Appendix A – Local Transport Network

Local Transport Network

Local transport in Clarkston and Busby is well served by public transportation and roads. Active travel options and infrastructure include footways / paths and Core Paths. Limited on road cycle facilities are provided on the main roads. Longer distance connectivity is provided by the M77 motorway to the west and the M74 motorway via the A726 to the east. Public transport is provided for by local and regional bus services and regular local train services from Clarkston and Busby Railway Stations.

Active Travel

Clarkston is predominantly urban in nature and as such footways are provided along both sides of most roads. Most footways in Clarkston and Busby are illuminated by street lighting, whilst a minority, predominately access lanes behind local resident's properties are not.

Off-road footpath and throughways are primarily provided within the Busby Glen and southern areas of Clarkston and Busby. These provide travel to key trip attractors, particularly to Busby Glen. There is a network of Core Paths located around Clarkston.

Public Transport

Scheduled bus services in the area are predominantly operated by First Glasgow and Glasgow Citybus. Both operators run several services which link the study area to several local communities in East Renfrewshire, including Busby, Stamperland, Battlefield, Waterfoot, Eaglesham, Newton Mearns, Glasgow, and East Kilbride.

ScotRail operates a regular scheduled service to East Kilbride from Clarkston via Busby and to Glasgow Central via Giffnock, Thornliebank and Crossmyloof. The average journey time between East Kilbride and Glasgow Central is approximately 32 minutes. On an average weekday, there are 48 trains per day travelling from East Kilbride to Glasgow Central with scheduled stops at Busby and Clarkston. It must be noted that the journey time may be longer on weekends and holidays.

Travel Patterns

The 2011 Census data indicates that most residents in Busby, Clarkston and Netherlee, work out with the local community. Over 45% of residents in Busby, Clarkston and Netherlee live between 5km and 10km of their workplace, a significantly higher percentage than East Renfrewshire (34.2%) and Scotland (19.2%) generally as illustrated below in Figure 1.

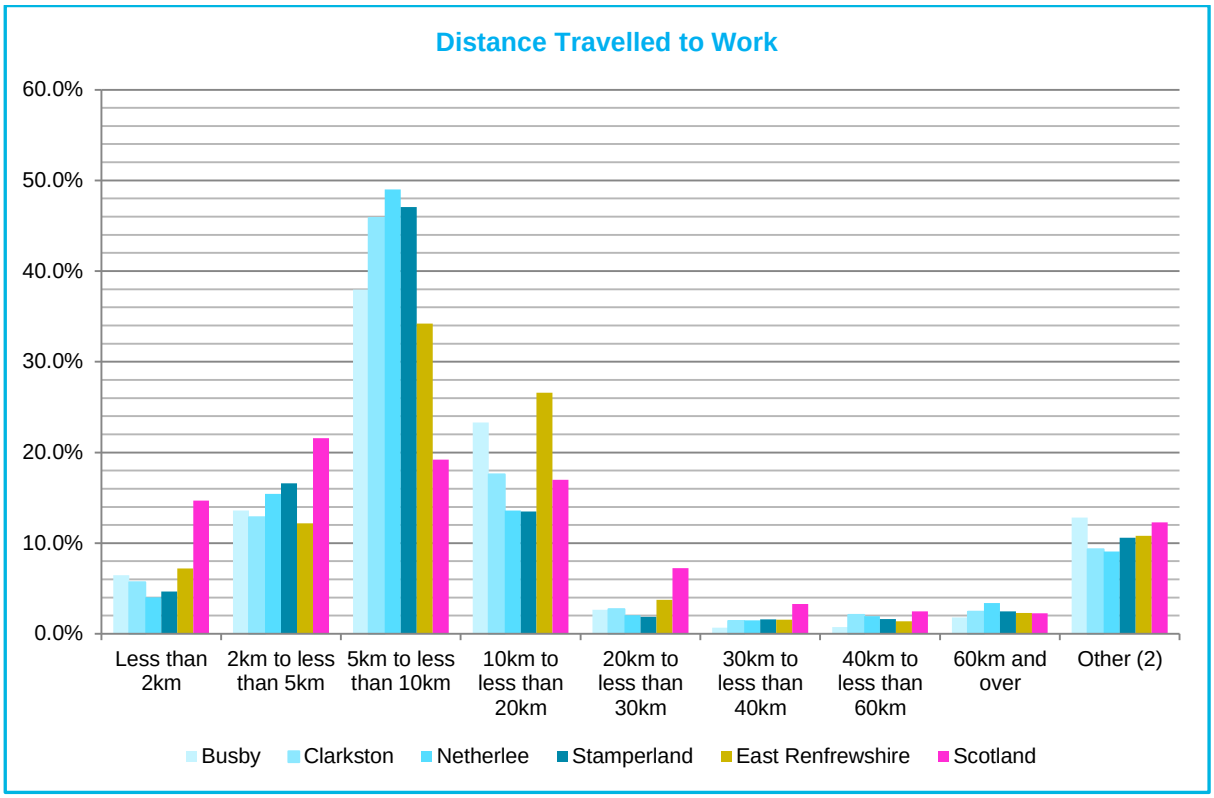


Figure 1 - Distance Travelled to Work[1]

As shown in , in Busby, Clarkston, Netherlee, and Stamperland approximately 47.4% of residents drive to work or study, 1.3% higher than the national average. Furthermore, 0.9% of the working population on average cycle to work or study, which is below the national average.

Table 1 - Method of Travel to place of Work/Study

Area	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Taxi or minicab	Driving a car or van	Passenger in a car or van	Motorcycle, scooter or moped	Bicycle	On foot	Other
Busby	0.1%	14.1%	9.8%	0.6%	46.0%	9.1%	0.2%	0.4%	19.4%	0.4%
Clarkston	0.2%	11.7%	7.0%	0.3%	49.8%	11.2%	0.3%	0.8%	18.3%	0.4%
Netherlee	0.1%	9.7%	19.5%	0.4%	46.0%	7.1%	0.3%	1.7%	14.3%	0.8%
Stamperland	0.0%	10.8%	16.0%	0.5%	47.8%	11.4%	0.3%	0.7%	12.3%	0.2%
East Renfrewshire	0.2%	9.3%	11.5%	0.6%	50.1%	12.4%	0.2%	0.6%	14.5%	0.6%
Scotland	0.3%	3.9%	15.1%	0.8%	46.1%	10.2%	0.3%	1.5%	20.8%	1.0%

Figure 2 below illustrates the method of travel to place of work/study census data[2] in a graphical format that highlights that a large percentage of local residents drive a car or van to their place of work or study.

[1] National Records of Scotland: Census Table: QS703SC, 2011
[2] National Records of Scotland: Census Table: QS702SC, 2011

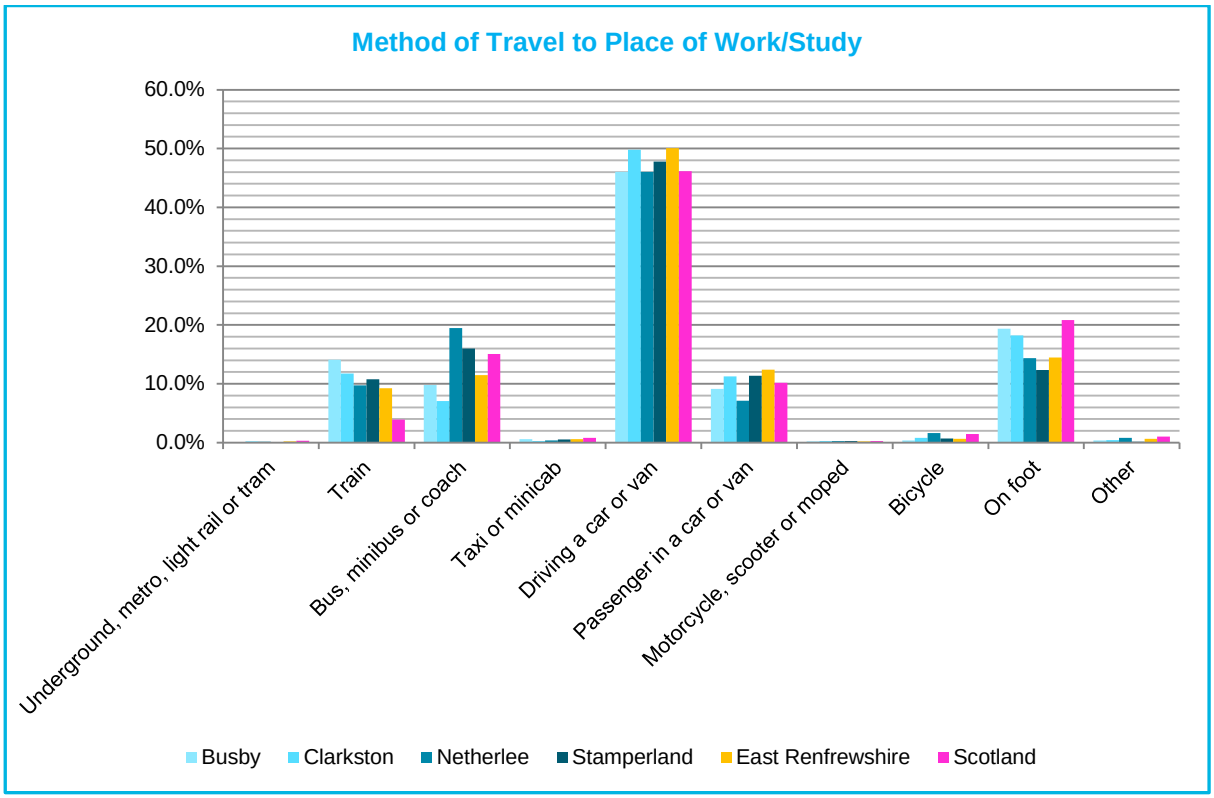


Figure 2 - Method of Travel to Place of Work/Study[3]

Based on the local travel statistics outlined above, whilst levels of walking are encouraging, there appears to be significant potential to promote greater levels of cycling. The 2011 Scotland Census data showed that in the Busby, Clarkston, Netherlee and Stamperland area, the vast majority of residents live between 5km and 10km of the workplace. This equates to cycling time of approximately 25-45 minutes on average (cycle2city, 2017).

Existing Cycling and Running

Figure 3 - Strava Heatmap of Clarkston[4]

Strava Global Heatmap is a website and mobile app that is used by millions of people worldwide to track athletic activity by Global Positioning System (GPS). The most common activities tracked using this software is cycling and running. Figure 3 shows the study area, and highlights that the key routes used by people carrying out cycling and running in the area are the main distributor roads such as A727 Eastwoodmains Road, A727 Busby Road and B767 Eaglesham Road. Another key route used is Mearns Road, though this is used less than the other key routes (Strava Labs, 2015).

Traffic Flows

The Department for Transport (DfT) provides traffic count data on an annual basis, across a number of sites throughout the country. The traffic count data is classified according to the type of vehicle. The traffic flow data can be used to determine if there has been a change in traffic over a period of time.

The Department for Transport has a traffic counter near to Clarkston town centre on Busby Road. Table 2 below highlights the total traffic flow of all categories of vehicle recorded.

[3] National Records of Scotland: Census Table: QS702SC, 2011
[4] http://labs.strava.com/heatmap/#14/-4.27016/55.78941/blue/both (Strava, 2015)

Table 2 - Traffic Flows on Busby Road

Year	Bicycles	P2W	Cars	Buses	LGVs	MGVs	HGVs	Total Motorised Traffic
2000	93	125	24,336	291	2,290	603	170	27,815
2001	89	129	24,823	297	2,281	591	162	28,283
2002	92	131	24,773	303	2,285	569	157	28,218
2003	82	147	24,426	271	2,491	611	160	28,106
2004	48	100	24,346	422	2,524	592	237	28,221
2005	45	87	22,834	402	2,507	570	148	26,548
2006	60	48	24,569	472	2,571	488	181	28,329
2007	49	67	21,875	383	2,085	411	118	24,939
2008	77	56	21,425	315	1,973	351	66	24,186
2009	77	53	21,082	308	2,137	338	68	23,986
2010	77	49	20,639	324	2,147	336	62	23,557
2011	85	52	20,536	324	2,214	334	64	23,524
2012	70	34	19,086	245	1,898	276	87	21,626
2013	69	34	18,978	231	1,920	275	94	21,532
2014	67	37	18,781	245	2,186	291	105	21,645
2015	62	37	18,436	243	2,299	283	108	21,406
2016	57	37	18,016	244	2,470	280	104	21,151

Source: https://bikedata.cyclestreets.net/#17/51.51137/-0.10498/opencyclemap.

Appendix B – Policy and Objectives

The National Transport Strategy (NTS) sets several high-level objectives, which includes "Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport…" The National Walking Strategy and Cycling Action Plan for Scotland are the policy vehicles designed to promote active travel and achieve the NTS objective. Of note is the vision of the Cycle Action Plan for Scotland of "10% of all journeys taken in Scotland will be by bike, by 2020".

This corresponds with similar objectives to increase the levels of active travel within the East Renfrewshire Council area, as stated by the Corporate Statement and Policy documents.

In East Renfrewshire Council, in their Active Travel Action Plan have a delivery plan that aims to improve the cycling and walking network across the region, these are summarised in Table 1 below.

Table 1 - Active Travel Action Plan Delivery Plan for East Renfrewshire Council

Delivery Plan Objective	Action	Delivery Notes	Lead Partners
1	Design and implement a signage strategy to establish the strategic cycle network	Sustrans Community Links funding 2015/16 will be used to design and implement signage of the strategic cycle network.	Sustrans, East Renfrewshire Council, Community Councils
2	Carry out feasibility and technical design for 5 strategic cycle corridors	This process will commence in 2016/17 where we will seek to obtain funding for feasibility and technical design for one strategic route each year.	Sustrans, East Renfrewshire Council, Community Councils
3	Deliver infrastructure improvements on strategic cycle corridors in line with the availability of funding	This process will commence in 2017/18 where we will seek to obtain funding to implement improvements identified through the feasibility and technical design process on an annual basis.	Sustrans, East Renfrewshire Council, Community Councils
6	Identify and deliver local cycle networks providing signed links throughout the key urban areas of Barrhead, Clarkston, Giffnock, Newton Mearns and Thornliebank	This process will begin in 2016/17 where we will seek to obtain funding to focus on one urban area each year.	Sustrans, East Renfrewshire Council, Community Councils
7	Ensure projects to improve walking and cycling infrastructure connect and complement the existing Core Path and green space networks	Continuous delivery.	Sustrans, East Renfrewshire Council, Community Councils
8	Develop, implement and promote improved cycle facilities at priority railway station locations	We will seek to work in partnership with Abellio to identify and deliver improvements at our railway stations starting with early engagement in 2015.	Sustrans, East Renfrewshire Council, Community Councils, Network Rail, ScotRail
9	Develop and implement an active travel hub pilot project at key bus stop locations	We will seek to obtain funding to implement a pilot project in 2016/17.	Sustrans, East Renfrewshire Council, Community Councils

Delivery Plan Objective	Action	Delivery Notes	Lead Partners
10	Develop, improve and promote the walking and cycling facilities at Rouken Glen Park, Dams to Darnley Country Park and Whitelee Wind Farm	Continuous delivery.	Sustrans, East Renfrewshire Council
11	Work with community partners to identify and establish local facilities to support community cycling	We will work with community partners as and when they come forward with proposals to support community cycling.	Sustrans, East Renfrewshire Council, Community Councils
14	Carry out a review of urban centres to establish where walking and cycling facilities can be improved and implement improvements	This process will begin in 2015/16 where we will review the Clarkston area. We will seek to obtain funding from 2016/17 to implement improvements. Reviews of other areas will commence from 2016/17 onwards subject to funding availability.	Sustrans, East Renfrewshire Council, Community Council, Local Businesses

Source: East Renfrewshire Council, Active Travel Action Plan, 2016

Noting these objectives, facilitating, enhancing and promoting active travel within the study areas served will help meet local, regional and national policy objectives.

