham Street site accesses would be in the form of simple priority junctions.

These are shown indicatively at Figure C7. Visibility splays of 2.0m by 34.0m will be provided in each direction from both access point in accordance with the standards set out for Access Roads within the Islington Council's Guidelines for Parking, Servicing and Highways Design - June 1999.

Given the disposition of proposed and existing land uses within the Basin, it will be necessary for a fourth Graham Street access to be provided within the Fidelity site frontage as indicated on the Masterplan to accommodate the following:

- Service vehicle access for the Fidelity development;
- Refuse collection for the Fidelity development;
- Service vehicle access to the retained EDF substation.

This junction is also to be in the form of a simple priority junction and adequate width, a minimum headroom of 4.5m and sufficient gradient will therefore need to be provided for service vehicles once geometric designs are prepared.

The Masterplan shows this access route running diagonally through the Fidelity Site. Access to the service entrance is likely to be controlled by a rising arm barrier. This would prevent unauthorised penetration into the Basin area by vehicles. A separate turning facility will be provided within the Fidelity curtilage in order that this development would function without vehicles turning in the Basin area or reversing onto the public highway.

Access to the residential and live/work uses on the east side of the Basin is to be taken from Wharf Road, also in the form of simple priority junction. The same 2.0m by 34.0m visibility requirements would apply as would the need for this junction to be designed to accommodate service and refuse vehicles. No general vehicular access to the waterside is proposed from the Wharf Road access, although provision for boats to be delivered to the boat club and vehicles that may be required to drop off or collect visitors to the boat club will be made.

Emergency vehicle access to the interior of the Basin will be provided from the southern Graham Street access and the Wharf Road access. In addition, emergency vehicle access will be provided through the landscaped area to the north of the phase II residential use on Graham Street.

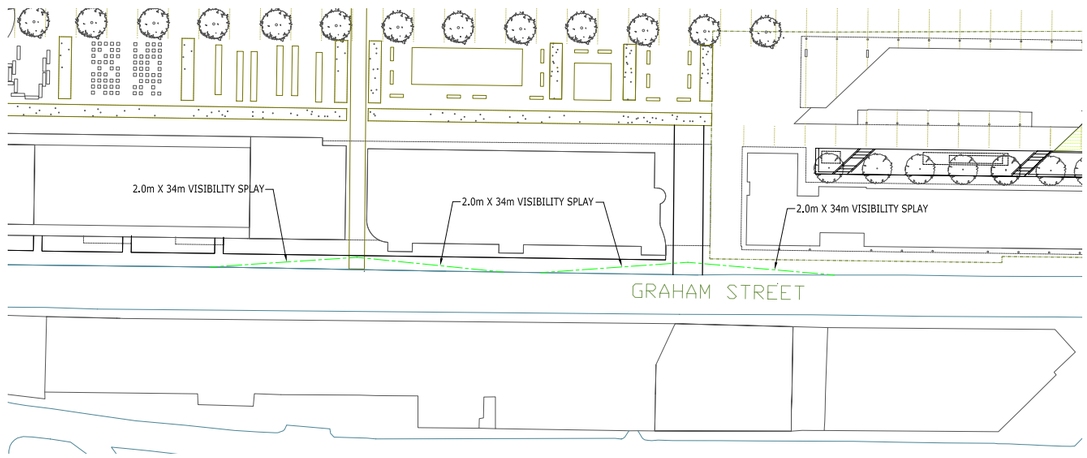

Figure C7: Visibility Splays

6.0 On-site Transport Considerations

This section of the report deals with Parking issues on-site, the principles of servicing the Masterplan area, including refuse collection for the different land uses proposed and on-site provision for pedestrians and cyclists.

6.1 Parking

On-site parking is considered within the context of sustainable transport policy as adopted by LBI and the location of the site within a controlled parking zone.

It is proposed that the residential units on the western side of City Road Basin will have parking provided at basement level within the parking standards set out by the Local Authority. These state that there will be a maximum provision for 0.5 spaces per dwelling. Likewise the parking provision for the Access Storage Site Building and the live/work units located to the east of the Basin will be within 0.5 spaces per dwelling.

This is in line with typical car ownership statistics in the London Borough of Islington where, based on National Census Data, there is an average of over 0.5 cars per household. This trend is reflected at a local level in the St Peter's Ward. The proposed provision can therefore be anticipated to represent a sustained level of parking below the average for this part of the Borough.

Significant consideration has been given to the effects of this car parking provision, with particular emphasis placed upon the cumulative impact of traffic generated by the development on the surrounding highway network.

The proposed residential developments are estimated to include a total of 433 parking spaces located both at grade and within basement parking areas. However, due to the very central location and high level of public transport accessibility, only a small proportion of these vehicles will be utilised during the peak periods. It is possible to confirm this assumption by again interrogating the results of the National Census carried out in 2001. The statistics for St Peter's ward demonstrate that over 45% of residents use public transport facilities as their primary mode for the journey to work (of which half utilise the bus network). However less than 14% of residents use their cars for the typical commuting journey. The statistics also illustrate that the constraint on car use is not as a result of availability to vehicles, with over 50% of all public transport users having access to a car which could potentially be used for the journey to work.

In addition to this, restraint on workplace parking and the recently introduced Congestion Charging constrains car use for community types.

It is therefore evident that despite the restricted parking on-site, the excellent accessibility to public transport and a location close to major commercial centres will provide the primary factor in the reduction of car based trips.

Parking for the redevelopment of the Fidelity Investments Site will be incorporated within a basement facility to be accessed by means of either vehicle lifts or a ramp. Whilst full details of the arrangement are currently in the early stages of design two key elements will be included. If two lifts are provided, they should give sufficient capacity during peak periods of arrival and departure. Such an arrangement should also provide a level of redundancy in the event of failure of a lift. Design consideration has also been given to the provision of adequate queuing space at the lift accesses to try to ensure no waiting on the highway takes place. Parking and access for the other two residential developments on Graham Street will be similarly arranged.

