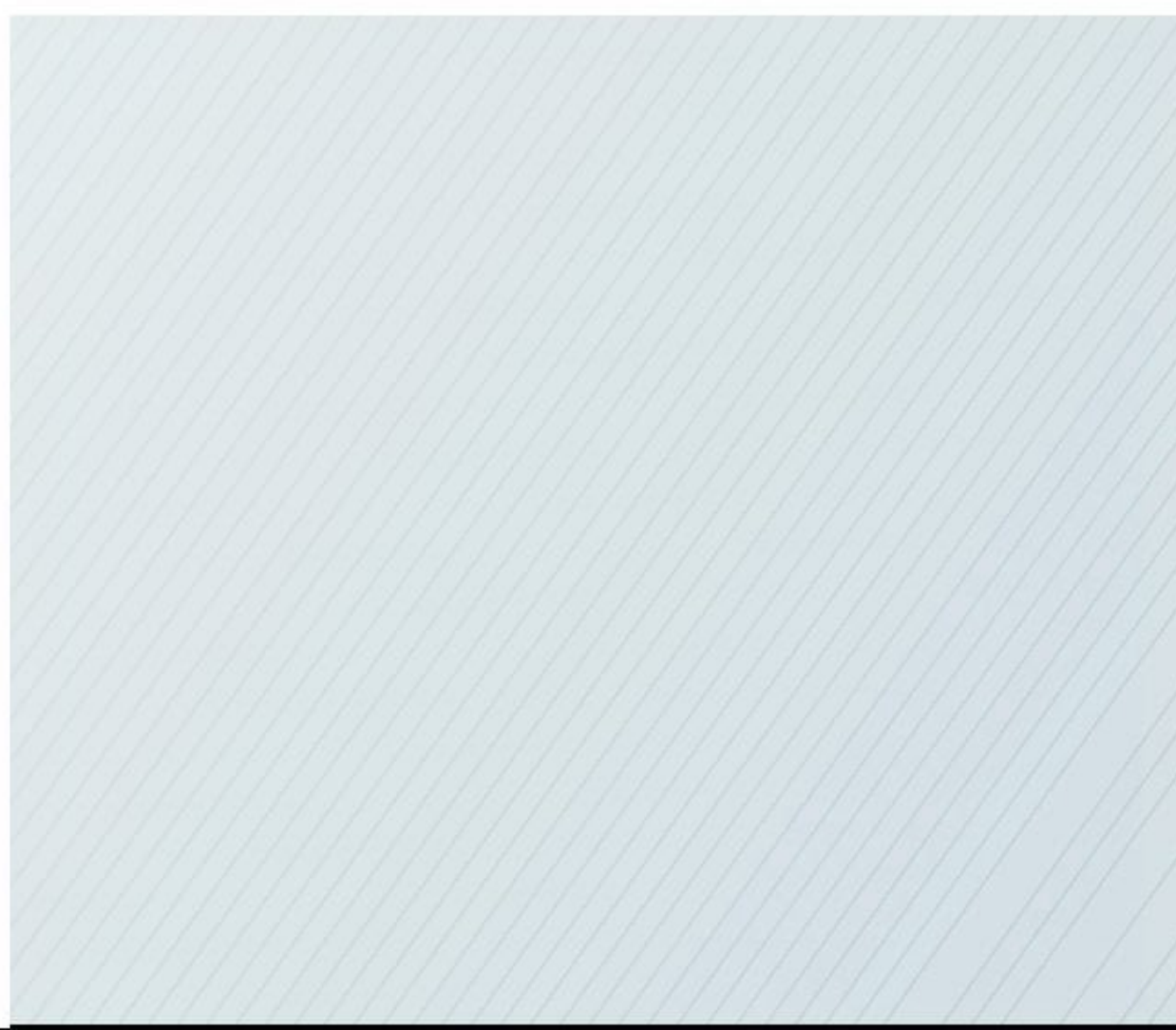
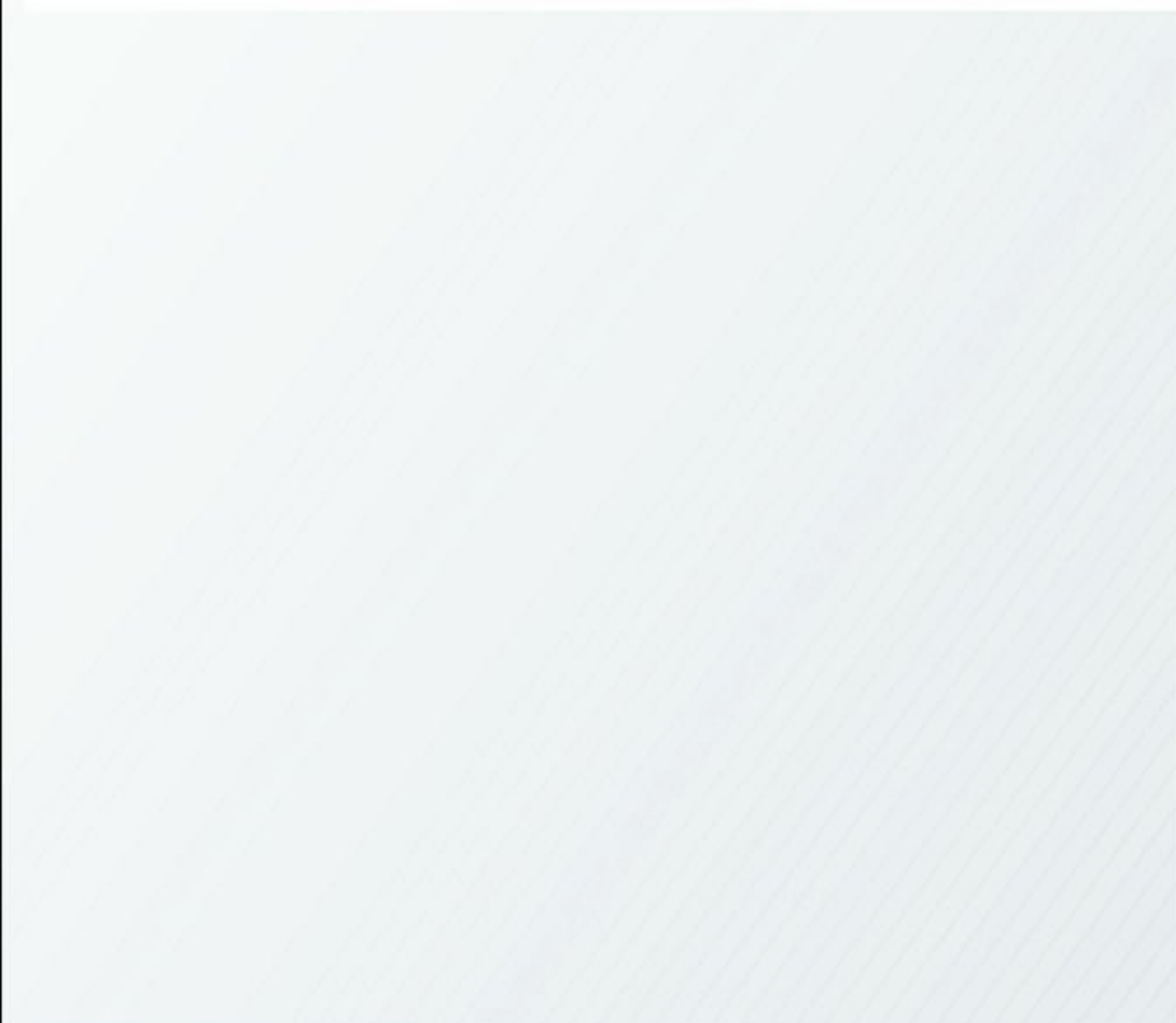
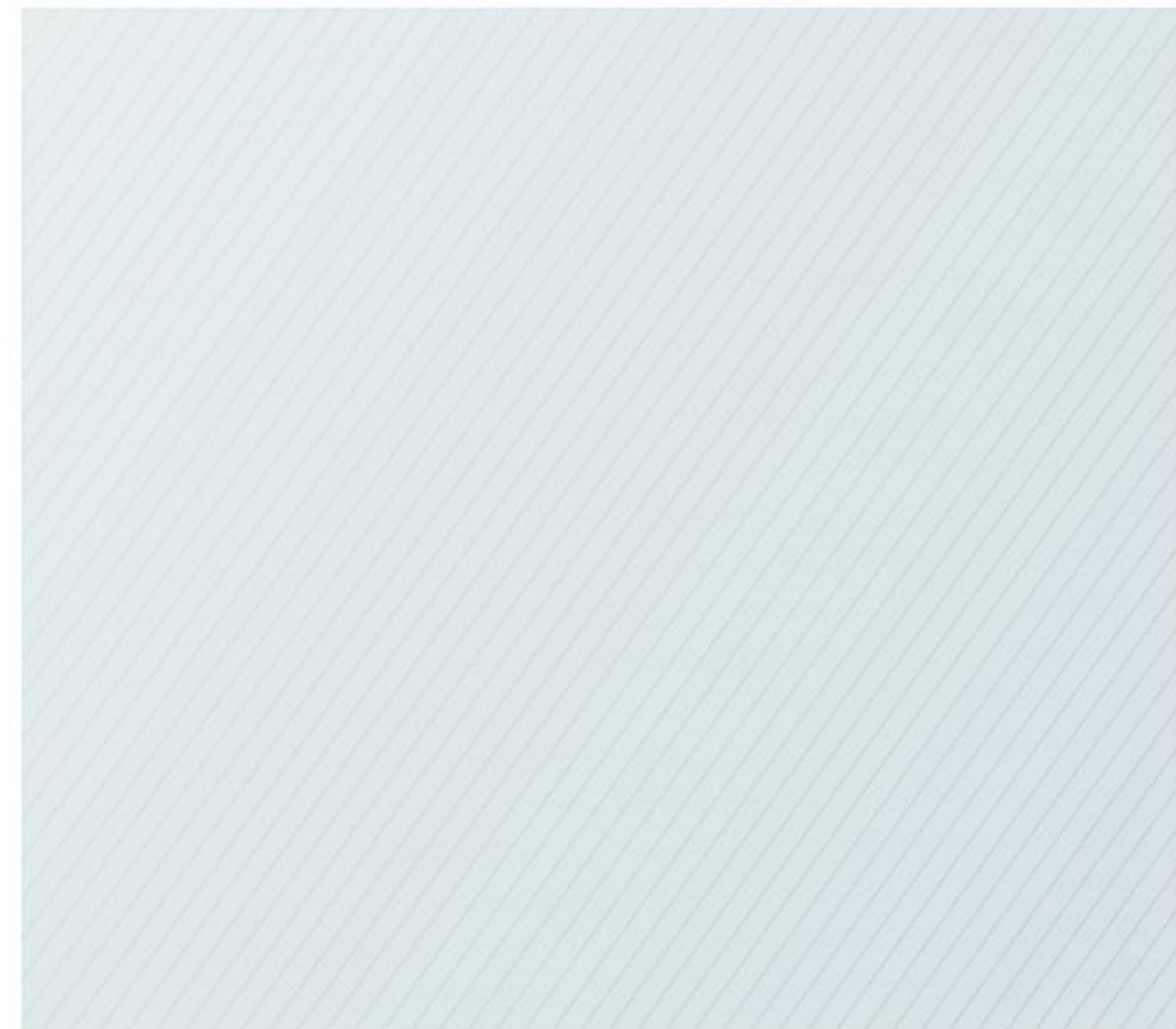


Redevelopment of Aberdeen Market

Market Street, Aberdeen

Transport Assessment

October 2021



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Appendices

APPENDIX A	Site Location Plan: HFM Drawing No. AMKT-HFM-ZZ-ZZ-DR-A-90-001 Site Plan: HFM Drawing No. AMKT-HFM-ZZ-ZZ-DR-A-90-002 East Green Service Access: HFM Drawing No. AMKT-HFM-ZZ-ZZ-DR-A-00-100
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1 Introduction

1.1 General

1.1.1 This Transport Assessment (TA) has been prepared for Aberdeen City Council (ACC) in support of a planning application for the redevelopment of Aberdeen's indoor market at Market Street. The mixed use development will consist of circa 4,987m² GFA, which includes the open air market and pedestrian links, of Use Classes 1, 3 and 11 to cover retail, food and exhibition.

1.1.2 The scheme consists of the demolition of the existing Aberdeen Indoor Market and BHS Department Store, and replacement with a new market-style destination venue featuring 'international style' food and drink outlets with complimentary 'market style' retail outlets.

1.1.3 The City Centre Masterplan (CCMP), which was approved by Aberdeen City Council in June 2015, sets out the following key objectives for the Aberdeen Market Development block:

“Redevelopment of the Aberdeen Indoor Market to be replaced by a more contextually appropriate development of buildings and spaces.

Key criteria for any redevelopment of The Market includes:

- *Enhanced active frontages on Union Street, Market Street, Hadden Street and The Green.*
- *Continued retail use at Union Street Level and a mix of retail, food and drink, and leisure uses at Hadden Street Level.”*
- *Appropriate scale and quality of design given the site's conservation area setting and Union Street setting.*

1.1.4 The Green is identified as a key public space within the city centre, with active frontages and intersecting pedestrian routes. This project offers an opportunity to deliver key aspirations for the city centre, and specifically for this identified site.

1.1.5 In May 2011, the City Growth and Resource Committee instructed a Review of the 2015 CCMP in conjunction with the development of a new Beach Masterplan. The review was presented back to the City Growth and Resource Committee in August 2021. In reference to the Aberdeen Market Development, the review comments that the project is on-going following the Council's recent acquisition of the site in August 2021 and the proposals will place local independent traders at the heart of the city centre and provide enhanced public space.

1.1.6 The CCMP review further notes that the Aberdeen Market project will address connectivity between the Union Street and the railway station, including improvements to the streetscape.

1.2 Site Context

- 1.2.1 The site is located on Market Street within central Aberdeen just south of Union Street. Retail, office and restaurant units predominantly surround the site and as a result of its central location it is highly accessible from sustainable transport means.
- 1.2.2 The site location is illustrated by Figure 1-1 overleaf and by HFM Drawing No. AMKT-HFM-ZZ-ZZ-DR-A-90-001 contained in Appendix A.

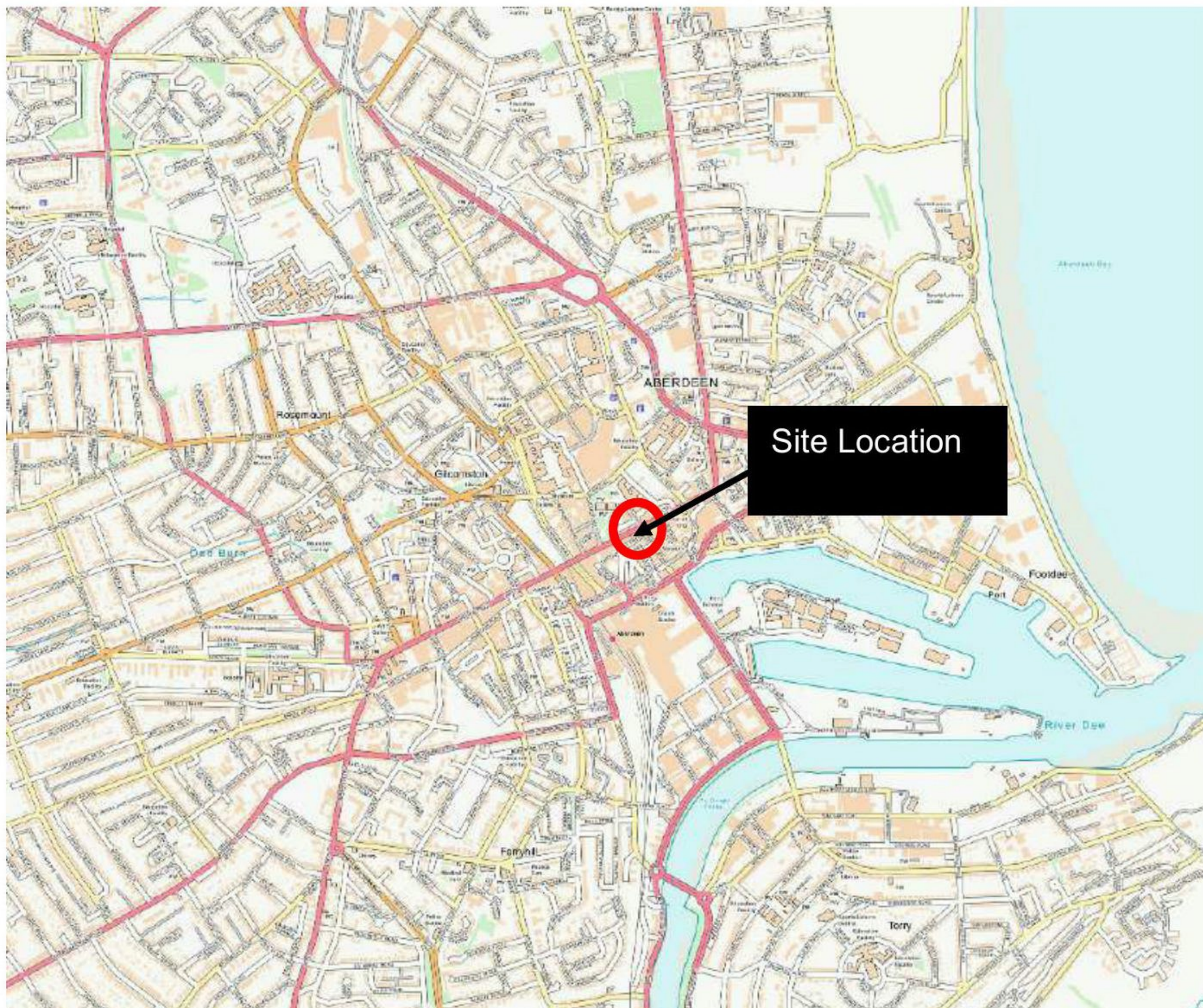


Figure 1-1: Site Location Plan

- 1.2.3 The site was previously operational under the collective name of Aberdeen Indoor Market and had around 500 square metres of stalls. The main entrance is on Market Street with a smaller access on Union Street. The Market operated with wide range of businesses open Monday to Saturday 9am to 5.30pm, selling a wide range of products from health and beauty and household items to fresh meat and fish.
- 1.2.4 The current building has been deteriorating for some time and is identified in the Adopted Aberdeen City Local Development Plan (ALDP) 2017 as OP67 for retail and mixed use developments.
- 1.2.5 Aberdeen Market lies at a key central point for pedestrian movement between the major retail space of Aberdeen. To the north of Union Street, Belmont Street has been the main pedestrianised route housing boutique retail units at The Academy and food and drink offerings.

- 1.2.6 Also to the north side of Union Street, the St Nicholas Centre offers a covered route through to the Bon Accord Centre, John Lewis and George Street.
- 1.2.7 The new development at Marischal Square is altering the pedestrian focus to bring people up Union Street and south across Union Street to Union Square and the bus and train terminals. This sees the Aberdeen Market site being very attractive to pedestrians particularly if there are new activity and retail/food offerings in The Green.

1.3 Planning History

- 1.3.1 Planning permission was previously granted on the existing site to form a mixed use office-led development (Class 4) (circa 18,000 sqm), with retail (Class 1), financial and professional (Class 2), food and drink (Class 3), public house (Sui Generis) and assembly and leisure (Class 11) uses (circa 750sqm), landscaping, public realm, car parking and associated works.
- 1.3.2 The planning application (Ref: 190312/DPP) was approved in October 2020 and was supported by a Transport Assessment prepared by Fairhurst (Ref: 102256 TA04) which considered the impacts of the re-development and included an assessment of accessibility and traffic impact.
- 1.3.3 The previous proposals included 126 car parking spaces associated with the consented development, which would have therefore resulted in vehicle trips directly to / from the site during typical AM and PM network peak hours. This level of impact was assessed on the local road network, with the assessment concluding that the only junction that would require further detailed analysis was the Market Street / Hadden Street junction, which was to provide the main access to the development's car park. The junction analysis results confirmed that the junction operated well within capacity and was predicted to continue to operate well within capacity during both the AM and PM peak hours with the development traffic included.
- 1.3.4 The current Aberdeen Market proposal does not include any office development and no car parking is proposed. The traffic impact directly at the site and on the surrounding road network will therefore be less than what has already been assessed and which currently has planning consent.

1.4 Consultation

- 1.4.1 In advance of this report, Fairhurst submitted Scoping to Aberdeen City Council's Roads Development Department (ACC-RDD) to agree methodology and factors for consideration within this Transport Assessment.
- 1.4.2 All relevant scoping correspondence is contained within Appendix B.

1.5 Planning Policy Context and Guidance

- 1.5.1 The TA has been undertaken giving regard to appropriate national, regional and local planning policies. The TA also takes cognisance of Transport Scotland's publication 'Transport Assessment Guidance' and the Adopted Aberdeen Local Development Plan - Supplementary Guidance 'Transport and Accessibility' (2017).

2 Transport Planning Policy Context

2.1 National Planning Policy

- 2.1.1 The National Planning Policy Context is principally defined by ‘Scottish Planning Policy’ (SPP) and Designing Streets. Scottish Planning Advice Note 75 (PAN 75) ‘Planning for Transport’ also provides good transport planning guidance. The Scottish Government document ‘Transport Assessment Guidance’ provides advice on appropriate matters for consideration within a transportation report to support a planning application. Road design standards are contained within the Design Manual for Roads and Bridges (DMRB) and the National Roads Development Guide, with some local variations.
- 2.1.2 The Scottish Government’s ‘Scottish Planning Policy’ (SPP) issued in June 2014 identifies the Scottish Government’s overarching aim to increase sustainable economic growth within Scotland.
- 2.1.3 SPP revolves around the principal policies – sustainability and placemaking. In considering how planning should support the vision, the document outlines the key outcomes that developments need to contribute to:
- *‘A successful, sustainable place – supporting sustainable economic growth and regeneration, and creation of well-designed, sustainable places.*
 - *A low carbon place – reducing our carbon emissions and adapting to climate change.*
 - *A natural, resilient place – helping to protect and enhance our natural and cultural assets, and facilitating their use.*
 - *A more connected place – supporting better transport and digital connectivity.’*
- 2.1.4 The ‘Promoting Sustainable Transport and Active Travel’ section of SPP stresses the importance of efficient transport connections within Scotland and to international markets, and the crucial role that planning plays to improving such infrastructure. The section goes on to identify, within paragraph 270, that the planning system should support developments that:
- *‘optimise the use of existing infrastructure;*
 - *reduce the need to travel;*
 - *provide safe and convenient opportunities for walking and cycling for both active travel and recreation, and facilitate travel by public transport;*
 - *enable the integration of transport modes’.*
- 2.1.5 Paragraph 273 notes that *‘the spatial strategies set out in plans should support development in locations that allow walkable access to local amenities and are also accessible by cycling and public transport. Plans should identify active travel networks and promote opportunities for travel by more sustainable modes in the following order of priority: walking, cycling, public transport, cars.’*

- 2.1.6 SPP notes in paragraph 287 that *'Planning permission should not be granted for significant travel-generating uses at locations which would increase reliance on the car and where:*
- *direct links to local facilities via walking and cycling networks are not available or cannot be made available;*
 - *access to local facilities via public transport networks would involve walking more than 400m'*
- 2.1.7 PAN75 identifies the need for the integration of land use planning with transport, taking into account policies on economic growth, education, health and the objective of a more inclusive society.
- 2.1.8 PAN 75 identifies in Annex B the undernoted thresholds:
- *'For accessibility of public transport the recommended guidelines are less than 400m to bus services;*
 - *A maximum threshold of 1600m for walking is broadly in line with observed travel behaviour'.*
- 2.1.9 PAN 75 indicates that *'Travel Plans are documents that set out a package of positive and complementary measures, for the overall delivery of more sustainable travel patterns for a specific development.'* It further states that *'their ability and success in influencing travel patterns is dependent upon the commitment of the developer and occupier of a development.'*
- 2.1.10 Transport Assessment Guidance (TAG) has been published by Transport Scotland to guide the preparation of Transport Assessments (TA) for development proposals in Scotland. Paragraph 1.8 notes that the TA process *"is directed towards successful delivery of development-related transport measures aimed at achieving sustainable transport outcomes."* It further notes that the *"process incorporates scoping, transport assessment and implementation including travel plans and monitoring."* Paragraph 2.2 provides some guidance on the principles of the assessment and states *"the TA deals with person-trips, not car trips."*
- 2.1.11 TAG identifies that Journey times of up to 20-30 mins are appropriate for walking and 30-40 mins for cycling.
- 2.1.12 'Designing Streets' sets out Scottish Government policy to be followed in designing and approving the layout of settlements. The Scottish Government's policy emphasises that street design should meet the six qualities of successful places, as set out in Designing Places. The six qualities and key considerations are summarised as follows:
- *Distinctive – street design should respond to local context to deliver places that are distinctive;*
 - *Safe and pleasant – streets should be designed to be safe and attractive place;*
 - *Easy to move around – streets should be easy to move around for all users and connect well to existing networks;*

- *Welcoming – streets layout and detail should encourage positive interaction for all members of the community;*
- *Adaptable – street networks should be designed to accommodate future adaptation; and*
- *Resource Efficient – street design should consider orientation, the integration of sustainable drainage and use attractive, durable materials that can be easily maintained..*

2.2 Regional Policy

2.2.1 Regional Policy for the proposed development is largely defined by:

- Approved Aberdeen City & Shire Strategic Development Plan (August 2020)
- NESTRANS Regional Transport Strategy Refresh 2035 (January 2014)

The **Approved Aberdeen City & Shire Strategic Development Plan (SDP)** identifies *‘four strategic growth areas’* (SGA) which will be the main focus of development in the area up to 2040. The SPD notes, *‘The strategic growth areas will make housing, employment opportunities and services sustainable by ensuring that these uses are in close proximity to each other and connected by high quality active travel networks and public transport.’* The SDP also aims to *‘make the most efficient use of the transport network, reducing the need for people to travel and making sure that walking, cycling and public transport are attractive choices’*.

