



GENERATION ABERDEEN
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CB Currie & Brown



FAIRHURST

SYSTRA

LD&A DESIGN

Business case update - Future design considerations

Aberdeen City Centre Streetscape Projects

Union Street West & West End, Union Street East & Castlegate, Market Streetscape Phase 2 & 3
8153-LDA-XX-XX-RP-L-2001

December 2023

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1.0

Introduction

1.1 Introduction and context

This purpose of this document is to sit alongside the business case and to support the general arrangement drawings by setting out key design considerations and caveats that require further exploration during future stages of the project.

There are three project areas included in this Business Case:

- Union Street West and West End
- Union Street East and Castlegate
- Market Streetscape

A plan showing the extents of each of these projects can be found in section 1.3.

Each project area has been reconsidered with a view to the inclusion of segregated cycle routes, as per Full Council instruction in December 2022, whilst continuing to improve the public realm for pedestrians.

The Full Council instruction in December 2022 set out;

“To instruct the Director of Resources to progress with developing the remaining streetscape programmes, including options for the provision of physically segregated cycle tracks/lanes, and bring forward for Council consideration and approval an update to the Full Business Case in (i) above following conclusion of design, planning and consultation stages on the below programmes by December 2023:

- a) Union Street East and Castlegate and Justice Street
- b) Union Street West and West End
- c) Market Streetscape Phases 2 and 3.”

Following this instruction, a brief was developed by ACC and issued to the design team to explore the inclusion of cycle provision in each of the areas outlined. This study was to broadly follow the STAG (Scottish Transport Appraisal Guidance) processes in accordance with transportation best practice and take cognizance of the recommendations as set out in Cycling by Design (2021), Transport Scotland's cycle design guidance where possible.

Union Street Central and UpperKirkgate and Schoolhill were not included within this study as the detailed design for these areas has been approved by Full Council and work is progressing towards delivery.

The options appraisal exercise was undertaken to determine the most appropriate strategy for introducing segregated cycling on Union Street and the Market Streetscape. Engagement was undertaken with stakeholders and Aberdeen City Council throughout the process.

The outcome of the options appraisal for Union Street East and West stimulated discussion around Union Street Central and the possibility to introduce a consistent approach to segregated cycling throughout the full length of Union Street. This led to an options appraisal being undertaken on Union Street Central and subsequently being reported in June 2023, where the introduction of segregated cycling was approved at Full Council.

The design changes associated with the outcome of the Union Street West and East options appraisal bring a consistent approach to segregated cycling along the full length of Union Street.

The key changes for each area from layouts submitted in December 2022 are:

Union Street West

Reduction of carriageway width to 7.3m and removal of the bus lay-bys. Introduction of a 3m wide segregated two-way cycle track to the north side of the street with the incorporation of bus stop bypasses, where the cycle track goes behind a bus boarding area. Extended pavement zones, street furniture and greening incorporated throughout where possible.

West End

In the previous layout, it was recommended that the taxi rank on Chapel St was combined with the night time taxi rank on Union Street West to become a full time taxi rank. With the removal of lay-bys on Union Street West, this is no longer possible, therefore the day time taxi rank on Chapel St has been reinstated and layout revised to accommodate this.

Union Street East

Reduction of carriageway width to 7.3m and removal of the bus lay-bys. Introduction of a 3m wide segregated two-way cycle track to the north side of the street with the incorporation of bus stop bypasses, where the cycle track goes behind a bus boarding area. Extended pavement zones, street furniture and greening incorporated throughout where possible.

Castlegate

Significant amendments have been undertaken to the proposal encompassing the castlegate. A single (eastbound) bus lane has been included, following instruction from Full Council. The two-way cycle track continues from Union Street

and connects to Justice Street through the space. These routes are included to the north of Castlegate and the public realm layout has been updated to accommodate this.

Market Streetscape

Market Streetscape takes in areas surrounding the proposed new market building, as well as routes through the Merchant Quarter. Since the previous submission, consideration has been given to facilitating cycling through the Merchant Quarter.

Market Streetscape is split into three phases (see drawing number 8153-LDA-02-XX-DR-L-1101). Phase 1 was approved and instructed by Full Council in December 2022.

The instruction for this piece of work considered only Phase 2 and Phase 3, therefore, this Business Case output makes no changes to Phase 1.

Fundamental considerations

Due to project constraints, this document sets out a number of key considerations which require further design development, coordination and engagement during future stages of the project. A number of these will be fundamental to the future success of the proposals and are outlined below.

- The width of the carriageway on Union Street.
- Vehicular movements including general traffic and buses on Union Street.
- Servicing arrangements for Union Street.
- The tie in at the Union Street / Alford Place / Holburn Street traffic signal junction.

- Kerb alignments to respect Swept Path Analysis, and to ensure that footway widths remain suitable.
- The implications for existing uses on side streets, if these are to be used for servicing. Also swept paths on some, to ensure that service bays, and their locations, are suitable.
- Road levels and drainage requirements.
- The alignment of the proposed Toucan Crossing into Castlegate.
- The form of the new junction into Castlegate.

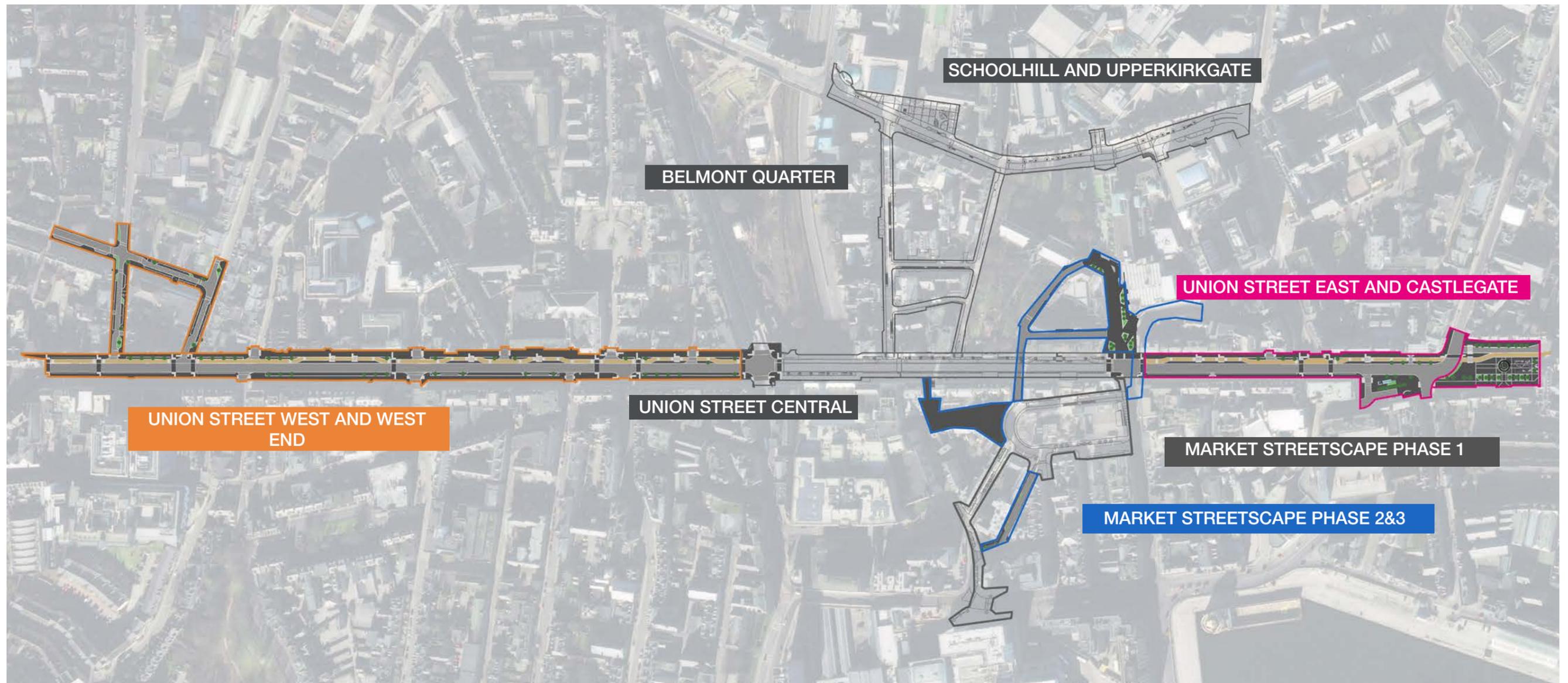
Further detail for these is set out throughout the document.

Further engagement with bus operators and other stakeholder groups will also be required throughout future stages of the projects.



Indicative visualisation of Union Street Central, showing the consistent approach to the street layout throughout the length of Union Street.

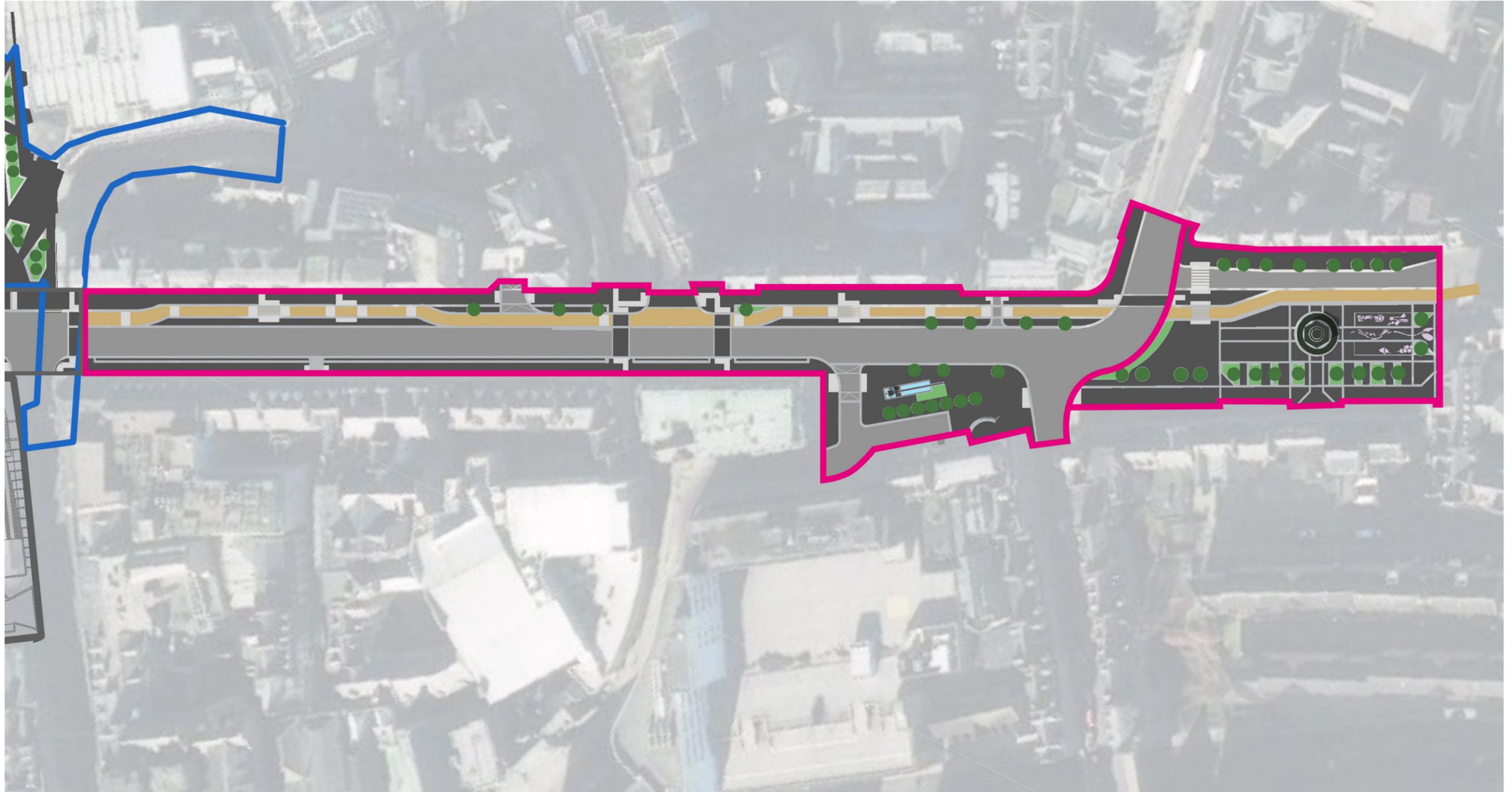
1.2 Overall plan



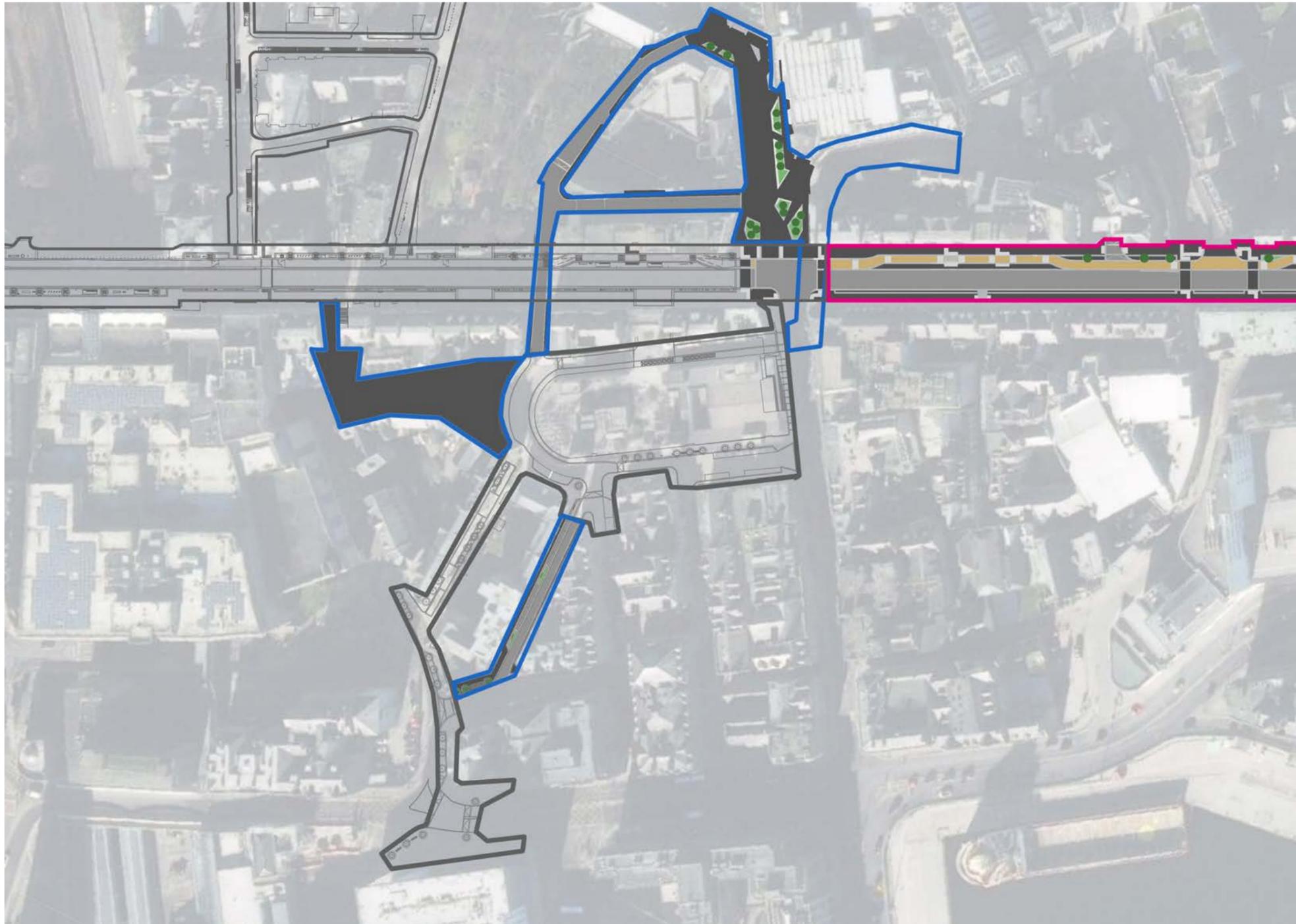
Union Street West & West End



Union Street East and Castlegate



Market Streetscape Phase 2 & 3



The adjacent plan shows the boundary phases 1, 2 & 3 of the Market Streetscape. This business case only considers phase 2 & 3 as phase 1 has been previously agreed at Full Council and is shown for context only.

For a more detailed phasing plan, please refer to drawing 8153-LDA-02-XX-DR-L-1101 in appendix B.

- Phase 1
- Phase 2 & 3

2.0

Key considerations

2.1 Engagement

Engagement with stakeholders has been undertaken throughout this process. Following the December committee instruction, the design team were briefed by ACC to carry out an options appraisal to explore options to introduce segregated cycling on Union Street and the Market Streetscape. Stakeholders were involved in the options appraisal process at all stages.

On-boarding 1-1's

1-1's with individual stakeholder groups was undertaken to introduce the idea of change and the introduction of cycle infrastructure. These sessions provided the opportunity for stakeholders to voice any initial queries and ideas. Generally, there was a consensus among groups that they understood ACC's ambition to include segregated cycle tracks and the challenges faced by this due to the constraints of the street. There was an understanding that to achieve this, there would have to be compromise to develop a scheme which best worked for everyone.

Combined stakeholder and ACC officer engagement session

Feedback from stockholders 1-1 on-boarding sessions was used to develop a long list of options for the introduction of segregated cycling on Union Street. Variables included whether the cycle track was two-way or one-way, which side of the road it was on, and how it interacted with bus stops.

A feasibility appraisal was undertaken on the long list of options and a number of options were

discounted. A further number of options were also discounted through this process based on feedback from the on-boarding 1-1's.

A combined session was held between ACC officers and stakeholders to go through the full long-list of options and discuss the removed options and conclude on a preferred option to progress with. This provided the opportunity for ACC officers to answer technical questions raised by stakeholders. From this session, a preferred option emerged which was favoured by the majority of stakeholder groups. This was for the introduction of a two-way cycle track on the north side of the road with bus stop bypasses.

Bus bypass mock up

Following concerns raised by the Disability Equity Partnership (DEP) around the safety of bus stop bypasses, a full scale mock up was constructed in Marischal College to allow stakeholder groups to understand how the layout worked and to ease any concerns.

At this point, focus was on Union Street Central, however this was still relevant to both Union Street East and West due to their proposed consistent approach. DEP and cycling groups attended an interactive session with ACC officers and several elected members, at which, a number of scenarios were acted out. This also provided opportunity for the design team to develop with DEP, a number of alterations and additions to the design which would improve perceived safety and usability of the layout.

Market Streetscape Phase 3

Due to project constraints, engagement has not been undertaken on Phase 3 of the market streetscape and will need to be considered during future stages of the project.

Castlegate

Engagement has been undertaken with bus operators on the public transport link through Castlegate. Ongoing engagement should continue in future phases of the project.



Bus operator engagement

Both operators support the broad objectives of the city centre masterplan and its associated projects and they recognise the Council's wish to explore options for enhanced cycling facilities in the city centre. Operators reflect positively on the ETRO2 bus gates, noting that they have already experienced journey time reductions in the city centre, aiding journey time reliability and therefore delivering a better service to passengers. Operators anticipate that the ETRO2 bus gates and other bus-friendly measures such as those proposed on key arterial corridors by Bus Partnership Fund studies will allow them to lower journey times, carry more passengers and ultimately offer lower fares.

As the indicative layouts developed, the bus operators indicated that they had concerns about the operational viability of the proposals, as presented in the indicative scheme. Operator concerns included:

- A lack of resilience. A two-lane carriageway offers no contingency for buses, other than in instances where overtaking opportunities were provided. Any stopped vehicle (such as a delivery van, refuse truck etc. would slow the pace of buses on the corridor, increasing journey time.
- Issues around the placement of bus stops. In instances where buses were serving stops located directly opposite one another, the progression of all following traffic (in both directions) would be slowed or stopped, with no passing opportunities.
- Issues around the number of bus stops.