Parking for the Access Storage Site development will also be within a basement facility. However, access will be gained by means of a vehicle ramp within the site boundary. Vehicles will leave the highway by means of an upgraded existing access road adjacent to the National Grid Building on Wharf Road.

Disabled parking and cycle parking will be incorporated within the above in accordance with the Council's guidelines.

It is proposed that no on-site parking provision is made for either the retail or the restaurant uses. It is expected that customers would use non-car modes of travel to travel to these uses, combine their visit with a trip already made to the Basin or be a local resident or employee. However, one disabled parking bay will be provided at the restaurant, in order to comply with standards set out by the London Borough of Islington's parking policy. Access to this space will be managed by the restaurant via the entry control system on Graham Street.

6.2 Servicing

With the development comprising predominantly residential uses, the servicing requirements will be minimal. With the exception of refuse collection and servicing of the Graham Street Centre and North developments, it is anticipated that the residential units servicing needs will be catered for within the Masterplan site. The mixed use elements of the Masterplan are proposed within the Fidelity and Access Storage Sites, the proposed small urban supermarket or 60m commercial unit on the ground floor of the Access Storage Site and the retail, restaurant or leisure units on the Fidelity Site on City Road. Both sites will make appropriate provision for servicing within their respective sites and to a standard compliant with local planning policy. It is the intention of the Masterplan to minimise the potential conflict between pedestrians and vehicles within the Basin area. This will be achieved by ensuring that, where possible, all servicing will take place within individual site boundaries and with no encroachment into pedestrian areas within the Basin. Limited manoeuvres for service vehicles will be required to permit access to the EDF Energy substation; however these are anticipated to be controlled and infrequent.

6.3 Refuse Collection

Refuse collection for the proposed buildings along Graham Street is proposed to take place "on-street." The waste arrangements for the residential blocks will be designed to enable this to happen in accordance with LBI Guidelines for Parking, Servicing and Highways Design - June 1999. It is the intention of the Masterplan that all refuse collection associated with the residential of the Fidelity Investments and Access Storage Site developments will take place within the respective sites. Such arrangements would be in accordance with the aforementioned guidelines and be designed to ensure that all vehicles can access and egress the sites in a forward gear. The refuse collection related to the Live/work units is anticipated to take place on-site.

With regard to the retail and restaurant units within the Masterplan layout, refuse collection would sensibly be required to take place on the site in order to accord with the guidelines provided by the Local Authority. These state that maximum carrying distance for sacks/bins from the point of collection is 25m and the maximum pushing distance for paladin containers is 10m. The run should be reasonably level, with no upstands and no gradient when loaded. It is not yet known how many times a week the restaurant will need to be serviced. Again, vehicles associated with the collection of refuse to these sites will be required to manoeuvre from and to the highway in a forward gear.

6.4 Pedestrians and Cyclists

It is proposed that the western side of the Basin would accommodate a new pedestrian route through the site. It is proposed that this route would be available to the public and users of the development on the same basis as the present hours of Graham St Park and the Regent's Canal Towpath. This route would be maintained and managed by the Basin Management Company.

Access to the pedestrian route would be via the main arrival zones to the Basin situated on Graham Street to the north of the Graham Street North residential development and on City Road adjacent to the proposed retail area.

Given the level difference between the Basin and City Road bridge, suitably designed ramps will be provided as part of the Masterplan proposals in order to make the scheme as accessible as possible to those on foot, for those with pushchairs and the mobility impaired.

The above pedestrian facilities would make the site highly accessible on foot and would open up new pedestrian routes through the area.

It can be seen from Figure C3 that the Council's proposed cycle route network between the Angel and the Barbican would run along the length of Graham Street. After discussion with the Council it is not proposed to formally divert this route through the Basin site. Hence, once implemented, Graham Street would provide the direct connection to the Council's cycle network from the site.

7.0 Trip Generation and Impact

It is not possible at this stage to identify precise floor areas and numbers of units. However, preliminary estimates have been made based on both granted permissions (Phase 1 Graham Street Centre Site) and those applications being prepared for submission. Located in Chapter 4 of this Appendix, the table (City Road Basin, Building Schedules) outlines the estimated schedule of the total Masterplan. Utilising these assumptions an estimate of likely trip generation and associated impact has been carried out.

In order to develop a robust trip rate, each land use will be investigated independently and compiled into a global trip generation. Section 11.1 contains a detailed breakdown of the analysis outlined here.

7.1 Residential

Interrogation of the TRAVL database has highlighted an existing residential development that has similar properties to those proposed at City Road Basin. Leatherfield Market Court is located in the London Borough of Southwark. The site has excellent accessibility to public transport services comparable to the proposed developments within the Masterplan. Parking provision is higher than proposed within the Masterplan and car ownership is greater than anticipated based on the trend in the surrounding areas. However this is assumed to provide a more robust estimate of trip rates, particularly with respect to traffic generation. A review of the surveyed data reveals total trip generation rates as outlined in the table below:

Residential Person Trip Rates per unit at Leatherfield Market Court

Period	In	Out	Two-way
AM Peak (0800 - 0900)	0.12	0.68	0.80
PM Peak (1700 - 1800)	0.41	0.29	0.70
Daily (0700 - 2300)	**2.36**	**3.14**	**5.50**

Applying these trip rates to the schedule of residential units in the proposed Masterplan results in the following total trips shown in the table below:

Residential Person Trips for Proposed Masterplan

Period	In	Out	Two-way
AM Peak (0800 - 0900)	105	589	694
PM Peak (1700 - 1800)	355	250	605
Daily (0700 - 2300)	**2041**	**2710**	**4751**

