Appendix B. Option Development

The following outlines the development of each option included within the Strategy Short (2018), Medium (2022) and Long (2030) term Core packages.

The development of options is essential to provide a review of how each might be formed on the ground, identifying any potential issues as well as good practice. For clarify this section outlines the options contained in each package in order of short term to long term.

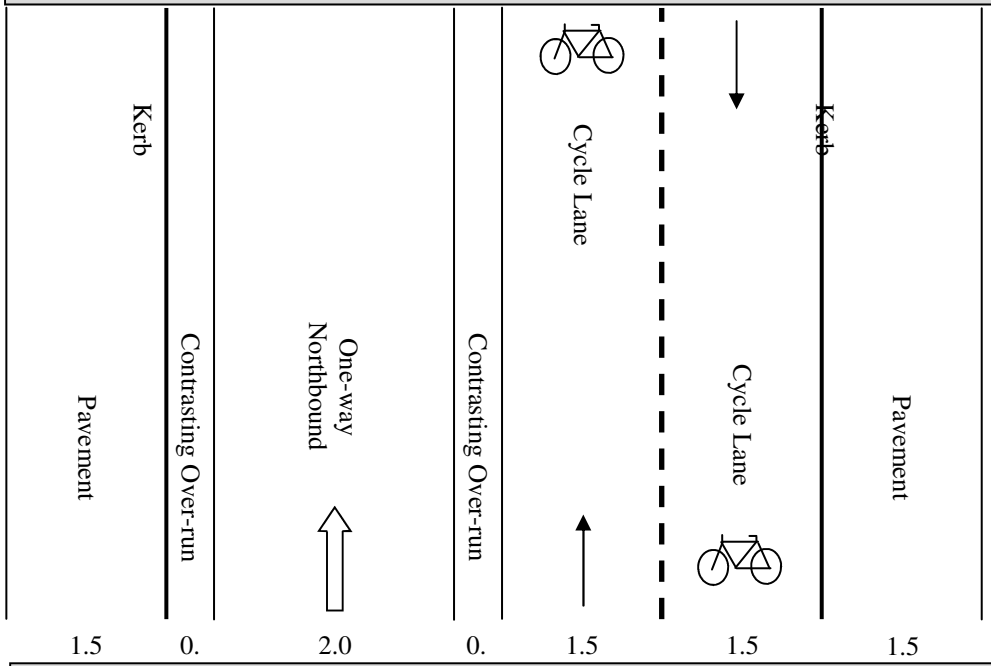
B.1 Short Term Core Package

The Short Term Core Package (2018) includes the following list of options:

- I2A – Moss Street – convert to one-way (northbound) & widen footways/cycle lanes
- I2J – Review measures to reduce vehicle movements around schools
- I3D – South St / Hay St Roundabout – improve operation
- I3G – Bilbohall Road / Fleurs Road / Mayne Road / Wards Road rationalisation
- I3H – Edgar Road / The Wards – improve operation
- I3K – Morrison Road/ North St : Signal improvements
- I4F – Provide cycle lanes alongside Station Road
- I4I – Provide cycle parking in Elgin where cycle paths enter the town
- IN1A – Provision of information to support use of all modes of travel
- M1A – Edgar Road: Review and redesign / add pedestrian crossing
- M1B – Station Road: Review and redesign pedestrian crossings on Station / Maisondieu Road
- M1C – A96 in Elgin: Review / redesign / add to pedestrian crossings
- M1D – Thornhill Road: Review / redesign / add to pedestrian crossings
- M3A – Elgin / Moray: Investigate use of technology to manage demand responsive bus service provision
- M4A – The Moray Council: Undertake robust Travel Plan for The Moray Council
- M4C – Development: Specify requirement for current best practice Residential Travel Plan for all new development
- M4D – Schools: Robust Travel Planning for all Elgin schools

