

MEPC

**Project Hillington
Hillington Park**

Transport Assessment

Volume 1

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1 INTRODUCTION

- 1.1 Vectos is retained by MEPC to provide transport advice in support of a Simplified Planning Zone (SPZ) for Hillington Park.
- 1.2 The site lies between Glasgow and Renfrewshire, to the south of M8 and north of the train line. The site comprises the largest mixed business and industrial park in Scotland.
- 1.3 In November 2013 an SPZ was proposed at Hillington Park. It will create an employment led redevelopment, providing choice and quick delivery for businesses considering locating in this part of Scotland.
- 1.4 SPZ's are a form of simplified planning control to facilitate growth and investment. They offer developers flexibility over land use and design, but provide a framework of planning control. They are more flexible than a master plan, so that development decisions are more responsive to changing market demands.
- 1.5 The aims of the SPZ are to encourage employment growth as well as providing bespoke space quickly. The SPZ also aims to bring Hillington Park into the 21st century to meet modern commercial needs and improve the vitality and viability of the park through a greater mix of uses that complement the main business/industrial use. There is much potential for Hillington Park to provide an environment and accessibility that is increasingly attractive.
- 1.6 This Transport Assessment (TA) sets out the background of the site from a transport perspective, describes the proposals, and assesses the proposals as part of the submission of technical evidence for the proposed Hillington Park SPZ.
- 1.7 Agreement has been obtained from Renfrewshire Council, Glasgow City Council and Transport Scotland on the basis that the descriptions, tasks, methodologies, data and conclusions contained with Transport Assessment Scoping Report were appropriate and comprehensive. As this has been agreed the TA has been based on all of the information contained within the Transport Assessment Scoping Report.

Structure of the Report

- 1.8 The remainder of this report is set out as follows:

- Section 2 – Existing Situation and Planning Context
- Section 3 – Accessibility of the Site
- Section 4 – Review of Relevant Planning Policy
- Section 5 - Proposed Development
- Section 6 – Sustainable Transport Strategy
- Section 7 – Consented, Permitted and Committed Development
- Section 8 – Traffic Generation and Distribution
- Section 9 – Traffic Impact Assessment Methodology
- Section 10 – Summary

2 PLANNING CONTEXT

Background

- 2.1 Hillington Park first opened in 1938 and has been home to thousands of workers in the last seven decades.
- 2.2 The park was Scotland's first industrial estate and it has grown in size since it first opened in 1938. It doubled in size in 1939 after a new aero engine manufacturing facility for the Rolls Royce Merlin engines that powered the Spitfire and Hurricane fighter planes was built at the park. At its peak, the Rolls Royce factory at Hillington Park employed 25,000 people, turning out 400 engines each week – a total of 23,500 engines, or 14% of the total Merlin production.
- 2.3 Today, Hillington Park is home to around 6,500 employees working in a range of sectors including retail, manufacturing, engineering, life sciences, technology and the public sector. Notable organisations include Balfour Beatty Engineering Services, BAA, Haven, Benchmark, NHS, Red Cross and BMI Healthcare as well as over 450 SMEs employing fewer than 25 staff each.
- 2.4 As Scotland's largest and most established business park, Hillington Park is a safe, well maintained environment with two train stations, two minutes from the motorway and two miles from Glasgow's International Airport.
- 2.5 An SPZ was proposed at Hillington Park in November 2013. It will create an employment led redevelopment, providing choice and quick delivery for businesses considering locating in this part of Scotland.
- 2.6 The aim is to encourage employment growth as well as providing bespoke space quickly. There is much potential for Hillington Park to provide an environment and accessibility that is increasingly attractive.

Existing Land Uses

- 2.7 At present, Hillington Park is Scotland's largest business park and the majority of the park is owned and managed by MEPC.

2.8 The business park, at present, is home to over 300 different organisations of varying degrees of scale including the Deanside Freight site. It should be noted that the Deanside Freight site is being safeguarded and is not an area for significant change under the SPZ.

2.9 Hillington Park has an existing gross floorspace of 494,352 sqm and it is broken down as shown in **Table 2.1**.

Table 2.1: Existing Floorspace (as at 2014)

Land Use Class	Land Use	Gross Floor Area (sqm)
Class 1	Shops	25,588
Class 1 – Sui Generis	Car/Commercial Vehicle Sales	6,968
Class 1 – Sui Generis	Petrol Filling Stations	279
Class 2	Financial and Professional Services (e.g banks)	93
Class 3	Food and Drink	1,230
Class 4	Business	43,219
Class 5 & 6	General Industrial / Storage and Distribution	409,115
Class 10	Non-Residential Institutions	483
Class 11	Assembly and Leisure	7,377
Total		494,352

Consented / Permitted Development

2.10 Hillington Park has been developed over a number of years and as such there have been numerous planning applications on the site. At present, there are three distinct areas which either have an extant planning consent or were formerly employment generating premises within the site that are in a state of metamorphosis.

2.11 The three distinct areas which can be considered as consented/permitted development, or committed in terms of employment generation, are:

- Pegasus Land (Former Rolls Royce Factory);
- Hillington Park Frontage Land; and
- Gladman Development on Mossland Road.

2.12 Each of these three different sites is described individually below and a summary of the consented/permitted or established development is then provided.

Pegasus Land (Former Rolls Royce Factory)

2.13 The area of land known as Pegasus Land is the Former Rolls Royce Factory and is located in the west of Hillington Park.

- 2.14 The Rolls Royce site (the Pegasus Land) floor areas are not included within the existing floor areas shown in **Table 2.1** above. Some of the buildings are no longer in place, and the area is currently undergoing a metamorphosis. However, it is sensible and appropriate to consider that this land has an established employment generating function, as it would be perverse to consider that in the act of modernising the Site that employment facilities are lost.
- 2.15 For the purposes of the Transport Assessment report this 'committed employment generation' will be included within the Baseline assessment in the same way that consented and permitted development is.
- 2.16 In order for us to understand the quantum of this established employment generator we need to make a number of assumptions. While they are relatively broad assumptions they have been based on the best available information at this time and with the benefit of professional judgement. This approach has been agreed with the Glasgow and Renfrewshire Councils. Each assumption is shown below:
- Single storey units;
 - Freely available car parking;
 - 60% of the buildings would have been Class 5 – General Industrial;
 - 40% of the buildings are Class 6 – Storage and Distribution;
 - Employment density of 1 employee per 34 sqm GIA of Class 5 floorspace based on the Arup Employment Densities Report (July 2001);
 - Employment density of 1 employee per 50 sqm GIA of Class 6 floorspace based on the Arup Employment Densities Report (July 2001);
 - Gross Internal Area (GIA) is approximately 95% of Gross External Area (GEA).
- 2.17 The Pegasus Land gives a total of 57,877 sqm GEA of employment land.

M8 Frontage Land

- 2.18 The M8 frontage land has an extant and unimplemented planning permission. This area has consent for 49,704 sqm gross of Class 4, 5 and 6 development which as broken down as follows:
- M8 Frontage West - 14,865 sqm gross of Class 5 & 6; and
 - M8 Frontage East – 34,839 sqm gross of Class 4.

Gladman Developments on Mossland Road

2.19 The Gladman Development on Mossland Road has an extant and unimplemented planning permission for 3,458 sqm gross of Class 4 development.

Summary of Consented Development

2.20 In summary, there are three distinct areas which can be considered as consented/permited or established employment generating development, namely:

- Pegasus Land (Former Rolls Royce Factory);
- Hillington Park Frontage Land; and
- Gladman Development on Mossland Road.

Table 2.2: Consented/Permitted/Established Floorspace

Land Use Class	Land Use	Gross Floor Area (sqm)
Class 4	Business	38,297
Class 5 & 6	General Industrial / Storage and Distribution	72,742
Total		111,039

*It should be noted that this includes recently demolished parts of the Former Rolls Royce Factory

2.21 The floor areas show in **Table 2.2** will be added to the floor areas in **Table 2.1** to give the baseline floor areas for inclusion within this Transport Assessment.

Summary of Existing and Consented Land Uses

2.22 In summary, **Table 2.3** below highlights the quantum of existing, committed (including Rolls Royce) and consented land at Hillington Park.

Table 2.3: Existing and Committed

Land Use Class	Land Use	Existing Gross Floor Area (sqm)	Consented / Established Gross Floor Area (sqm)	Baseline Gross Floor Areas (sqm)
Class 1	Shops	25,588	-	25,588
Class 1 – Sui Generis	Car/Commercial vehicle sales	6,968	-	6,968
Class 1 – Sui Generis	Petrol Filling Station	279	-	279
Class 2	Financial and Professional Services	93		93
Class 3	Food and Drink	1,230	-	1,230
Class 4	Business	43,219	38,297	81,516
Class 5 & 6	General Industrial / Storage and Distribution	409,115	72,742	481,857
Class 10	Non-residential Institution	483	0	483
Class 11	Assembly and Leisure	7,377	-	7,377
Total		494,352	111,039	605,391

3 ACCESSIBILITY

- 3.1 This section of the report provides detail on the suitability of the site for redevelopment in terms of the local facilities and accessibility by all modes of transport.

Site Location

- 3.2 The site lies in Hillington and straddles the administrative boundaries of Renfrewshire and Glasgow City. It is located to the south of the M8 (junction 26) and to the north of the Inverclyde Railway Line.
- 3.3 The site can be seen in its geographical context in **Figure 1** and in its local context in **Figure 2**.

Local Highway Network

- 3.4 The site is located in an accessible location for vehicles with direct access to residential areas of Glasgow and Renfrewshire and with local connections to Braehead Shopping Centre. For those who will travel further afield, the site is located adjacent to the M8 Junction 26 with Hillington Road and therefore has excellent access to the strategic road network with routes towards South West and Central Scotland and Glasgow City Centre.
- 3.5 The local highway network is shown on **Figure 3**.
- 3.6 In the vicinity of Hillington Park, the highway network consists of Hillington Road, Penilee Road, Sandwood Road and Queen Elizabeth Road.
- 3.7 Transport Scotland are responsible for motorways and trunk roads within the area, including the M8.
- 3.8 A description of the key elements of the local road network is given below.

M8

- 3.9 The M8 motorway is a 70 mph strategic road which runs from Edinburgh in the east to Langbank in the west via Glasgow. It provides strategic connections to the M74 and M77 and provides direct access into Glasgow City Centre.
- 3.10 The site lies to the south of junction 26 of the M8 and in this location the motorway is three lanes wide in each direction. Numerous junctions along the carriageway allow access to local

communities within both Renfrewshire and Glasgow making the M8 an accessible strategic link into and out of Glasgow and gives wider connections into Central Scotland.

Hillington Road (A736)

- 3.11 Hillington Road is a dual carriageway road linking the M8 at junction 26 with Paisley Road West and is subject to a 40 mph speed limit. It is referred to as Hillington Road between the M8 and Queen Elizabeth Avenue, and as Sandwood Road between Queen Elizabeth Avenue and Paisley Road West.
- 3.12 There are several access off both sides of the carriageway into the site as well as to various frontages along Hillington Road.

Hillington Industrial Estate: Internal Access Roads

- 3.13 The site has a number of internal roads, accessed from various frontages along Hillington Road, Queen Elizabeth Road, Penilee Road and Mossland Road.
- 3.14 The internal access roads are generally single lane carriageways, allowing the contra-flow of vehicular traffic and many are non-delineated. Footways are generally present along either side of the carriageway, however along smaller roads, or where there are many building frontages, the footway may be present along just one side.

Accident Analysis

- 3.15 Personal Injury Collision (PIC) data was obtained for the latest available 5 year period, from April 2008 to September 2013. A total of 247 incidents were recorded during this period, of which 66 resulted in injury to one or more of the persons involved. Out of the 66 incidents resulting in personal injury, just 1 incident resulted in a fatality, 11 incidents were classed as 'serious' and 54 as 'slight.'
- 3.16 A more detailed analysis of personal injury collisions by geographical location is discussed below.

Sandwood Road

- 3.17 Six incidents were recorded on Sandwood Road, between the junction with Hillington Road (South) and Carnegie Road/ Queen Elizabeth Road. Five incidents were classed as 'slight' and one as 'serious.'

- 3.18 The incident classed as serious occurred on Sandwood Road, opposite property 373 at Chirnside Road. It involved a pedal cycle and the causation factor was recorded as the cyclist failing to look properly.
- 3.19 A further two incidents, classed as 'slight,' occurred within the immediate vicinity of the junction with Chirnside Road. Neither involved a vulnerable road user and the causation factors for both incidents were recorded as driver error.
- 3.20 Three incidents occurred within the vicinity of the junction with Hillington Road South, all of which were classed as 'slight.' One incident resulted in injury to a pedal cyclist and driver error was recorded as the causation factor, specifically the vehicle driver undertaking a poor turn/ manoeuvre and failing to look properly.
- 3.21 The remaining two incidents both involved motorised vehicles. Both listed some form of driver error as a causation factor, however the incident that occurred furthest south towards the junction also listed the external conditions (slippery road surface) as a contributory factor.

Hillington Road/ Carnegie Road/ Sandwood Road/ Queen Elizabeth Avenue Junction

- 3.22 Three incidents were recorded at the junction of Hillington Road with Carnegie Road/ Sandwood Road/ Queen Elizabeth Avenue. Two incidents were classed as 'slight' and involved motorised vehicles only. Both incidents were caused by driver error, for example, failing to judge the other vehicle's path/ speed and following too closely. One of these incidents also noted a distraction outside of the vehicle as a secondary factor.
- 3.23 The incident classed as 'serious' resulted in personal injury to a motorcyclist and was caused by external weather conditions (slippery road surface).

Hillington Road – between Queen Elizabeth Road and Kelvin Avenue

- 3.24 Two incidents were recorded on Hillington Road between the junctions with Queen Elizabeth Road/ Carnegie Road and Kelvin Avenue/ Deanside Road.
- 3.25 One incident was classed as fatal and occurred approximately 100 metres south of the junction with Deanside Road. No vulnerable road users were involved and the causation

factors were listed as 'exceeding the speed limit' and 'loss of control' (i.e. driver error) rather than due to the highway design.

- 3.26 The incident classed as 'slight' occurred approximately 100 metres south of the junction with Ainslie Road. The causation factors recorded were 'travelling too fast for conditions' and 'following too closely.'

Hillington Road/ Deanside Road/ Kelvin Avenue Junction

- 3.27 Five incidents occurred at the junction of Hillington Road with Deanside Road/ Kelvin Avenue. Four incidents were recorded as 'slight' and one as 'serious.' None involved any vulnerable road users and all were caused by driver error. Contributory factors included failing to look properly, undertaking a poor turn/ manoeuvre or driving in a careless/ reckless manner.

Hillington Road between Kelvin Road and M8 J26

- 3.28 Just two incidents, classed as 'slight,' occurred on Hillington Road between the junction with Deanside Road/ Kelvin Avenue and junction 26 with the M8.
- 3.29 The latest incident, which occurred 180 metres south of the junction with Huntly Road, involved two cars and was caused by driver error, specifically by the driver failing to look properly.
- 3.30 The second incident, which occurred in 2010, was recorded on Hillington Road at the junction with the entrance to Makro. The incident occurred within close proximity to the site access; although not on the approach as it appears to have occurred in the southbound carriageway. It resulted in personal injury to a pedal cyclist and was recorded as the cyclist's fault for entering the road from the footway.

M8 Junction 26

- 3.31 A total of 27 incidents were recorded within the vicinity of Junction 26 of the M8, one of which was classed as 'serious' and the remaining 25 as 'slight.' A breakdown of the incidents by geographic location is discussed below.

Junction 25 Off-Slip

- 3.32 Three incidents occurred along the eastbound off-slip from Junction 25, all of which were classed as 'slight.'
- 3.33 Two of the incidents were due to driver error, including aggressive driving and following a vehicle too closely, and one due to external conditions (slippery road surface).

M8 (Eastbound)

- 3.34 A total of four incidents occurred on the eastbound carriageway of the M8, one of which was classed as 'serious' and the remaining three as 'slight.'
- 3.35 The incident recorded as serious occurred approximately 365 metres west of Junction 26. Three causation factors were listed including, a slippery road surface, exceeding the speed limit and travelling too fast for the conditions.
- 3.36 The three incidents classed as slight were caused by driver error, with the exception of one incident, which occurred approximately 90 metres east of the junction with Hillington Road, which also listed a slippery road surface as a contributory factor.

M8 (Westbound)

- 3.37 Six incidents were recorded along the westbound carriageway of the M8. Four of the incidents involved car drivers, one a motorcyclist and one involved a bus/ coach.
- 3.38 Each incident was classed as 'slight' and all were the result of driver error. The contributory factors listed included exceeding the speed limit, illness/ disability, failing to judge another driver's speed and a lack of driving experience.

Junction 26 of M8 Eastbound Off-Slip

- 3.39 Five incidents occurred along the eastbound off-slip from the M8. All were recorded as 'slight' and each involved car drivers only.
- 3.40 Three of the recorded incidents were caused by driver error and contributory factors included failing to look properly and failing to judge another vehicle's path or speed.

- 3.41 One incident was caused by a combination of external conditions and driver error. The three contributory factors recorded include a slippery road surface, sudden braking and the vehicle having defective breaks.
- 3.42 One incident was caused by a combination of driver error and a fault with highway infrastructure. This incident occurred on the eastbound off-slip, at the junction with Hillington Road. The contributory factors recorded were the driver failing to judge another vehicle's path or speed and the presence of defective traffic signals.

Junction 26 of M8 Westbound Off-Slip

- 3.43 Five incidents were recorded along the westbound off-slip from the M8. Each incident was recorded as 'slight' and all contributory factors listed were due to driver error. No highway or infrastructure design flaws were identified.

M8 Junction 26 within the circulation carriageway

- 3.44 Two incidents occurred on the Hillington Road roundabout, both of which were classed as 'slight.' Both incidents occurred at the south of the junction, within the immediate vicinity of the junction with the M8 westbound off-slip.
- 3.45 Both incidents involved two cars and were recorded as the fault of driver error, rather than a result of highway design or external conditions.

Hillington Road approaching Junction 26

- 3.46 Two incidents were recorded on Hillington Road, within the immediate vicinity of the junction with the M8.
- 3.47 The most recent incident occurred 20 metres north of the junction with Huntly Road, to the immediate south of the junction with the M8. The incident was classed as 'slight' and involved a taxi/ private hire vehicle. No other vehicles were involved. The contributory factors were listed as a defective road, a slippery road surface and the vehicle driver undertaking a poor turn/ manoeuvre. No further details are provided in order to identify the defect; however, upon observation there appears to be no issue with the highway design. This is confirmed by the fact that no incidents were recorded in this location prior to or following this incident and none in the vicinity listed 'defective road' as a contributory factor.

- 3.48 The second incident occurred approximately 30 metres north of junction 26 and was also classed as 'slight.' The incident involved three cars and was caused by a combination of driver error, including careless/ reckless driving, failing to judge another vehicle's path/speed and undertaking a poor turn or manoeuvre.

Summary of Accident Analysis

- 3.49 The accident analysis indicates that there do not appear to be any specific problems at the main junctions within the study area. The majority of the accidents can be attributed to driver error such as pulling out of junctions without looking properly, or failing to stop.

Transport Connections

- 3.50 Hillington Park as whole is already very well connected to a plethora of travel networks, as shown in the Public Transport Facilities Plan (**Figure 4**) and the Connectivity of Hillington Park plan (**Figure 5**). Bus stops are located along Hillington Road, Mossland Road, Penilee Road, Queen Elizabeth Avenue and Earl Haig Road, therefore providing good permeability of bus routes throughout the site.
- 3.51 In addition, bus stops located throughout the site provide access to Hillington West and Hillington East rail stations. This increases the accessibility of the rail stations by employees at the north of the site, which could be considered too far from the stations to walk.

Local Bus Services

- 3.52 At present, Hillington Park has excellent local bus connections and there are a number of bus stops located both within and surrounding the park.
- 3.53 A number of local destinations are served by these routes, including Glasgow City Centre, Govan, Paisley, Nitshill, Dunoon, Erskine, Johnstone, Auchenback and Foxbar.
- 3.54 Furthermore, there are onward connections from easy to reach destinations such as Braehead and the City Centre. In particular, the Bus Rapid Transit route will be in place in Glasgow in 2015 and is predicted to be extended to Braehead. There is already a bus service from Hillington Park to Braehead which takes 7 minutes, and which runs at a frequency of one bus every 30 minutes during the daytime.
- 3.55 A summary of the most frequent bus services available at present as shown in **Table 3.1**.

Table 3.1 – Summary of Local Bus Services

Bus Stops (see Figure 4)	Service	Destination	AM Peak (Services/ hr)	PM Peak (Services /hr)	Average Weekday Daytime Frequency (mins)
A, E, F, G, H, I, P, Q	9A	Buchanan St Bus Station	1	3	20 – 30
		Braehead Centre	3	3	20 – 30
A, B, C	21	Govan	6	4	10 – 15
		Paisley	6	4	15
A, B, C, E, F, G, H, I, P, Q	22	Nitshill	2	2	30
		Braehead Centre	3	2	30
A, C	23/23A	Glasgow	5	4	10 – 30
		Erskine	6	5	10 – 30
A, B	101	Auchenback	5	6	10 – 30
		Braehead Centre	6	6	10 – 30
A	X7/A	Buchanan	2	3	30 – 50
		Greenock	2	6	15 – 60
B	X23	Buchanan	5	3	10 – 30
		Erskine	4	6	10 – 30

Local Rail Services

- 3.56 Hillington West and Hillington East rail stations are situated at the south of the site, and provide access to Glasgow Central (eastbound) and Gourock (westbound).
- 3.57 A summary of the train services available are presented in **Table 3.2**.

Table 3.2 – Summary of Services at Hillington East and West Train Station

Destination	AM Peak (Services/hr)	PM Peak (Services/hr)	Average Frequency (mins)	Journey Time
Glasgow Central via Paisley Gilmore Street to Gourock	2	3	20-30	5-8 mins to Paisley Gilmore St
Gourock to Glasgow Central via Paisley Gilmore Street	2	2	20-30	10-12 mins to Glasgow

- 3.58 Stations in the vicinity of Hillington Park can be reached from a wide range of places including Glasgow and Paisley.

Accessibility by Foot

- 3.59 Research commissioned by the Government has identified that walking is a prominent mode of travel at the local level. Whether it is reasonable to expect people to walk, and whether there is a propensity to do so, is based on a plethora of circumstances including purpose of

journey, environment, incentive, disincentives to use other modes etc. For commuting it is not unreasonable to expect that a journey time of say 30 - 45 minutes is attractive, particularly in the context of increasing awareness of the need for a healthier lifestyle. At a typical walk speed of 4.8km/hr this would mean in the order of 2.4km – 3.6km.

- 3.60 Various isochrones are shown on **Figure 6** indicating the facilities, including Braehead shopping centre, that are within attractive reach by some by foot.
- 3.61 The more formal walking links within the site are shown at **Figure 7**. Pedestrian facilities within the vicinity of the site are adequate. Footways of sufficient width are provided along both sides of Hillington Road between Junction 26 with the M8 and the junction with Ainslie Road.
- 3.62 To the south of Ainslie Road, a footway is only provided along the west side of the carriageway.
- 3.63 Footways of ample width are provided along both sides of Queen Elizabeth Road. Dropped kerbs are provided at the majority of crossing points, enabling safe crossing movements by those with mobility impairments.
- 3.64 Mossland Drive has a good pedestrian environment, with footways of ample width provided along either side of the carriageway. However, a lack of formal crossings at the junction with Kelvin Avenue and Mossland Road presents a barrier to comfortable pedestrian movement along the northern boundary of the site. Along Mossland Road, a footway is provided along the south side of the carriageway. This is of ample width and dropped kerbs are provided at each crossing point.
- 3.65 In general, the pedestrian realm at the site can be considered to be adequate, but with room for improvement in terms of the ambience and environment.
- 3.66 A lack of formal pedestrian crossing points is a consistent issue and presents a barrier to attractive movement within and around the site. In addition, a number of the footways are in poor condition, with visible damage.
- 3.67 The assessment work will, in consultation with the Authorities, investigate the quality of these routes and make proposal, where appropriate, for improvement. These improvements may include both physical and management initiatives.