7.2 Retail

Again the TRAVL Database was utilised to establish trips generated by the retail components of the Masterplan. Due to the significant variation between the two developments an alternate approach was adopted for each. For the purposes of the Access Storage Site Retail development a selection of small urban based supermarkets were utilised as follows:

Review of Urban Supermarket Site Used

	Location	GFA (m^2)	Parking	PTAL
Somerfield	Barkingside	463	12	4
Tesco Metro	Finsbury Park	1994	0	5
Tesco Metro	Richmond	1347	8	6

The trip rates developed utilising these sites was as follows:

Retail Person Trip Rates per 100m² for Supermarket

Period	In	Out	Two-way
AM Peak (0800 - 0900)	65.4	65	11.14
PM Peak (1700 - 1800)	21.11	21.94	43.06
Daily (0700 - 2300)	**249.22**	**247.75**	**496.97**

For the purposes of the retail component on Graham street, a single appropriate site was located. Located in Bexleyheath, the site consists of similar scale and use that could potentially occupy the units. However the site has significant less public transport accessibility and incorporates dedicated car parking. Therefore it is assumed the trip rate estimations, shown in the table below will be of a very robust nature.

Retail Person Trip Rates per 100m² for Shopping Parade

Period	In	Out	Two-way
AM Peak (0800 - 0900)	21.92	20.13	42.06
PM Peak (1700 - 1800)	12.08	15.21	27.29
Daily (0700 - 2300)	**207.79**	**200.22**	**402.01**

Utilising the above trip rate assumptions, a level of generated trips as a result of the retail components are outlined in the table below:

Retail Person Trips for Proposed Masterplan

Period	In	Out	Two-way
AM Peak (0800 - 0900)	310	258	569
PM Peak (1700 - 1800)	526	569	1095
Daily (0700 - 2300)	**6693**	**6651**	**13344**

7.3 Restaurant

Three sites were identified within the TRAVL database which are appropriate for an analysis of the restaurant located within the site, these are reviewed in the table below:

Review of Urban Supermarket Site Used

	Location	GFA (m²)	Parking	PTAL
Benihana Restaurant	Swiss Cottage	465	0	4
Carluccio's	Oxford Circus	420	0	6
Tiger Lils	Islington	290	0	4

Utilising the survey data within TRAVL a series of trip rates were established, these are reviewed below, again the full details are contained in Section 11.1. The estimated total trips calculated through the application of the trip rates to the proposed restaurant gross floor area are shown below.

Restaurant Person Trip Rates per 100m²

Period	In	Out	Two-way
AM Peak (0800 - 0900)	5.63	5.16	10.79
PM Peak (1700 - 1800)	1.34	0.40	1.74
Daily (0700 - 2300)	**32.78**	**30.84**	**63.62**

Restaurant Person Trips for Proposed Masterplan

Period	In	Out	Two-way
AM Peak (0800 - 0900)	26	24	50
PM Peak (1700 - 1800)	6	2	8
Daily (0700 - 2300)	**150**	**142**	**292**

7.4 Total Person Trip Generation

The summation of all land use generated trips results in an estimated total of person trips for the peak periods along with a daily total, shown below:

Total Person Trips for Proposed Masterplan

Period	In	Out	Two-way
AM Peak (0800 - 0900)	441	871	1312
PM Peak (1700 - 1800)	887	820	1708
Daily (0700 - 2300)	**8884**	**8502**	**18387**

7.5 Vehicle Trip Generation and Impact

In the detailed analysis the trip generation estimations have been carried out considering the mode of transport used. Using this breakdown it is possible to estimate the vehicle trip generation for the development.

The source data used from TRAVL is intended to give a representation of the trips and modes of residents/customer/staff visiting a particular site, this can be based on a combination of questionnaire surveys and counts of those entering the site. However, to establish an accurate estimate of traffic impact, additional service related trips should be considered. Residential developments do not generate significant levels of service trips beyond that already operating on the network, such as refuse collection and postal deliveries. However, retail land use typically generates service vehicle trips in the form of deliveries. The detailed analysis in Section 11.1 utilised delivery vehicle data from two of the sites identified above to determine service trip rates for the two retail components, the results of which are reviewed below.

Total Service Vehicle Trips for Proposed Masterplan

Period	In	Out	Two-way
AM Peak (0800 - 0900)	17	11	29
PM Peak (1700 - 1800)	15	15	29
Daily (0700 - 2300)	**92**	**92**	**184**

The summation of both the residential and service vehicle data represents a robust estimation of the total number of vehicle trips generated by the proposed Masterplan. These are presented in the table below:

Total Vehicle Trips for Proposed Masterplan

Period	In	Out	Two-way
AM Peak (0800 - 0900)	146	156	301
PM Peak (1700 - 1800)	245	246	492
Daily (0700 - 2300)	1840	1964	3804

The above results demonstrate the low level of traffic generated by the Masterplan proposals, particularly during the peak periods of the surrounding highway network. It is also supportive of the underlying assumptions outlined in chapter 6, which state that the majority of person trips will utilise the public transport network.

It is important to note that the existing site incorporates a significant level of parking, upwards of 180 spaces (80 of which would be guaranteed if the existing use was to be maintained) which serve a commercial development. These can be expected to generate substantial traffic volumes, particularly in peak periods. It is therefore likely that the generated trips from the Masterplan development will not result in a significant net impact on the highway.

7.6 Bus Capacity Impact

With a high proportion of trips taking place by public transport, particularly bus, it is necessary to assess the impact on the available capacity. As part of this assessment, analysis has been carried out to estimate the likely trips taking place by public transport. National Statistics for St Peter's Ward show that over 45% of residents use public transport facilities as their primary mode for their journey to work, of which half use the bus network as a primary mode. Taking into consideration the high availability of services close to the site and the potential for passengers to use the bus as a first mode, it has been assumed that the level of use would be 60% of all generated trips.