2.2.2 The Strategic Development Plan identifies among others the undernoted objectives:-

- *‘To be a region which takes the lead in reducing the amount of emissions and pollutants released into the environment, mitigates and adapts to the effects of climate change and changing weather patterns, limits the amount of non-renewable resources it uses and supports and protects our biodiversity.’*
- *‘To make sure that new development meets the needs of the whole community, both now and in the future, and makes the City Region a more attractive and sustainable place for residents and business to remain, grow and relocate to.’*
- *‘To provide opportunities which encourage sustainable economic growth and create new employment in a range of areas that are both appropriate for, and attractive to, the needs of different industries, while at the same time improving the essential strategic infrastructure necessary to allow the City Region economy to grow over the long term.’*
- *‘To make sure that all new developments contribute towards reducing the need to travel and encourage people to walk, cycle or use public transport by making these attractive options.’*

2.2.3 The **NESTRANS Regional Transport Strategy Finalised Strategy 2021 (RTS)** identifies within its four Strategic Objectives the requirements to:

- *'to enhance and exploit the North East's competitive economic advantages, and to reduce the impacts of peripherality*
- *enhance choice, accessibility and safety of transport, particularly for disadvantaged and vulnerable members of society and those living in areas where transport options are limited*
- *support transport integration and a strong, vibrant and dynamic city centre and town centres across the north east'*

2.2.4 In identifying an 'Internal Connections Strategy' the RTS sets out key initiatives aimed at improving transport infrastructure within the City and Shire. These are focused on improvements to public transport aimed at delivering economic, environmental and social inclusion benefits, with construction of the Western Peripheral Route facilitating the delivery of complementary transport measures as well as contributing *'to the economy and sustainable communities across the north east'*. It also sets out a detailed programme for the delivery of additional park and ride sites and improved bus services aimed at maximising the identified benefits of reducing congestion, improving air quality and broadening travel choices.

2.3 Local Policy

2.3.1 Local Policy that can be used to guide the development is largely defined by:

- The Adopted Aberdeen Local Development Plan – (January 2017)
- The City Centre Masterplan – (June 2015)
- ALDP Planning Advice - Topic Area 5 – Transport and Accessibility (2017)
- Aberdeen Local Transport Strategy 2016 – 2021

2.3.2 The **Aberdeen Local Development Plan** (LDP) was adopted in 2017. It sets out how the council aims to work towards the vision for Aberdeen to be a *"sustainable city at the heart of a vibrant and inclusive city region"*.

2.3.3 With regards to transportation it is stated within the plan that delivery of supporting infrastructure is important in mitigating the impact of development and helping to create balanced, accessible and sustainable communities. This can be delivered either through the direct provision of the required infrastructure, or through financial contributions made by the developer.

2.3.4 The Aberdeen Market Site is identified in the LDP as OP67 for retail and mixed use developments.

2.3.5 The **City Centre Masterplan** (CCMP) is a regeneration blueprint that is transforming the city centre while conserving its proud heritage. The goal is greater prosperity and a better quality of life for all.

2.3.6 The Masterplan was shaped following extensive public consultation and unanimously approved by Aberdeen City Council in June 2015, with the following eight objectives included within the Masterplan:

- Changing perceptions
- Growing the city centre employment base
- A metropolitan outlook
- A living city for everyone
- Made in Aberdeen
- Revealing waterfronts
- Technologically advanced and environmentally responsible
- Culturally distinctive

2.3.7 In all, it has 50 projects including the redevelopment of the Aberdeen Market (Project CM06) with the CCMP noting that *'the site presents a significant opportunity to introduce a mix of uses including retail that better addresses The Green and enhances the overall vibrancy and attractiveness of this area including other uses such as residential.'* Key criteria for the redevelopment of the Aberdeen Market is noted as including:

- *Enhanced active frontages on Union Street, Market Street, Hadden Street and The Green.*
- *Continued retail use at Union Street level and a mix of retail, food and drink and leisure uses at Hadden Street level.*
- *Appropriate scale and quality of design given the site's conservation area setting and Union Street setting.*

2.3.8 The ALDP 2017 Planning Advice Topic Area 5 – **Transport and Accessibility** is Supplementary Guidance (SG). It comments on car parking standards for all types of developments. At Section 4, it notes that *'Transport Assessments can help to identify and tackle issues of concern and determine whether further infrastructure or service improvements are required to support the development proposed.'*

2.3.9 It further states that *'the TA should provide a comprehensive and consistent review of all the potential transport impacts relating to a proposed development or redevelopment and its immediate surroundings. It should consider travel-related issues such as safety, trip generation, access junction design and new infrastructure requirements.'*

2.3.10 The SG comments that all developments requiring a TA will also require to submit a Travel Plan in support of the development. The SG states that *'A Travel Plan is a general term for a package of measures aimed at promoting more sustainable travel choices to and from a site, with an emphasis on reducing reliance on the private car, thereby lessening the impact of that site on the surrounding road network.'*

2.3.11 Specific reference is made to ACC's Technical Advice Note Travel Plans: A Guide for Developers, which contains detailed guidance on preparing Travel Plans and any associated documentation.

2.3.12 The **Local Transport Strategy** 2016 – 2021 (LTS) outlines the policies and interventions adopted by Aberdeen City Council to guide the planning and improvement of the local road network over a five year period.

2.3.13 The LTS sets out five high level aims, as follows:

- *'A transport system that enables the efficient movement of people and goods;*
- *'A safe and more secure transport system';*
- *'A cleaner, greener transport system;*
- *'An integrated, accessible and socially inclusive transport system'; and*
- *'A transport system that facilitates healthy and sustainable living'.*

2.3.14 A number of specific objectives detailed within the LTS also support the previously listed aims. Key considerations among these objectives include:

- *'minimise and improve reliability of journey times for people and goods through Aberdeen's transport networks*
- *improve the condition of road, footway and cycle road network*
- *increase the share of travel by the most sustainable modes to promote economic growth without the associated traffic growth*
- *continue to reduce road casualties*
- *reduce carbon emissions from road transport*
- *improve accessibility (network and cost) to jobs and services to support social inclusion,*
- *to facilitate and support land use development adjacent to sustainable transport corridors and nodes*
- *to promote healthy living by encouraging safe walking and cycling'*

2.4 Conclusion

2.4.1 The proposed development is considered to be in accordance with Policy at National, Regional and Local levels.

3 Development Proposals

3.1 Existing Site

- 3.1.1 The existing site is currently vacant but was previously occupied by Aberdeen Market and supports a collection of food and retail units. The site is located within the City Centre retail core as defined by the ALDP, and is identified Market is still currently operational.
- 3.1.2 The site lies within the retail and business core of Aberdeen City Centre. It is bounded to the east by Market Street with Hadden Street situated to its south. The Aberdeen City Council headquarters 'Marischal College' and St Nicholas Shopping Centre are positioned to the north.

3.2 Overview of Development

- 3.2.1 The proposals brought forward in the current Masterplan is to redevelop the Aberdeen Market with new development containing a total GFA of circa 4,987m², which includes the open air market and pedestrian links.
- 3.2.2 The main portion of the site will be the creation of the new Market. A new pedestrian route will be created at the ground floor of the existing BHS building on Union Street which lead across a bridge to the new Market building and then down to the Green level via escalators, lift and steps, and link in to the route to Union Square and the Train Station. To the east, towards Market Street, there will be a two storey food court with central atrium with food serving units on the north and south elevations. To the west will be the open air market with retail stalls which will be sheltered by a large feature roof.
- 3.2.3 To the east on Market street, due to the existing change in levels, stepped access is required. The façade is stepped back from the street line to create a welcoming, feature public space, with a suitable accessible ramp around the perimeter. A stand-alone glazed retail unit is proposed for the SE corner, which can be accessed directly from the street and provides active frontage at street level. A further glazed retail unit is formed on the ground floor of the BHS building on Union Street alongside the pedestrian walkway to the Market.
- 3.2.4 Servicing is via a service area on the east of the plan. It is anticipated delivery vans will enter via a roller shutter on East Green, unload, turn round and exit the same way so there will be no reversing on public roads.
- 3.2.5 The Proposed Site Plan is shown by HFM Drawing No. AMKT-HFM-ZZ-ZZ-DR-A-90-002 and is contained in Appendix A.

3.3 Parking & Vehicle Access

- 3.3.1 Vehicular access to the development will continue to be provided from Hadden Street and East Green, however the proposals do not include any on-site car parking. As a site located in the heart of the city centre and adjacent to both the bus and train

- stations, numerous public car parks and the major bus routes of Guild Street, Market Street and Union Street, the provision of zero parking is in accordance with the City Centre Masterplan. This approach has been agreed with ACC-RDD through scoping discussions. Relevant correspondence is included in Appendix B.
- 3.3.2 The proposals will allow for the provision of 1 disabled space, 1 Electric Vehicle charge point space and 1 Car Club space. These are indicatively shown on the Site Plan contained in Appendix A but the exact locations would be agreed with ACC, tying in with the wider public realm project around The Green.
- 3.3.3 Through Scoping discussions it has been agreed to provide provision of a Car Club space which would extend the wider car club vehicle provision within this area. ACC are shortly to provide a Car Club vehicle on Stirling Street, adjacent to Hadden Street and it is considered that any additional Car Club space to be provided by the redevelopment of Aberdeen Market, would benefit from being located at the same location if possible.
- 3.3.4 Cycle parking will be provided in order to increase the existing provision that is provided on Haden Street adjacent to the Taxi Rank. The number and type of cycle parking spaces is to be agreed with ACC taking into consideration the wider public realm project around The Green.
- 3.3.5 The existing Aberdeen Market development does have an existing undercroft car park for 32 spaces and is accessed off East Green. The redevelopment proposals will remove all the existing car parking, with space retained for servicing needs, with the provision of 3 new van spaces accessed via roller doors from East Green. Details of the servicing access are shown on HFM Drawing No. AMKT-HFM-ZZ-ZZ-DR-A-00-100, contained in Appendix A.
- 3.3.6 The servicing of the development will continue to be taken from Hadden Street / East Green (under Market Street) as is the existing arrangement for the Aberdeen Market and other businesses and flats around the Market Street / Union Street junction. Service vehicles currently have to reverse down East Green, including delivery and refuse collection vehicles. Betterment is however provided with the provision of a small service yard area internally which allows access for 3 vans via a roller shutter door.

4 Site Accessibility

4.1 Pedestrian & Cycle Accessibility

- 4.1.1 Given the site's city centre location, pedestrian and cycle accessibility is excellent. Pedestrian movements through the city centre are concentrated on Union Street, which affords access to a network of footways permeating through the major shopping, business and tourist centres within the city centre. There is also a strong pedestrian desire line between the Bon Accord, St Nicholas, Trinity and Union Square Shopping Centres.
- 4.1.2 The existing network of footways incorporate pedestrian crossing facilities at key points on the highway. A 20mph speed limit applies on the existing road network within the city centre boundary which creates a low speed environment which is more conducive to pedestrian movements.
- 4.1.3 With regards to walking as a main mode of travel, PAN75 suggests that a maximum walking threshold of 1600 metres (20 minutes) is in line with observed behaviour. It also highlights the potential to increase accessibility by improvements to walking and cycling networks where a significant population is located within 800 metres (10 minutes) of a site. Reference to Paragraph 5.21 of TAG also suggests that journey times of 20 – 30 minutes (1600 – 2400 metres) are appropriate for walking.
- 4.1.4 Figure 4-1 in Appendix C illustrates the areas covered by walking isochrones indicating the 400 metres (5 minutes) , 800 metres (10 minutes) and 1600 metres (20 minutes) walking distances measured along formal pedestrian routes from the site. The walking isochrones indicate that many of the city centre facilities, amenities and major transport corridors are within a reasonable walking distance from the site, as are residential zones at Rosemount, Ferryhill, Holburn, Torry and Linksfield.

Pedestrian Access from the City Centre

- 4.1.5 The site is highly accessible on foot from Market Street and Hadden Street. Footways exist on both sides of Market Street linking with Union Street to the north and Guild Street / Trinity Quay to the south. Pedestrians on Market Street benefit from the inclusion of traffic signals and pedestrian crossings at key junctions and locations, including just to the north and south of the sites Market Street frontage.
- 4.1.6 Due to the topography surrounding the development, Hadden Street which borders the site to the south and west offers a route under Union Street. Hadden Street continues to the north to connect with Correction Wynd before adjoining St Nicholas Street where an additional route to Union Street is achieved.
- 4.1.7 Hadden Street is a lightly trafficked cobbled road which is primarily used for local access and deliveries to the existing market and other retailers, cafes, restaurants and pubs that are located within the Merchant Quarter. Pedestrian footways link to Exchange Street, Carmalite Street, The Green, Correction Wynd and East Green. Sections of Carmalite Street and The Green are pedestrianised and the environment

throughout is conducive for pedestrians and cyclists, providing linkage to the Rail and Bus Station located at Union Square to the south.

- 4.1.8 Union Street is identified as the main pedestrian route through the city centre, facilitating access to other pedestrian routes. The footways on Union Street provide links to King Street, Castle Street, Union Terrace, Bridge Street, Crown Street, Bon Accord Street, Holburn Street and Albyn Place. These routes permeate through the city centre affording pedestrian access to the wider network. Pedestrian crossing points on Union Street are generally in the form of integrated pedestrian phases within signal controlled junctions. There are additional standalone signal controlled pedestrian crossing points along the Union Street route.

Pedestrian Access from Rosemount

- 4.1.9 The footways on Union Street via Market Street link west to Belmont Street, Union Terrace and further north to Upperkirkgate, Harriet Street, Blackfriars Street, all of which form part of the city centre footway network. Heading west along Upperkirkgate / Schoolhill and the Rosemount Viaduct there are footway connections to Union Terrace, Skene Terrace, Skene Street and South Mount Street. The footways on South Mount Street and Skene Street afford walking links to the residential suburbs of Rosemount and Mid Stocket to the north and north-west respectively.
- 4.1.10 Pedestrians can benefit from standalone pedestrian crossing points on Upperkirkgate at the Bon Accord / St Nicholas Centre entrances and immediately west of the Harriet Street junction. There are also integrated pedestrian crossing phases within the signal control junctions with Blackfriars Street, Union Terrace and Skene Street.

Pedestrian Access from Ferryhill

- 4.1.11 The residential neighbourhood of Ferryhill is located to the south of the city centre. Pedestrian access to/from Ferryhill is primarily via footways on Union Street connecting to Crown Street and Bon Accord Street. A 20mph speed limit applies on both Crown Street and Bon Accord Street between the Union Street and Willowbank Road signal controlled junctions.

Pedestrian Access from Linksfield and Seaton

- 4.1.12 Pedestrian routes to the north and northeast of the city are through footway links on Gallowgate, West North Street, East North Street and King Street. All of which are primarily accessed via Union Street. Pedestrian access to/from residential neighbourhoods of Linksfield and Seaton, to the north of the city centre, can be reached via the routes identified above.
- 4.1.13 The Aberdeen City Centre core is well connected to the surrounding residential areas with footway connections and crossing facilities strategically located to facilitate pedestrian trips to and from a major regional employment and retail centre.

Pedestrian Access from Torry

- 4.1.14 Torry is located to the south of the city centre, but is segregated by the River Dee. Pedestrian access to Torry from the city centre is via the sites main access route,

Market Street and two crossings on the River Dee namely: the Queen Elizabeth Bridge and Victoria Bridge. The potential pedestrian desire line to the city centre from Torry is via Victoria Bridge which connects to Market Street, passing the site to the east.

- 4.1.15 Paragraph 5.21 of Transport Assessment Guidance suggests that journey times of 30 – 40 minutes, that is between 8 to 10km, are appropriate for cycling. Figure 4-2 in Appendix C illustrates a section of the ACC cycle map in which the development at Market Street is based.
- 4.1.16 Aberdeen has a number of cycle routes, both segregated and on-road, that facilitate cycling within the city boundary and beyond. The majority of the existing cycle routes comprise of 'recommended routes' which are generally identified as 'lightly trafficked' residential streets and core roads within the city's settlement boundary. These encourage cycling as a mode of transport and provide opportunities to cycle within the city for those who choose to do so.

Cycling Facilities on School Hill / Upperkirkgate

- 4.1.17 The National Cycle Network (NCN) Route 1 runs north of the site on Schoolhill / Upperkirkgate to the west of the site and can be primarily accessed via Union Terrace. The NCN Route 1 is a long distance 'predominantly on-road' cycle route running north-south through Aberdeen City. The route heads north on Gallowgate linking to Tillydrone, Woodside, Bucksburn and beyond. In the southerly direction the NCN Route 1 links to Torry and Cove via Schoolhill and Union Terrace.
- 4.1.18 The NCN Route 1 also facilitates access to NCN Route 195, known as the 'Deeside Way', and other local cycle routes on the wider network. The NCN Route 195 comprises predominantly off-road shared use paths in an easterly direction from Polmuir Road, south of the city centre. The Deeside Way runs west from Aberdeen, through Garthdee, Cults, Peterculter and other villages to Banchory.

Cycling Facilities on Union Street / Hadden Street

- 4.1.19 The cycle facilities on Union Street comprise of shared use 'Bus, Cycle and Taxi Lanes' and Advanced Stop Lines (ASL) at the majority of signal controlled intersections on the route. The Union Street route to the west links to the NCN Route 1 at the Union Terrace junction and on-road facilities on Albyn Place and the A93 Great Western Road.
- 4.1.20 Hadden Street continues to the north to connect with Correction Wynd which routes under Union Street before adjoining with St Nicholas Street where an additional route to Union Street and the St Nicholas Shopping Centre is achieved. The route is restricted to access only for motor vehicles and therefore provides a lightly trafficked route for cyclists, avoiding the busier routes of Union Street and Market Street.
- 4.1.21 The existing site, due to its location, benefits from the excellent pedestrian and cycle facilities and opportunities within the city centre and is well placed to encourage pedestrian and cycle trips.

4.2 Bus Services

- 4.2.1 For major travel generating developments there is a planning requirement to ensure that the site is accessible by sustainable transport modes including public transport. SPP notes that significant travel generating proposals should be located where access to public transport links involves walking no more than 400m.
- 4.2.2 The site is extremely well placed with respect to existing public transport services which link the city centre to various outer parts of Aberdeen and beyond. Existing bus routes and bus stops at a number of points on Union Street and Guild Street are all well within the recommended 400 metres maximum walking distance from the Aberdeen Market site. The closest bus stops to the site are located on Union Street within 150m.
- 4.2.3 The existing bus routes and frequencies serving the Union Street bus stops are summarised in Table 4-1.

Provider	Service	Adelphi Stop G1	Weekday	Saturday	Sunday
		Route			
First Group	17, 17A, 17B, 18A	Faulds Gate - Dyce	Every 7 Minutes	Every 7 Minutes	Every 20/30 Minutes
Stagecoach	60, 61, X60	Aberdeen - Peterhead via Ellon	Hourly	Hourly	Hourly
	62, 62A, N62, X62	Aberdeen - Ellon via Balmedie	Hourly	Hourly	Hourly (Between 06:15 - 17:00)
	63	Aberdeen - Peterhead via Newburgh	Hourly	Hourly (Between 09:20 - 18:25)	No Service
	67,X67,68,X68	Ellon - Fraserburgh	30 Mins	30 Mins	Hourly
	290, 291	Aberdeen - Methlick via Tarves	Hourly	Hourly	4 Services (09:45, 12:55, 17:05, 20:10)
	727	Union Square Jet Stance - Aberdeen Airport	Every 10 Minutes	Every 20 Minutes	Every 20 Minutes
Provider	Service	Adelphi Stop G6	Weekday	Saturday	Sunday
		Route			
First Group	1 The Bridges	Danestone - RGU	Every 5 Minutes	Every 12 Minutes	Every 30 Minutes
	2 The Bridges	Ashwood - RGU	Every 15 Minutes	Every 20 Minutes	Every 30 Minutes
	20/40	Dubford - Balnagask Circle	Every 30 Minutes	Every 30 Minutes	Every 30 Minutes
	8	Dubford - ARI	Hourly	Hourly	No Service
	11	Woodend - Northfield	Every 15 Minutes	Every 20 Minutes	Every 30 Minutes
	13	Scatterburn - Golf Links	Every 20 Minutes	Every 20 Minutes	Every 30 Minutes
	23	Heathryfold - Summerhill	Every 10 Minutes	Every 10 Minutes	Every 30 Minutes

Table 4-1: Existing Bus Services

- 4.2.4 The Aberdeen City Public Transport (PT) Guide produced by ACC, with assistance from public transport operators, contains comprehensive city centre bus stop location and route information. A copy of the guide is contained in Appendix C.
- 4.2.5 Aberdeen Bus Station is located 300m to the south at Union Square. This is only a 4 minute walking journey to access local, regional and national public transport services. Existing bus services from the Bus Station serve a variety of locations and land uses within the Aberdeen City and Shire region. There are also national services from the Bus Station to destinations such as Edinburgh, Glasgow, Dundee, Inverness, Perth and Stirling.

4.3 Rail Services from Aberdeen

- 4.3.1 Aberdeen Railway Station is located to the south, approximately 300 metres (4 minutes walking journey) from the site, adjacent to Union Square. Aberdeen Railway Station provides frequent local and regional connections via the East Coast Main Line

to Edinburgh and Glasgow via Dundee and Perth, and to Inverness via Elgin. Table 4-2 shows the existing rail services with frequencies from Aberdeen Railway Station.

Provider	Service	Route	Weekday	Saturday	Sunday
Scotrail	Aberdeen - Glasgow	Aberdeen - Dundee - Glasgow	Approximately every Hour	Approximately every Hour	Approximately every 2 Hours
Scotrail	Aberdeen - Edinburgh	Aberdeen - Dundee - Edinburgh	Approximately every Hour	Approximately every Hour	Approximately every 2 Hours
Scotrail	Aberdeen - Inverness	Aberdeen, Dyce, Inverurie, Inch, Huntly, Keith, Elgin, Forres, Nairn, Inverness	Approximately every 2 Hours	Approximately every 2 Hours	5 Services at (10:00, 13:00, 15:22, 18:01, 21:27)

Table 4-2: Regional Rail Services from Aberdeen Railway Station

4.4 Access from the Local Road Network

- 4.4.1 Due to its location, the development site is currently accessible by all vehicle routes leading into the City Centre from all directions.
- 4.4.2 Vehicle access to the development is from Hadden Street which links with Market Street to the east and Guild Street to the south via Exchange Street. Access to Hadden Street can also be made via Stirling Street and Trinity Street which link with Guild Street and Carmelite Street respectively.
- 4.4.3 To the north, Market Street connects to Union Street via a signal controlled junction. Market Street also forms a 4-arm signal controlled junction with Trinity Quay and Guild Street to the south. Market Street continues south as a dual carriageway to its signalised junction with North Esplanade West and Victoria Road linking to Riverside Drive, South College Street and Wellington Road. Through these links the A90 and A92 can be accessed at two locations, namely; the Bridge of Dee Roundabout and the Charleston Interchange.
- 4.4.4 Union Street is the principle Street within Aberdeen and as a result supports high volumes of daily traffic including buses and HGVs. To the west union Street splits in two to become Alford Place and Holburn Street via a three route signal layout. Continuing west Alford place becomes Albyn Place before a connection with B9119 Queens Road is made. Westbound travel on Queens Road can be used as a direct route out of western Aberdeen where an access is afforded to Kingswells and Westhill. B9119 Queens Road also provides a routing onto the A92 Anderson Drive via a four arm roundabout.
- 4.4.5 From Carmelite Street, Trinity Street provides a connection with Hadden Street. Carmelite Street connects with Guild Street via a signal controlled junction which also affords access to the Railway Station. Guild Street is one-way in the westbound direction. To the east it forms a two-way dual carriageway road connecting with Market Street and Virginia Street. Guild Street also provides a 'bus-only' egress from the bus station and connects with Stirling Street and Exchange Street which operate

as one-way streets in the northbound and southbound directions respectively, connecting to / from Hadden Street.

- 4.4.6 The existing vehicular routes in the vicinity of the site link with key corridors on the wider network and provides good connections to a variety of land uses; employment, leisure, housing and retail, within Aberdeen City and Shire areas as well as the wider north east region.
- 4.4.7 Proposals through the CCMP include potential pedestrianisation / bus only of Union Street and altering Guild Street and Market Street to bus only links. Further proposals looking at the wider Public Realm around The Green may also result in changes to the road network around the site, particularly to ensure that rat running does not occur between Wapping Street and Market Street via Stirling Street, Exchange Street, Carmelite Street and Carmelite Lane. This may include a network of one-way streets around the development, creating the opportunity to expand pedestrian footways and creating a pedestrian friendly space forming a seamless pedestrian route between Union Street and Union Square and through the Merchant Quarter. Whilst Wapping Street is currently one-way eastbound, it may revert to two-way between its junctions with Denburn Road to the east and Bridge Street to the west following implementation of the CCMP Proposals. The section of Wapping Street to the East of Denburn Road to its junction with Carmelite Street remains unchanged.

4.5 Accessibility Summary

- 4.5.1 The site location is highly accessible by a number of sustainable transport modes, which makes it particularly suitable for retail and food & drink uses. Due to the development's locations within the heart of the City Centre, the development would generate a high level of pedestrian trips not only during weekday peak periods, but at all times of the week. In addition, the development has excellent access to the National Cycle Network and Aberdeen Bus and Rail Stations, allowing sustainable travel to destinations that are further afield.
- 4.5.2 Given the site's accessibility and proximity to sustainable transport networks, car dependency would be greatly reduced.

5 Traffic Impact Summary

5.1 Overview

- 5.1.1 As requested by ACC-RDD, this chapter provides an overview of the previous traffic impact analysis that was undertaken in support of the consented Aberdeen Market Redevelopment proposals (Ref: 190312/DPP).
- 5.1.2 The previous assessment considered vehicle trips routing directly to the Aberdeen Market site, which will not occur under the current proposals with no car parking included as part of the proposals, which is in accordance with the 'zero parking for new development' aspirations set within the CCMP.

5.2 Trip Distribution

Scottish Census 2011, 'Origin – Destination' online database includes data for 'All usual residents aged 16 and over in employment the week before the census' at <https://www.scotlandscensus.gov.uk/ods-web/data-warehouse.html#additionaltab>

- 5.2.1 Dataset 'WU03BSC_IZ2011_Scotland - Location of usual residence and place of work by method of transport (Intermediate Zone level)' comprises 'Origin – Destination' data for travel by different transport modes between defined Scottish Neighbourhood Statistics (SNS) 'Intermediate Zone Levels'.
- 5.2.2 Fairhurst has extracted 'Origin – Destination' data for Intermediate Zone S02001250' designated as Aberdeen City Centre East in the 2011 Scotland Census database. The zone covers the town centre and a section of Aberdeen Harbour.
- 5.2.3 The 'car or van' driver element of the O-D data for Zone 'S02001250' has been utilised to derive a distribution for the proposed office element. The detailed census data and resulting distribution are included in Appendix D.
- 5.2.4 Table 5-1 summarises the distribution and expected routing of vehicle trips on the adjacent local road network. Web-based mapping and knowledge of the area has been used to inform the routing of trips between origin and destination zones. Where alternative routes are available, the resulting distribution has been subjected to further refinement based on potential route choices available for making the trip.