Accessibility by Cycle

- 3.68 Government research identified that cycling has the potential to replace short car journeys. As for walking, it is reasonable to expect that people can cycle, and that, with encouragement and increasing awareness of that option, and the health benefits, that there is an increasing propensity for this mode. A 30min – 45 min journey would take a cyclist about 7.5km – 11.3km at a comfortable average speed of 15km/hr. **Figure 8** shows various isochrones.
- 3.69 The site currently has few cycling facilities provided and the more formal cycle links within the site are shown at **Figure 9**. There is room for improvement in terms of cycling facilities.
- 3.70 An off-road cycle way is located along the south side of Mossland Drive, which subsequently becomes a shared use pedestrian/ cycle way along on Mossland Road and Penilee Road, up to the junction with Queen Elizabeth Avenue.
- 3.71 Shared use pedestrian/ cycle crossings are provided at three crossing points along Hillington Road, allowing safe movement between the east and west sides of the site. Advanced stop lines (ASLs) are provided at an additional two junctions/ crossings on Hillington Road, allowing cyclists to position themselves safely in front of vehicular traffic.

Summary of Accessibility

- 3.72 The site is extremely well located being within walking and cycling distance of a large number of residential, leisure and retail facilities. It benefits from being within easy walking distance of the rail stations and bus stops and is also located close to Braehead Shopping Centre, with excellent links across Glasgow, Renfrewshire and the surrounding areas.
- 3.73 There is room for improvement in terms of making the most of these proximities and facilities and the investment in the park through the SPZ will provide some of these improvements.

4 REVIEW OF RELEVANT TRANSPORT POLICIES

- 4.1 A review of relevant transport policy is included at **Appendix A**.
- 4.2 The thrust of policy is to encourage growth and employment, and to enable that growth to occur in a sustainable and socially inclusive manner.
- 4.3 Locating new development where there is a choice of means of transport is a central tenet of those policies. Having achieved best location, policy goes on to promote the best use of that location by design and by management.
- 4.4 This site is in an excellent location in the context of that policy. Served by two railway stations, a bus network and motorway, with good proximity to homes and retail, development and improvement of this site is entirely in accord with those policies.
- 4.5 This is a good site and development in the policy context.

5 DESCRIPTION OF DEVELOPMENT

- 5.1 The proposed development is set out in the sections below, including the application approach and a schedule of the land uses for assessment within this report. The architect's Development Opportunity Area plan is included at **Appendix B**.
- 5.2 The report and assessments focus on delivering employment and economic growth in a sustainable manner, improving the built environment and local facilities for the benefit of all Park users.

Proposed Simplified Planning Zone Approach

- 5.3 Renfrewshire Council and Glasgow City Council are proposing to make a Simplified Planning Zone (SPZ) Scheme for Hillington Park. This will create an employment led redevelopment, providing choice and quick delivery for businesses considering locating in this part of Scotland.
- 5.4 The proposals for the Hillington Park SPZ are for a ten year period from 2014 and provide a flexible approach to planning where commercially viable developments can come forward in an efficient and bespoke manner within the criteria set out in the SPZ.
- 5.5 The red line boundary to which the planning application relates is shown in **Appendix C**.

Development Schedule

- 5.6 The proposed SPZ at Hillington Park will enable a redevelopment of the park to create a modern and sustainable business park. The proposed SPZ does not plan for a dramatic change in the nature of Hillington Park as there will be an element of demolition, new build and upgrading existing facilities on the site in what is traditionally a dynamic built environment in any case.
- 5.7 **Table 5.1** below provides a summary of the proposed changes at Hillington Park as a result of the SPZ. It should be noted that the baseline assessment includes the consented / permitted development as agreed with Renfrewshire Council, Glasgow City Council and Transport Scotland, and explained in Section 2.
- 5.8 As can be seen in **Table 5.1**, there are a few key aspects of the SPZ which are to create:
- a new modern and sustainable employment area;

- a new gateway into Hillington Park; and
- a new social Hub area.

Table 5.1: Proposed Development Schedule of Change as a result of SPZ

Category	Existing Gross Floor Area (sqm)	Consented / Permitted / Established Gross Floor Area (sqm)	Baseline Gross Floor Area (sqm)	Proposed SPZ Site Layout (Gross Floor Area in sqm)	Change in Floor Area compared to Baseline (Gross Floor Area in sqm)
Employment and Traffic Generating Land Uses*	459,302	111,039	570,341	535,168	-35,173
Complementary Uses including The Hub**	35,050	-	35,050	44,200	9,057
Total	494,352	111,039	605,391	579,368	-26,116

* All traditional business uses (Class 4, 5 & 6) as well as other quasi-employment uses and traffic generating uses in Class 1 Sui Generis, Class 7 and Class 8

** All complementary land uses which enable a 21st Century Business Park to operate and do not generate traffic on the strategic highway network as they offer ancillary services such as provision of leisure (Five-a-side football) and/or small café, retail or professional services units (Class 1, 2 and 11). The size of each individual unit will be controlled by the criteria set out in the SPZ so as to ensure they do not generate traffic.

The Hub

- 5.9 One of the key aspects of the SPZ is to create a Hub within the site to provide a range of attractive facilities for employees and visitors. The facilities will help to modernise the general amenity of the park and will sustain business/commercial opportunities on the park.
- 5.10 The Hub will be a social centre, a transport node, a place to meet, to exercise, to wait and to conduct business. The facilities that will be provided in the Hub are not yet specified but options include:
- Retail units ancillary to the operation of the Park (including sandwich shops, newsagents, cycle accessories and maintenance;
 - Leisure facilities, including gyms, football pitches, and others;
 - Changing and showering areas;
 - Restaurants, café and/or Public House facilities ancillary to the Park and local area;
 - Professional services, including hairdressers, accountant, lawyers, banks etc.
 - Transport services, including a stepping off point for bus services to Braehead and Glasgow City Centre
 - Bespoke travel planning facilities
 - Internet cafe

- 5.11 The integration of various land uses within one area has been recognised by Designing Streets (**The Scottish Government, March 2010**) and Sustrans as fundamental in relation to improving the use of sustainable transport. Concentrating a range of ancillary facilities within the Hub will increase the presence of this area for employees within the park therefore encouraging the area to become more vibrant and welcoming.
- 5.12 It should be noted that the Hub is proposed to serve the working population of the site and is therefore not considered to generate any external trips from existing and established centres. Instead, it is expected that the existence of the Hub will reduce the number of vehicle trips from the site to surrounding facilities and services, therefore reducing traffic on the surrounding highway network.

Access Strategy

Vehicle Access and New Gateway

- 5.13 A new access is proposed to the West Area of Hillington Park from Hillington Road in a similar location as the existing left in and left out access junction. This new junction will serve as a gateway to Hillington Park and will be located adjacent to the hub. A plan of the new access is included at **Appendix D in Drawing 120825/A/05**.
- 5.14 The new access will be the main access for employees and visitors to the Hub and to the frontage land; however all of the existing access will remain in use and provide flexibility for management of movements.
- 5.15 Within the site, a hierarchy approach will be applied to roads which will be planned to permit the required movements by all vehicle types likely to use the site but also enable pedestrian and cycle movements and have regard to the built environment and public realm.
- 5.16 This access has been discussed in detail with Renfrewshire Council and Transport Scotland and the principle of the junction design and layout has been agreed.
- 5.17 A Stage 1 Road Safety Audit (**Appendix E**) and a Risk Assessment (**Appendix E**) of this access layout has been undertaken. The Designers Response to the Road Safety Audit is included at **Appendix F**.

Pedestrian and Cyclist Facilities

- 5.18 The SPZ aims to facilitate a walkable and cycleable neighbourhood. It is to provide day to day facilities, to encourage healthy lifestyles and to provide convenience and useful services for the employees and visitors to the Park. **Table 5.2** below highlights the internal distance from the Hub to the Key Nodes in the park.

Table 5.2 Distances to Key Nodes from Hub

Key Nodes	Distance (metres)	Walk Time (minutes)	Cycle Time (minutes)
Bus Stop on Hillington Road at the Hub	0m	0	0
Hillington West Train Station	1,250m	15	5
Hillington East Train Station	1,900m	24	8
Braehead Shopping Centre	1,200m	14	5

- 5.19 The internal layout will be well connected via a network of legible streets and spaces that provide a good environment for walking and cycling. The infrastructure has to be carefully planned to provide convenient and direct links between existing nodes (Train Stations, Bus Stops and main employment areas), and it also means that new facilities on site are located where these links converge to create new nodes. Footpaths will be constructed along desire lines between land uses to ensure that walking is considered as a realistic choice. The routes will be lit with appropriate security levels. Pedestrians will be given priority wherever possible over all other forms of traffic with crossing facilities taking the form of signalised Pelican crossings, Zebra crossings or shared surfaces depending on the location and pedestrian/traffic volumes.
- 5.20 Cycle lanes, or facilities where segregated lanes are not appropriate, will be created alongside all major roads, either on-street or dedicated off-street as appropriate, and along key desire lines either as shared or dedicated facilities, with cyclists given priority over motorised traffic. Crossing facilities will be provided either as part of signalised junctions or signalised Toucan crossings, with details covered in the Transport Design Guidance.
- 5.21 For some people, cycling will be the most convenient way of getting around the Park. Secure and weather protected cycle parking will be provided throughout the site in appropriate quantities in line with the approved cycle parking standards. Cycle parking will be provided within public areas for general use and within individual plots as these are developed out. Cycle parking will be provided at key bus stops.

Parking Strategy

- 5.22 All car and cycle parking will be appropriate and agreement will be sought with the Local Planning Authority. Parking provision will comply with the parking standards specified in the SPZ, unless there is justification for revised provision as a result of the provision of sustainable transport improvements or in individual cases where a specific development does not require the quantum of parking set out in the standards.

6 SUSTAINABLE TRANSPORT STRATEGY

Introduction

- 6.1 The Sustainable Transport Strategy (STS) forms an integral part of the SPZ proposals. The objective has been to create a package of measures and a commitment to fund that package of measures that gives employees and visitors a real choice in how they travel to and from the site. This is the subject of an evolving strategy (included at **Appendix G**), which the report will set out in greater detail.
- 6.2 The STS is a live document and will be continually updated, it enables some judgements to be made now about the opportunities for modal shift compared with existing travel patterns. These judgements have been used in the assessment process.
- 6.3 The strategy should be seen in the context of a development which is likely to take several years to be fully built out and occupied. During this time government policies are likely to evolve to give further encouragement to the use of sustainable means of transport.
- 6.4 The STS chimes with one of the key drivers of the proposals, which is to reduce the need for extensive travel both within the park and externally.

Key Measures

- 6.5 The STS promotes provision, contributions towards or investigation of:
- The Hub (social heart of the site);
 - The Travel Plan
 - Improved Walk and Cycling Routes;
 - Improved ambience for pedestrians and cyclists;
 - Car share systems;
 - Cycle Hire;
 - Potential for Electric Covered Buses / Rickshaws / Cycles;
 - Demand responsive vehicles (electric);
 - Improve virtual connectivity (reducing the need to travel);
 - Awareness and Education; and
 - Travel Planning and Management.

- 6.6 The Final Sustainable Transport Strategy is included at **Appendix G**. This is reasonable and appropriate.

Travel Plan

- 6.7 A critical feature of the Sustainable Transport Strategy and the overall sustainable redevelopment of Hillington Park will be the revised Travel Plan (TP). It will encompass all of the sustainable and social initiatives. It will be well funded, with transparent monitoring, reporting and comparison of achievements against targets.
- 6.8 It will be a living document and it will enable adjustments to be made to best achieve the stated aims and targets.
- 6.9 It will have a 'fighting fund' for unforeseen actions.
- 6.10 The TP's overriding objective will be to:

Put in place the management tools deemed necessary so that employees of the proposed site are able to make informed choices about their travel, while at the same time minimising the adverse impacts of their travel on the environment, surrounding highway network and local residents.

- 6.11 The sub-objectives are:

- To reduce the need to travel to and from the site, particularly during peak hours;
- To increase the awareness of choice of travel modes and promote social inclusion;
- To promote the health, wealth and environment benefits of walking, cycling and public transport use; and
- To provide clear information to all employees and visitors on the alternative modes of transport available at the site.

Travel Plan Management

- 6.12 MEPC provides a Travel Plan Manager (TPM) to manage the Travel Plan.
- 6.13 They will be responsible for overseeing the management, development, implementation, monitoring and review of the Site-wide Travel Plan.

Travel Plan Targets

- 6.14 The Travel Plan targets will be based on minimising single occupancy vehicle trips.

Measures and Initiatives

- 6.15 The initiatives and measures that will form part of the Travel Plan are a mix of 'hard' and 'soft' measures. The 'hard' measures include the provision of facilities set out above such as public transport improvements, walking/cycling improvements, car clubs and secure cycle parking. The 'soft' measures include initiatives such as providing Welcome Packs, and provision of information on sustainable travel services through Travel Notice Boards and Real Time Information (RTI). It may also include the new technology features such as app based facilities, and data facilities being trialled in Glasgow City.

Monitoring and Review

- 6.16 A comprehensive monitoring and review programme will be agreed with the Authorities and MEPC, and will set out the type and frequency of travel surveys for each land use. This will be coordinated by the Travel Plan Manager and surveys will be funded by the developers/occupiers of the various land uses.

Transport Review Group (TRG)

- 6.17 A Transport Review Group will be created, comprising key stakeholders including MEPC and both Local Planning Authorities, who will meet periodically to monitor and review the achievements of the Travel Plan.

Fighting Fund

- 6.18 A fighting fund will be set up by the Site Owner (MEPC) to fund remedial measures and mitigation measures. This will either be directly managed by the Travel Plan Manager or will be invested in the THISTLE Bid for Integrated Smart Mobility and managed by the TRG.
- 6.19 Should the TRG determine that the targets are not on track to be met and remedial measures are required then the Travel Plan Manager will propose measures to improve the achievement of the targets. The proposal will include the estimated cost of implementing the measures. If the TRG agree with the remedial measures proposed, the TRG will authorise expenditure from the Contingency Fund up to the estimated cost of those measures.

7 CONSENTED/PERMITTED AND COMMITTED DEVELOPMENT

Introduction

7.1 As set out in Section 2, there are a number of consented, permitted and committed developments in the area surrounding Hillington Park. This section of the report sets out the approach to estimating traffic movement to and from those developments.

Consented/Permitted Development

7.2 The three distinct areas which can be considered as consented/permitted development, or committed in terms of employment generation, are:

- Pegasus Land (Former Rolls Royce Factory);
- Hillington Park Frontage Land; and
- Gladman Development on Mossland Road.

7.3 Each of these areas has been addressed in a similar way using the traffic generation and distribution methodology as set out in detail in Section 8.

Committed Development

7.4 A number of committed developments within the vicinity of the proposed site will be included within the traffic impact assessment (part of the Transport Assessment Report). These developments are listed below in **Table 7.1**.

Table 7.1 Identified Committed Developments

Development Area	Use Class	Land Use	Development Size	Completion
New Southern General Hospital	Class 8	Residential Institutions- Hospital	+1000 beds	-
Braehead Shopping Centre	Class 1	Retail	+41, 000 sqm	-
	Class 2 & Class 3	Financial Uses, Food & Drink	3, 100 sqm	-
	Class 7	Hotel		-
	Class 11	Assembly & Leisure	5000 seat (18, 900 sqm)	-
		Transport Interchange	11 stands	-
		Car Parking	Up to 8500 total (proposed and existing)	-
Shiels*	Class 4	Employment	26,337 sqm	50%
Titanium II*	Class 4	Employment	11, 148 sqm	85%
Kings Inch Business Park*	Class 4	Employment	14,000 sqm	0%
	Class 9	Residential	250 Units	0%
Millburn*	Class 9	Residential	476 Units	12% (56 units)
Macfarlane*	Class 9	Residential	525 Units	36% (188 units)
	Class 4	Employment	7,432 sqm	0%
Park Lane Ferry Village*	Class 9	Residential	750 Units	18% (132 units)

*Committed developments identified within the Braehead Shopping Centre TA

Southern General Hospital

- 7.5 The net difference in vehicle trips expected to be generated by the proposed development at Southern General Hospital was identified from the traffic impact assessment, undertaken within the supporting TA.
- 7.6 The Hospital TA subsequently distributed these vehicle movements onto the local highway network and the links/ junctions relevant to the proposed Hillington Park development were identified. 6% of vehicles were allocated to travel to SGH from the west and 12% from the west via the M8.
- 7.7 The distribution was further broken down into the following movements:
- West: 100% via Renfrew Road
 - M8 West: Inbound – 100% via junction 25
 - M8 West: Outbound – 100% via junction 26

7.8 No vehicles were assigned to the network south of junction 26 of the M8.

7.9 We will adopt the results of this TA for the purpose of our baseline assessment.

Braehead Shopping Centre

7.10 A traffic impact assessment was undertaken as part of the TA prepared in support of the proposed development at Braehead Shopping Centre. The additional vehicle movements created as part of this development were assigned to the local highway network, with two junctions being relevant to the proposed development at Hillington Park. These were the Glasgow Road/ Kings Inch Road/ Renfrew Road/ Hillington Road junction and junction 26 of the M8.

7.11 The number of vehicles assigned by the Braehead TA to these junctions was identified. Vehicles travelling south along the A736 rather than accessing the M8 were assigned to continue south along Hillington Road, in order to take the strategic route to Paisley Road West.

7.12 As no AM traffic assignment was undertaken within the TA, the additional vehicle movements created by the proposed development at Braehead were identified by comparing the existing parking survey with the proposed parking accumulation, taking into account an 11.2% overall increase in all retail traffic and a 3% mode shift away from the private car.

7.13 The net change in trips was then assigned to the network using the same distribution as used for the PM peak period.

7.14 We have adopted the flows contained within this TA for the purpose of our baseline assessment.

Braehead TA Committed Developments

7.15 A number of committed developments were identified within the TA prepared in support of the proposed development at Braehead Shopping Centre. The trips generated by each of these developments were subsequently allocated to the local highway network during the PM peak period as part of the traffic impact assessment for Braehead Shopping Centre.

7.16 The assessment also included trips generated as part of the M8 Frontage development, a part of the proposed development at Hillington Park. A trip rate was identified for the land

uses proposed at this site and the number of trips generated was subsequently subtracted from the total committed development traffic.

- 7.17 As no impact assessment was undertaken for the AM peak period, trip rates were identified for each land use within the committed developments. The resulting number of trips was then distributed onto the highway network based on the location of the developments. Vehicles travelling to the south of junction 26 of the M8 were assigned to follow a strategic route along the A736.

8 TRAFFIC GENERATION AND DISTRIBUTION

Introduction

8.1 This section sets out the method used for estimating traffic generation for the SPZ proposals. The methodology set out below has been agreed in principle with Renfrewshire Council, Glasgow City Council and Transport Scotland on the basis of the Transport Assessment Scoping Report. The land uses and floor areas have been subject to minor alterations since the Transport Assessment Scoping Report but the methodology has remained the same.

Traffic Generation Methodology

External Trip Generation Methodology

8.2 Trip rates were determined for each employment generating land uses at Hillington Park in order to calculate the net change in the number of vehicle trips generated between the extant and proposed land uses.

8.3 The land uses which have been defined as employment generating are summarised in **Table 8.1** below.

Table 8.1 Proposed Employment Generating Land Uses

Use Class (Code)	Land Use	Land Use	Category (TRICS)
C1 Sui Generis	Retail	Car/Commercial vehicle sales	Car Showroom
C4	Business	Employment	Business Park
C5/C6	General Industrial & Storage/ Distribution	Employment	Industrial Estate
C7	Hotel	Hotel, Food & Drink	Hotel
C8	Residential Institutions	Health	Private Hospital

8.4 For each land use identified, a vehicle trip rate was determined using a general selection of parameters. However, due to the limitations presented by the number of sites available, these parameters were sometimes inapplicable and were therefore varied slightly. When the ideal parameters were not available, the resulting individual sites were subsequently interrogated individually in order to determine their suitability for inclusion within the final trip rates.

- The guideline parameters used to determine the trip rates are listed below.

- Region: England and Scotland only (excluding Greater London)
- Survey day: Weekday surveys only
- Location: Edge of town
- Location Sub-Category: Industrial zone

8.5 Sites within England and Scotland were selected.

8.6 It was concluded that due to the lack of available surveys, it was generally not as robust to select sites within Scotland only.

8.7 Weekend surveys were not included within the selection process, where they were available, as the trip rates and peak arrival/ departure periods will differ significantly in comparison with weekdays.

8.8 Sites within edge of town locations, in industrial zones were selected in order to reflect the location of the site, and therefore calculate the most representative trip rate. For example, sites in town centres would be likely to have a lower number of vehicle trips, due to the accessibility of the location, and therefore would not be representative of the site.

8.9 However, it should be noted that when an insufficient number of surveys were available, it was not possible to calculate a trip rate based on the exact parameters discussed above. In these instances, the most similar sites to the selection criteria were selected, and each interrogated in order to determine its suitability.

8.10 The following paragraphs will go through each of the land uses identified in **Table 8.1** individually. At this stage, the proposed floor areas shown in **Table 8.2** below are indicative only as further development of the site layout is taking place.

Table 8.2 Indicative Land Uses

Use Class (Code)	Land Use	Land Use	Category (TRICS)	Net Change – including Former Rolls Royce Site (Gross Floor Area in sqm)
C1 Sui Generis	Retail	Car Showroom	Car Showroom	10,033
C4	Business	Employment	Business Park	6,355
C5/C6	General Industrial & Storage/ Distribution	Employment	Industrial Estate	-58,807
C7	Hotel	Hotel, Food & Drink	Hotel	7,246
Other Non-Employment Generating land Uses				9,057
Total				-26,116

C1 Sui Generis

- 8.11 The land use C1 Sui Generis, in the case of the proposed development, refers to a car/commercial vehicle sales unit.
- 8.12 Due to the wider availability of relevant surveys, only sites within Scotland were selected, in order to provide a more representative trip rate. The remaining selection parameters were used, however only sites within commercial zones were subsequently available. The sites included are listed in **Table 8.3** below, and it should be noted that no surveys were manually removed.

Table 8.3 Selected Sites (C1 Sui Generis)

Site Code	Location	Location Category	Location Sub-Category	Survey Day	GFA (sqm)
AD-14-A-01	Aberdeen	Edge of Town	Commercial zone	Tuesday	5640
PK-14-A-01	Perth	Edge of Town	Commercial zone	Tuesday	1800

- 8.13 The AM and PM peak and daily trip rates were subsequently extracted from the data and are presented below in **Table 8.4**.

Table 8.4 Trip Rates (C1 Sui Generis)

	AM		PM	
	Arr	Dep	Arr	Dep
Trip Rate (Total Vehicles)	0.269	0.161	0.161	0.242
HGVS	0.027	0.027	0	0

C4 Business Park

- 8.14 For the office land uses within the site, the employment sub-category ‘Business Park’ was selected. The TRICS Database defines this category as a “collection of office buildings hosting separate organisations.” It was concluded that this was a more representative category that simply ‘Office,’ which is for a single building or multiple buildings occupied by the same organisation.
- 8.15 The selection parameters were applied, and due to the high number of surveys available, only sites within edge of town, industrial zone locations were included within the results. The exception to this is one site for which a sub-category was not listed. This site was interrogated and determined to be representative of the site location, and therefore included within the trip rate calculation.

- 8.16 Out of the six sites satisfying the selection parameters, one was manually removed from the survey list. The reason for deselecting the survey was that the percentage office land use at the site was just 50%.
- 8.17 The remaining five surveys selected are presented in **Table 8.5** below.

Table 8.5 Selected Sites (C4 Business Park)

Site Code	Location	Location Category	Location Sub-Category	Survey Day	GFA (sqm)
GM-02-B-03	Sale	Edge of Town	Industrial zone	Tuesday	3985
LN-02-B-01	Lincoln	Edge of Town	Industrial zone	Tuesday	4460
SF-02-B-01	Bury St Edmunds	Edge of Town	Industrial zone	Wednesday	2480
TW-02-B-03	Sunderland	Edge of Town	No sub-category	Thursday	77513
WO-02-B-01	Redditch	Edge of Town	Industrial zone	Tuesday	3525

- 8.18 The AM and PM peak and daily trip rates were subsequently extracted from the data and are presented below in **Table 8.6**.

Table 8.6 Trip Rates (C4 Business Park)

	AM		PM	
	Arr	Dep	Arr	Dep
Trip Rate (Total Vehicles)	1.736	0.275	0.218	1.499
HGVS	0.032	0.019	0.012	0.018

C5/C6 Industrial Estate

- 8.19 The Industrial Estate land use category was used to determine a trip rate for the combined general industrial and storage/distribution uses currently located and proposed within the site. The TRICS Database defines the 'Industrial Estate' category as "a number of industrial buildings at the same site."
- 8.20 The same selection parameters as used previously were applied, and only edge of town sites were selected. Industrial zones and surveys with no sub-category were included within the search, due to a lack of sites exactly matching the parameters. Each site was then interrogated individually to assess the specific land usage.
- 8.21 A total of nine sites were manually removed from the survey list, of which eight were for having a percentage of office usage included within the site land uses. The remaining site was removed for having no B8 (storage and distribution) land use within the site.