To establish existing bus capacity, surveys were commissioned on the four main routes operating on City Road. A preliminary survey was undertaken to establish the busiest points on the routes to the east and west of the site. The surveys were carried out over 3 hours during the AM and PM peak periods and collected boarding, alighting and general occupancy data at the two busiest points of each route and at the stops directly adjacent to the site.

The following key assumptions were made within this analysis, which is outlined in detail in Section 11.2:

- East/West split of generated bus trips was assumed to be 50%;
- The generated trips were distributed proportionally across the available buses based on the frequency and overall capacity;

The table below directly compares the estimated bus passenger trips with the available capacity during that period.

Percentage bus occupancy at busiest points on route

Period	Route	Existing EB	Occupancy WB	Estimated EB	Occupancy WB
AM	43	67%	72%	81%	86%
	205	54%	70%	68%	84%
	214	90%	69%	104%	83%
	394	15%	45%	29%	59%
PM	43	77%	76%	90%	89%
	205	79%	76%	92%	89%
	214	78%	75%	91%	88%
	394	73%	25%	86%	38%

The above results illustrate the estimated general increase in the bus occupancy across all routes. Demand has only exceeded capacity on one route, the 214 in an eastbound direction.

However, both the 43 and 214 service operate along the same route corridor between the development site and the City of London. Thus, as it is assumed that a significant proportion of AM eastbound trips would be destined for the City, reserve capacity on route 43 would easily accommodate the excess trips on route 214.

8.0 Wider Sustainability Enhancements

The proposed north/south and east/west routes through the site would open up new pedestrian links through the area. These links would be predominantly vehicle free and would provide an attractive environment through which to travel. This enhancement of pedestrian and cycle facilities would be consistent with national and local sustainable transport policies which seek to reduce the growth in car journeys (particularly short journeys less than 1 mile) and to encourage greater walking and cycling.

Despite the high level of facilities, there is potential to improve the routes to the main interchanges with public transport. Currently facilities are in place to allow safe crossing of City Road, however it may be beneficial to enhance the facilities on the desire line between the site and the east bound bus services. The assessment of pedestrian amenity on City Road will require TFL's approval.

Consideration was given to the relocation of bus stops on City Road to enhance their position relative to the site and the new pedestrian linkages through it. However, the highway layout is likely to prevent further improvement from taking place. The existing location of bus stops is however considered to be convenient for use by residents of the site and pedestrians utilising the new links.

9.0 Section 106 Agreement Framework

It is likely to be a requirement of any planning permission that the developers of the Masterplan enter into a section 106 agreement with the local authority to establish levels of contributions. It will be necessary for a framework of payments to be established between the developers of the site and agreed with the Local Authority. Such a framework would lay down the distribution of payment between the component parts of the Masterplan; together with timing for implementation of measures of triggers for payment of contributions.

In terms of transportation, the section 106 agreement is likely to include a breakdown of the contributions in the following key areas:

- Upgrade of key pedestrian routes, particularly those providing links to public transport services. This is likely to include pedestrian crossing facilities of City Road adjacent to the site;
- Introduction of new traffic management measures on the residential areas to the west of the Graham Street. This may take the form of an expansion of the existing St Peters scheme;
- The enhancement of existing cycle routes in the vicinity of the site, primarily the upgrade of existing on-street facilities such road markings; and
- Improvements to existing bus route facilities, ranging from the introduction of new stops to the enhancements of current facilities.

10.0 Conclusions

This report demonstrates that the Masterplan site is highly accessible to public transport, both bus, rail and underground, and to local services such as shopping, education, employment and leisure.

Car parking on the site will be constrained for all uses thereby reinforcing the sustainable credentials of the site.

Footway links within the site together with the provision of new north/south and east/west routes through the site combine to make the site readily accessible by this mode of travel.

Potential enhancements to pedestrian facilities on City Road would improve access to bus services.

Given the constrained parking standards to be applied to all uses within the Masterplan and the historic levels of car parking on the site, the level of net traffic generated by the proposals is not expected to be significantly different from the historic permitted use on the site.

The existing bus services have been shown to provide sufficient capacity for the total estimated bus related trips during the peak periods.

Accordingly, the Masterplan proposals are considered to conform to both national and local sustainable transport policy.

Satisfactory vehicular access arrangements to the site can be made from Graham Street and Wharf Road. One of these access points, namely Graham Street (south) would allow for vehicles to penetrate the Basin to enable the retained London Electricity sub-station to be serviced. This entry point will be barrier controlled to prevent unauthorised parking within the Basin.

In the light of the findings of this report it is considered that the highways and transportation aspects of the Masterplan proposals would be acceptable to the Highway Authority.

11.0 Supplementary Information

11.1 Trip Generation Calculations

Building Schedules

Note: The following areas have been suggested, taken as an assumption upon which to base the travel and trip generation data which follows. The areas are not intended to be prescriptive for the Masterplan.

Access Storage Site

Retail		2025 m²
Restaurant		459 m²
Commercial		0 m²
Residential	1 Bed	- units
	2 Bed	- units
	3 Bed	- units
	4 Bed	- units
	Total	318 units

Fidelity Building

Retail		816 m²
Restaurant		0 m²
Commercial		0 m²
Residential	1 Bed -	units
	2 Bed -	units
	3 Bed -	units
	4 Bed	- units
	Total	293 units

Phase 1

Retail		0 m²
Restaurant		0 m²
Commercial		741.5 m²
Residential	1 Bed -	units
	2 Bed -	units
	3 Bed -	units
	4 Bed -	units
	Total	83 units

Phase 2

Retail		0 m²
Restaurant		0 m²
Commercial		730.4 m²
Residential	1 Bed -	units
	2 Bed -	units
	3 Bed -	units
	4 Bed -	units
	Total	58 units