In addition to the above, local land use planning may also further the need for high quality active travel links within the study area. East Renfrewshire Planning identifies 20.00Ha of land for residential development to the south of Clarkston, in Waterfoot. Should this development be realised more people will be traveling in and around the study area. It is therefore important to ensure the appropriate infrastructure is in place to maximise the number of trips undertaken by active travel.

It should also be considered that improved active travel is not only a transportation policy objective. It also helps deliver other policy objectives, such as, health improvement, accessibility, social inclusion, sustainability and economic development.

Active Travel Strategy Research Findings

In 2014 as part of the Active Travel Action Plan, a comprehensive and independent study was carried out by Progressive Partnership Ltd. The study aided in establishing a strategy for development in the area, now known as the Active Travel Action Plan, to include the local roads, footpaths and cycle paths.

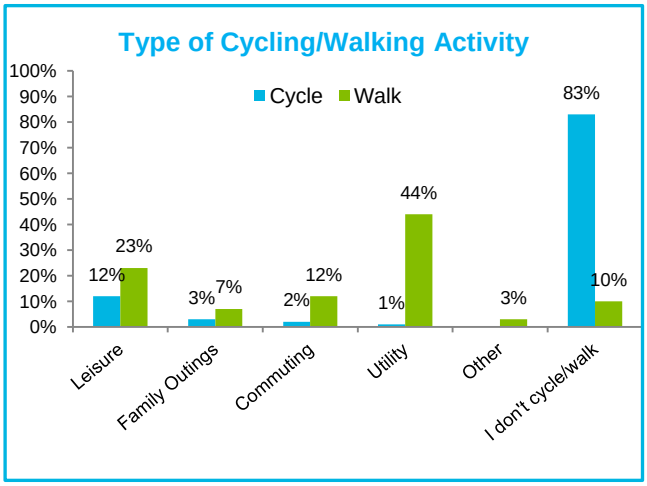


Figure 1 - Type of Cycling & Walking Activity in East Renfrewshire

It is generally known that opinions across the various urban areas of East Renfrewshire are divided when it comes to issues such as road and cycle path infrastructure, and resident's priorities for development were unknown. The aim of the survey was to gauge public opinion, of the residents of East Renfrewshire, to provide local priorities for potential investment for cycling and walking infrastructure.

The survey its self was conducted via Computer Aided Personal Interviews (CAPI) between November and December 2014, using a stratified random sampling technique, conducted in-street and in home interviews. The final sample size was 502 local residents in the main urban areas of East Renfrewshire. The survey only included respondents of adult age.

The following urban areas in East Renfrewshire used to conduct the survey were:

- Newton Mearns;
- Giffnock / Thornliebank;
- Barrhead;
- Clarkston; and
- Eaglesham / Uplawmoor / Neilston.

The final data was weighted to reflect an approximate equal sample size (100 respondents in each sample point) in each location.

Though the study carried out was extensive and investigated numerous different elements, there is a selection of the data that is most relevant to this study.

Figure 1[1] provides an insight to the type of journey being carried out by active travel means. The original sample size used was 500 people; however, from knowing that Clarkston was one of the five sample locations it can be assumed that the results will be proportional, i.e. that 100 people responded from Clarkston. As an example, it can be anticipated that 83% of residents within Clarkston do not cycle and 10% of residents do not walk, preferring to use alternate means of transport.

Figure 3[2] provides an insight to the purpose each journey type been carried out by active travel means in East Renfrewshire. Again, the original sample size was 500 people, it is assumed that the results will be proportional i.e. that 100 people responded from Clarkston.

The data from Figure 1 and Figure 3 are closely related though it can be seen that the majority of active travel methods of travel are for health/fitness and recreation/fun uses and it can be seen that the majority of trips undertaken are leisure and utility trips. This suggests that many active travel users in the Clarkston area would be recreational users, and utility users with the key attractors being Clarkston Town Centre, focusing on the shopping concourses and the numerous greenspaces around the Clarkston area.

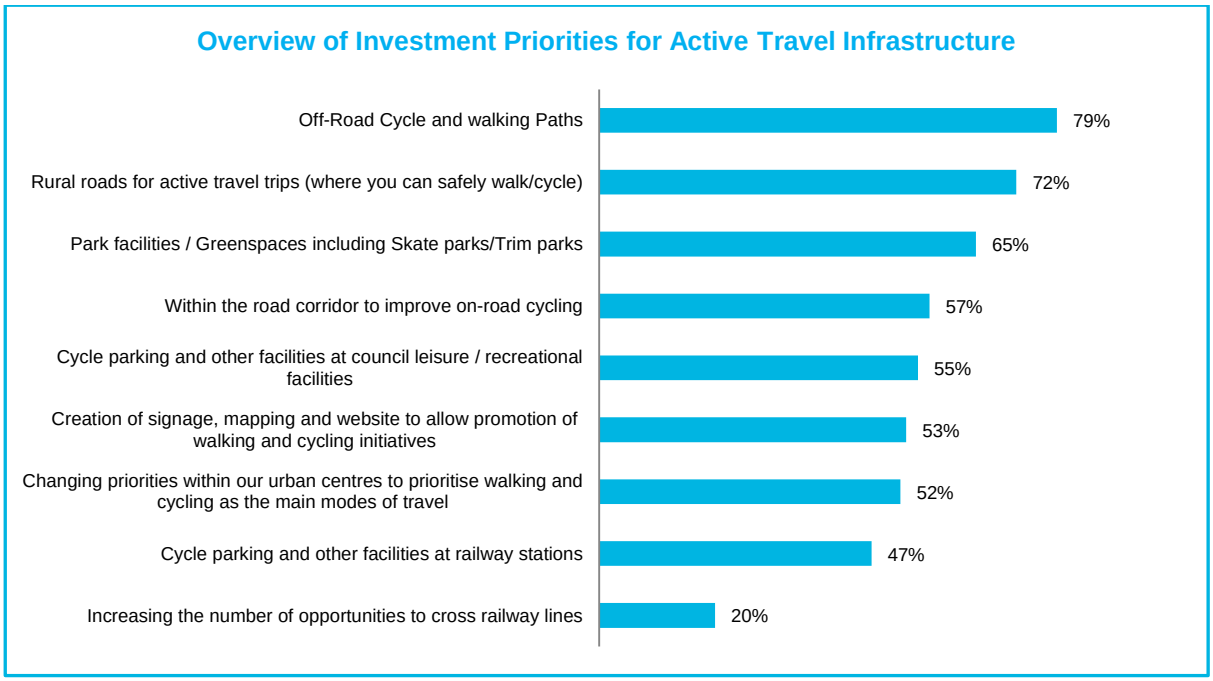


Figure 2 - Overview of Investment Priorities for Active Travel Infrastructure in East Renfrewshire

Figure 2 provides insight into the priorities of investment those residents in the East Renfrewshire Council area believe should be taking place. It is interesting to note that the top two priorities listed are further investment in off-road cycle and walking paths and rural roads for active travel trips. Figure 2 above also highlights that 20% of the 500 people who responded believed that investment should be focused on increasing the number of opportunities to cross railway lines. Though these percentages are proportional, in

[1] Progressive Partnership Ltd. (2014). *East Renfrewshire Council Active Travel Plan Research Findings. Slide 10.* Glasgow: Progressive
[2] Progressive Partnership Ltd. (2014). *East Renfrewshire Council Active Travel Plan Research Findings. Slide 11.* Glasgow: Progressive

a similar fashion to Figure 1 and Figure 3 above, it is anticipated that the number of railway crossings will be further highlighted at the consultation events due to the limited number of crossings within the study area.

Journey Type

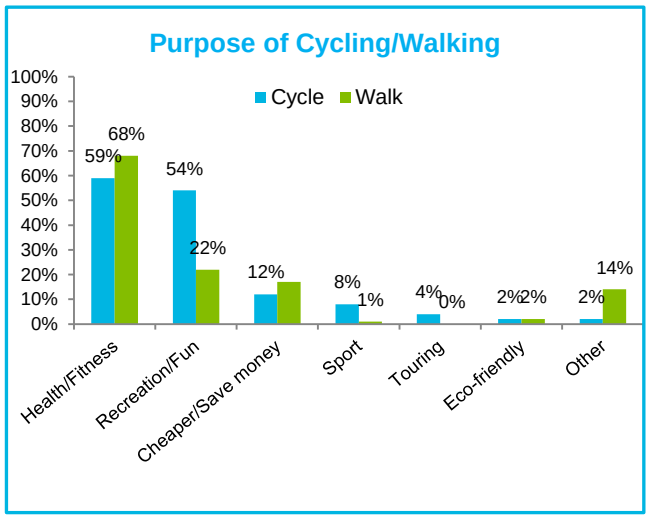


Figure 3 - Purpose of Cycling & Walking in East Renfrewshire

As previously mentioned, there are two main types of journey identified in the above study, utility and leisure journeys. These will also be considered as part of this study, following the stakeholder engagements held by AECOM and East Renfrewshire Council.

Journey Type – Utility

Utility type journeys represent the daily trips people make to reach employment, education or services (such as shops or the hospital). It also includes journeys to visit friends and relatives. It is highly important to provide cycling and walking routes which are useful to residents and visitors on an everyday basis. This will support the aims and objectives of the local authority and national government, relating to health, environment and accessibility.

Journey Type - Leisure

Leisure type journeys comprise of journeys made for pleasure, either by residents or visitors, particularly at weekends and evenings. Whilst maximising utility journeys, it is essential that leisure journeys are facilitated as they can act as a catalyst to people undertaking utility journeys by active travel means.

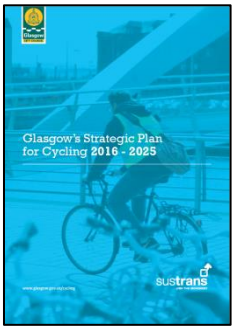
Neighbouring Local Authorities Cycling Strategies

Glasgow's Strategic Plan for Cycling 2016 – 2025

Glasgow's Strategic Plan for Cycling 2016-2025, as shown in Table 2, sets out Glasgow City Council's visions, objectives, targets and actions for increasing levels of cycling: for leisure; as a mode of transport; and for sport following the 2014 Commonwealth games.

Table 2 - Glasgow's Strategic Plan for Cycling

Title	Glasgow's Strategic Plan for Cycling 2016 - 2025
Date Adopted	**2016**



Source: Glasgow City Council, 2016

It is well known that the Glasgow Cycle Network has grown considerably in recent years, from 116km in 2006 to 310km in 2015. A substantial effort has been made by Glasgow City Council to join the routes together to create a more coherent, connected and attractive network. These routes are supported by more local provision aimed at helping move members of the public around their own communities. The aspiration is to create a network of dedicated space for cycling; creating routes that link key places of employment, leisure, public transport and residential areas.

Existing and potential routes have been reviewed, including opportunities through parks, along former railway lines, development sites and other regeneration areas. This involved mapping existing routes, identifying trip generators and desire lines, and looking at over 800km of routes to record information including route type, surface condition, bikeability level, speed limit and suitability. The results of the reviewed routes have been translated into a digitised map showing both the existing and potential cycle routes as shown below in Figure 4.

In terms of this study it must be highlighted by the red box above, that there is a future route towards Clarkston which stops at the Glasgow City Council Boundary.

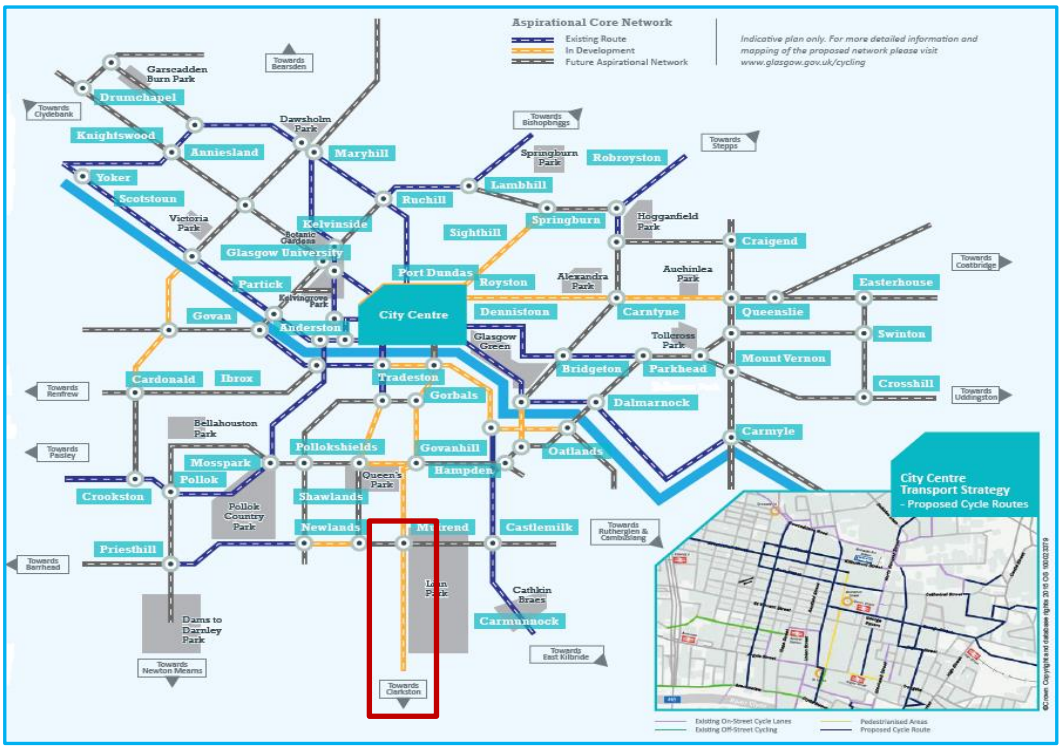
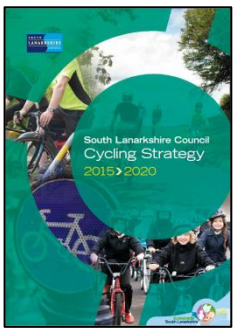


Figure 4 - Glasgow City Council's Aspirational Core Network

South Lanarkshire Council Cycling Strategy

Table 3 - South Lanarkshire Council Cycling Strategy 2015 -2020

Title	South Lanarkshire Council Cycling Strategy 2015 - 2020
Date Adopted	**2015**



Source: South Lanarkshire Council, 2015

The South Lanarkshire Cycling Strategy 2015 – 2020, as shown by Table 3, sets out the local authorities strategic cycling objectives for the South Lanarkshire area, as well as identifying potential links to neighbouring local authorities such as East Renfrewshire Council.