Operators have previously provided details of the number of stops needed to serve present-day service patterns (i.e. the number of bus services and their frequency). As the number of stops is reduced, the number of passengers and buses using remaining stops is increased – this will increase stop dwell time and reduce throughput.

- The lack of available alternatives. Union Street is at the heart of the city and regional bus network and there are few available alternative routes through the city centre. Other routes which might be available carry general traffic and do not afford buses the same 'straight line' priority that Union Street offers. Alternative routes would be more convoluted and hence less attractive to passengers.
- Servicing: Operators recognise the requirement for businesses and other properties to be serviced, but they have clear concerns that incorporation of such activity in the context of a two-lane road layout would materially impact bus services.
- Presence of general traffic: General traffic is not permitted in Central Union Street and levels in the Eastern section are sufficiently low so as not to present operational issues to bus services. Notwithstanding this, levels of general traffic in Union Street West remain sufficiently high so as to present issues for bus reliability, particularly in the context of a two-lane section of road, where there are no bus stop lay-bys or passing places.

The Design Team has therefore established that a series of alterations will likely be necessary to the indicative design such that an appropriate

level of bus provision can be guaranteed and sustained. This would ensure that buses can continue to serve Union Street in a way that is efficient for operators and attractive to their passengers now and in the future, noting the local and national aspirations for a growth in public transport ridership.

These considerations which are discussed in full in the supporting SYSTRA note: Union Street Bus Operator Consultations 2023 (Ref: GB01T23D25/DN2/061023) are summarised as follows:

- To incorporate resilience within the revised streetscape and ensure the continued efficiency of bus movements along Union Street, localised carriageway widening or passing opportunities are likely to be required.
- To ensure effective bus stop operations, it is necessary to reflect on the different role of stops throughout the corridor. This is related to the point above. (For example, First experiences high demand associated with student travel at key (mainly westbound) nodes, Stagecoach has specific requirements in relation to long distance services at Adelphi).
- Operators were clear that a strategy was required to manage or displace potentially harmful delivery and servicing activity, from the corridor.
- Operators were keen to see a reduction in levels of general traffic movements within Union Street corridor (particularly in the western section) and they stated that traffic displaced from the corridor should not then

present operational issues for buses on the periphery of the corridor.

- Both operators referred to Aberdeen Rapid Transit and its potential future role on the corridor.

Interventions that would aid in achieving this are set out in this document. Due to project constraints, these have not been fully assessed and refined and therefore require detailed consideration during the next stage of the project. They have also not been subject to engagement with other stakeholder groups, this

Key future consideration:

Union Street West: Consider feedback from stakeholders and potential interventions suggested. Continue engagement with bus operators and undertake engagement with stakeholders.

West End: Continue to undertake engagement with stakeholders.

Union Street East: Consider feedback from stakeholders and potential interventions suggested. Continue engagement with bus operators and undertake engagement with stakeholders.

Castlegate: Continue engagement with bus operators and undertake engagement with stakeholders.

Market Streetscape: Continue to undertake engagement with stakeholders. Particularly around Phase 3.

2.2 Placemaking

Union Street East and Union Street West

Along the Union Street corridor, all footways are proposed to be wider than currently. The inclusion of segregated cycle infrastructure as well as widened footways is facilitated by road carriageway narrowing, from three or four lanes to two lanes: one running in each direction. The reduction in carriageway widths allows for both pedestrians and cyclists to be prioritised.

Where footway widening permits, 'dwell zones' are incorporated along the length of the corridor. These allow for street greening, places to sit and the inclusion of public art, contributing to interest and encouraging use of Union Street as a destination rather than simply a through route.

The adjacent diagrams show the zoning of the street, highlighting space for pedestrians on the footway and in the extended pavement areas.

Castlegate

The introduction of a one way public transport route through the Castlegate impacts pedestrian space, however this is balanced out with the benefit of the new route for creating a gateway to the beach and facilitating the continuation of the segregated cycle track. The concept for the space remains the same, placing importance on existing heritage features, space to sit and congregate and play.

Market Streetscape

The Green and Back Wynd Steps constitute Phase 3 of the Market Streetscape project. It was considered that The Green is a special and characterful area. As part of these works, a high level conditions survey and recommendations report has been developed. Further exploration is required into the level of intervention to Phase 3 of the Market Streetscape

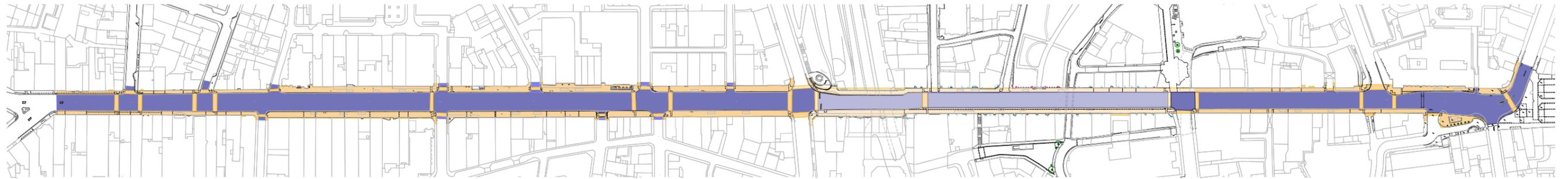
Key future consideration:

Union Street West: Ensure pavement widening and dwell zone areas are maximised in balance with any carriageway compromise.

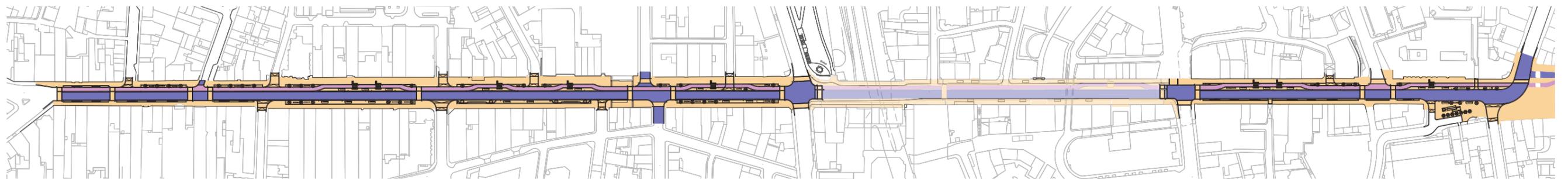
Union Street East: Ensure pavement widening and dwell zone areas are maximised in balance with any carriageway compromise.

Castlegate: Further design development to ensure synthesis between public transport route and wider pedestrian square, as well as servicing requirements.

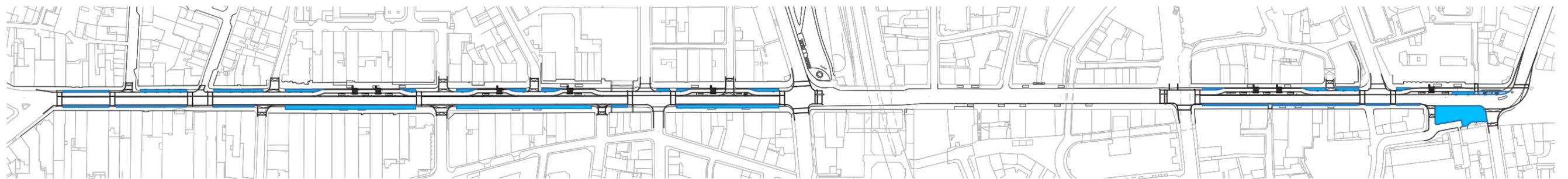
Market Streetscape: Further exploration is required into the level of intervention to Phase 3 of the market streetscape.



Union Street East and Union Street West - Existing conditions zoning diagram



Union Street East and Union Street West - Current proposal zoning diagram



Union Street East and Union Street West - Dwell zone locations

-  Pedestrian footway
-  Two-way cycle track

2.3 Carriageway

Union Street West

The proposal drawings show a consistent carriageway width along Union Street West and East of 7.3m, this width comprised of one 3.65m wide lane each way.

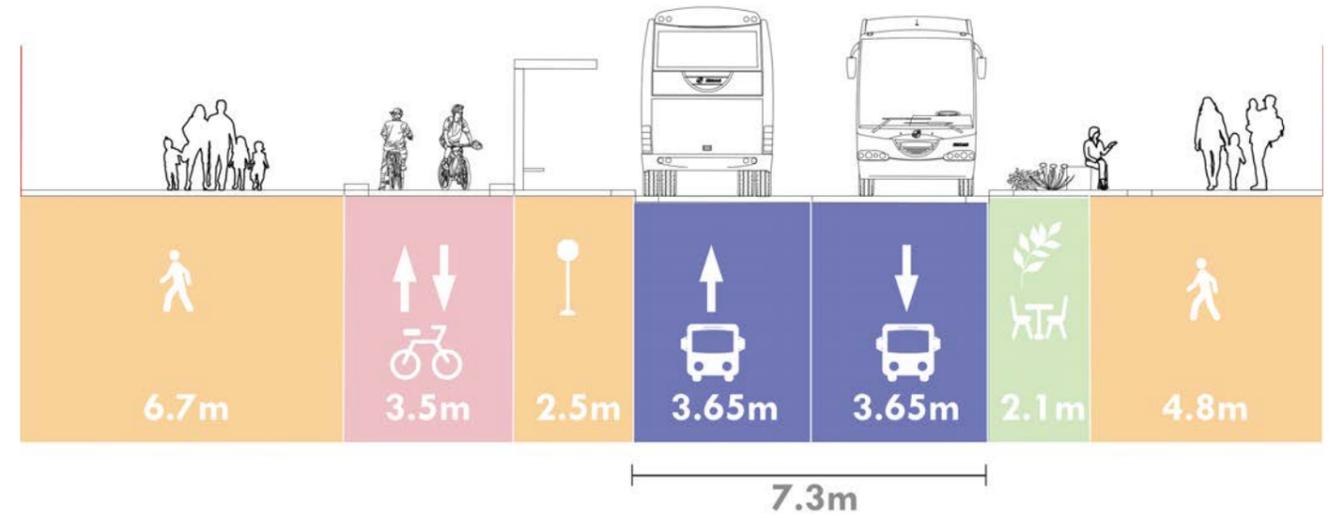
Bus operators have raised concerns around the resilience of the indicative proposals. They noted that a two-lane carriageway offers no contingency for buses, other than in instances where overtaking opportunities were provided. Any stopped vehicle (such as a delivery van, refuse truck etc. could lead to bus congestion on the corridor, increasing journey time. To appropriately mitigate, localised widening of the carriageway on Union Street West to 9m will be required.

The adjacent diagrams show potential locations for this. It would allow for overtaking manoeuvres, should buses be stopped at bus stops. It is likely that this will be required on Union Street West to maintain a reliability of service for the bus network.

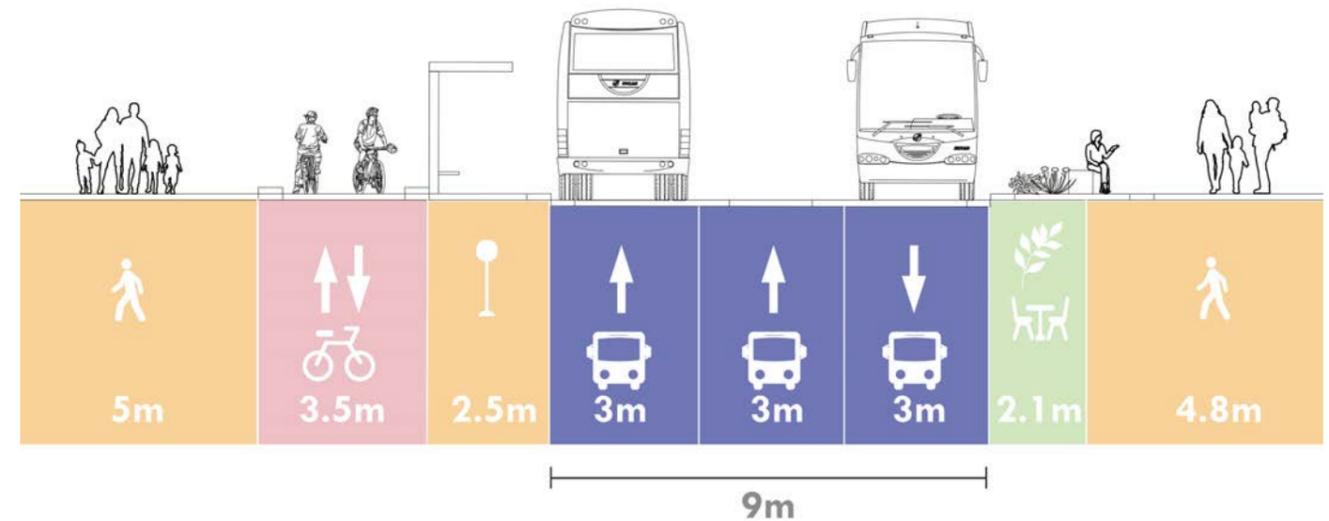
High level pros and cons for this option are set out below, however this would need further consideration and engagement with stakeholders at later stages of the project to ensure concise and considered design development.

Union Street East

There is limited opportunity to widen the footways on Union Street East between Market Street and Broad St, however there is space to widen the carriageway at Plainstanes to between 9 and 11 metres to accommodate the high volume of buses and the tracking of vehicles through the new junction from Union Street East to Castlegate. This has been incorporated within the indicative layouts.



Option 1 - Typical section of Union Street layout with 7.3m



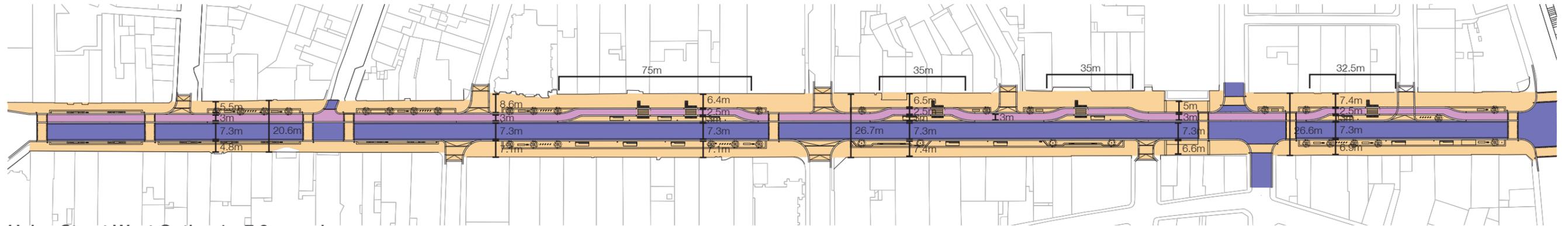
B - Increase of carriageway to 9m on Union Street

- Pedestrian footway
- Two-way cycle track
- Carriageway
- Dwell zone

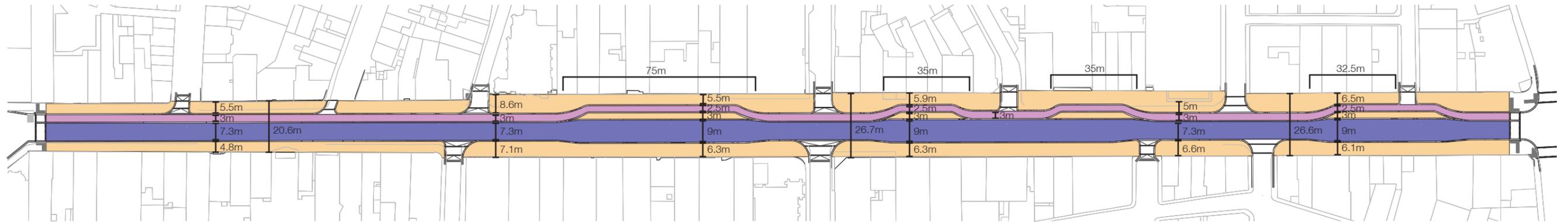
Key future consideration:

Union Street West: Consider implications of carriageway width and decide whether to retain consistent 7.3m wide carriageway or implement localised widening to 9m.

Union Street East: Consider implications of carriageway width and widening of carriageway after Plainstanes.



Union Street West Option 1 - 7.3m carriageway



Union Street West Option 2 - Localised 9m carriageway widening potential locations

Option 1 - Consistent 7.3m Carriageway

Pros

- Legibility
- Maximises footway width
- Maximises dwell zone provision and opportunity for street furniture and greening

Cons

- Potential traffic congestion due to lack of overtaking opportunity
- Potential to slow down traffic, including buses, due to lack of overtaking opportunity
- Potential to impact reliability of the bus network.

Option 2 - 9m localised widening

Pros

- Retains reliability of the bus network
- Lower impact on bus journey times

Cons

- Reduces space for pedestrians
- Compromises street symmetry
- Greater crossing distances for pedestrians
- Reduced legibility of road priorities, who has use of the additional road width

2.4 Cycling

Market Streetscape

An assessment of the feasibility of the inclusion and implications of segregated cycling infrastructure through the Merchant Quarter was initially undertaken by ACC, with a view to determining the possibility of a route from the railway station to Union Street. This was followed by a holistic study of potential infrastructure through the area, seen in 8153-LDA-02-XX-RP-L-2001, May 2023. Following coordination with Fairhurst and ACC a summary document was produced, 8153-LDA-02-XX-RP-L-2002, the main findings of which were:

- It is not possible to implement a fully segregated cycle route from the railway station to Union Street utilising streets through the Merchant Quarter.
- Should a fully segregated route from the station to Union Street be desired, the preferred route should be Guild Street to Market Street. This route could also tie into the Shiprow route. This route is not currently within the scope of the City Vision projects.
- Although not fully segregated, a cycle

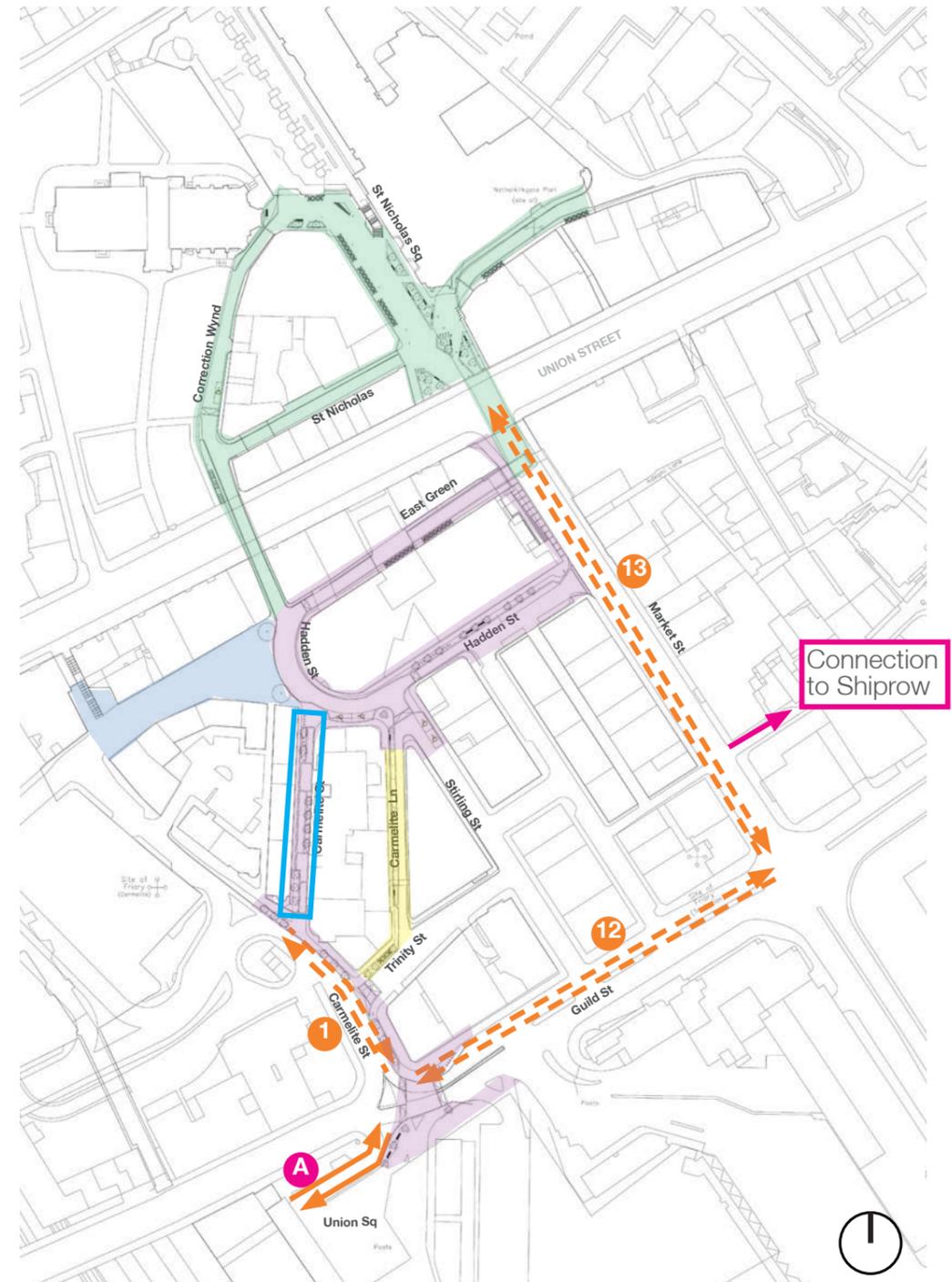
route from the station to Union Street via the Merchant Quarter would be desirable for those more comfortable cycling on quieter streets, and that provision of such infrastructure that is required to facilitate this should be considered, although this would necessitate a revision to the currently approved Phase 1 and currently proposed Phase 2 proposals.