Live/work units

Retail		0 m²
Restaurant		0 m²
Commercial		995.4 m²
Residential	All	111 units

Residential Data from TRAVL

Leatherfield Market Court, Southwark

Retail		0 m²
Restaurant		0 m²
Commercial		0 m²
Residential	1 Bed	10 units
	2 Bed	89 units
	3 Bed	8 units
	4 Bed	0 units
	Total	107 units

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	6	9	0	2	0	0	0	0	7	62	13	73	86
PM Peak 1700-1800	12	10	1	0	2	1	0	0	29	20	44	31	75
Daily 0700 - 2300	56	69	2	3	5	4	4	5	186	255	253	336	589

Trip Rates per Unit

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.06	0.08	0.00	0.02	0.00	0.00	0.00	0.00	0.07	0.58	0.12	0.68	0.80
PM Peak 1700-1800	0.11	0.09	0.01	0.00	0.02	0.01	0.00	0.00	0.27	0.19	0.41	0.29	0.70
Daily 0700 - 2300	0.52	0.64	0.02	0.03	0.05	0.04	0.04	0.05	1.74	2.38	2.36	3.14	5.50

Restaurant Data from TRAVL

Benihana Restaurant, Swiss Cottage Expensive, Primarily Evenings

Retail	0 m²
Restaurant	465 m²
Commercial	0 m²
Residential	0 units
Parking	0 spaces

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Peak 1700-1800	0	0	0	0	0	0	0	0	0	0	0	0	0
Actual Peak 2030-2130	9	0	0	0	0	0	3	0	11	5	23	5	28
Daily 0700 - 2300	15	16	0	0	0	0	29	22	31	41	75	79	154

Trip Rates per 100m²

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM Peak 1700-1800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Actual Peak 2030-2130	1.94	0.00	0.00	0.00	0.00	0.00	0.65	0.00	2.37	1.08	4.95	1.08	6.02
Daily 0700 - 2300	3.23	3.44	0.00	0.00	0.00	0.00	6.24	4.73	6.67	8.82	16.13	16.99	33.12

Carluccio's Café/Restaurant, Oxford Circus Inexpensive, All Day

Retail	0 m²
Restaurant	420 m²
Commercial	0 m²
Residential	0 units
Parking	0 spaces

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	5	0	3	0	1	0	3	0	59	65	71	65	136
PM Peak 1700-1800	0	0	4	1	0	0	4	2	6	2	14	5	19
Actual Peak 1300-1400	11	7	1	0	1	0	12	7	11	5	36	19	55
Daily 0700 - 2300	15	16	0	0	0	0	56	43	31	41	102	100	202

Trip Rates per 100m²

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	1.19	0.00	0.71	0.00	0.24	0.00	0.71	0.00	14.05	15.48	16.90	15.48	32.38
PM Peak 1700-1800	0.00	0.00	0.95	0.24	0.00	0.00	0.95	0.48	1.43	0.48	3.33	1.19	4.52
Actual Peak 1300-1400	2.62	1.67	0.24	0.00	0.24	0.00	2.86	1.67	2.62	1.19	8.57	4.52	13.10
Daily 0700 - 2300	3.57	3.81	0.00	0.00	0.00	0.00	13.33	10.24	7.38	9.76	24.29	23.81	48.10

Tiger Lils Restaurant, Islington Expensive, Primarily Evenings

Retail	0 m²
Restaurant	290 m²
Commercial	0 m²
Residential	0 units
Parking	0 spaces

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Peak 1700-1800	0	0	0	0	0	0	0	0	2	0	2	0	2
Actual Peak 2100-2200	4	3	0	0	0	0	6	1	40	9	50	13	63
Daily 0700 - 2300	22	20	0	0	0	0	18	16	130	114	168	150	318

Trip Rates per 100m²

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM Peak 1700-1800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.69	0.00	0.69
Actual Peak 2100-2200	1.38	1.03	0.00	0.00	0.00	0.00	2.07	0.34	13.79	3.10	17.24	4.48	21.72
Daily 0700 - 2300	7.59	6.90	0.00	0.00	0.00	0.00	5.52	5.52	44.83	39.31	57.93	51.72	109.66

Average Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	2	0	1	0	0	0	1	0	20	22	24	22	45
PM Peak 1700-1800	0	0	1	0	0	0	1	1	3	1	5	2	7
Actual Peak 2030-2130	8	3	0	0	0	0	7	3	21	6	36	12	49
Daily 0700 - 2300	17	17	0	0	0	0	34	27	64	65	115	110	225

Average Trip Rates per 100m²

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.40	0.00	0.24	0.00	0.08	0.00	0.24	0.00	4.68	5.16	5.83	5.16	10.79
PM Peak 1700-1800	0.00	0.00	0.32	0.08	0.00	0.00	0.32	0.16	0.71	0.16	1.34	0.40	1.74
Actual Peak 2030-2130	1.98	0.90	0.08	0.00	0.08	0.00	1.86	0.67	6.26	1.79	10.25	3.36	13.61
Daily 0700 - 2300	4.79	4.72	0.00	0.00	0.00	0.00	8.36	6.83	19.63	19.30	32.78	30.84	63.62

Retail Data from TRAVL

Somerfield, Barkingside

Retail	1483 m^2
Restaurant	0 m^2
Commercial	0 m^2
Residential	0 units
Parking	12 spaces

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	10	5	0	0	0	0	0	0	42	18	52	23	75
PM Peak 1700-1800	74	69	0	0	0	0	0	1	94	104	168	174	342
Actual Peak 1100-1200	59	60	2	2	3	3	0	0	293	257	357	322	679
Daily 0700 - 2300	681	681	9	9	27	27	1	2	1788	1799	2506	2518	5024