The strategy is based upon wider national and regional policy's such as the Cycling Action Plan for Scotland and builds upon high the high-level policies and actions with the aim to increase the levels of cycling by promoting and providing further encouragement of active travel. The strategy is a focused policy document which sets out clear processes, outcomes and actions for the implementation of cycling policies, objective and actions within South Lanarkshire Council.

South Lanarkshire Council has identified a cycle network within East Kilbride, which at the time of writing is being implemented on site. Any future expansion of this network could be linked to any potential routes from Clarkston along the A727 corridor.

Appendix C – Data

Appendix C includes all the data provied as part of the project including analysis for the collision history between 2010 and 2014. The appendix has been split into the following sub-appendix:

Sub-appendix	Title
Appendix C.1	Local Environmental, Cultural and Development Plan Information
Appendix C.2	Collision Summaries
Appendix C.3	Collision Location Plan
Appendix C.4	School Catchment Area

C.1 Local Environmental, Cultural and Development Plan Information

Statutory and Non-Statutory Designated Sites

There is one identified Site(s) of Special Scientific Interest (SSSI) or Special Areas of Conservation or Special Protection Areas adjacent to or within 1km of the study area. A review of designated sites using the Scottish Natural Heritage Sitelink and GIS database tool identified one SSSI area for which consideration is taken.

Tree Preservation Orders

There are numerous confirmed and provisional tree preservation orders in the Clarkston and Busby area.

Water Bodies and Flood Risk

The SEPA Flood Map identifies several areas in Clarkston and Busby that have varying levels of flood likelihood. Where risk is identified, the level of risk is largely high. These risks manifest from White Cart Water, Kittoch Water and Thorntonhall Burn, as shown by Figure 2.

Conservation and Article 4 Direction Areas

There are two areas that are designated as Conservation Areas or Article 4 Direction Areas within the study area by East Renfrewshire Council.

Busby is designated as a Conservation Area where the area is of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance. The designated area includes A727 East Kilbride Road and B759 Carmunnock Road is designated as a conservation area, the extents of which are shown in Figure 1.

Figure 1 - Map of Local Environmental and Cultural Constraints

Netherlee is designated as an Article 4 Direction Area. Article 4 directions are issued by East Renfrewshire Council in circumstances where specific control over development is required. This is primarily where the character of an area of acknowledged importance may be threatened. The effect of such a Direction is to remove permitted development rights, thereby necessitating a planning application to be made.[1] The extents of the Article 4 Direction Area are shown in Figure 1.

Figure 2 - SEPA Flood Map of Clarkston, Busby and surrounding area

Local Development Plan

The Main Issues Report used to permit consultation on the development of ERC Local Development Plan 2 (Figure 3)

[1] East Renfrewshire Council. (n.d.). Conservation Areas. Retrieved 31/07/17, from East Renfrewshire Council: http://www.eastrenfrewshire.gov.uk/conservation-areas

highlights potential housing sites within the study area to the south of Clarkston and Busby.

Figure 3 - Main Issues Report Sites

C.2 Collision Summaries

Injury Accidents Summary

Location: A727 Clarkston Toll Jct to Sheddens Rbt

Road accidents between 2010 **and** 2014

Summary of Injury Accidents

Year

2010	1
2011	3
2012	3
2013	1
2014	3
Total	**11**

Month

Jan	0
Feb	1
Mar	0
Apr	1
May	0
Jun	1
Jul	0
Aug	1
Sep	0
Oct	4
Nov	2
Dec	1
Total	**11**

Day

Mon	1
Tue	3
Wed	0
Thu	4
Fri	1
Sat	2
Sun	0
Total	**11**

Hour starting

00:00	0
01:00	0
02:00	0
03:00	0
04:00	0
05:00	0
06:00	0
07:00	0
08:00	0
09:00	1
10:00	2
11:00	1
12:00	0
13:00	1
14:00	0
15:00	1
16:00	1
17:00	1
18:00	1
19:00	1
20:00	1
21:00	0
22:00	0
23:00	0
Total	**11**

Severity

Fatal	1
Serious	1
Slight	9
Damage	0
Total	**11**

Light conditions

Dark	3
Light	8
Total	**11**

Road surface

Wet	4
Dry	7
Ice/snow	0
Total	**11**

Road user

Moto	0
Car	9
HGV	1
Other	1
Total	**11**

No. of Vehicles

1	6
2	5
3	0
4	0
4+	0
Total	**11**

Other factors

Accident problem(s)

29/09/2017

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C.3 Collision Location Plan

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C.4 - School Catchment Areas

Netherlee Primary School were the only school to respond to request.

School Catchment Areas in Clarkston

Street	Primary School	Secondary School
Alyth Crescent	Netherlee Primary School	Secondary School
Alyth Gardens	Netherlee Primary School	Secondary School
Beechlands Avenue	Netherlee Primary School	Secondary School
Brenfield Road no's 6,10,14 only	Netherlee Primary School	Secondary School
Bute Gardens	Netherlee Primary School	Secondary School
Clarkston Road no.s 400-505 upwards No.s 410-468 & 553-591	Netherlee Primary School	Secondary School
Corrie Grove	Netherlee Primary School	Secondary School
Cromarty Gardens	Netherlee Primary School	Secondary School
Deanwood Avenue	Netherlee Primary School	Secondary School
Deanwood Road	Netherlee Primary School	Secondary School
Elgin Gardens	Netherlee Primary School	Secondary School
First Avenue	Netherlee Primary School	Secondary School
Golf Court	Netherlee Primary School	Secondary School
Gordon Avenue	Netherlee Primary School	Secondary School
Gordon Drive	Netherlee Primary School	Secondary School
Gordon Road	Netherlee Primary School	Secondary School
Leebank Drive	Netherlee Primary School	Secondary School
Leefield Drive	Netherlee Primary School	Secondary School
Leewood Drive	Netherlee Primary School	Secondary School
Linn Drive	Netherlee Primary School	Secondary School
Linn Park Avenue	Netherlee Primary School	Secondary School
Linn Park Gourt	Netherlee Primary School	Secondary School
Mclaren Place	Netherlee Primary School	Secondary School
Monteith Drive	Netherlee Primary School	Secondary School
Monteith Gardens	Netherlee Primary School	Secondary School
Moray Drive	Netherlee Primary School	Secondary School
Moray Gardens	Netherlee Primary School	Secondary School
Muirend Road [no.9 onlY]	Netherlee Primary School	Secondary School
Netherburn Avenue	Netherlee Primary School	Secondary School
Nethercliffe Avenue	Netherlee Primary School	Secondary School
Netherhill Avenue	Netherlee Primary School	Secondary School
Netherlee Road No's 142-168	Netherlee Primary School	Secondary School
Netherpark Avenue	Netherlee Primary School	Secondary School
Nethervale Avenue	Netherlee Primary School	Secondary School
Netherview Road	Netherlee Primary School	Secondary School
Nethenuay	Netherlee Primary School	Secondary School
Oakley Drive	Netherlee Primary School	Secondary School
Orchy Avenue	Netherlee Primary School	Secondary School
Orchy Drive	Netherlee Primary School	Secondary School

Street	Primary School	Secondary School
Orchy Gardens	Netherlee Primary School	Secondary School
Ormonde Avenue	Netherlee Primary School	Secondary School
Ormonde Crescent	Netherlee Primary School	Secondary School
Ormonde Court	Netherlee Primary School	Secondary School
Ormonde Drive	Netherlee Primary School	Secondary School
Parklands Road	Netherlee Primary School	Secondary School
Randolph Avenue	Netherlee Primary School	Secondary School
Randolph Drive	Netherlee Primary School	Secondary School
Randolph Gardens	Netherlee Primary School	Secondary School
Stamperland Avenue	Netherlee Primary School	Secondary School
Stamperland Crescent	Netherlee Primary School	Secondary School

Source: Active Schools Co-ordinator, East Renfrewshire Culture and Leisure

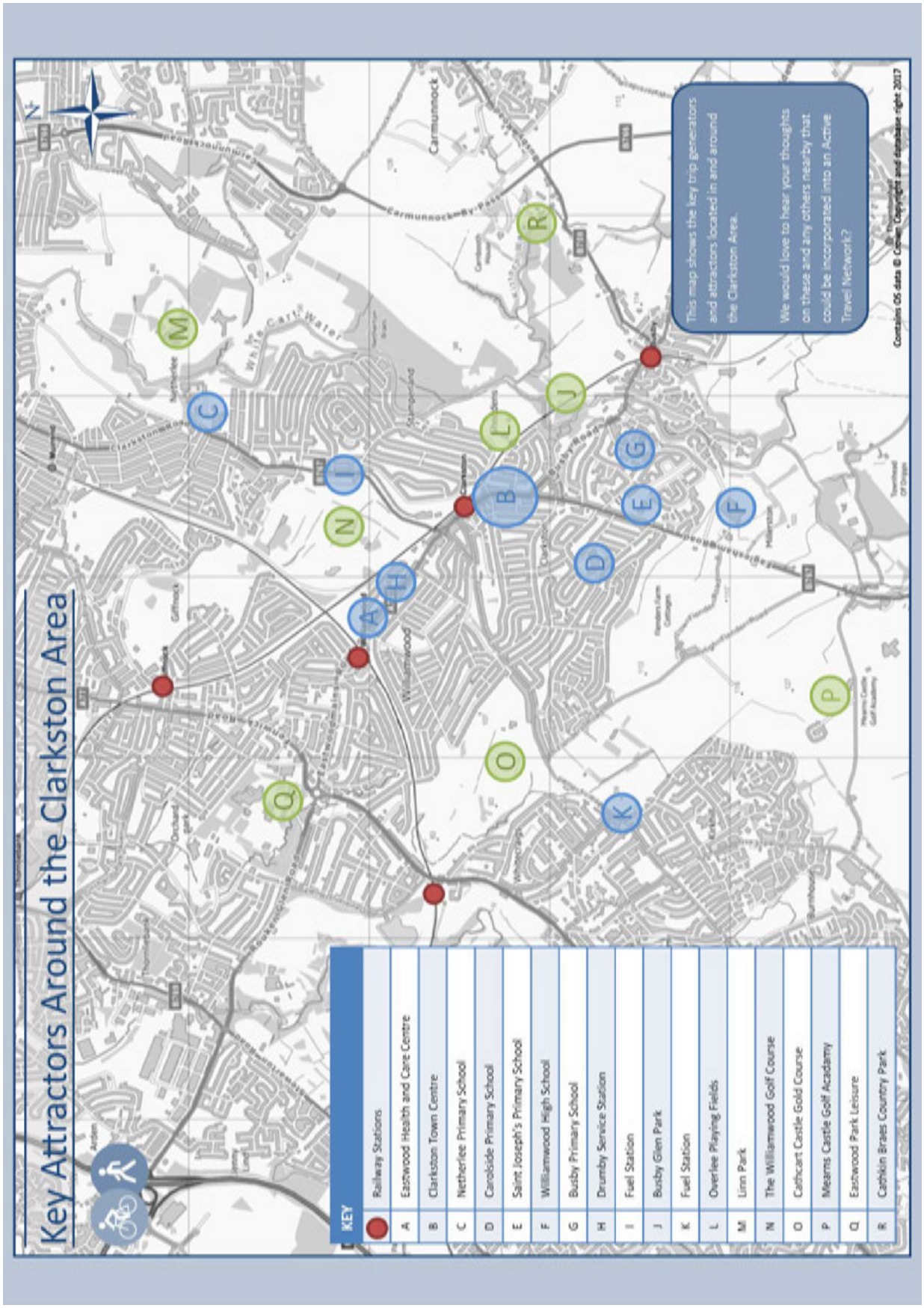
Appendix D - Consultation

Appendix D includes all the data gathered at the public and internal consultations. Due to the large amount of data gathered the appendix has been split into the following sub-appendix:

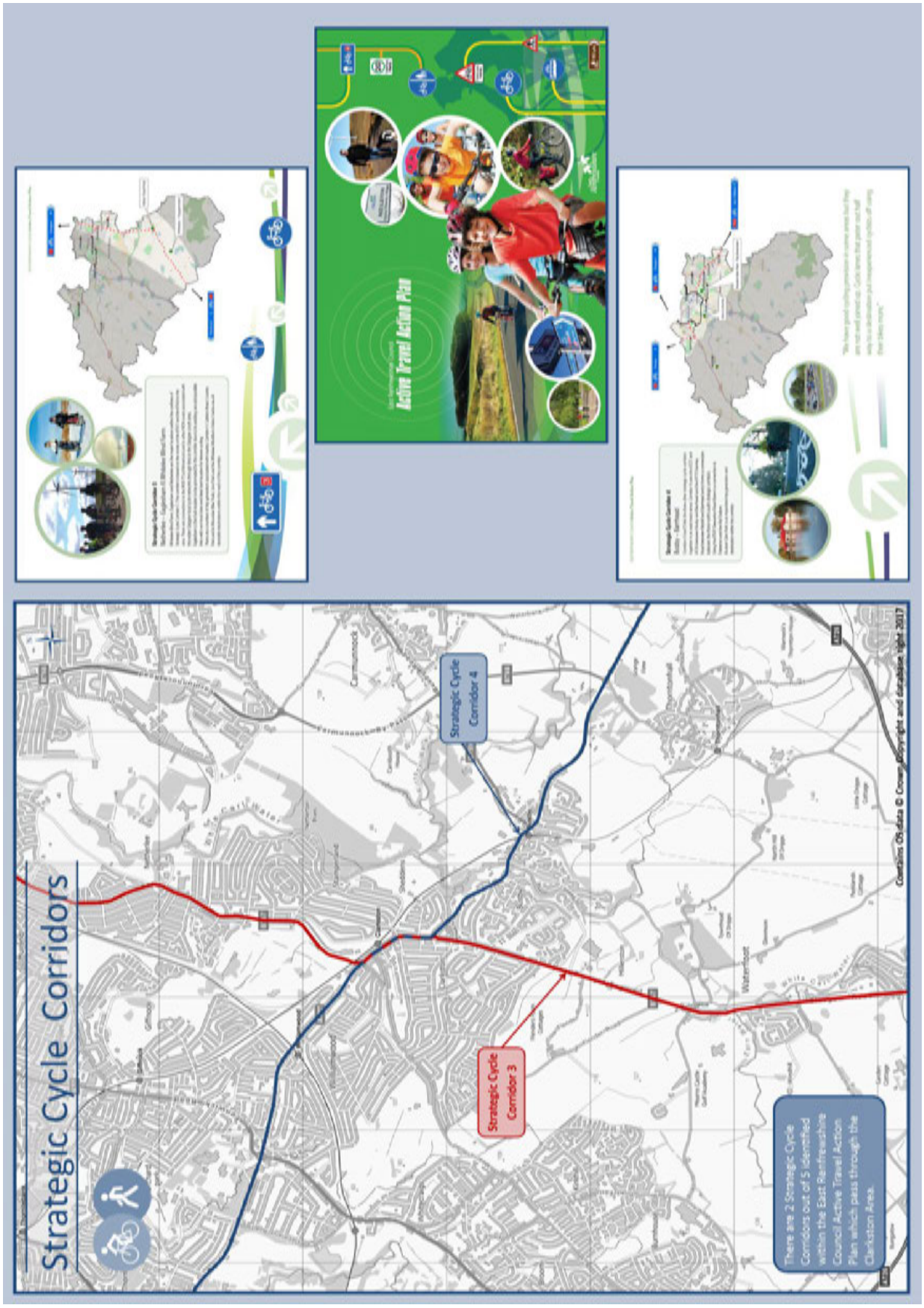
Sub-appendix	Title
Appendix D.1	Information Boards
Appendix D.2	Example Questionnaire
Appendix D.3	Online Placecheck Comments
Appendix D.4	Manual Placecheck Comments