- The Guild Street junction will require to be reconsidered should any of these cycling proposals be brought forward.

There is also a parallel requirement for a bus hub at Guild St due to the reduced No. stops on USC. The Guild St East corridor will therefore require detailed design consideration to accommodate all the required modes (pedestrians, cyclists, buses) as well as the impact through a major transport junction (Guild St / Market St / Virginia St).

Key future consideration:

Market Streetscape: Explore further the potential for segregated cycling on Guild St and Market St and decide whether to implement cycle infrastructure in Phase 1. Consideration of the detail design of Guild Street to accommodate all modes of transport.



2.5 Public transport

Castlegate

Following instruction from Full Council, a new public transport link is proposed to run through Castlegate. This can be seen on the current indicative layout drawings. In its current form this is a single lane, single direction (eastbound) route, connecting Union Street/King Street to Justice Street, with buses proposed to run through here towards the beach.

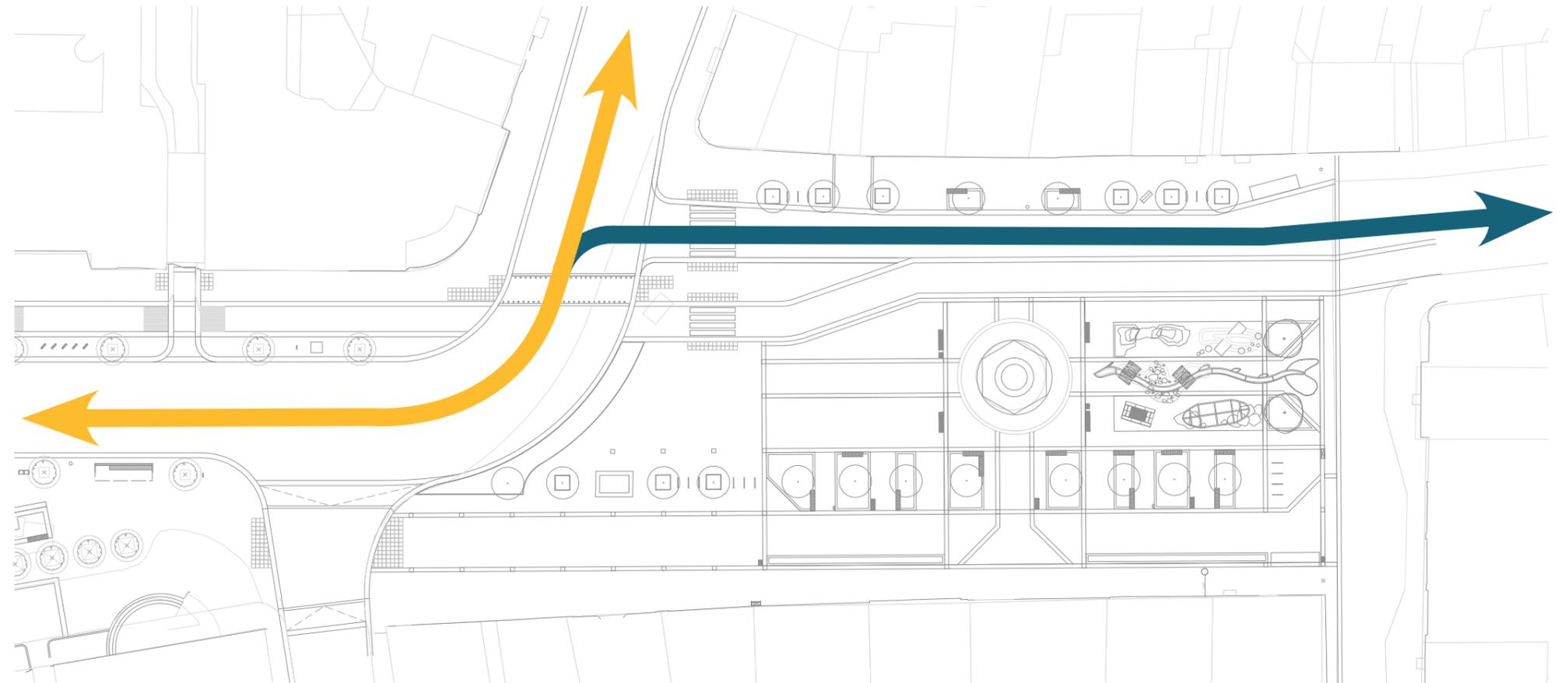
An options appraisal was undertaken by SYSTRA exploring possible layouts and operations for this bus link. Engagement was undertaken with bus operators, both of whom are supportive of the development of this link.

SYSTRA's initial feasibility study pointed towards an operator preference for a two-way link, however it recognised that should a two-way link prove impractical, then the objective would be to cater for eastbound movements, towards the beach-front. This was then strengthened through additional feedback provided by Stagecoach, relating to the potential to extend and divert services to the beach and therefore requiring a higher frequency use of the Castlegate.

Following outcomes of technical audit, issues arose which leads justification to sift out a two-way link at this point and only consider a one-way eastbound scenario. See 'Castlegate Public Transport & Active Travel Link' (Ref: GB01T23D72/CAS2/131023), for option studies.

Key future consideration:

Castlegate: Explore implications and confirm decision to make public transport link one-way eastbound.



Castlegate public transport link

- Two way bus movement
- One way bus movement

Union Street East and Union Street West

Union Street is a key movement corridor which sits at the heart of the city and regional bus network. Buses support the travel needs of those who visit the city centre area for work, leisure, education and healthcare purposes from within that city-wide and regional catchment.

The bus using population is composed of users of all age groups and abilities. While the city has aspirations to grow rates of pedestrian and cycle activity, these modes are not a realistic opportunity for a significant portion of the population, most notably including:

- Users who are represented by the Equalities Act, including those who are elderly and infirm, those with disabilities etc.
- Users travelling over distances which cannot realistically be covered on foot or by bike.

As the Council moves to reduce the number of car trips which are made within the city centre area, it is necessary to plan for and enable mode shift, with more users choosing to walk, cycle or take the bus. This is exemplified by ongoing corridor studies related to Aberdeen Rapid Transit, where the Council recognises the significant role buses will have in facilitating future mode shift, particularly for trips over distances which may otherwise generate car trips.

Mindful of the aspiration to increase footfall in the city centre, it is therefore vital that buses can continue to serve the needs of their passengers and the businesses and facilities to which they travel.

Bus operator feedback

As mentioned previously, development of the indicative layout has been informed through dialogue with First Aberdeen and Stagecoach Bluebird.

Bus operators raised concerns around the location and number of bus stops throughout the Union Street corridor, particularly in instances where buses were serving stops located directly opposite one another, the progression of all following traffic (in both directions) would be slowed or stopped, with no passing opportunities.

They also had issues around the number of bus stops. Operators have previously provided details of the number of stops needed to serve present-day service patterns (i.e. the number of bus services and their frequency). As the number of stops is reduced in the indicative plans, the number of passengers and buses using remaining stops is increased – this will increase stop dwell time.

Key operator concerns are backed up by technical traffic modelling exercises which are detailed in the supporting SYSTRA technical report: Union Street East & West Corridor – Traffic Modelling (Ref: GB01T23D25/TM1/131023).

Suggested alterations for consideration

The design team has therefore established that a series of alterations for future consideration which will likely be necessary to the indicative design such that a minimum level of bus provision can be guaranteed and sustained. This would ensure that buses can continue to

serve Union Street in a way that is efficient for operators and attractive to their passengers now and in the future, noting the local and national aspirations for a growth in public transport users. The adjacent diagrams show the current indicative bus stop layout and a potential option which takes into account the alterations discussed by the design team. Pros and cons of each are set out below them.

Option 2 incorporates:

Union Street West

- Eastbound and westbound bus stops grouped (Hubs) and offset from those in the opposing direction

Union Street East

- Three bus stops proposed on north kerb (G1-G3) for longer-distance Stagecoach services, with a potential for a drop-off only stop on the southern kerb (no passengers travel from here to the bus station, where most Stagecoach services terminate).
- A Bus Hub is proposed at the east end of Union Street / Castle Street, primarily to accommodate First services – this will require road widening and potential lay-by options.

There is an option to incorporate additional bus stops in the southern portion of King Street (south of West North Street) to accommodate stops which would be displaced from the Adelphi.

The detail of bus stop locations will be developed during technical design stage of the project.

Aberdeen Rapid Transit (ART)

ACC and Nestrans are currently progressing proposals to deliver Aberdeen Rapid Transit (ART).

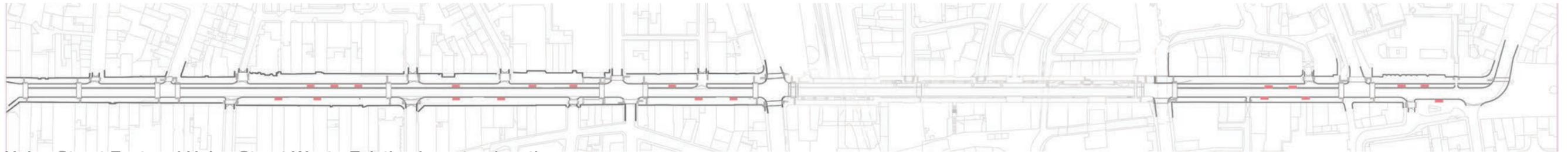
While studies related to ART are ongoing, with no final agreement yet reached as to its route through the city centre, it remains a possibility that the route could incorporate Union Street.

If it is ultimately decided that ART will incorporate Union Street, the indicative cycle scheme proposals will need to be revisited to ensure the necessary infrastructure requirements and performance objectives of that project can be catered for.

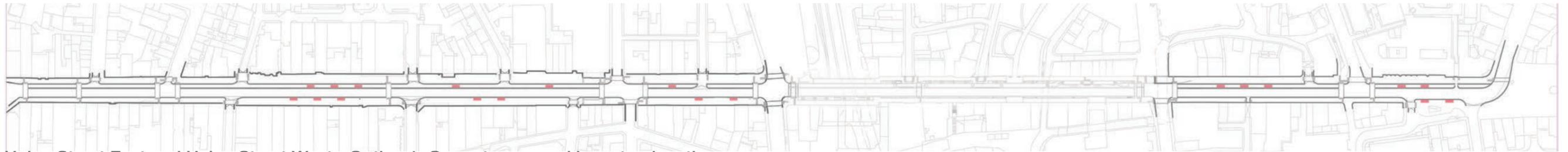
While the Design Team has liaised with bus operators and ACC's Public Transport officer, it is suggested that engagement with Nestrans is also necessary as part of subsequent stages of the Union Street streetscape proposals. This will ensure a clear understanding of the position related to ART, and any potential implications it may have on the segregated cycle scheme.

Key future consideration:

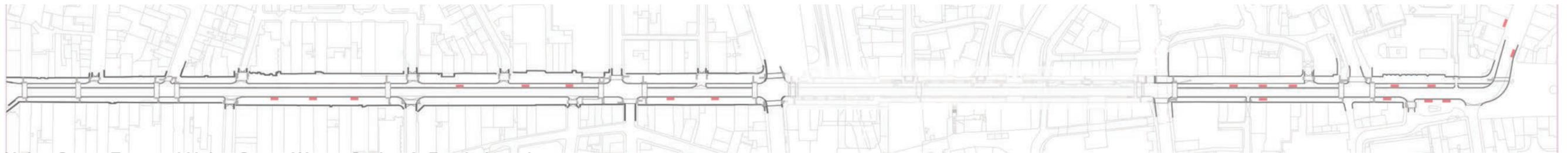
Union Street East and West: Consider implications of current bus stop locations and explore potential need for bus hubs and other bus stop measures. Also consider the implications of ART.



Union Street East and Union Street West - Existing bus stop locations



Union Street East and Union Street West - Option 1: Current proposed bus stop locations



Union Street East and Union Street West - Option 2: Bus hub option

Option 1 - Current bus stop locations

Pros

- Similar to existing bus stop locations so easily navigated by pedestrians
- Provides space for more than one bus at each stop
- Potentially future proofed for longer buses as part of ART

Cons

- Bus stops opposite one another means no opportunity to overtake
- Less efficient for buses and passengers
- Reduced number of bus stops potentially requiring rationalisation of services

Option 2 - Bus hubs

Pros

- Provides identifiable location for boarding and alighting buses on Union Street
- Bus stops not opposite one another could lead to less congestion
- Could lead to improved efficiency of the bus network

Cons

- Passengers would need to get used to new locations
- Longer distances between bus stops
- Localised congestion at bus hubs possible
- Reduced number of bus stops potentially requiring rationalisation of services

2.6 Operations

The updated Roads Hierarchy adopted by the Council in 2019 included a de-classification of the Union Street corridor to help dissuade drivers from utilising the city centre as a through traffic route. Routing along or across the Union Street corridor should therefore only be a requirement for those taking local access. From a general traffic perspective, the city centre area is envisioned as a destination not a through route. With this in mind, the operation of the local routes around the Union Street corridor requires to be carefully considered in the context of enhanced priority for pedestrians, cyclists, and buses through the corridor. The following comments and associated figures provide additional detail around the potential wider operation of the Union Street East and West areas. These considerations are conceptual at present and will require further assessment of their respective functions as the proposals move towards detailed design.

Union Street West

In order to restrict general traffic routing unnecessarily around the western Union Street corridor, it is proposed to restrict traffic movements at the minor junctions to a left-in / left-out configuration (See diagram on following pages). Not only does this restrict cross-city centre movements but it also simplifies the junction operation and removes delay to public transport, both from signal junction delays, and from right turning vehicles waiting on the Union Street corridor. Critically, it also reduces the number of conflict points for vehicles that require to cross over the segregated cycle track, thus improving operational road safety.

There are notable exceptions to this rule, including:

- Chapel Street, whereby the potentially higher traffic volume is encouraged away from the Union Street corridor via a southbound right turn only rather than a left turn through the Union Street and Union Terrace corridors. This junction therefore requires signalisation to allow for the right turn exit from Chapel Street. A left turn from this junction should be retained for taxis only, given the taxi rank located on Chapel Street.
- In addition, it is suggested that traffic signals are retained at the South Silver Street and Crown Street offset crossroads, enabling safe controlled movement at this location. A right turn from Crown Street would potentially also be required to cater for the No. 17 bus service.

It is not proposed to completely restrict general traffic from Union Street West as local access is still required. However, the proposed junction restrictions noted above, together with raised footway proposals across the junctions will ensure that general traffic volumes are kept to a minimum. The reduction in through routing has already been addressed to an extent by the banning of the right turn from Union Terrace to Rosemount Viaduct.

Access to properties to the north of Union Street West would therefore be taken primarily from Skene Street, which is the local distributor route in this area. Access to the properties to the south of Union Street West is proposed primarily from Holburn Street, and Willowbank Road/ Springbank Terrace via College Street.

West End

The West End will continue to operate as a one-way system, with vehicles travelling north on Rose Street, east on Thistle Street and exiting back on to Union Street by travelling south on Chapel Street. The key change to operations is the reduction from two lanes of traffic to one, this allows more space to be given to pedestrians while retaining some parking and service space. The taxi rank on Chapel Street had been combined with the night time taxi rank on Union Street West in previous proposals, due to the updated configuration of Union Street West, this is no longer possible and therefore the day time taxi rank on Chapel Street has been reinstated. This has an impact on the proposed configuration of the Chapel Street/Union Street junction. This was originally proposed to be right out only, however taxis are likely to need to turn left out of Chapel Street to travel up Union Street, it is therefore proposed for consideration, a left out for all traffic except taxis, who can turn left or right. Further information on junctions in section 2.8.

Union Street East

With the inclusion of the bus gates on Central Union Street and the north end of Market Street, there is no opportunity for through routing general traffic along Union Street East. Other than buses, cycles, taxis, and service vehicles, only general traffic routing to local destinations will require to utilise the east end of Union Street (access to Queen Street, the Adelphi etc.). The anticipated low traffic volumes exiting St. Catherine's Wynd, Castle Street, and The Adelphi will primarily require to route back to

King Street to exit the locality (unless exempt from the bus gates). It is proposed that the Broad Street / Union Street junction remains signalised, to facilitate all traffic movements at the junction, particularly for bus routing.

Marischal Street operation is still under review, noting that in its current configuration the route invites rat-running movements for traffic avoiding Market Street. It may also be affected by the junction proposals for Castlegate.

Castlegate

Castlegate is currently considered as a pedestrianised area, with access within restricted hours for servicing only. A two-way cycle track is proposed, tying the proposed Union Street route to the beachfront. Following instruction, the proposals now incorporate a single lane, one-way (eastbound) bus route, which can also be utilised by service vehicles, within restricted hours, as well as for local access required to parking at Brebner's Court. This formalises the previously informal service route along the north side of Castlegate.

Market Streetscape

The area comprising the Market Streetscape generally consists of slow moving traffic, generally local and often seeking parking. Much of the area's streets are one way.

The operation of the streets within the Market Streetscape area has not changed since the previous December 2022 Business Case. However, following instruction to review

the potential for inclusion of cycle routes, consideration may be made on whether to revisit the Stage 3 plan for Phase 1 to implement the necessary infrastructure to allow cycling. This may also require that the operational plan changes Carmelite Street (N) to a pedestrian and cycle zone, with local access to car parking only for traffic.

Supporting traffic modelling

Traffic modelling of the layout considerations for Union Street East and West was undertaken using the Aberdeen City Centre Paramics Model (2019) under an appropriate future year network scenario which includes the proposed configuration of Central Union Street. The model was utilised to assess the potential impact on bus network journey times and reliability through the corridor. Several scenarios were tested with variations on Union Street for the permitted delivery and servicing period; removal of all servicing provisions; management of general traffic; and finally the impact of the resilience measures detailed in this document.

The modelling detail is provided in the supporting SYSTRA technical report: Union Street East & West corridor – Traffic Modelling (Ref: GB01T23D25/TM1/131023). The key outcomes from the model testing suggests the following:

- There is a direct correlation between the servicing / loading activity period and increases in the spread of bus journey times (i.e. bus reliability). Changing the loading period within the daytime hours only moves the conflict issue to other times in the day.