Trip Rates per 100m^2

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.68	0.34	0.00	0.00	0.00	0.00	0.00	0.00	2.87	1.23	3.55	1.57	5.13
PM Peak 1700-1800	5.06	4.72	0.00	0.00	0.00	0.00	0.00	0.07	6.43	7.11	11.48	11.89	23.38
Actual Peak 2030-2130	4.03	4.10	0.14	0.14	0.21	0.21	0.00	0.00	20.03	17.57	24.40	22.01	46.41
Daily 0700 - 2300	46.55	46.55	0.62	0.62	1.85	1.85	0.07	0.14	122.21	122.97	171.29	172.11	343.40

Tesco Metro, Finsbury Park

Retail	1994 m^2
Restaurant	0 m^2
Commercial	0 m^2
Residential	0 units
Parking	0 spaces

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	16	11	0	0	0	0	1	1	18	17	35	29	64
PM Peak 1700-1800	69	71	1	1	0	0	0	3	101	102	171	177	348
Actual Peak 1630-1730	78	71	1	0	1	1	2	1	117	110	199	183	382
Daily 0700 - 2300	482	477	11	10	6	6	11	23	714	692	1224	1208	2432

Trip Rates per 100m^2

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.80	0.55	0.00	0.00	0.00	0.00	0.05	0.05	0.90	0.85	1.76	1.45	3.21
PM Peak 1700-1800	3.46	3.56	0.05	0.05	0.00	0.00	0.00	0.15	5.07	5.12	8.58	8.88	17.45
Actual Peak 1630-1730	3.91	3.56	0.05	0.00	0.05	0.05	0.10	0.05	5.87	5.52	9.96	9.18	19.16
Daily 0700 - 2300	24.17	23.92	0.55	0.50	0.30	0.30	0.55	1.15	35.81	34.70	61.38	60.58	121.97

Tesco Metro, Richmond

Retail	1347 m^2
Restaurant	0 m^2
Commercial	0 m^2
Residential	0 units
Parking	8 spaces

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	8	7	0	0	8	7	0	0	175	133	191	147	338
PM Peak 1700-1800	61	70	0	0	0	4	0	0	522	533	583	607	1190
Actual Peak 1700-1800	61	70	0	0	0	4	0	0	522	533	583	607	1190
Daily 0700 - 2300	418	464	0	9	71	71	0	43	6448	6290	6937	6877	13814

Trip Rates per 100m^2

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.59	0.52	0.00	0.00	0.59	0.52	0.00	0.00	12.99	9.87	14.18	10.91	25.09
PM Peak 1700-1800	4.53	5.20	0.00	0.00	0.00	0.30	0.00	0.00	38.75	39.57	43.28	45.06	88.34
Actual Peak 2100-2200	4.53	5.20	0.00	0.00	0.00	0.30	0.00	0.00	38.75	39.57	43.28	45.06	88.34
Daily 0700 - 2300	31.03	34.45	0.00	0.67	5.27	5.27	0.00	3.19	478.69	466.98	515.00	510.54	1025.54

Average Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	11	8	0	0	3	2	0	0	78	56	93	66	159
PM Peak 1700-1800	68	70	0	0	0	1	0	1	239	246	307	319	627
Actual Peak 2030-2130	66	67	1	1	1	3	1	0	311	300	380	371	750
Daily 0700 - 2300	527	541	7	9	35	35	4	23	2983	2927	3556	3534	7090

Average Trip Rates per 100m^2

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.89	0.47	0.00	0.00	0.20	0.17	0.02	0.02	5.59	3.99	6.50	4.65	11.14
PM Peak 1700-1800	4.35	4.49	0.02	0.02	0.00	0.10	0.00	0.07	16.75	17.26	21.11	21.94	43.05
Actual Peak 2030-2130	4.16	4.29	0.06	0.05	0.09	0.18	0.03	0.02	21.55	20.88	25.89	25.42	51.30
Daily 0700 - 2300	33.92	34.97	0.39	0.59	2.47	2.47	0.21	1.49	212.24	208.21	249.22	247.75	496.97

Brampton Road Parade

Retail	447 m^2
Restaurant	0 m^2
Commercial	0 m^2
Residential	0 units
Parking	8 spaces

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	35	34	0	0	0	0	0	0	63	66	98	90	188
PM Peak 1700-1800	25	33	0	0	5	0	0	0	24	35	54	68	122
Actual Peak 1400-1500	49	44	0	0	9	9	0	0	47	46	105	99	204
Daily 0700 - 2300	322	321	8	8	28	28	0	0	544	536	902	895	1797

Trip Rates per 100m^2

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	7.83	7.61	0.00	0.00	0.00	0.00	0.00	0.00	14.09	12.53	21.92	20.13	42.06
PM Peak 1700-1800	5.59	7.38	0.00	0.00	1.12	0.00	0.00	0.00	5.37	7.83	12.08	15.21	27.29
Actual Peak 2100-2200	10.96	9.84	0.00	0.00	2.01	2.01	0.00	0.00	10.51	10.29	23.49	22.15	45.64
Daily 0700 - 2300	72.04	71.81	1.79	1.79	6.26	6.26	0.00	0.00	121.70	120.36	201.79	200.22	402.01

Retail Service Data from TRAVL

Tesco Metro, Richmond

Retail	1463 m^2
Restaurant	0 m^2
Commercial	0 m^2
Residential	0 units
Parking	12 spaces

Development Generated Service Trips

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0	0	0	0	1	1	1	2	2.00	3.00	5.00
PM Peak 1700-1800	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Daily 0700 - 2300	0	0	1	1	3	3	3	3	7.00	7.00	14.00

Trip Rates per 100m^2

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.14	0.14	0.21	0.34
PM Peak 1700-1800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily 0700 - 2300	0.00	0.00	0.07	0.07	0.21	0.21	0.21	0.21	0.48	0.48	0.96