D.1 Information Boards

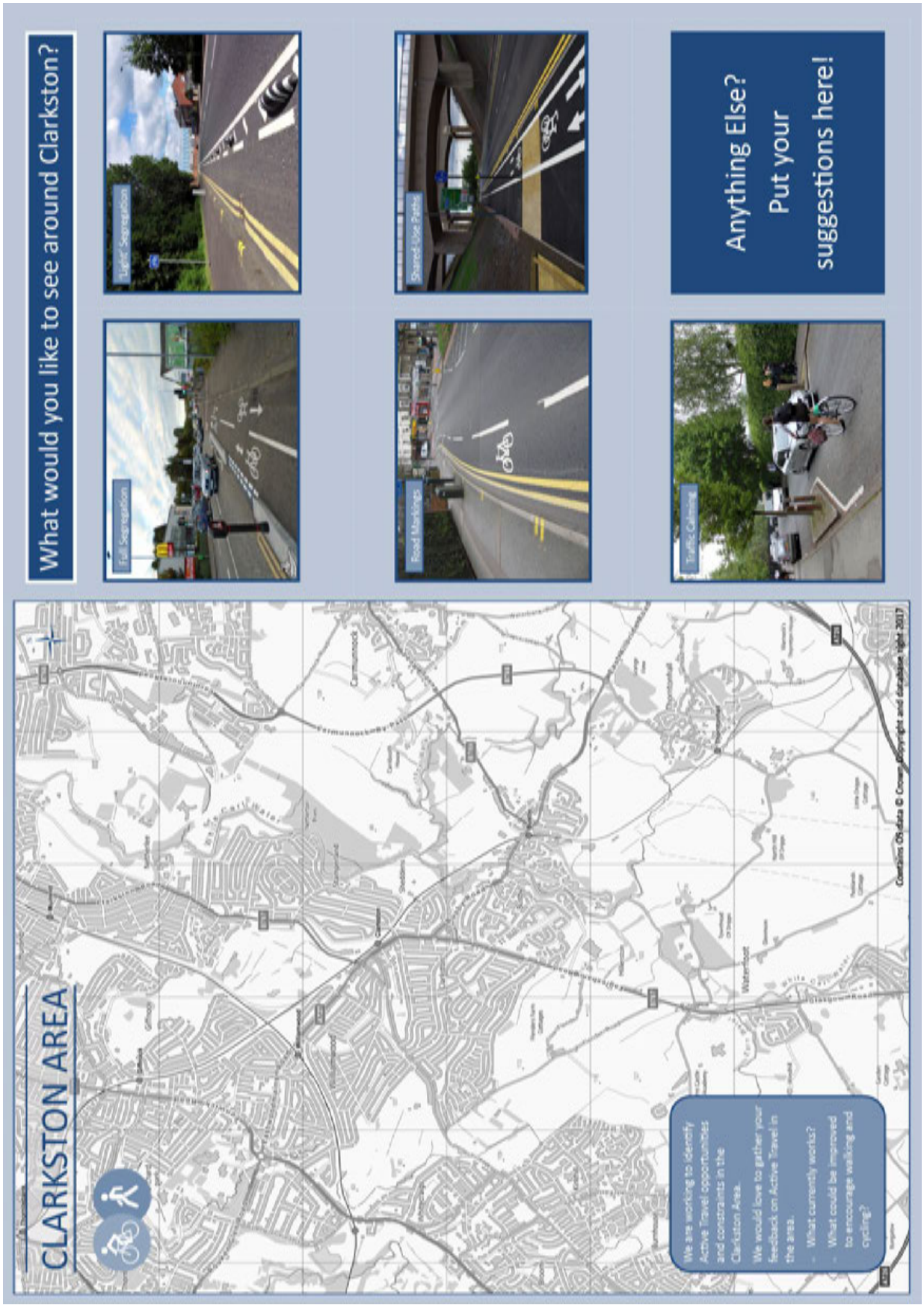
Information Board 1 - Routes Reviewed



Information Board 2 - Key Trip Generators

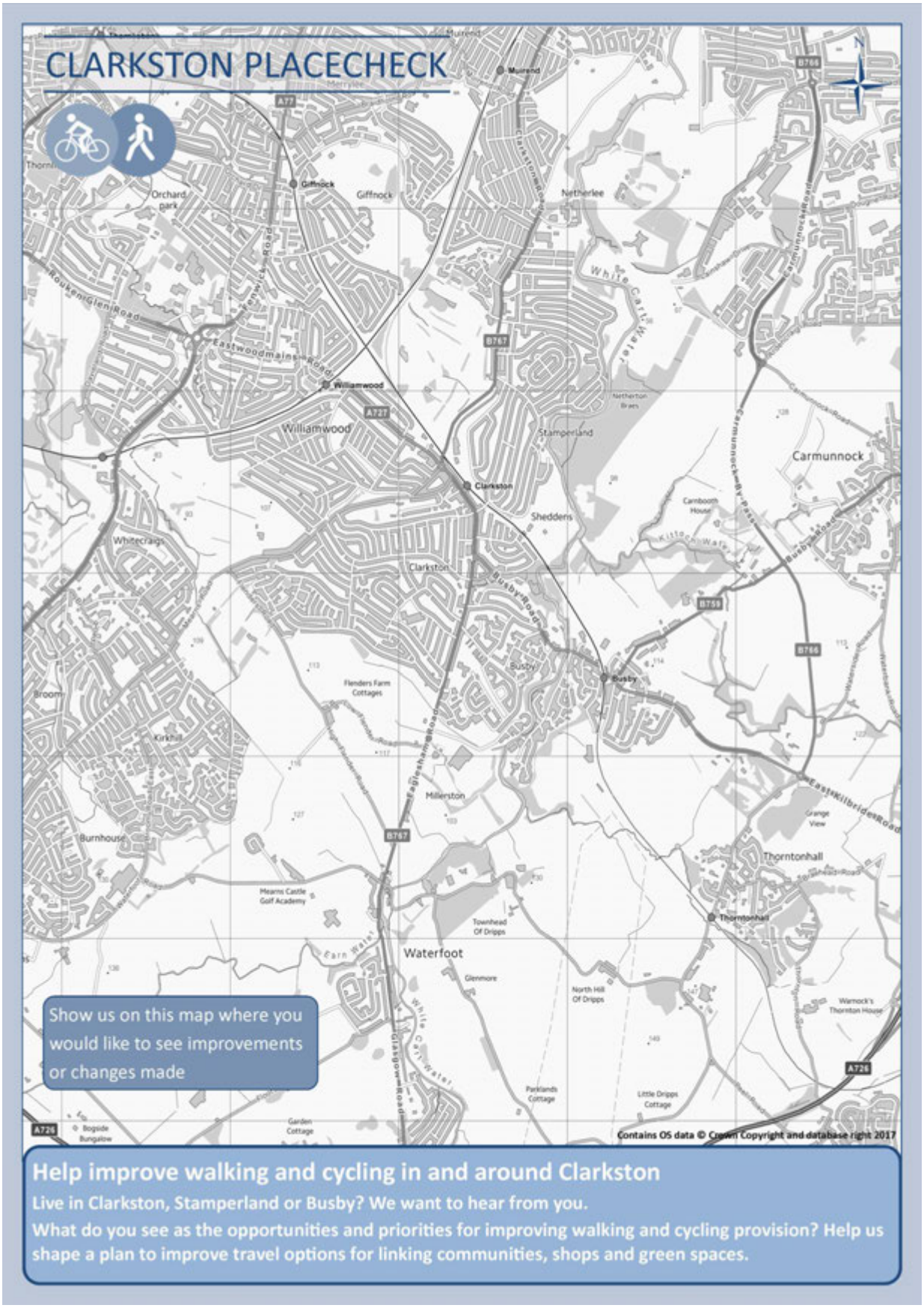


Information Board 3 - Strategic Cycle Corridors



Information Board 4 - active travel network Options

Information Board 5 - Examples of International Best Practice



Information Board 6 - Manual Placecheck

D.2 Example Questionnaire

The 20 completed questionnaires during the consultation event were given due cognisance during evaluation and creation of the action plan.

Help improve walking and cycling in and around Clarkston

Live in Clarkston, Stamperland, Busby or Netherlee? We want to hear from you. What do you see as the opportunities and priorities for improving walking and cycling provision?

Help us shape a plan to improve travel options for linking communities, shops and green spaces.

What do you visit in and around your local area? Do you do this by walking or cycling?

Where do you currently carry out most of your walking or cycling in and around the local area? For instance Linn Park, Busby Glen, etc.

What type of opportunities/facilities would you like to see for improving walking and cycling provision in and around Clarkston? For instance reduced traffic lanes, improved path networks, etc.

Where would you like to see new facilities for walking and cycling, or improvements to existing facilities? Please provide as much detail as possible, e.g. street names, start and end points, or key landmarks.

Do you have any other information, thoughts or ideas on walking, cycling or improvements to public spaces in the Clarkston area that you'd like to include?

D.3 Online Placecheck Comments

Comments Received from the Online Placecheck

Type	Title	Content	Date Added	Latitude	Longitude
Things I don't like	Clarkston toll	Traffic from Eastwood Mains Rd quite often does not stop give or even give way. Have been knocked off here over car bonnet, splat. "driver did not see me" or hi vis jacket	30/08/17	55.791	-4.27849
Things I don't like	busby road raceway	Speed increase due to clearway enforcement 40/ 45 mph uphill to busby and under taking. Cars regularly failing to stop in time at pedestrian crossing. now dangerous to cross and cycle	30/08/17	55.788	-4.27469
Things I don't like	cycle lane entrance	cycle lane entrance obstructed by cemetery maintenance personnel car every Wednesday cycle lane full of leaves and debris seldom passable in autumn, cleared occasionally	30/08/17	55.811	-4.26098
Things we need to work on	cycle lane exit/ finish	blocked by dog walkers cars parked right up to keep left sign	30/08/17	55.806	-4.26817
Things I don't like	poor access to cycle lane	no access to city bound cycle lane from Clarkston rd. (no right turn!) into Netherlee rd.	30/08/17	55.804	-4.26896
Things we need to work on	No provision for cycling	If the road is reduced to one lane each side as proposed, if there is no cycle lane added, then cars will be held up by cyclists going up the hill.	29/08/17	55.789	-4.27574
Things I don't like	Clarkston Toll	This is a nightmare for pedestrians - you basically have to run over it to avoid cars. No safe way to get over it.	29/08/17	55.791	-4.2782
Things we need to work on	Mearns rd.	look at safety of this area as a crossing from Greenwood Rd and Hillview Dr towards Campsie Gardens etc.	23/08/17	55.788	-4.2884
Things we need to work on	white cart	Keep the idea of a new link from Busby Glen to Overlee park on the agenda	23/08/17	55.786	-4.2666
Things we need to work on	track	There is a path from Low Flenders Rd to Golf Academy. Technically cycle able. This is at risk of being lost	23/08/17	55.775	-4.29265
Things we need to work on	pavement	There is potential for short dual use pavement section from Linn park Ave to start of Netherlee Rd. This would allow back route via Stamperland, Netherlee school to Netherlee RD	23/08/17	55.803	-4.26935

Type	Title	Content	Date Added	Latitude	Longitude
Things we need to work on	steps down to path in to Linn Park	Obviously pedestrian but worth looking at potential for cycle route - I use it!	23/08/17	55.802	-4.26574
Things I like	route through Stamperland	This is quiet and should be a preferred route avoiding Clarkston roundabout	23/08/17	55.791	-4.27287
Things we need to work on	Hillview Dr and Busby Rd in to Straw hill Rd	This is a logical route leading through Stamperland. Review r hand turn and crossing from Hillview	23/08/17	55.788	-4.27503
Things I don't like	road from Waterfoot to Clarkston	Very narrow at this point - separate cycle lane only solution	23/08/17	55.776	-4.279
Things I don't like	Bus stop is in narrowest part of road	The bus stop appears to be in the narrowest and most congested location possible. Would this be better placed towards Busby, just beyond the pedestrian crossing?	23/08/17	55.79	-4.27753
Things I don't like	Parking in contraflow cycle lane	The contraflow cycle lane along Netherlee Rd is great. Not so good are the drivers who park in it when visiting the cemetery resulting in cyclists having to move out into the opposing lane, sometimes at the brow of the hill.	23/08/17	55.807	-4.26733
Things I don't like	Another central island/pedestrian refuge pinch point	Another danger point when cycling creating risk from overtaking traffic.	23/08/17	55.783	-4.27557
Things we need to work on	Fast narrow road through Busby	Very unpleasant link between Busby and Clarkston for cycling.	23/08/17	55.781	-4.26394
Things we need to work on	Busy uphill road from Clarkston Toll to Sheddens Roundabout	Two lanes given to cars in each direction. Risk of car door opening when cycling up the hill. Space should be taken out to create segregated bidirectional cycle lane through Clarkston to enhance safety and local amenity. There is a station car park and also parking above the shops, so there is no argument for retaining on-road parking here.	23/08/17	55.79	-4.27675
Things we need to work on	Busy fast road	Needs segregated cycle space along the length to join up with the Glasgow boundary. A busy road at all times of day.	23/08/17	55.794	-4.27589
Things I don't like	End-on car parking by shops	Leads to drivers reversing out with no clear view of the road.	23/08/17	55.784	-4.27497
Things we need to work on	Three schools here (St Joseph's, Carolside, Williamwood)	Absolutely no provision for teachers, pupils, parents or visitors cycling to any of these. 'Safe Routes to Schools' has not reached this part of the world.	23/08/17	55.78	-4.27714