Route	Distribution
A956 South / Market Street South	31%
Denburn Road / Trinity Street / Stirling Street	17%
Union Street East / Market Street North	24%
Union Street West / Market Street North	28%
Total	100%

Table 5-1: Development Trip Distribution

- 5.2.5 Network Diagram Figure 1, contained in Appendix E, illustrates the resulting trip distribution on the adjacent local and strategic road network.
- 5.2.6 Network Diagram Figure 2a and Figure 2b illustrate the route assignment of the vehicle trips estimated to be generated by the consented development.
- 5.2.7 The majority of trips would have entered and exited the consented development via Market Street. In the AM peak hour, this was established as 59 trips accessing Hadden Street via Market Street while during the PM peak 61 trips were estimated to access Market Street via Hadden Street. This is equivalent to only 1 vehicle per minute, across the peak hours.

5.3 Study Area

- 5.3.1 The study area was agreed with ACC-RDD, with the following junctions surveyed in order to establish a post AWPR base traffic network:
- Union Street / Market Street Signalised Junction
 - Market Street / Hadden Street Priority Junction
 - Market Street / Trinity Quay / A956 / Guild Street Signalised Junction
 - Guild Street / Exchange Street Priority Junction
 - Guild Street / Carmelite Street
 - Carmelite Street / Trinity Street Priority Junction
 - A93 / Denburn Road Signalised Junction
 - B993 / A93 Signalised Junction
 - B993 / Guild Street / A93 Signalised Junction
 - Guild Street / Aberdeen Bus Station Junction

5.4 Base Traffic Data

- 5.4.1 Traffic surveys were undertaken on Wednesday 24th April 2019 over the following time periods:
- 07:00 – 10:00
 - 16:00 – 19:00
- 5.4.2 From the traffic surveys undertaken the AM and PM network peak hours were established as 07:45 - 08:45 and 16:45 – 17:45 respectively. Figures 3a and 3b, contained in Appendix E, show the 2019 Base AM and PM peak hour network diagrams.

5.5 Future Year Assessment

5.5.1 National Road Traffic Forecast 'Low' growth has been used to convert the observed 2019 traffic to 2021 year of opening. The low growth rate of 1.6% between 2019 and 2021 has been applied. Figure 4a and Figure 4b, contained in Appendix E, illustrate the 2021 'Year of Opening' traffic conditions.

5.5.2 Whilst the year of opening will now change, this traffic impact analysis summary is still considered to be robust, given that the current re-development proposals will not result in the same level of vehicle trips directly to the site.

5.6 Traffic Impact Assessment

5.6.1 A percentage threshold assessment of the consented development traffic was undertaken and is shown by Figures 5a and 5b in Appendix E for the AM and PM peak hours respectively.

5.6.2 The two way development traffic impact on Market Street was assessed to be around 10% to the north of Hadden Street on the approach to the Market Street / Union Street traffic signalised junction during the AM and PM peak hours. However when considering the junction in its entirety and each approach arm, the consented development traffic impact during both the AM and PM peak hours is only 3%. This is illustrated in Table 5-2.

Union Street / Market Street Signalised Junction						
Approach	AM Peak Hour			PM Peak Hour		
	2021 Base Traffic	Development Traffic	Percentage Impact	2021 Base Traffic	Development Traffic	Percentage Impact
Union street West	511	19	4%	499	2	0%
Union Street East	606	16	3%	562	2	0%
Market Street South	167	6	4%	241	40	16%
TOTAL	1284	42	3%	1303	44	3%

Table 5-2: Union Street / Market Street Signalised Junction Threshold Summary

5.6.3 The two way development traffic impact on Market Street was assessed to be around 5% to the south of Hadden Street on the approach to the Market Street / Guild Street / Trinity Quay traffic signalised junction during the AM and PM peak hours. However when considering the junction in its entirety the consented development traffic impact during both the AM and PM peak hours is only 1%. This is illustrated in Table 5-3.

Market Street / Trinity Quay / Guild Street Signalised Junction						
Approach	AM Peak Hour			PM Peak Hour		
	2021 Base Traffic	Development Traffic	Percentage Impact	2021 Base Traffic	Development Traffic	Percentage Impact
Market Street North	283	3	1%	221	21	10%
Trinity Quay	1229	0	0%	1180	0	0%
Market Street South	1197	21	2%	1471	2	0%
Guild Street	408	3	1%	436	0	0%

TOTAL	3116	27	1%	3308	24	1%
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Table 5-3: Market Street / Trinity Quay / Guild Street Signalised Junction Threshold Summary

5.6.4 It was concluded that the consented development's impact on the Market Street / Union Street junction and the Market Street / Guild Street / Trinity Quay junction would be insignificant and it was subsequently agreed with ACC-RDD that no further junction analysis was required at either of those junctions.

5.6.5 The greatest consented development impact was predicted on the Hadden Street approach at the Market Street / Hadden Road Priority Junction with a two way impact of 89% in the AM peak hour and 108% in the PM peak hour. Whilst this is a substantial percentage increase, this is due to the low background traffic flows that use this route. The additional consented development traffic is not significant but further detailed analysis was undertaken to demonstrate that the junction would continue to operate within capacity. The junction capacity results are summarised and discussed below.

Market Street / Hadden Street Priority Junction

5.6.6 TRL's software package Junctions 8 (PICADY Module) was used to assess the operation and performance of the Market Street / Hadden Street priority controlled junction.

5.6.7 The junction was assessed to determine the consented development traffic impact on the local road network in terms of junction Ratio of Flow to Capacity (RFC) values. Vehicle queue lengths, expressed in Passenger Car Units (pcus) have been rounded up to the nearest whole number.

5.6.8 The following Weekday AM and PM peak hour modelling scenarios have been assessed:

- 2021 Factored Base Weekday AM and PM peak hours illustrated by Figure 4a and Figure 4b contained in Appendix E;
- 2021 Factored Base plus Full Development Traffic for AM and PM peak hours illustrated by Figure 6a and Figure 6b contained in Appendix E.

5.6.9 The results for the PICADY analysis for the Weekday AM and PM peak hours are summarised in Table 5-4 with the Junction Modelling Report and Junction Input Parameters contained in Appendix F. Electronic copies of model input and output files are available upon request.

Arm	2021 Base AM			2021 Base PM		
	RFC	Max Que	Delay (seconds)	RFC	Max Que	Delay (seconds)
Hadden Street (B-AC)	9%	0	6	10%	0	6
Market Street North / Hadden Street (C-AB)	4%	0	5	4%	0	5
	2021 Base + Development AM			2021 Base + Development PM		

	RFC	Max Que	Delay (seconds)	RFC	Max Que	Delay (seconds)
Hadden Street (B-AC)	11%	0	7	21%	0	7
Market Street North / Hadden Street (C-AB)	10%	0	5	5%	0	5

Table 5-4: Market Street / Hadden Street Priority Junction

- 5.6.10 It is recognised that some priority controlled junctions can begin to experience operational difficulties when any arm reaches a Ratio of Flow to Capacity (RFC) value of 0.85 (85% of capacity).
- 5.6.11 The results show that the junction was predicted to operate well within capacity under the 2021 base traffic scenario during both the AM and PM peak hours. The junction was also predicted to continue to operate well within capacity during both the AM and PM peak hours with the consented development traffic included.
- 5.6.12 Analysis indicated that no improvements were required at the junction to accommodate the additional traffic likely to have been generated by the consented development.

5.7 Conclusion

- 5.7.1 Given that the current redevelopment proposals for the Aberdeen Market will result in less traffic generation than what already has planning consent, it can be concluded that the current proposals will not result in any notable impact on the local road network and therefore no mitigation is required.

6 Travel Plan Framework

6.1 Overview

6.1.1 A Travel Plan is a dynamic document that evolves over time responding to the needs of building users, and as such subsidiary Travel Plans based on this framework will be developed further by individual companies beyond occupancy of the building to accommodate the specific travel patterns of building users once they become known.

6.2 Policy Context

6.2.1 Transport Planning Policy at national and local level aims to encourage development in a sustainable manner in order to minimise potential transport impacts. Travel Plans are a mechanism by which alternative travel choices are promoted and encouraged, so as to minimise the environmental effects of travel.

6.2.2 Scottish Planning Policy (SPP) comments that a Travel Plan is ‘a package of measures aimed at promoting more sustainable travel choices and reducing reliance on the car, and should be encouraged for all significant travel generating developments.’

6.2.3 Scotland’s National Transport Policy (NTS) outlines the Scottish Government’s policies and strategy for the ‘Future of Transport’ in Scotland. The NTS supports the development and promotion of ‘Specific, Measurable, Attainable, Relevant and Time’ (SMART) measures such as Travel Plans, and high quality travel information to encourage more sustainable travel.

6.2.4 With regard to situations where a building occupier is known, Planning Advice Note (PAN) 75 comments that ‘Where the occupier is known measures should be more robust. The travel plan should incorporate a variety of measures and targets to encourage sustainable travel, such as MSTs, an implementation time scale and an agreed monitoring and review process. The setting up of a working group to oversee the travel plan is also encouraged, as is a trust fund for additional remedial measures if targets of the plan are not met’. Building occupiers will need to prepare subsidiary Travel Plans which accord with this advice.

6.2.5 This Travel Plan Framework has been written to comply with both National and Local Policies and Guidance. It will outline measures to be implemented from the outset that will both limit the development’s traffic impact and also promote more sustainable and healthier forms of transport, thereby achieving the aims of those Policies. In addition, this document suggests other measures that can potentially be implemented in future beyond occupation of the building, to respond to specific demands.

6.3 Travel Plan Aims and Objectives

6.3.1 The ‘Travel Plan Resources Pack for Employers’ describes a Travel Plan as a ‘package of measures aimed at promoting sustainable travel within an organisation’. This package of measures is not considered as a “one-off” provision by a developer

or organisation but a process of delivery from the setting of policy and the creation of the supporting networks through to application on the ground and monitoring. All of these elements require to be linked through the partnership working of the various stakeholders within the process.

- 6.3.2 The aim of the Travel Plan is to reduce car usage to the development, particularly single occupancy trips. This will be achieved through the introduction of site wide measures and company specific measures to encourage sustainable travel.

The diagram outlines the typical 'step by step' process of a Travel Plan.



- 6.3.3 Key objectives of any travel planning measures will be to reduce car trips, particularly single occupancy trips. This Travel Plan Framework provides the basis for the development of the Travel Plan. The implementation strategy will incorporate measures to support the development of an effective Travel Plan with the core aims being to:

- Encourage staff and visitors to use alternative modes of transport.
- Monitor regularly the means of travel used by staff and visitors and seek to encourage transfer to the most sustainable modes.
- Provide transport information for staff and visitors in order to encourage use of sustainable modes.

- 6.3.4 Management will employ reasonable measures to ensure that the Travel Plan becomes a success in the organisations. The aspirations of the Travel Plan should be specific to the business needs and in order to establish a set of objectives the existing

issues, barriers and incentives should be addressed to encourage sustainable mode choice.

6.3.5 This could include the following objectives relating to staff travel:

- Reduce the need for travel – both commuting trips and trips made during working hours.
- Increase awareness among staff of travel choices, environmental implications of travel, and health benefits of sustainable travel.
- Facilitate and promote more active forms of travel.
- Increase the share of staff travelling to work by walking, cycling or public transport.
- Reduce car use and in particular private car use.
- To ensure the Travel Plan is reviewed, monitored and updated regularly.
- Similar objectives can be pursued with regard to infrequent visitors to developments, including office visitors and customers which the Travel Plan should recognise where appropriate.

6.3.6 Staff would be required to complete a questionnaire giving details of their typical travel to work patterns. A Travel Information Pack would be provided to all new staff. This pack would include:

- Pedestrian route plan.
- Cycle route plan.
- A public transport map highlighting local services and facilities in the area that can be used to access the site.
- Car Park Management Strategy.

6.4 Delivery and Implementation Strategy

6.4.1 Successful delivery and implementation of a Travel Plan can improve; accessibility by sustainable modes, positively affect modal choice for journeys to work and reduce congestion on the road network. The most important measure of a Travel Plan's success is its effect on travel behaviour through reduced single occupancy car use and promotion of more sustainable forms of travel.

6.4.2 To assist in the delivery of a successful Travel Plan for the development the following strategy will be pursued:

- Implementation of site wide measures to promote sustainable travel by all users.

- Appointment of a Travel Plan Co-ordinator to oversee the implementation and management of the Travel Plan.
- Prepare a Travel Plan specific to the business aimed at reducing car trips by employees and visitors.
- Within 3 months of first occupation, establish a base line travel pattern to the development through a programme of Staff Travel Surveys to be undertaken annually.
- Set clear modal shift targets with specific dates for their achievement.
- Monitor the progress of the Travel Plan at regular intervals.

6.5 Appointment of a Travel Plan Co-ordinator

- 6.5.1 The key to successful implementation of a Travel Plan is staff involvement at all stages. In addition, within a site occupied by multiple companies there is a need for communication between the companies in order to maximise the potential benefits of implementing Travel Plan measures.
- 6.5.2 Consultation will be achieved via the Travel Plan Co-ordinator. Once appointed, the name and contact details of the Travel Plan Co-ordinator will be provided to the Council.
- 6.5.3 The role of the Travel Plan Co-ordinator would be to provide the link between strategy, provision, implementation and monitoring. The Travel Plan Co-ordinator will be responsible for:
- Implementation of the Travel Plan, including preparation of initial travel surveys to be undertaken by individual companies and agreement of travel mode share targets.
 - Being the point of contact for travel information, including preparation and distribution of up to date travel information packs on a regular basis.
 - Liaising with public transport operators, planning / highway authorities and other stakeholders to explore the potential for sustainable travel improvements.
 - Liaison with neighbouring employers to explore opportunities for co-operation in achieving the aims of the Travel Plan.
 - Promoting and marketing the Travel Plan to existing and new, including provision of up to date information on regional and national initiatives / promotional events, e.g. National Bike Week.
 - Monitoring progress of the Travel Plan through co-ordinating repeat surveys and using the findings to develop new measures as necessary to encourage sustainable travel.

- Regularly reviewing the aims / objectives of the Travel Plan and implementing any new Travel Plan measures and setting revised travel targets.
- Implementing any bike purchase or public transport season ticket schemes.
- Annual review of the progress of the Travel Plan with the Council.

6.6 Staff Travel Survey

6.6.1 Within the first 3 months of occupation, the Travel Plan Co-ordinator will liaise with the company to ensure that a Staff Travel Survey is carried out to establish travel patterns and obtain views of staff with regard to any existing barriers to sustainable travel, and any measures that could potentially be implemented to encourage sustainable travel. The survey data would be collected via self-completion questionnaires issued to staff, and passed to the Travel Plan Co-ordinator. In addition to this, an annual staff survey would also be undertaken on the selected survey date.

6.6.2 Surveys can be undertaken electronically or by paper means to capture the required data.

6.7 Travel Targets

6.7.1 Travel targets will be set, in agreement with the Council, following the completion of the initial travel surveys and a thorough review of the data obtained. It should be noted that some of the travel planning measures and initiatives will be in place prior to the first travel surveys being undertaken in order to promote sustainable travel to employees of the new development from the day of opening.

6.7.2 A reasonable Travel Plan target could be to achieve a 5% reduction in single occupancy car trips over a 5 year period, with a proportionate increase in other sustainable modes of travel. Staff travel surveys upon occupation of the development will determine the base line Mode Share.

6.8 Travel Plan Measures

6.8.1 This Section sets out a range of measures that will assist in achieving the aims and targets of the Travel Plan. The employer will allocate reasonable resources to ensure that the identified measures can be considered and implemented.

6.8.2 A number of site wide measures will be implemented from the outset which will contribute towards the aim of reducing single occupancy car travel to the site at the planning and design stage.

6.8.3 The site is recognised as being within a highly accessible location where people will have a number of travel options from a variety of local and national origins.

6.8.4 The following tables present additional measures that can be considered for inclusion within the Travel Plan, and they are set out in two categories:

- **IMPLEMENT** – These measures should be implemented within a specified time from occupation.

- **CONSIDER** – These measures should be considered for implementation if justified by the findings of the Travel Survey and/or an assessment of feasibility/deliverability.

6.8.5 The measures are also given timescales for action:

- **SHORT** – up to 3 months.
- **MEDIUM** – 3 months to a year.
- **LONG** – over a year.

Management of the Plan

STATUS	ACTION	COMMENTS	TIMESCALE
Implement	Senior management support.	This is key to the success of the Travel Plan.	Immediate – Prior to Occupation
Implement	Appointment of Transport Co-ordinator.	Co-ordinator role to be identified in the management structure.	Immediate – Prior to Occupation
Implement	Clearly identify role/position of Transport Co-ordinator within management hierarchy.	Identify person responsible for allocating funding and staff time for implementation of the Travel Plan.	Immediate – Prior to Occupation
Implement	Staff Travel Survey.	Key to obtaining up to date information.	Short – 3 months
Consider	Tie-in with measures of adjacent employers.	Transport Co-ordinator to liaise with adjacent businesses and explore opportunities as a Working Group.	Short – 3 months

Actions for Raising Awareness and Marketing the Plan

STATUS	ACTION	COMMENTS	TIMESCALE
Implement	All staff will be made aware of the contents of the Travel Plan and will be encouraged to travel by sustainable transport.	The Plan will be actively marketed to seek staff co-operation and encourage 'ownership' of the Plan.	Immediate – Prior to Occupation
Implement	Transport Co-ordinator to operate an open door policy to encourage participation.	Important to engage staff in order to implement appropriate measures that will encourage suitable travel.	Immediate – Prior to Occupation
Implement	Issue a Travel Information Pack to all staff as part of the induction process.	Pack to set out current information on sustainable travel options.	Immediate – Prior to Occupation
Implement	Promotional events.	Advertise and promote participation in national events such as national bike week.	Ongoing
Implement	Travel Awareness to be targeted at all staff on site. Suitable communications media to be identified.	Important to publicise success and keep staff informed.	Medium – 12 months
Implement	Raise awareness of Travel Planning through company websites	Company website to promote sustainable means of travel for staff and visitors	Immediate – Upon Occupation

Actions to Reduce the Need to Travel

STATUS	ACTION	COMMENTS	TIMESCALE
Implement	Make staff aware of amenities in the area to reduce the need to drive during the day.	There are many city centre facilities in the area.	Immediate – Prior to Occupation
Consider	Internet access for staff at break times.	Can remove / reduce the need to travel during the day.	Immediate – Upon Occupation

Actions to Promote Walking and Cycling

STATUS	ACTION	COMMENTS	TIMESCALE
Implement	Provision of secure covered cycle parking and monitoring of usage.	Staff parking for bicycles will be provided. Additional visitor cycle parking will be provided externally.	Immediate – Prior to Occupation
Implement	Display up to date information on local walking and cycling routes.	Information to be displayed where it can be viewed by staff and visitors.	Immediate – Upon Occupation
Implement	Ongoing promotion of cycling and walking as part of healthy living. Promote walking/cycling for special events e.g. bike2work week.	Transport Co-ordinator to regularly distribute information via staff notice boards / intranet / email.	Short – 3 months
Implement	Shower, changing and locker facilities	Staff shower & locker facilities will be provided for those choosing to commute by active travel modes.	Immediate – Prior to opening
Consider	Offering staff access to a government backed scheme for the tax efficient purchase of a bicycle.	Many websites available e.g. www.cyclescheme.co.uk	Medium – 6 months
Consider	Participation in wider cycling measures.	Measures may typically include participation in a local bicycle user group, provision of advice/training on safe cycling, arranging discounts with local cycle retailer etc.	Medium – 12 months

Actions to Promote Public Transport

STATUS	ACTION	COMMENTS	TIMESCALE
Implement	Publicity of taxi details and public transport routes, timetables and travel information lines for staff.	Current information to be displayed in public area and on Intranet. Promote bus and rail websites and on-line journey planning tools.	Immediate – Prior to Occupation
Consider	Subsidised public transport travel	Incentives to encourage staff to travel by public transport rather than car.	Long – Over 12 months

Actions to Reduce Car Use / Modify Driving Behaviour

STATUS	ACTION	COMMENTS	TIMESCALE
Implement	Provide details of travel options to visitors	Provide travel options through website. Emphasise no available car parking.	Immediate – Upon Occupation
Implement	Promote car sharing.	Where appropriate and to meet the needs of the business. Potential to co-ordinate with neighbouring businesses.	Short – 3 months
Implement	Provision of Car Club for staff that may travel by car during the day. Ensure that any new lease cars are fuel efficient.	Car Club space / contribution is proposed.	Immediate – Upon Occupation
Consider	Guarantee lift home scheme.	Consider guaranteed lift home in times of emergency for those who do not drive to work.	Medium – 12 months
Consider	Discussion with taxi operators for reduced fares	Can reduce dependency on private car use for staff and visitors.	Medium – 6 months

6.9 Monitoring

- 6.9.1 The building occupier will be required to assess staff travel patterns within 3 months of occupation through a staff questionnaire. Thereafter surveys will be undertaken annually. The results of this survey will then be collated and reviewed by the Travel Plan Co-ordinator to determine the modal share for the development. Results will be used to identify specific measures to be incorporated into the Travel Plan document in future.
- 6.9.2 Information on current travel behaviour will be summarised and circulated among staff through information boards and emails with key initiatives highlighted. Other sustainable travel alternatives to private car use will be promoted through information packs and email / intranet.
- 6.9.3 The Travel Plan Co-ordinator will review the effects of the various initiatives with the Council on an annual basis. The purpose of this review is to:
- Provide a running assessment of how staff travel to the site.
 - Assess performance against the aims and targets of the Plan.
 - Demonstrate continued management support.

- Develop revised targets for staff travel.
- Review and alteration of initiatives if necessary.
- Develop new initiatives to encourage reduced use of the private car.

6.9.4 The Travel Plan Co-ordinator will produce an annual monitoring report, which will be submitted to the Council. The report will include the Staff Travel Survey results, analysis of trends against previous surveys, brief details of marketing and promotional events during the past year and details of any new measures adopted. It will also include details of relevant changes in personnel associated with the Travel Plan.

6.9.5 Annual surveys would be used for monitoring purposes. This would identify the changes in modal split over a defined period. If the surveys reveal that the targeted changes have not been met, areas where improvements are required would be identified and measures implemented with a view to reversing the trend.

6.9.6 Targets would be set following the completion of the initial Travel Plan surveys. It is anticipated that these surveys could be undertaken within 3 months of occupation. Several of the travel planning measures and initiatives would be in place prior to the surveys being undertaken in order to promote sustainable travel to the development from the outset.

6.10 Review

6.10.1 The Travel Plan is an organic document that will require periodic review of targets and measures, in consultation with the Council.

6.10.2 The first review should take place one year after the initial travel surveys, with further reviews annually thereafter.

6.10.3 Where monitoring has revealed issues with the progress of the Plan, revised targets or further measures will be identified, and agreed with the Council, to address these issues.

6.11 Action Plan

6.11.1 Beyond planning consent the following actions would be taken to develop and maintain the Travel Plan.

- Appointment of a Travel Plan Co-ordinator shortly after planning consent granted.
- Implementation of site wide Travel Plan measures by the developer prior to building occupation.
- Travel Plan Co-ordinator to regularly review public transport plans, timetables, and relevant policy and changes to the area affecting travel to the site.
- Travel Plan Co-ordinator to ensure that measures proposed are being implemented.

- Travel Plan Co-ordinator to obtain initial Staff Travel Survey within 3 months of occupation.
- Travel Plan Co-ordinator to prepare an initial site wide Travel Plan within 6 months of occupation, setting out Mode Share Targets for staff.
- Travel Plan Co-ordinator to implement annual Staff Travel Surveys.
- Travel Plan Co-ordinator to review responses to the Staff Travel Survey annually and produce a Monitoring Report for discussion with the Council.
- Travel Plan Co-ordinator to update the Travel Plan on an annual basis responding to the Monitoring Report details, reviewing measures to be implemented and Mode Share targets for staff and visitors where appropriate.
- Travel Plan Co-ordinator to encourage implementation of new measures as necessary to respond to the results of Staff Travel Surveys.

7 Summary and Conclusion

7.1 General

- 7.1.1 This Transport Assessment (TA) has been prepared for Aberdeen City Council (ACC) in support of a planning application for the redevelopment of Aberdeen's indoor market at Market Street. The mixed use development will consist of circa 4,987m² GFA, which includes the open air market and pedestrian links, of Use Classes 1, 3 and 11 to cover retail, food and exhibition.
- 7.1.2 The site is located on Market Street within central Aberdeen just south of Union Street. Retail, office and restaurant units predominantly surround the site and as a result of its central location it is highly accessible from sustainable transport means.
- 7.1.3 The site was previously operational under the collective name of Aberdeen Indoor Market and had around 500 square metres of stalls. The current building has been deteriorating for some time and is identified in the Adopted Aberdeen City Local Development Plan (ALDP) 2017 as OP67 for retail and mixed use developments.
- 7.1.4 Planning permission was previously granted on the existing site to form a mixed use office-led development, with retail, financial and professional, food and drink (, public house and assembly and leisure uses, landscaping, public realm, car parking and associated works.
- 7.1.5 The current Aberdeen Market proposal does not include any office development and no car parking is proposed. The traffic impact directly at the site and on the surrounding road network will therefore be less than what has already been assessed and which currently has planning consent.

7.2 Transport Planning Policy Context

- 7.2.1 The TA has been undertaken giving regard to appropriate national, regional and local planning policies and the proposed development is considered to be in accordance with Policy at National, Regional and Local levels.

7.3 Development Proposals

- 7.3.1 The proposals brought forward in the current Masterplan is to redevelop the Aberdeen Market with new development containing a total GFA of circa 4,987m², which includes the open air market and pedestrian links.
- 7.3.2 The main portion of the site will be the creation of the new Market. A new pedestrian route will be created at the ground floor of the existing BHS building on Union Street which lead across a bridge to the new Market building and then down to the Green level via escalators, lift and steps, and link in to the route to Union Square and the Train Station.

- 7.3.3 Servicing is via a service area on the east of the plan. It is anticipated delivery vans will enter via a roller shutter on East Green, unload, turn round and exit the same way so there will be no reversing on public roads.
- 7.3.4 Vehicular access to the development will continue to be provided from Hadden Street and East Green, however the proposals do not include any on-site car parking. As a site located in the heart of the city centre and adjacent to both the bus and train stations, numerous public car parks and the major bus routes of Guild Street, Market Street and Union Street, the provision of zero parking is in accordance with the City Centre Masterplan.
- 7.3.5 The proposals will allow for the provision of 1 disabled space, 1 Electric Vehicle charge point space and 1 Car Club space.
- 7.3.6 Cycle parking will be provided in order to increase the existing provision that is provided on Haden Street adjacent to the Taxi Rank.
- 7.3.7 The redevelopment proposals will remove all the existing car parking, with space retained for servicing needs, with the provision of 3 new van spaces accessed via roller doors from East Green.
- 7.3.8 The servicing of the development will continue to be taken from Hadden Street / East Green (under Market Street) as is the existing arrangement for the Aberdeen Market and other businesses and flats around the Market Street / Union Street junction.