Development Generated Service Trips

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	3	3	5	1	0	0	0	0	8.00	4.00	12.00
PM Peak 1700-1800	8	8	0	0	0	0	0	0	8.00	8.00	16.00
Daily 0700 - 2300	37	37	8	8	0	0	0	0	45.00	45.00	90.00

Trip Rates per 100m^2

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.67	0.67	1.12	0.22	0.00	0.00	0.00	0.00	1.79	0.89	2.68
PM Peak 1700-1800	1.79	1.79	0.00	0.00	0.00	0.00	0.00	0.00	1.79	1.79	3.58
Daily 0700 - 2300	8.28	8.28	1.79	1.79	0.00	0.00	0.00	0.00	10.07	10.07	20.13

Total Development Generated Service Trips

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	3	3	5	1	1	1	1	2	10	7	17
PM Peak 1700-1800	8	8	0	0	0	0	0	0	8	8	16
Daily 0700 - 2300	37	37	9	9	3	3	3	3	52	52	104

Masterplan Residential Trips

Access Storage Site Trips Based on 318 **units**

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	18	27	0	6	0	0	0	0	21	184	39	217	256
PM Peak 1700-1800	36	30	3	0	6	3	0	0	86	59	131	92	223
Daily 0700 - 2300	166	205	6	9	15	12	12	15	553	758	752	999	1750

Fidelity Building Trips Based on 293 **units**

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	16	25	0	5	0	0	0	0	19	170	36	200	235
PM Peak 1700-1800	33	27	3	0	5	3	0	0	79	55	120	85	205
Daily 0700 - 2300	153	189	5	8	14	11	11	14	509	698	693	920	1613

Phase 1 Development Trips Based on 83 **units**

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	5	7	0	2	0	0	0	0	5	48	10	57	67
PM Peak 1700-1800	9	8	1	0	2	1	0	0	22	16	34	24	58
Daily 0700 - 2300	43	54	2	2	4	3	3	4	144	186	196	261	457

Phase 2 Development Trips Based on 58 **units**

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	3	5	0	1	0	0	0	0	4	34	7	40	47
PM Peak 1700-1800	7	6	1	0	1	1	0	0	16	11	24	17	41
Daily 0700 - 2300	30	37	1	2	3	2	2	3	101	138	137	182	319

Live/work Unit Trips Based on (Estimated) 111 **units**

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	6	9	0	2	0	0	0	0	7	64	13	76	89
PM Peak 1700-1800	12	10	1	0	2	1	0	0	30	21	46	32	78
Daily 0700 - 2300	58	72	2	3	5	4	4	5	193	265	262	349	611

Total Master Plan Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	48	73	0	16	0	0	0	0	56	500	105	589	694
PM Peak 1700-1800	97	81	8	0	16	8	0	0	234	161	355	250	605
Daily 0700 - 2300	452	557	16	24	40	32	32	40	1500	2057	2041	2710	4751

Masterplan Restaurant Trips

Proposed Development

Retail	0 m^2
Restaurant	459 m^2
Commercial	0 m^2
Residential	0 units
Parking	0 spaces

Trip Rates per 100m^2

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.40	0.00	0.24	0.00	0.08	0.00	0.24	0.00	4.68	5.16	5.63	5.16	10.79
PM Peak 1700-1800	0.00	0.00	0.32	0.08	0.00	0.00	0.32	0.16	0.71	0.16	1.34	0.40	1.74
Daily 0700 - 2300	4.79	4.72	0.00	0.00	0.00	0.00	8.36	6.83	19.63	19.30	32.78	30.84	63.62

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	2	0	1	0	0	0	1	0	21	24	26	24	50
PM Peak 1700-1800	0	0	1	0	0	0	1	1	3	1	6	2	8
Daily 0700 - 2300	22	22	0	0	0	0	38	31	90	89	150	142	292

Masterplan Retail Trips

Proposed Development Retail Component of Access Storage Site

Retail	2025 m^2
Restaurant	0 m^2
Commercial	0 m^2
Residential	0 units
Parking	0 spaces

Trip Rates per 100m^2

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.69	0.47	0.00	0.00	0.20	0.17	0.02	0.02	5.59	3.99	6.50	4.65	11.14
PM Peak 1700-1800	4.35	4.49	0.02	0.02	0.00	0.10	0.00	0.07	16.75	17.26	21.11	21.94	43.06
Daily 0700 - 2300	33.92	34.97	0.39	0.59	2.47	2.47	0.21	1.49	212.24	208.21	249.22	247.75	496.97

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	14	10	0	0	4	4	0	0	113	81	132	94	226
PM Peak 1700-1800	88	91	0	0	0	2	0	1	339	350	428	444	872
Daily 0700 - 2300	687	708	8	12	50	50	4	30	4298	4216	5047	5017	10064

Masterplan Retail Trips

Proposed Development Retail Component of Access Storage Site

Retail	2025 m^2
Restaurant	0 m^2
Commercial	0 m^2
Residential	0 units
Parking	0 spaces

Trip Rates per 100m^2

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	7.83	7.61	0.00	0.00	0.00	0.00	0.00	0.00	14.09	12.53	21.92	20.13	42.06
PM Peak 1700-1800	5.59	7.38	0.00	0.00	1.12	0.00	0.00	0.00	5.37	7.83	12.08	15.21	27.29
Daily 0700 - 2300	72.04	71.81	1.79	1.79	6.26	6.26	0.00	0.00	121.70	120.36	201.79	200.22	402.01

Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	64	62	0	0	0	0	0	0	115	102	179	164	343
PM Peak 1700-1800	46	60	0	0	9	0	0	0	44	64	99	124	223
Daily 0700 - 2300	588	586	15	15	51	51	0	0	993	982	1647	1634	3280

Total Development Generated Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	78	72	0	0	4	4	0	0	228	183	310	258	569
PM Peak 1700-1800	134	151	0	0	9	2	0	1	383	413	526	569	1095
Daily 0700 - 2300	1275	1294	22	27	101	101	4	30	5291	5198	6693	6651	13344