Type	Title	Content	Date Added	Latitude	Longitude
Things I don't like	Pinch point on approach to Sheddens Roundabout from Eaglesham Rd	Road narrows on immediate entry to roundabout. Drivers frequently attempt to overtake on the approach, and then cut in left. Could be solved by a cycle bypass lane.	23/08/17	55.786	-4.27497
Things I don't like	Parking immediately after Sheddens Roundabout	Sideswiped by driver who overtook me after the roundabout, spotted a parking space and left hooked across my path.	23/08/17	55.786	-4.27467
Things I don't like	Clarkston Toll	Busy roundabout which is a major obstacle for cycling. I have been knocked off my bike here when on the roundabout by a car approaching from Eastwoodmains Rd. Driver 'did not see' me! Needs redesign and calming.	23/08/17	55.791	-4.27842
Things I don't like	Right hand turn lanes and traffic islands creating pinch points	Hatched zones, right hand turn lanes and islands create pinch points between Clarkston Toll and Eastwood Toll. Cause risk to cyclists from overtaking traffic cutting in. Unnecessary waste of space which should be used for segregated cycle lanes.	23/08/17	55.793	-4.28387
Things we need to work on	Lack of cycle space/lanes	This busy carriageway through Clarkston is missing cycle space for road users. By creating cycle space here, a safe route could be established through the planned garden spaces in Clarkston, making it easier and more pleasant for people to visit and joining up to the main Eaglesham road where students would be able to safely cycle to school.	23/08/17	55.789	-4.27643
Things I don't like	Bridge is too narrow	There is barely enough space for the busy traffic that goes through here and no space for pedestrians and cyclists. The bridge should be widened or an adjacent space created for cyclists and pedestrians.	23/08/17	55.791	-4.27815
Things we need to work on	Cycle Lanes/Space	This busy carriageway that links the main area of Netherlee to Clarkston school is missing cycle space. Any refurbishment of this route should prioritise a safe route for cyclists - with the exception of the narrow railway bridge, there is space for this and it would encourage cycling, especially for students and those looking to enjoy the planned cleaner 'garden space' in Clarkston.	23/08/17	55.796	-4.27338
Things I like	Dedicated Cycle space	It's great that this is here; it just doesn't join onto anything in Netherlee or Clarkston!	23/08/17	55.805	-4.26866
Things we need to work on	Cycle Routes	This flat and wide piece of carriageway that links the main catchments of Williamwood High school to Busby is missing cycle space for the students at the school. Any refurbishment of this route should prioritise a safe route for cyclists.	23/08/17	55.781	-4.27669
Things we need to work on	New local pathway	Woodyett Park Residents Association has voluntarily partially built a new access path through the woodland area as a route from Field Road to Westerton Avenue, bypassing the main East Kilbride road normally used by school children who walk from Easterton/Westerton to Williamwood school. No assistance has been offered by ERC in creating this pathway; however it's hoped that it can be combined with any future plans to	22/08/17	55.778	-4.26641

Type	Title	Content	Date Added	Latitude	Longitude
		complete it.			
Things I don't like	Parking on pavement	Field Road is the main access road to a large number of residential properties and to the industrial estate. It has a narrow single pavement on one side only. This is used daily by cars parking on the pavement by the Busby Hotel visitors making it difficult, dangerous and sometimes impossible for residents to walk other than on Field Road itself.	22/08/17	55.78	-4.26613
Things I don't like	narrow bridge	cycled over this a few times and had to hold my ground in the middle of the lane as the bridge over the railway is narrow yet cars still try to pass you, even with a toddler in the rear bike seat. Even when walking over the bridge there is no pedestrian pavement on the left-hand side walking towards Stamperland or at least it is ridiculously narrow	11/08/17	55.791	-4.27804
Things I like	Dedicated cycle lanes!	Totally brilliant! Just wish that segregated cycle lanes went beyond Netherlee Road onto Clarkston Road all the way to Eaglesham to make it easier for children and people not so confident on their bikes to cycle.	11/08/17	55.806	-4.26804
Things I like	Linn Park	Great for kids for cycling. But we can't get here on our bikes from Mearns Road because the road is too fast/busy and we have to cycle on the pavement. You have to cycle on the pavement as a right turn into Linn Park coming from Clarkston is literally impossible because of the traffic island in the middle of the road.	11/08/17	55.804	-4.26857
Things we need to work on	dropped kerbs	Generally for anyone who needs a dropped kerb wheelchair users mainly, but buggies to the state of the dropped kerbs all along Mearns Road from Flenders Road to Clarkston Toll are dire! Making it very difficult for people with reduced mobility to navigate. The camber of some of the junctions combined with awful uneven kerbs is very dangerous!	11/08/17	55.787	-4.2887
Things I don't like	No pavement for pedestrians	I walk to Greenbank Gardens with my children. This small section of Flenders Road has no pavement on either side making it very dangerous. It is also very steep heading in the direction of Greenbank Gardens making it slow going for children or less able people meaning traffic can be waiting behind people back towards the junction. Cars can speed up to the junction coming from Greenbank Gardens making the road quite scary to negotiate for pedestrians.	11/08/17	55.785	-4.29786
Things we need to work on	Overlee Park building	This building looks like it could be re purposed as working public toilets for the park; a cafe; a children's resource centre; a park warden resource centre like Rouken Glen a bike hire place..... Lots of things. At the moment it is derelict and a bit of an eyesore.	11/08/17	55.788	-4.2698
Things I like	the view	This is another amazing view but is being obscured by trees	11/08/17	55.789	-4.27945

Type	Title	Content	Date Added	Latitude	Longitude
Things we need to work on	Reducing school traffic	As the parent of 2 children, one of which is P1 age, I would like my child to cycle to school at St Joseph's Primary from Mearns Road, along Busby Road and onto Eaglesham Road. At the moment the only safe way of doing this is on the pavement and even then there are so many roads to cross and narrow sections of pavement this is difficult. Plus cycling as an adult with a child on a tag-along-bike or a bike trailer on a pavement is not fair to pedestrians. Generally the infrastructure to encourage people to travel by more active means needs to be reconsidered on this stretch of road.	11/08/17	55.787	-4.27484
Things we need to work on	Segregated cycle land between Linn Park and Eaglesham	This road is fast and narrow at points, with on street parking making the road even narrower at points. It is also a steep hill heading towards Clarkston from Linn Park so cycling can be slow going. There is a great cycle lane from Linn Park into Mount Florida. It would be great to have an extended (possibly segregated) cycle lane from Linn Park up to Williamwood High School through Clarkston maybe further to make local journeys by bicycle more safe and realistic for children and others.	11/08/17	55.798	-4.27299
Things I don't like	Traffic too fast for family cyclists	We are a family of four. We have a rear bike trailer for our two children (2 years and 4 years) and will soon want to use a tag-a-long bike for the eldest. We would cycle to Greenbank Gardens (and most places locally but there is no space for cycling safely with young children along this stretch of Mearns Road. The road is fast and traffic is often impatient. Segregated cycle lanes to allow all types of cyclist to cycle safely and confidently would be great.	11/08/17	55.787	-4.2896
Things we need to work on	Very narrow road	Lots of cyclists and walkers come this way. Foot path is narrow to the point where I am nervous walking along there I tried cycling this once down through Waterfoot and have never got on my bike again after this. It is a main artery down to the bypass. If you wanted to cycle on some of the small back roads from Waterfoot they are difficult to get to along this road as it is certainly too dangerous to take children or less experienced cyclists on bikes.	11/08/17	55.775	-4.27995
Things I like	Footpath and bridge over the White Cart River.	Connecting back end of Clarkston to Busby. Nice walk to Busby hotel. Would be better if paved or wood chipped as it gets very muddy. Would also be nice to extend this path all along the White Cart River. down through Waterfoot for walking if feasible.	11/08/17	55.778	-4.26963
Things we need to work on	No safe crossing from play park		11/08/17	55.789	-4.28514
Things we need to work on	No safe crossing to play park		11/08/17	55.789	-4.28463

Type	Title	Content	Date Added	Latitude	Longitude
Things I don't like	No safe pedestrian crossing	No safe pedestrian crossing	11/08/17	55.791	-4.2781
Things I don't like	No safe pedestrian crossing	No safe pedestrian crossing	11/08/17	55.79	-4.27731
Things I don't like	No safe pedestrian crossing	We live on Eastwoodmains Rd and there is no safe route for pedestrians to the shops/station/school.	11/08/17	55.79	-4.27849
Things I like	Hidden away Viaduct	The railway viaduct is brilliant although hidden away. Could make more of this?	10/08/17	55.786	-4.26918
Things I like	Greenbank is a great local attraction.	Access hidden away if passing along Mearns Road. Better signage for routes in and out. Improved cycle and pedestrian routes in and out	10/08/17	55.777	-4.29151
Things we need to work on	Great wee play park in need of some TLC	Ageing playpark in need of some TLC. Gate doesn't lock, swings outside fenced area.	10/08/17	55.789	-4.28514
Things I like	The view!	View from the top of the hill, although trees are now beginning to obscure it	10/08/17	55.79	-4.29741
Things I like	Entrance to Linn Park	Cycling in Linn Park from Netherlee is great, however is does require cycling on the pavement to enter unless you are happy cycling on Clarkston Rd., which is busy. It would be really great if there was a bridge from Linn Park to Overlee park which would allow Williamwood High School Students from Netherlee to cycle through without having to go onto Clarkston Rd. or round Clarkston Toll. It would be a safer cycle route to school.	10/08/17	55.804	-4.26926
Things I don't like	Bottleneck	This is a congested wee side road. Busy with cars, which struggle to turn right. The pavement is narrow and only on one side of the road. Pedestrians crossing at the junction at Busby Road often choose not to use the pedestrian crossing here, seems that the junction needs some attention to work better,	09/08/17	55.789	-4.27428
Things we need to work on	Dangerous for cyclists	This can get really congested and vehicles come from all directions; lots of junctions cars reversing out in to the road from parking spaces. 30 mph limit doesn't seem appropriate. Also makes a really difficult road to cross as a pedestrian.	09/08/17	55.785	-4.27495
Things we need to work on	Poor attempt to spruce up central reservation	The wee trees in plant pots through the central reservation are too small in scale for where they are. They add nothing to the town, are liable to getting vandalised. Not fit for purpose.	09/08/17	55.789	-4.27596

Type	Title	Content	Date Added	Latitude	Longitude
Things we need to work on	Right turn in to Mearns Road	This right turn gets really busy; you rely on pedestrians crossing to allow a gap to turn. Vehicles inevitably speed round here, making it dangerous for pedestrians crossing Mearns Road. Traffic backs up on to the roundabout too. It isolates pedestrians to one side of Busby Road too. Not anything friendly!	09/08/17	55.79	-4.27723
Things I don't like	Clarkston Toll	This junction is not good for anybody, cars, pedestrians or cyclists. The junction is busy, cars approach it fast, it is very difficult to cross the road, and it takes up a huge amount of space that could be used to make it more inviting for pedestrians.	09/08/17	55.791	-4.27806
Things I like	Busby Glen	Lovely natural woodland and gorge	08/08/17	55.783	-4.26531

Source: http://www.placecheck.info/maps/view/index.php?display=comments&map=54

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D.4 Manual Placecheck Comments

Type	Title	Content	Date Added	Latitude	Longitude
Things we need to work on	1	Link to St Ninians School via Eastwood Park. Further links connecting Eastwood, Golf Course, Williamwood, Macastan Petrol Station. Routes as crow flies.	23/08/17	55.79461	-4.28731
Things I don't like	2	Crossing location is in a poor location for vulnerable road users. High traffic flows.	23/08/17	55.78988	-4.27716
Things we need to work on	3	Possible railway crossing would be a good school connection.	23/08/17	55.80141	-4.27927
Things I like	4	The Tolls – Route between them for Walking and Cycling.	23/08/17	55.79658	-4.30154
Things we need to work on	5	Link between Busby Glen and Overlee Park missing.	23/08/17	55.78562	-4.26739
Things I don't like	6	Missing Link to Glasgow	23/08/17	55.80327	-4.29491
Things I don't like	7	Limited Parking for Bowling Club	23/08/17	55.79143	-4.28062
Things I like	8	Privately owned land by Woodyett Park Residents Association. Do not want cyclists and equestrians using it!!	23/08/17	55.77806	-4.26514
Things I like	9	Link to Waterfoot. Shared Use footway or off-road facilities would be best for this route.	23/08/17	55.77841	-4.27803
Things I like	10	Hillhead Drive to Stamperland is good link.	23/08/17	55.78823	-4.27489
Things we need to work on	11	Steps at this location. Would be best if site was reviewed and made more accessible to all potential users.	23/08/17	55.80011	-4.26621
Things we need to work on	12	Core accessible route. Through link for cyclists and pedestrians.	23/08/17	55.77527	-4.29173
Things we need to work on	13	Cycle route exists. Segregation would be best.	23/08/17	55.804	-4.26938
Things we need to work on	14	Traffic issues at school times. Mainly due to build-up of traffic when parents are dropping off kids.	23/08/17	55.78248	-4.28104
Things I don't like	15	Road needs upgrade. Can't deal with capacity.	23/08/17	55.77751	-4.27847
Things I don't like	16	Block off to through traffic.	23/08/17	55.77759	-4.26282
Things we need to work on	17	Busby Primary School – One way to improve traffic flow.	23/08/17	55.78114	-4.27117

Type	Title	Content	Date Added	Latitude	Longitude
Things we need to work on	18	Station Road – Double yellows at junction to prevent unsafe parking.	23/08/17	55.78008	-4.26122
Things I like	19	Shared use footway would be beneficial in this location to improve safety.	23/08/17	55.80371	-4.26932
Things I don't like	20	Sight Lines at junction and camber of road surface is poor.	23/08/17	55.78611	-4.27479
Things I don't like	21	Mearns Road – Resurface/widen.	23/08/17	55.78879	-4.28211
Things I like	22	Greenbank Gardens via Flenders Road potential route.	23/08/17	55.7839	-4.29621
Things I like	23	Core path to Golf Course.	23/08/17	55.78866	-4.30183
Things we need to work on	24	Possible tunnel/underpass to make railway crossing safe.	23/08/17	55.80184	-4.27901
Things I don't like	25	Clarkston Toll – South side footpath is too narrow. Surfaces don't encourage walking or anything. Feels too dangerous being close to speeding traffic/buses. To cross north side is inconvenient. So I drive 0.5miles to town.	23/08/17	55.79369	-4.27505
Things I don't like	26	Suddenly the Cycle lane disappears! When I am driving I am concerned about safety of cyclists – I would like to cycle but it's too dangerous.	23/08/17	55.80845	-4.27204
Things I don't like	27	Cars constantly stop in the cyclists advanced stop line at signal controlled junctions. Let's differentiate lights for cars and cycles.	23/08/17	55.80872	-4.27192
Things I don't like	28	Unsafe for cycling	23/08/17	55.8086	-4.27201
Things I don't like	29	Crossing unsafe for cyclists/pedestrians and motorised road users.	23/08/17	55.78812	-4.27483
Things I don't like	30	Awkward pedestrian crossing signal attached to button not straight ahead. No visually impaired practicality.	23/08/17	55.78852	-4.2752
Things I don't like	31	Road (Twenty's Plenty) not enforced. Need traffic restriction/flashing speed signs.	23/08/17	55.79686	-4.26369
Things we need to work on	32	Open up short walking/cycling links. One for walking and One for cycling.	23/08/17	55.79903	-4.26665
Things we need to work on	33	Improve link to the park. Make a ramp (steps currently). Been raised before.	23/08/17	55.79598	-4.26284
Things we need to work on	34	Improve cycling connection.	23/08/17		