I2A One-way Restriction

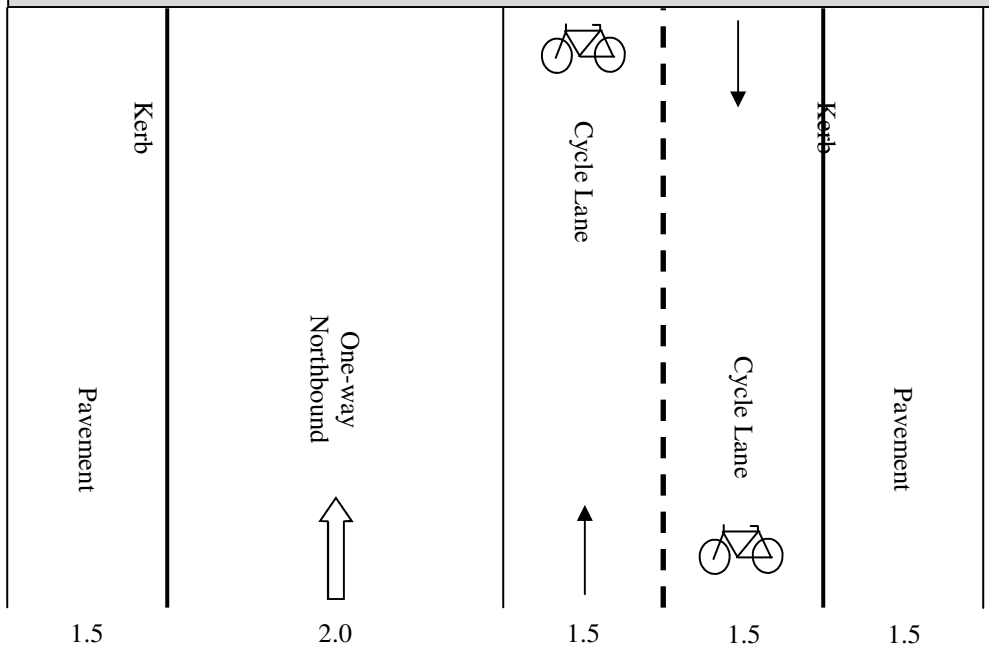
I2A Option 1 - No change to kerbs



Considerations:

- This option does not alter the current kerb.
- Traffic restricted to one-way northbound lane.
- Contrasting over-run strip provides some buffering space between motor vehicles and pedestrians/cyclists, and also contributes to traffic calming through visual narrowing.
- Moss St widths are estimated.

I2A Option 2—raised cycle way



Considerations:

- Similar operation to previous option, but this option moves the curb line to raise the track to the footpath level or an intermediate level.
- One-way northbound operation for motor vehicles, which can be supplemented again with a contrasting over-run strip for visual narrowing and traffic calming.

I2J—Measures to Reduce Vehicle Movements Around Schools

Speed Reduction Measures

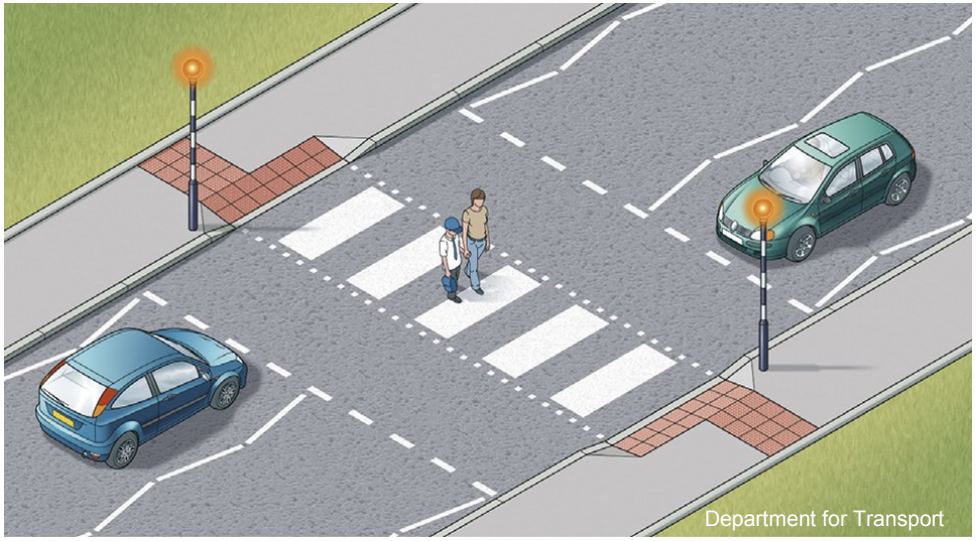
A number of different methods exist to calm traffic and can be utilised near schools. These measures do not exclude traffic, but slow traffic to a target speed—generally 20 miles per hour or less. A sample of these options are below:

- speed humps;
- lane narrowing;
- chokers/chicanes;
- neighbourhood traffic circles;
- reduced corner radii; and
- raised pedestrian crossings / raised junctions.

The final two measures listed above would also have a positive benefit for pupils walking to school. Reduced corner radii slow the speed of turning vehicular traffic, whilst level pedestrian crossings/junctions both act similarly to speed humps and provide a quality surface for crossing the street without the need for dropped kerbs.

Other, less expensive options exist for speed management, including signage and pavement markings. Enforcement can also be used for speed management, but is generally considered a tool with limited long-term effectiveness.

Designated Crossings—Facilitate Walking

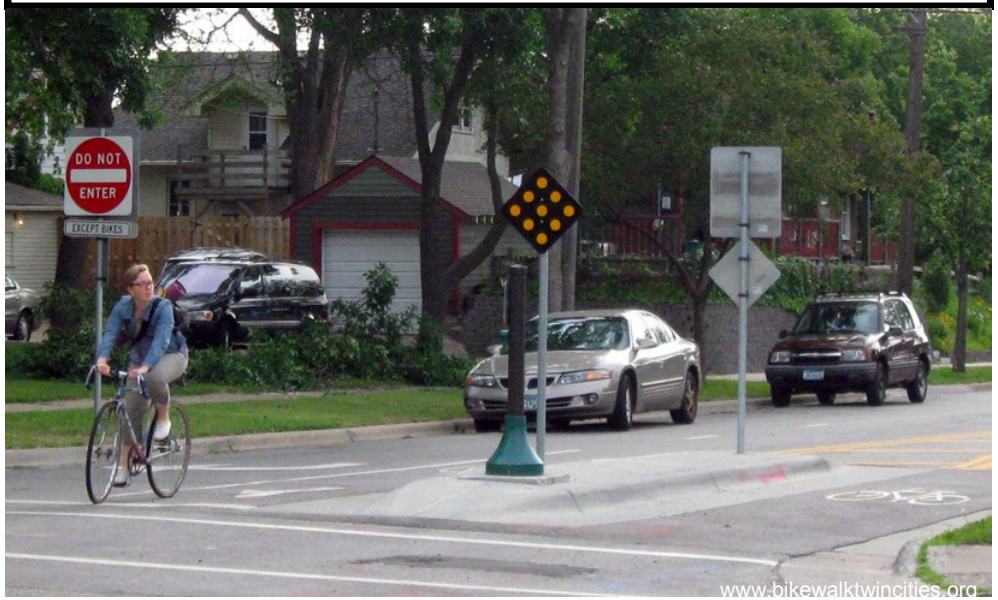


Establishing a system of zebra crossings on designated walking routes to schools helps to encourage more walking and reduce driving trips.

Groningen, Netherlands uses these distinctive coloured markers at every designated school crossing to encourage greater awareness from drivers.