- A high spread of journey times directly impacts bus reliability and hence, the attractiveness of buses to passengers
- Removing the conflict between buses and service vehicles makes a considerable improvement to bus reliability. This could be achieved through alternative daytime service locations away from the Union Street corridor, as proposed in this report
- The model suggests that the removal of general traffic from the Union Street East and West corridor has little impact on the overall operation of the bus network. The modelling is underpinned by assumptions around the less attractive nature of the proposed streetscape interventions for general traffic (via raised footways, road surfacing materials, no directional signage to Union Street etc.) , which in itself, reduces the volume of general traffic routing along and across the corridor. The traffic levels routing across and through Union Street is further reduced by the restricted left-in, left-out operation proposed at many of the minor junction onto Union Street
- A test which includes the general concepts of the contingency measures to improve network resilience has also been undertaken. This test assumed carriageway widening at potential bus hub locations and assumed all daytime loading (7am-7pm) would be undertaken at alternative dwelling locations, adjacent to Union Street East and West. The model suggests that the mitigation measures cater for the needs of buses more effectively when compared to the initial streetscape proposal, with lower average bus journey

times and improved journey time reliability. The model therefore demonstrates a technical justification for the measures which seek to ensure the minimum operational requirements which emerged from operator consultations.

Diagrams on the following pages highlight the high level proposed movements for Union Street East and Union Street West, incorporating the movements outlined in this section for consideration.

Key future consideration:

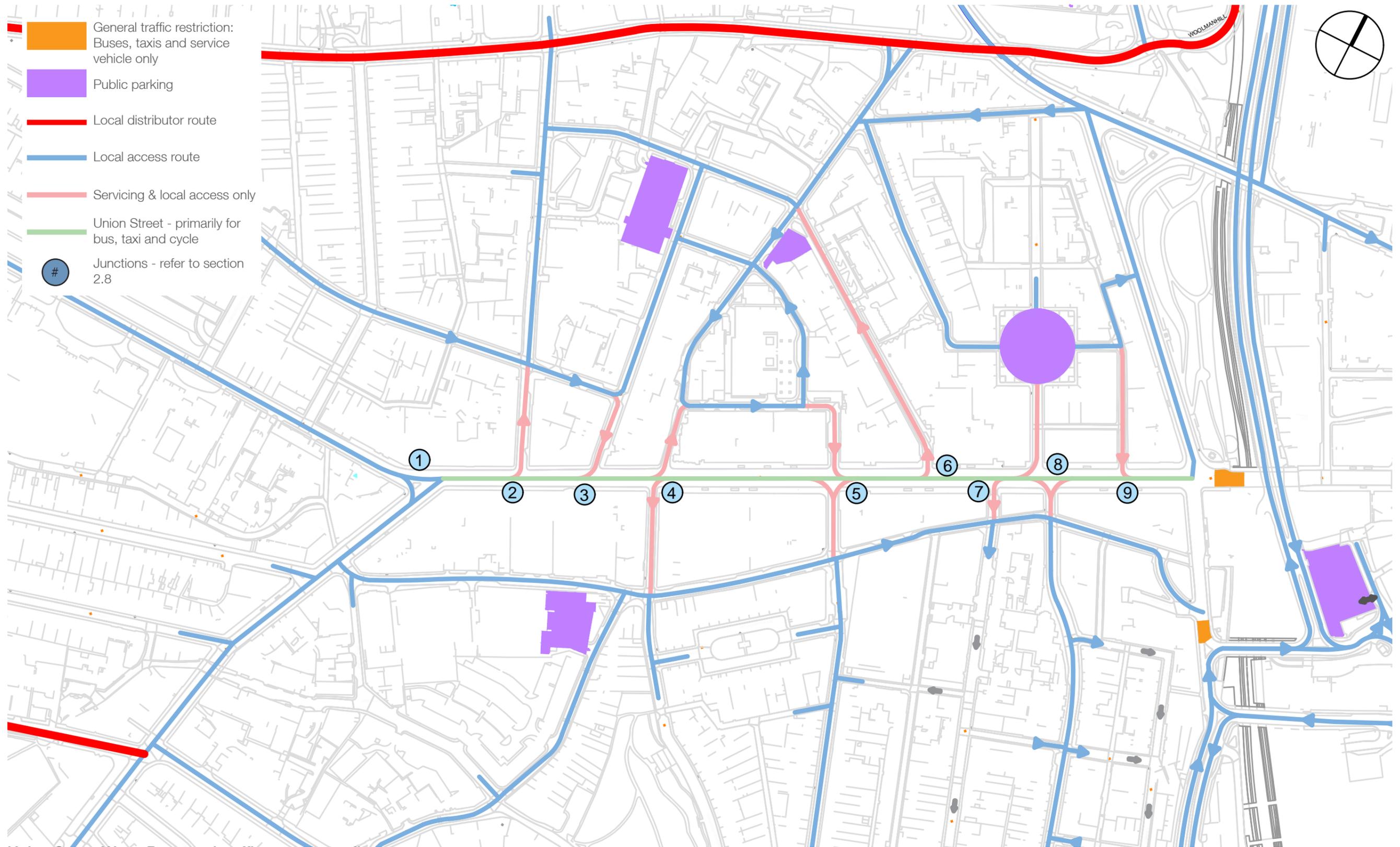
Union Street West: Explore options for further traffic management to aid bus operations. E.g. minimising general traffic movements.

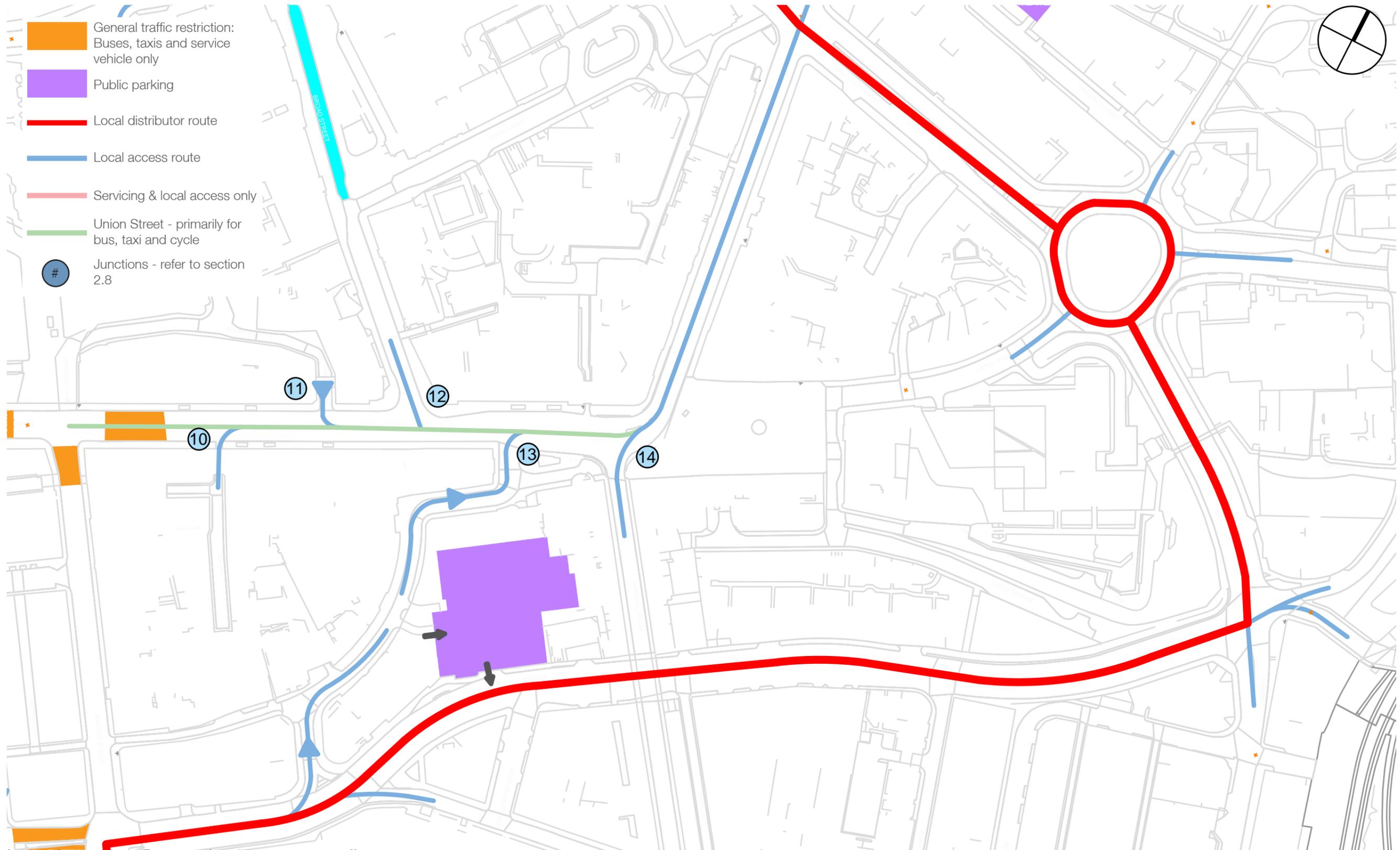
West End: Confirm decision to allow left out for taxis from Chapel St to Union St West, right out only for general traffic.

Union Street East: Explore options for further traffic management to aid bus operations. E.g. minimising general traffic movements.

Castlegate: Explore implications and confirm decision to make public transport link one-way eastbound and consider bus stop location.

Market Streetscape: Analyse and explore operational changes that may be required to Phase 1 if cycling infrastructure is introduced.





Union Street East: Proposed traffic movement diagram

2.7 Servicing

Union Street East and Union Street West

A key implication of the cycle track proposals is that only a single lane of traffic movements will be provided in each direction on Union Street. This, in turn, reduces the available space to cater for general traffic, delivery and servicing activity and local bus service operations. In a scenario where no contingency is provided for these various operational requirements, those activities then potentially compete for the limited space available, leading to a reduction in the capacity and efficiency of the link.

Current servicing provisions

Currently, the service periods through the Union Street corridor are designed to fall out-with the peak public transport periods (typically, no loading between 07:30-09:30am; 12noon-2:30pm; and 4:00-6:00pm).

Vehicle loading is available along the length of the corridor out-with these restricted periods. Buses and general traffic are therefore able to pass dwelling vehicles relatively easily due to the minimum two lane operation in both direction at all points along the corridor (out-with bus stop locations). General traffic has been restricted from parking or dwelling along the corridor, enforced by the 'no waiting at any time' double yellow line restrictions.

The three defined sections of the Union Street corridor, East, West, and Central, each have different characteristics, servicing requirements and dwelling opportunities.

The proposals to restrict traffic routing lanes to one in each direction will lead to a direct

conflict between local service buses and service vehicles, if servicing is permitted through the daytime hours. Service vehicles may include postal delivery vans, couriers, trades / maintenance vehicles, delivery lorries etc.

Both First and Stagecoach have noted concern with this conflict (See supporting SYSTRA note: Union Street Bus Operator Consultations 2023 (Ref: GB01T23D25/DN2/061023).

Traffic modelling of the proposed general layout of Union Street East & West has also confirmed that service vehicle dwelling has a direct impact on the bus network journey time and reliability, no matter what time of day the servicing is permitted (See supporting SYSTRA technical report: Union Street East & West Corridor – Traffic Modelling (Ref: GB01T23D25/TM1/131023).

Suggested servicing strategy

Therefore, it is proposed for consideration, to utilise the available side streets in the adjoining local network to Union Street East and West to facilitate loading during the daytime hours. Out-with these hours, there may be a potential to permit some kerbside servicing.

If larger service vehicles are required for delivery, these may be restricted to periods out with the core daytime hours when there are fewer buses and generally lighter passenger loadings.

There are more opportunities for off-line servicing along the Union Street West corridor than the East corridor, due to the number of potential loading locations. It may be pertinent to also consider on-street loading bays at locations on Union Street East that are sufficiently wide as to

accommodate them.

In summary, the proposals for consideration for loading and servicing along Union Street East and West are:

- Utilisation of side streets in the close proximity to Union Street for daytime servicing and loading
- Restriction periods to be determined but may typically be: No Loading 07:00-19:00
- Service vehicles may be permitted on Union Street East and West out-with these periods

Implications of Alternative Daytime Loading Locations

- Removes direct conflict between buses on the Union Street corridor with dwelling service vehicles during the daytime hours, thus improving bus journey time and reliability.
- Make best use of minor routes into Union Street that no longer carry a traffic routing function. This is also in adherence with the roads network hierarchy.
- Some of these minor routes may be considered for additional restrictions to general traffic routing if deemed necessary. Several of these routes were successfully restricted during the Spaces for People Scheme during the pandemic.
- Loading provisions and general traffic restrictions on approach routes to Union Street adheres to the local transport strategy which envisages the city centre as a destination and not a through route for general traffic

- The more formal service and waiting locations there are off-line from Union Street, the lower the likelihood of illegal parking or poor driver behaviour along the Union Street corridor itself. In the absence of a defined strategy, activity would be ad hoc – vehicles would park where it best suited them, either disrupting buses or encroaching into places which are defined for pedestrian and cycle activity.

- Requirement for clearly defined waiting / loading restrictions on the corridor, coupled with the importance of high-visibility enforcement, without which informal or illegal parking will be highly detrimental to bus operations.

Key future consideration:

Union Street West: Fully understand servicing requirements via survey. Explore options for servicing such as reducing the servicing window and promoting side streets for day time servicing.

Union Street East: Fully understand servicing requirements via survey. Explore options for servicing such as reducing the servicing window and promoting side streets for day time servicing.

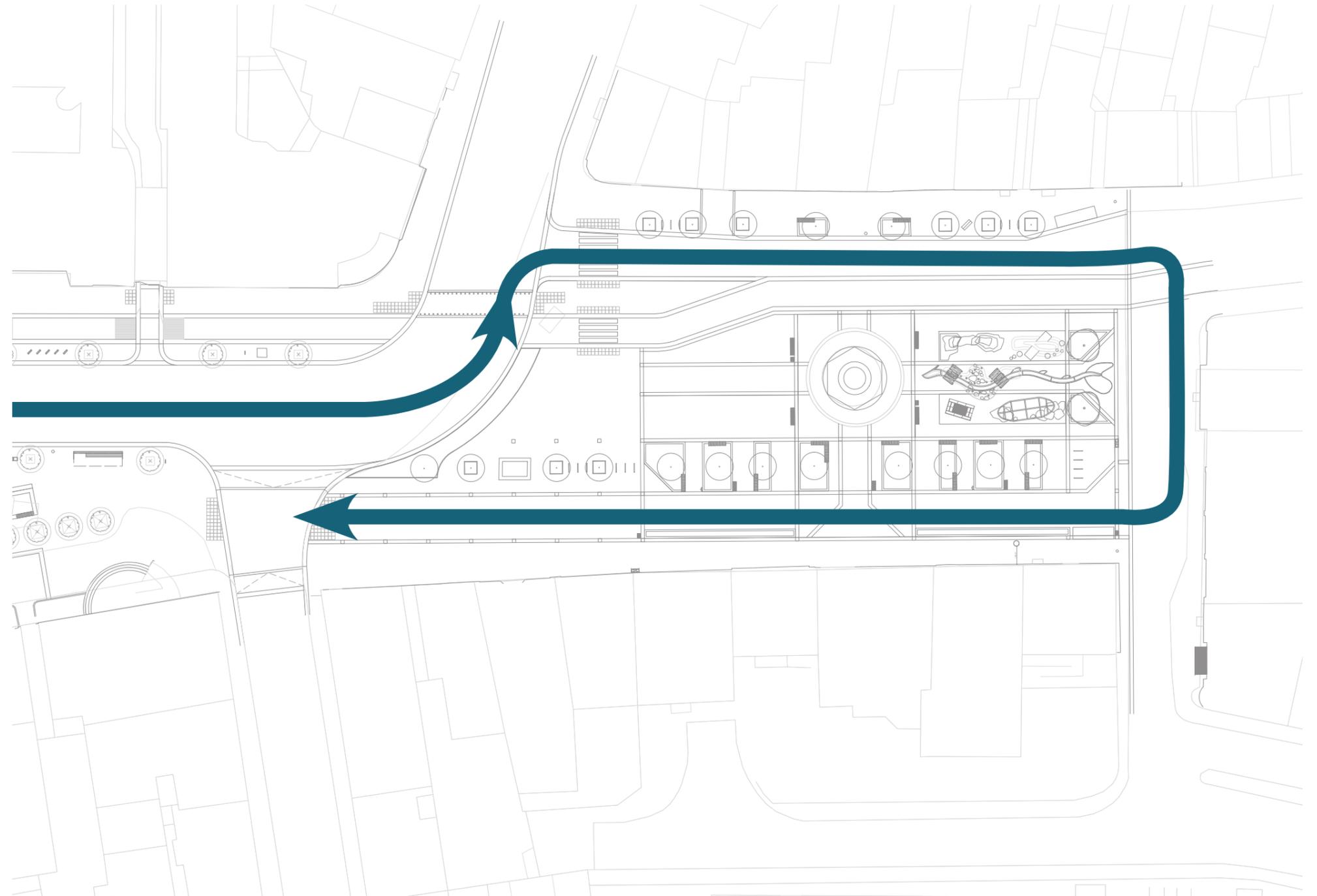
Castlegate: Develop detail for service route around Castlegate that would work with exit on to Marischal St.

Castlegate

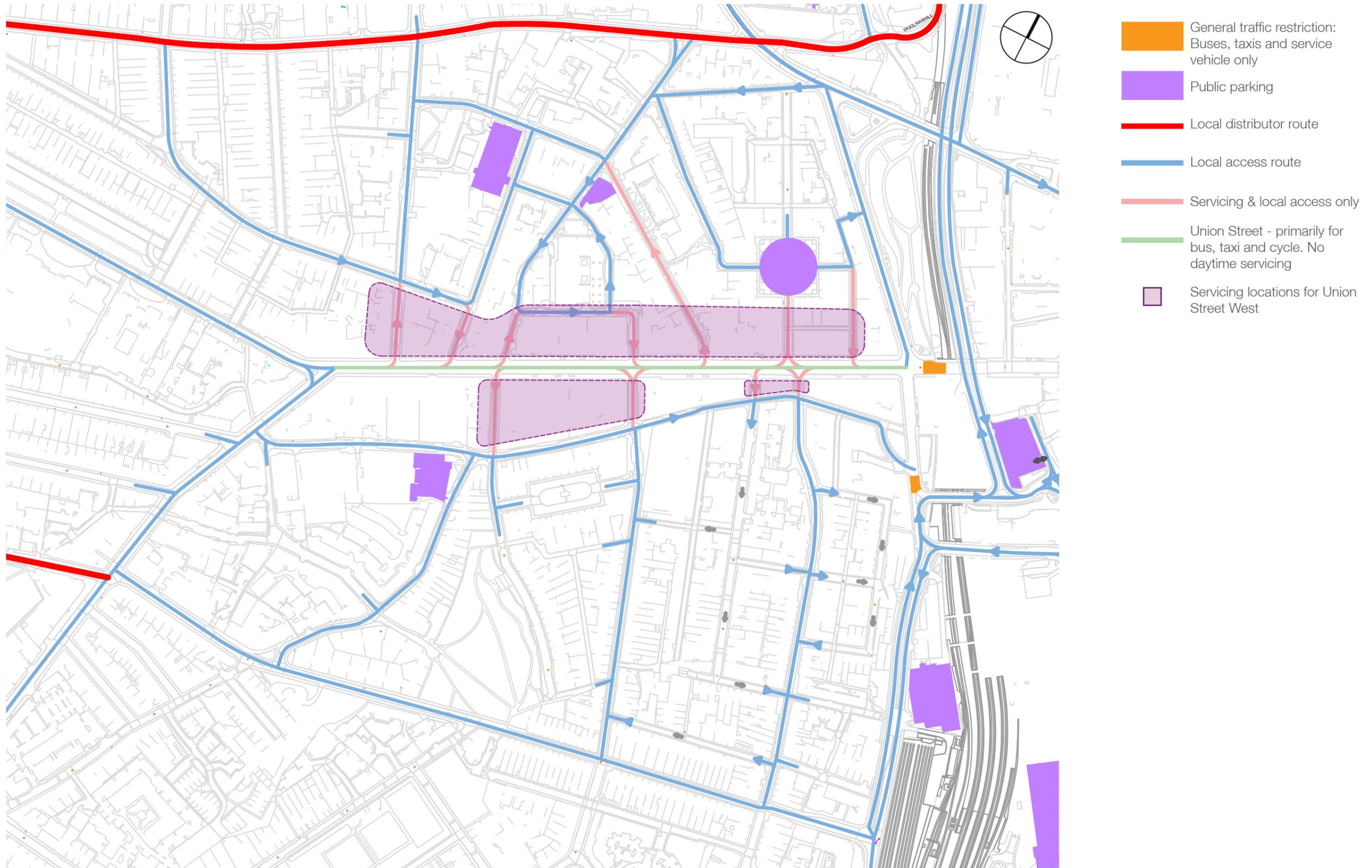
The diagram below shows the proposed servicing route through Castlegate. Currently vehicles enter Castlegate at the southeast, travel westwards, turn beyond the Mercat Cross and travel eastwards and out to Justice Street. Implementation of a bus lane and segregated cycle route precludes this option:

- Service vehicles crossing segregated cycle track- safety
- Service vehicles crossing segregated cycle track, damaging the material integrity of the cycle track
- Taking a tight turn thereafter onto the bus lane.