Type	Title	Content	Date Added	Latitude	Longitude
Things I don't like	35	Knocked off bike here on roundabout. Traffic calm the junction/raised table and reduce traffic speeds.	23/08/17	55.79064	-4.27861
Things I don't like	36	Left back in front of cyclist by car turning in front of cyclist for parking space. Segregated cycle lane using on street parking. Cycle lane behind parked cars.	23/08/17	55.78593	-4.27472
Things I don't like	37	Knocked off bike/close call with vehicle coming out from side road.	23/08/17	55.78364	-4.27541
Things we need to work on	38	Open up as Safe Routes to School.	23/08/17	55.79837	-4.26685
Things I don't like	39	Traffic islands that create pinch points for cyclists. Remove traffic islands, reduce carriageway width to 2 Lanes only and add a segregated cycleway.	23/08/17	55.79343	-4.28549
Things I like	40	Active Travel Route between comment 33 and 40. Upgrade the White Cart Way and Sheddens to Lyn Park and extend to Waterfoot and Glasgow.	23/08/17	55.7907	-4.26748
Things we need to work on	41	Wheeling Ramps on bridges	23/08/17	55.78083	-4.26229
Things I don't like	42	High Flenders Road Link – Surfacing Poor condition.	23/08/17	55.77731	-4.28839
Things we need to work on	43	Continuation of route mentioned in comment 12. Old Right of Way.	23/08/17		
Things I don't like	44	Route to Humble Road But often extremely muddy/water logged.	23/08/17	55.76749	-4.30872
Things we need to work on	45	Cycle path on pavement would be helpful at this stretch.	23/08/17	55.7716	-4.28165

Source: Manual Placecheck Survey Feedback, 2017

Type	Title	Content	Date Added	Length
Things we don't like	Purple Line	Parking 90 degrees to footway causes issues when cars reverse out of parking spaces. Change Layout of Car Parking	23/08/17	83m
Things we need to work on	Yellow Line	Widen footway. Create Shared use/segregated cyclepath and footway.	23/08/17	1140m
Things we don't like	Red Line	Feel Unsafe as cyclist. Need segregation or alternative treatment	23/08/17	4240m

Source: Manual Placecheck Survey Feedback, 2017

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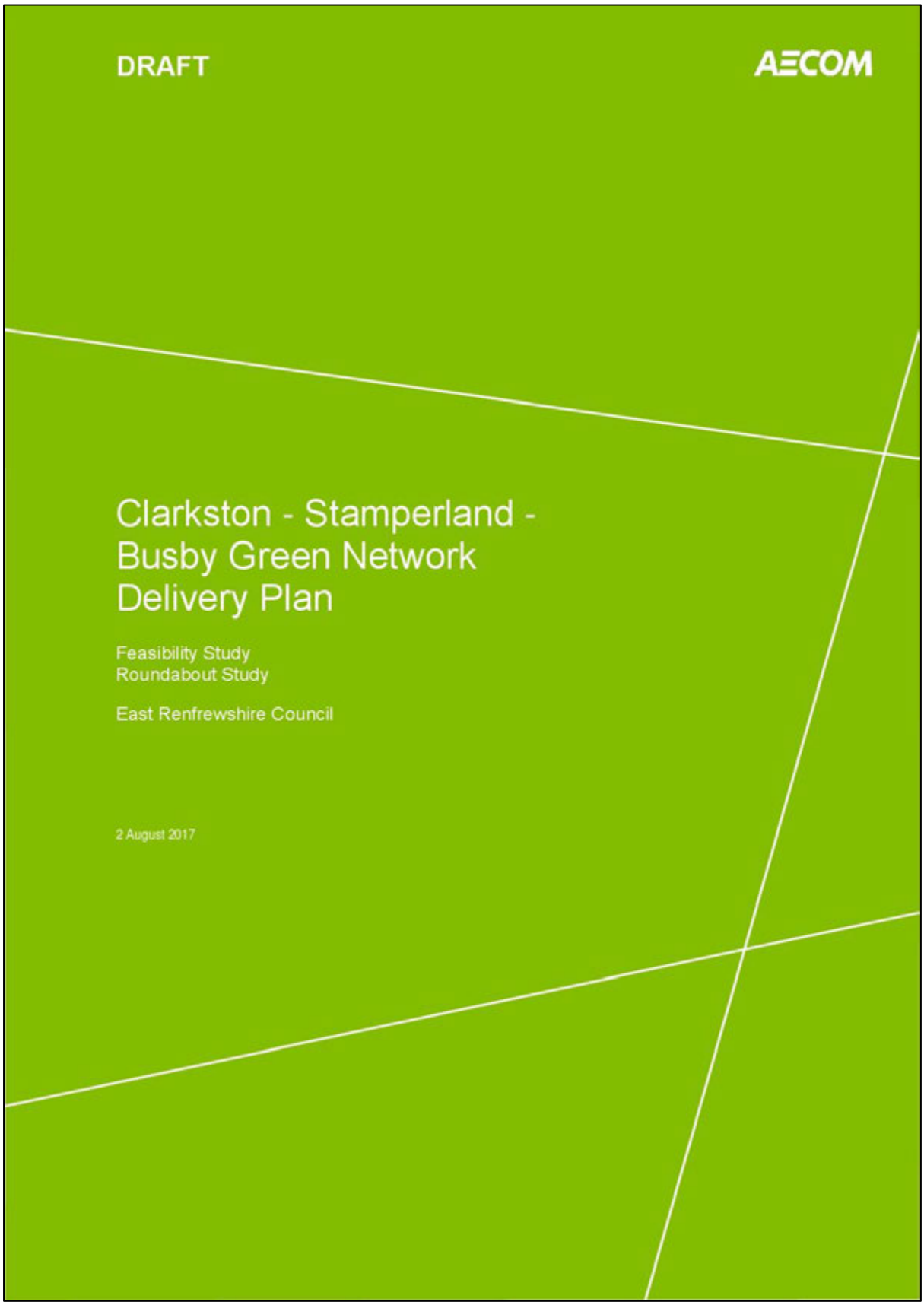
Appendix E Roundabout Study



Clarkston - Stamperland - Busby Green
Network Delivery Plan

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Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position

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Clarkston - Stamperland - Busby Green
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Table of Contents

Figures

Tables

Clarkston - Stamperland - Busby Green
Network Delivery Plan

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1. Introduction

This preliminary Technical Note outlines potential options for incorporating cycling infrastructure on existing roundabouts, which could be considered for the roundabouts within Clarkston. This Technical Note contains examples of roundabout design techniques and innovative solutions which prioritise active travel by removing barriers to walking and cycling at roundabout junctions.

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5

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2. Background

Integration of active travel at roundabouts has evolved over recent years and has been very much led by pioneering Dutch-style roundabouts, which are frequently cited as the most successful examples for cycling roundabout infrastructure. However, the effectiveness of these schemes can be tempered by incorrect application and implementation within a given setting. To minimise this risk, designs must respond to their local context, requirements and critical details. Such responses may include measures such as the provision of a buffer space between the roundabout and cycle lane crossing, and carefully considered cycle priority crossings.

The effectiveness of a scheme in Clarkston would be complimented by behaviour change measures for full and seamless integration into people's active travel journeys.

Each design, discussed below, has a number of pros and cons, which have been summarised with web-links and images included. Not all examples are directly applicable to Clarkston, but hopefully there are aspects of each that are relevant in some way. Designs should not be simply implemented 'off the shelf' but should be carefully considered or adjusted as appropriate to the particular context.

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6

3. Cycle Friendly Roundabouts in the Netherlands

A brief summary below highlights the different types of Dutch-style roundabouts currently in use in the Netherlands and the UK.

3.1 Turbo Roundabout

A typical turbo-roundabout is generally several lanes wide and has a particular spiral shape. Turbo-roundabouts are used to allow traffic to flow around the roundabout at a higher speed than typically found on a standard Design Manual for Roads and Bridges (DMRB) recommended Spiral Roundabout[1]. Physical segregation of vehicular lanes results in increased speeds but eliminates potential lane change collisions. However, increased vehicular speeds increases the difficulty for non-motorised users, such as cyclists, to use the junction. Examples of typical turbo roundabout layouts are shown in Figure 1 and Figure 2.

Figure 1 - Typical small Dutch Turbo-roundabout

Figure 2 - Typical large Dutch Turbo-roundabout

In the Netherlands, cyclists on turbo-roundabouts are generally segregated from general traffic in advance and often grade separated from the roundabout throughout the junction. The Dutch Cyclists' Union recommend that crossings on high speed and multi-lane junctions are to be grade separated, particularly in urban areas.

A turbo-roundabout has been constructed in the UK in Bedford following a design competition through Sustrans and Department for Transport Cycle Safety Fund. Here a pre-existing standard roundabout was reconstructed as a turbo-roundabout with improved walking and cycling infrastructure, including zebra crossings and off-carriageway cycling.

3.2 Standard Roundabout without Priority for Cyclists

In rural areas, 'Standard' roundabouts in the Netherlands are typically one lane wide with occasional overrun areas, similar in concept to compact roundabouts found in the United Kingdom. The roundabouts are kept small, so that the diameter is constrained and tight radii decrease vehicle speeds.

Typically, when a standard roundabout is constructed outside built-up areas, cyclists do not have priority. Often cyclists are provided crossings remote from the main junction. The relatively low expected speeds of traffic and shorter crossing distances help cyclists cross the carriageway. To make it clear to cyclists that they do not have priority in the vicinity to the roundabout, the shape of the cycle tracks is typically not circular, crossing the carriageway perpendicularly as shown by Figure 3 below. Generally, the priority of motorised vehicles using the roundabout is emphasised by clear 'Give Way' road markings and traffic signs.

[1] Design Manual for Roads and Bridges, 1997. TA78/97, Design of road markings at roundabouts. London: Department for Transport.

Figure 3 - Typical roundabout without cyclist priority

3.3 Standard Roundabout with Priority for Cyclists

Standard roundabouts (Figure 4) in urban areas generally comprise segregated cycle facilities which follow the circular trajectory of the roundabout. In contrast to junctions discussed above, the cycle facilities form part of the junction and cyclists are given priority, so motorised vehicles give way to cyclists.

Figure 4 - Standard roundabout with cyclist priority

One important feature of this type of roundabout is that it has a compact single lane for motorised traffic, which aids reducing vehicle speeds. It is also recommended that approximately one lane width in segregation is provided between motorised traffic and cyclist traffic.

It must be noted that this is the type of roundabout that Transport for London is testing for future use on the cycle superhighways. Additional details for the above roundabouts can be found here:

https://bicycledutch.wordpress.com/2013/05/09/a-modern-amsterdam-roundabout/

3.4 Variations of Dutch Style Roundabout

The application of the Dutch-style roundabouts with cyclist priority can be varied to meet local requirements and configuration. For example, in Assen, Netherlands various adaptations have been implemented, as shown in Figure 5.

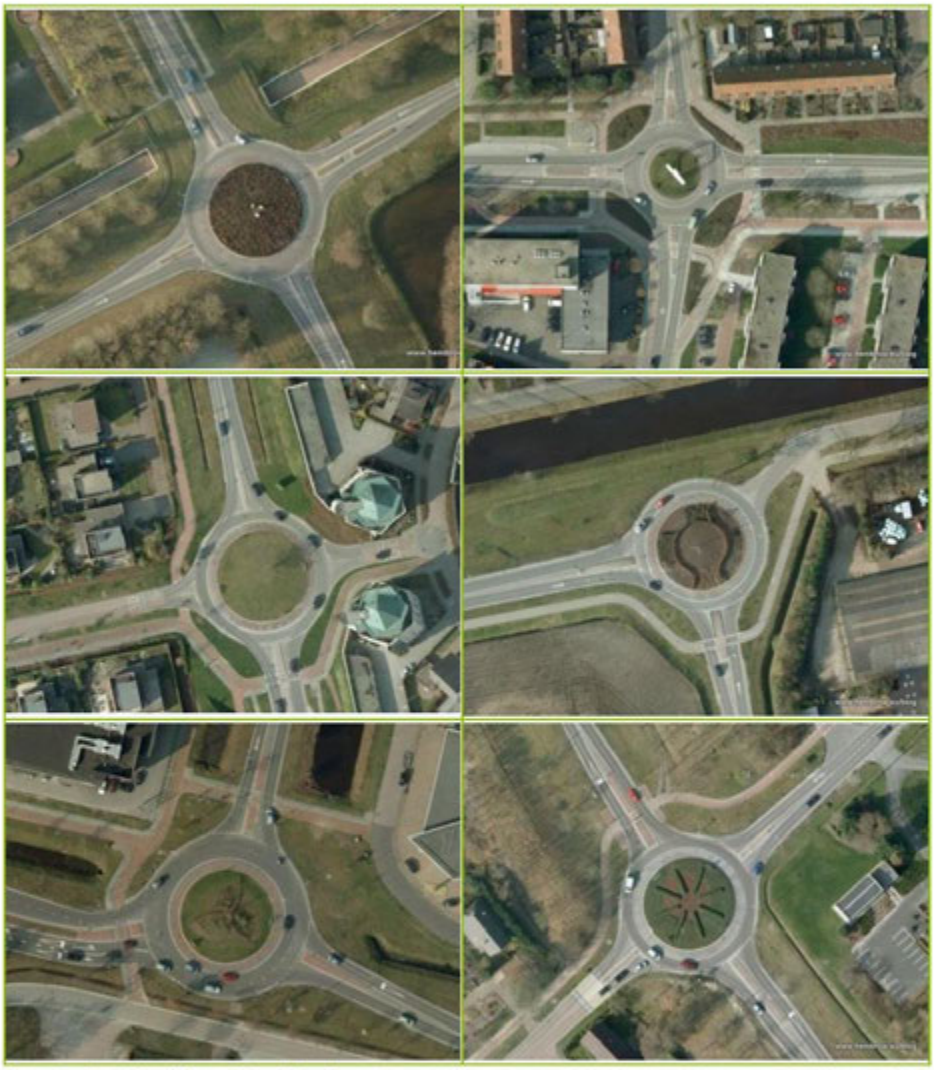

Figure 5 - Examples of Assen Roundabout Layouts

3.4.1 Grade Separated Roundabout

The 'Hovenring' example (Figure 6) is frequently cited as a precedent (elevated cycle bridge), but many examples raise the road instead or slightly lower the cycling infrastructure. This has the potential to include more meaningful public realm interventions for example playgrounds / planting etc. if they are designed correctly.

Figure 6 - Hovenring Image

It must be noted that underpasses need to be dealt with very carefully in the above scenario, to minimise perceived risk and danger especially at night with inadequate lighting. This design is not always appropriate, but could potentially be better for pedestrians and place-making than the Hovenring example.

An example of the underpass scenario found in the Netherlands can be found here:

https://bicycledutch.wordpress.com/2015/09/15/a-monumental-bicycle-roundabout-in-arnhem/

Further information in regards to the Hovenring elevated cycle bridge can be found here:

https://hovenring.com/design-2/

3.4.2 Roundabout By-Pass

The roundabout by-pass, as shown by Figure 7, is a similar design concept to the above grade separated cycle friendly roundabout, but is a more recent introduction in the Netherlands, with more sweeping and gentle curves and slopes. The article providing more information can be found using the following link:

Figure 7 - Typical roundabout by-pass layout

https://bicycledutch.wordpress.com/2016/11/15/a-roundabout-bypass-in-goes/

3.5 Dutch-style Roundabout Summary:

A brief summary below highlights the different design ideas that could be used in Clarkston, following the Dutch-Style cycle friendly roundabout ideas identified previously.