I2J—Measures to Reduce Vehicle Movements Around Schools

Traffic Exclusion—Forced Turn



RiverLake Greenway (40th Street), Minneapolis, Minnesota. Drivers approaching this junction from both directions are forced to turn, but bicycles may continue straight.

Traffic Exclusion—Median Diverter/Refuge

Median diverters force turns for motorised traffic, but offer permeability for cycles and pedestrians. They have the added benefit of providing a refuge space to cross busy roads.

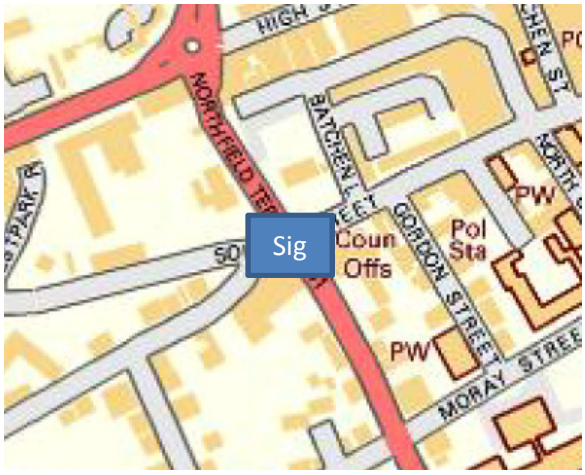
Traffic Exclusion—Diagonal Diverter

RiverLake Greenway (40th Street), Minneapolis, Minnesota. This diverter forces drivers to turn. Drivers may still access a nearby school, but the route is less direct and more circuitous. This device did not require any change to storm water structures as it left existing drainage basins intact.

Traffic Exclusion—Half closure

Half closure with cycle access, Western Australia. Cars may pass by this feature in one direction, but must turn in the other. It does not affect drainage structures.

I3D – South Street / Hay Street (Comet Roundabout) – improve operation



Considerations:

- Upgrade from roundabouts to signals
- Provides improved pedestrian and cycle facilities
- Signal timings have greater flexibility to accommodate peak flows and fluctuations

I3G – Bilbohall Road / Fleurs Road / Mayne Road / Wards Road rationalisation

General Provision: Considering further residential development off Mayne Farm Road the railway overbridge would be widened to accommodate two way traffic with a new footbridge provided alongside.

Considerations:

- One way northbound on Mayne Road reduces turning movements at crossroads
- Removes poor visibility from Mayne Road at crossroads

Considerations:

- One way southbound on Mayne Road reduces turning movements at crossroads
- Potential to ban right turn movements from Wittet Drive to Wards Road
- Potential increase in traffic movements over this section of Mayne Road

Considerations:

- Closure at Mayne Road reduces turning movements at current crossroads
- Turning movements on Mayne Road would have to use access lane as turning head
- Removes poor visibility from Mayne Road onto crossroads
- Right turn from Wittet Drive to Wards Road maintained

I3H – Edgar Road/The Wards – improve operation

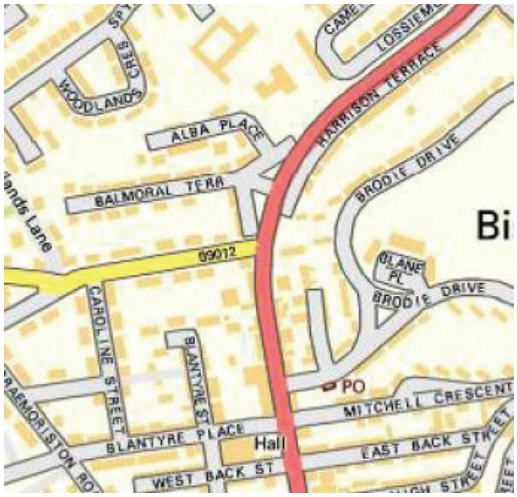
Considerations:

- Signalised option
- Provide for existing cycling infrastructure and enhance
- Consistency with signalised improvements at Sandy Road/Glenmoray Drive which include Toucan crossings and advanced cycle lanes
- The layout similar to that proposed at Sandy Road/Glen Moray Drive would be employed

Considerations:

- NOT PREFERRED OPTION
- Roundabout option
- Does not cater effectively for pedestrians and cyclists

I3K – Morriston Road/North Street: Signal Improvements

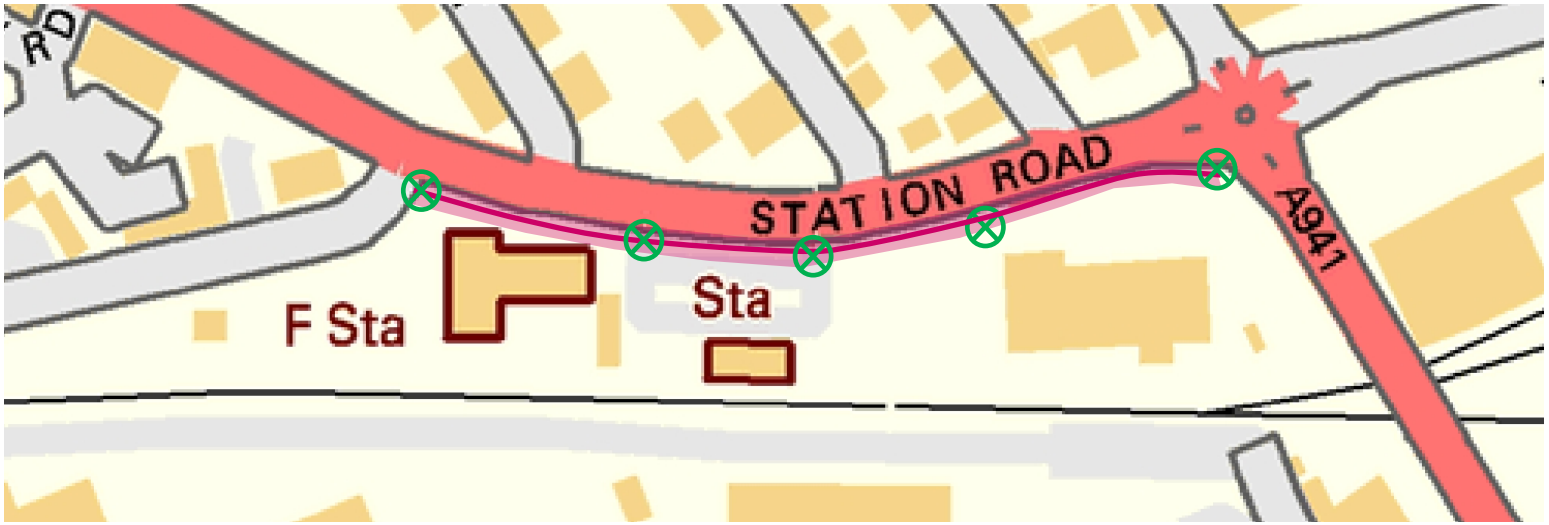


Considerations:

- Existing signalised junction to be reviewed in terms of improvements
- Limited scope for physical capacity improvements in current layout