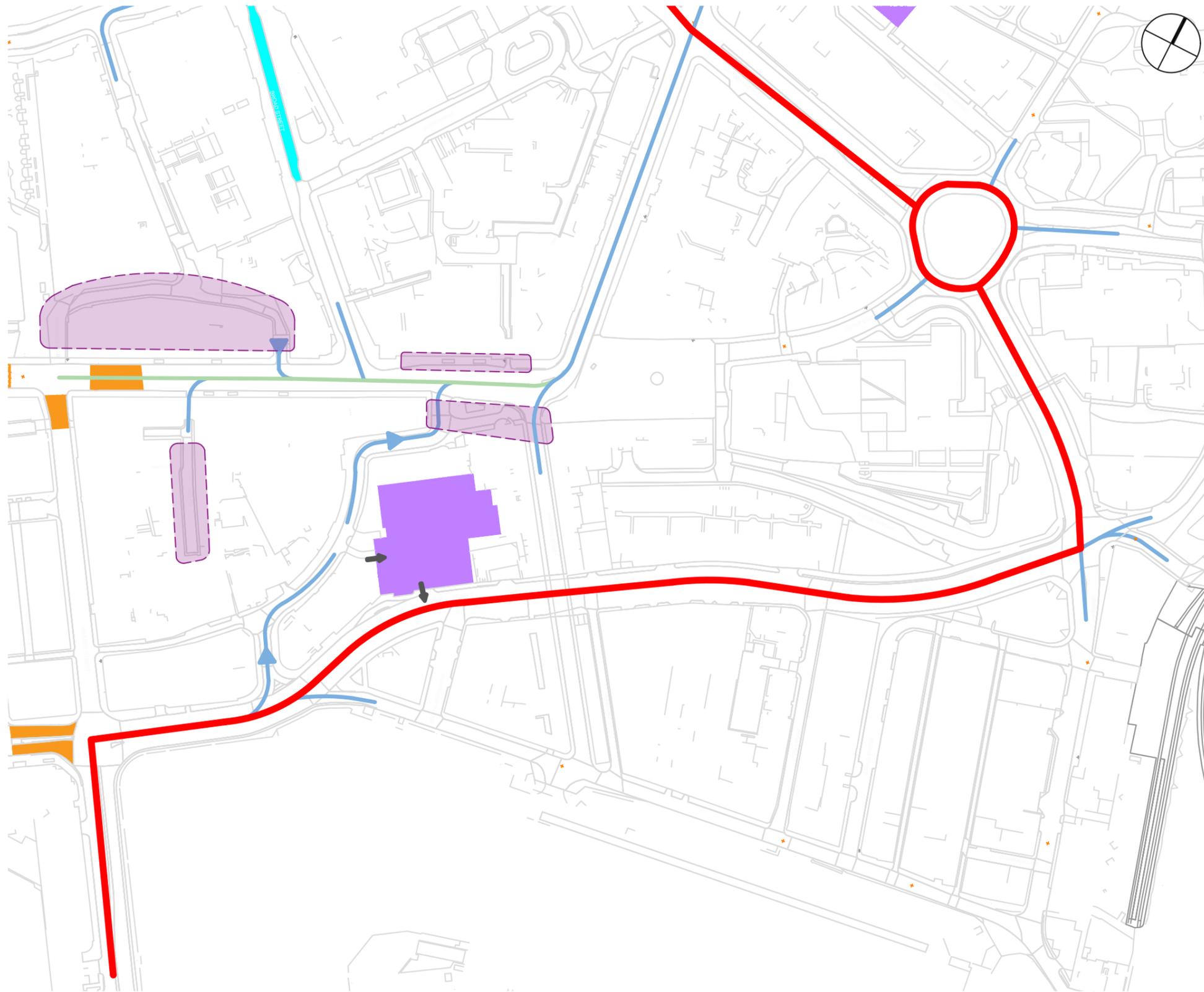
Current proposals allow for service vehicles to enter Castlegate at the southeast, as currently. These vehicles travel westbound to exit at Marischal Street to the southwest. To service the north of Castlegate, service vehicles enter the bus lane at Union Street/King Street and travel eastbound exit to Justice Street. In this way full coverage of the premises on Castlegate is retained, whilst enhancing legibility and therefore safety for other space users. Servicing will also, as now, be restricted to proscribed hours.



Proposed Castlegate servicing route



Union Street West - Proposed traffic movement with potential daytime servicing locations



-  General traffic restriction: Buses, taxis and service vehicle only
-  Bus and cycle only
-  Public parking
-  Local distributor route
-  Local access route
-  Servicing & local access only
-  Union Street - primarily for bus, taxi and cycle. No daytime servicing
-  Potential daytime servicing locations for Union Street

Union Street East - Proposed traffic movement with potential daytime servicing locations

2.8 Junctions

Union Street East and Union Street West

Fairhurst have undertaken a detailed examination of all 16 junctions that are associated with Union Street East and West describing the existing situation and the proposed changes associated with each junction in terms of permitted / prohibited movements, crossing facilities footway widths, carriageway widths, junction radii and how the proposed new two-way cycle track promoted to run parallel to the eastbound carriageway of Union Street will interact with each junction also.

Cognisance has been made to relevant national design guidance when undertaking this review but with a particular emphasis made to Transport Scotland's Cycling by Design 2021 and compliance with this.

In addition, further technical information has been undertaken of each junction in terms of swept path analysis for a range of design vehicles expected to make the permitted manoeuvres at each junction. Finally, detailed Linsig junction capacity modelling has been undertaken for each traffic signal control junction along the route to ensure both the smooth flow of traffic through each junction but also to ensure pedestrians can cross Union Street in a timeous manner. Traffic flows for these assessments have been obtained from the Aberdeen City Centre Paramics Model.

However, to summarise this information, most junctions will see their overall footprint reduce with wider pedestrian footways provided on both sides of Union Street and junction radii being reduced to the minimum they can be while still allowing the safe manoeuvrability of the expected design vehicles permitted to either access or egress that particular junction.

This has largely been achieved by reducing the existing carriageway width of Union Street down from circa 14-16m with junction widening where required, to a constant width of 7.3m permitting two 3.65m lanes in each direction. By making this reduction the available land has been given over to footway widening, the new two-way cycle track, or other forms of active frontage e.g., bus shelters or cycle parking.

With regard to the two-way cycle track itself. This will interact with each junction generally in two forms via either minimal off-set segregation from the road carriageway via a 500mm wide low kerb or similar type of buffer arrangement, which as the cycle lane passes through the junction a flush kerb type of arrangement (or similar) is proposed. This is referred to in Cycling by Design 2021 as a 'Cycle Lane Over Side Road'. Further detailed design work will need to be undertaken at future stages to fully detail the interaction between the cycle track and side streets. Diagrams from Cycling by Design showing the aforementioned options are situated adjacent.

Based on these proposed junction layouts, it can be confirmed that the appropriate design vehicles associated with each junction can be accommodated safely via swept path analysis, and that all sets of traffic signals operate satisfactorily within 'practical capacity' limits thus not causing significant detriment or delay to buses or pedestrians.

Castlegate

A new junction is proposed between Union Street East and Castlegate, facilitating the movement of buses on to the new public transport route which facilitates movements to the beach from the city centre. Currently, the junction is proposed to function with priority control rather than a signalised junction. As it has currently only been developed to concept stage, further consideration will need to be given to the operational requirements of this junction at future stages.

Market Streetscape

If it is agreed to implement the outcomes of the cycle lane appraisal study for the Market Streetscape Phase 1, further consideration is required around the Guild Street junction and how it may be designed to facilitate cycle and pedestrian movement from Guild Street across into the train station.

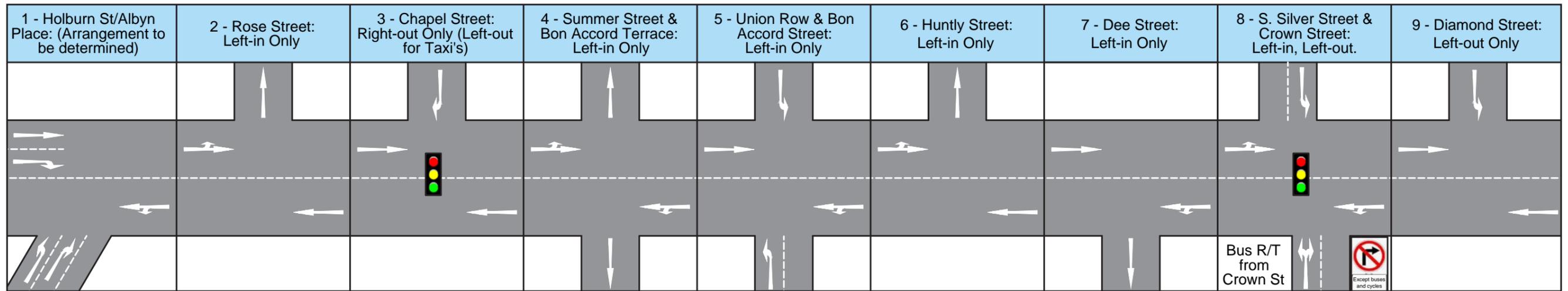
Key future consideration:

Union Street West: Develop detail for junction design at future stages.

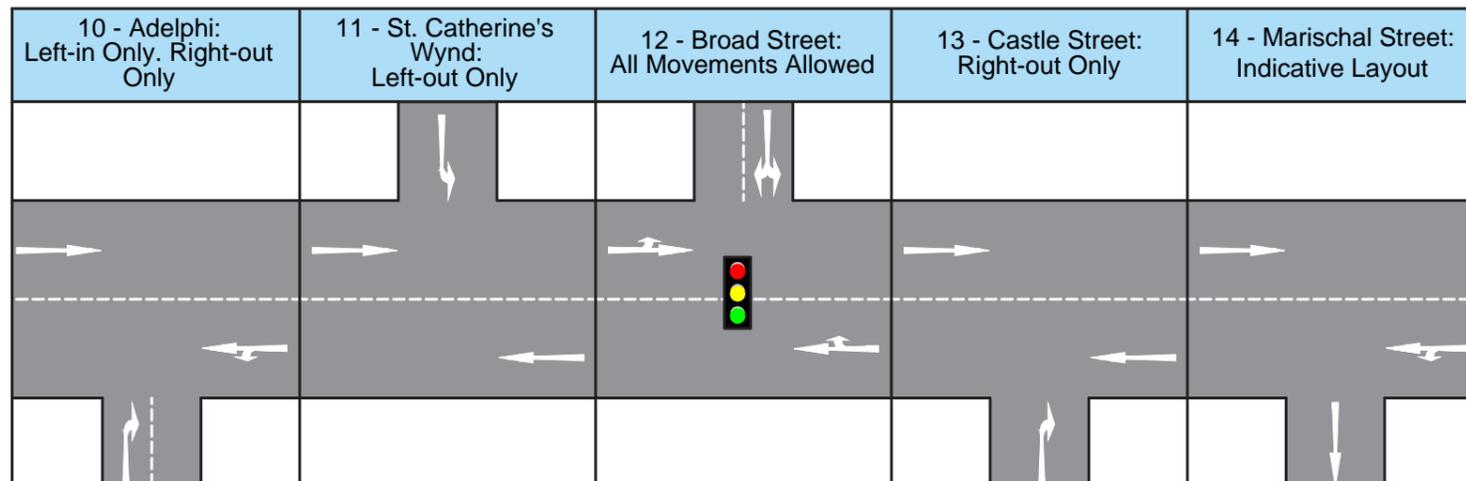
Union Street East: Develop detail for junction design at future stages.

Castlegate: Understand operational requirements and develop detail for Union Street East - Castlegate junction.

Market Streetscape: Develop detail of how the Guild St junction will work for pedestrians and cyclists if cycle options appraisal is implemented.



Union Street West: Proposed junction movements



Union Street East: Proposed junction movements

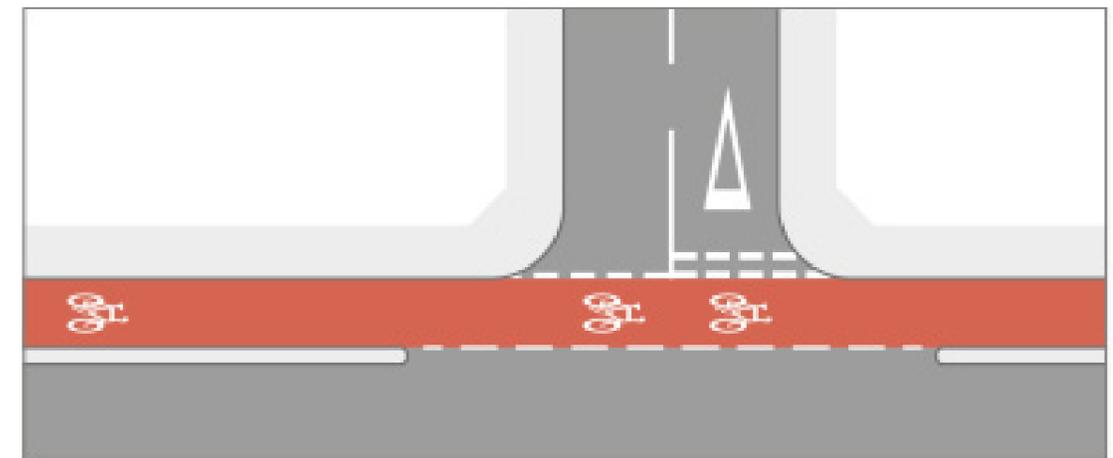


Figure 5.7: Cycle lane over side road layout

Cycle track interaction with side streets fro Cycling by Design

3.0

Summary and table of considerations

3.1 Summary

This document sets out future design considerations that require further exploration, design development and engagement during the next stages of the project.

The considerations outlined throughout this report are summarised in the table adjacent. This sets out all future design considerations required, however there are several of these which have a fundamental importance in the continued design development of the areas, summarised in detail below;

Union Street carriageway width

To ensure resilience within the proposals in the event of stopped vehicles on the carriageway e.g. service vehicles, consideration should be given to the carriageway width. Currently proposed at 7.3m wide, there is potential in Union Street West and East to locally increase the carriageway to 9m at certain points, this option is set out in section 2.3.

The implications of this option will have to be considered in relation to a number of other factors, including placemaking and footway widening. Some initial pros and cons for both the current indicative layout and the localised widening layout are set out in this document.

Engagement on this has only been undertaken with bus operators and will require further engagement with other stakeholders to ensure all views are considered.

Bus stop locations

As discussed in section 2.5, the bus stop locations shown in the indicative layouts are not favourable to the bus operators and has

the potential to impact efficiency of the public transport network.

Following further bus operator engagement, an option has been developed which proposes bus hubs and other minor alterations to bus stop locations throughout the Union Street corridor, outlined below;

Union Street West

- Eastbound and westbound bus stops grouped (Hubs) and offset from those in the opposing direction

Union Street East

- 3 bus stops proposed on north kerb (G1-G3) for longer-distance Stagecoach services, with a potential for a drop-off only stop on the southern kerb (no passengers travel from here to the bus station, where most Stagecoach services terminate).
- A Bus Hub is proposed at the east end of Union Street / Castle Street, primarily to accommodate First services – this will require road widening and potential lay-by options.
- There is an option to incorporate additional bus stops in the southern portion of King Street (south of West North Street) to accommodate stops which would be displaced from the Adelphi.

These alterations require further design development, consideration and engagement with both bus operators and other stakeholder groups.

Servicing

A key implication of the cycle track proposals is that only a single lane of traffic movements will

be provided in each direction on Union Street. This, in turn, reduces the available space for general traffic, delivery and servicing activity and local bus service operations. In a scenario where no contingency is provided for these various operational requirements, those activities then potentially compete for the limited space available, leading to a reduction in the capacity and efficiency of the link.

A number of potential proposals were set out as future key design considerations in section 2.7 which has the potential to mitigate these issues and improve the efficiency of the corridor. In summary, the design team propose for consideration:

- It is recommended that a detailed servicing survey for all Union Street properties is undertaken in order to inform the next stage of detailed design. This will enable a clear understanding of typical loading requirements, timings, service vehicle types and dwelling locations etc. to inform the capacity and location of appropriate loading.
- Develop a servicing strategy for alternative loading locations off-line from Union Street East & West
- Potential restriction periods to be determined but could be: No Loading 07:00-19:00

Ongoing engagement

It is important to ensure ongoing engagement is undertaken with relevant stakeholder groups at future stages to enable the development of the most successful scheme possible.

Following on from the engagement already undertaken, ongoing discussions with bus

operators to assist with the development of detailed arrangement for bus stops, assignment of services, operational requirements and localised carriageway widening requirements is important.

Continued engagement with all key stakeholders through detailed design process, including cycle groups and disability groups as well as representatives of the local business community should occur to ensure the views of all parties are considered throughout the process.

Future design development

As mentioned, the associated layout drawings for all project areas are currently indicative and developed to concept design level, highlighting the overarching principles of the layouts.

At future stages, works culminating in the delivery of a detailed streetscape layout proposal, traffic management plan, and engineering design for a single proposed scheme layout will need to be undertaken. This work will also need to take into consideration and coordination of interfaces between previously agreed projects including Union Street Central, Market Streetscape Phase 1 and Schoolhill and Upperkirkgate.