7.4 Accessibility Summary

- 7.4.1 The site location is highly accessible by a number of sustainable transport modes, which makes it particularly suitable for retail and food & drink uses. Due to the development's locations within the heart of the City Centre, the development would generate a high level of pedestrian trips not only during weekday peak periods, but at all times of the week. In addition, the development has excellent access to the National Cycle Network and Aberdeen Bus and Rail Stations, allowing sustainable travel to destinations that are further afield.
- 7.4.2 Given the site's accessibility and proximity to sustainable transport networks, car dependency would be greatly reduced.

7.5 Traffic Impact Summary

- 7.5.1 As requested by ACC-RDD, an overview of the previous traffic impact analysis that was undertaken in support of the consented Aberdeen Market Redevelopment proposals (Ref: 190312/DPP) has been included.
- 7.5.2 The previous assessment considered vehicle trips routing directly to the Aberdeen Market site, which will not occur under the current proposals with no car parking included as part of the proposals, which is in accordance with the 'zero parking for new development' aspirations set within the CCMP.

- 7.5.3 Traffic surveys were previously undertaken in order to establish a current base traffic network that takes account of the opening of the AWPR. The study area and survey dates were agreed in advance with ACC-RDD.
- 7.5.4 A percentage threshold assessment of the consented development traffic was undertaken and submitted to ACC-RDD in order to agree the junctions that required further detailed junction analysis.
- 7.5.5 Due to the low volume of consented development vehicle trips, the percentage threshold assessment concluded that the only junction that required further detailed analysis was the Market Street / Hadden Street junction, which provides the main access to the consented development.
- 7.5.6 The junction analysis results confirmed that the junction was predicted to operate well within capacity, with and without the consented development traffic, during both the AM and PM peak hours.

7.6 Travel Plan Framework

- 7.6.1 A framework for the development a site specific travel plan has been included. This would be developed post occupation following staff travel surveys. The resulting Travel Plan would be updated on a regular basis with revised targets set in consultation with the Council.

7.7 Conclusion

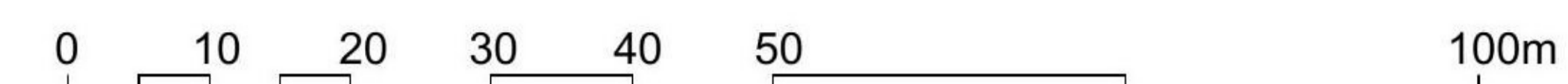
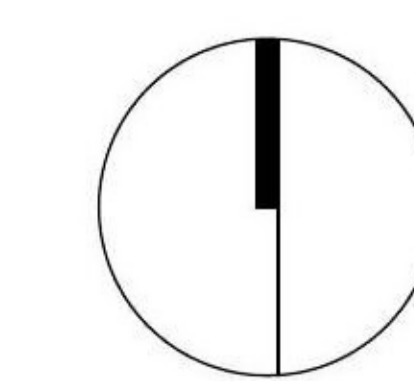
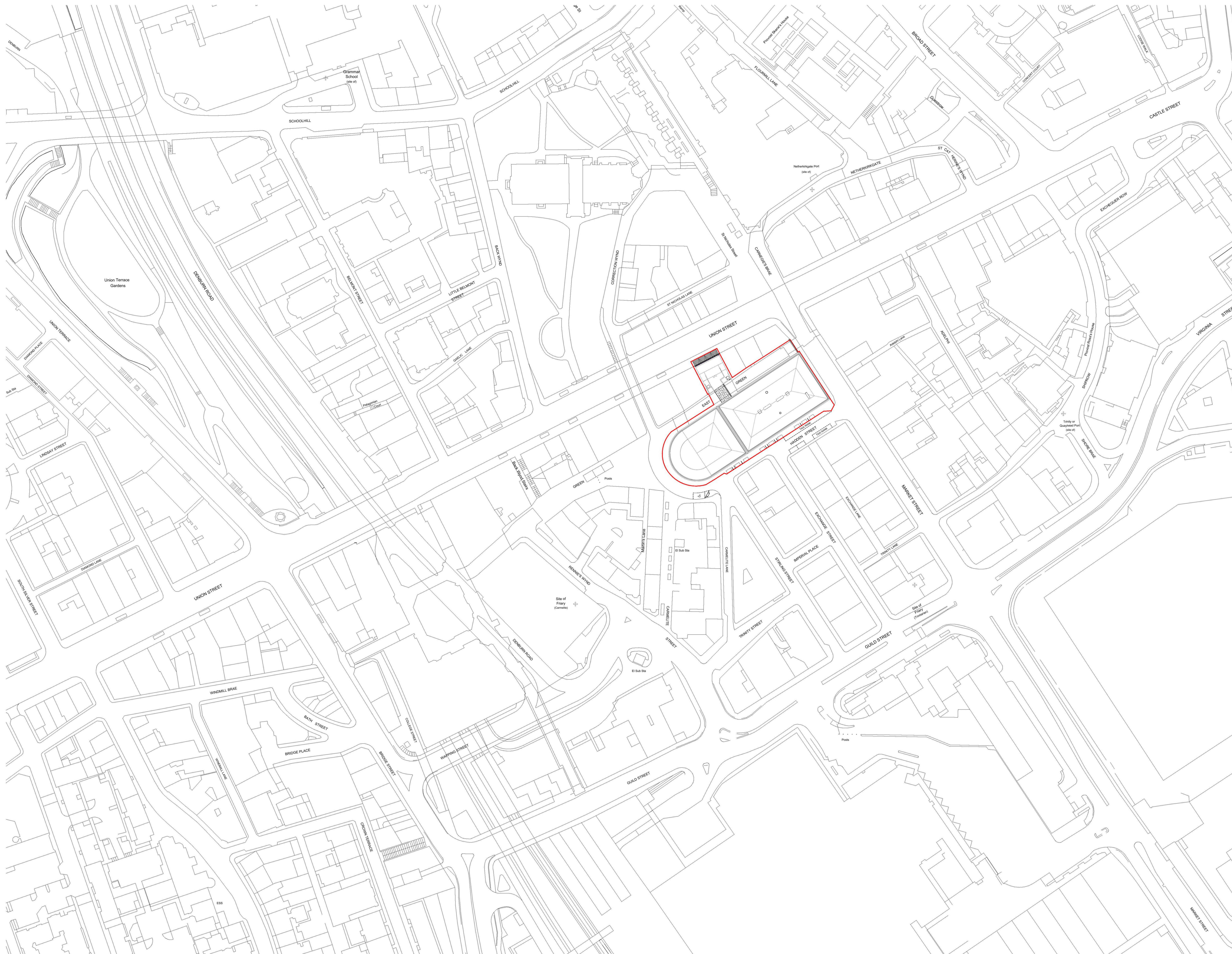
- 7.7.1 The site is highly accessible by walking, cycling and public transport, as well as for vehicles to/from the adjacent local and strategic road network.
- 7.7.2 The traffic impact analysis for the consented development concluded that there were no junction improvements required as a result of the traffic generated by the consented development.
- 7.7.3 Given that the current redevelopment proposals for the Aberdeen Market will result in less traffic generation than what already has planning consent, it can be concluded that the current proposals will not result in any notable impact on the local road network and therefore no mitigation is required.
- 7.7.4 It is concluded that the site's location and characteristics meet with both local and national policies on sustainable development, and any traffic or transport impacts will not be significant.

Appendix A

Site Location Plan: HFM Drawing No. AMKT-HFM-ZZ-ZZ-DR-A-90-001

Site Plan: HFM Drawing No. AMKT-HFM-ZZ-ZZ-DR-A-90-002

East Green Service Access: HFM Drawing No. AMKT-HFM-ZZ-ZZ-DR-
A-00-100



HALLIDAY FRASER MUNRO
 CHARTERED ARCHITECTS & PLANNING CONSULTANTS

Project:
 Aberdeen Market Redevelopment

Client:
 Aberdeen City Council

Title:
 Location Plan

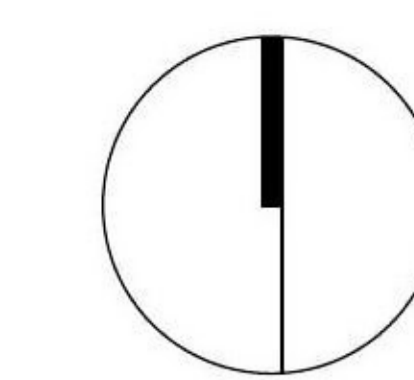
Identification / Location		Drawing Number	
Project Code	Originator Code	Volume / Location / Level	Type / Revision / Classification / Number
AMKT	HFM	- ZZ - ZZ	- DR - A - 90 001

Drawing Status: **Planning** Revision
 Scale: 1:1000 @ A1 Date: Oct 2021

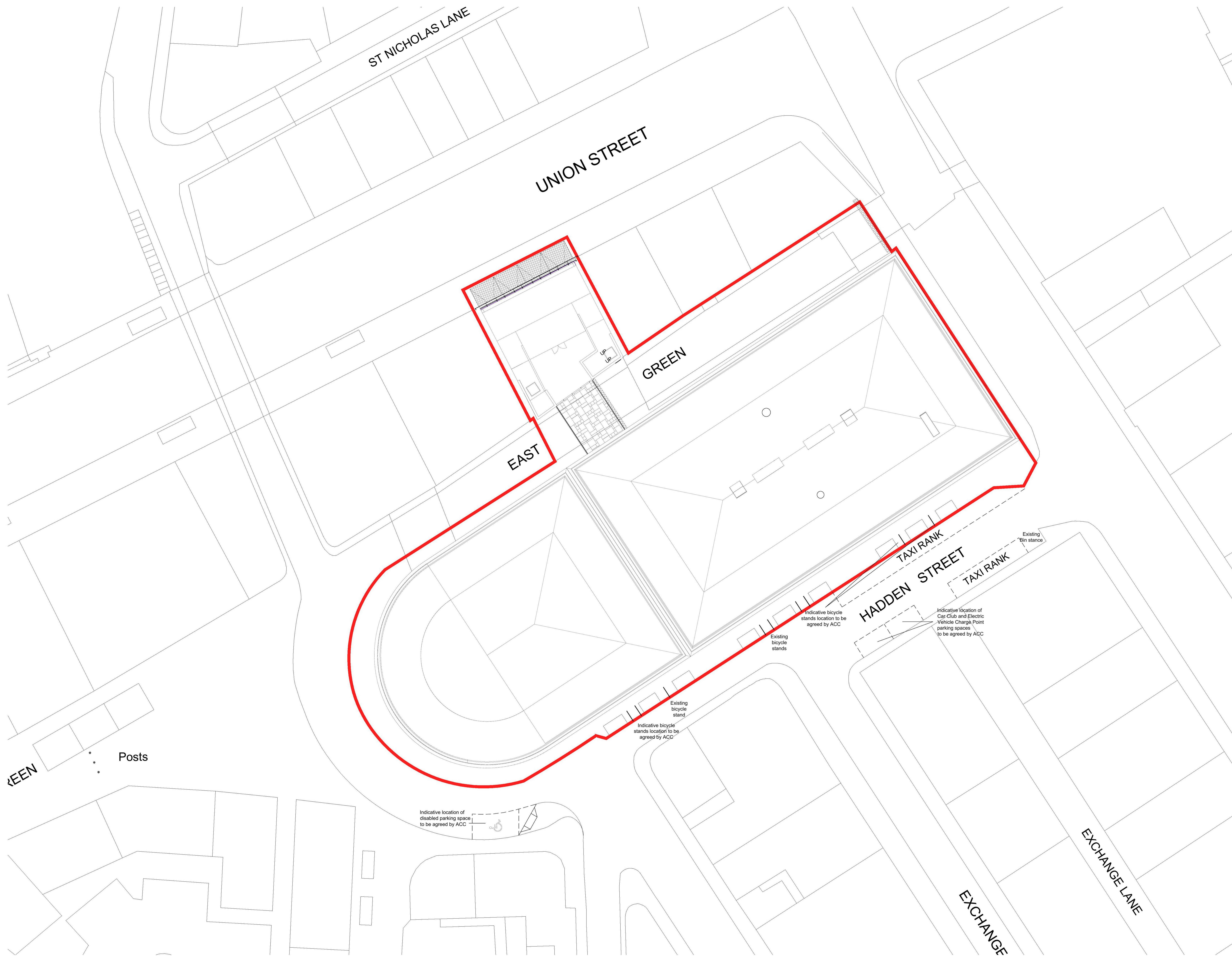
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Project:
Aberdeen Market Redevelopment

Client:
Aberdeen City Council

Title:
Proposed Site Plan

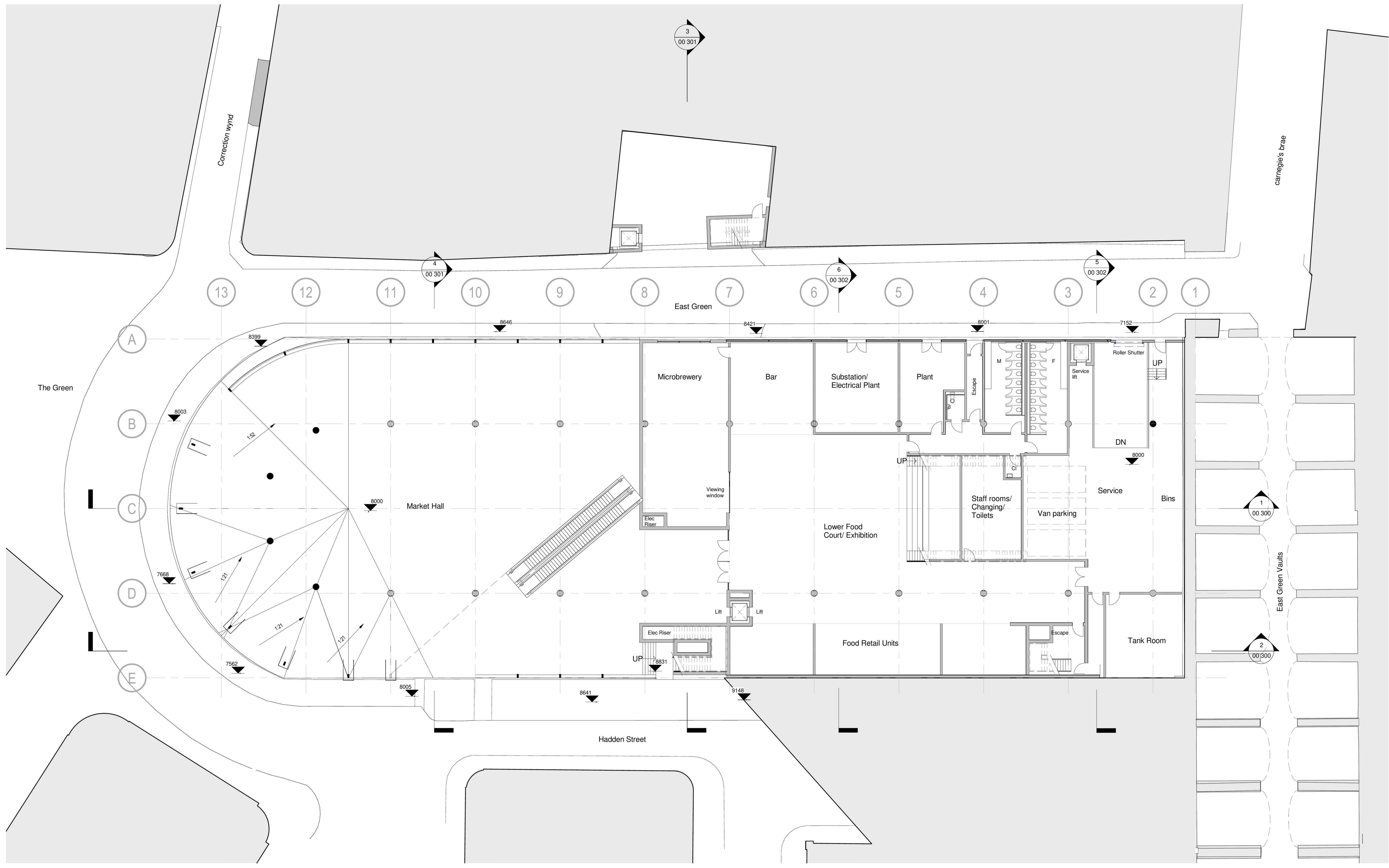
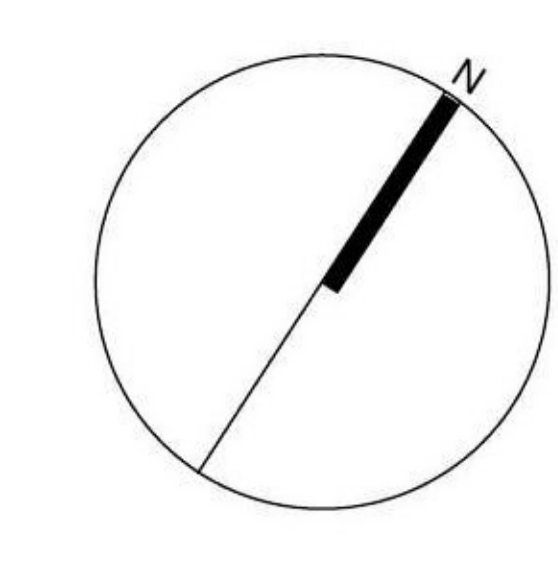
Document Reference						
Project Code	Original Code	Volume	Location / Level	Type	Revision	Drawing Number
AMKT	HFM	- ZZ	- ZZ	- DR	- A	- 90 002

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Planning	
Scale: 1:250 @ A1	Date: Oct 2021

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- B Lift relocated to terrace, terrace stairs updated, flood defence wall added to north, door from bar omitted 08.10.21
- A Layout updated to remove stairs at bridge, internal layout updated. 01.10.21

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Project:
Project Name

Client:
Client

Title:
GENERAL ARRANGMENT PLAN - THE GREEN

Revision	Description	Date
00300	1	
00300	2	

Document Reference
 AMKT - HFM - ZZ - 00 - DR - A - 00 100

Drawing Status: **PRELIMINARY** Revision: **B**

Scale: **1 : 200 - A1** Date: **09/21/21**

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Appendix B

Scoping Correspondence

Mark Peters

From: Scott Lynch <SLynch@aberdeencity.gov.uk>
Sent: 29 September 2021 13:16
To: Mark Peters
Subject: RE: 144793: Redevelopment of Aberdeen Market

Hi Mark,

Long time no speak – hope you're well!

The below is acceptable. I'd ask that you include a section of the new TA on traffic impact, but it can consist of a summary of the study of the traffic impact of the previously approved scheme, and a note on how the traffic related to the new proposal will compare – i.e. if you're saying it'll be the same or less, hence that the results still hold true, etc.

I would also ask for consideration of car club – I can't remember if this was previously requested, but given the city centre location, and the proposed office use, it would permit staff who use sustainable modes to get to work to still have a car available to go to meeting elsewhere – in the same way that ACC use car club cars for this purpose.

Scott

From: Mark Peters <mark.peters@fairhurst.co.uk>
Sent: 29 September 2021 12:20
To: Scott Lynch <SLynch@aberdeencity.gov.uk>
Subject: RE: 144793: Redevelopment of Aberdeen Market

Hi Scott

As you are aware we previously provided a Transport Assessment in support of the redevelopment of Aberdeen Market with the previous proposals consisting mainly of office with additional café / restaurant development and associated parking. The report was structured as follows:

- Introduction
- Transport Planning Policy Context
- Development Proposals
- Site Accessibility
- Travel Demand Forecast
- Trip Distribution & Traffic Impact Analysis
- Travel Plan Framework
- Summary & Conclusions

Planning consent was previously granted, however as you are aware new proposals on the site are now being taken forward. The proposed development will now include Class 1 retail and Class 3 food/ café, with essentially no car parking, other than some operational parking and provision for disabled and electric vehicles. It is not anticipated that this will result in any more provision than is currently on the Aberdeen Market site, and will likely be less.

The previous proposals assessed the traffic impact of the office development based on the level of parking that was then proposed and the resulting vehicle arrivals and departures. Post AWPR traffic data was recorded at the following junctions with a percentage threshold assessment undertaken:

- Union Street / Market Street Signalised Junction
- Market Street / Hadden Street Priority Junction
- Market Street / Trinity Quay / A956 / Guild Street Signalised Junction
- Guild Street / Exchange Street Priority Junction
- Guild Street / Carmelite Street
- Carmelite Street / Trinity Street Priority Junction
- A93 / Denburn Road Signalised Junction
- B993 / A93 Signalised Junction
- B993 / Guild Street / A93 Signalised Junction
- Guild Street / Aberdeen Bus Station Junction

Due to the low volume of development vehicle trips for the then office development proposals, the percentage threshold assessment concluded that the only junction that required further detailed analysis was the Market Street / Hadden Street junction, which provides the main access to the development's car park. The junction analysis results confirmed that the junction operated well within capacity at that time and was predicted to continue to operate well within capacity during both the AM and PM peak hours with the office development traffic included.

Given that the current proposals will not result in any notable vehicle trips direct to the Aberdeen Market Site, it is not considered necessary to provide any new or updated traffic impact analysis. The site is located within the heart of the City Centre adjacent to Aberdeen bus and train station, as well as the main bus routes of Guild Street, Market Street and Union Street. Several City Centre Car Park are located within acceptable walking distance and the majority of the daily visitors will already be within the City Centre accessing other retail, food, entertainment and employment facilities.

There are also several proposals currently being taken forward through the City Centre Masterplan which may result in roads such as Guild Street, Market Street and Union Street being bus only / pedestrianised whilst also allowing Taxi and Cycles and servicing access.

We are awaiting finalised development layout plans and GFA's for the Class 1 retail and Class 3 food/ café development proposals, however it is anticipated that in support of a new planning application, the previous Aberdeen Market TA would be updated and amended accordingly. Updates would essentially relate to the development proposals, the previously approved planning application and the current status of the City Centre Masterplan projects. Site Accessibility would be reviewed and updated if required, particularly in relation to the public transport services as these often change in frequencies and routing. There would be no need for any traffic impact analysis, however an overview of the travel demands in terms of the sites interaction and linkage with existing City Centre amenities would be included. Details relating to servicing needs and routes would also be included.

It is therefore proposed that a supporting TA would include the following sections:

- Introduction
- Transport Planning Policy Context
- Development Proposals
- Site Access, Parking and Servicing Requirements
- Site Accessibility
- Travel Demand Overview
- Travel Plan Framework
- Summary & Conclusions

Can you confirm that the above approach would be acceptable?

Regards

Mark

Mark Peters, IEng BSc (Hons) MCIHT
Principal Engineer - Transportation

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From: Scott Lynch <SLynch@aberdeencity.gov.uk>
Sent: 07 September 2021 11:22
To: Mark Peters <mark.peters@fairhurst.co.uk>
Cc: Ross McDonald <ross.mcdonald@fairhurst.co.uk>
Subject: RE: 144793: Redevelopment of Aberdeen Market

Hi Mark,

It's been a while – hope you're well!

Yes, my stance is the same as previously – minimal parking would be desirable here, although disabled and operational parking should be provided, and these should have electric vehicle charging provision.

We'd also need robust servicing facilities for this.

Cycle parking would be required in line with our SG.

Does that answer your queries?

Thanks,

Scott

From: Mark Peters <mark.peters@fairhurst.co.uk>
Sent: 07 September 2021 11:00
To: Scott Lynch <SLynch@aberdeencity.gov.uk>
Cc: Ross McDonald <ross.mcdonald@fairhurst.co.uk>
Subject: 144793: Redevelopment of Aberdeen Market

Hi Scott

As you are aware we were previously involved in the redevelopment proposals of Aberdeen Market which subsequently received planning approval.

There are revised proposals, which I think is coming forward through the City Vision project, or at least some involvement in that.

The new proposals are for the Green level to be Class 1 retail, the rest being Class 3 for food/ café. There will be occasions where the ground floor will also be an exhibition/ venue – which would make it a Class 11. We don't have detailed plans / GFA's to currently share, however we would like to establish what the parking requirements will be.

I recall from our previous discussions where the proposals were for office, there was a lot of debate regarding parking and the provision to be provided. Your position at that time was that due to the sites location in the heart of city centre and adjacent to both the bus and train stations, numerous car parks and the major bus routes of Guild Street, Market Street and Union Street, that zero parking would be acceptable in line with the City Centre Masterplan.

Can you confirm that this is still your position in regards to car parking? Please can you also advise what you would require in terms of cycle parking (ratios) and whether there would be a need for EV parking? I assume that an element of operational and disabled parking would be required / acceptable.