8.22 The sites considered representative of the existing and proposed land uses within the development site are presented below in **Table 8.7**.

Table 8.7 Selected Sites (C5/C6 Industrial Estates)

Site Code	Location	Location Category	Location Sub-Category	Survey Day	GFA (sqm)
CA-02-D-02	Cambridge	Edge of town	Industrial zone	Monday	2063
MS-02-D-05	St Helens	Edge of town	No sub-category	Tuesday	2430
NT-02-D-01	Sutton-in-Ashfield	Edge of town	No sub-category	Friday	26400
WY-02-D-02	Huddersfield	Edge of town	No sub-category	Monday	20824

8.23 The AM and PM peak and daily trip rates were subsequently extracted from the data and are presented below in **Table 8.8**.

Table 8.8 Trip Rates (C5/C6 Industrial Estate)

	AM		PM	
	Arr	Dep	Arr	Dep
Trip Rate (Total Vehicles)	0.284	0.144	0.096	0.232
HGVS	0.022	0.031	0.033	0.008

C7 Hotel

8.24 For the proposed hotel land use within the site, the selection parameters were applied, and due to the high number of surveys available, only sites within edge of town, industrial zone locations were included within the results. The exception to this is one site for which a sub-category was not listed. This site was interrogated and determined to be representative of the site location, and therefore included within the trip rate calculation.

8.25 No sites were manually removed from the selection. The selected sites are presented in **Table 8.9**.

Table 8.9 Selected Sites (C7 Hotel)

Site Code	Location	Location Category	Location Sub-Category	Survey Day	No. Bedrooms
DV-06-A-03	Plymouth	Edge of Town	Industrial zone	Wednesday	110
NF-06-A-02	Norwich	Edge of Town	No Sub-Category	Thursday	119

8.26 The AM and PM peak trip rates were subsequently extracted from the data and are presented below in **Table 8.10**.

Table 8.10 Trip Rates (C7 Hotel) – Per Bedroom - Up to 120 Bedrooms

	AM		PM	
	Arr	Dep	Arr	Dep
Trip Rate (Total Vehicles)	0.192	0.297	0.275	0.144
Trip Rate (HGVs)	0.004	0.013	0	0

C8 Residential Institutions

- 8.27 Scope for a small, private hospital/ health centre is proposed within the site plan, potentially to complement the nearby Southern General Hospital.
- 8.28 A trip rate was derived from the TRICS Database from the land use category ‘health’ and the sub-category ‘private hospital.’ This land use is defined by TRICS as a “fee-paying or BUPA type hospital.” The selection parameters were applied and three suitable survey sites were determined. Due to a lack of available ‘edge of town’ sites, those located outside of industrial zones were included within the selection. No sites were manually deselected.
- 8.29 The sites selected are presented in **Table 8.11** below.

Table 8.11 Selected Sites (C8 – Private Hospital)

Site Code	Location	Location Category	Location Sub-Category	Survey Day	GFA (sqm)
CA-05-D-01	Peterborough	Edge of Town	Residential zone	Thursday	5050
GS-05-D-01	Gloucester	Edge of Town	No sub-category	Tuesday	7775
LE-05-D-01	Leicester	Edge of Town	No sub-category	Friday	6800

- 8.30 The AM and PM peak and daily trip rates were subsequently extracted from the data and are presented below in **Table 8.12**.

Table 8.12 Trip Rates (C8 – Private Hospital)

	AM		PM	
	Arr	Dep	Arr	Dep
Trip Rate (Total Vehicles)	1.034	0.280	0.474	0.688
HGVS	0.025	0.020	0.000	0.000

Estimated Gross SPZ Trip Generation – (Before Mitigation)

- 8.31 **Table 8.13** below summarises the gross new trips beyond the site boundary (north of Mossland Drive and south of Queen Elizabeth Avenue) on this basis and shown on **Flow Diagram 19 and 20**.

8.32 These trips are the difference between estimated trips from the committed or established employment generation, and the reasonable potential for trips to occur as a result of the SPZ.

Table 8.13 Estimated Gross SPZ Vehicle Trip Generation - Not including Mitigation

	AM		PM	
	Arr	Dep	Arr	Dep
Total Vehicles	-7	-15	7	0
HGVS	-8	-13	-16	1

8.33 These trips shown above do not take account of the effects of the Sustainable Transport Strategy. These effects are set out below, and it is these mitigated flows that will be used in this report to assess the effects of the development beyond the site boundary.

The Sustainable Transport Strategy and Resulting Demand

8.34 Sustainability and Urban Design are key elements of the proposals. This site, being in an excellent location in terms of social inclusion and sustainable travel, provides opportunity beyond what occurs in practice at the moment.

8.35 The inclusion of the Hub and the active travel plan (see **Appendix G**) will make a noticeable difference to the way in which people will choose to travel. That this is the case is the fundamental premise of current transport policy, and also for instance the assumption underlying Glasgow City Council’s successful bid for Future Cities funding.

8.36 The extent to which these proposals will make a difference is still the subject of investigation and judgement; however, at the least we expect a 10% shift across the site as a result of cycling, walking and car share initiatives. This is outlined in the Sustainable Transport Strategy report (**Appendix G**) where comparisons are made between Hillington Park and Milton Park (also owned and operated by MEPC).

8.37 Therefore, in making assumptions we have assumed a 10% mode shift away from private car use as a result of the proposals. This will be applied to the baseline traffic that arrives and departs from Hillington Park and the proposed development traffic.

8.38 The application of this shift results in net new car trips on the highway network as a result of the comprehensive SPZ proposal as set out in **Table 8.14** below. Compared with existing, committed and established employment generation, this SPZ creates a more modern and

attractive place to work, makes significantly better use of the location and facilities, and results in less peak period private car trips on the surrounding network. This is a win all round.

Table 8.14 NET Vehicle Trip Generation - Including Mitigation

	AM		PM	
	Arr	Dep	Arr	Dep
Total Vehicles	-295	-125	-126	-249
HGVS	-7	-12	-16	1

Traffic Distribution

8.39 In order to understand the degree of effect of the SPZ on the traffic network (even if that is a net reduction in movement), the distribution of vehicle trips onto the local highway network needed to be determined. Two options have been identified to determine the trip distribution (both give similar answers), which are set out below.

Option 1

- 8.40 A travel survey was undertaken amongst existing staff at the industrial estate which collected information regarding travel behaviour. The survey was sent electronically to approximately 550 staff, of which 244 responded. This gives a response rate of 41%.
- 8.41 However, as a total of approximately 6,500 employees work at the site there is a risk that this sample size is too small and as a result there is reduced confidence that the results are representative of all employees.
- 8.42 In the travel survey, each respondent was asked a number of travel questions, including where they had travelled from to access the site. From these responses it was possible to determine the percentages of employees travelling from each origin, and the routes they are likely to use to access the site.
- 8.43 The staff origins were grouped together by Local Authority for locations outside of Renfrewshire and Glasgow City, and by Ward for those locations within. This methodology was used as all employees living in a Local Authority outside of Renfrewshire and Glasgow would be expected to take one strategic route into the site via the M8 or Hillington Road, rather than a combination of routes as those residing close to the site would be expected to do.

8.44 A plan showing the origin of each staff journey is presented at **Figure 10**. The percentages of staff residing in each location are presented at **Table 8.15** below.

Table 8.15 Origin Locations – Employee Travel Survey 2013

Origin (Local Authority)	Number of Employees	% of Overall Count
Glasgow City	67	27%
Renfrewshire	65	27%
South Lanarkshire	20	8%
East Renfrewshire	18	7%
Inverclyde	13	5%
North Ayrshire	13	5%
North Lanarkshire	11	5%
East Dunbartonshire	8	3%
East Ayrshire	7	3%
West Dunbartonshire	6	2%
South Ayrshire	4	2%
Falkirk	3	1%
West Lothian	3	1%
Argyll and Bute	2	1%
City of Edinburgh	2	1%
Sefton	1	0%
Chiltern	1	0%
Total	244	100%

8.45 The advantage of using travel survey data as a basis for the trip distribution is that it represents current travel behaviour for existing staff at the site, and is therefore likely to be similar to that of future staff. The disadvantage of using this dataset is that the surveys captured the behaviour of only a small section of employees, just 4%, and therefore cannot be considered as entirely representative.

Option 2

8.46 Due to the low number of travel surveys received in comparison with the number of employees working at the site, the issue of the representativeness of the surveys was addressed. In response, journey to work census data was obtained for the Sandyford Ward, within which the site is located.

8.47 The data indicated the origin point of each journey made by a person employed within Sandyford. Subsequently it was then possible, using a combination of route planning software and professional judgement to determine the likely routes to the site that each employee would be likely to take.

8.48 As with Option 1, staff origins were grouped by Local Authority for locations outside of Renfrewshire and Glasgow City. Within Renfrewshire and Glasgow, origin locations were categorised into wards, in order to obtain more detail.

8.49 A plan showing the percentage of staff residing in each Local Authority is presented at **Figure 11, 12 and 13**. The percentages of staff residing in each location are presented at **Table 8.16** although it excludes any local authority without a minimum of 1% of the overall total.

Table 8.16 Origin Locations (Local Authority) – 2001 Census Data

Origin (Local Authority)	Number of Employees	% of Overall Count
Renfrewshire	2,686	38%
Glasgow City	1,819	26%
East Renfrewshire	456	6%
South Lanarkshire	408	6%
North Lanarkshire	365	5%
Inverclyde	243	3%
North Ayrshire	222	3%
East Dunbartonshire	216	3%
West Dunbartonshire	203	3%
East Ayrshire	117	2%
South Ayrshire	83	1%
Argyll and Bute	68	1%
Stirling	40	1%
Total	7,083	100%

8.50 Subsequently the percentage of staff travelling through each junction was inputted into a traffic flow diagram. The trip distribution could then be used to determine the impact on the capacity and operation of the identified junctions within the vicinity of the site.

8.51 The benefit of using the census data as a basis for the trip distribution associated with the proposed development is that the data is based on a total of 7,083 respondents, and can therefore be considered representative.

8.52 However, the data was collected in 2001, and therefore could be considered to be out of date, and not representative of current travel behaviour at the industrial estate. It should also be noted that the 2001 Census data uses different wards to the 2011 data.

8.53 Whilst both methods provide similar answers, we have used Option 2 (which is corroborated by Option 1) as the more robust estimate.

8.54 The traffic distribution for Hillington Park West on this basis are shown in **Flow Diagrams 1 & 2** and Hillington Park East in **Flow Diagrams 3 & 4**.

9 TRAFFIC IMPACT ASSESSMENT

Introduction

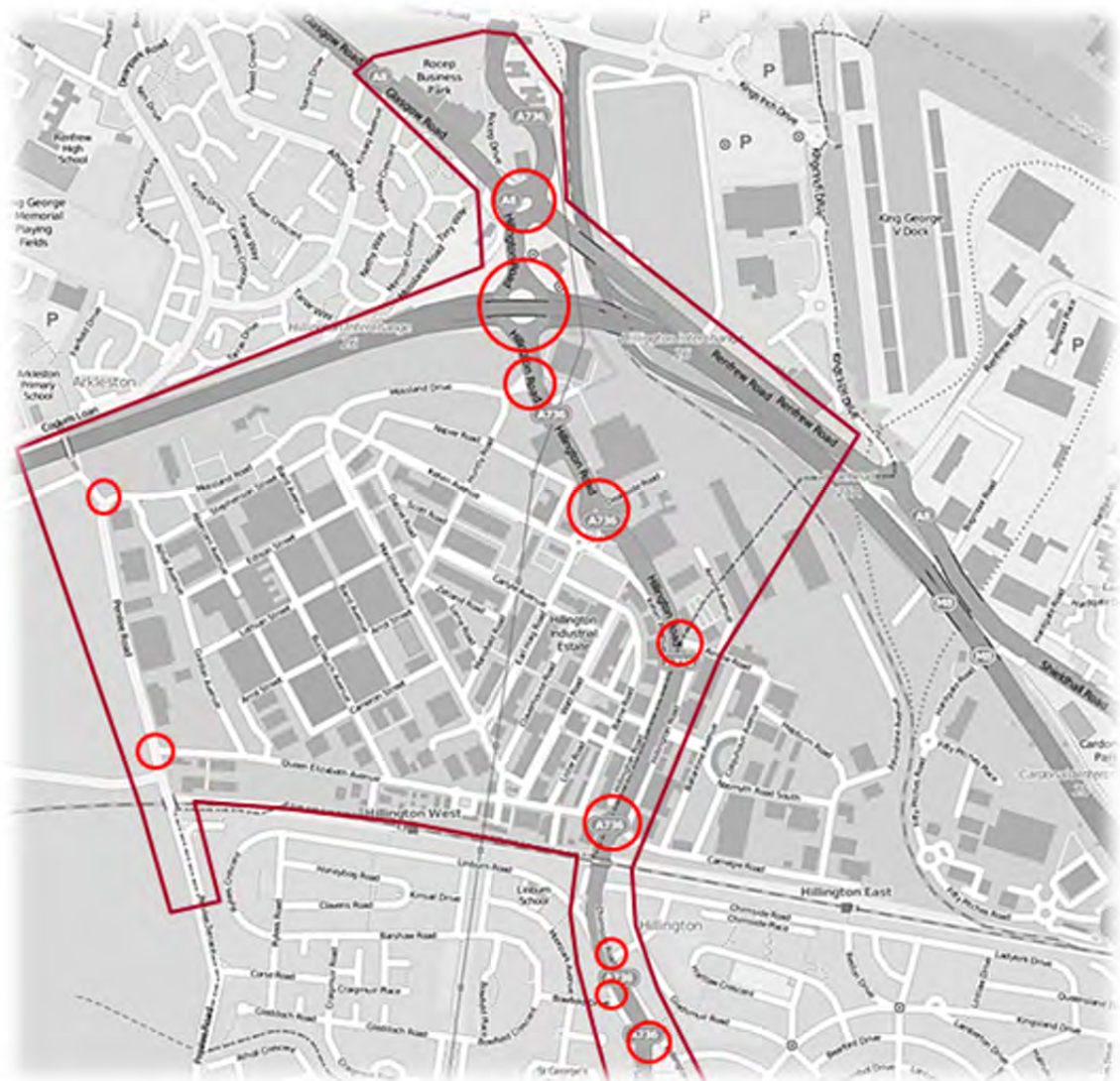
9.1 This section considers the effects on highways matters relating to the proposed development.

Study Area

9.2 The study area has been defined by identifying links or locations closest to the site where the greatest traffic related changes are predicted to occur as a result of the SPZ. The study area has been agreed with Renfrewshire Council, Glasgow City Council and Transport Scotland.

9.3 The geographical extent of the study area is shown in **Plan 1** below:

Plan 1 Geographical Extent of Study Area



9.4 As can be seen in **Plan 1**, the study network includes the following junctions:

- Glasgow Road/ Renfrew Road/ Kings Inch Road and A726,
- Junction 26 of the M8;
- A736 Hillington Road / Mossland Drive;
- Hillington Road / Earl Haig Road / Deanside Road;
- Hillington Road / Ainslie Road;
- Hillington Road / Queen Elizabeth Avenue / Carnegie Road / Sandwood Road;
- Queen Elizabeth Avenue / Penilee Road;
- Penilee Road / Arkelstan Road / Mossland Road;
- A736 Sandwood Road / Yard Drive;
- A736 Sandwood Road / Bowfield Drive; and
- A736 Sandwood Road / Hillington Road.

Traffic Surveys

9.5 A comprehensive set of traffic surveys of the local road network were undertaken in June 2013. The results of the surveys are shown on **Flow Diagram 5** (AM Peak Hour – 07:45-08:45) and **Flow Diagram 6** (PM Peak Hour – 16:30-17:30).

9.6 In addition, Automatic Traffic Counts (ATCs) were carried out on the local road network and data was obtained from Transport Scotland for the M8 on all links surrounding Junction 26.

9.7 The background traffic flows are based on the traffic surveys detailed above.

Baseline Scenario

9.8 The Baseline scenario is as described in **Section 4**.

9.9 The committed development traffic flows for the developments in the vicinity of the proposed site (excluding any consents on Hillington Park) are shown on **Flow Diagram 7** (AM Peak Hour) and **Flow Diagram 8** (PM Peak Hour). The trips associated with consented or established employment generation within Hillington Park are shown on **Flow Diagram 9** (AM Peak Hour) and **Flow Diagram 10** (PM Peak Hour).

9.10 It is assumed that all of the background traffic growth will be as a result of the committed developments and as such no additional growth is added to the network.

9.11 The resulting Baseline Flows are shown in **Flow Diagrams 11** and **12**.

Change Due to SPZ

Diverted Background Traffic

- 9.12 As explained in **Section 5**, it is proposed to form a new access to the West Area of Hillington Park from Hillington Road in a similar location as the existing left in and left out access junction. This new junction will serve as a gateway to Hillington Park and will be located adjacent to the proposed new mixed-use hub.
- 9.13 At this stage it has been assumed that approximately 30% of the total background traffic that currently travels to/from M8 Junction and right into Earl Haig Road will be diverted and will right turn into Mossland Drive. On the exit it has been assumed that a similar percentage of people who currently left turn out of Earl Haig Road and travel to M8 Junction 26 will use the new access on Mossland Road instead.
- 9.14 As such it is necessary to divert a proportion of the Baseline traffic and this is summarised on **Flow Diagram 13** (AM Peak Hour) & **Flow Diagram 14** (PM Peak Hour).

Net Change in Flow

- 9.15 Taking into account the net traffic flows in **Table 8.12** in **Section 8**, the distribution of new trips in **Section 8**, the Baseline Flows in **Section 8**, and the diversion of background traffic as a result of the SPZ set out above, provides Development Case Flows.
- 9.16 **Flow Diagram 15** and **16** shows the Development Case flows, and **Flow Diagram 17** and **18** show the net difference in trips between this and the Baseline and this shows that there is a net reduction.

Assessment Scenario's

- 9.17 We have assessed the effects of the difference between the Development Case and the Baseline on the study network and this has been agreed with all parties.
- 9.18 We have adopted the following two step approach:

- Firstly, we have undertaken a percentage impact assessment at each junction. If, in our view, and also that of the relevant Authorities, this percentage effect is negative or not material in the context of current policy, we go no further.
- If the percentage effect might be material, in our view and that of the relevant Authorities, then we will undertake some traffic modelling using either ARCADY, PICADY or LINSIG.

9.19 The percentage effects for the junctions set out previously are shown below in **Table 9.1**.

Table 9.1 Percentage Effect – Development Case compared to Baseline – External Network

Junction	AM Peak Hour			PM Peak Hour		
	Base	With Dev	% Impact	Base	With Dev	% Impact
Glasgow Rd / Renfrew Rd/ Kings Inch Rd and A726	4303	4249	-1%	4437	4394	-1%
Junction 26	6697	6446	-4%	6636	6405	-3%
A736 Hillington Rd / Mossland Dr	4372	4185	-4%	4295	4187	-3%
A736 Hillington Rd / Earl Haig Rd / Deanside Dr	3841	3234	-16%	3367	2885	-14%
A736 Hillington Rd / Ainslie Rd	2409	2384	-1%	2743	2708	-1%
Hillington Rd / Queen Elizabeth Ave / Carnegie Rd / Sandwood Rd	2543	2471	-3%	2724	2645	-3%
Queen Elizabeth Ave / Penilee Rd	1125	1013	-10%	1169	1054	-10%
Penilee Rd / Arkelstan Rd / Mossland Rd	783	771	-2%	764	758	-1%
A736 Sandwood Rd / Yard Dr	2087	2027	-3%	2125	2063	-3%
A736 Sandwood Rd / Bowfield Dr	2284	2224	-3%	2415	2353	-3%
A736 Sandwood Rd / Hillington Rd	2161	2101	-3%	2222	2160	-3%

9.20 On this basis of the analysis included in **Table 9.1** above and discussions with Renfrewshire Council, Glasgow City Council and Transport Scotland it has been agreed that there will not be an adverse effect on any of the roads or junctions in the local area.

9.21 Therefore, it has been agreed that we would only model any amendments that we have made to the local highway network. As such we have only modelled the following junction:

- Hillington Road junction with Mossland Drive which incorporates the new access proposals.

Impact of Development Traffic on New Site Access Junction

- 9.22 The new proposed access into the Site will be from the junction of Mossland Drive and Hillington Road, as shown in **Appendix D in Drawing 120825/A/05**. To understand the operation of the existing junction an Arcady model has been built and the results of the model are summarised in **Table 9.2** and the full outputs are included at **Appendix H**.

Table 9.2 – Hillington Road/ Mossland Drive – Base plus Development Traffic

Junction Arm	AM Peak		PM Peak	
	RFC	Max Queue	RFC	Max Queue
Hillington Road (N)	0.08	0	0.05	0
Hillington Road (S)	0.60	2	0.67	2
Mossland Drive	0.45	1	0.73	3

- 9.23 As can be seen from **Table 9.2**, the new proposed site access works well within capacity under the loading of base plus development traffic.
- 9.24 As such there are no significant adverse impacts of the proposed development in traffic and transport terms and this has been agreed with Renfrewshire Council, Glasgow City Council and Transport Scotland. The new access provides a new gateway to Hillington Park and provides a beneficial impact for all of the employees and visitors who wish to travel from Junction 26 to Hillington Park West.

Assessment of Non-Car Modes of Transport

- 9.25 Due to the nature of the project, there are proposals to improve the pedestrian/cycle environments within Hillington Park. These have not been designed in detail at present but will be designed according to the Design Criteria which are included within the SPZ. As such there will be a significant improvement to pedestrian and cyclist’s provision at Hillington Park.
- 9.26 In relation to public transport, the opportunities exists at present for staff and visitors to use public transport as such it is not proposed to increase the level of service. However, using the Travel Plan and Sustainable Transport Strategy it is proposed to promote the use of more sustainable forms of transport and the Travel Plan Manager will be responsible for promoting the use of public transport.
- 9.27 Furthermore, MEPC are making a significant contribution through the Sustainable Transport Strategy for innovative transport measures. This will achieved through investing in innovative

transport measures directly or through combining their effects with Scottish Enterprise through the Smart Mobility Investment Challenge. By investing in either/both of these options this will create new technologies and methods of transport which will encourage the use of sustainable methods of transport.

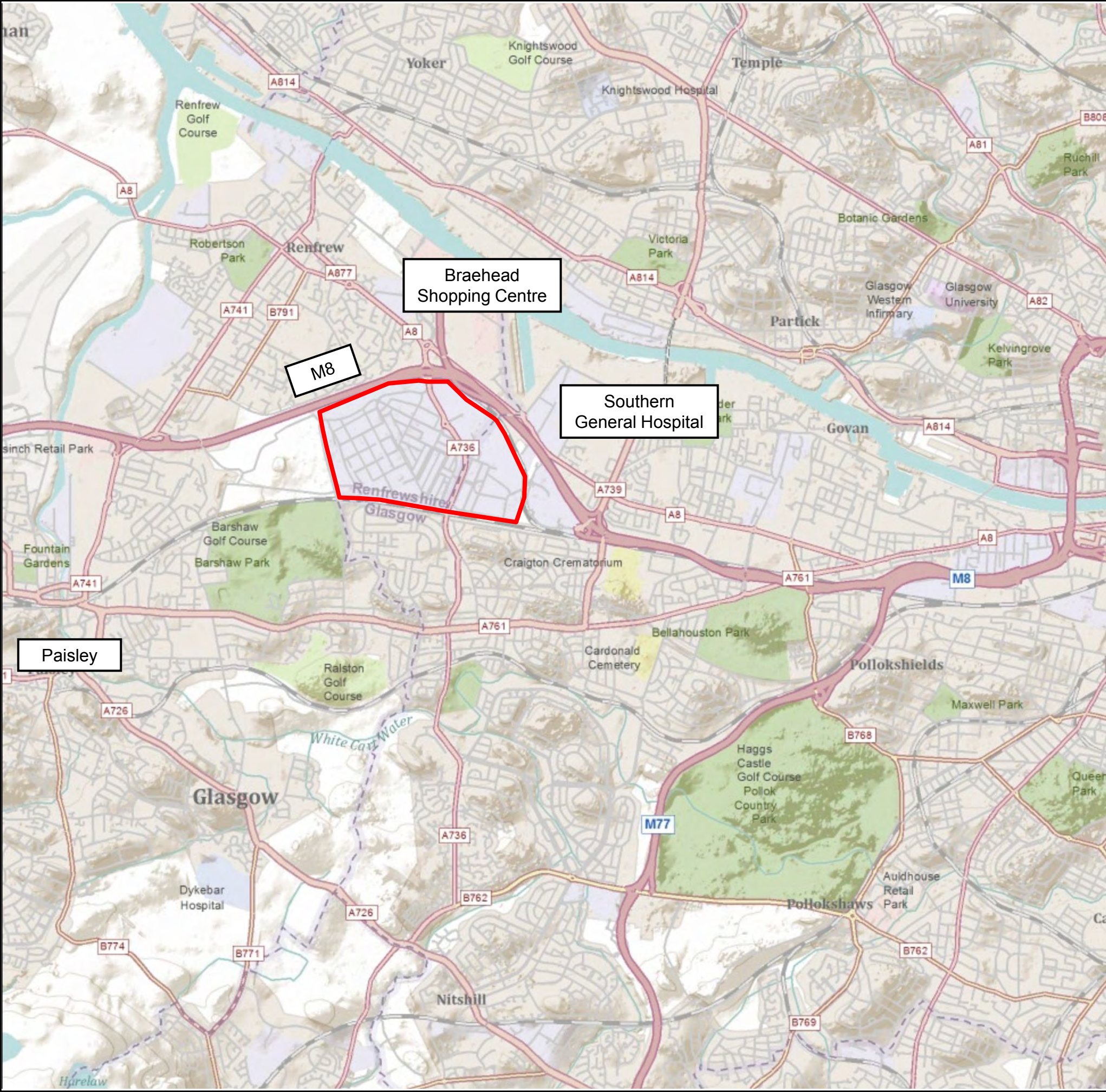
- 9.28 As a result, there will be a positive impact on the use of sustainable transport across Hillington Park facilitated by the SPZ and this will be beneficial to the employees and visitors at Hillington Park and reduce the reliance on the private car.