3.2 Table of future design considerations

	UNION STREET WEST	WEST END	UNION STREET EAST	CASTLEGATE	MARKET STREETSCAPE
Engagement	Consider feedback from stakeholders and potential interventions suggested. Continue engagement with bus operators and undertake engagement with stakeholders.	Continue to undertake engagement with stakeholders.	Consider feedback from stakeholders and potential interventions suggested. Continue engagement with bus operators and undertake engagement with stakeholders.	Continue engagement with bus operators and undertake engagement with stakeholders.	Continue to undertake engagement with stakeholders. Particularly around Phase 3.
Placemaking	Ensure pavement widening and dwell zone areas are maximised in balance with any carriageway compromise.	-	Ensure pavement widening and dwell zone areas are maximised in balance with any carriageway compromise.	Further design development to ensure synthesis between public transport route and wider pedestrian square, as well as servicing requirements.	Further exploration is required into the level of intervention to Phase 3 of the market streetscape.
Carriageway	Consider implications of carriageway width and decide whether to retain consistent 7.3m wide carriageway or implement localised widening to 9m.	-	Consider implications of carriageway width and widening of carriageway after Plainstones.	-	-
Cycling		-			Explore further the potential for segregated cycling on Guild St and Market St and decide whether to implement cycle infrastructure in Phase 1. Consideration of the detail design of Guild Street to accommodate all modes of transport.
Public Transport	Consider implications of current bus stop locations and explore potential need for bus hubs and other bus stop measures. Also consider the implications of ART..	-	Consider implications of current bus stop locations and explore potential need for bus hubs and other bus stop measures. Also consider the implications of ART.	Explore implications and confirm decision to make public transport link one-way eastbound.	-
Operations	Explore options for further traffic management to aid bus operations. E.g. minimising general traffic movements.	Confirm decision to allow left out for taxis from Chapel St to Union St West, right out only for general traffic.	Explore options for further traffic management to aid bus operations. E.g. minimising general traffic movements.	Explore implications and confirm decision to make public transport link one-way eastbound and consider bus stop location.	Analyse and explore operational changes that may be required to Phase 1 if cycling infrastructure is introduced.
Servicing	Fully understand servicing requirements via survey. Explore options for servicing such as reducing the servicing window and promoting side streets for day time servicing.	-	Fully understand servicing requirements via survey. Explore options for servicing such as reducing the servicing window and promoting side streets for day time servicing.	Develop detail for service route around Castlegate that would work with exit on to Marischal St.	-
Junctions	Develop detail for junction design at future stages.	-	Develop detail for junction design at future stages.	Develop detail for Union Street East - Castlegate junction	Develop detail of how the Guild St junction will work for pedestrians and cyclists if cycle options appraisal is implemented

4.0

Appendices

Appendix A

Reference documents

4.1 Reference documents

A number of documents are referenced throughout this report. This report should also be read in conjunction with a number of drawings and further supporting documents. These are outlined below:

LDA Design - See Appendix B for general arrangement drawings

- Market Streetscape Phasing Plan - 8153-LDA-02-XX-DR-L-1101
- Market Streetscape General Arrangement Plan 1 - 8153-LDA-02-XX-DR-L-2001
- Market Streetscape General Arrangement Plan 2 - 8153-LDA-02-XX-DR-L-2002
- Market Streetscape The Green Report - 8153-LDA-02-XX-RP-L-2003
- Market Streetscape Cycle Summary - 8153-LDA-02-XX-RP-L-2002
- Union Street East General Arrangement Drawing - 8153-LDA-06-XX-DR-L-2001
- Castlegate General Arrangement Drawing - 8153-LDA-06-XX-DR-L-2002
- Union Street West General Arrangement Drawing - 8153-LDA-07-XX-DR-L-2001
- West End General Arrangement Drawing - 8153-LDA-07-XX-DR-L-2002

SYSTRA

- Union Street East & West Corridor – Traffic Modelling (Ref: GB01T23D25/TM1/131023).
- Union Street Bus Operator Consultations 2023 (Ref: GB01T23D25/DN2/061023)
- Castlegate Public Transport & Active Travel Link (Ref: GB01T23D72/CAS2/131023)

FAIRHURST

- 154241 TN02: Union Street West (Union Terrace to Rose Street) Junction Layout Amendments, Aberdeen – Technical Note
- 154241 TN01: Union Street East (Marischal Street to Market Street) Junction Layout Amendments, Aberdeen – Technical Note

Appendix B

General arrangement drawings

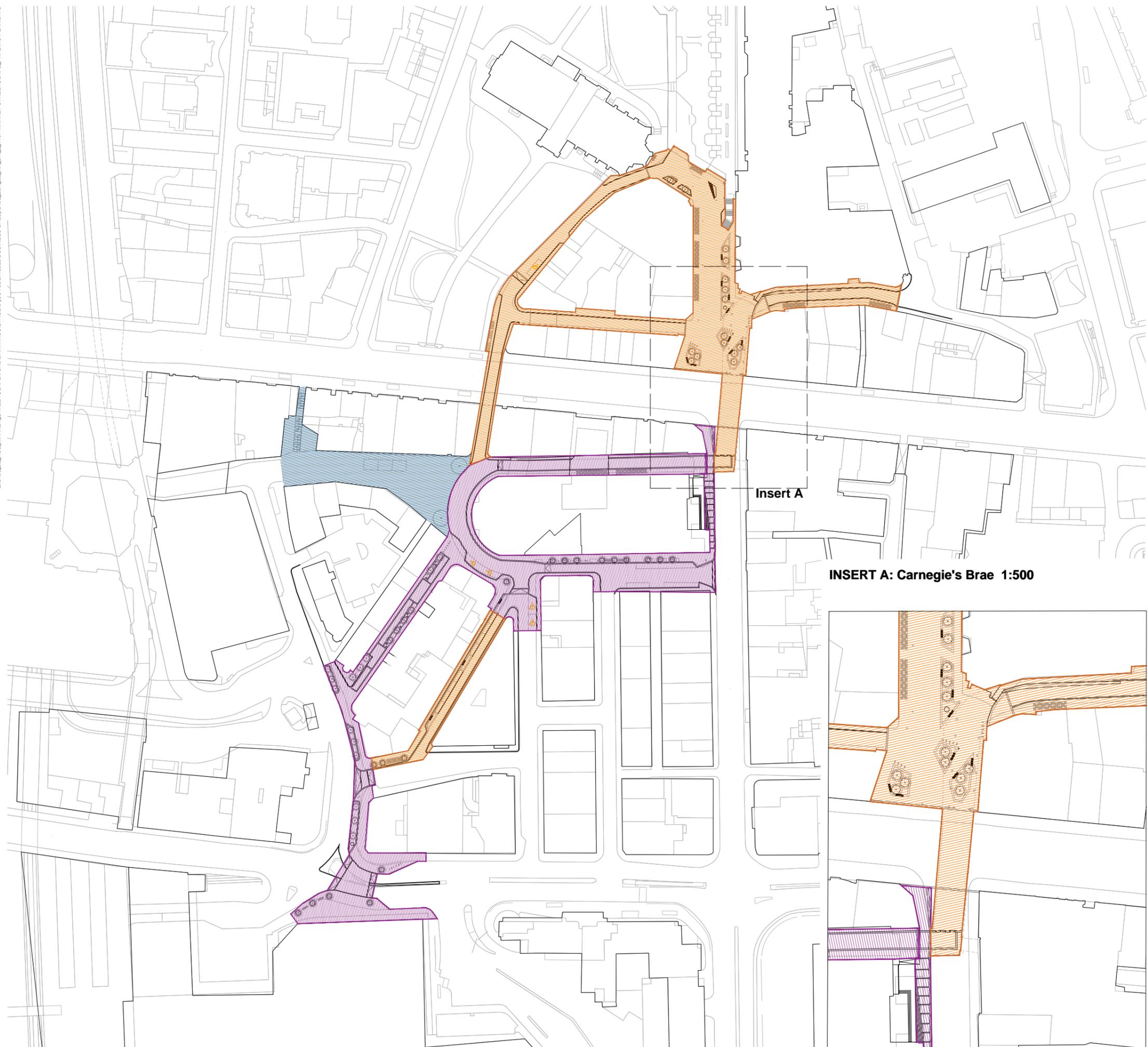
Z:\9153_02_ACC_MARKET_STREETSCAPE\DRAWINGS\STAGE 3 (OCTOBER 2023 BUSINESS CASE)\9153_LDA_02_XX_DR_L_1101 MARKET STREETSCAPE PHASING PLAN.DWG

LEGEND

-  PHASE 1
Agreed and developed as part of visioning works and recommended to full council at February 2022 committee to be delivered alongside construction of the Aberdeen Market
-  PHASE 2
Additional areas instructed by full council at February 2022 committee to also progress to RIBA stage 3
-  PHASE 3
Considered as part of long term streetscape vision however, currently out with scope

NOTE:
Extent of works/ red-line boundary to be confirmed and assessed to ensure it conforms with employers requirements

To be read in conjunction with drawings:
Market Streetscape General Arrangement drawings:
8153-LDA-02-XX-DR-L-2001 MS Streetscape Landscape General Arrangement Plan 1
8153-LDA-02-XX-DR-L-2002 MS Streetscape Landscape General Arrangement Plan 2



Insert A

INSERT A: Carnegie's Brae 1:500



F	Issue for business case update	RW	13.10.23
E	OS base updated	JWa	28.03.23
D	Ground floor Aberdeen Market footprint removed	JWa	29.11.22
C	Issue for RIBA Stage 3	JWa	21.10.22
B	Updated to reflect September council committee instruction	JWa	12.10.22
A	Updated to reflect September council committee instruction	JWa	07/09/22
-	Draft issue to ACC	JWa	08/07/22
REV.	DESCRIPTION	APP.	DATE

LD&A DESIGN

PROJECT TITLE
ABERDEEN CITY CENTRE VISION

DRAWING TITLE
Market Streetscape
Landscape Phasing Plan

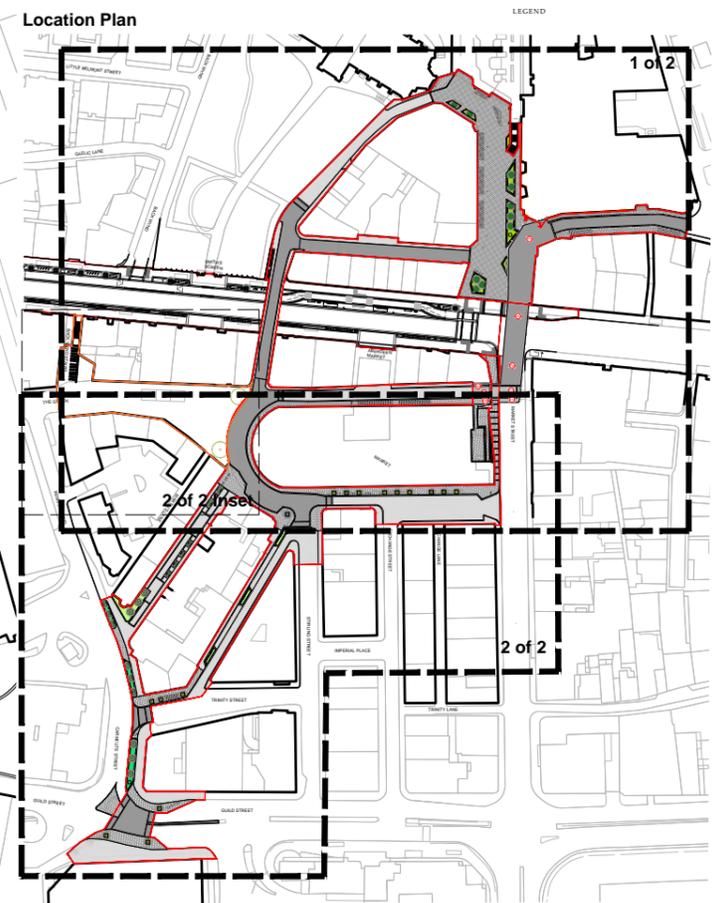
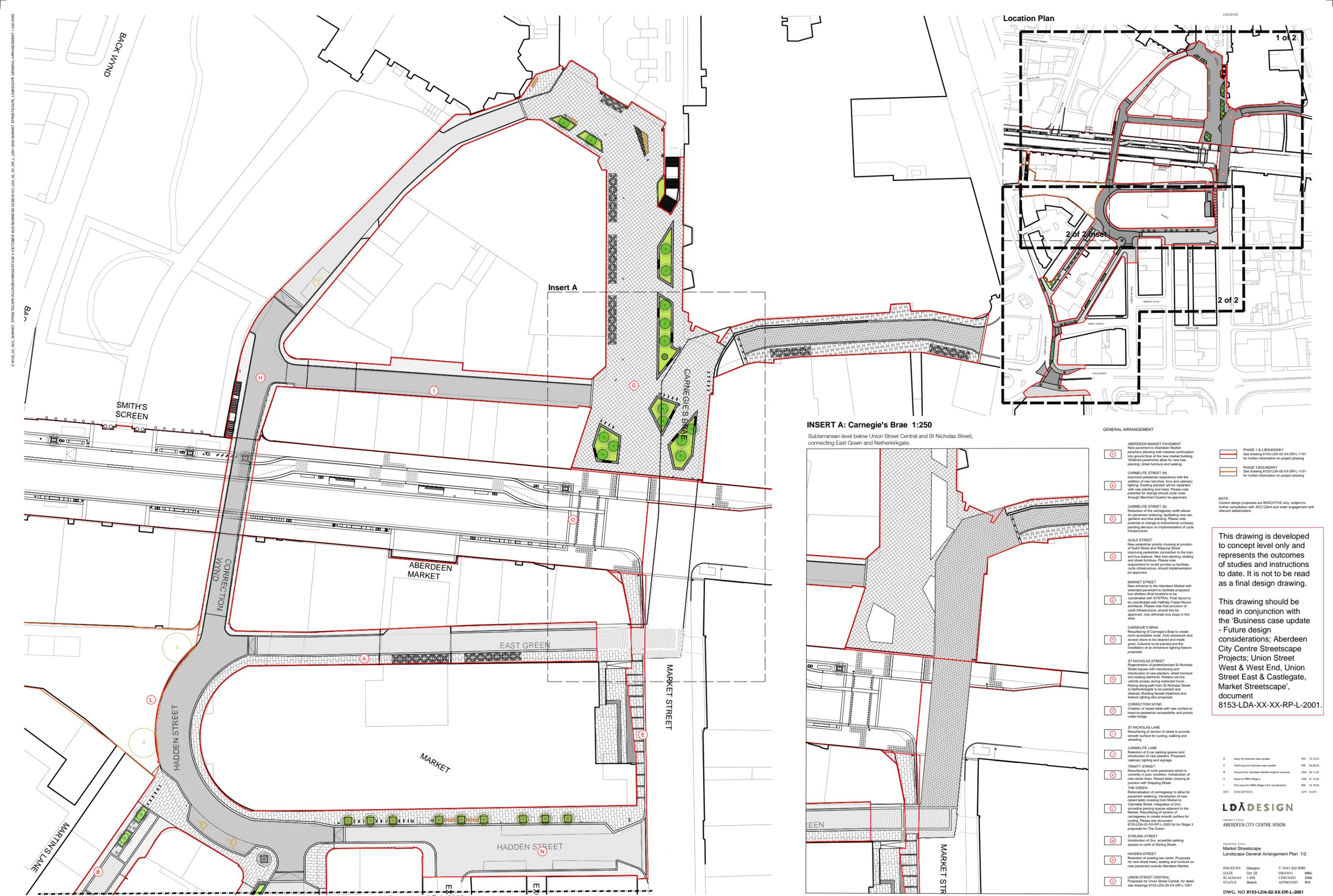
ISSUED BY	Glasgow	T: 0141 222 9780
DATE	Jun 22	DRAWN MMc
SCALE@A1	1:750	CHECKED GMe
STATUS	Draft	APPROVED RW

DWG. NO 8153-LDA-02-XX-DR-L-1101

No dimensions are to be scaled from this drawing.
All dimensions are to be checked on site.
Area measurements for indicative purposes only.

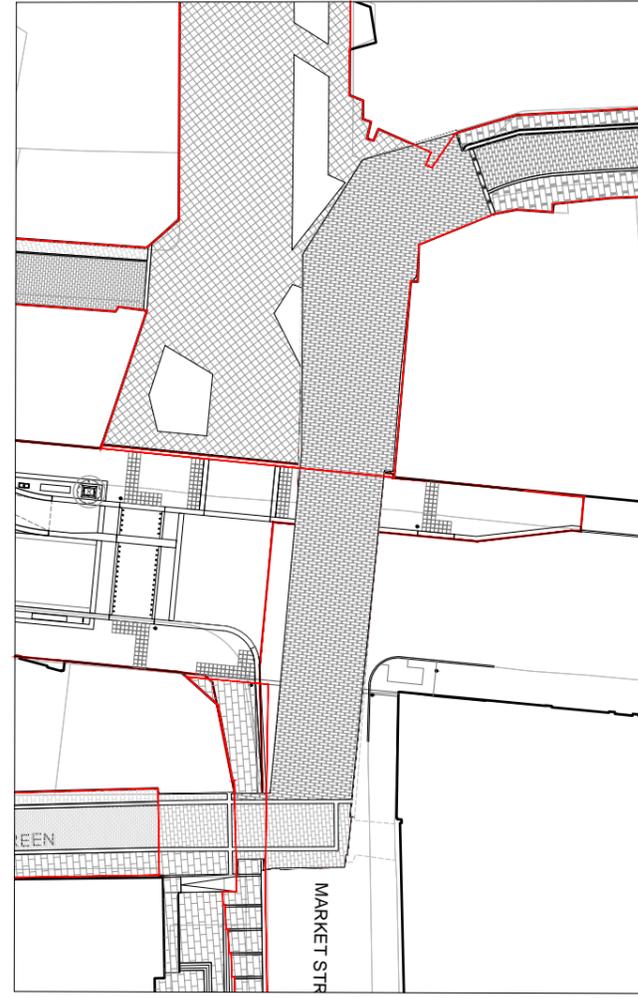
© LDA Design Consulting Ltd. Quality Assured to BS EN ISO 9001 : 2015
Sources Ordnance Survey





INSERT A: Carnegie's Brae 1:250

Subterranean level below Union Street Central and St Nicholas Street, connecting East Green and Netherkirkgate.



- GENERAL ARRANGEMENT**
- C **ABERDEEN MARKET PAVEMENT**
New pavement to Aberdeen Market periphery allowing with material continuation into ground floor of the new market building. Widened pavements allow for new tree planting, street furniture and seating.
 - C **CARMELITE STREET (N)**
Improved pedestrian experience with the addition of new benches, bins and catering lighting. Existing planters will be replaced with new planting and trees. Please note potential for change should cycle route through Merchant Quarter be approved.
 - C **CARMELITE STREET (S)**
Reduction of the carriageway width allows for pavement widening, facilitating new rain gardens and tree planting. Please note potential to change to bidirectional cycleway pending decision on implementation of cycle infrastructure.
 - C **GUILD STREET**
New pedestrian priority crossing at junction of Guild Street and Wapping Street improving pedestrian connection to the train and bus stations. New tree planting, seating and street furniture. Please note requirement to install junction to facilitate cycle infrastructure, should implementation be approved.
 - C **MARKET STREET**
New entrance to the Aberdeen Market with extended pavement to facilitate proposed bus shelters (final locations to be coordinated with ST/STA). Final layout to be coordinated with Holiday Fraser Munro architects. Please note that provision of cycle infrastructure, should this be approved, may eliminate bus stops in this area.
 - C **CARNEGIE'S BRAE**
Resurfacing of Carnegie's Brae to create more accessible route. Arch stonework and access doors to be cleaned and made good. Columns to be painted and the installation of an innovative lighting feature proposed.
 - C **ST NICHOLAS STREET**
Regeneration of pedestrianised St Nicholas Street square with resurfacing and introduction of new planters, street furniture and seating elements. Retains service vehicle access during restricted hours. Railing along path from St Nicholas Street to Netherkirkgate to be painted and cleaned. Building facade treatment and feature lighting also proposed.
 - C **CORRECTION WYND**
Creation of raised table with new surface to improve pedestrian accessibility and priority under bridge.
 - C **ST NICHOLAS LANE**
Resurfacing of section of street to provide smooth surface for cycling, walking and wheeling.
 - C **CARMELITE LANE**
Retention of 8 car parking spaces and introduction of new planters. Proposed catering lighting and signage.
 - C **TRINITY STREET**
Resurfacing of north pavement which is currently in poor condition. Introduction of new street trees. Raised table crossing at junction with Wapping Street.
 - C **THE GREEN**
Reinstatement of carriageway to allow for pavement widening. Introduction of new raised table crossing from Market to Carmelite Street. Integration of 2no. accessible parking spaces adjacent to the Market. Resurfacing of section of carriageway to create smooth surface for cycling. Please see document 8153-LDA-02-XX-RP-L-2003 for Stage 3 proposals for The Green.
 - C **STIRLING STREET**
Introduction of 2no. accessible parking spaces to north of Stirling Street.
 - C **HADDEN STREET**
Retention of existing tail marks. Proposals for new street trees, seating and furniture on new pavement outside Aberdeen Market.
 - C **UNION STREET CENTRAL**
Proposals for Union Street Central, for detail see drawings 8153-LDA-0A-XX-DR-L-1001

- C **PHASE 1 & 2 BOUNDARY**
See drawing 8153-LDA-02-XX-DR-L-1001 for further information on project phasing
- C **PHASE 3 BOUNDARY**
See drawing 8153-LDA-02-XX-DR-L-1001 for further information on project phasing

NOTE:
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This drawing should be read in conjunction with the 'Business case update - Future design considerations; Aberdeen City Centre Streetscape Projects; Union Street West & West End, Union Street East & Castlegate, Market Streetscape', document 8153-LDA-XX-XX-RP-L-2001.