The Transport Research Laboratory (TRL) published a report safety Dutch-style roundabout (Figure 8) with cyclist priority. The report resulted from a trial TRL undertook as part of a programme trials to aid the implementation of London Mayor's Vision for Cycling 2013.

The standard roundabout layout with priority for cyclists was used during the trials, as shown in Figure 8 - Roundabout Layout for TfL Testing. It draws upon the CROW (Netherlands) cycling infrastructure design guidance, and it utilises short turning radii to reduce speeds and a single lane for motorised vehicles. Cyclists are segregated from the carriageway providing priority for cyclists.

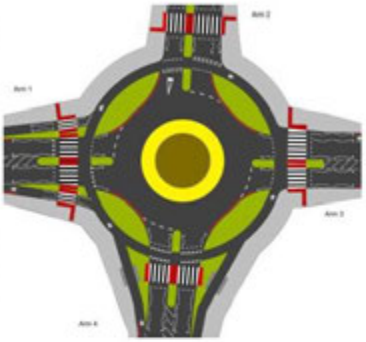

Figure 8 - Roundabout Layout for TfL Testing

The key findings of the trial are summarised below in Table 1:

Table 1 - Summary of TRL Findings

Majority of cyclists utilised the orbital cycle track	Compared to an ordinary roundabout, majority of non-motorised users found it easier to use
Cyclists were prepared to give way to pedestrians	Almost all participants thought cyclists would benefit from this style of roundabout
94% of drivers said they would give way to cyclists crossing	Majority of participants rated the roundabout as easy or very easy to use

(Transport Research Laboratory, 2015)

The full TRL report can be found here:

https://trl.co.uk/media/839260/ppr751_dutch_roundabout_safety_v1.pdf

4. Cycle Friendly Roundabouts in the United Kingdom

A summary is provided below highlighting schemes which have been implemented or are currently in planning within the United Kingdom. These been designed / constructed utilising the standards prescribed by the Department for Transportation and regional guidance, and these examples could be adapted for use in Clarkston for a cycle friendly roundabout.

4.1 Old Street Roundabout, London

Proposals to adjust a pre-existing roundabout on Old Street, London incorporate improvements to public space, walking and cycling. The proposals included closing part of the circulatory carriageway, effectively removing the roundabout and replacing it with two signalised junctions shown in Figure 9 overleaf.

Figure 9 - Proposed Layout for Old Street

As part of the proposal, the remainder of the junction would be redesigned to be simple and straight-forward to use. New cycle lanes, marked green in Figure 9, and crossings would be provided throughout the junction, some of which would be segregated from vehicles, and cycle-only signals would be installed.

Transport for London suggested that it would improve conditions and create a more welcoming environment for pedestrians, non-motorised, and vulnerable road users with new pedestrian crossings as an alternative to the existing subways the provision of greater footway space and removal of obstructive street furniture wherever possible.

Further information can be found here:

https://consultations.tfl.gov.uk/roads/old-street-roundabout/

Following a consultation period, Transport for London has decided to proceed with this scheme[2].

4.2 Queens Circus Roundabout, London

Queen's Circus roundabout in Wandsworth has been upgraded to improve cycle movement and safety through the junction. The design introduced traffic signals and segregated cycle lanes (shown in green on Figure 10Figure 9) which will improve safety for all road users. The design also included

[2] Transport for London, 2015. Old Street Roundabout.

new signalised crossing facilities for pedestrians, which has improved the environment for all road users, including cyclists and pedestrians.

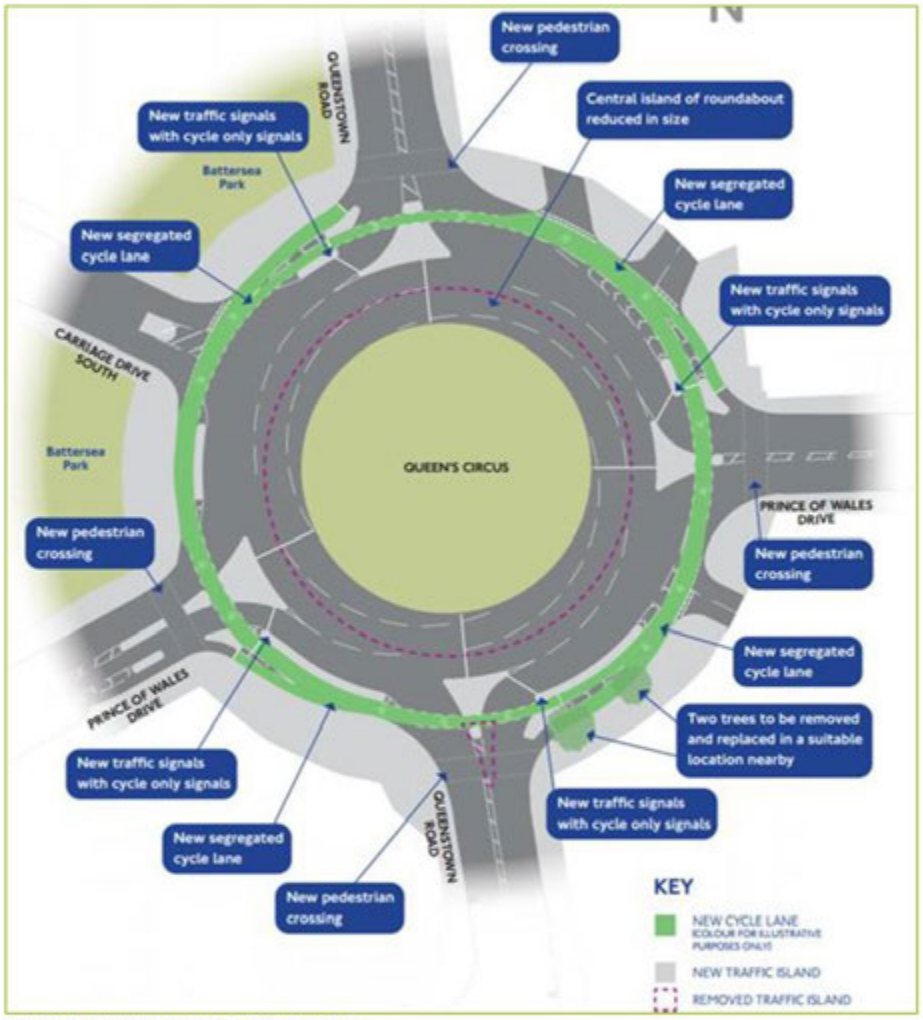

Figure 10 - Proposed Layout for Queen's Circus

Further information can be found at the following links:

http://www.cyclingweekly.com/news/latest-news/work-starts-radical-new-cycle-friendly-roundabout-london-133472

http://cyclelondoncity.blogspot.co.uk/2014/08/mixed-feelings-about-batterseas-new.html

https://tfl.gov.uk/corporate/safety-and-security/cycle-safey-innovations

4.3 Heworth Green Roundabout, York

Heworth Green Roundabout (Figure 11), York, also known locally as York's 'Magic Roundabout', has a wide cycle lane split in two, set in from the edge of the roundabout, whilst providing a reduced circulatory carriageway width, tight geometry and a smaller overall size of roundabout, similar in style to a compact or continental roundabout.

Figure 11 - Heworth Green Roundabout, York

The layout is similar to Queen's Circus in London, although without physical segregation between cyclists and general traffic.

Whilst the roundabout has been successful in reducing the number of accidents and attracting cyclists to what had previously been a hazardous junction, it is recommended that cycle lanes on the circulatory carriageway should not be seen as the solution for every potential site. Research has been carried out that suggests that cycle lanes do not offer significant safety benefits to cyclists on roundabouts. A roundabout design has to incorporate cyclists within the design from the beginning as cycle lanes may introduce additional hazards. It must be noted that most cyclists feel safer using cycle lanes, but these feelings may only be temporary if the lanes put them in an unsafe position. In this particular case the large numbers of cyclists using the junction means that motorists have become accustomed to interacting with the cyclists and that cycle lanes on the roundabout were a success.

Further information and opinions from experienced cyclists can be found at the following links:

http://www.aviewfromthecyclepath.com/2011/08/magic-roundabout.html

http://www.yorkshirepost.co.uk/news/magic-for-roundabout-1-2528501

http://crapwalthamforest.blogspot.co.uk/2011/02/whats-so-magical-for-cyclists-about.html

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5. Other Designs

A brief description below, highlighting other innovative designs that could be used in Clarkston:

5.1 Piazza Nember, Lido di Iesolo, Italy

This is an unusual design that has now been completed that incorporates cycle movement, place making and public realm all integrated into the centre of the roundabout (Figure 12). It must be noted that no other arms of the roundabout have cycle routes provided along them.

Figure 12 - Plazza Nember, Lido di Iesolo, Italy layout

Further information can be found here:

http://www.archilovers.com/projects/61993/piazza-nember.html

https://www.google.co.uk/maps/search/5.1%09Piazza+Nember,+Lido+di+Iesolo/@45.4874453,12.5969307,196m/data=!3m1!1e3

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DRAFT

5.2 Groningen, Netherlands

In Groningen, a similar solution to Piazza Nember has been implemented whereby cyclists pass straight through the roundabout over the central island, which has also integrated place-making aspects.

This unusual proposal which creates a bicycle roundabout with some shared space incorporates a heavily modified T-Junction to enable cyclists to have priority (Verkeersnet, 2017). Further information can be found here:

https://www.verkeersnet.nl/22838/fietsrotonde-plaats-shared-space/

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17

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6. Significant Adjustments to Vehicle Movements

A summary below highlights schemes where significant adjustments to vehicle movements helped create a cycle friendly roundabout:

6.1 Zwolle experimental roundabout, Netherlands

There is a policy in Zwolle, Netherlands to segregate cycle traffic and motorised traffic at grade crossings. This works by creating a cycle roundabout at locations where cyclists are required to cross a main road. The road link passes through the roundabout, with vehicles giving way to cyclists. This enables cyclists to cross the road with minimal delay. More information can be found at:

https://bicycledutch.wordpress.com/2013/08/26/experimental-bicycle-roundabout-in-zwolle/

6.2 Massachusetts Cycle Design Guidance

The Massachusetts Cycle design guidance provides examples on re-configuring roundabout space to create controlled signalised junctions that have cycle priority/cycle phasing rather than roundabouts. Further information can be found here (Massachusetts Department of Transportation, 2015):

http://www.massdot.state.ma.us/Portals/8/docs/SBLG/Chapter4_Intersections.pdf

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18

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7. Summary

This technical note has provided some commentary on the development of cycle friendly roundabouts, and the options that are available to the Clarkston – Stamperland – Busby Green Network Delivery Plan as it progresses. A large proportion of work in this area has been in the Netherlands and London, although it is expected that Clarkston will be an exemplar scheme which will show that there is scope for similar work in Scotland. Having the pros and cons of each option already compiled here will aid the design development for Clarkston's cycle friendly roundabouts.

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19

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Network Delivery Plan

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8. Bibliography

Cycle London City, 2014. *Cyclists in the City.* [Online]
Available at: http://cyclelondoncity.blogspot.co.uk/2014/08/mixed-feelings-about-batterseas-new.html
[Accessed 12 07 17].

Design Manual for Roads and Bridges, 1997. TA78/97. In: *Design of road markings at roundabouts.* London: Department for Transport.

Hembrow, D., 2011. *Every Roundabout in Assen. Variations of the safest roundabout design..* [Online]
Available at: http://www.aviewfromthecyclepath.com/2011/09/every-roundabout-in-assen.html
[Accessed 11 07 17].

Hembrow, D., 2014. *The best roundabout design for cyclists. The safest Dutch design described and an explanation of why this is the most suitable for adoption elsewhere.* [Online]
Available at: http://www.aviewfromthecyclepath.com/2014/05/the-best-roundabout-design-for-cyclists.html
[Accessed 11 07 2017].

Hembrow, D., 2014. *The best traffic light solution for cyclists. Simultaneous Green scales to almost any size of junction. Safe, convenient.* [Online]
Available at: http://www.aviewfromthecyclepath.com/2014/05/the-best-traffic-light-solution-for.html
[Accessed 11 07 17].

Massachusetts Department of Transportation, 2015. *Intersection Design.* [Online]
Available at: http://www.massdot.state.ma.us/Portals/8/docs/SBLG/Chapter4_Intersections.pdf
[Accessed 11 07 17].

Microsoft, 2017. *Heworth Green, York, England YO31 7.* [Online]
Available at: https://www.bing.com/mapspreview?signedup=1
[Accessed 12 07 17].

Transport for London, 2013. *The Mayor's Vision for Cycling in London.* London: Transport for London.
Transport for London, 2015. *Have your say on transforming Old Street roundabout.* [Online]
Available at: https://consultations.tfl.gov.uk/roads/old-street-roundabout/
[Accessed 11 07 17].

Transport for London, 2015. *Old Street Roundabout.* [Online]
Available at: https://consultations.tfl.gov.uk/roads/old-street-roundabout/user_uploads/old-street_010611.pdf
[Accessed 11 07 17].

Transport Research Laboratory, 2015. *Off street trials of a Dutch-style roundabout.* [Online]
Available at: https://trl.co.uk/media/839260/ppr751_dutch_roundabout_safety_v1.pdf
[Accessed 11 07 2017].

VALERI.ZOIA architetti associati, 2012. *Piazza Nember Restyling Piazza Drawings.* [Online]
Available at: http://www.archilovers.com/projects/61993/piazza-nember.html#drawings
[Accessed 11 07 17].

Verkeersnet, 2017. *Fietsrotonde in plaats van shared space.* [Online]
Available at: https://www.verkeersnet.nl/22838/fietsrotonde-plaats-shared-space/
[Accessed 11 07 2017].

Wagenbuur, M., 2011. *A modern Amsterdam Roundabout.* [Online]
Available at: https://bicycledutch.wordpress.com/2013/05/09/a-modern-amsterdam-roundabout/
[Accessed 11 07 2017].

Wagenbuur, M., 2011. *A monumental bicycle roundabout in Arnhem.* [Online]
Available at: https://bicycledutch.wordpress.com/2015/09/15/a-monumental-bicycle-roundabout-in-

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20

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Network Delivery Plan

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arnhem/
[Accessed 11 07 17].

Wagenbuur, M., 2011. *A roundabout bypass in Goes*. [Online]
Available at: https://bicycledutch.wordpress.com/2016/11/15/a-roundabout-bypass-in-goes/
[Accessed 11 07 17].

Wagenbuur, M., 2013. *Experimental bicycle roundabout in Zwolle*. [Online]
Available at: https://bicycledutch.wordpress.com/2013/08/26/experimental-bicycle-roundabout-in-zwolle/
[Accessed 11 07 17].