10 SUMMARY

- 10.1 MEPC, working with Renfrewshire and Glasgow Councils, proposes the establishing of an SPZ at Hillington. The purpose of the SPZ will be to allow swift and decisive decisions to be made about new development, and so to encourage and facilitate employment generating companies to locate within this region.
- 10.2 This report sets out the approach proposed by MEPC in redeveloping Hillington Park.
- 10.3 The Hillington site is in an excellent location for employment generating uses. It is already one of the largest sites in Scotland for this purpose. It has excellent transport links, including two railway stations, a bus network, a motorway junction and proximity to residential and retail land uses. The location of the site, and the expansion of the site, is entirely in accord with current land use policy, including transport policy.
- 10.4 One of the significant aims of the proposal is to make best and better use of the transport opportunities that exist given the site's location and infrastructure. There is some significant benefit to be had by this improvement and modernisation. In particular, in accord with the tenor and thrust of current policy, it is what should be, and is, expected.
- 10.5 The proposal includes a Sustainable Transport Strategy which will have a meaningful effect on transport to and from the site. This is evolving, however at this stage it is reasonable to judge that this will have the effect of at least a 10% modal shift away from private car use compared with current travel patterns.
- 10.6 Within the Baseline flows we have assumed consented development, and we have also assumed that there is an established employment generating use on the 'Rolls Royce Site' within the Site and this has been agreed in detail by all parties.
- 10.7 Traffic Flows have been derived and the Development Case has been compared with the Baseline. There is a net reduction in trips on the local highway network as a result of the proposed development and Sustainable Transport Strategy.
- 10.8 The new site access junction between Hillington Road and Mossland Drive, which provides a new gateway into Hillington Park, has been assessed. It will function well within capacity.
- 10.9 Therefore, the proposals, which are appropriate and to be encouraged in the planning context, also bring significant benefits in transport, social inclusion and sustainability terms,

with no material adverse effects. As such, this is a scheme which ought to be encouraged and used as an example of achieving growth together with positive and enviable transport effects.

FIGURES



Key:



Site Location

MEPC

Hillington Park, Glasgow

Site Location
(Geographical Context)

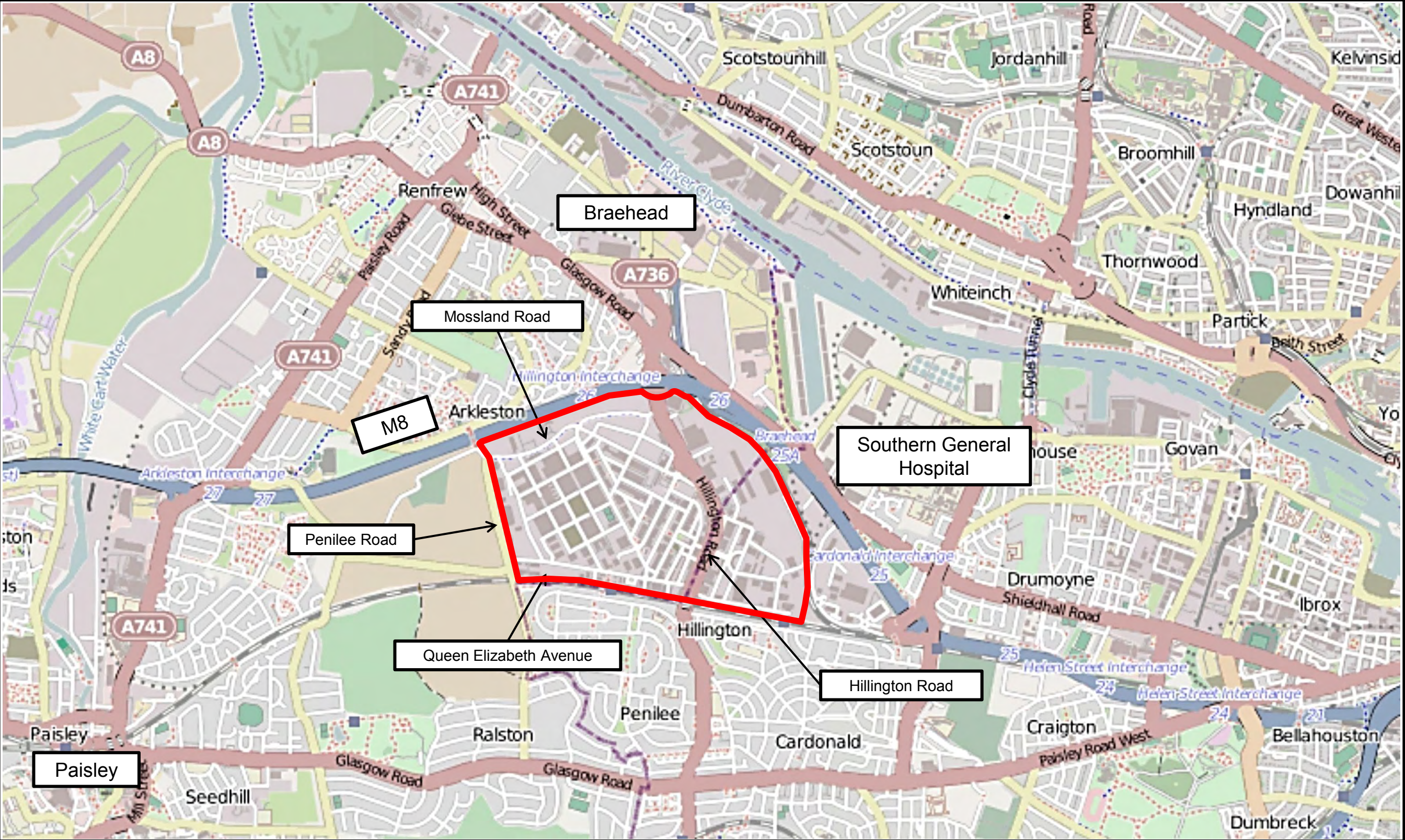
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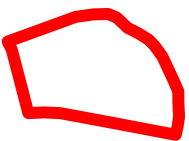


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DRAWING REFERENCE: Figure 1



Key:



Site Location

Project Hillington

Site Location (Local Context)

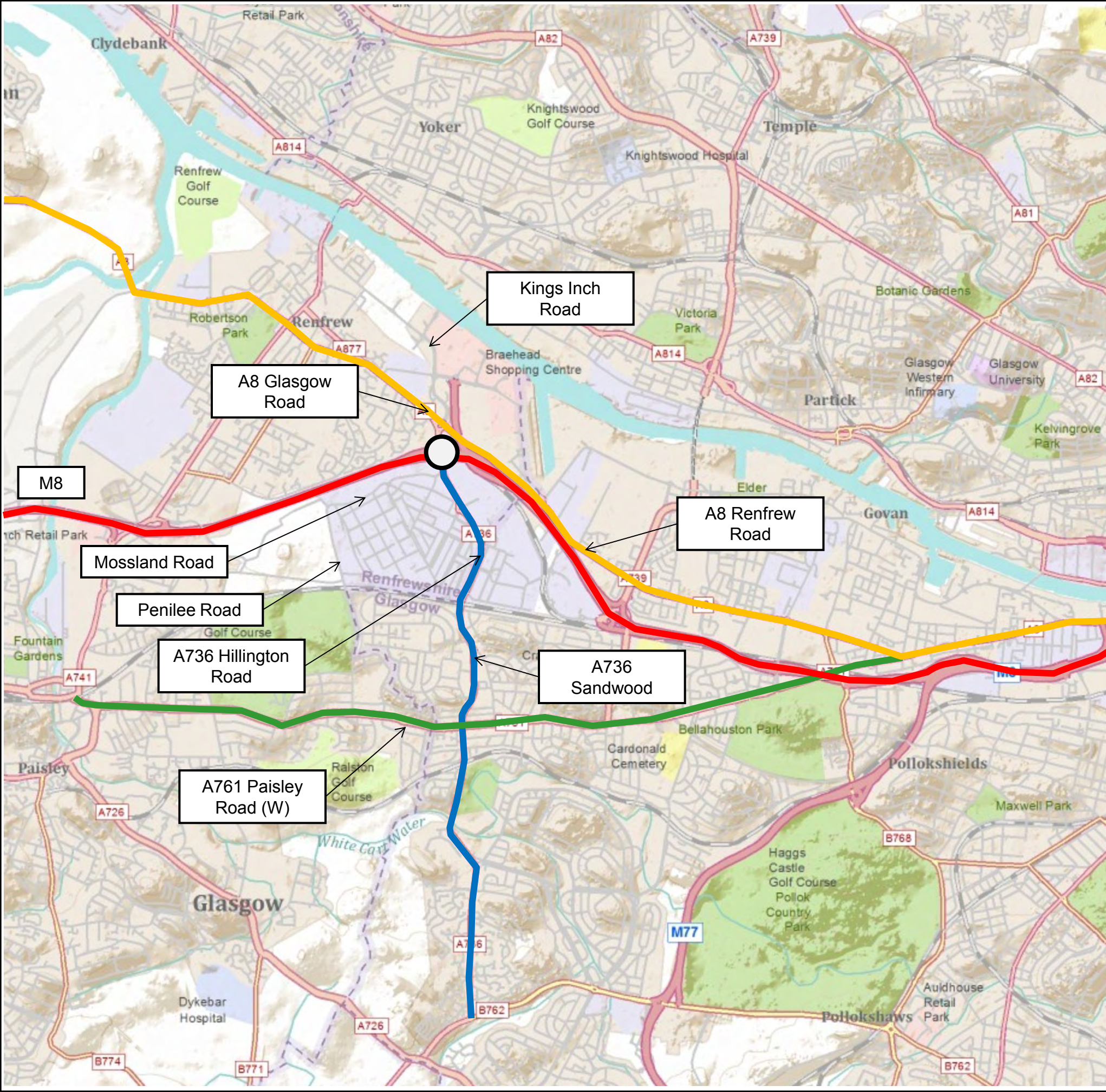
MEPC



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DRAWING REFERENCE: **Figure 2**



Key:

- M8
- A8
- A736
- A761
- M8 Junction 26

MEPC

Project Hillington

Local Highway Network

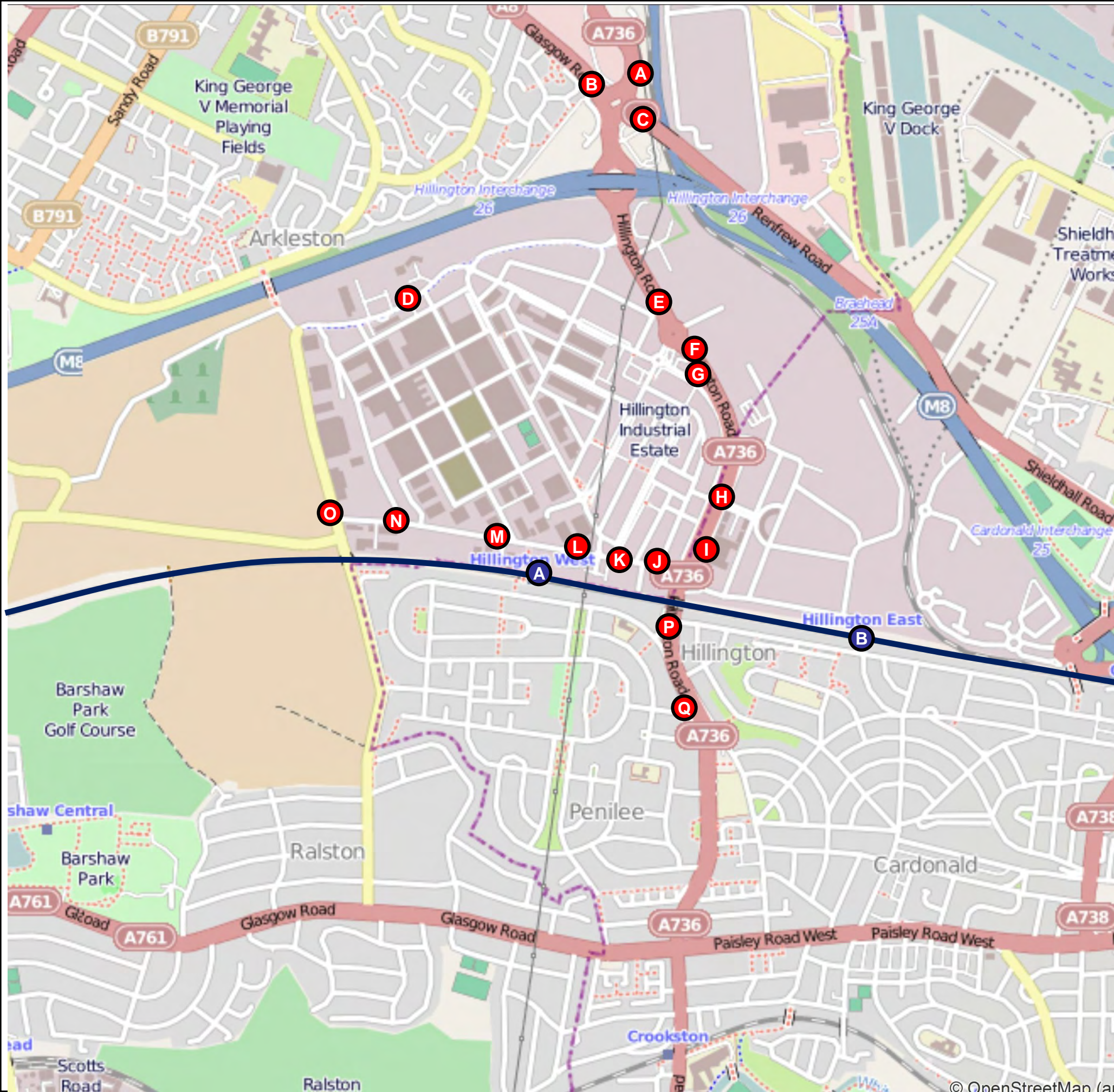
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DRAWING REFERENCE: Figure 3



Key:

- A Bus stop location
- A Train Station Location
- Inverclyde Rail Line

MEPC

Project Hillington

Public Transport Facilities

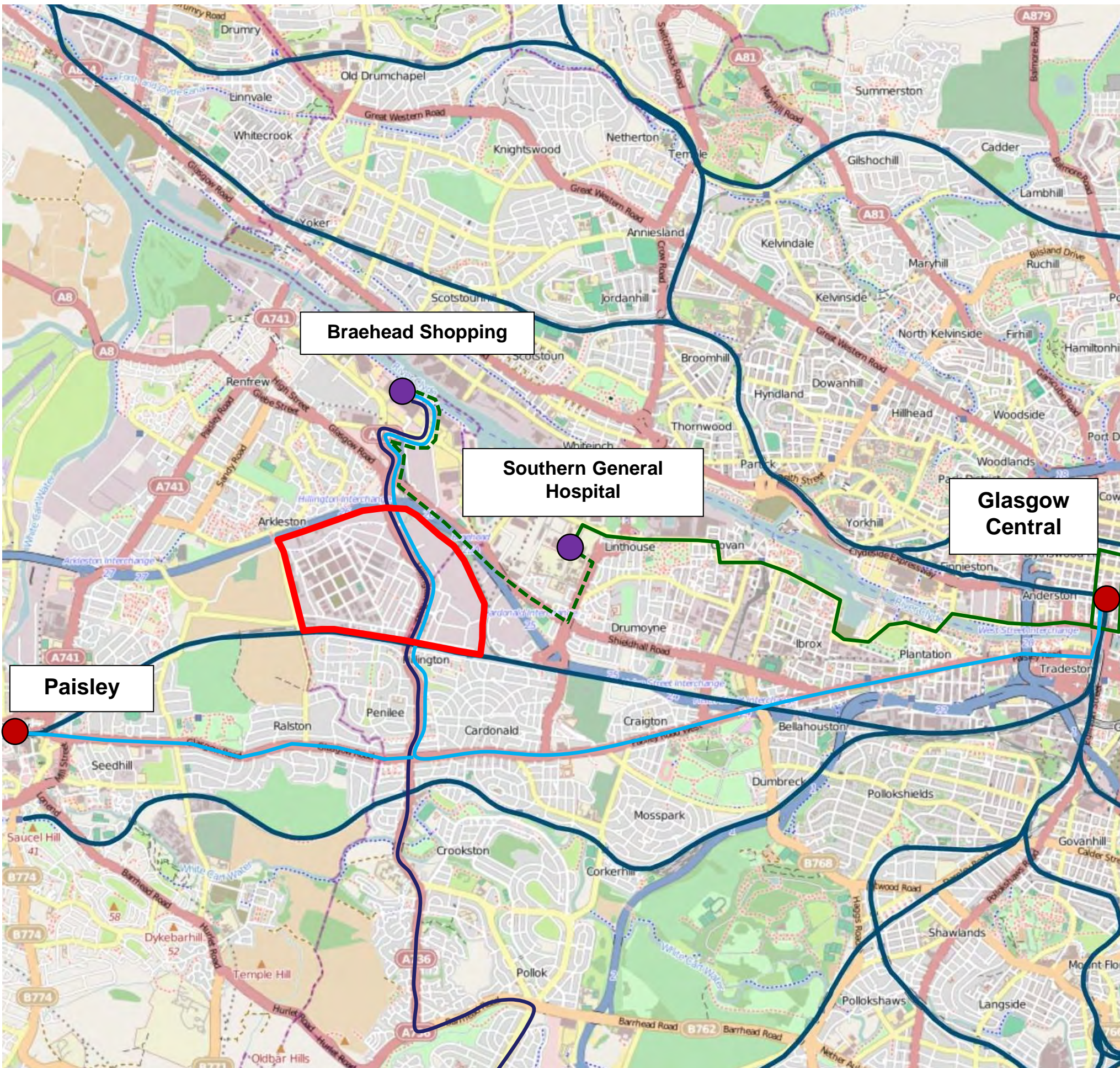
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DRAWING REFERENCE: Figure 4



- Key:**
- Site Location
 - Train Station
 - Railway Line
 - Bus Routes 9A
 - Bus Route 22
 - Fastlink Route
 - - - Fastlink Phase 2

Braehead Shopping

Southern General Hospital

Glasgow Central

Paisley

MEPC

Hillington Park, Glasgow

Connectivity of Hillington Park

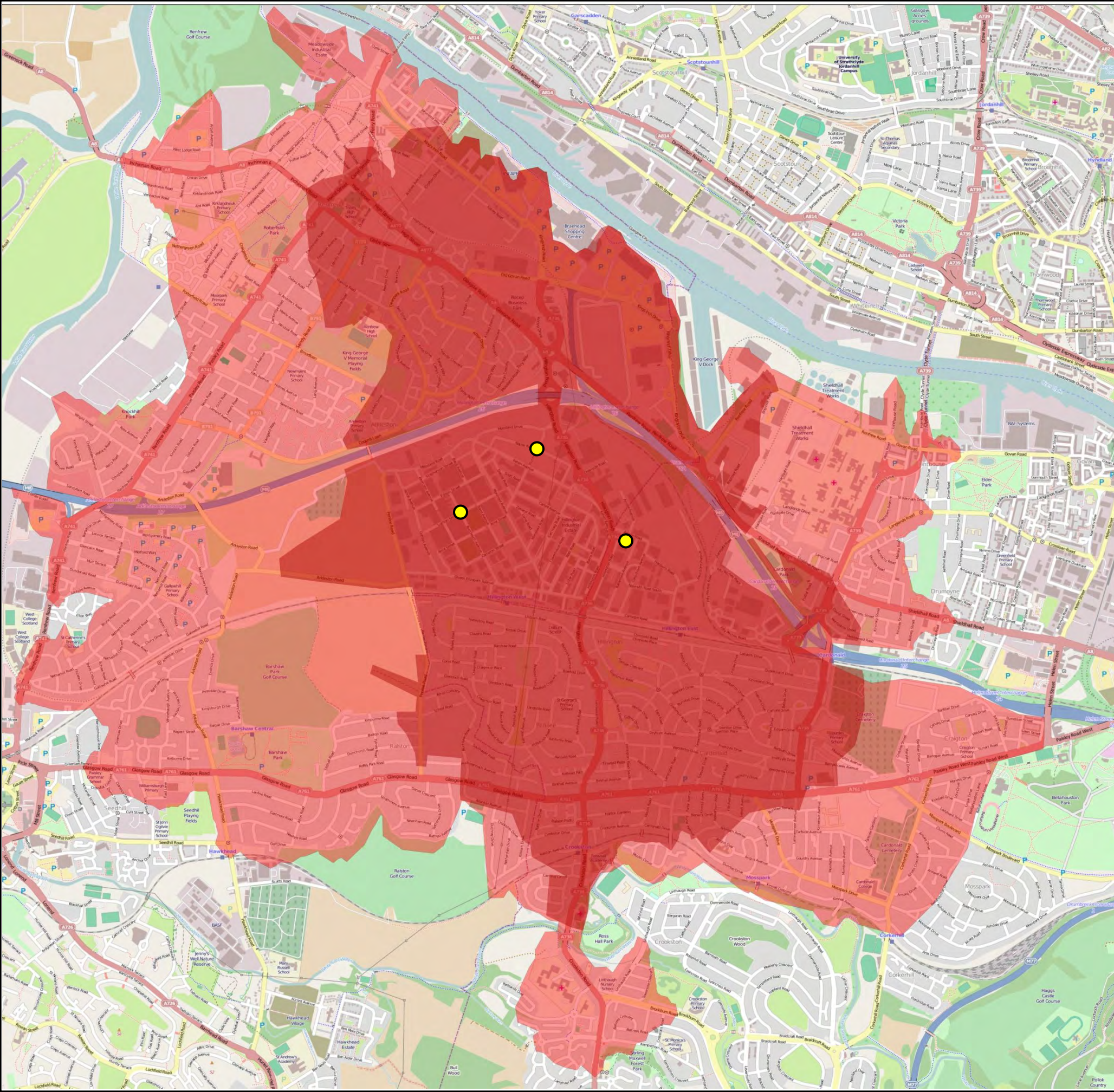
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DRAWING REFERENCE: **Figure 5**



Key:

-  2.4 km Isochrones
-  3.6 km Isochrones
-  Isochrones centres

Project Hillington

MEPC

2.4 km & 3.6 km Isochrones

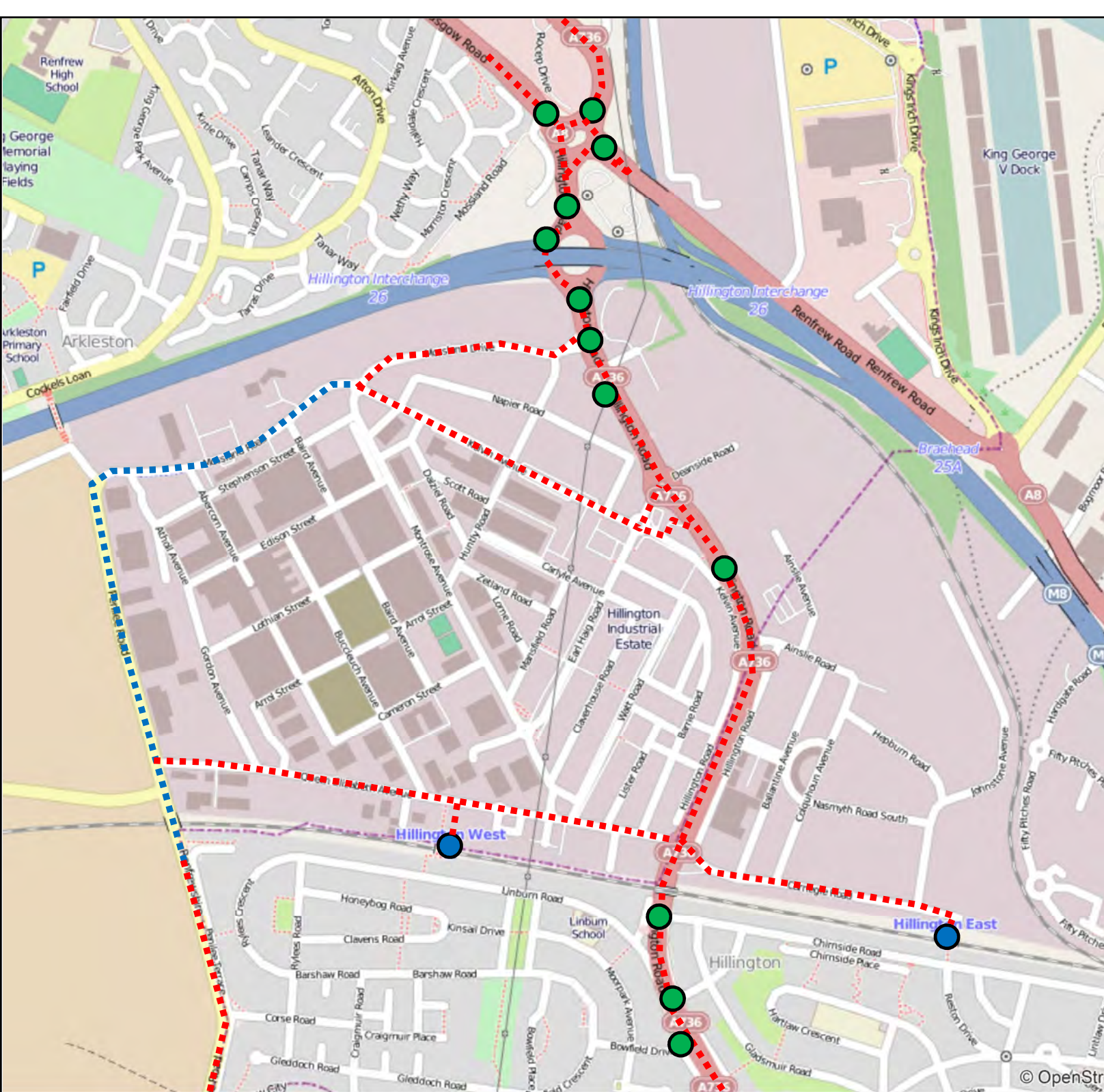
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DRAWING REFERENCE: Figure 6



- Key:
- Signalled pedestrian crossing
 - Rail Station
 - - - Pedestrian Footway
 - - - Shared-use pedestrian and cycle way

MEPC

Project Hillington

Walking Linkages Plan

NTS

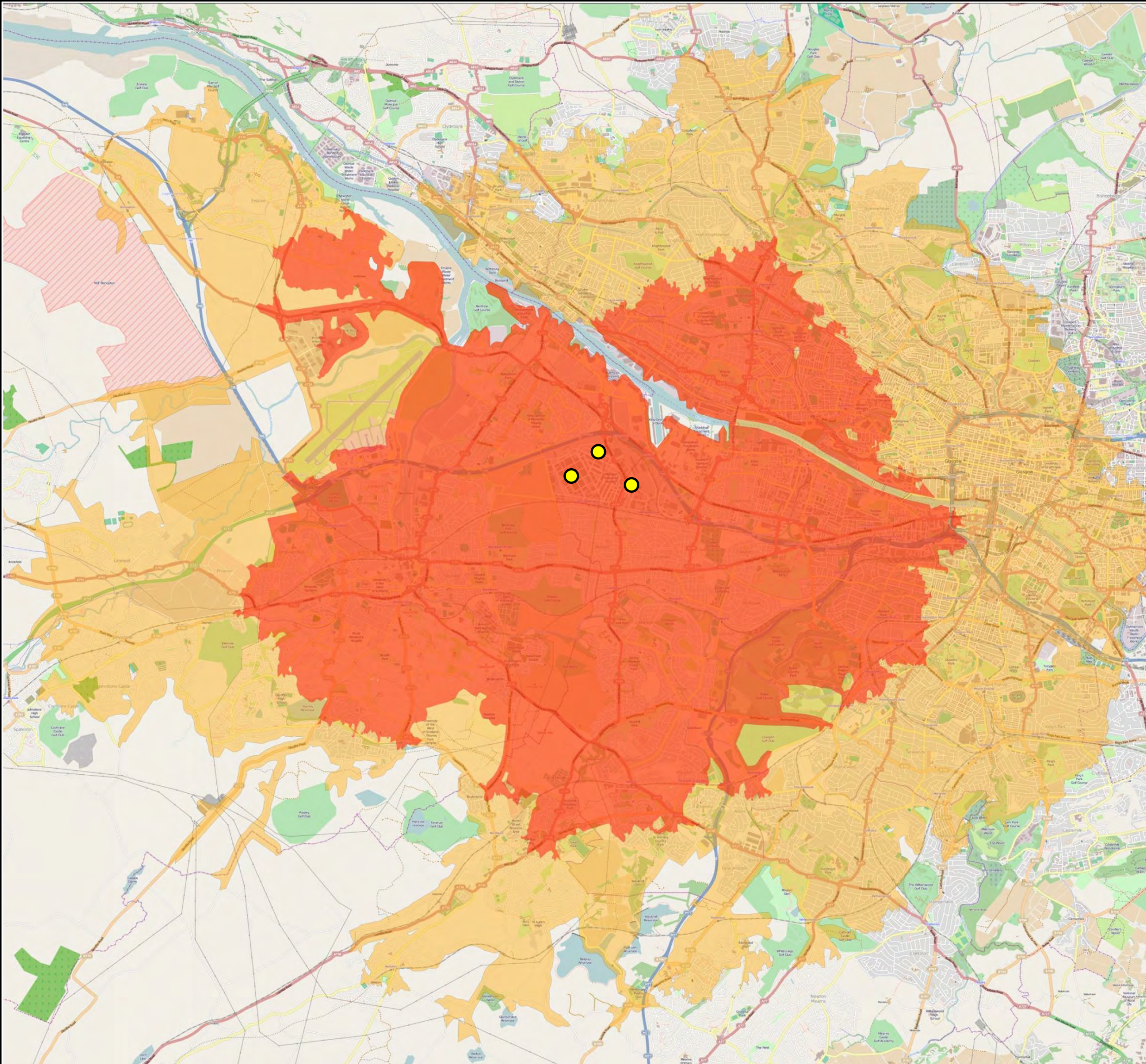
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DRAWING REFERENCE: Figure 7

© OpenStreetMap



Key:



7.5 km Isochrones



11.3 km Isochrones



Isochrones centres

Project Hillington

MEPC

7.5km & 11.3km Isochrones

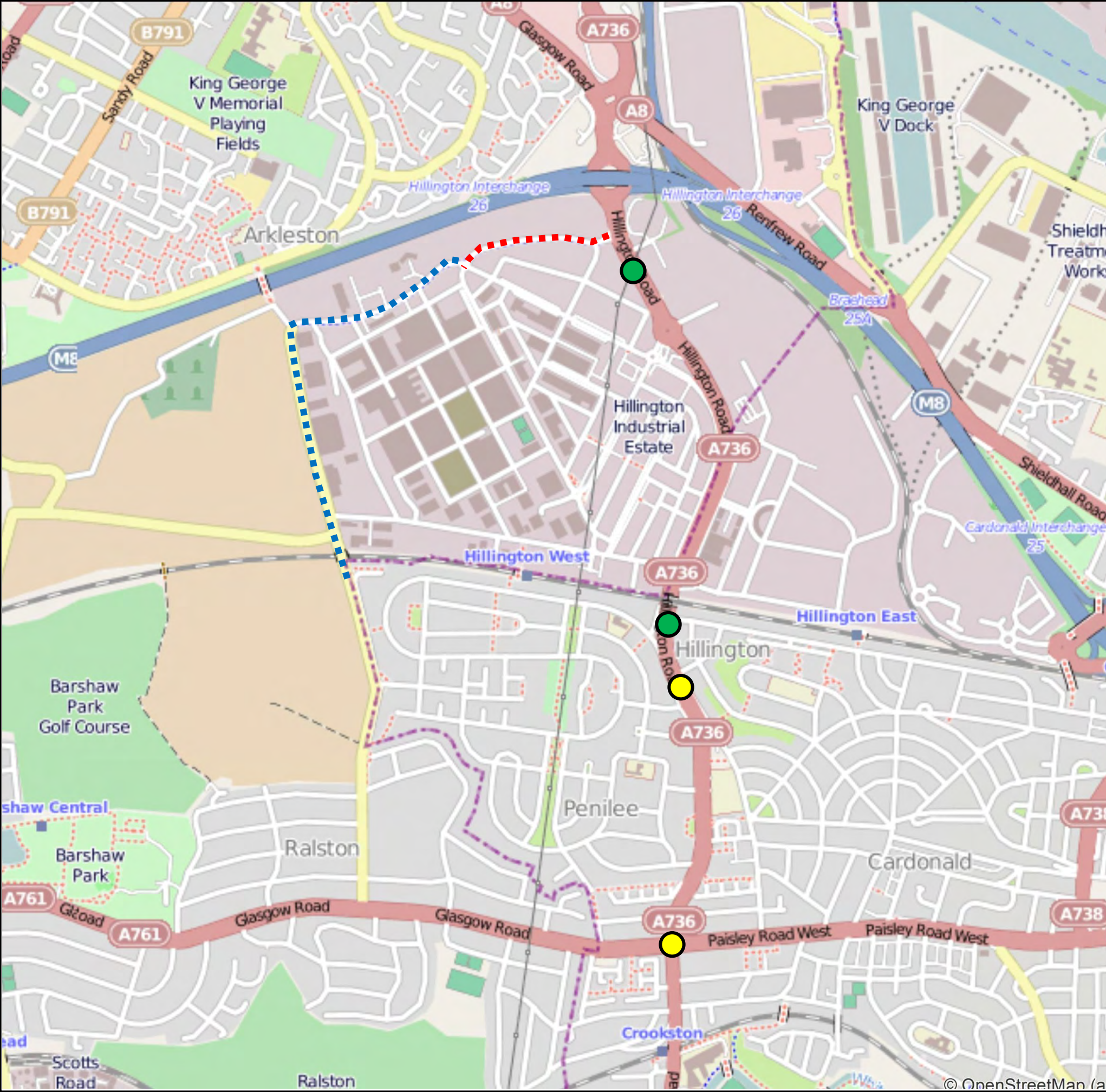
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DRAWING REFERENCE: Figure 8



- Key:
- Advanced Stop Lines (ASL) in place at junction/ crossing
 - Shared use pedestrian/ cycle crossing
 - - - Off-road cycle way
 - - - Off road shared-use pedestrian and cycle way

MEPC

Project Hillington

Cycle Linkage Plan

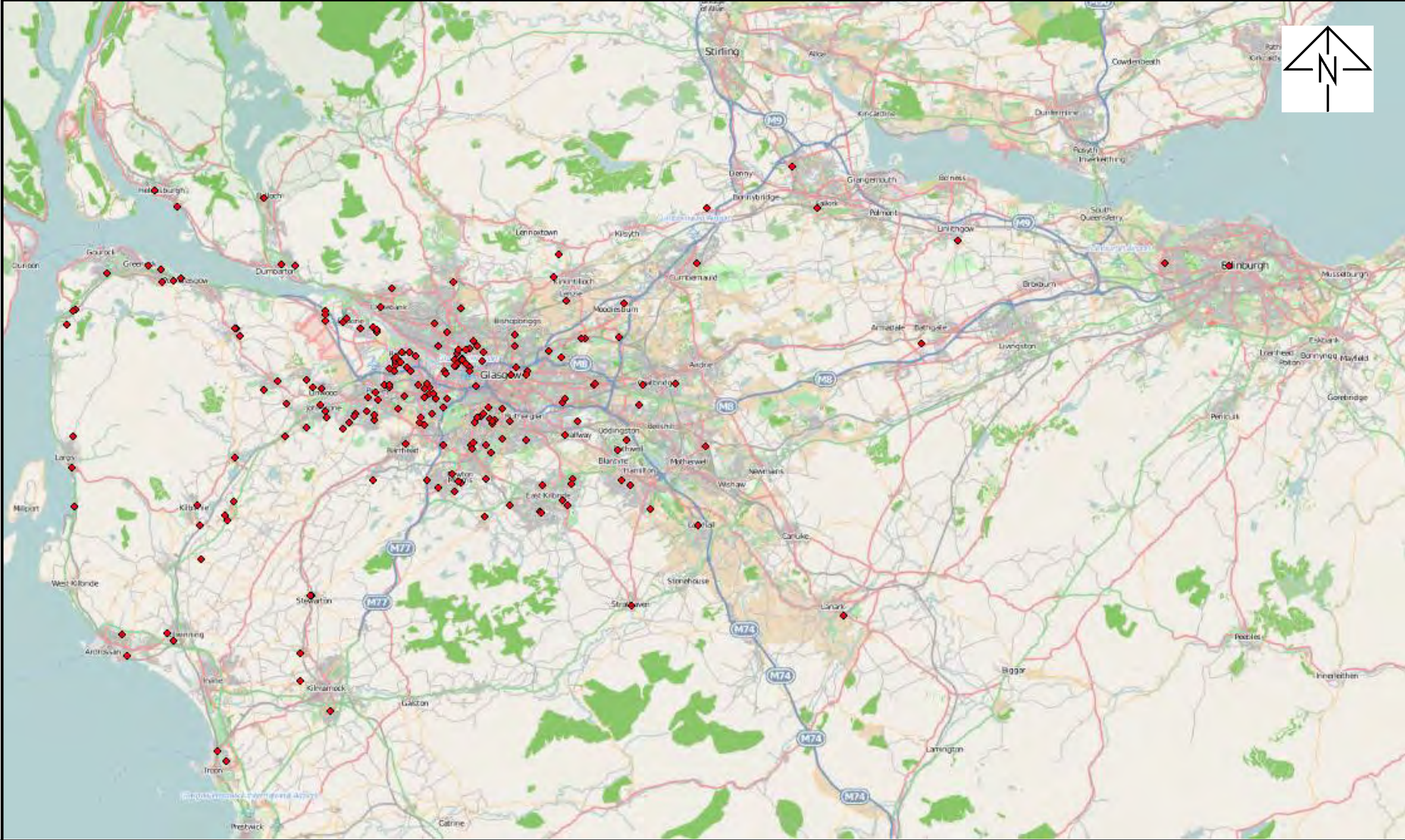
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DRAWING REFERENCE: Figure 9



Key:



Staff Postcode

MEPC

Hillington Park, Glasgow

Staff Postcode Plot



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DRAWING REFERENCE: **Figure 10**



MEPC

Project Hillington

Staff Journey to Work
Origin Map

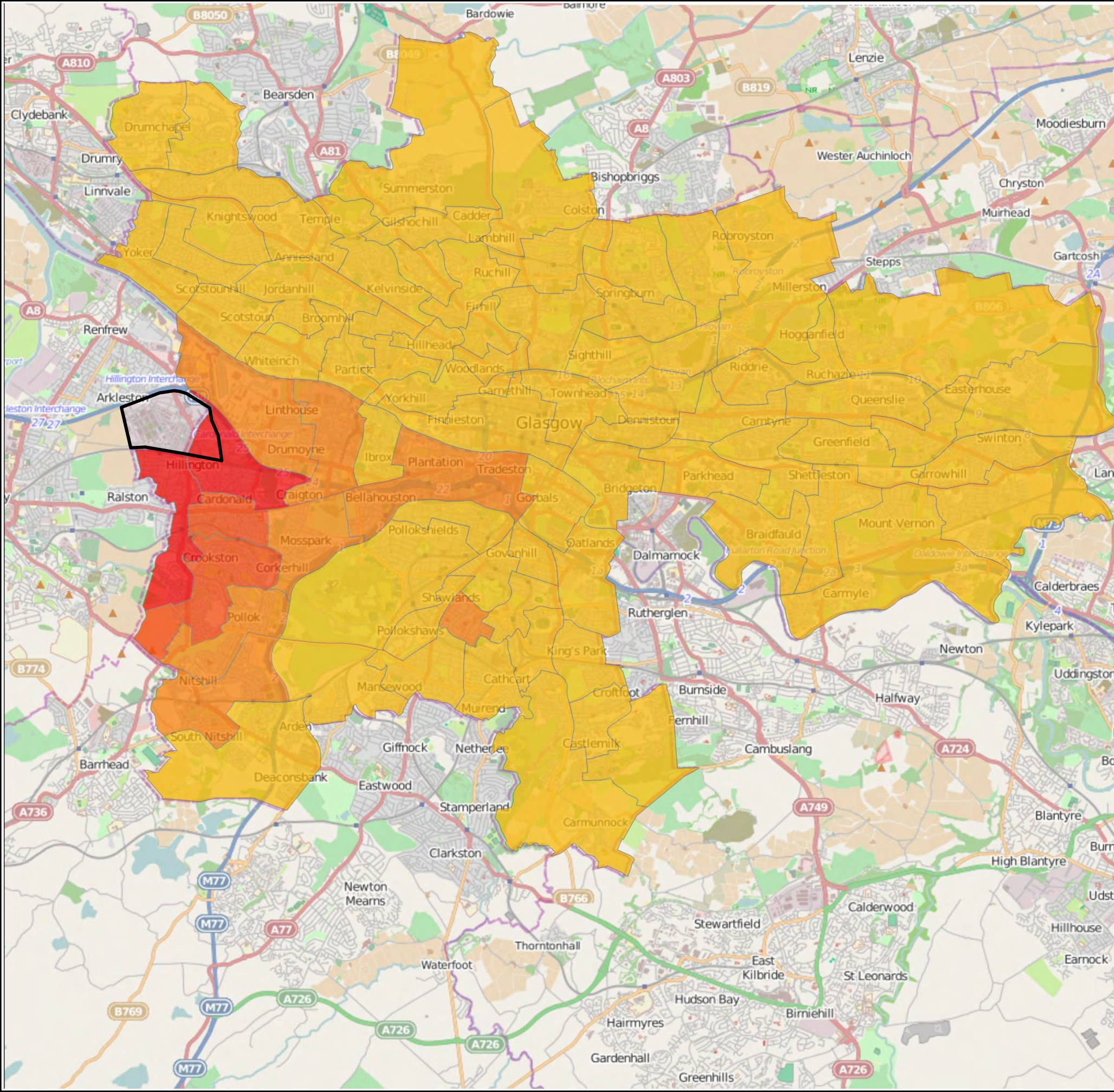
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DRAWING REFERENCE: **Figure 11**



Key:



Site



0%



1 – 2%



2 – 4%



4 – 6%



6 – 8%

MEPC

Hillington Park, Glasgow

Staff Journey to Work Origin Map:
Glasgow City Council

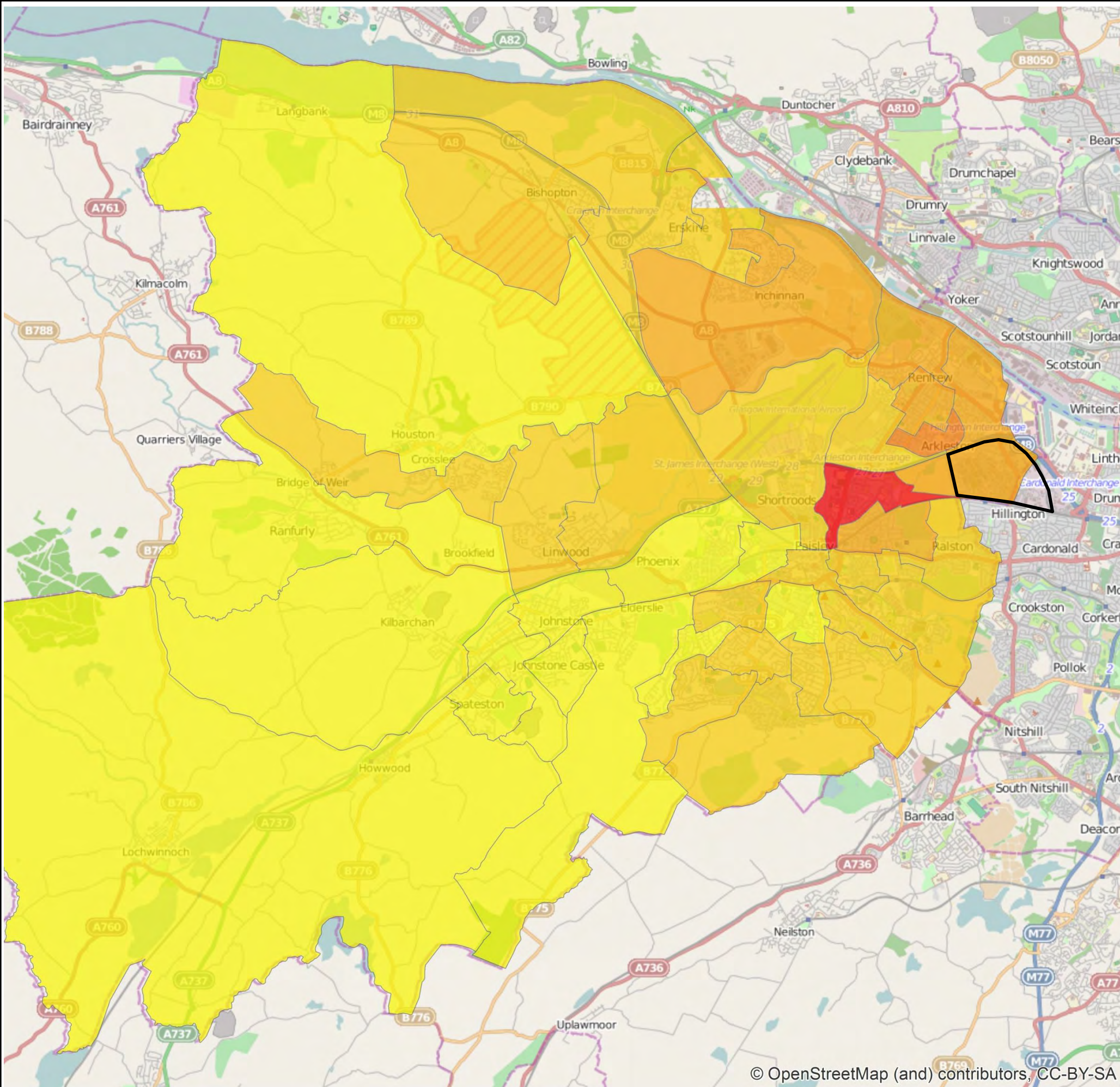
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DRAWING REFERENCE: Figure 12



Key:

-  Site
-  1 – 2%
-  2 – 3%
-  3 – 4%
-  4 – 5%
-  5 – 7%
-  7 – 9%
-  9 – 12%

MEPC

Hillington Park, Glasgow

Staff Journey to Work Origin Map:
Renfrewshire Council

SCALES: NTS

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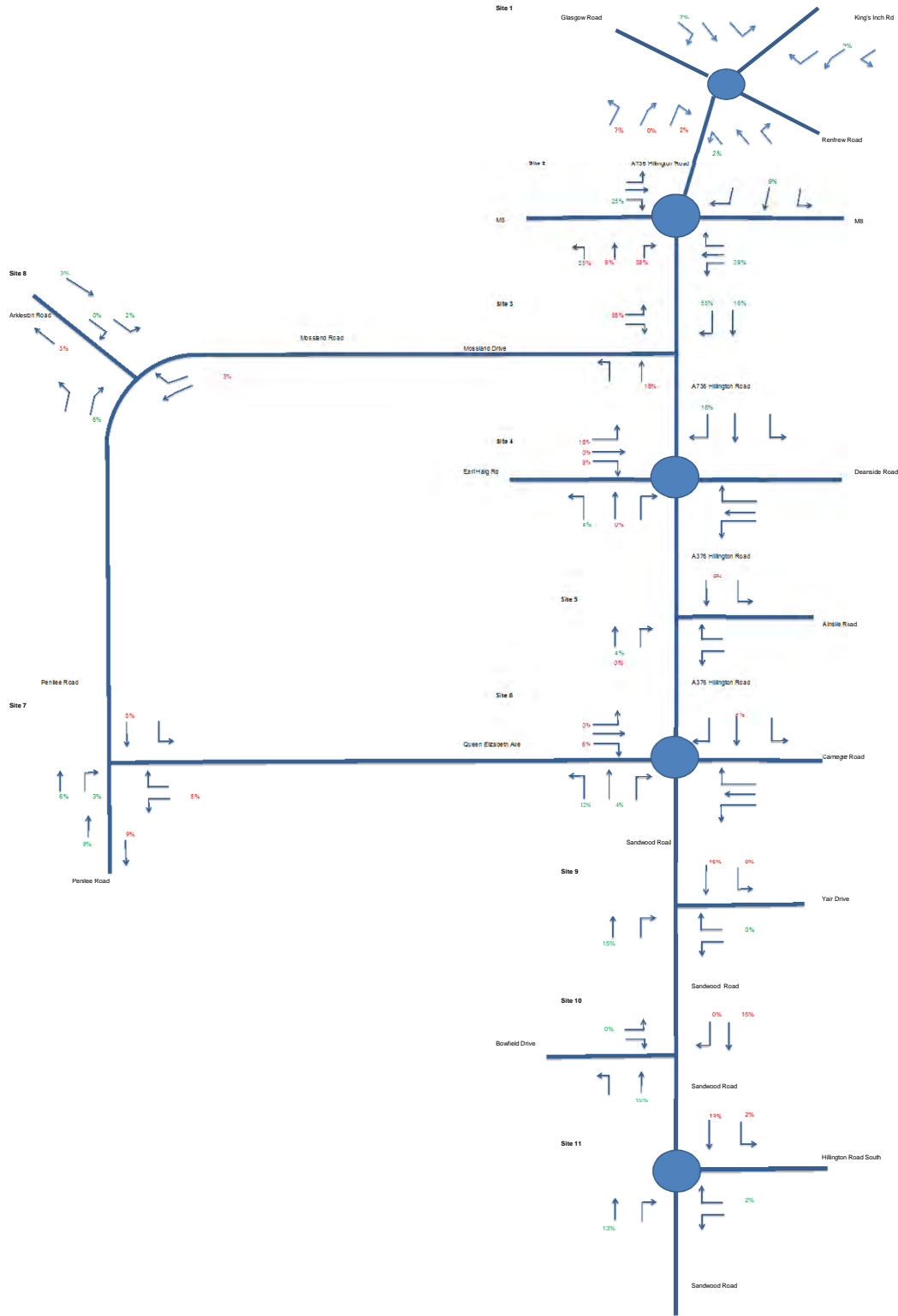


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DRAWING REFERENCE: Figure 13

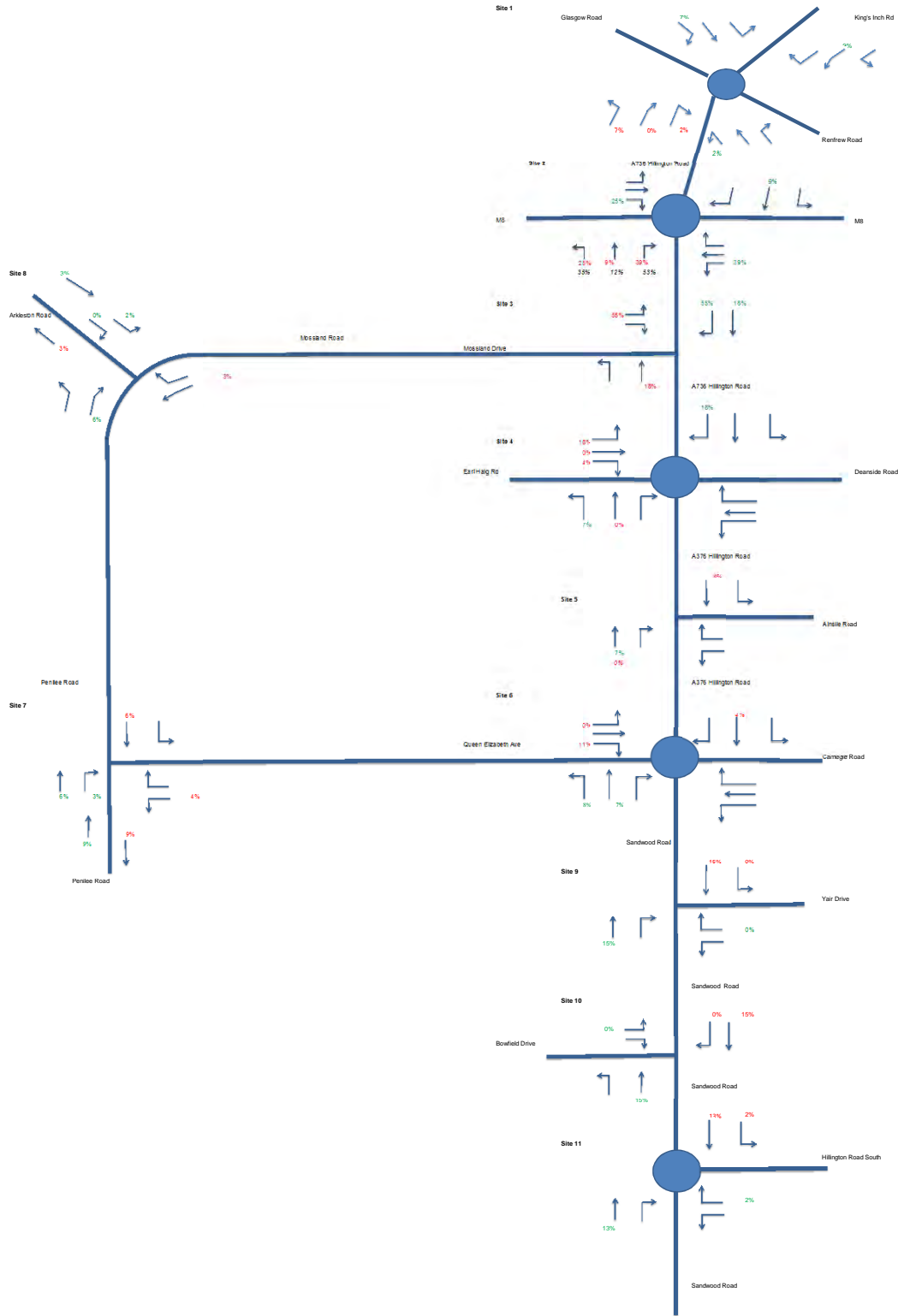
FLOW DIAGRAMS

Arrivals 100%
 Departures 100%
 Total 200%

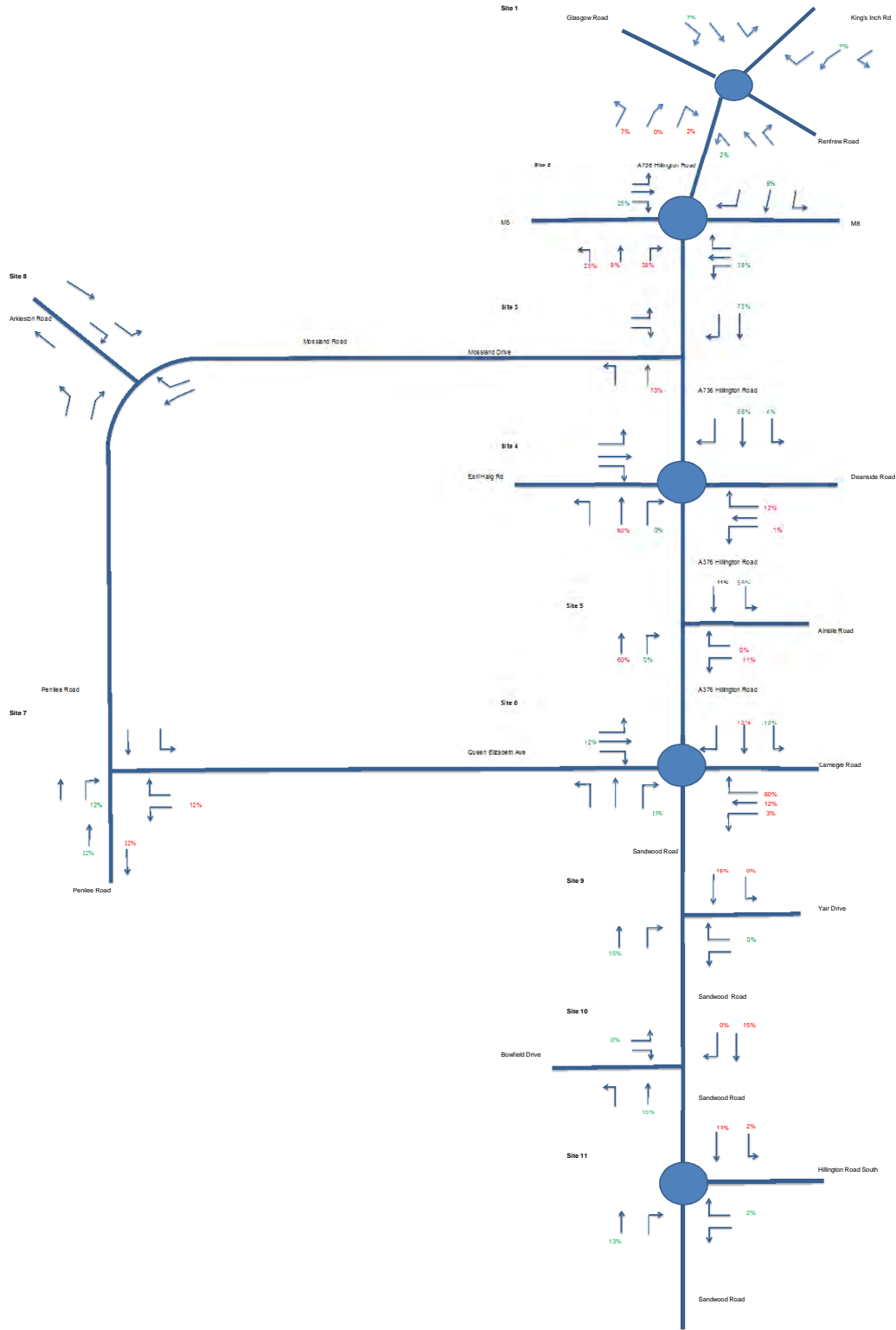


Traffic Figure 1 AM Peak Hour Proposed Distribution (Hillington Park West)

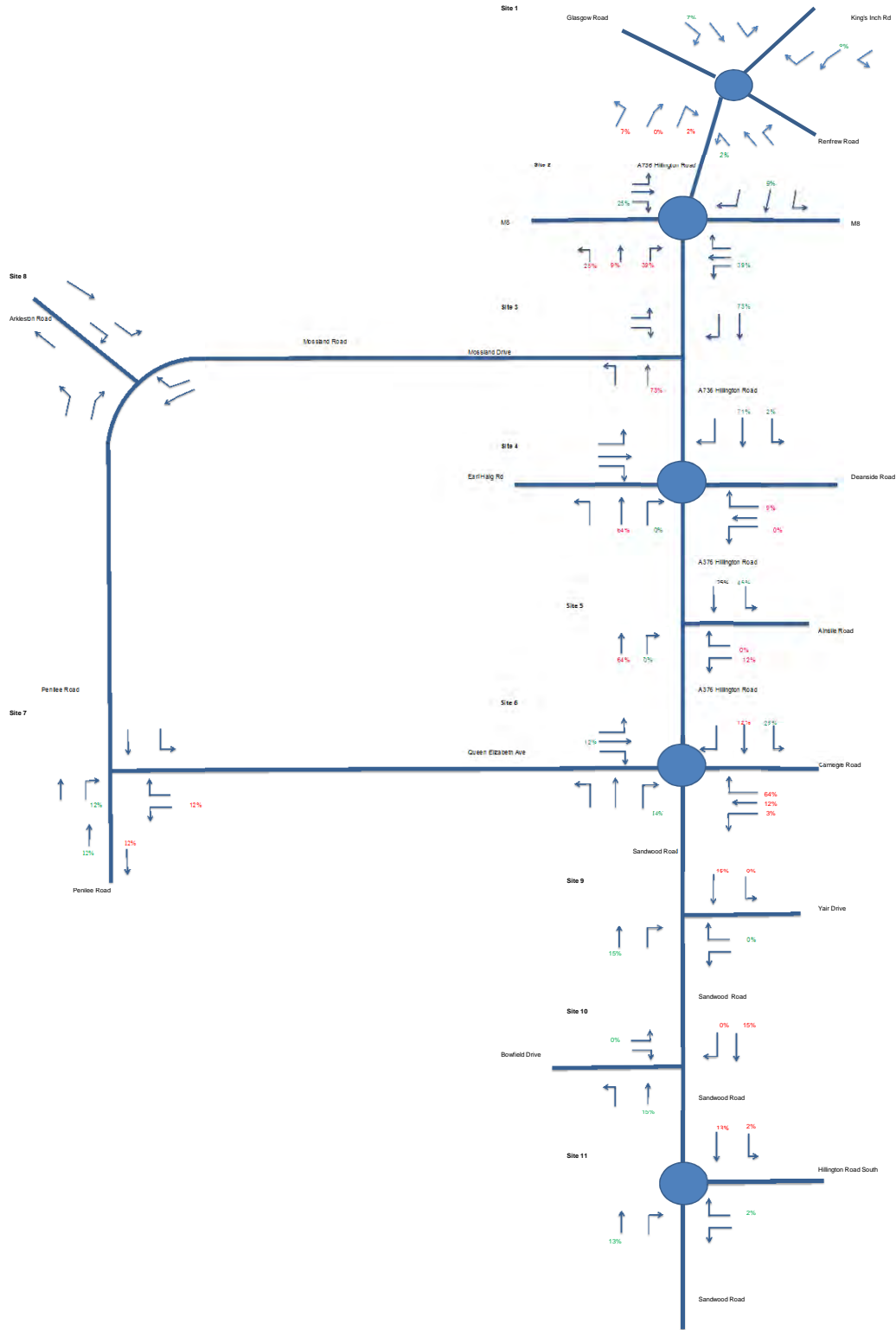
Arrivals 100%
 Departures 100%
 Total 200%



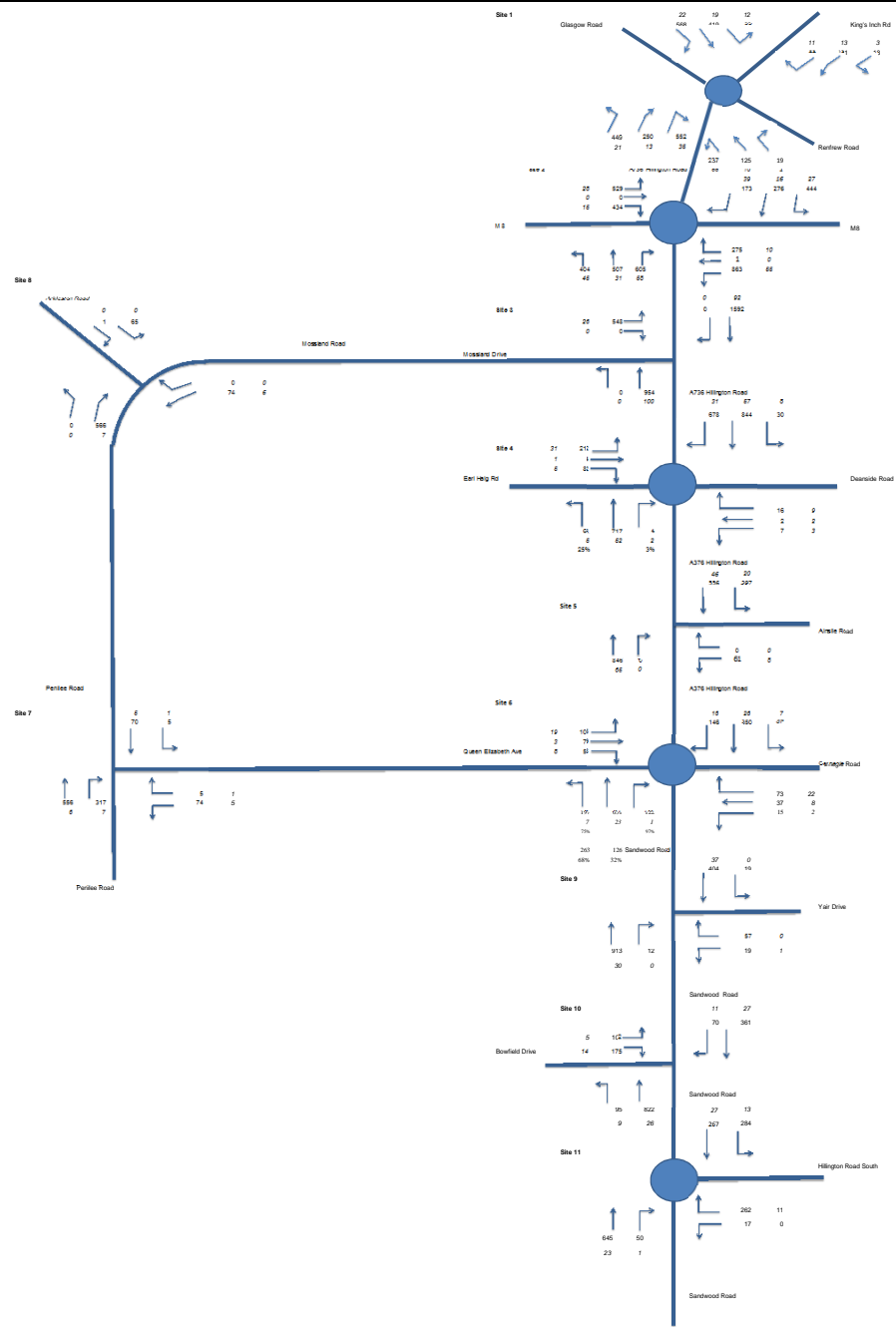
Traffic Figure 2 PM Peak Hour Proposed Distribution (Hillington Park West)



Traffic Figure 3 AM Peak Hour Proposed Distribution (Hillington Park East)

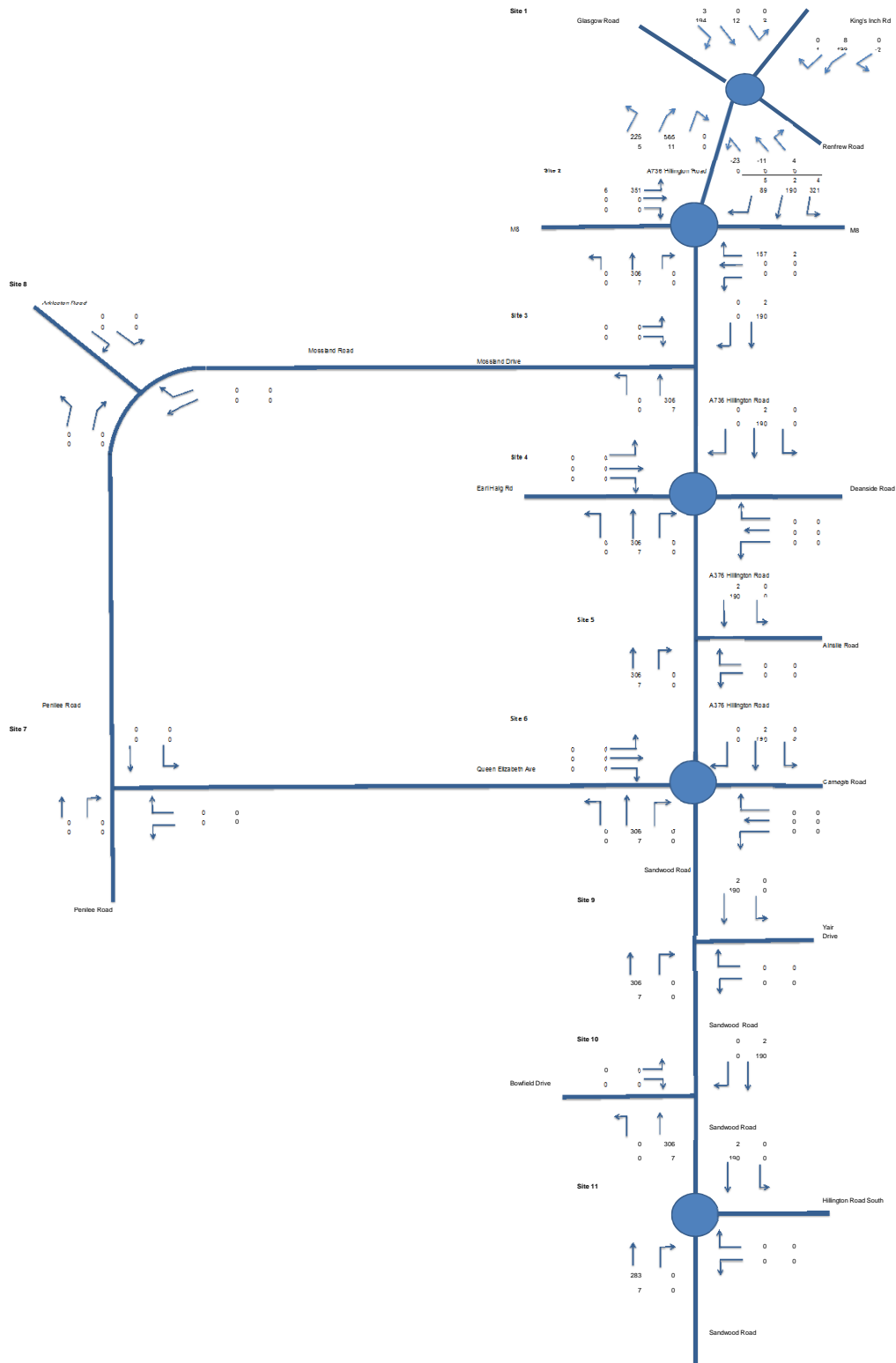


Traffic Figure 4 PM Peak Hour Proposed Distribution (Hillington Park East)