REV.	DESCRIPTION	APP. DATE
D	Issue for business case update	15.10.23
C	Draw issue for business case update	25.09.23
B	Issue from Aberdeen Market support removed	20.11.22
A	Issue for RIBA Stage 3	20.11.22
F	Final issue for RIBA Stage 3 for resubmission	12.10.22

LDAD DESIGN

PROJECT TITLE
ABERDEEN CITY CENTRE VISION

DRAWING TITLE
Market Streetscape
Landscape General Arrangement Plan 1/2

ISSUED BY Glasgow	T: 0141 222 9780
DATE Oct 22	DRAWN MMS
SCALE 1:250	CHECKED GMS
STATUS Sketch	APPROVED RW

DWG. NO 8153-LDA-02-XX-DR-L-2001

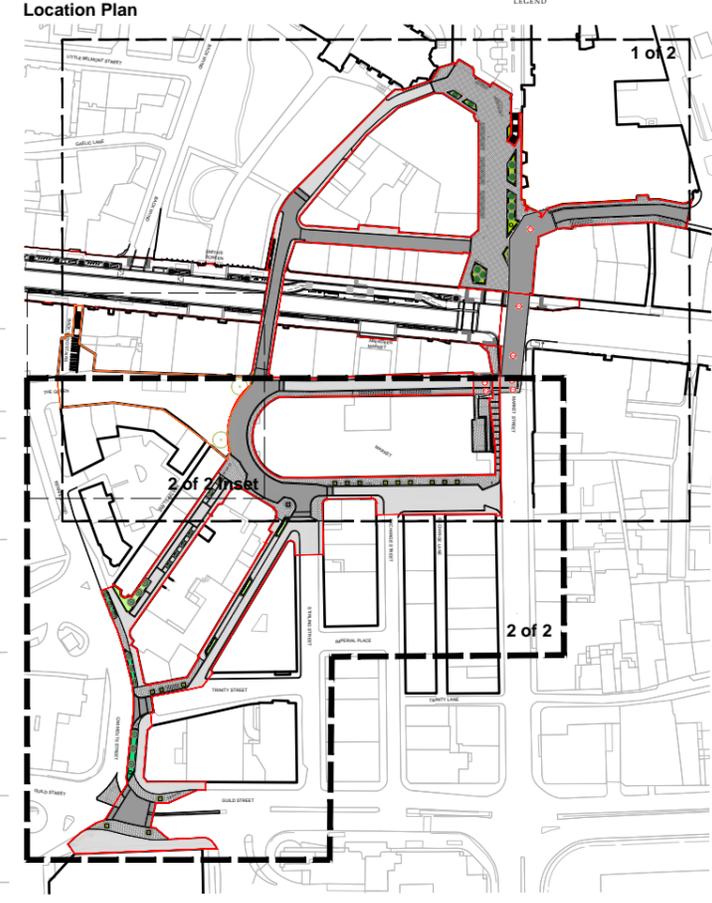
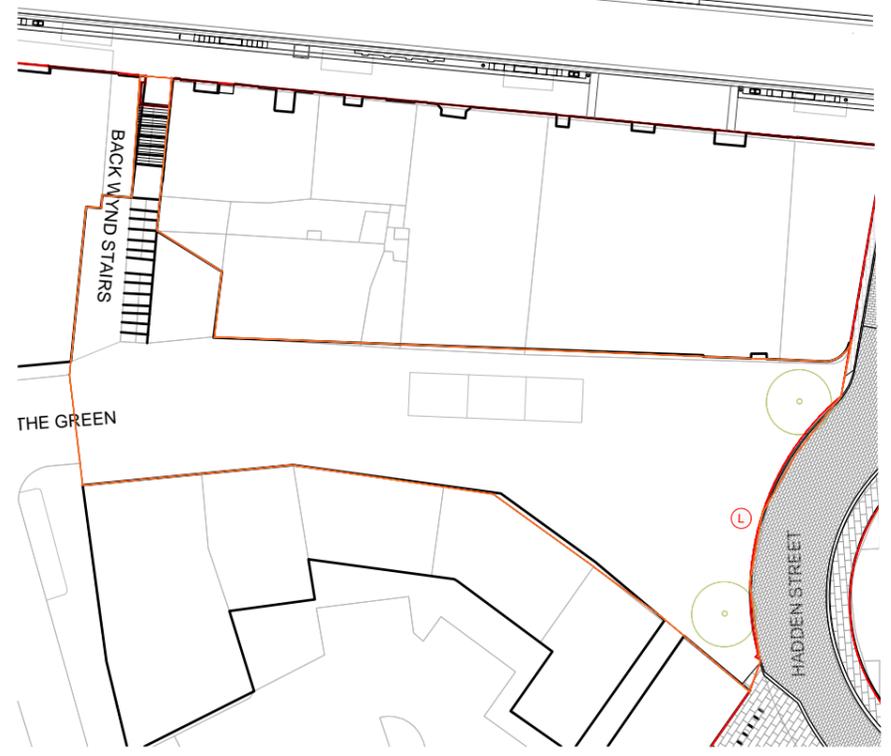
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Source: Ordnance Survey

Z:\8153_LDA_02_MARKET_STREETSCAPE\DRAWINGS\STAGE 3 OCTOBER 2023 BUSINESS CASE\8153_LDA_02_XX_DR_L_2001_2003 MARKET STREETSCAPE LANDSCAPE GENERAL ARRANGEMENT 1:250.DWG



INSERT B: The Green (Phase 3) 1:250
Please see document 8153-LDA-02-XX-RP-L-2001 for for Stage 3 proposals for The Green.



GENERAL ARRANGEMENT

- ABERDEEN MARKET PAVEMENT
New pavement to Aberdeen Market periphery allowing with material continuation into ground floor of the new market building. Widened pavements allow for new tree planting, street furniture and seating.
- CARMELITE STREET (N)
Improved pedestrian experience with the addition of new benches, bins and catenary lighting. Existing planters will be replaced with new planting and trees. Please note potential for change should cycle route through Merchant Quarter be approved.
- CARMELITE STREET (S)
Reduction of the carriageway width allows for pavement widening, including new rain gardens and tree planting. Please note potential to change to bidirectional cycleway pending decision on implementation of cycle infrastructure.
- GUILD STREET
New pedestrian priority crossing at junction of Guild Street and Wapping Street improving pedestrian connection to the train and bus stations. New tree planting, seating and street furniture. Please note requirement to revise junction to facilitate cycle infrastructure, should implementation be approved.
- MARKET STREET
New entrance to the Aberdeen Market with extended pavement to facilitate proposed bus shelters (final locations to be coordinated with BY (STRA). Final layout to be coordinated with Halliday Fraser Murray architects. Please note that provision of cycle infrastructure, should this be approved, may eliminate bus stops in this area.
- CARNEGIE'S BRAE
Resurfacing of Carnegie's Brae to create more accessible route. Arch stonework and access doors to be cleaned and made good. Columns to be painted and the installation of an immersive lighting feature proposed.
- ST NICHOLAS STREET
Regeneration of pedestrianised St Nicholas Street square with resurfacing and introduction of new planters, street furniture and seating elements. Restroom service vehicle access during restricted hours. Railing along path from St Nicholas Street to Northlinkgate to be painted and cleaned. Building facade treatment and feature lighting also proposed.
- CORRECTION WYND
Creation of raised table with new surface to improve pedestrian accessibility and priority under bridge.
- ST NICHOLAS LANE
Resurfacing of section of street to provide smooth surface for cycling, walking and wheeling.
- CARMELITE LANE
Retention of 8 car parking spaces and introduction of new planters. Proposed catenary lighting and signage.
- TRINITY STREET
Resurfacing of north pavement which is currently in poor condition. Introduction of new street trees. Raised table crossing at junction with Wapping Street.
- THE GREEN
Rationalisation of carriageway to allow for pavement widening. Introduction of new raised table crossing from Market to Carmelite Street. Integration of 2ho, accessible parking spaces adjacent to the Market. Resurfacing of section of carriageway to create smooth surface for cycling. Please see document 8153-LDA-02-XX-RP-L-2003 for Stage 3 proposals for The Green.
- STIRLING STREET
Introduction of 2ho, accessible parking spaces to north of Stirling Street.
- HADDEN STREET
Retention of existing taxi ranks. Proposals for new street trees, seating and furniture on new pavement outside Aberdeen Market.
- UNION STREET CENTRAL
Proposals for Union Street Central, for detail see drawings 8153-LDA-02-XX-DR-L-1001

PHASE 1 & 2 BOUNDARY
See drawing 8153-LDA-02-XX-DR-L-1101 for further information on project phasing

PHASE 3 BOUNDARY
See drawing 8153-LDA-02-XX-DR-L-1101 for further information on project phasing

NOTE:
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This drawing should be read in conjunction with the 'Business case update - Future design considerations; Aberdeen City Centre Streetscape Projects; Union Street West & West End, Union Street East & Castlegate, Market Streetscape', document 8153-LDA-XX-XX-RP-L-2001.

REV.	DESCRIPTION	APP. DATE
E	Issue for business case update	RW 13.10.23
D	Draft issue for business case update	RW 28.09.23
C	OS issue update	JMS 28.09.23
B	Check for Aberdeen Market footprint removal	JMS 28.11.23
A	Issue for RIBA Stage 3	JMS 21.10.22
J	Final issue for RIBA Stage 3 for amendment	RW 12.10.22

LDADesign
ABERDEEN CITY CENTRE VISION

ISSUED BY: Glasgow
DATE: Oct 22
SCALE: 1:250
STATUS: Sketch

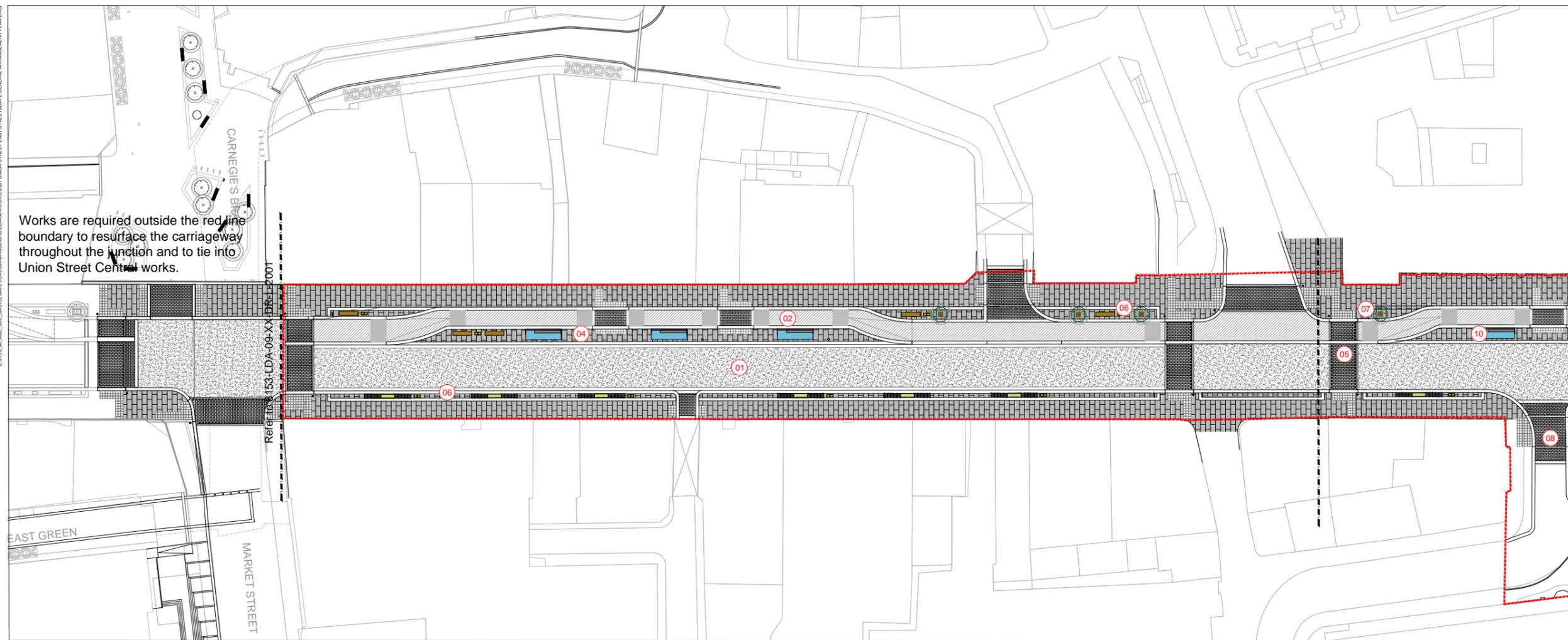
T: 0141 222 9780
DRAWN: MMc
CHECKED: GMA
APPROVED: RW

DWG. NO 8153-LDA-02-XX-DR-L-2002

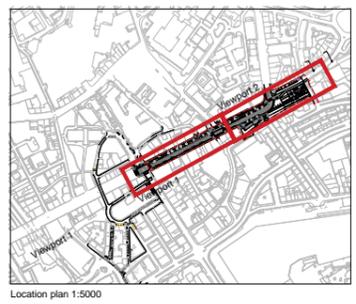
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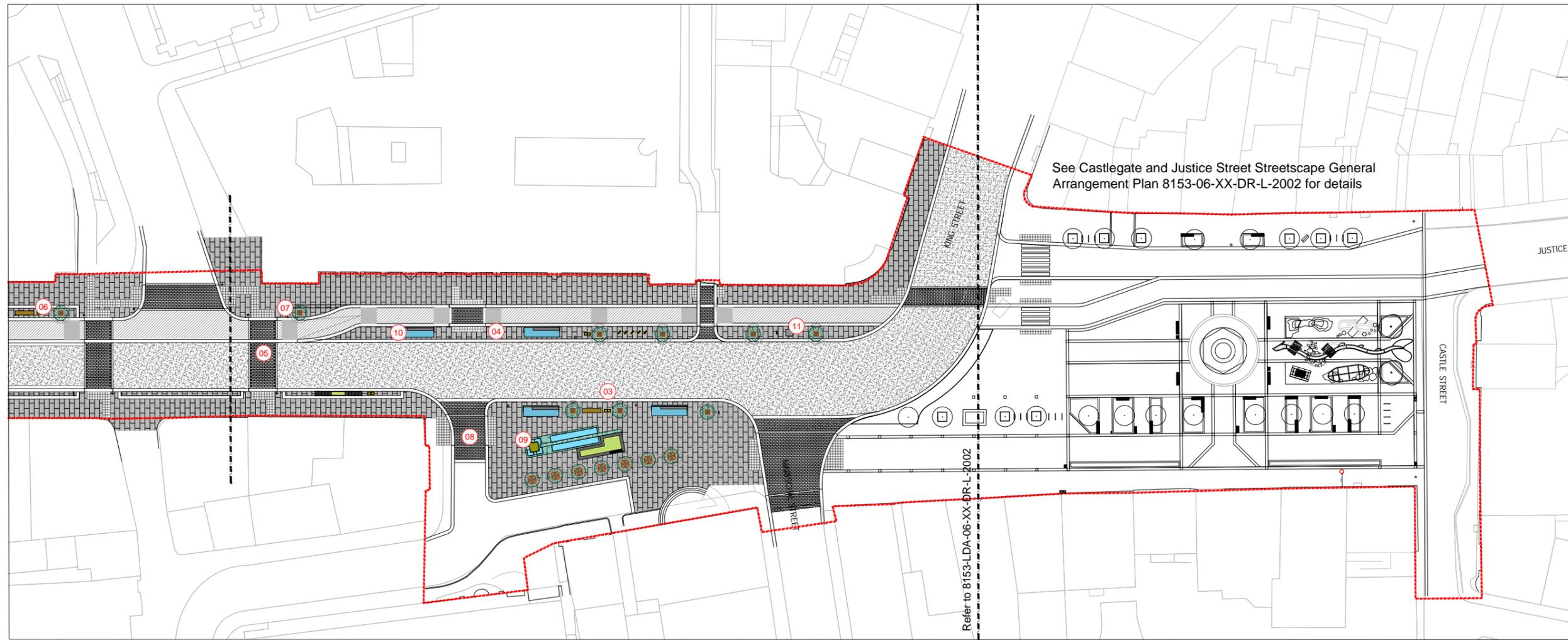
Works are required outside the red line boundary to resurface the carriageway throughout the junction and to tie into Union Street Central works.



- STREETSCAPE GENERAL ARRANGEMENT**
- Indicative extent of Union Street East streetscape interventions
 - 01 Two lane carriageway with one lane routing either direction. Lane widths generally 3.65m wide
 - 02 Segregated bi-directional cycle lane, generally 3m wide. Narrowing to 2.5m behind bus stops
 - 03 Night time taxi rank at bus stop
 - 04 Bus stop boarding island
 - 05 Signalled pedestrian crossings
 - 06 Extended pavement zone provides opportunity for areas for seating, greening, cycle parking and other facilities
 - 07 New trees define key avenue of Union Street
 - 08 Copenhagen (horizontal) crossings with tactile paving to all side streets where appropriate
 - 09 Marrow Wheel Plaza with additional water feature to complement the well and new trees to extend the greenery toward Union Street East
 - 10 New bespoke bus shelters throughout the length of Union Street
 - 11 Gibbet Stone (relocated)
 - Typical road width

NOTE:
Ultimate selection of materials will be depending upon availability within the marketplace / further dialogue with ACC client.

(*) Depth to allow for vehicular overrun, to be confirmed by Fairhurst.



See Castlegate and Justice Street Streetscape General Arrangement Plan 8153-06-XX-DR-L-2002 for details

This drawing is developed to concept level only and represents the outcomes of studies and instructions to date. It is not to be read as a final design drawing.

This drawing should be read in conjunction with the 'Business case update - Future design considerations; Aberdeen City Centre Streetscape Projects; Union Street West & West End, Union Street East & Castlegate, Market Streetscape', document 8153-LDA-XX-XX-RP-L-2001.