Regards

Mark

Mark Peters, IEng BSc (Hons) MCIHT
Principal Engineer - Transportation

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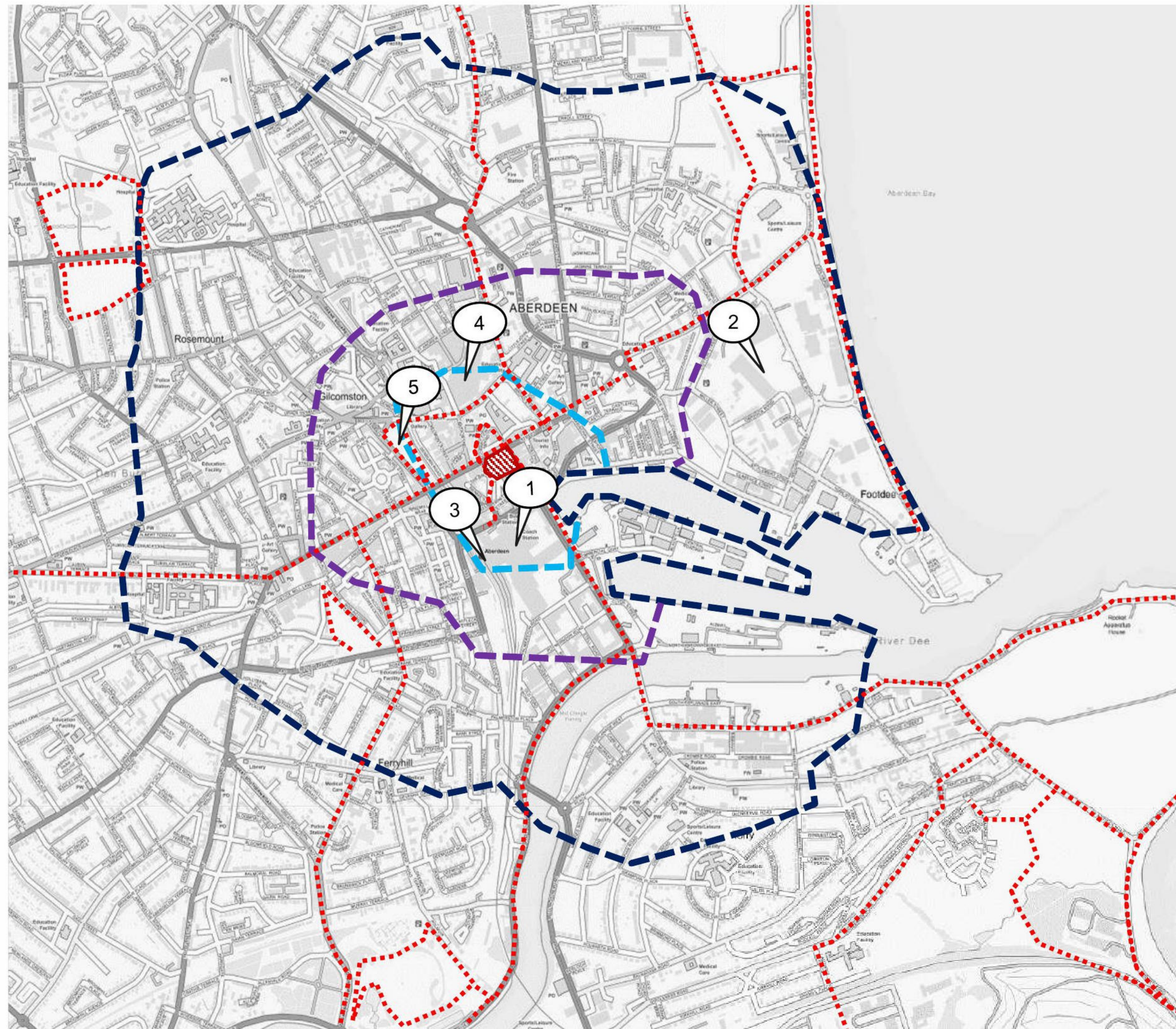
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Appendix C

Accessibility Maps

Project Title:
 144793: Redevelopment of
 Aberdeen Market, Market Street,
 Aberdeen
 Drawing Title:
 Figure 4-1: Walking Accessibility



KEY:

-  Development Site
-  1 Union Square
-  2 Beach Boulevard Retail Park
-  3 Aberdeen Bus and Rail Station
-  4 Bon Accord Centre
-  5 Union Terrace Gardens
-  400m Walking Isochrone
-  800m Walking Isochrone
-  1600m Walking Isochrone
-  Core Path Network

Client:



ABERDEEN
CITY COUNCIL

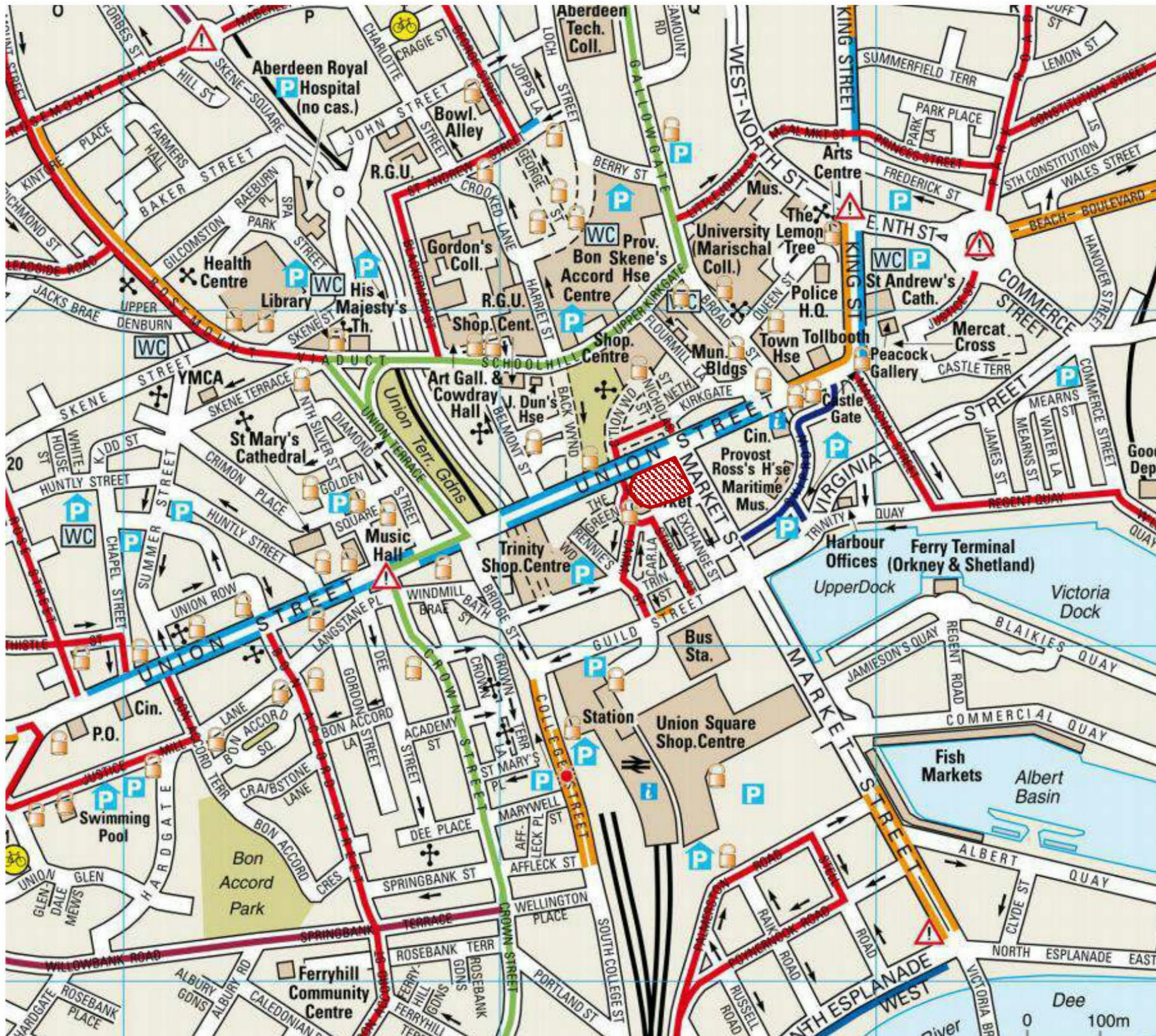
Drawn by: MP
 Date: 15/10/21
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 Westhill
 AB32 6UF
 T: 01224 047320
 F: 01224 323201

Project Title:

144793: Redevelopment of
Aberdeen Market, Market Street,
Aberdeen

Drawing Title:

Figure 4-2: Cycle Accessibility



- Development Site
- Bicycle Parking
- Bike Shop
- Care Needed
- Toucan Crossing / useful Pedestrian Crossing
- Recommended Route
- On Road Cycle Lane
- Bus, Cycle and Taxi Lane
- Dual Use Path
- Busy but Useful Road
- National Cycle Network, Route 1
- Dual Carriageway
- Other Road
- Restricted Road & Pedestrianised
- Rail
- Buildings
- Parks
- River/Lake
- Car Park - Multi-storey/covered
- Car Park - Open air
- Church Symbol
- Public Toilets

Client:



Drawn by: MP

Date: 15/10/21

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public transport guide

August 2019

This new revised edition of the **Aberdeen City Public Transport Guide** has been produced by Aberdeen City Council with assistance from First in Aberdeen, Stagecoach Bluebird and Bain's Coaches.

Inside you will find easy to read colour-coded maps of Aberdeen's daytime and night bus networks. There is also a city centre map showing all bus stops accompanied by a destination list to help you find the right departure point to catch your bus.

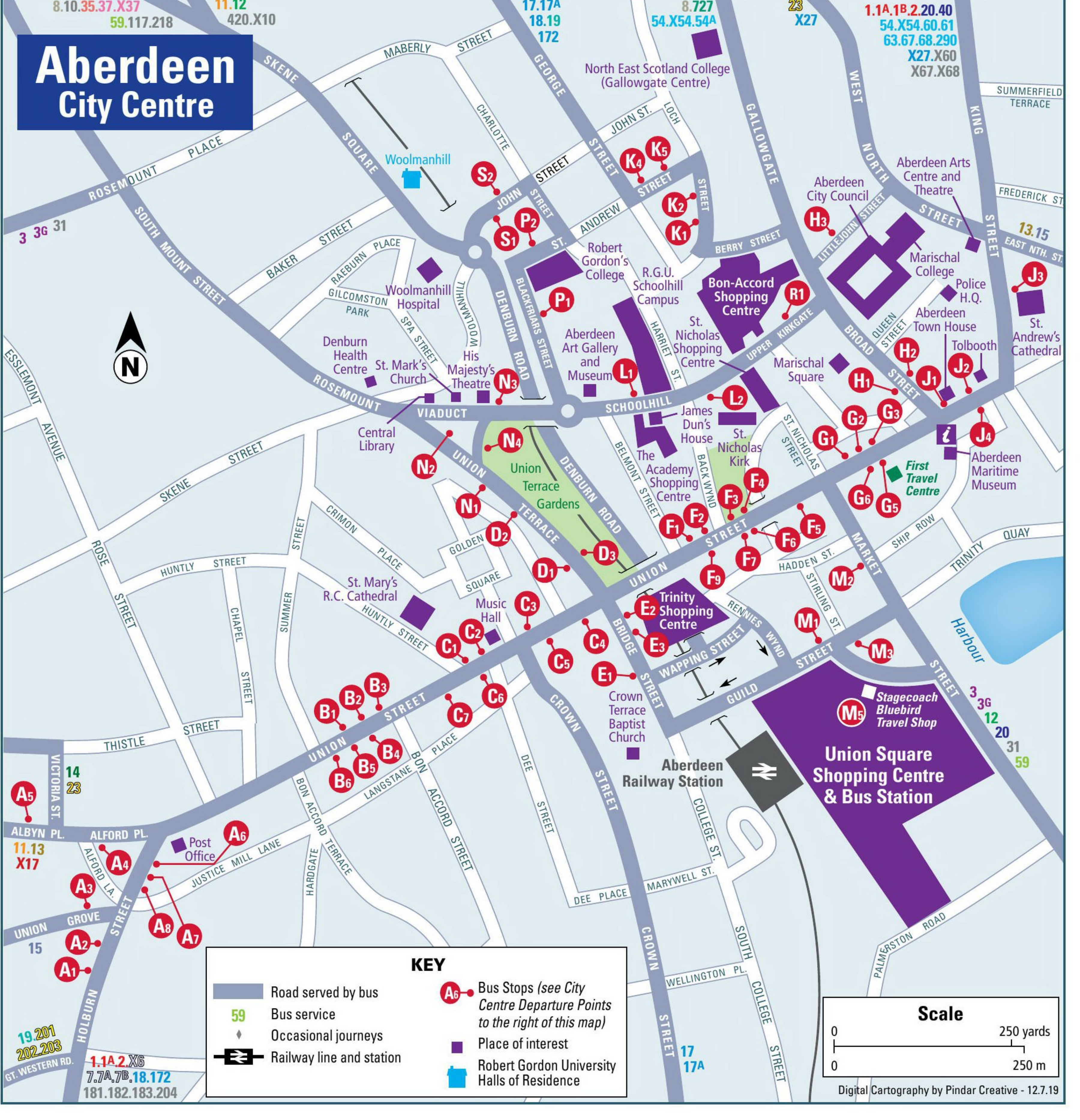
With a quick guide to places of interest, a list of bus operators and useful telephone numbers, this is the guide to help you make the most of travelling around Aberdeen City.

For detailed journey information and help with travel planning, contact:

www.getabout.org.uk

www.realtimebus.com

0871 200 22 33



All bus stops in Aberdeen City and Shire are equipped with QR Codes and NFC Technology. This allows you to look up bus times from your stop for free* using your Smartphone. Look for symbols like these at the bus stop

Just scan the top QR Code, or if you have a smartphone equipped with NFC technology, hold it against the indicated area to take you to a page showing the departure times from your stop. The lower codes will take you directly to the service operators websites.

Departures

NFC

Place Phone Over

First

Stagecoach Bluebird

* Requires a QR Code Reader application to be installed on your device and for an internet connection to be available. This service requires information to be retrieved from the internet, as such depending on your tariff there may be a charge for the data used.

www.getabout.org.uk

Getabout is a partnership featuring several organisations who work together to raise awareness of sustainable and active travel and to promote the alternatives to the private car in Aberdeen City and Shire.

Partners include members from the regional transport partnership Nestrans, Aberdeen City Council, Aberdeenshire Council, The Energy Savings Trust, NHS Grampian, Robert Gordon University and University of Aberdeen.

Working together, the partners want to promote a healthy and sustainable transport choice for everybody travelling within the region and beyond. All take steps to make active and sustainable forms of transport more accessible for their staff, their users and everybody in the north east.

By enabling you to consider options like car-sharing, taking the bus or train, cycling or walking for some trips - we can reduce congestion on the roads and everybody can enjoy the benefits.

Getting about Aberdeen City and Shire could not be easier with Getabout, just go to the website and you will find lots of information to help you. Including:

real-time travel

Find out where your bus is in real time

walkit.com

A comprehensive list of walking routes within Aberdeen City

Local rail timetables

A Local timetable for all stations in the North East

getabout.liftshare.com

A free car share website where you can offer or request lifts. Either as a one-off or every day, help the environment and save lots of money. You don't need a car to car share!

www.travelinescotland.org.uk

A to B in Scotland with a 24-hour helpline to help you plan your travel

Smarter Choices, Smarter Places

Supporting Sustainable Travel

A Scottish Government funded programme allowing local authorities to develop measures that will result in more journeys by sustainable transport. This guide was funded through the programme.

Guide To City Centre Departure Points

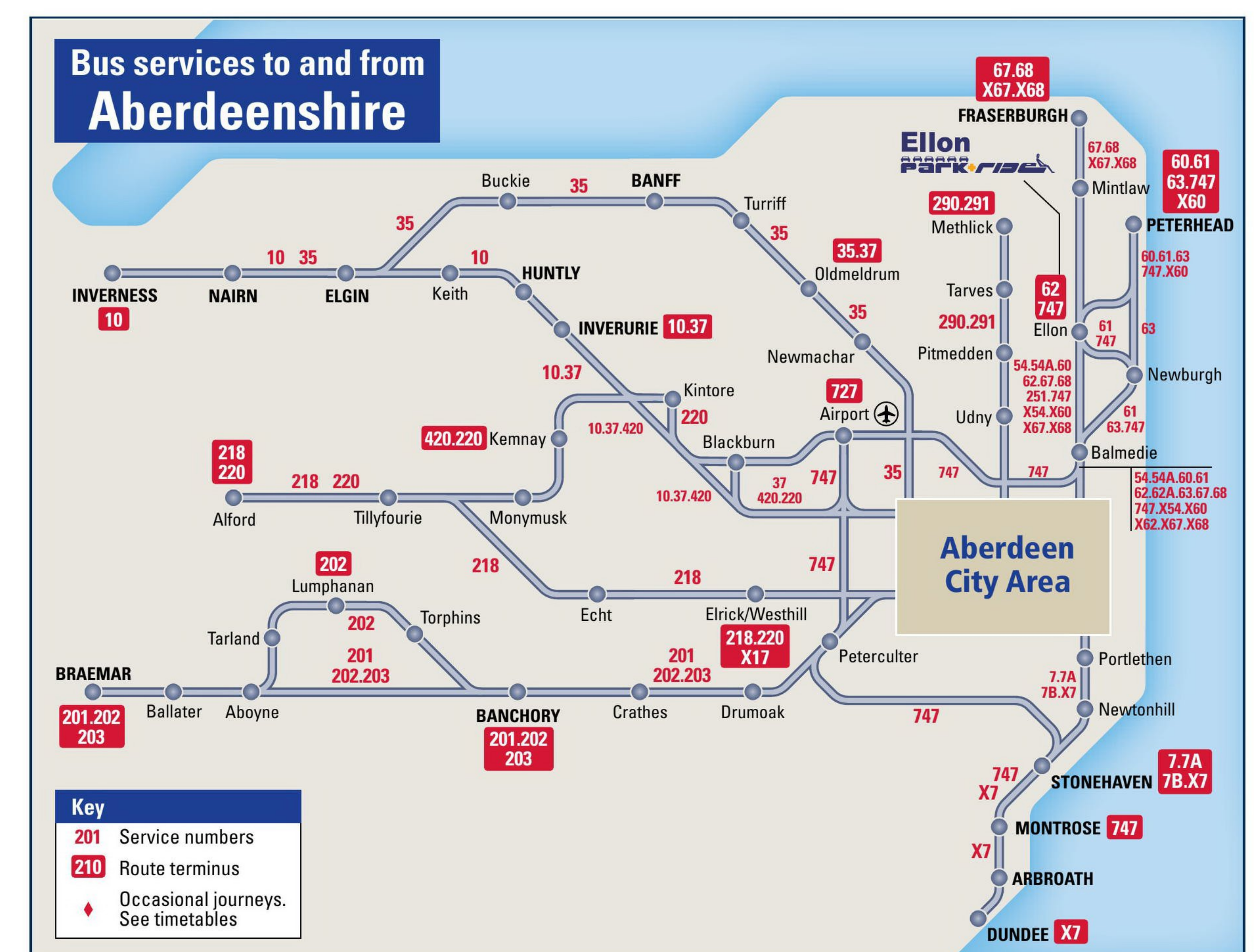
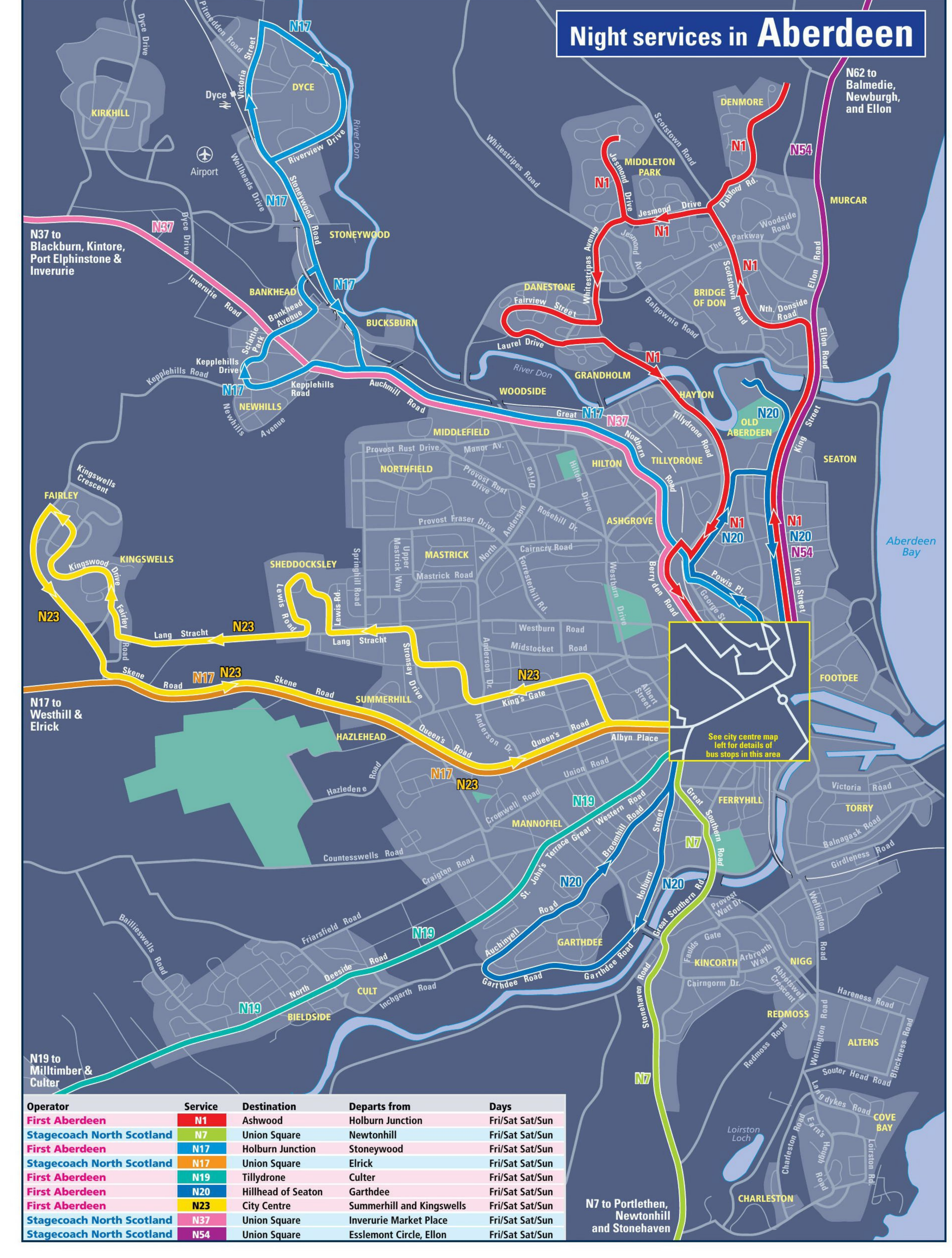
Destination	Service Nos.	City Centre Boarding Points
Aberdeen International Airport / Heliports	117, 727, X27	E2, F8, G1, H1, M5, B3, C3, F4, G1, H1, K2
Aberdeen Royal Infirmary	3, 3G, 8	D1, E1, M3, N1, E2, F7, G6, H2, R1, H2, G4, F6, G6, B5, A4, A4, B5, C5, F7, G6, J3
Airhall	15, 15A	D1, E1, M3, N3, P2, S1, D2, E1, M3, N3, P2, S1
Alitens Industrial Estate	3A, 7A, 18	A7, B4, C4, F5, F7, G5, G6, J3, A1, B1, C1, F1, A7, B5, C5, F7, G5, H2, K5
Ashgrove	11, 12	A5, B3, C3, F3, H1, D1, E1, M3, N3, P2, S1
Ashwood	2	A1, B2, C2, F2, J2
Auchinnyell	1, 2	A8, B6, C7, F9, G6, J4
Balnagoss	20, 12, 59	D3, F1, G2, H1, L2, N4, E3, M1, N4, P2, S2
Bankhead	17, 17A, X27, 18, 172, 37, 220, 420, 727	B3, C3, F4, G1, H1, K2, A2, B3, C2, F4, G5, H1, K1, D2, D3, E1, M5, N3, P2, S1, G1, H1, M5
Beach	15	A3, B1, B3, C1, F1, G2, J1
Berryden	11, 12, 220, 420, 305	A5, B3, C3, F3, H1, D1, E1, M3, N3, P2, S1, D2, E1, M5, N4, P2, S1, D2, N3, P2, S1
Bielside	19, 201, 202, 203	A7, B4, C4, F5, H2, K4, A7, B4, C4, F5, M5
Bridge of Don	1, 1B, 2, 40, 54, X54, 60, 61, 63, 67, 68, 290, 291, X60, X62, X67, X68	G1, M5
Bridge of Don	18, 40	A5, B2, C2, F2, G2
Bucksburn	17, 17A, X27, 18, 172, 35, 37, 220, 420, 727	B3, C3, F4, G1, H1, K2, A2, B3, C2, F4, H1, D2, M5, N3, P2, D2, E1, F3, M5, N3, P2, S1, D2, E1, M5, N4, P2, S1, G1, H1, M5
Cove	3, 3G, 18	E2, M1, N2, D2, E1, F3, M5, N3, P2, S1, D2, E1, M5, N4, P2, S1
Craigiebuckler	15	A7, B4, C4, F5, F7, G5, G6, J3
Culter	19, 201, 202, 203	A7, B4, C4, F5, H2, K4, A7, B4, C4, F5, M5
Cults	19, 201, 202, 203	A7, B4, C4, F5, H2, K4, A7, B4, C4, F5, M5
Danestone	1, 8, 18	A1, B2, C2, F2, J2, E2, F7, G6, H2, A2, B3, C2, F4, H1
Dubford	18, 8, 40	D1, F5, H2, L1, N3, P2, R1, S1
Duthie Park	7B, 17, 17A, 18, 172, 204	A6, B6, C5, F6, M5, C5, F6, G5, H2, K5, A7, B6, C5, F7, F6, G5, H2, K5, A7, B4, C4, F5, M5
Dyce	17, 17A, X27, 18, 172, 35, 37, 117, 305	B3, C3, F4, G1, H1, K2, E2, F7, G6, H2, D2, M5, N3, P2, E2, F8, D2, N3, P2, S1
Ellon	54, 60, 61, 67, 68, X54, X62, 254	G1, M5, D2
Ferryhill	17, 17A, X27	C5, F6, G5, H2, K5
Footdee	15	A3, B1, B3, C1, F1, G2, J1
Garthdee	1, 1B, 2	A8, B6, C7, F9, G6, J4
Gateway Business Park	3G, 7A, 7B	E2, M1, N2, A6, B6, C5, F7, F6
Hazlehead	11, X17	A4, B5, C6, F7, G6, H2, A4, B5, C6, F7
Heathryfold	12, 13, 23	D1, E1, M3, N3, P2, S1, A5, B1, C1, F1, G2, J1, A4, B5, C6, F7, G6, J3
Hillhead of Seaton	20	A1, B2, C2, F2, J2
Hilton	11, 12, 220, 420, 305, 727	A5, B3, C3, F3, H1, D1, E1, M3, N3, P2, S1, A4, B5, C6, F7, G6, J3, E2, F8
Holburn Junction	F	St. Nicholas Kirk
Langstane Kirk	G	Adelphi
Music Hall	H	Broad Street
Union Terrace	J	Castlegate
Bon-Accord Centre and Aberdeen College	K	
Schoolhill	L	
Guild Street & Union Square	M1, M3, M2	
City Centre Boarding Points	M5	Union Square Bus Station
	N	HMT Woolmanhill
	P	John Street
	R	Upper Kirkgate
	S	John Street

Public Transport Operators and Services

Local Bus Services	First Aberdeen	Stagecoach
Bain's Coaches www.bainscoaches.co.uk Tel. +44(0)1651 872365 Service Nos. 305	www.firstgroup.com/abderdeen Tel. +44(0)345 6460702 Service Nos. 1, 1B, 2, 3, 3G, 8, 8A, 11, 12, 13, 15, 17, 17A, 18, 19, 20, 21A, 22A, 22C, 23, X27, 31, 40, 117, 172, 181, 182, 183, N1, N17, N19, N20, N23	www.stagecoachbus.com Tel. +44(0)1224 591381 Service Nos. 7, 7A, 7B, 7C, 14, 15A, 35, 37, 54, 54A, 59, 60, 61, 63, 67, 68, 80, 94, 200, 201, 202, 203, 218, 220, 290, 291, 727, X6, X17, X37, X54, X62, X67, X68
Central Taxis www.centralabderdeen.co.uk Tel. +44(0)1224 890089 Service Nos. 220, 420	Express Coach Services Scottish CityLink Tel. +44(0)8712 663333 www.citylink.co.uk Megabus Tel. +44(0)141 3524444 www.megabus.com National Express Tel. +44(0)871 7818181 www.nationalexpress.com Rail Services National Rail Enquiries Tel. +44(0)8457 484950 www.nationalrail.co.uk First Scotrail Tel. +44(0)344 8110141 www.scotrail.co.uk Ferry Services Northlink Ferries Tel. +44(0)845 6000449 www.northlinkferries.co.uk	Express Coach Services Scottish CityLink Tel. +44(0)8712 663333 www.citylink.co.uk Megabus Tel. +44(0)141 3524444 www.megabus.com National Express Tel. +44(0)871 7818181 www.nationalexpress.com Rail Services National Rail Enquiries Tel. +44(0)8457 484950 www.nationalrail.co.uk First Scotrail Tel. +44(0)344 8110141 www.scotrail.co.uk Ferry Services Northlink Ferries Tel. +44(0)845 6000449 www.northlinkferries.co.uk

For public transport information and journey planning, please contact Traveline on +44(0)871 2002233 www.traveline.info

Aberdeen City Council manages the Park and Ride sites. For all enquiries regarding public transport infrastructure including bus stops and shelters please telephone +44(0)3000 200292. For all operational and timetable enquiries regarding services within Aberdeen City, please contact the relevant operator using the contact details above.