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21

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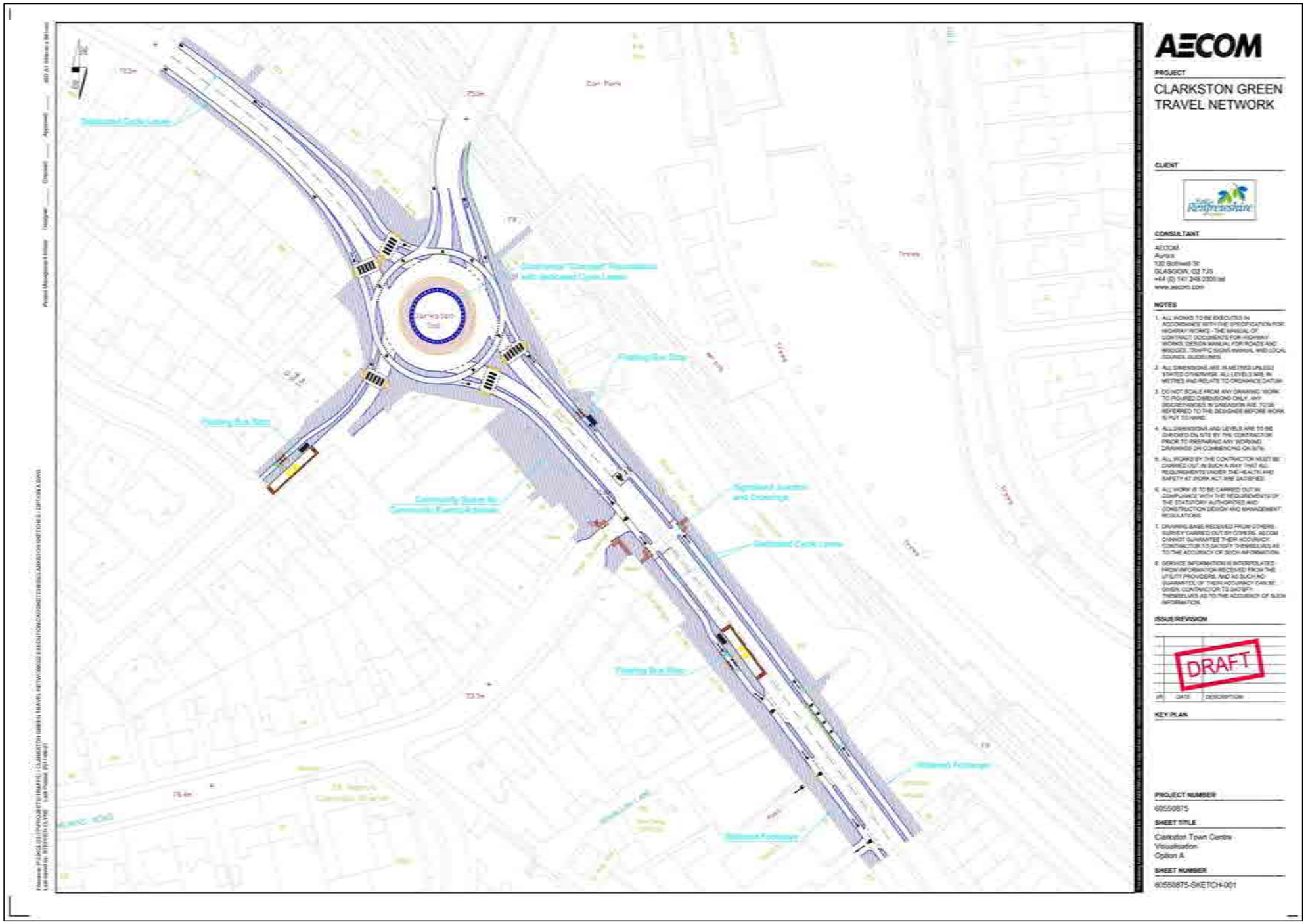
Appendix F – Concept Designs

Appendix F includes the concept designs developed during the Area Wide Recommendations. Due to the differing options proposed the appendix has been split into the following sub-appendix:

Sub-appendix	Title
Appendix F.1	Dedicated Cycle Lanes
Appendix F.2	Busby Road Realignment
Appendix F.3	Netherlee / Linn Park / Stamperland Public Realm
Appendix F.4	Busby Glen / Overlee Park

F.1 Dedicated Cycle Lanes



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F.2 Busby Road Realignment

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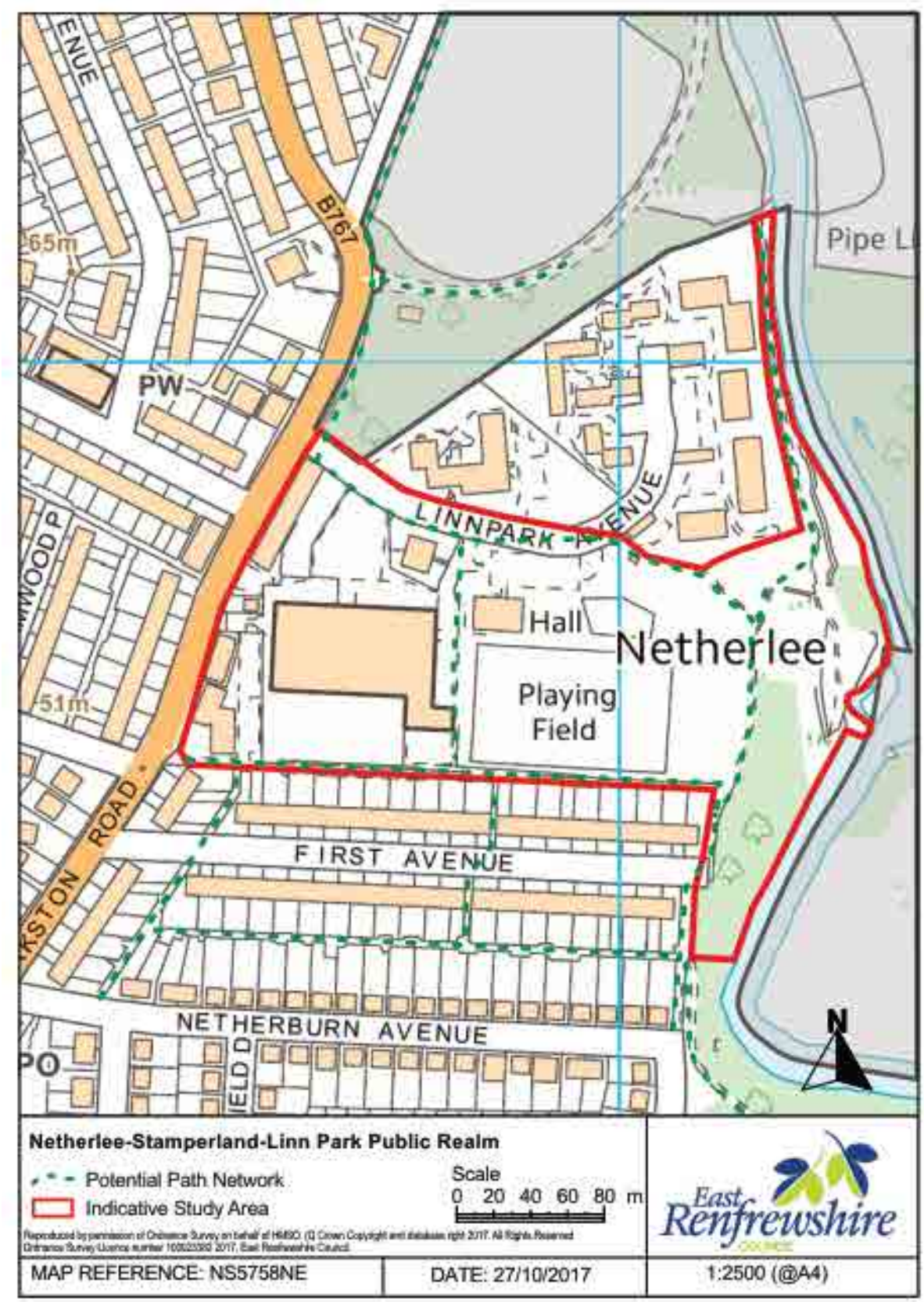
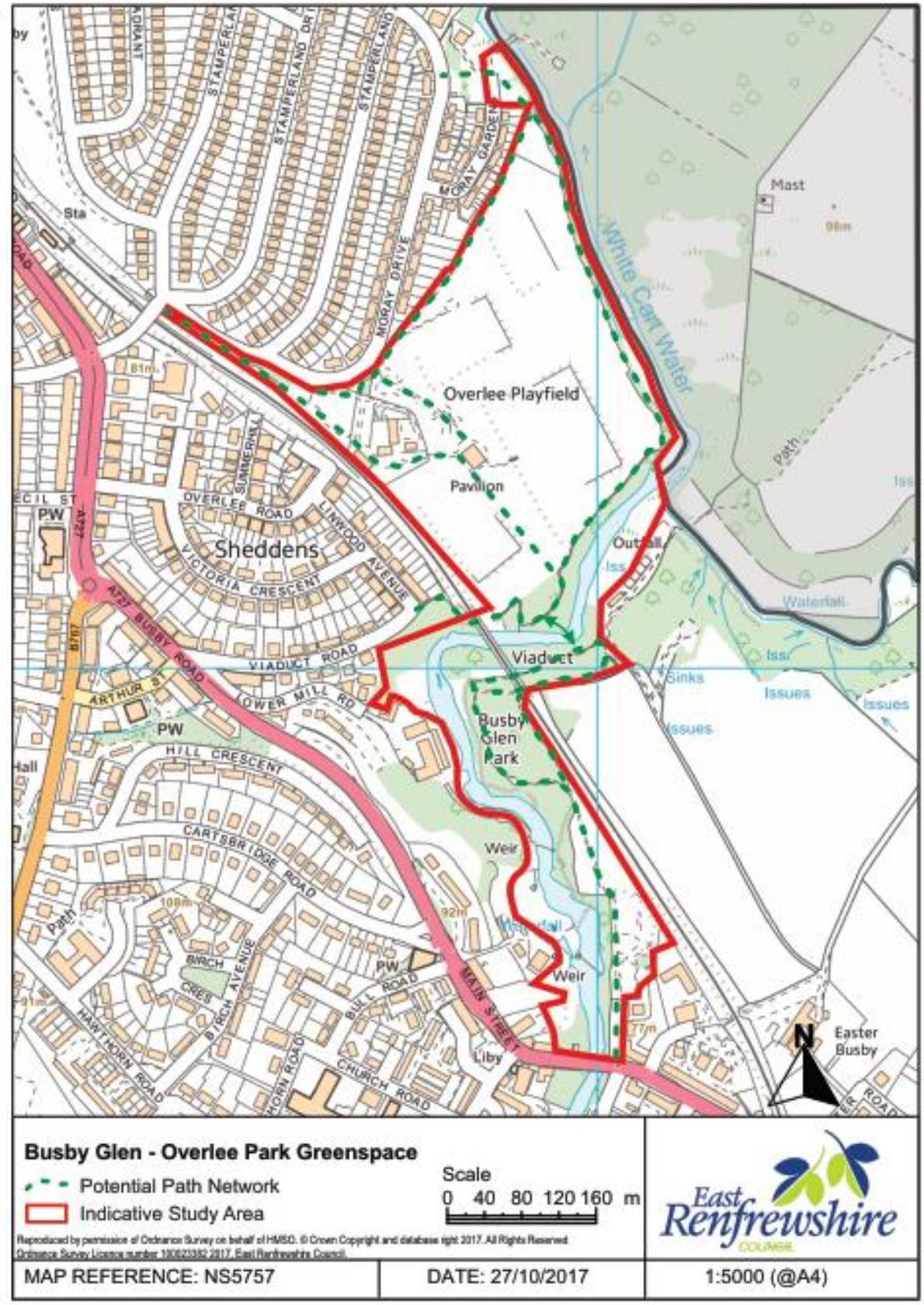
F.3 Dedicated Cycle Lanes



F.4 Busby Glen / Overlee Park



Appendix G – Concept Designs Visualisations

Appendix G includes the concept designs developed during the Area Wide Recommendations. Due to the differing options proposed the appendix has been split into the following sub-appendix:

Sub-appendix	Title
Appendix G.1	Dedicated Cycle Lanes
Appendix G.2	Shared Space
Appendix G.3	Busby Road Realignment

G.1 Dedicated Cycle Lanes


Look Both Ways
Look Left
Look Right


BUS STOP
Look Right
Look Left

G.2 Shared Space

Visualisations from Charrette


PUBLIC TOILET
Clarkston Bride
Courtesy of Willie Miller Urban Design


THE HUB
Courtesy of Willie Miller Urban Design


Courtesy of Willie Miller Urban Design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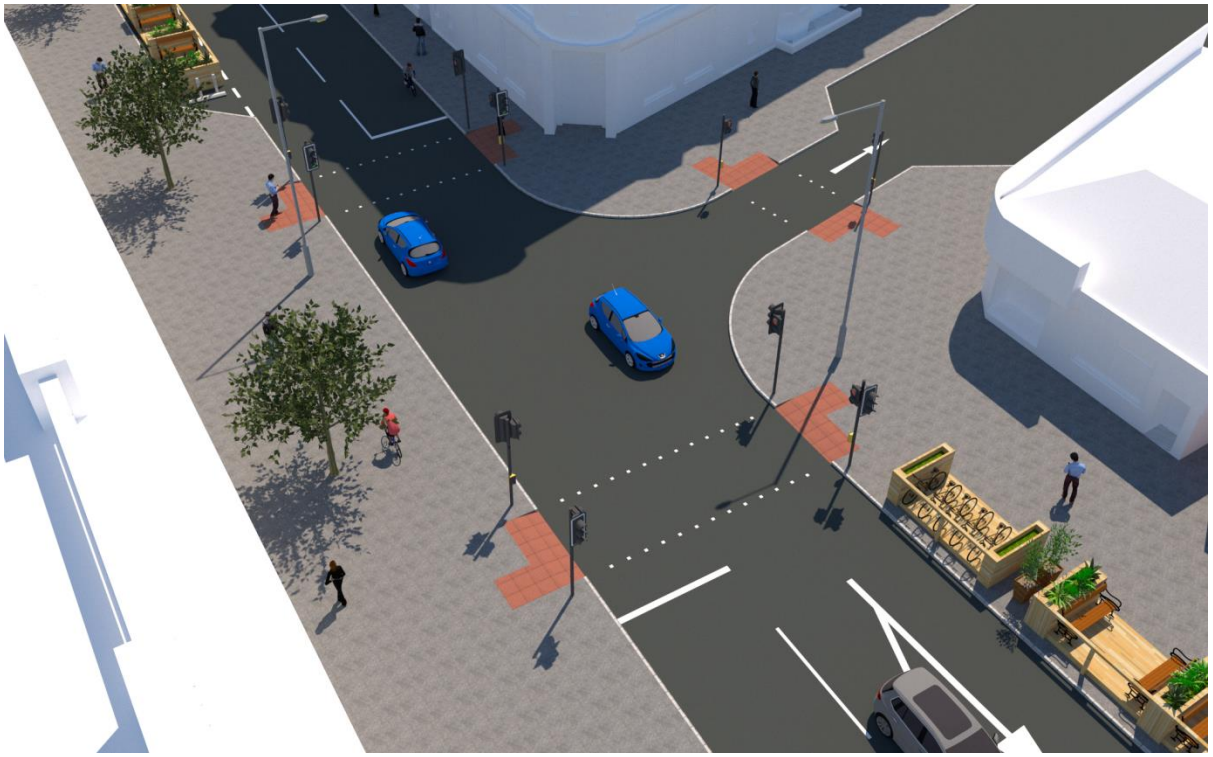
Courtesy of Willie Miller Urban Design

G.3 Busby Road Realignment




BUS
STOP