B	Carriageway material updated to asphalt	RW	27.10.23
D	Issue for business case update	RW	13.10.23
C	Updated to include Market Street junction	RW	03.10.23
B	Draw issue for business case update	RW	29.09.23
A	Issue for RIBA Stage 2	RW	21.10.22
F	Final issue for RIBA Stage 3 (for coordination)	RW	06.10.22
REV.	DESCRIPTION	APP.	DATE

LDADesign

PROJECT TITLE
ABERDEEN CITY CENTRE VISION

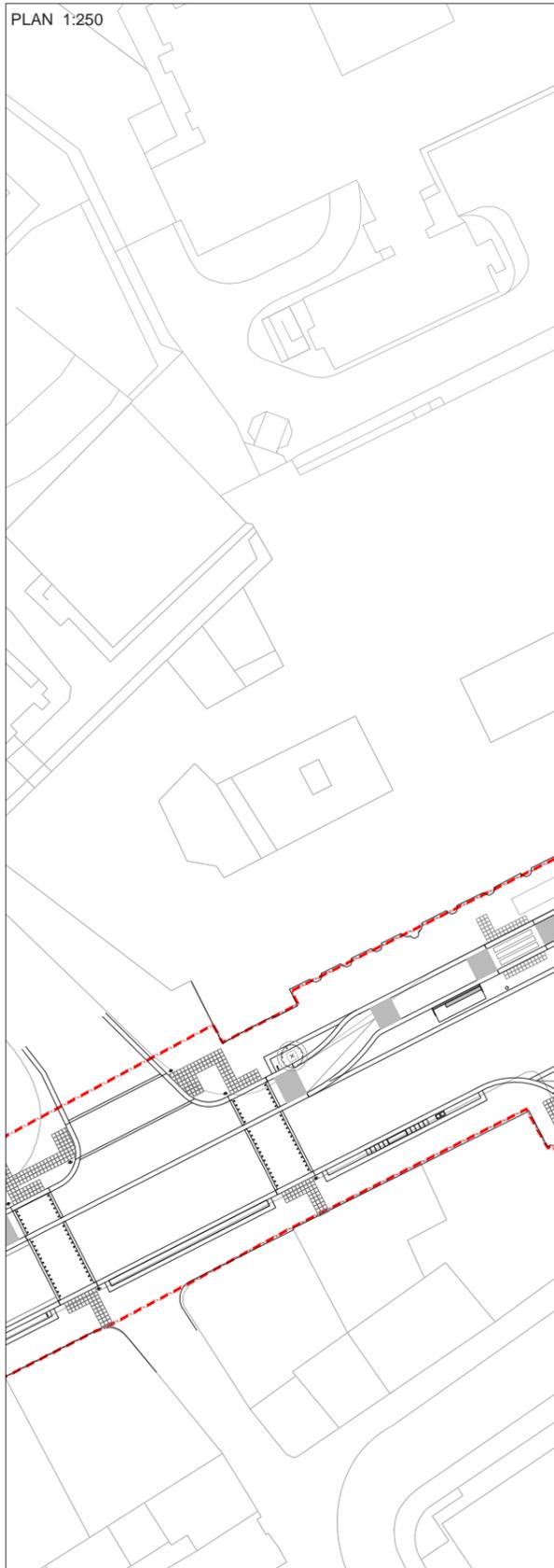
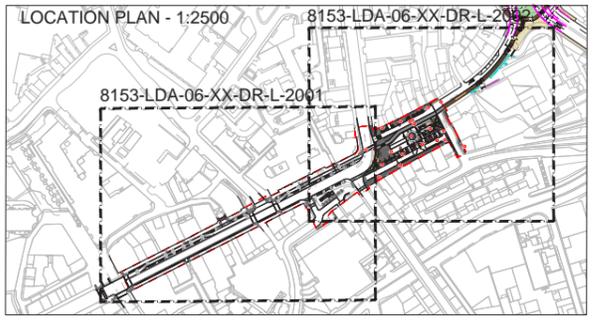
DRAWING TITLE
Union Street East Streetscape General Arrangement Plan

ISSUED BY	Glasgow	T: 0141 222 9780
DATE	Oct 22	DRAWN: MMC
SCALE/AD	1:250	CHECKED: JWA
STATUS	Sketch	APPROVED: RW

DWG. NO 8153-LDA-06-XX-DR-L-2001

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Source: Ordnance Survey



Systra schematic of Justice Street continuation of cycleway. Refer to Beachfront team for further details.

- LEGEND**
- 01 Indicate extent of Union Street East and Castlegate Intervention Areas
 - 02 Memorial Cross, with peripheral public seating facing the monument and renewed hard landscaping with lighting
 - 03 Play area containing a water fountain and thematic structures to reflect the contextual connection to the site. Together encouraging free and accessible play and enhancing the animation of Castlegate
 - 04 Plaza space with renewed hard landscaping kept clear to allow for pop-up events and markets and allow for an unobstructed view of the Memorial Cross Monument
 - 05 Mix of tree planting and rain gardens along with public seating to bring down the scale of the square, to increase biodiversity, add colour and seasonality and inspire closer contact with nature
 - 06 Opportunity for spill-out space for businesses, clearly delineated to avoid interference with clear uncluttered footways.
 - 07 Eastbound bus route from King Street to Justice Street and towards the beach. Available also to service vehicles within restricted hours, 4m wide.
 - 08 Signalled pedestrian crossing
 - 09 Vehicular route around Castlegate to allow servicing during restricted times of the day.
 - 10 Bi-directional cycle way, 3m wide. To tie through to Castlegate and to the beach.
 - 11 Gordon Highlanders memorial, relocated. Location TBC
 - 12 Connection of cycle route to Union Street junction TBC
 - 13 Refuse / bin storage to contain existing bins currently on street. Public seating with back and armrests, to coordinate with proposed seating throughout the city centre (2m per storage unit).
 - 14 Sentinel lighting - 'To the Beach' sign

NOTE:
 Current design proposals are INDICATIVE only, subject to further consultation with ACC Client and wider engagement with relevant stakeholders.
 Ultimate selection of materials will be depending upon availability within the marketplace / further dialogue with ACC client.
 Depth to allow for vehicular overrun for service vehicles to be confirmed by project engineer.

This drawing is developed to concept level only and represents the outcomes of studies and instructions to date. It is not to be read as a final design drawing.

This drawing should be read in conjunction with the 'Business case update - Future design considerations; Aberdeen City Centre Streetscape Projects; Union Street West & West End, Union Street East & Castlegate, Market Streetscape', document 8153-LDA-XX-XX-RP-L-2001.

E	Issue for business case update	RW	13.10.23
D	Updated to include bus stop at Castlegate bus stop	RW	03.10.23
C	Draft issue for business case update	RW	29.02.23
B	Issue for RIBA Stage 3	JWA	21.10.22
A	Issue for Stage 3 coordination	MDJ	06.11.22
F	Final issue for Stage 3 coordination	MDJ	27.09.22
REV.	DESCRIPTION	APP.	DATE

LD&DESIGN

PROJECT TITLE
 ABERDEEN CITY CENTRE VISION

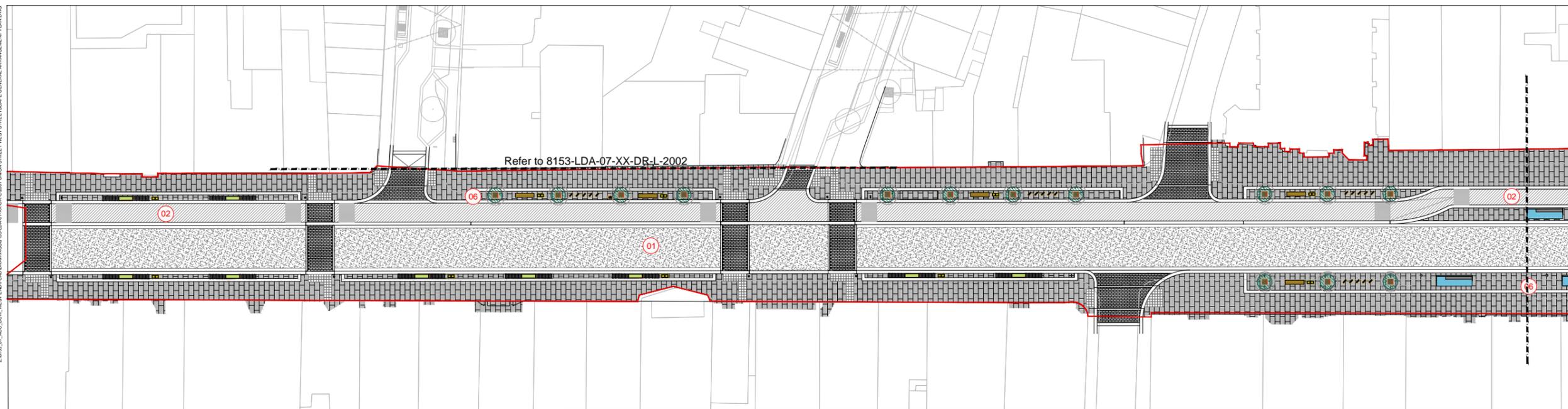
DRAWING TITLE
 Castlegate General Arrangement Plan

ISSUED BY Glasgow T: 0141 222 9780
 DATE Sep 2022 DRAWN MGJ
 SCALE/AD 1:250 CHECKED RW
 STATUS Sketch APPROVED KT

DWG. NO 8153-LDA-06-XX-DR-L-2002

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 Sources: Ordnance Survey

Z:\1813_07_ACC_LDA_06W_VEST_END_CAD\DRAWINGS\8153-LDA-07-XX-DR-L-2001-UNION STREET WEST STREETSCAPE GENERAL ARRANGEMENT PLAN.DWG



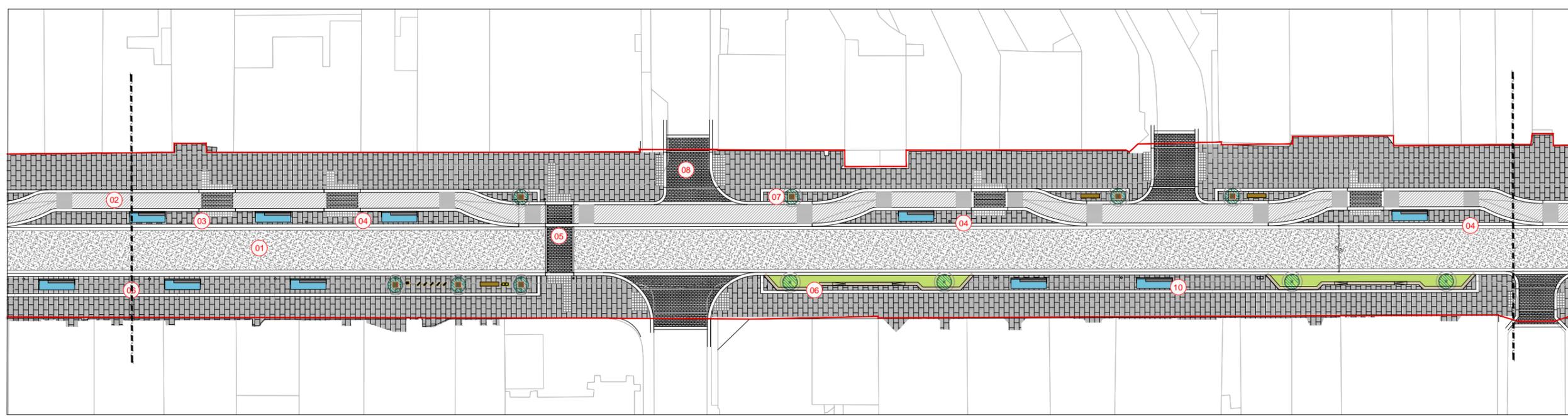
Refer to 8153-LDA-07-XX-DR-L-2002



Location plan 1:5000

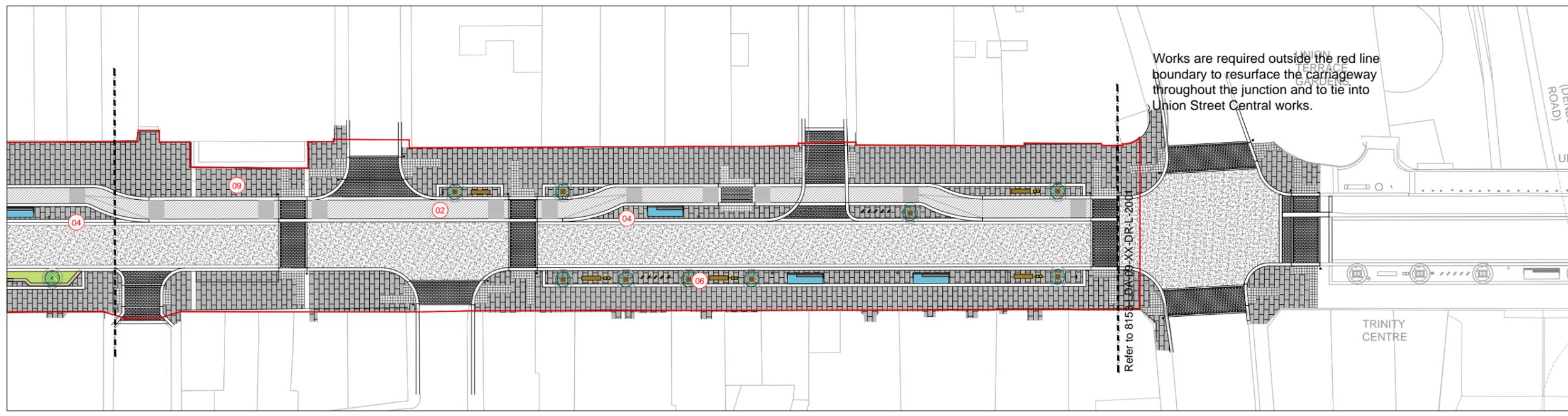
- STREETSCAPE GENERAL ARRANGEMENT**
- Indicative extent of Union Street West streetscape interventions
 - Two lane carriageway with one lane routing either direction. Lane widths generally 3.65m wide
 - Segregated bi-directional cycle lane, generally 3m wide. Narrowing to 2.5m behind bus stops
 - Night time taxi rank at bus stop bypass
 - Bus stop boarding island
 - Signalised pedestrian crossings
 - Extended pavement zone provides opportunity for areas for seating, greening, cycle parking and other facilities
 - New trees define key avenue of Union Street
 - Copenhagen (continuous) crossings with tactile paving to all side streets where appropriate
 - Paving feature to key buildings and architectural moments
 - New bespoke bus shelters throughout the length of Union Street
 - Typical road width

NOTE:
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Wherever possible, all materials will be sourced from within the marketplace. Further dialogue with ACC client.



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Works are required outside the red line boundary to resurface the carriageway throughout the junction and to tie into Union Street Central works.

Refer to 8153-LDA-07-XX-DR-L-2001

E	Carriageway material updated to asphalt	RW	27.10.23
D	Issue for business case update	RW	13.10.23
C	Updated to include Union Terrace junction	RW	03.10.23
B	Issue for business case update	RW	28.09.23
A	Issue for RIBA Stage 3	JWA	21.10.22
F	Final issue for RIBA Stage 3 (for coordination)	RW	08.10.22
REV.	DESCRIPTION	APP.	DATE

LDADesign
ABERDEEN CITY CENTRE VISION

DRAWING TITLE
Union Street West Streetscape
General Arrangement Plan

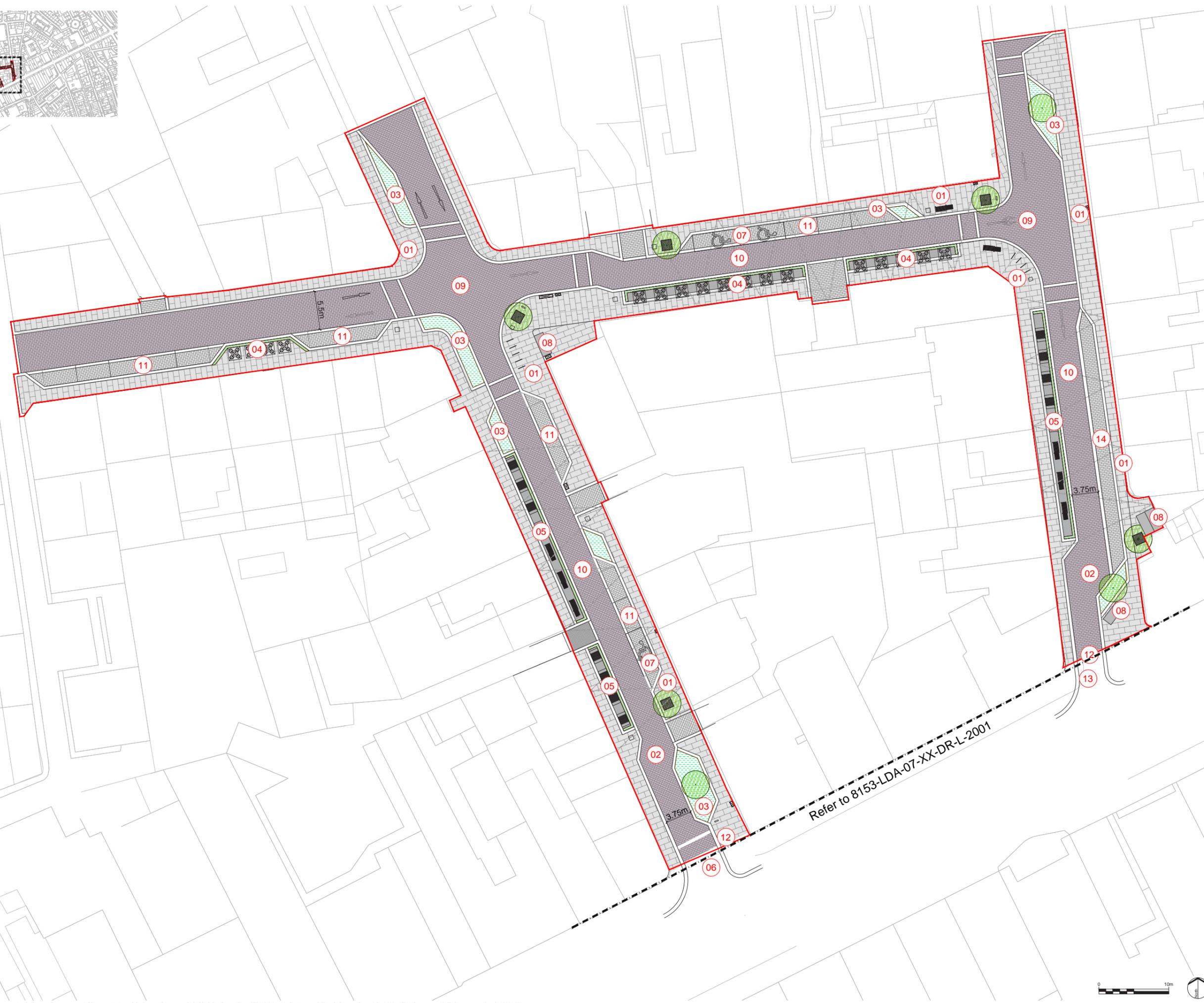
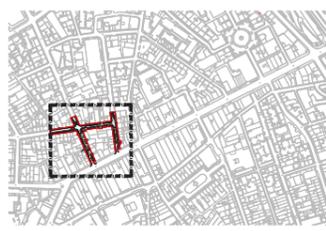
ISSUED BY Glasgow
DATE Oct 22
SCALE 1:250
STATUS Sketch

T: 0141 222 9780
DRAWN MJC
CHECKED JW
APPROVED RW

DWG. NO 8153-LDA-07-XX-DR-L-2001

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Source: Ordnance Survey

Z:\18153_07_ACC_LCW_WEST_END\TCD\DRAWINGS\8153-LDA-07-XX-DR-L-2002 WEST END GENERAL ARRANGEMENT PLAN.DWG



- LEGEND**
- WEST END STREETScape GENERAL ARRANGEMENT**
- Indicative extent of West End and Union Street Streetscape Intervention Areas.
 - Natural stone footway, widened where space allows.
 - Rationalised carriageway, narrowed where possible to give more space to pedestrians.
 - Rain gardens to improve drainage/biodiversity in the urban environment and create definition between footways and carriageway.
 - Outdoor spillout seating for local businesses.
 - Parkettes/public realm seating and picnic table
TBC - flexible outdoor space (subject to further engagement with local businesses).
 - Copenhagen crossings to enhance connection with Union Street.
 - Accessible parking bays (3no. original accessible parking bays retained and rationalised).
 - Refuse / bin storage to contain existing bins.
 - Rationalised junctions providing enhanced crossing points.
 - Feature cotersey lighting to improve social atmosphere.
 - Standard parking bays (16no. original parking bays retained and rationalised).
 - Sentinel lighting (West End wayfinding sign).
 - Controlled crossing (retained and rationalised).
 - Day time taxi rank (retained and rationalised).
 - Typical road width

NOTE
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 Ultimate selection of materials will be depending upon availability within the marketplace / further dialogue with ACC client.

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Refer to 8153-LDA-07-XX-DR-L-2001

E	Issue for business case update	RW	13.10.23
D	Draft issue for business case update	RW	29.09.23
C	Issue for RIBA Stage 3	JWA	21.10.22
B	Issue for RIBA Stage 3 (for coordination)	MGU	06.10.22
A	Issued to Design Team for Stage 3 coordination	JWA	26.09.22
/	Issue for RIBA stage 2	JWA	12.07.22
REV.	DESCRIPTION		APP. DATE

LDĀDESIGN

PROJECT TITLE
 ABERDEEN CITY CENTRE VISION

DRAWING TITLE
 West End Streetscape
 General Arrangement Plan

ISSUED BY	Glasgow	T:	0141 222 9780
DATE	22/06/22	DRAWN	BAd
SCALE/A1	1:250	CHECKED	MMc
STATUS	Sketch	APPROVED	JWA

DWG. NO 8153-LDA-07-XX-DR-L-2002

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 Sources Ordnance Survey



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