Appendix D

Census Data Outputs

Origin - Area Usual Residence	Destination - Area of Workplace		Driving a car or van	Distribution	Route Taken	Sum of Distribution
S02001236	S02001250	Culter	45	1%	Union Street West / Market Street North	A956 South / Market Street South 31%
S02001237	S02001250	Cults, Bieldside and Milltimber West	51	1%	Union Street West / Market Street North	Denburn Road / Trinity Street / Stirling Street 17%
S02001238	S02001250	Cults, Bieldside and Milltimber East	59	2%	Union Street West / Market Street North	Union Street East / Market Street North 24%
S02001239	S02001250	Garthdee	50	1%	A956 South / Market Street South	Union Street West / Market Street North 28%
S02001240	S02001250	Braeside, Mannofield, Broomhill and Seafield East	58	2%	Union Street West / Market Street North	Grand Total 100%
S02001241	S02001250	Braeside, Mannofield, Broomhill and Seafield South	39	1%	Union Street West / Market Street North	
S02001242	S02001250	Braeside, Mannofield, Broomhill and Seafield North	60	2%	Union Street West / Market Street North	
S02001243	S02001250	Hazlehead	50	1%	Union Street West / Market Street North	
S02001244	S02001250	Summerhill	41	1%	Street	A956 South / Market Street South 31%
S02001245	S02001250	Midstocket	48	1%	Street	
S02001246	S02001250	Rosemount	30	1%	Union Street West / Market Street North	Denburn Road / Trinity Street / Stirling Street 17%
S02001247	S02001250	West End North	35	1%	Union Street West / Market Street North	Union Street East / Market Street North 24%
S02001248	S02001250	West End South	53	1%	Union Street West / Market Street North	Union Street West / Market Street North 28%
S02001249	S02001250	City Centre West	16	0%	Union Street West / Market Street North	
S02001250	S02001250	City Centre East	6	0%	Union Street West / Market Street North	
S02001251	S02001250	Ferryhill North	43	1%	Union Street West / Market Street North	
S02001252	S02001250	Ferryhill South	50	1%	Union Street West / Market Street North	
S02001253	S02001250	Kincorth, Leggart and Nigg North	41	1%	A956 South / Market Street South	
S02001254	S02001250	Kincorth, Leggart and Nigg South	45	1%	A956 South / Market Street South	
S02001255	S02001250	Cove South	93	2%	A956 South / Market Street South	
S02001256	S02001250	Cove North	75	2%	A956 South / Market Street South	
S02001257	S02001250	Torry West	47	1%	A956 South / Market Street South	
S02001258	S02001250	Torry East	46	1%	A956 South / Market Street South	
S02001259	S02001250	Hanover South	18	0%	Union Street East / Market Street North	
S02001260	S02001250	Hanover North	33	1%	Union Street East / Market Street North	
S02001261	S02001250	George Street	30	1%	Union Street East / Market Street North	
S02001262	S02001250	Ashgrove	26	1%	Union Street East / Market Street North	
S02001263	S02001250	Froghall, Powis and Sunnybank	19	1%	Union Street East / Market Street North	
S02001264	S02001250	Seaton	17	0%	Union Street East / Market Street North	
S02001265	S02001250	Old Aberdeen	16	0%	Union Street East / Market Street North	
S02001266	S02001250	Tillydrone	43	1%	Union Street East / Market Street North	
S02001267	S02001250	Woodside	36	1%	Union Street East / Market Street North	
S02001268	S02001250	Hilton	46	1%	Street	
S02001269	S02001250	Stockethill	41	1%	Street	
S02001270	S02001250	Mastrick	28	1%	Street	
S02001271	S02001250	Sheddocksley	50	1%	Street	
S02001272	S02001250	Cummings Park	27	1%	Street	
S02001273	S02001250	Northfield	38	1%	Street	
S02001274	S02001250	Heathryfold and Middlefield	34	1%	Street	
S02001275	S02001250	Kingswells	63	2%	Union Street West / Market Street North	
S02001276	S02001250	Bucksburn South	17	0%	Union Street West / Market Street North	
S02001277	S02001250	Bucksburn North	20	1%	Union Street West / Market Street North	
S02001278	S02001250	Dyce	26	1%	Union Street West / Market Street North	
S02001279	S02001250	Danestone	60	2%	Union Street West / Market Street North	
S02001280	S02001250	Oldmachar West	51	1%	Union Street East / Market Street North	
S02001281	S02001250	Oldmachar East	67	2%	Union Street East / Market Street North	
S02001282	S02001250	Balgownie and Donmouth West	29	1%	Street	
S02001283	S02001250	Balgownie and Donmouth East	21	1%	Street	
S02001284	S02001250	Denmore	31	1%	Union Street East / Market Street North	
S02001285	S02001250	East Cairngorms	5	0%	Union Street West / Market Street North	
S02001286	S02001250	Aboyne and South Deeside	23	1%	A956 South / Market Street South	
S02001287	S02001250	Mearns and Laurencekirk	44	1%	A956 South / Market Street South	
S02001288	S02001250	Mearns South and Benholm	28	1%	A956 South / Market Street South	
S02001289	S02001250	Mearns North and Inverbervie	53	1%	A956 South / Market Street South	
S02001290	S02001250	Fetteresso, Netherley and Catter	48	1%	A956 South / Market Street South	
S02001291	S02001250	Stonehaven South	48	1%	A956 South / Market Street South	
S02001292	S02001250	Stonehaven North	58	2%	A956 South / Market Street South	
S02001293	S02001250	Newtonhill	54	1%	A956 South / Market Street South	
S02001294	S02001250	Portlethen	66	2%	A956 South / Market Street South	
S02001295	S02001250	Banchory-Devenick and Findon	72	2%	A956 South / Market Street South	
S02001296	S02001250	Dunecht, Durris and Drumoak	57	2%	Union Street West / Market Street North	
S02001297	S02001250	Banchory East	42	1%	A956 South / Market Street South	
S02001298	S02001250	Banchory West	19	1%	A956 South / Market Street South	
S02001299	S02001250	Crathes and Torphins	13	0%	A956 South / Market Street South	
S02001300	S02001250	Cromar and Kildrummy	12	0%	Union Street West / Market Street North	
S02001301	S02001250	Howe of Alford	44	1%	Union Street West / Market Street North	
S02001302	S02001250	Kemnay	17	0%	Street	
S02001303	S02001250	Inverurie North	18	0%	Street	
S02001304	S02001250	Inverurie South	17	0%	Street	
S02001305	S02001250	Durno-Chapel of Garioch	29	1%	Street	
S02001306	S02001250	Kintore	47	1%	Street	
S02001307	S02001250	Blackburn	28	1%	Street	
S02001308	S02001250	Westhill North and South	44	1%	Union Street West / Market Street North	
S02001309	S02001250	Westhill Central	47	1%	Union Street West / Market Street North	
S02001310	S02001250	Garlogie and Elrick	57	2%	Union Street West / Market Street North	
S02001311	S02001250	Newmachar and Fintray	34	1%	Union Street East / Market Street North	
S02001312	S02001250	Balmedie and Potterton	70	2%	Union Street East / Market Street North	
S02001313	S02001250	Ellon East	51	1%	Union Street East / Market Street North	
S02001314	S02001250	Ellon West	23	1%	Union Street East / Market Street North	
S02001315	S02001250	Ythanside	48	1%	Union Street East / Market Street North	
S02001316	S02001250	Ythsie	50	1%	Union Street East / Market Street North	
S02001317	S02001250	Barrhill	34	1%	Union Street East / Market Street North	
S02001318	S02001250	Fyvie-Rothie	12	0%	Union Street East / Market Street North	
S02001319	S02001250	Insch, Oyne and Ythanwells	23	1%	Street	
S02001320	S02001250	Clashindarroch	11	0%	Street	
S02001321	S02001250	Huntly	5	0%	Street	
S02001322	S02001250	Auchterless and Monquhitter	5	0%	Street	
S02001323	S02001250	Turriff	7	0%	Street	
S02001324	S02001250	Portsoy, Fordyce and Cornhill	5	0%	Street	
S02001325	S02001250	Aberchirder and Whitehills	2	0%	Union Street East / Market Street North	
S02001326	S02001250	Banff	2	0%	Union Street East / Market Street North	
S02001327	S02001250	Macduff	11	0%	Union Street East / Market Street North	
S02001328	S02001250	Gardenstown and King Edward	9	0%	Union Street East / Market Street North	
S02001329	S02001250	New Pitsligo	6	0%	Union Street East / Market Street North	
S02001330	S02001250	Deer and Mormond	22	1%	Union Street East / Market Street North	
S02001331	S02001250	Mintlaw	3	0%	Union Street East / Market Street North	
S02001332	S02001250	Auchnagatt	12	0%	Union Street East / Market Street North	
S02001333	S02001250	Cruden	30	1%	Union Street East / Market Street North	
S02001334	S02001250	Peterhead Links	10	0%	Union Street East / Market Street North	
S02001335	S02001250	Peterhead Bay	7	0%	Union Street East / Market Street North	
S02001336	S02001250	Peterhead Harbour	15	0%	Union Street East / Market Street North	
S02001337	S02001250	Peterhead Ugieside	25	1%	Union Street East / Market Street North	
S02001338	S02001250	Longside and Rattray	11	0%	Union Street East / Market Street North	
S02001339	S02001250	Rosehearty and Strathbeg	12	0%	Union Street East / Market Street North	
S02001340	S02001250	Fraserburgh Smiddyhill	10	0%	Union Street East / Market Street North	
S02001341	S02001250	Fraserburgh Lochpots	4	0%	Union Street East / Market Street North	
S02001342	S02001250	Fraserburgh Central-Academy	2	0%	Union Street East / Market Street North	
S02001343	S02001250	Fraserburgh Harbour and Broadsea	1	0%	Union Street East / Market Street North	
S02001344	S02001250	South Angus	3	0%	A956 South / Market Street South	
S02001345	S02001250	Monikie	2	0%	A956 South / Market Street South	
S02001347	S02001250	Monifieth East	3	0%	A956 South / Market Street South	
S02001348	S02001250	Carnoustie West	1	0%	A956 South / Market Street South	
S02001349	S02001250	Carnoustie East	4	0%	A956 South / Market Street South	
S02001350	S02001250	Arbroath Landward	2	0%	A956 South / Market Street South	
S02001351	S02001250	Arbroath Kirton	2	0%	A956 South / Market Street South	
S02001352	S02001250	Arbroath Keptie	2	0%	A956 South / Market Street South	
S02001355	S02001250	Arbroath Warddykes	1	0%	A956 South / Market Street South	
S02001356	S02001250	Lunan	6	0%	A956 South / Market Street South	

Origin - Area Usual Residence	Destination - Area of Workplace		Driving a car or van	Distribution	Route Taken
S02001357	S02001250	Montrose South	4	0%	A956 South / Market Street South
S02001358	S02001250	Montrose North	6	0%	A956 South / Market Street South
S02001359	S02001250	Hillside	12	0%	A956 South / Market Street South
S02001360	S02001250	Frickheim	4	0%	A956 South / Market Street South
S02001361	S02001250	Brechin East	3	0%	A956 South / Market Street South
S02001362	S02001250	Brechin West	11	0%	A956 South / Market Street South
S02001363	S02001250	Letham and Glamis	1	0%	A956 South / Market Street South
S02001364	S02001250	Forfar East	1	0%	A956 South / Market Street South
S02001365	S02001250	Forfar Central	1	0%	A956 South / Market Street South
S02001366	S02001250	Forfar West	1	0%	A956 South / Market Street South
S02001368	S02001250	Kirriemuir	3	0%	A956 South / Market Street South
S02001369	S02001250	Angus Glens	4	0%	A956 South / Market Street South
S02001371	S02001250	Oban South	1	0%	A956 South / Market Street South
S02001398	S02001250	Tillicoultry	1	0%	A956 South / Market Street South
S02001448	S02001250	City Centre	1	0%	A956 South / Market Street South
S02001461	S02001250	West Pitkerro	1	0%	A956 South / Market Street South
S02001463	S02001250	Fintry	1	0%	A956 South / Market Street South
S02001468	S02001250	Fairmuir	1	0%	A956 South / Market Street South
S02001469	S02001250	Law	1	0%	A956 South / Market Street South
S02001471	S02001250	Menzieshill	1	0%	A956 South / Market Street South
S02001475	S02001250	Western Edge	4	0%	A956 South / Market Street South
S02001481	S02001250	Cumnock Rural	2	0%	A956 South / Market Street South
S02001486	S02001250	Northern and Irvine Valley Rural	1	0%	A956 South / Market Street South
S02001511	S02001250	Kilmardinny West	1	0%	A956 South / Market Street South
S02001521	S02001250	Auchinairn	1	0%	A956 South / Market Street South
S02001539	S02001250	IZ06	1	0%	A956 South / Market Street South
S02001567	S02001250	Busby	1	0%	A956 South / Market Street South
S02001580	S02001250	Bonaly and The Pentlands	2	0%	A956 South / Market Street South
S02001585	S02001250	Parkhead and Sighthill	1	0%	A956 South / Market Street South
S02001633	S02001250	Duddingston and Portobello South	1	0%	A956 South / Market Street South
S02001643	S02001250	Great Junction Street	2	0%	A956 South / Market Street South
S02001647	S02001250	Hillside and Calton Hill	1	0%	A956 South / Market Street South
S02001662	S02001250	Murrayfield and Ravelston	1	0%	A956 South / Market Street South
S02001664	S02001250	Blackhall	1	0%	A956 South / Market Street South
S02001683	S02001250	Ratho, Ingliston and Gogar	1	0%	A956 South / Market Street South
S02001687	S02001250	Barra and South Uist	1	0%	A956 South / Market Street South
S02001697	S02001250	Fankerton, Stoneywood and Denny Town	1	0%	A956 South / Market Street South
S02001701	S02001250	Bonnybridge	1	0%	A956 South / Market Street South
S02001704	S02001250	Larbert - South Broomage and Village	2	0%	A956 South / Market Street South
S02001730	S02001250	Grangemouth - Newlands	2	0%	A956 South / Market Street South
S02001735	S02001250	Bo'ness - Newtown	1	0%	A956 South / Market Street South
S02001741	S02001250	Valleyfield Culross and Torryburn	1	0%	A956 South / Market Street South
S02001750	S02001250	Dunfermline Belleoeman and Townhill	1	0%	A956 South / Market Street South
S02001756	S02001250	Dunfermline Masterton	1	0%	A956 South / Market Street South
S02001766	S02001250	Dalgely Bay Central	2	0%	A956 South / Market Street South
S02001776	S02001250	Cardenden	4	0%	A956 South / Market Street South
S02001801	S02001250	Glenrothes South Parks	1	0%	A956 South / Market Street South
S02001805	S02001250	Glenrothes Pitteuchar	2	0%	A956 South / Market Street South
S02001807	S02001250	Glenrothes Balgeddie and Town Park	1	0%	A956 South / Market Street South
S02001812	S02001250	Windygates and Coaltown	1	0%	A956 South / Market Street South
S02001814	S02001250	Methil Methilhill	1	0%	A956 South / Market Street South
S02001816	S02001250	Methil East	2	0%	A956 South / Market Street South
S02001819	S02001250	Leven North	1	0%	A956 South / Market Street South
S02001821	S02001250	Kennoway and Bonnybank	1	0%	A956 South / Market Street South
S02001832	S02001250	Anstruther	2	0%	A956 South / Market Street South
S02001839	S02001250	Balmullo and Gaudry	1	0%	A956 South / Market Street South
S02001879	S02001250	Carmunnock North	1	0%	A956 South / Market Street South
S02001907	S02001250	North Barfarnack and Easterhouse South	1	0%	A956 South / Market Street South
S02001918	S02001250	Robroyston and Millerston	1	0%	A956 South / Market Street South
S02001941	S02001250	Ruchill	1	0%	A956 South / Market Street South
S02001946	S02001250	Summerston North	1	0%	A956 South / Market Street South
S02001964	S02001250	Yoker South	1	0%	A956 South / Market Street South
S02001978	S02001250	Lochaber West	1	0%	A956 South / Market Street South
S02001985	S02001250	Nairn Rural	1	0%	Denburn Road / Trinity Street / Stirling Street
S02001986	S02001250	Nairn East	3	0%	Denburn Road / Trinity Street / Stirling Street
S02001987	S02001250	Nairn West	1	0%	Denburn Road / Trinity Street / Stirling Street
S02001989	S02001250	Inverness Culloden and Balloch	1	0%	Denburn Road / Trinity Street / Stirling Street
S02001992	S02001250	Inverness Inshes	1	0%	Denburn Road / Trinity Street / Stirling Street
S02001994	S02001250	Inverness Lochardil and Holm Mains	1	0%	Denburn Road / Trinity Street / Stirling Street
S02001995	S02001250	Inverness Drummond	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002000	S02001250	Inverness Ballifeary and Dalneigh	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002002	S02001250	Inverness Merkinch	2	0%	Denburn Road / Trinity Street / Stirling Street
S02002004	S02001250	Inverness Kinmylies and South West	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002013	S02001250	Ross and Cromarty Central	4	0%	Denburn Road / Trinity Street / Stirling Street
S02002015	S02001250	Muir of Ord	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002017	S02001250	Dingwall	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002023	S02001250	Tain	2	0%	Denburn Road / Trinity Street / Stirling Street
S02002028	S02001250	Wick North	2	0%	Denburn Road / Trinity Street / Stirling Street
S02002029	S02001250	Caitness North East	2	0%	Denburn Road / Trinity Street / Stirling Street
S02002030	S02001250	Caitness North West	2	0%	Denburn Road / Trinity Street / Stirling Street
S02002035	S02001250	Kilmacollm, Quarriers, Greenock Upper East/Central	1	0%	A956 South / Market Street South
S02002036	S02001250	Inverkip and Wemyss Bay	1	0%	A956 South / Market Street South
S02002046	S02001250	Greenock Town Centre and East Central	1	0%	A956 South / Market Street South
S02002047	S02001250	Greenock East	1	0%	A956 South / Market Street South
S02002073	S02001250	South Speyside and the Cabrach	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002075	S02001250	Rural Keith and Strathisla	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002077	S02001250	Cullen, Portknockie, Findochty, Drybridge and Berryhillock	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002078	S02001250	Buckie Central East	2	0%	Denburn Road / Trinity Street / Stirling Street
S02002079	S02001250	Buckie West and Mains of Buckie	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002081	S02001250	Fochabers, Aulmore, Clochan and Ordiquish	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002085	S02001250	New Elgin East	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002086	S02001250	New Elgin West	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002090	S02001250	Lossiemouth East and Seatown	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002091	S02001250	Lossiemouth West	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002092	S02001250	Burghead, Roseisle and Laich	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002093	S02001250	Findhorn, Kinloss and Pluscarden Valley	2	0%	Denburn Road / Trinity Street / Stirling Street
S02002095	S02001250	Forres South West and Mannachie	1	0%	Denburn Road / Trinity Street / Stirling Street
S02002099	S02001250	Irvine Tarryholme	1	0%	A956 South / Market Street South
S02002104	S02001250	Irvine Perceton and Lawthorn	1	0%	A956 South / Market Street South
S02002116	S02001250	Saltcoats North East	1	0%	A956 South / Market Street South
S02002128	S02001250	Largs Central and Cumbræ	2	0%	A956 South / Market Street South
S02002134	S02001250	Beith East and Rural	1	0%	A956 South / Market Street South
S02002148	S02001250	Stane	1	0%	A956 South / Market Street South
S02002160	S02001250	Holytown	1	0%	A956 South / Market Street South
S02002164	S02001250	Hattonrigg	1	0%	A956 South / Market Street South
S02002166	S02001250	Fallside	2	0%	A956 South / Market Street South
S02002172	S02001250	Drumpellier and Langloan	1	0%	A956 South / Market Street South
S02002186	S02001250	Coatdyke and Whinhall	2	0%	A956 South / Market Street South
S02002195	S02001250	Chryston and Muirhead	1	0%	A956 South / Market Street South
S02002202	S02001250	Cumbernauld Central	1	0%	A956 South / Market Street South
S02002205	S02001250	Abronnhill North	1	0%	A956 South / Market Street South
S02002208	S02001250	Balloch West	1	0%	A956 South / Market Street South
S02002226	S02001250	Crieff South	2	0%	A956 South / Market Street South
S02002240	S02001250	Gannochy and Walnut Grove	3	0%	A956 South / Market Street South
S02002243	S02001250	Errol and Inchture	1	0%	A956 South / Market Street South
S02002246	S02001250	Alyth	1	0%	A956 South / Market Street South
S02002262	S02001250	Elderslie and Phoenix	1	0%	A956 South / Market Street South
S02002276	S02001250	Paisley Falston	1	0%	A956 South / Market Street South
S02002284	S02001250	Erskine Central	1	0%	A956 South / Market Street South

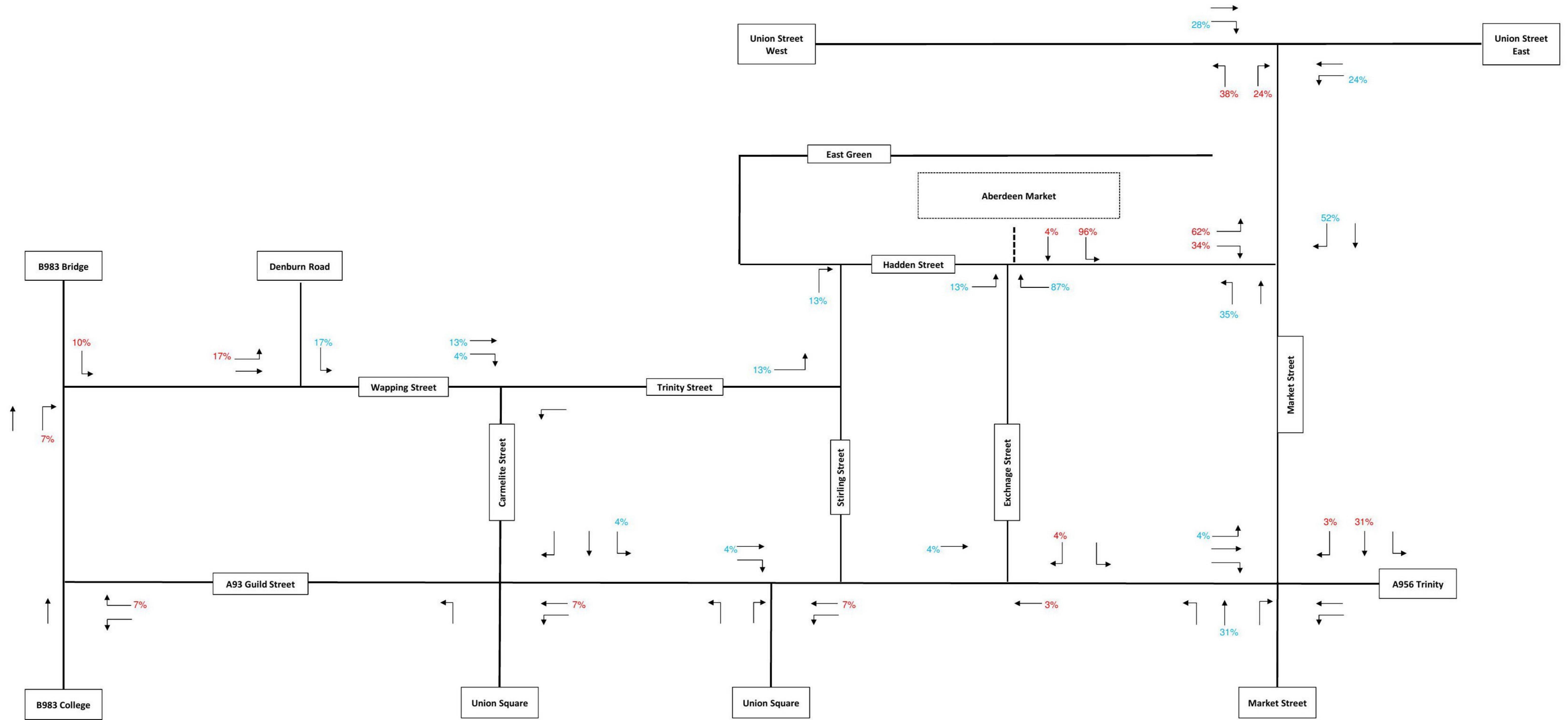
Origin - Area Usual Residence	Destination - Area of Workplace		Driving a car or van	Distribution	Route Taken
S02002288	S02001250	Linwood North	1		0% A956 South / Market Street South
S02002350	S02001250	Dundonald, Loans and Symington	1		0% A956 South / Market Street South
S02002356	S02001250	Carstairs, Carstairs Junction and Carnwath	1		0% A956 South / Market Street South
S02002377	S02001250	Strathaven South	1		0% A956 South / Market Street South
S02002378	S02001250	Strathaven North	1		0% A956 South / Market Street South
S02002380	S02001250	Glassford, Quarter and Allanton	1		0% A956 South / Market Street South
S02002399	S02001250	Bothwell South	1		0% A956 South / Market Street South
S02002420	S02001250	St Leonards North	1		0% A956 South / Market Street South
S02002424	S02001250	Stewartfield East	1		0% A956 South / Market Street South
S02002435	S02001250	Birmiehill, Kelvin and Whitehills East	3		0% A956 South / Market Street South
S02002457	S02001250	Carse of Stirling	1		0% A956 South / Market Street South
S02002478	S02001250	Fauldhouse	1		0% A956 South / Market Street South
S02002496	S02001250	Blackburn	1		0% Street
S02002507	S02001250	Linthgow South	1		0% A956 South / Market Street South
					Denburn Road / Trinity Street / Stirling