Masterplan Retail Service Trips

Small Urban Supermarket within Access Storage Site

Retail	2025 m^2
Restaurant	0 m^2
Commercial	0 m^2
Residential	0 units
Parking	0 spaces

Trip Rates per 100m^2

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.14	0.14	0.21	0.34
PM Peak 1700-1800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily 0700 - 2300	0.00	0.00	0.07	0.07	0.21	0.21	0.21	0.21	0.48	0.48	0.96

Generated Service Trips

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0	0	0	0	1	1	1	3	3	4	7
PM Peak 1700-1800	0	0	0	0	0	0	0	0	0	0	0
Daily 0700 - 2300	0	0	1	1	4	4	4	4	10	10	19

Masterplan Retail Service Trips

Shopping Parade on Graham Street

Retail	816 m^2
Restaurant	0 m^2
Commercial	0 m^2
Residential	0 units
Parking	0 spaces

Trip Rates per 100m^2

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	0.67	0.67	1.12	0.22	0.00	0.00	0.00	0.00	1.79	0.89	2.68
PM Peak 1700-1800	1.79	1.79	0.00	0.00	0.00	0.00	0.00	0.00	1.79	1.79	3.58
Daily 0700 - 2300	8.28	8.28	1.79	1.79	0.00	0.00	0.00	0.00	10.07	10.07	20.13

Generated Service Trips

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	5	5	9	2	0	0	0	0	15	7	22
PM Peak 1700-1800	15	15	0	0	0	0	0	0	15	15	29
Daily 0700 - 2300	68	68	15	15	0	0	0	0	82	82	164

Total Generated Service Trips

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	5	5	9	2	1	1	1	3	17	11	29
PM Peak 1700-1800	15	15	0	0	0	0	0	0	15	15	29
Daily 0700 - 2300	68	68	16	16	4	4	4	4	92	92	184

Total Masterplan Person and Vehicle Trips

Development Generated Person Trips

Period	*Car*		*Motorcycle*		*Pedal Cycle*		*Taxi*		*Walk and PT*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	128	144	1	16	4	4	1	0	308	707	441	871	1312
PM Peak 1700-1800	230	232	10	1	25	10	1	2	620	576	887	820	1708
Daily 0700 - 2300	1748	1872	39	51	142	133	75	102	6881	7344	8884	9502	18387

Total Generated Vehicle Trips

Period	*Car*		*Transit Type*		*3 axle Rigid*		*3 axle Artic*		*Total*		
	In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*Two-way*
AM Peak 0800-0900	134	150	9	2	1	1	1	3	146	156	301
PM Peak 1700-1800	245	246	0	0	0	0	0	0	245	246	492
Daily 0700 - 2300	1816	1940	16	16	4	4	4	4	1840	1964	3804

Reference Data

Model Split Based on National Census 2001 St Peter's Ward

Mode	Work at Home	Light Rail	Train	Bus	MC	Car Driver	Car Passenger	Taxi	PC	Walk	Other
Split	10%	19%	3%	23%	2%	14%	1%	2%	4%	21%	1%

Aggregated Model Split of Commuters (Excluding Home Workers)

Mode	Car	Motorcycle	Cycle	Walk & PT	Other
Split	16%	2%	4%	73%	4%

Model Split from TRAVL Analysis

Mode	Car	Motorcycle	Cycle	Walk & PT	Other
Split	49%	2%	4%	4%	42%

11.2 Bus Occupancy Study

Table 1 - Development generated bus trips. Based on 60% bus usage

	EB		WB	
	Board	Alight	Board	Alight
AM	277	135	277	135
PM	253	276	253	276

Table 2 - Assumed split of trips across available services

Route	Freq	Cap	Total	%
43	10	95	950	47%
205	6	96	576	28%
214	6	50	300	15%
394	4	49	196	10%
Total	**26**	**290**	**2022**	**100%**

Table 3 - Development generated bus trips/bus, based on linear distribution across the hour

		EB		WB	
		Board	Alight	Board	Alight
AM	**43**	13	6	13	6
	205	13	6	13	6
	214	7	3	7	3
	394	7	3	7	3
PM	**43**	12	13	12	13
	205	12	13	12	13
	214	6	7	6	7
	394	6	7	6	7

Table 4 - Bus Capacities

Route	Capacity
43	95
205	96
214	50
394	49
Total	290

Table 5 - Percentage bus occupancy during Peak Periods

		Stop Adjacent to Development		Busiest Location on Route	
Period	Route	EB	WB	EB	WB
AM	43	53%	56%	67%	72%
	205	45%	54%	54%	70%
	214	90%	69%	90%	69%
	394	15%	45%	15%	45%
PM	43	60%	76%	77%	76%
	205	63%	76%	79%	76%
	214	78%	66%	78%	75%
	394	73%	25%	73%	25%

Table 6 - Total Passenger Demand, existing plus development generated

		Stop Adjacent to Development		Busiest Location on Route	
Period	Route	EB	WB	EB	WB
AM	43	63	66	77	81
	205	56	65	65	80
	214	52	41	52	41
	394	14	29	14	29
PM	43	69	84	85	84
	205	72	85	88	85
	214	45	39	45	44
	394	42	18	42	18

Table 7 - Ratio of Demand to Capacity at stop adjacent to stop

		Stop Adjacent to Development		Busiest Location on Route	
Period	Route	EB	WB	EB	WB
AM	43	67%	70%	81%	86%
	205	59%	68%	68%	84%
	214	104%	83%	104%	83%
	394	29%	59%	29%	59%
PM	43	73%	89%	90%	89%
	205	76%	89%	92%	89%
	214	91%	79%	91%	88%
	394	86%	38%	86%	38%