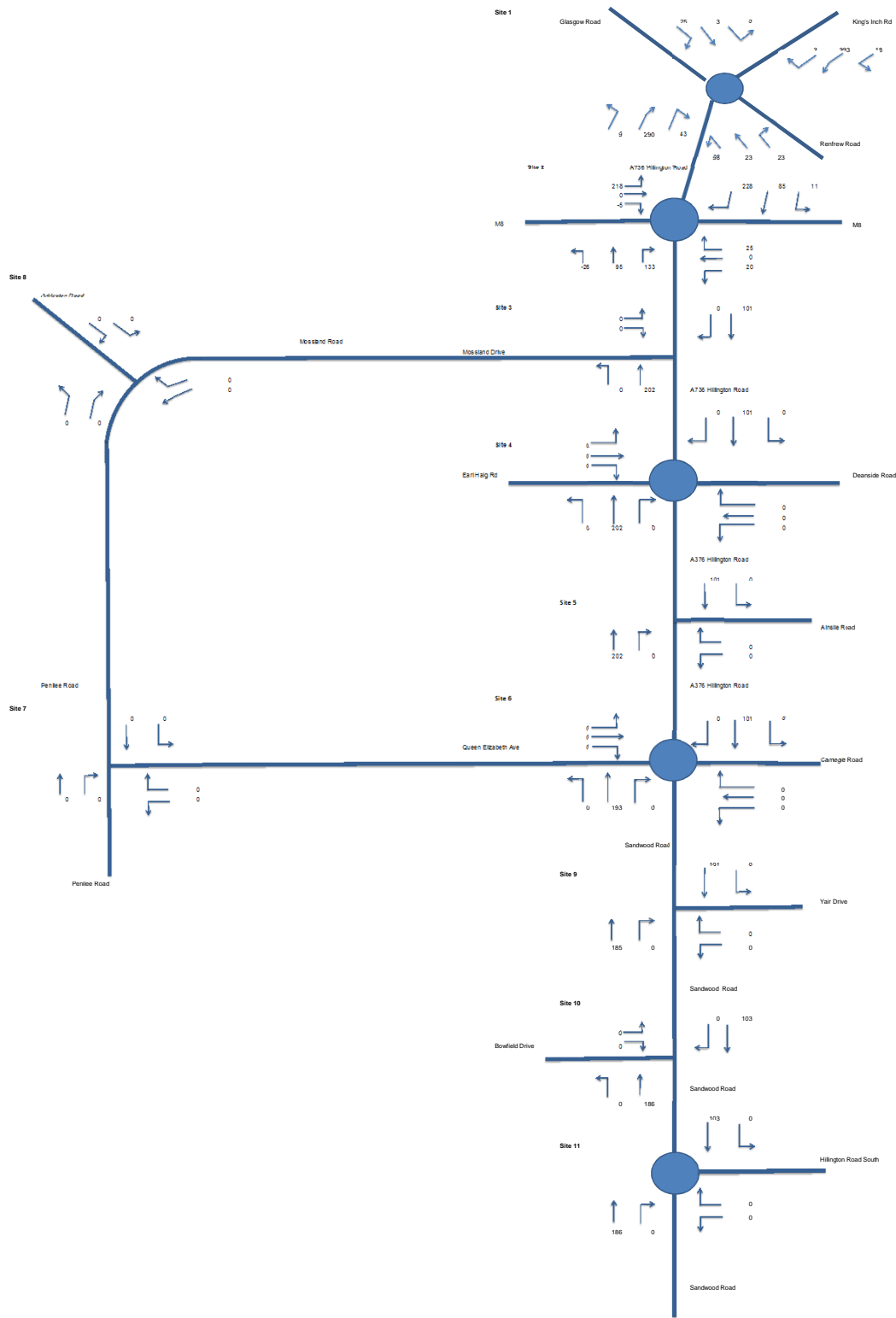
K&K
Traffic Volume
PROVA

Traffic Figure 5 AM Peak Hour Observed 2013



Key
 Total Vehs
 HGVs

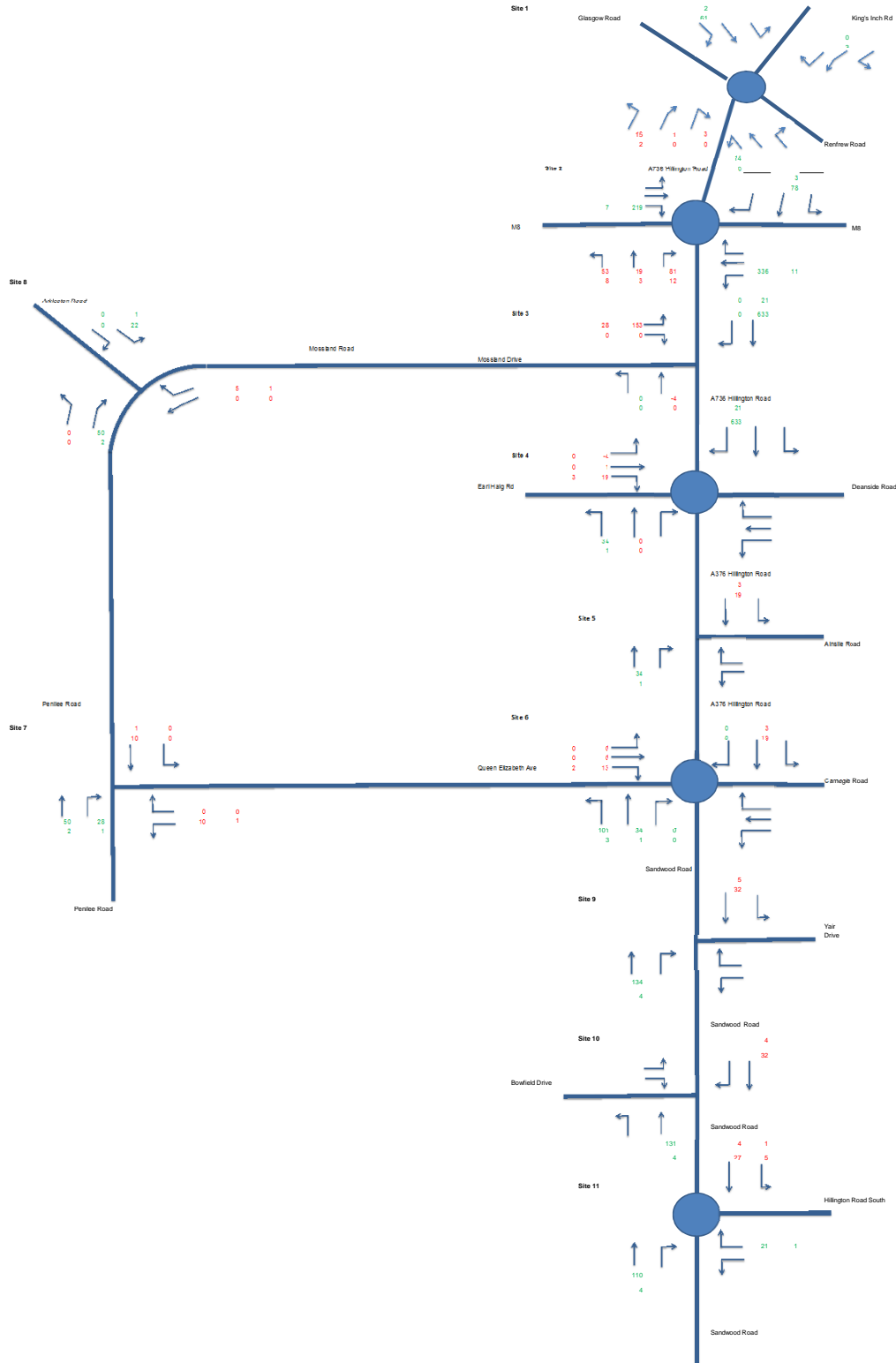
Traffic Figure 7 AM Peak Committed Development (excluding any consents on Hillington Park)



Traffic Figure 8 PM Peak Committed Development (excluding any consents on Hillington Park)

Committed Development on Hillington Park

	Total Vehs	HGVs
Arrivals	271	28
Departures	210	30
Total	1081	58

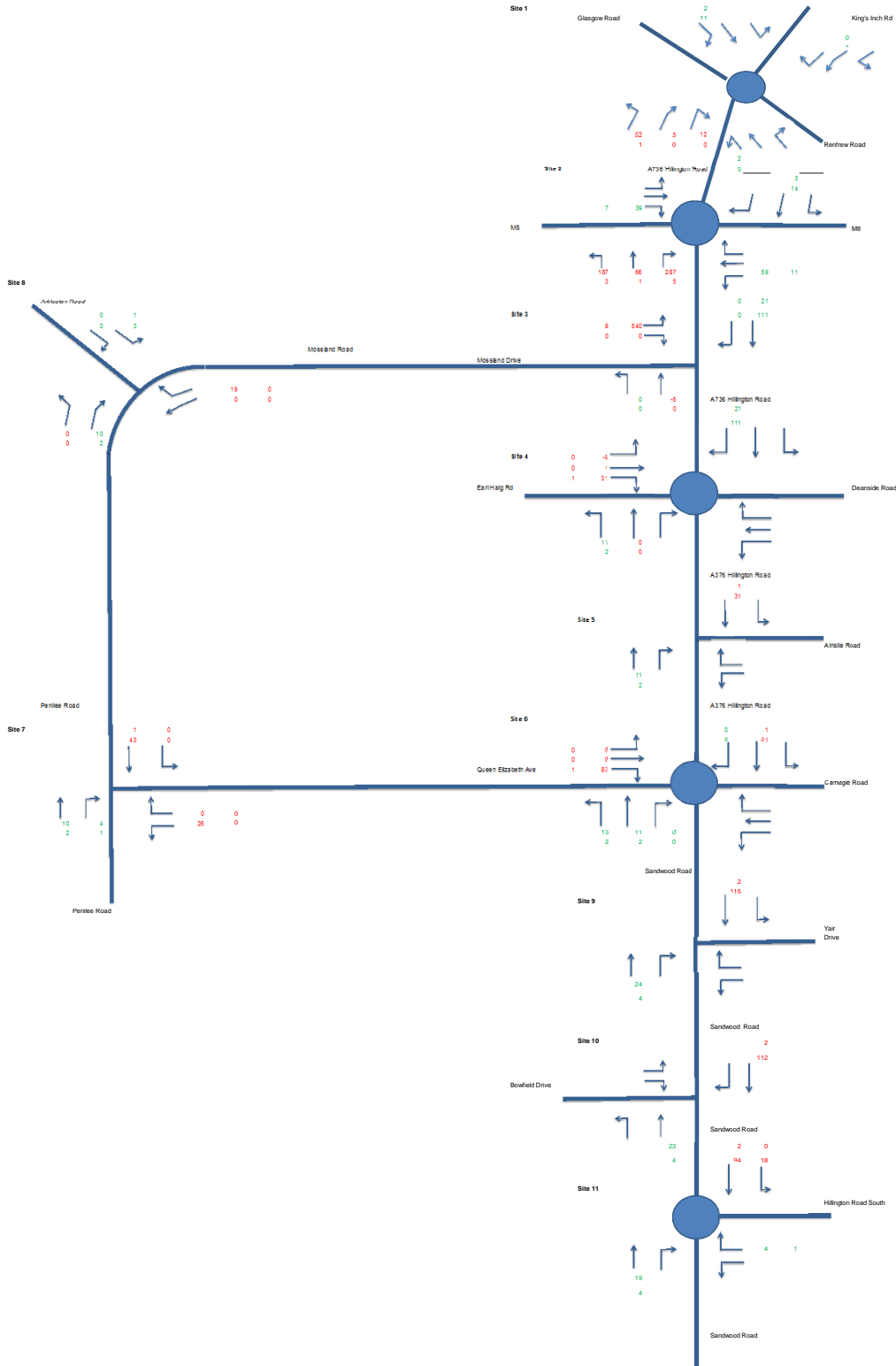


Key	Total Vehs	HGVs

Traffic Figure 9 AM Peak Hour Committed/Permitted Development on Hillington Park

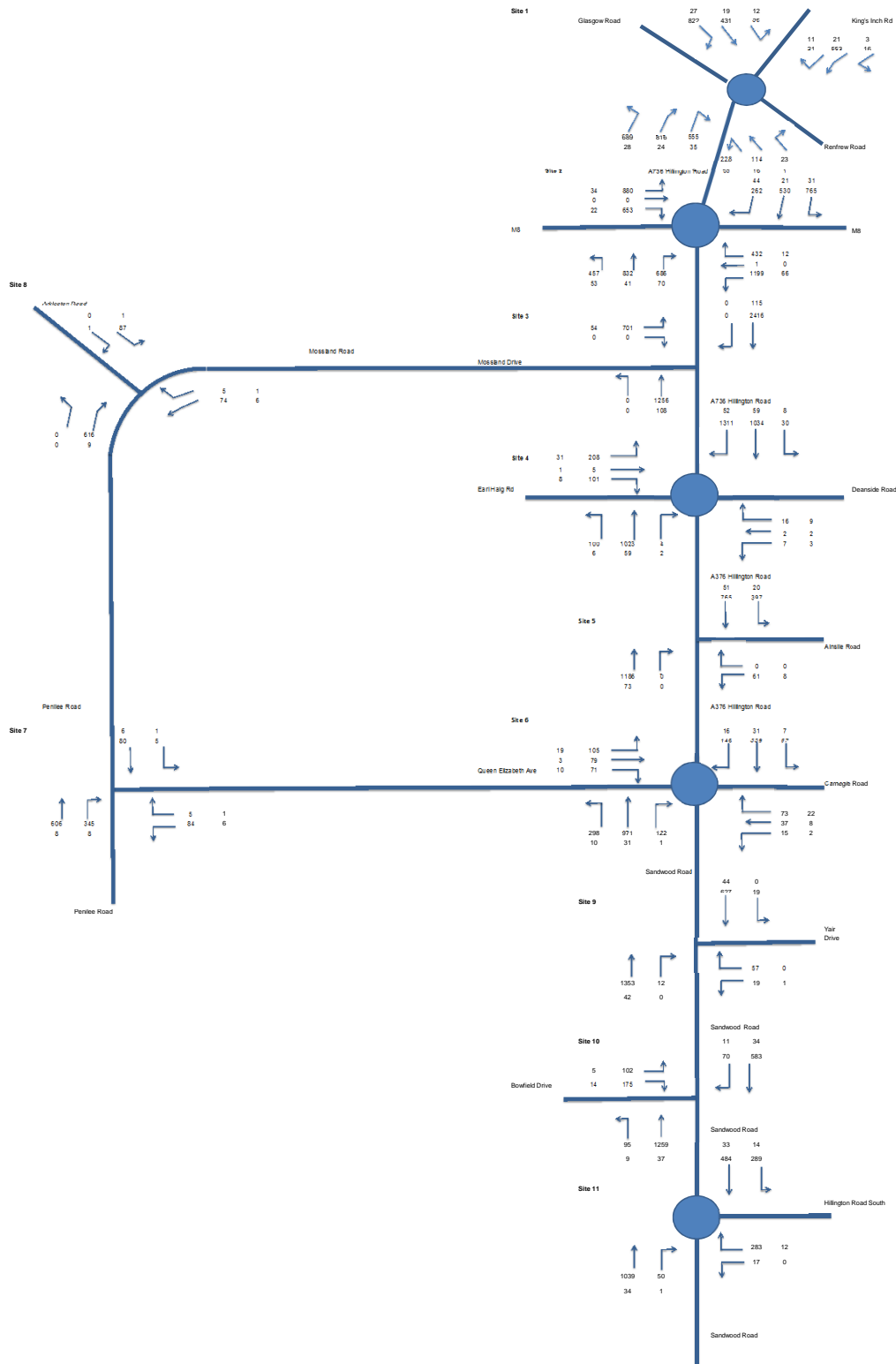
Committed Development on Hillington Park

	Total Vehs	HGVs
Arrivals	153	29
Departures	743	13
Total	896	42



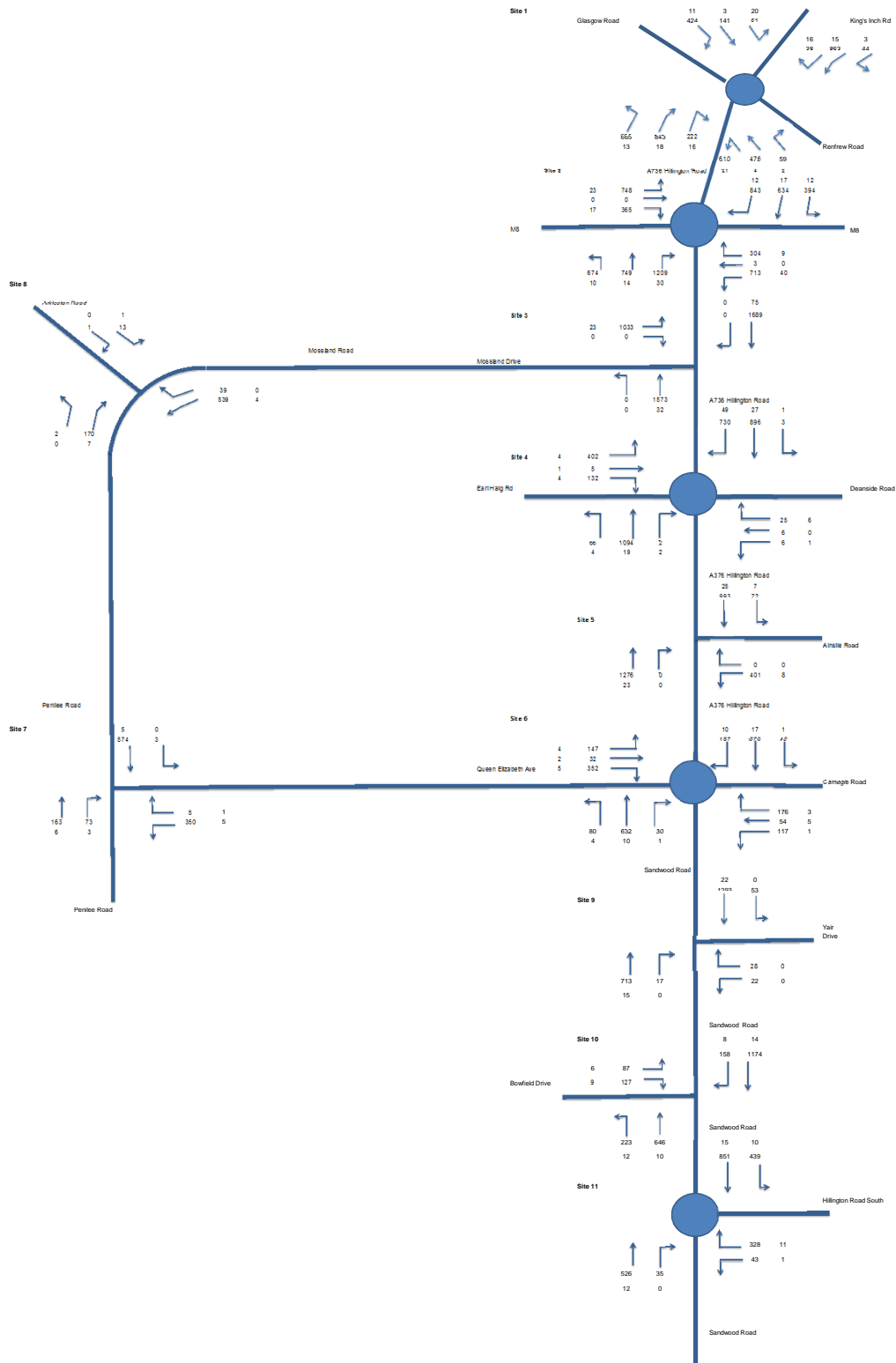
Key
 Total Vehs
 HGVs

Traffic Figure 10 PM Peak Hour Committed/Permitted Development on Hillington Park



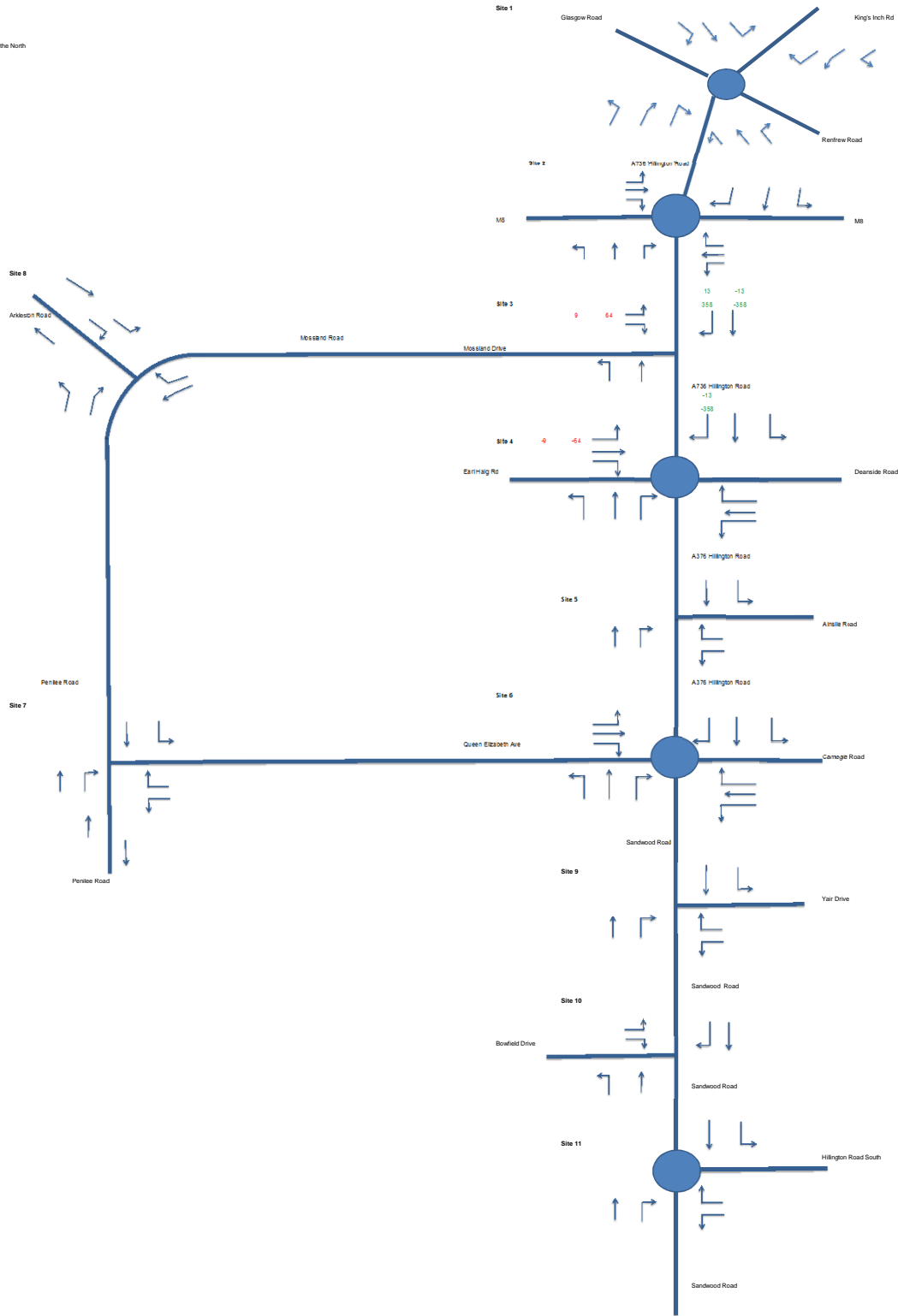
Key
 Total Vehs
 HGVs

Traffic Figure 11 AM Peak Hour Base



Traffic Figure 12 PM Peak Hour Base

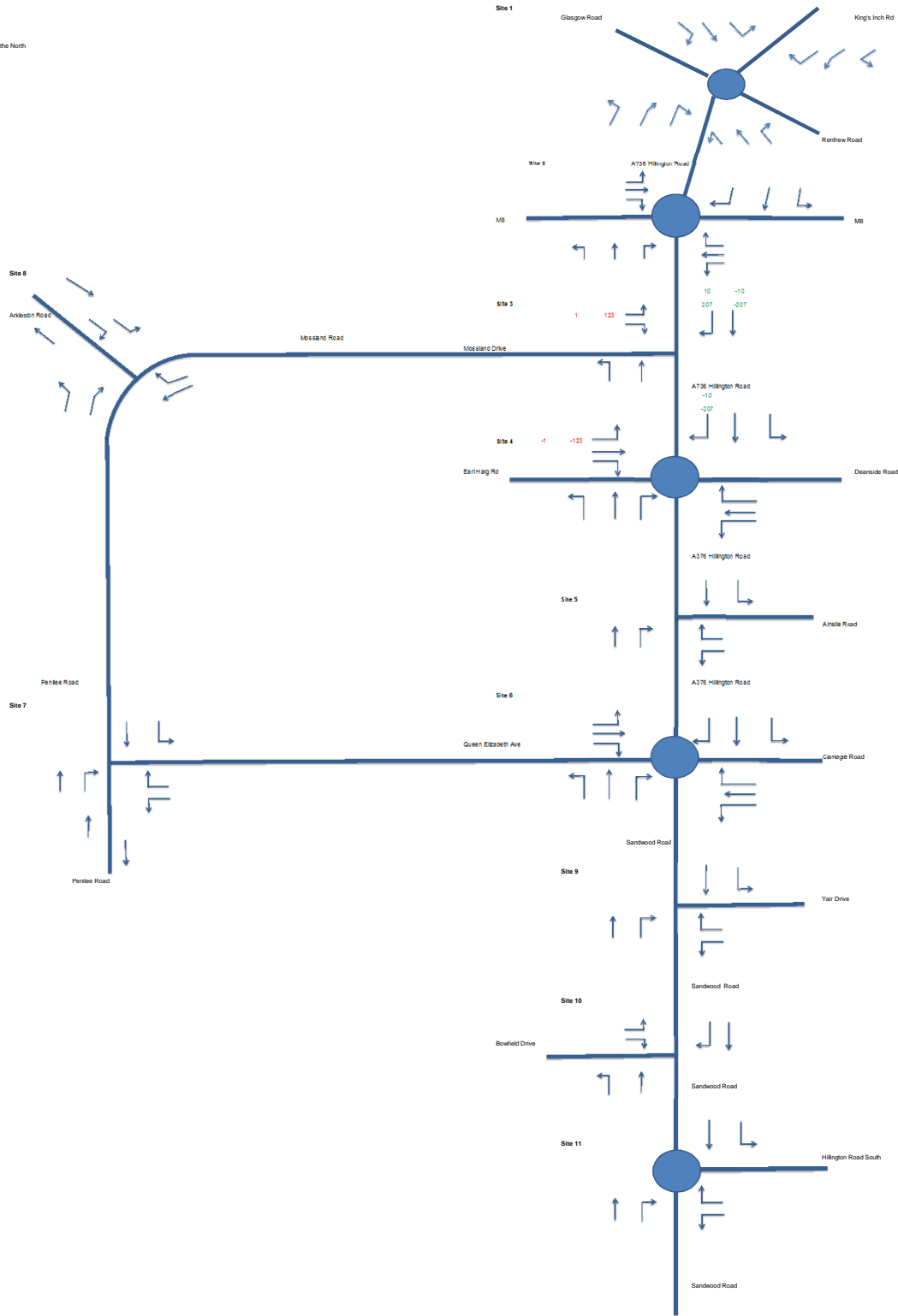
Diverted Traffic
 33% of existing left turn into Earl Haig Road from the North