3763

Appendix E

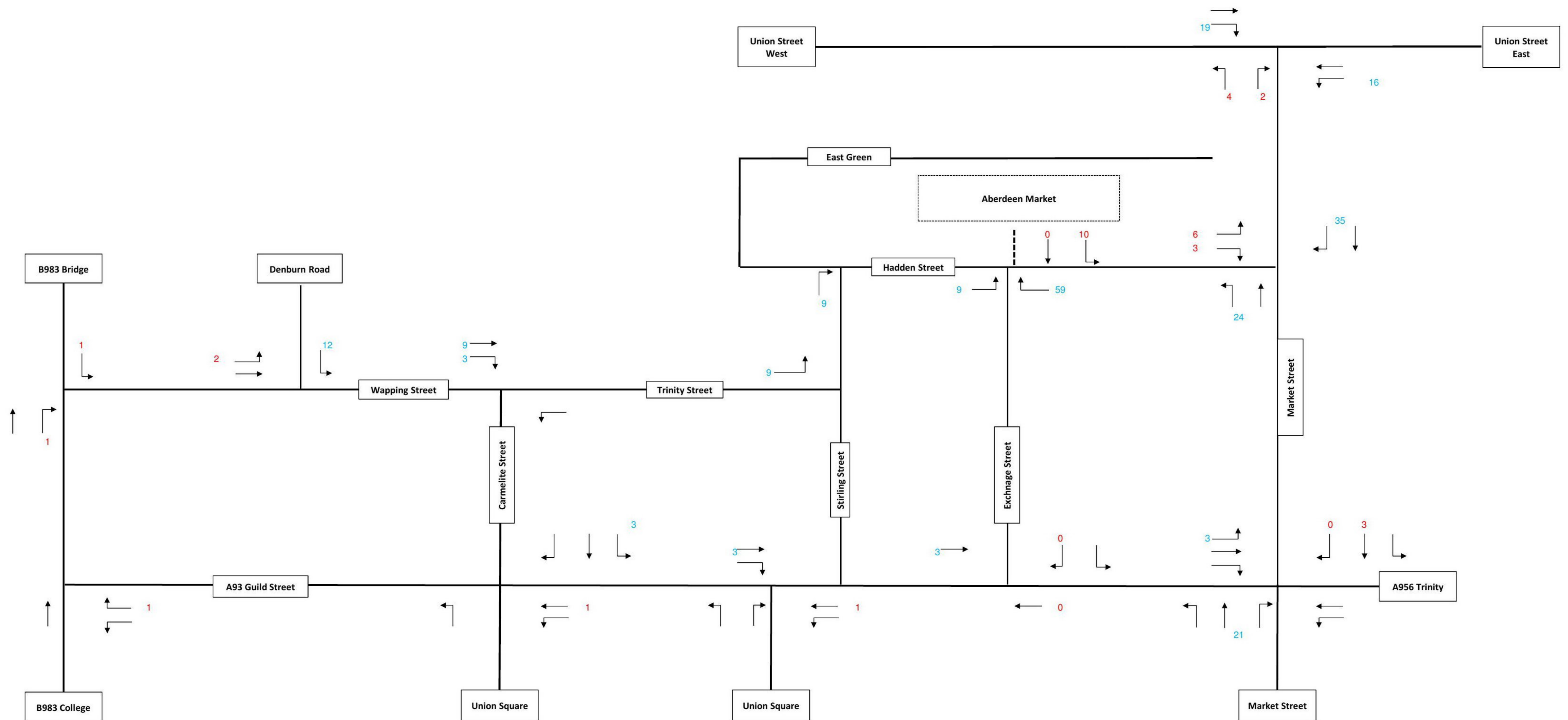
Network Diagrams

102256: Aberdeen Market
 Figure 1: Distribution



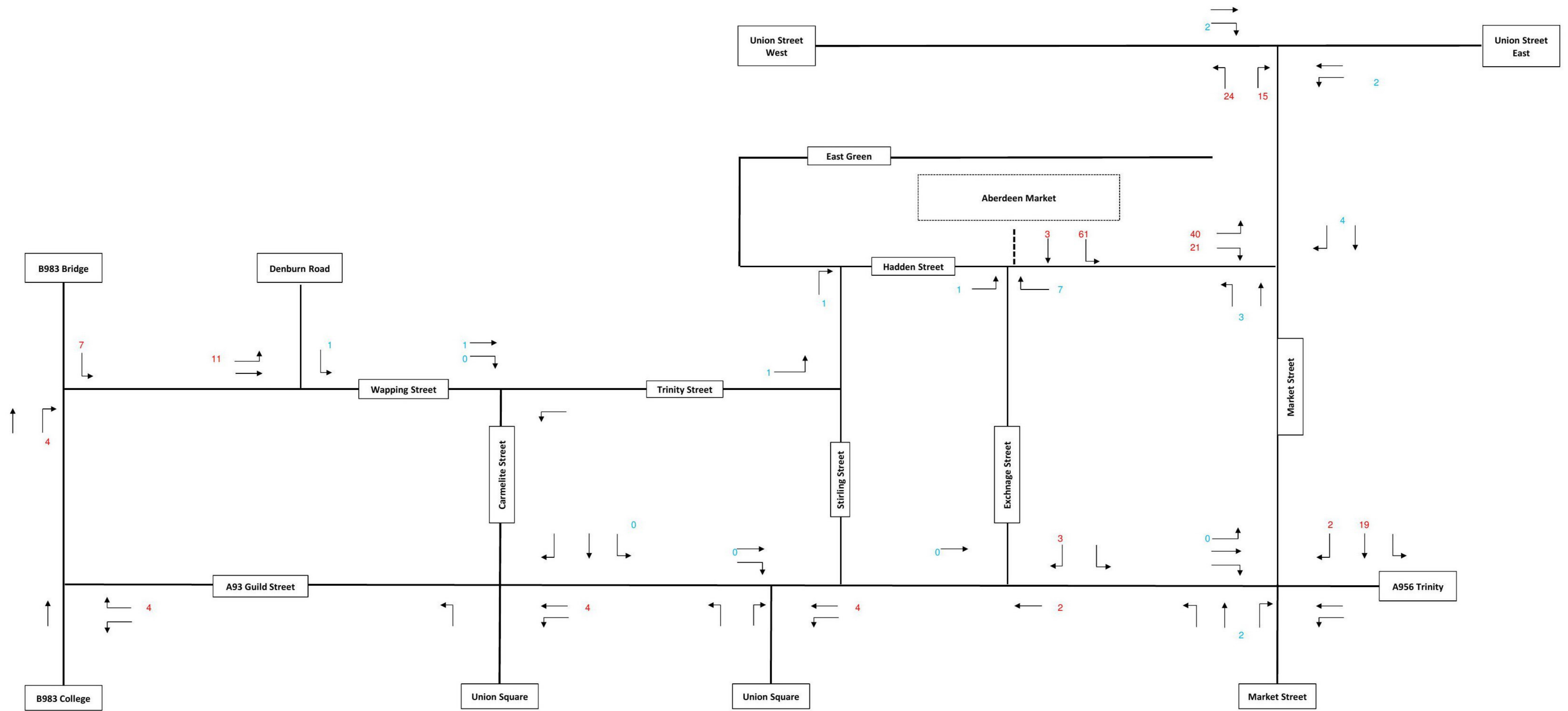
102256: Aberdeen Market
 Figure 2a: Development AM Peak Hour

In	68
Out	10

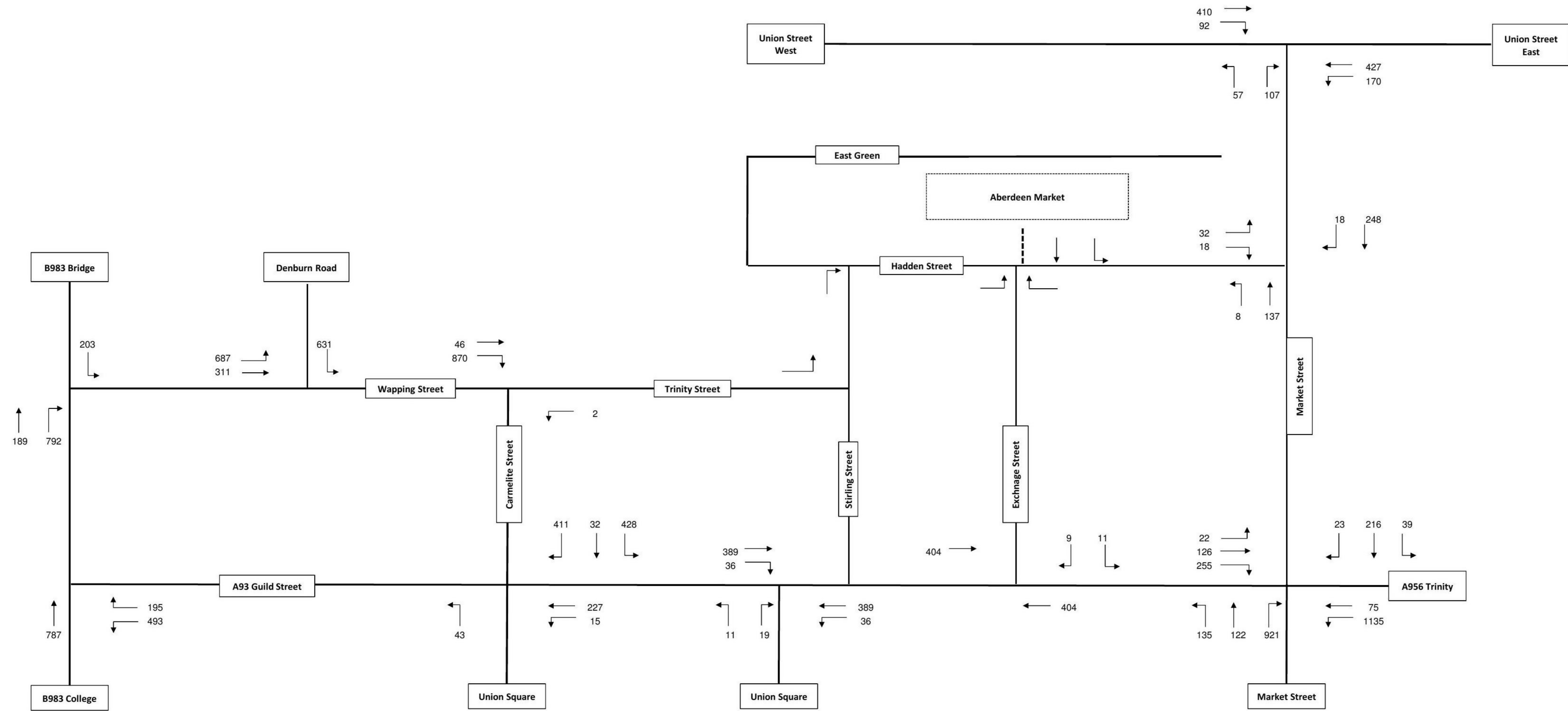


102256: Aberdeen Market
 Figure 2b: Development PM Peak Hour

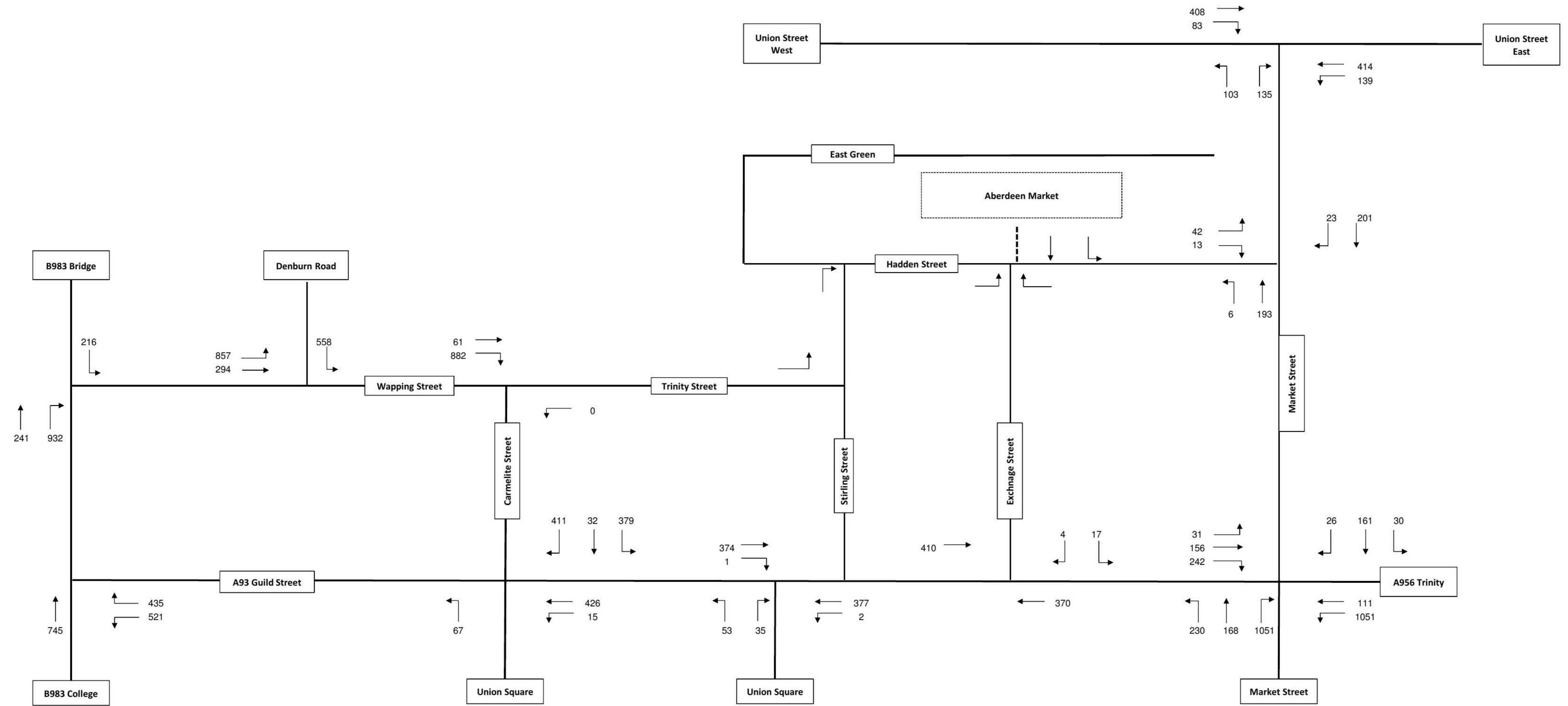
In	8
Out	63



102256: Aberdeen Market
Figure 3a: 2019 AM Base Peak Hour (07:45-08:45)

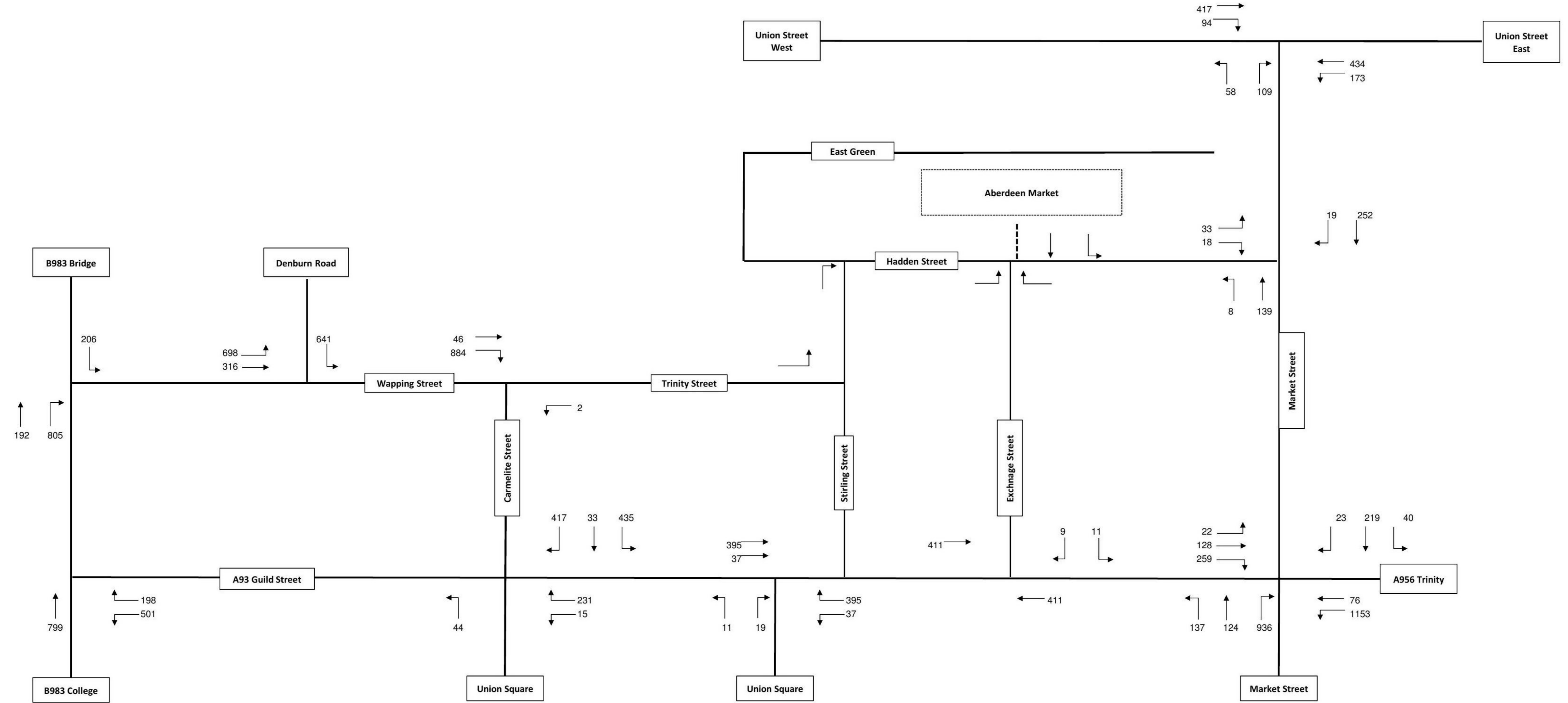


102256: Aberdeen Market
Figure 3b: 2019 PM Base Peak Hour (07:45-08:45)



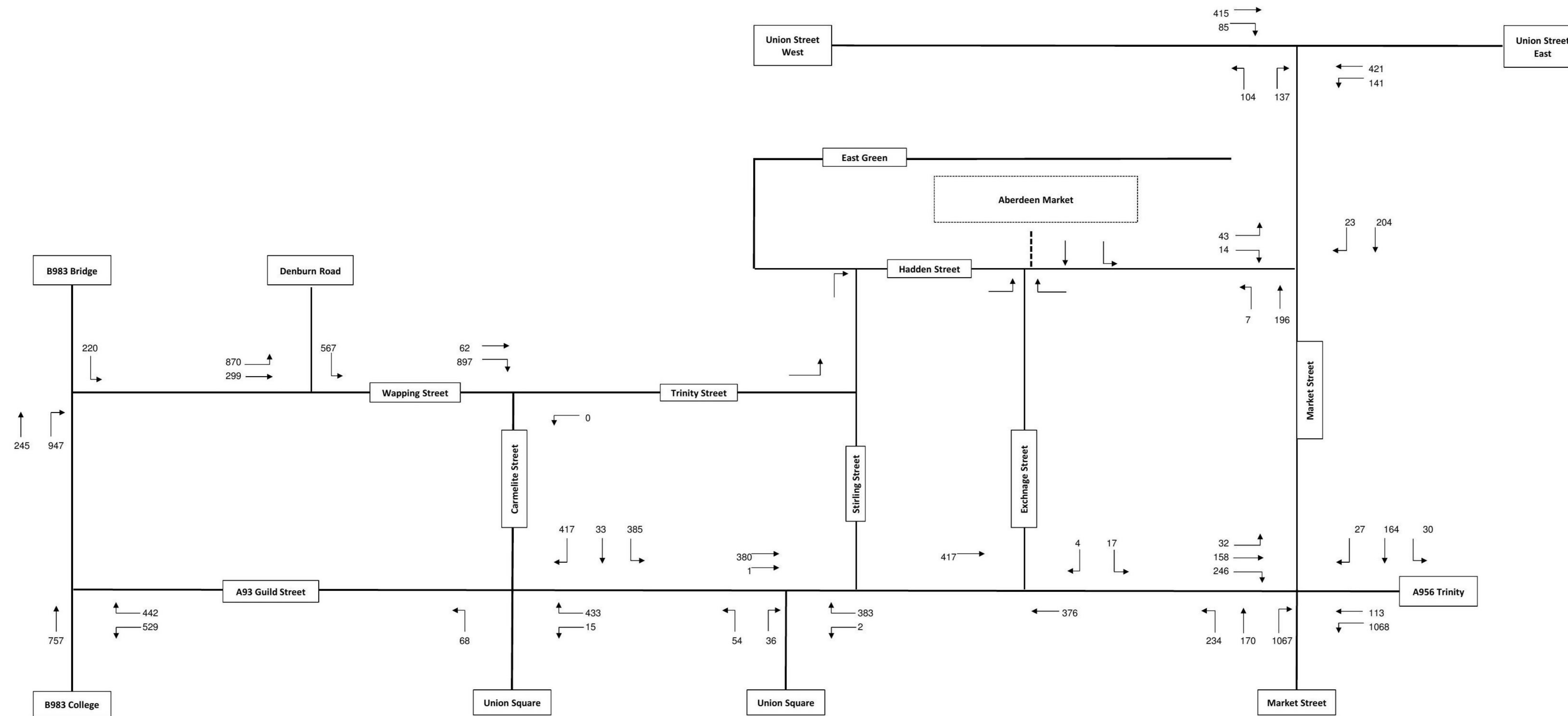
102256: Aberdeen Market
 Figure 4a: 2021 AM Base Peak Hour

NRTF Low Growth 2019-2021= 1.016



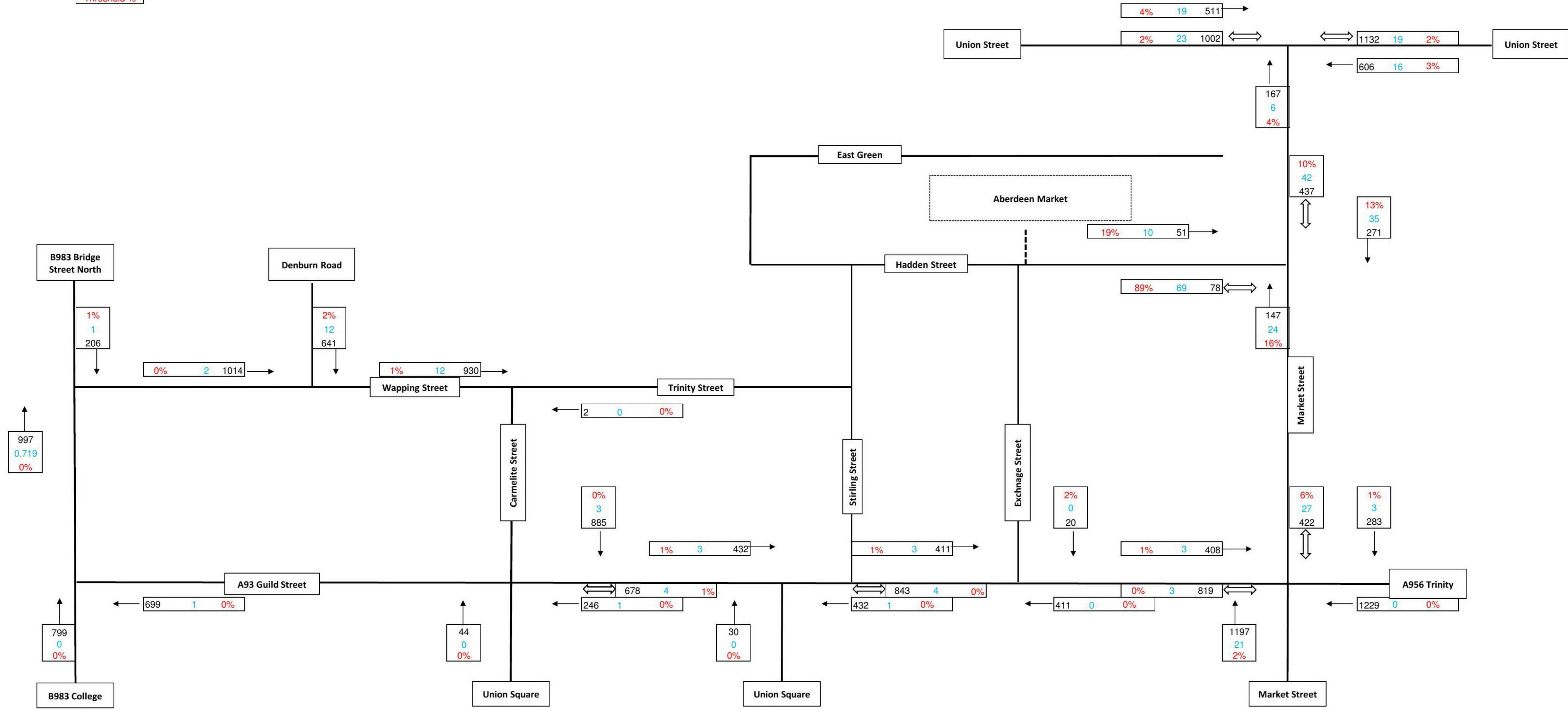
102256: Aberdeen Market
Figure 4ba: 2021 PM Base Peak Hour

NRTF Low Growth 2019-2021= 1.016



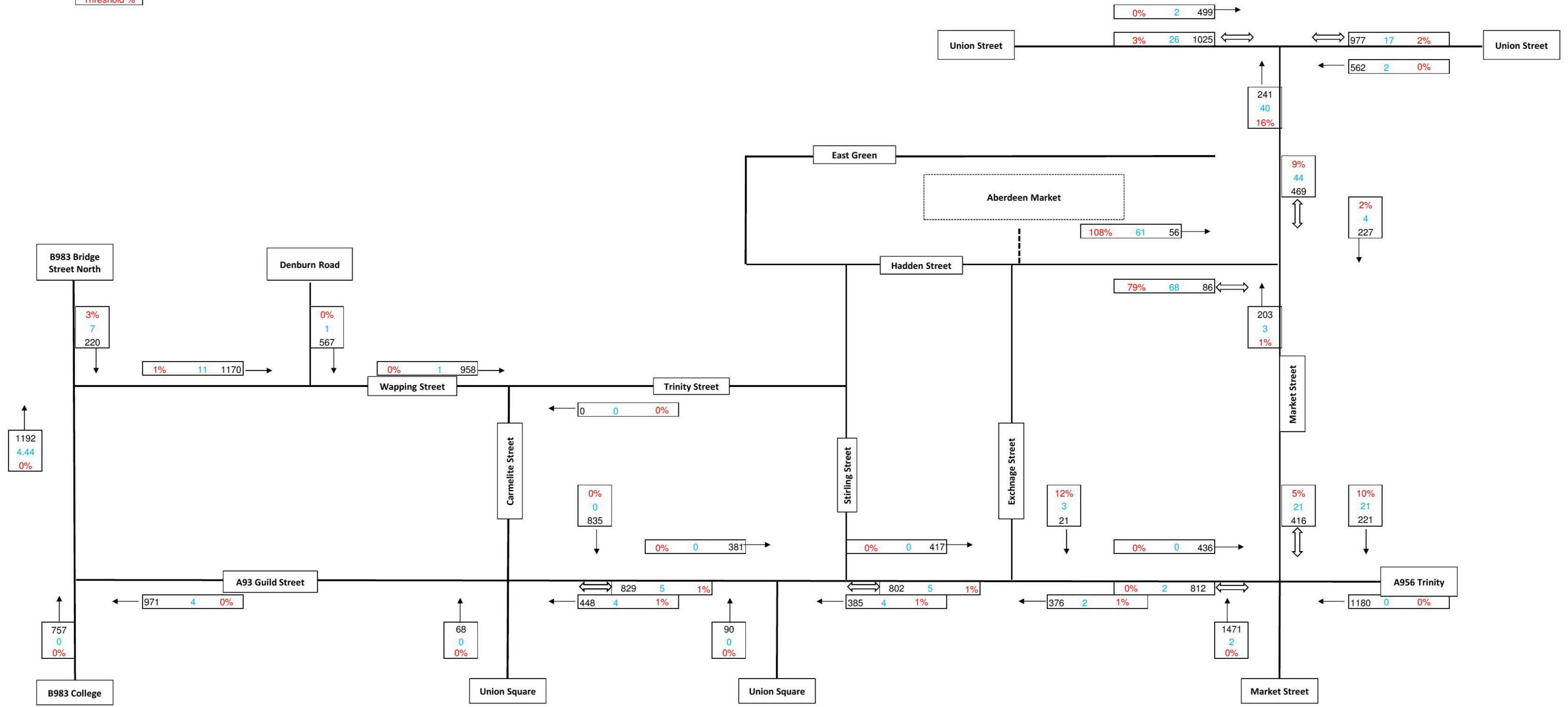
102256: Aberdeen Market
 Figure 5a: AM Peak Hour Threshold Assessment

Base
Development
Threshold %

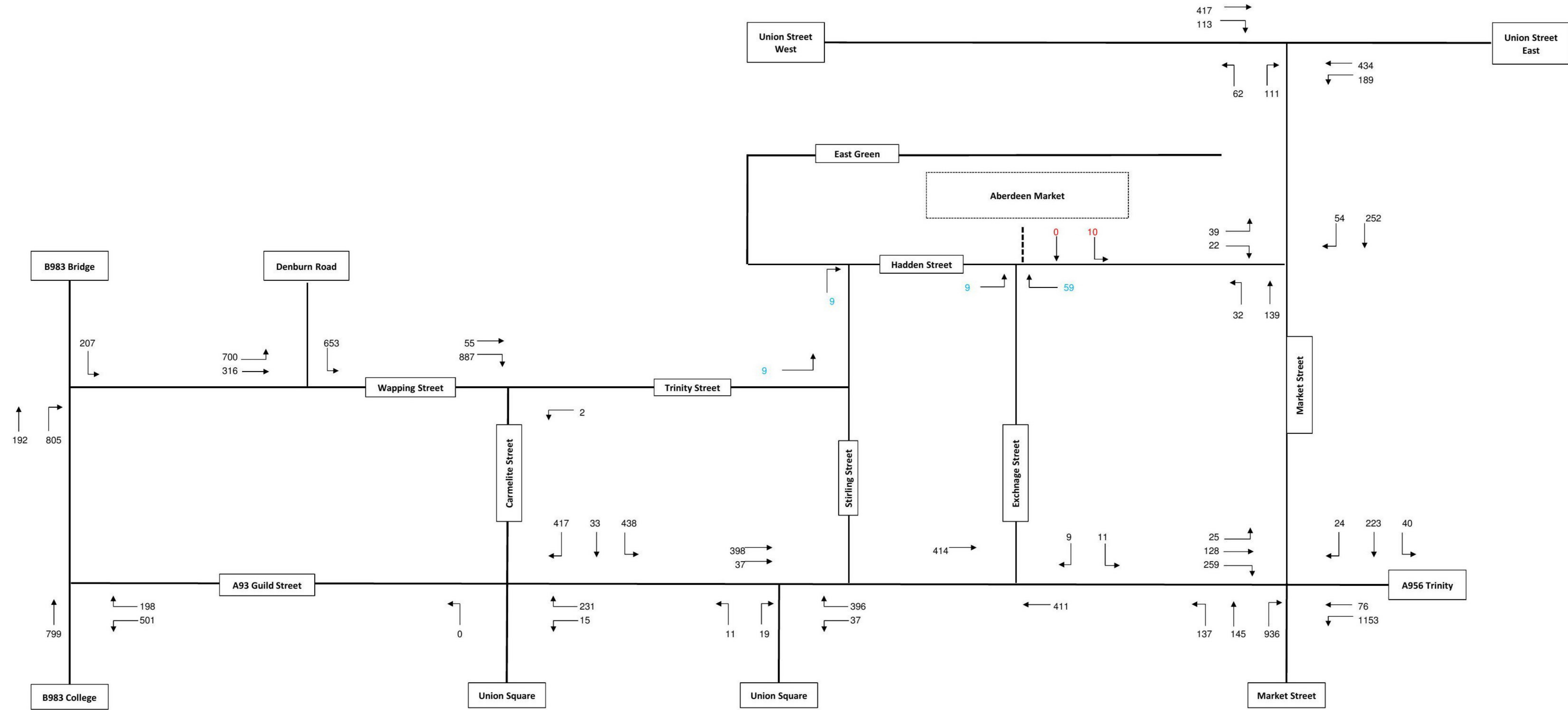


102256: Aberdeen Market
 Figure 5b: PM Peak Hour Threshold Assessment

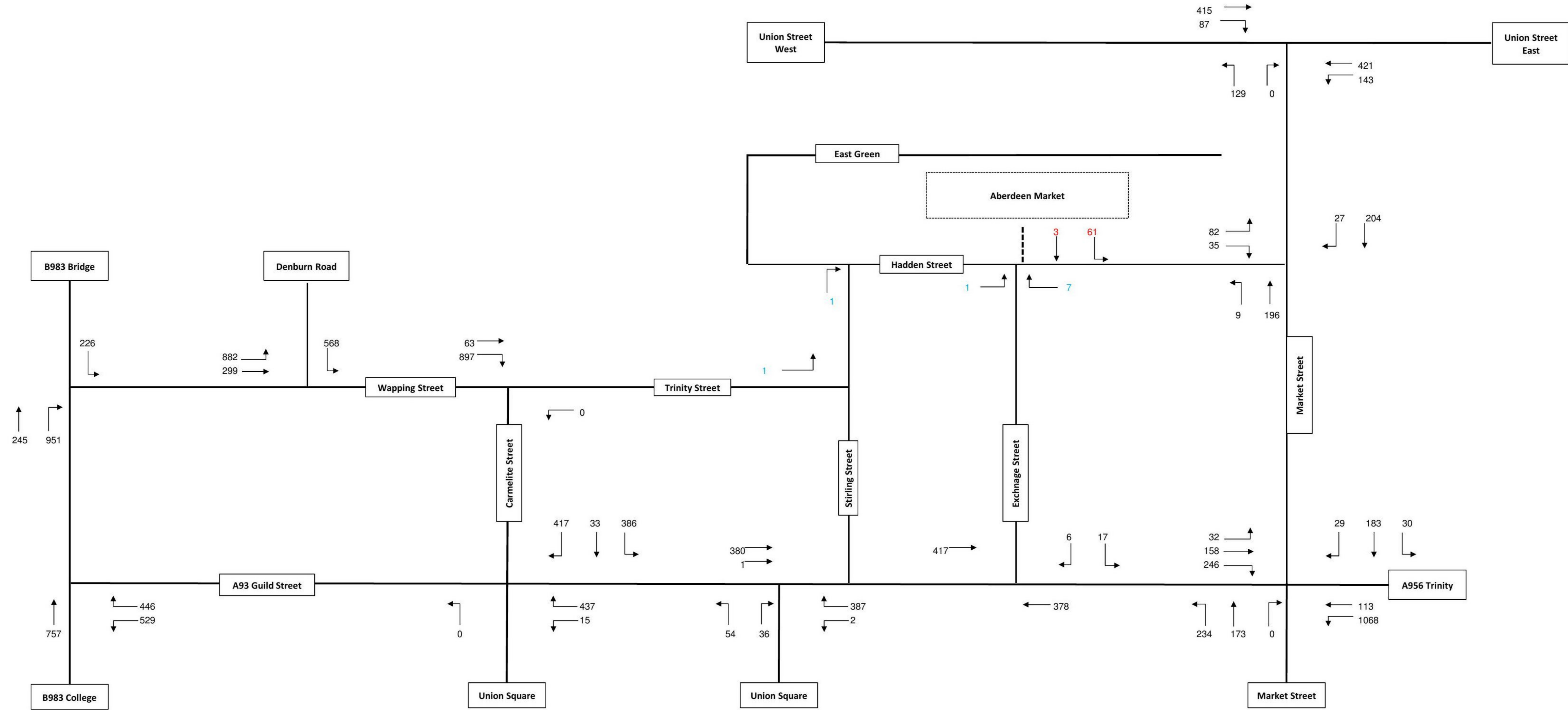
Base
Development
Threshold %



102256: Aberdeen Market
Figure 6a: 2021 AM Base Peak Hour + Development

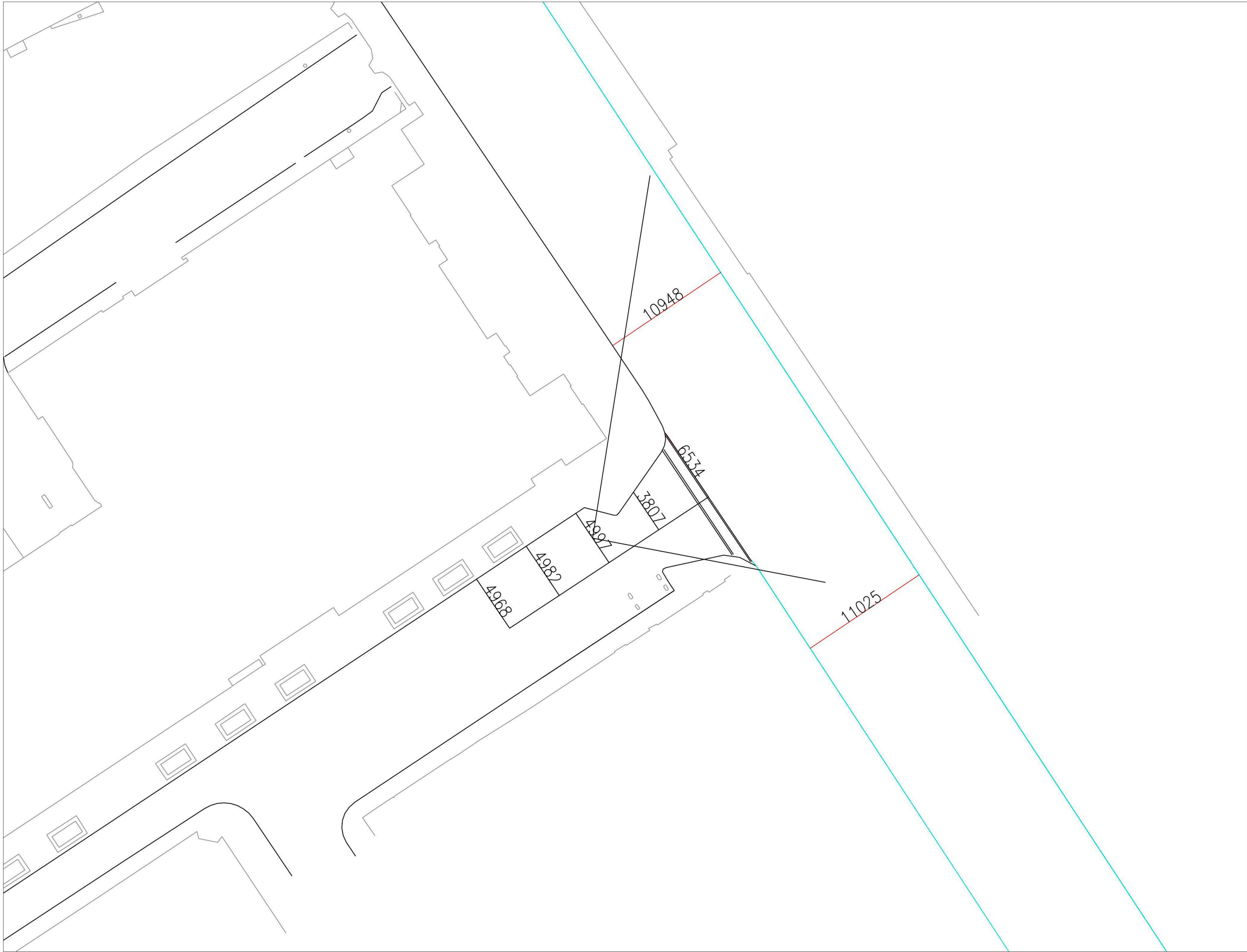


102256: Aberdeen Market
Figure 6b: 2021 PM Base Peak Hour + Development



Appendix F

Junction Modelling Report & Junction Input Parameters



Junctions 8
PICADY 8 - Priority Intersection Module
Version: 8.0.6.541 [19821,26/11/2015] © Copyright TRL Limited, 2019
For sales and distribution information, program advice and maintenance, contact TRL: Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Hadden Street . Market Street Priority Junction.arc8
Path: X:\100000-104999\102000-102999\102256\T - Transportation\Modelling
Report generation date: 05/06/2019 12:34:08

- » (Default Analysis Set) - 2021 Base, AM
- » (Default Analysis Set) - 2021 Base, PM
- » (Default Analysis Set) - 2021 Base + Dev, AM
- » (Default Analysis Set) - 2021 Base + Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2021 Base								
Stream B-AC	0.10	6.33	0.09	A	0.11	6.27	0.10	A
Stream C-AB	0.05	4.55	0.04	A	0.06	4.75	0.04	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
A1 - 2021 Base + Dev								
Stream B-AC	0.12	6.58	0.11	A	0.26	7.26	0.21	A
Stream C-AB	0.17	4.78	0.10	A	0.08	4.77	0.05	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2021 Base, AM" model duration: 07:30 - 09:00
 "D2 - 2021 Base, PM" model duration: 16:30 - 18:00
 "D3 - 2021 Base + Dev, AM" model duration: 07:30 - 09:00
 "D4 - 2021 Base + Dev, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 05/06/2019 12:34:06

File summary

Title	(untitled)
Location	
Site Number	
Date	05/06/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	lwhitecross
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - 2021 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2021 Base, AM	2021 Base	AM		ONE HOUR	07:30	09:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	5.73	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Market Street South	A	Market Street South		Major
Hadden Street	B	Hadden Street		Minor
Market Street North	C	Market Street North		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Market Street North	10.96		0.00		2.20	250.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hadden Street	One lane	4.76										31	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	584.998	0.084	0.211	0.133	0.302
1	B-C	748.539	0.090	0.227	-	-
1	C-B	718.741	0.218	0.218	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Market Street South	ONE HOUR	✓	147.00	100.000
Hadden Street	ONE HOUR	✓	51.00	100.000
Market Street North	ONE HOUR	✓	271.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.000	8.000	139.000
	Hadden Street	18.000	0.000	33.000
	Market Street North	252.000	19.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.00	0.05	0.95
	Hadden Street	0.35	0.00	0.65
	Market Street North	0.93	0.07	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	1.000	1.000	1.000
	Hadden Street	1.000	1.000	1.000
	Market Street North	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.0	0.0	0.0
	Hadden Street	0.0	0.0	0.0
	Market Street North	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.09	6.33	0.10	A
C-AB	0.04	4.55	0.05	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:30-07:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	38.40	38.14	0.00	642.75	0.060	0.06	5.951	A
C-AB	18.44	18.33	0.00	809.92	0.023	0.03	4.548	A
C-A	185.59	185.59	0.00	-	-	-	-	-
A-B	6.02	6.02	0.00	-	-	-	-	-
A-C	104.65	104.65	0.00	-	-	-	-	-

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	45.85	45.79	0.00	635.10	0.072	0.08	6.108	A
C-AB	23.10	23.07	0.00	827.67	0.028	0.04	4.474	A
C-A	220.52	220.52	0.00	-	-	-	-	-
A-B	7.19	7.19	0.00	-	-	-	-	-
A-C	124.96	124.96	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	56.15	56.07	0.00	624.47	0.090	0.10	6.333	A
C-AB	30.15	30.10	0.00	852.06	0.035	0.05	4.379	A
C-A	268.23	268.23	0.00	-	-	-	-	-
A-B	8.81	8.81	0.00	-	-	-	-	-
A-C	153.04	153.04	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	56.15	56.15	0.00	624.46	0.090	0.10	6.333	A
C-AB	30.16	30.16	0.00	852.07	0.035	0.05	4.380	A
C-A	268.22	268.22	0.00	-	-	-	-	-
A-B	8.81	8.81	0.00	-	-	-	-	-
A-C	153.04	153.04	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	45.85	45.93	0.00	635.09	0.072	0.08	6.112	A
C-AB	23.12	23.17	0.00	827.69	0.028	0.04	4.474	A
C-A	220.51	220.51	0.00	-	-	-	-	-
A-B	7.19	7.19	0.00	-	-	-	-	-
A-C	124.96	124.96	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	38.40	38.45	0.00	642.73	0.060	0.06	5.959	A
C-AB	18.47	18.50	0.00	809.95	0.023	0.03	4.550	A
C-A	185.55	185.55	0.00	-	-	-	-	-
A-B	6.02	6.02	0.00	-	-	-	-	-
A-C	104.65	104.65	0.00	-	-	-	-	-

(Default Analysis Set) - 2021 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2021 Base, PM	2021 Base	PM		ONE HOUR	16:30	18:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	5.74	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Market Street South	A	Market Street South		Major
Hadden Street	B	Hadden Street		Minor
Market Street North	C	Market Street North		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Market Street North	10.96		0.00		2.20	250.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hadden Street	One lane	4.76										31	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	584.998	0.084	0.211	0.133	0.302
1	B-C	748.539	0.090	0.227	-	-
1	C-B	718.741	0.218	0.218	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Market Street South	ONE HOUR	✓	203.00	100.000
Hadden Street	ONE HOUR	✓	57.00	100.000
Market Street North	ONE HOUR	✓	227.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.000	7.000	196.000
	Hadden Street	14.000	0.000	43.000
	Market Street North	204.000	23.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.00	0.03	0.97
	Hadden Street	0.25	0.00	0.75
	Market Street North	0.90	0.10	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	1.000	1.000	1.000
	Hadden Street	1.000	1.000	1.000
	Market Street North	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.0	0.0	0.0
	Hadden Street	0.0	0.0	0.0
	Market Street North	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.10	6.27	0.11	A
C-AB	0.04	4.75	0.06	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	42.91	42.64	0.00	657.37	0.065	0.07	5.853	A
C-AB	21.38	21.24	0.00	779.84	0.027	0.03	4.746	A
C-A	149.51	149.51	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	147.56	147.56	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	51.24	51.18	0.00	648.89	0.079	0.09	6.022	A
C-AB	26.61	26.57	0.00	792.06	0.034	0.04	4.702	A
C-A	177.46	177.46	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	176.20	176.20	0.00	-	-	-	-	-

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	62.76	62.66	0.00	637.10	0.099	0.11	6.267	A
C-AB	34.45	34.38	0.00	809.04	0.043	0.06	4.649	A
C-A	215.48	215.48	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	215.80	215.80	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	62.76	62.76	0.00	637.10	0.099	0.11	6.267	A
C-AB	34.46	34.46	0.00	809.06	0.043	0.06	4.649	A
C-A	215.47	215.47	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	215.80	215.80	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	51.24	51.33	0.00	648.88	0.079	0.09	6.024	A
C-AB	26.63	26.69	0.00	792.08	0.034	0.05	4.705	A
C-A	177.44	177.44	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	176.20	176.20	0.00	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	42.91	42.98	0.00	657.36	0.065	0.07	5.861	A
C-AB	21.42	21.46	0.00	779.86	0.027	0.04	4.747	A
C-A	149.48	149.48	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	147.56	147.56	0.00	-	-	-	-	-

(Default Analysis Set) - 2021 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2021 Base + Dev, AM	2021 Base + Dev	AM		ONE HOUR	07:30	09:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	5.59	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Market Street South	A	Market Street South		Major
Hadden Street	B	Hadden Street		Minor
Market Street North	C	Market Street North		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Market Street North	10.96		0.00		2.20	250.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hadden Street	One lane	4.76										31	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	584.998	0.084	0.211	0.133	0.302
1	B-C	748.539	0.090	0.227	-	-
1	C-B	718.741	0.218	0.218	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Market Street South	ONE HOUR	✓	171.00	100.000
Hadden Street	ONE HOUR	✓	61.00	100.000
Market Street North	ONE HOUR	✓	306.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.000	32.000	139.000
	Hadden Street	22.000	0.000	39.000
	Market Street North	252.000	54.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.00	0.19	0.81
	Hadden Street	0.36	0.00	0.64
	Market Street North	0.82	0.18	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	1.000	1.000	1.000
	Hadden Street	1.000	1.000	1.000
	Market Street North	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.0	0.0	0.0
	Hadden Street	0.0	0.0	0.0
	Market Street North	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.11	6.58	0.12	A
C-AB	0.10	4.78	0.17	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:30-07:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	45.92	45.61	0.00	635.38	0.072	0.08	6.101	A
C-AB	52.47	52.08	0.00	806.39	0.065	0.10	4.772	A
C-A	177.90	177.90	0.00	-	-	-	-	-
A-B	24.09	24.09	0.00	-	-	-	-	-
A-C	104.65	104.65	0.00	-	-	-	-	-

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	54.84	54.77	0.00	626.44	0.088	0.10	6.297	A
C-AB	65.80	65.69	0.00	823.58	0.080	0.12	4.750	A
C-A	209.29	209.29	0.00	-	-	-	-	-
A-B	28.77	28.77	0.00	-	-	-	-	-
A-C	124.96	124.96	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	67.16	67.06	0.00	614.00	0.109	0.12	6.579	A
C-AB	88.03	87.84	0.00	850.17	0.104	0.17	4.723	A
C-A	248.88	248.88	0.00	-	-	-	-	-
A-B	35.23	35.23	0.00	-	-	-	-	-
A-C	153.04	153.04	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	67.16	67.16	0.00	613.98	0.109	0.12	6.582	A
C-AB	88.08	88.08	0.00	850.23	0.104	0.17	4.727	A
C-A	248.83	248.83	0.00	-	-	-	-	-
A-B	35.23	35.23	0.00	-	-	-	-	-
A-C	153.04	153.04	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	54.84	54.94	0.00	626.40	0.088	0.10	6.300	A
C-AB	65.86	66.04	0.00	823.67	0.080	0.13	4.754	A
C-A	209.23	209.23	0.00	-	-	-	-	-
A-B	28.77	28.77	0.00	-	-	-	-	-
A-C	124.96	124.96	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	45.92	46.00	0.00	635.31	0.072	0.08	6.111	A
C-AB	52.58	52.70	0.00	806.47	0.065	0.10	4.779	A
C-A	177.79	177.79	0.00	-	-	-	-	-
A-B	24.09	24.09	0.00	-	-	-	-	-
A-C	104.65	104.65	0.00	-	-	-	-	-

(Default Analysis Set) - 2021 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2021 Base + Dev, PM	2021 Base + Dev	PM		ONE HOUR	16:30	18:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	6.69	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Market Street South	A	Market Street South		Major
Hadden Street	B	Hadden Street		Minor
Market Street North	C	Market Street North		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Market Street North	10.96		0.00		2.20	250.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hadden Street	One lane	4.76										31	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	584.998	0.084	0.211	0.133	0.302
1	B-C	748.539	0.090	0.227	-	-
1	C-B	718.741	0.218	0.218	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Market Street South	ONE HOUR	✓	205.00	100.000
Hadden Street	ONE HOUR	✓	117.00	100.000
Market Street North	ONE HOUR	✓	231.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.000	9.000	196.000
	Hadden Street	35.000	0.000	82.000
	Market Street North	204.000	27.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.00	0.04	0.96
	Hadden Street	0.30	0.00	0.70
	Market Street North	0.88	0.12	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	1.000	1.000	1.000
	Hadden Street	1.000	1.000	1.000
	Market Street North	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		Market Street South	Hadden Street	Market Street North
From	Market Street South	0.0	0.0	0.0
	Hadden Street	0.0	0.0	0.0
	Market Street North	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.21	7.26	0.26	A
C-AB	0.05	4.77	0.08	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	88.08	87.46	0.00	645.57	0.136	0.16	6.444	A
C-AB	25.10	24.93	0.00	779.53	0.032	0.04	4.771	A
C-A	148.80	148.80	0.00	-	-	-	-	-
A-B	6.78	6.78	0.00	-	-	-	-	-
A-C	147.56	147.56	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	105.18	105.02	0.00	636.65	0.165	0.20	6.770	A
C-AB	31.25	31.20	0.00	791.71	0.039	0.06	4.733	A
C-A	176.42	176.42	0.00	-	-	-	-	-
A-B	8.09	8.09	0.00	-	-	-	-	-
A-C	176.20	176.20	0.00	-	-	-	-	-

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	128.82	128.57	0.00	624.26	0.206	0.26	7.259	A
C-AB	40.45	40.37	0.00	808.63	0.050	0.08	4.686	A
C-A	213.89	213.89	0.00	-	-	-	-	-
A-B	9.91	9.91	0.00	-	-	-	-	-
A-C	215.80	215.80	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	128.82	128.81	0.00	624.25	0.206	0.26	7.265	A
C-AB	40.47	40.47	0.00	808.64	0.050	0.08	4.688	A
C-A	213.87	213.87	0.00	-	-	-	-	-
A-B	9.91	9.91	0.00	-	-	-	-	-
A-C	215.80	215.80	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	105.18	105.42	0.00	636.64	0.165	0.20	6.781	A
C-AB	31.27	31.35	0.00	791.74	0.040	0.06	4.737	A
C-A	176.39	176.39	0.00	-	-	-	-	-
A-B	8.09	8.09	0.00	-	-	-	-	-
A-C	176.20	176.20	0.00	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	88.08	88.25	0.00	645.55	0.136	0.16	6.463	A
C-AB	25.15	25.20	0.00	779.57	0.032	0.04	4.772	A
C-A	148.76	148.76	0.00	-	-	-	-	-
A-B	6.78	6.78	0.00	-	-	-	-	-
A-C	147.56	147.56	0.00	-	-	-	-	-

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