Key
 Total Vols
 HV's

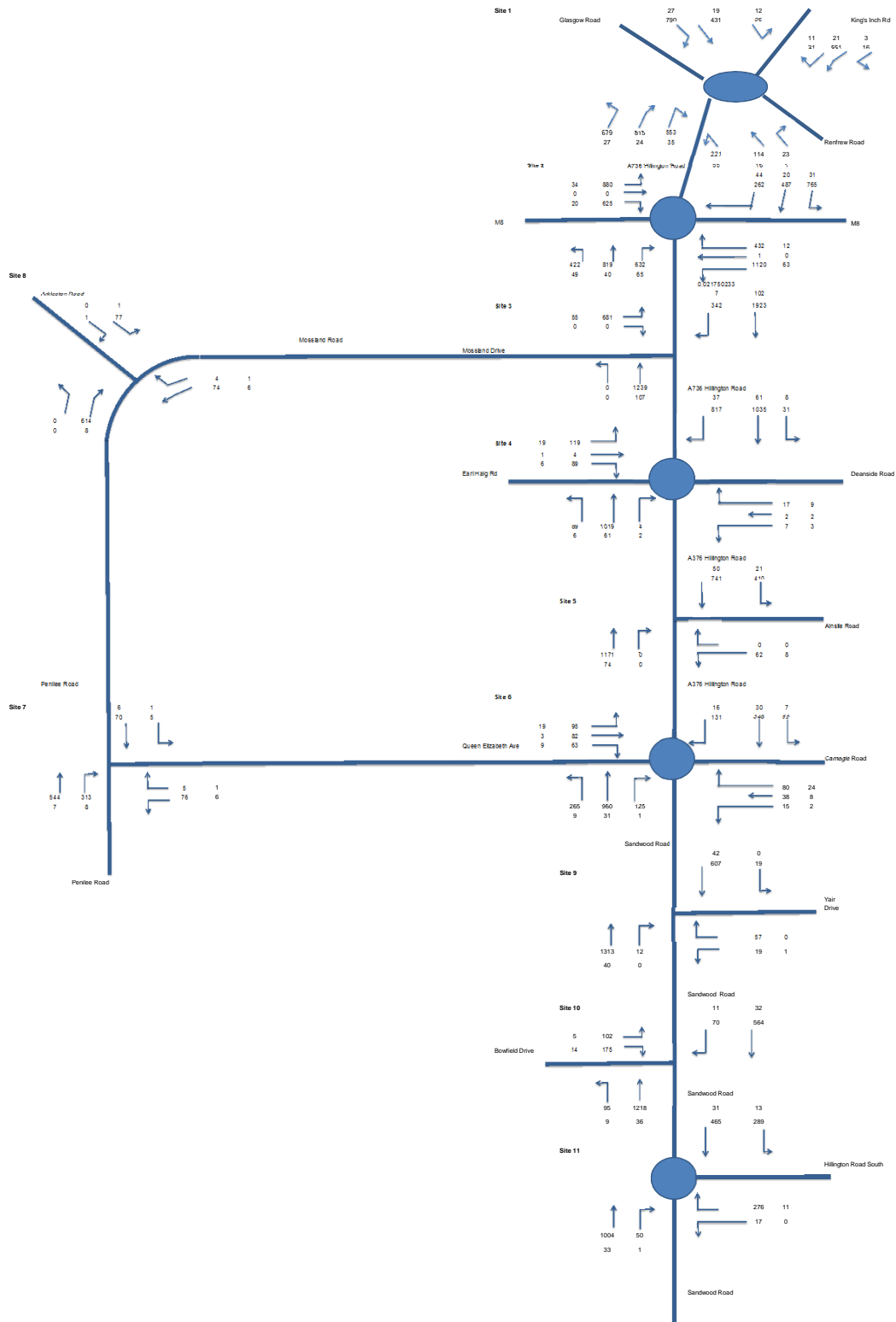
Traffic Figure 13 AM Peak Hour Diverted Traffic

Diversed Traffic
 33% of existing left turn into Earl Haig Road from the North



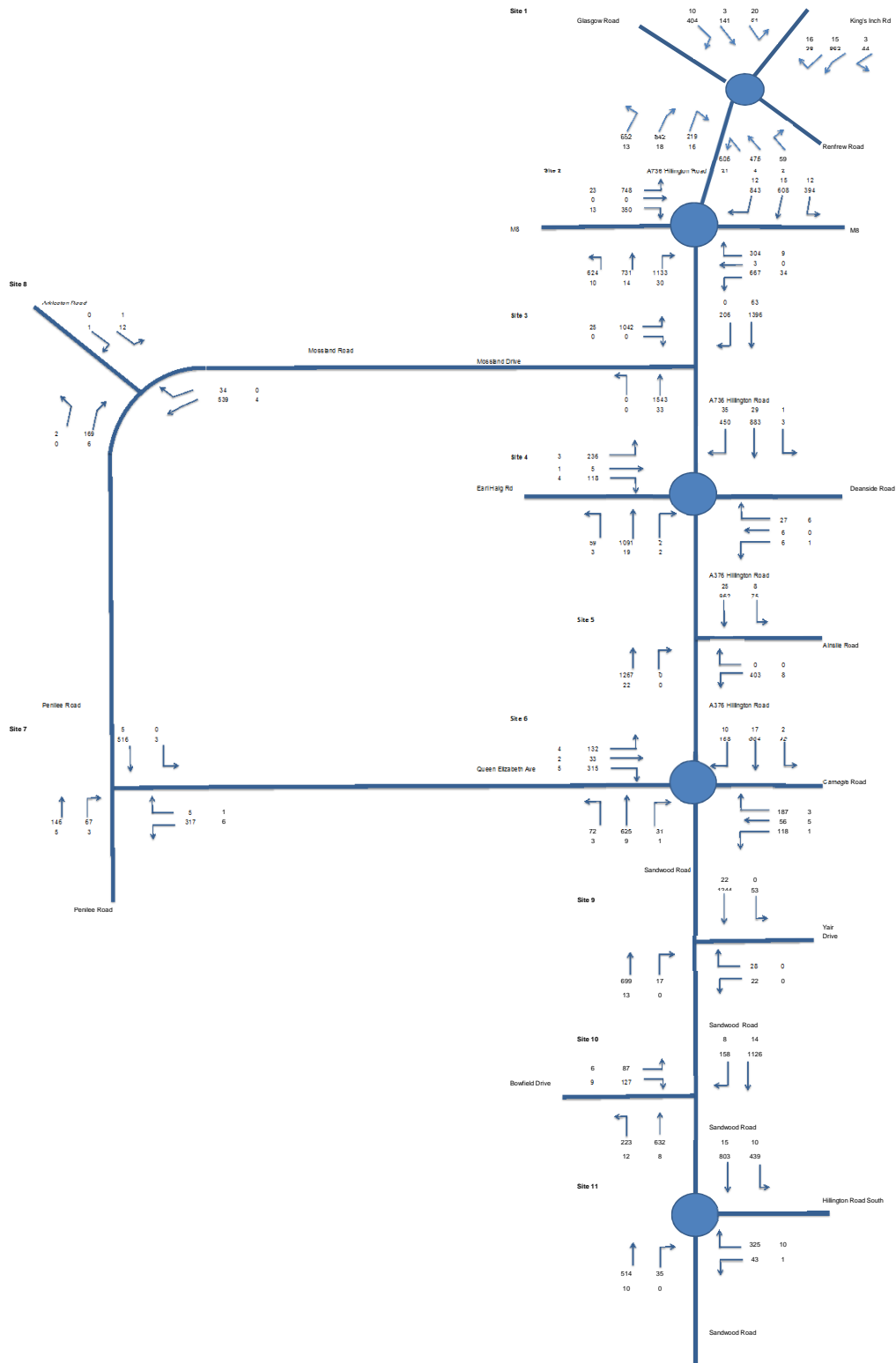
Key
 Total Volume
 AGVs

Traffic Figure 14 PM Peak Hour Diversed Traffic



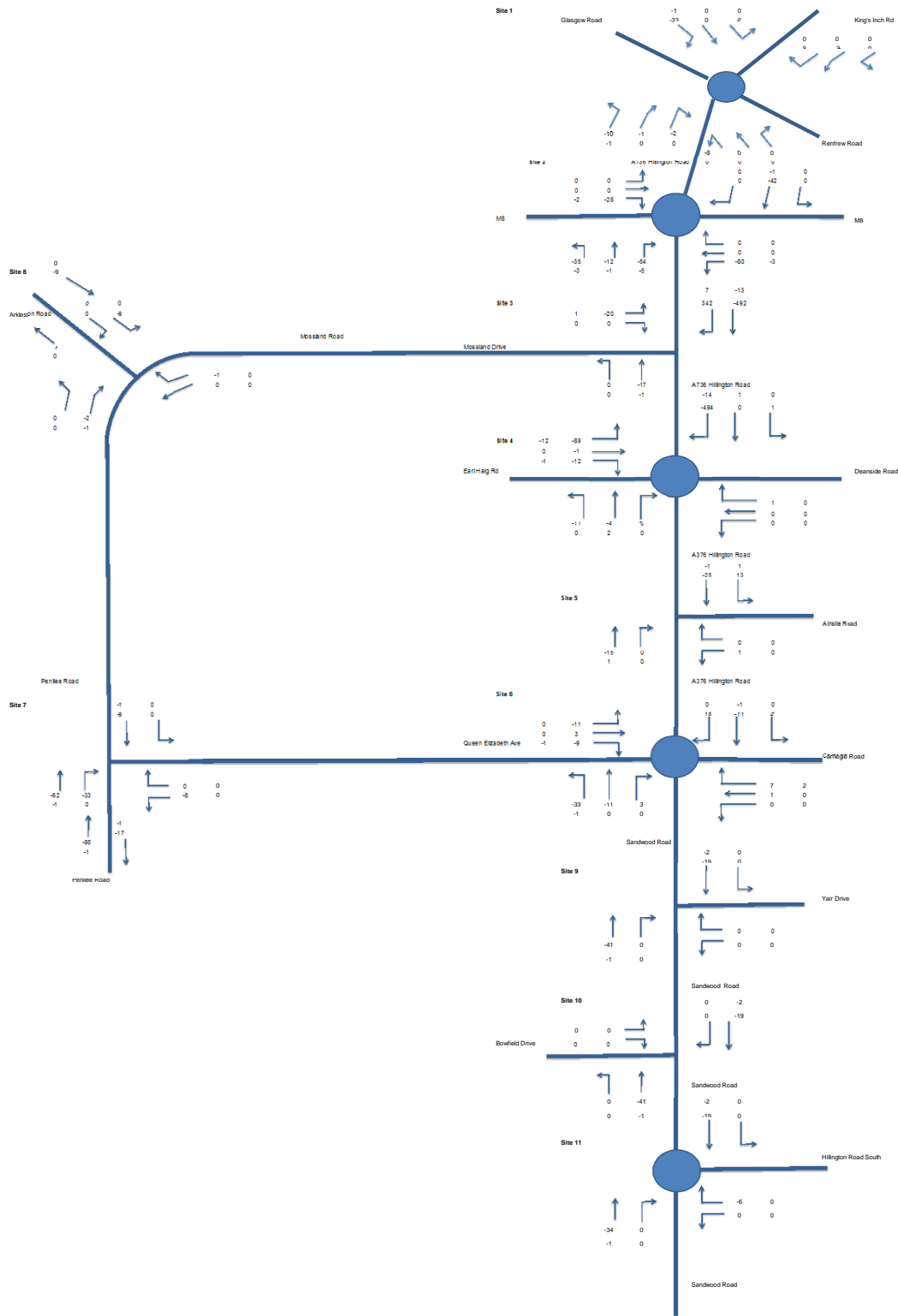
Key
 Total Vehs
 HGVs

Traffic Figure 15 Base + Development Traffic Flows AM Peak - Including Travel Plan



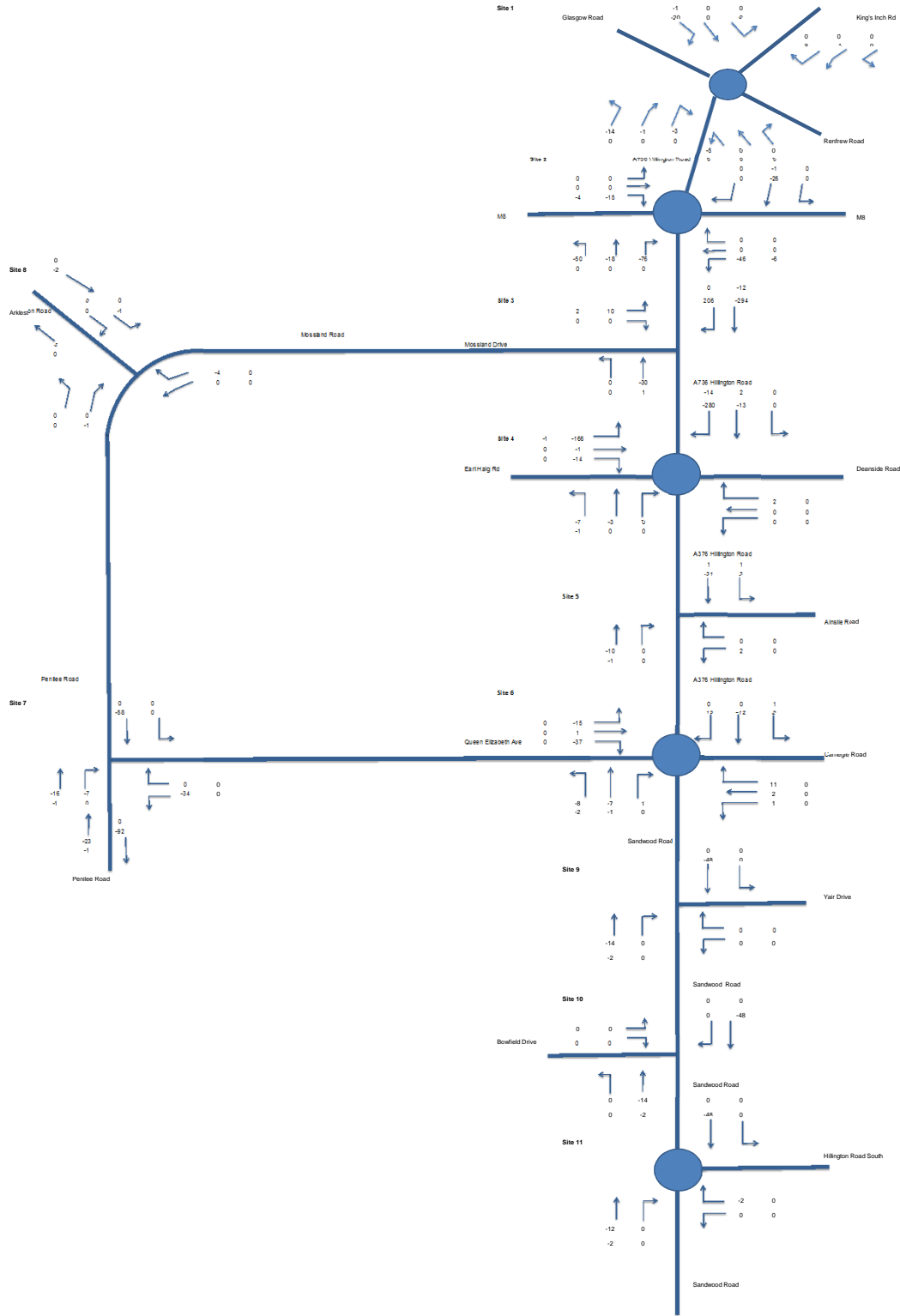
Key
 Total Vehs
 HGVs

Traffic Figure 16 Base + Development Traffic Flows PM Peak - Including Travel Plan



Key
 Total Vehs
 HGVs

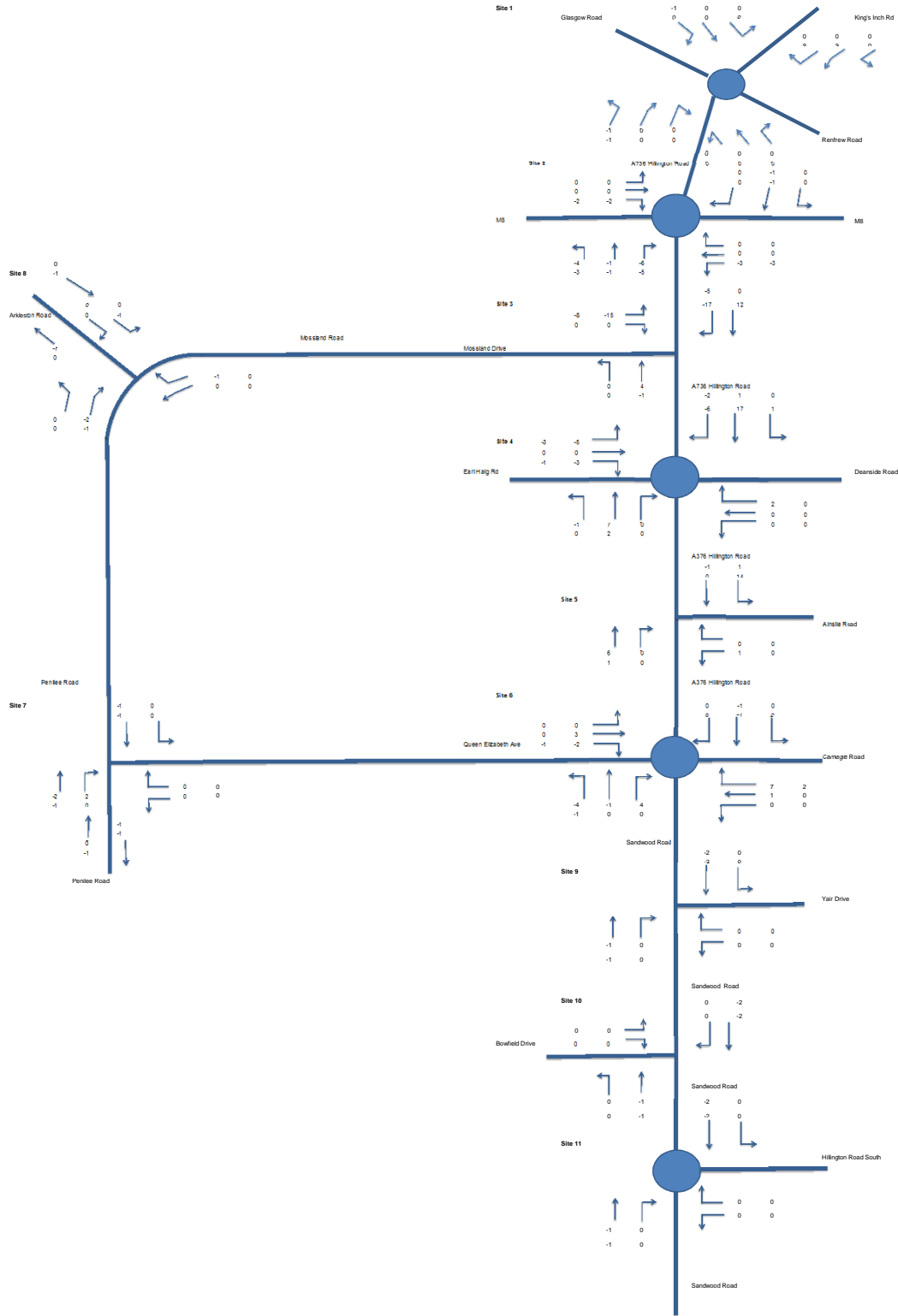
Traffic Figure 17 NET Change in Traffic Flows AM Peak including All Travel Plan Reductions and Diverted Traffic



Traffic Figure 18 NET Change in Traffic Flows PM Peak including All Travel Plan Reductions and Diverted Traffic

Proposed Development

Total Vehs	HGVs
Arrivals	-7 -8
Departures	-15 -13
Total	-22 -20



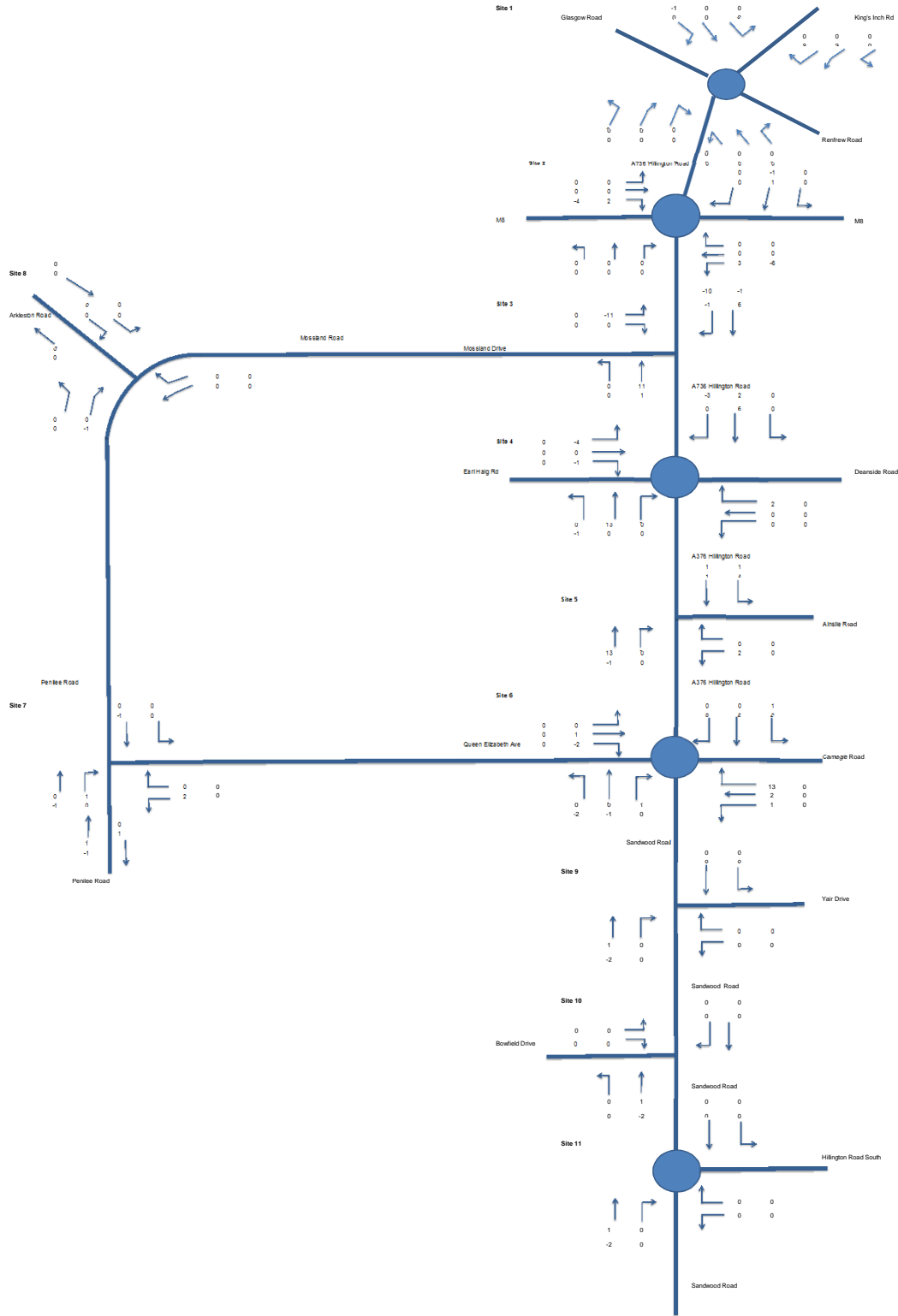
Key

Total Vehs
HGVs

Traffic Figure 19 Proposed Development Traffic Flows AM Peak SPZ - Not including Travel Plan

Proposed Development

Total Vehs	HGVs
7	-10
0	1
2	-11



Key

Total Vehs
HGVs

Traffic Figure 20 Proposed Development Traffic Flows PM Peak SPZ - Not including Travel Plan