I4F - Cycle lanes alongside Station Road

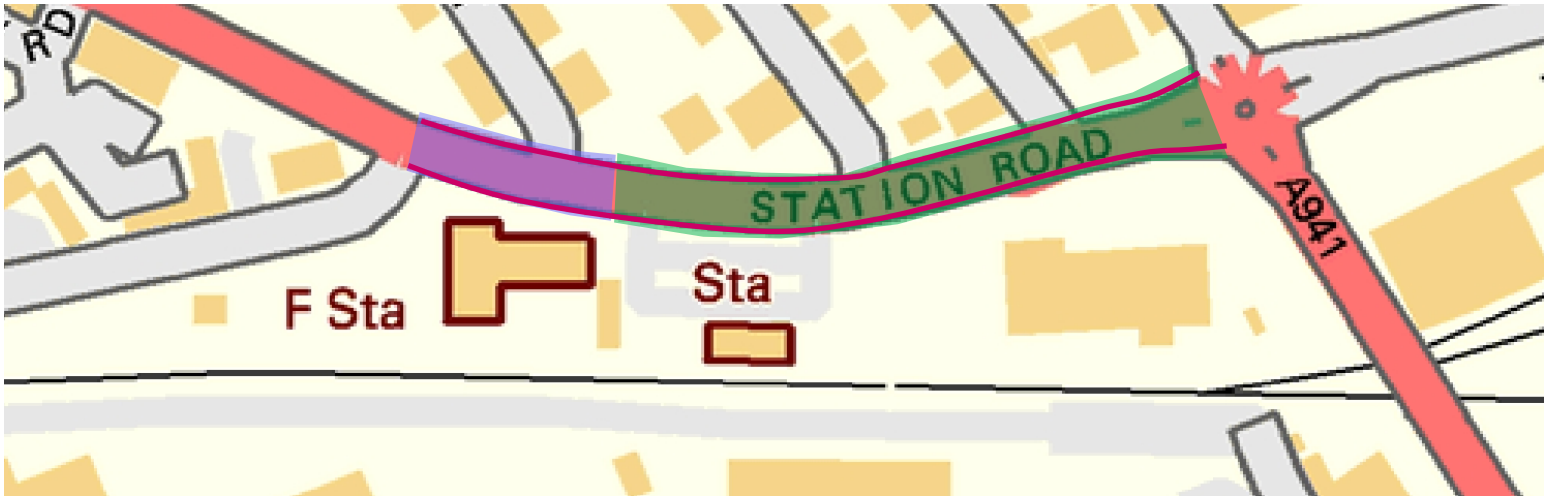
Station Road Cycleway Option 1: Shared cycleway/footpath on southern side of road



Improved markings of access crossings and dropped kerbs (location and width).

Tighter kerb radii (particularly Wards Road).

Station Road Cycleway Option 2: On road cycle lanes.



Section 1: Eliminate centre line to add advisory cycle lanes

Section 2: Remove medians and centre right turn lanes to add cycle lanes

I4F - Cycle lanes alongside Station Road

Before

Station Road looking east from Ward Road—existing

Station Road looking west from Moss Street—existing

After

Station Road centre line removed and advisory cycle lanes added

Station Road, centre turning lane removed and cycle lanes added.

I4I - Cycle Parking

I4I - Cycle Parking

Cycle Parking Strategy

In addition to providing parking at key locations, Elgin may wish to consider developing a strategy for provision of cycle parking along certain streets or types of future locations. A parking strategy better defines the type of cycle parking infrastructure that is considered acceptable, where, when and how it should be installed and which party is responsible for ongoing maintenance.

Cyclists frequently wish to ride directly to their destinations and to park in close proximity. Providing parking one block away may be considered inconvenient. A cycle strategy can help to determine a target frequency and amount of parking. It also helps to better define placement considerations so that cycle parking does not block key pedestrian corridors, and so it is not consigned to the edges of a surface parking lot. Providing cycle parking also helps to *corral* bicycles into defined areas, decreasing the chances that cycles will be affixed to sign posts, light poles, fences or hand rails.

Example of dense public cycle parking—Chelmsford Rail Station, Essex

Design

Cycle parking can be made with unique designs or colours as part of an Elgin placemaking strategy.

This example shows bespoke parking affixed to steel rails, which are then mounted to the pavement surface. This prevents having to install cycle parking into the pavement during construction, and makes moving/ reconfiguring parking to better meet demand more simple.

Dero Bike Racks

Some cities have programs to move rail-mounted racks about to provide additional event parking for bicycles. Examples include sporting events and market days.

Bike Racks

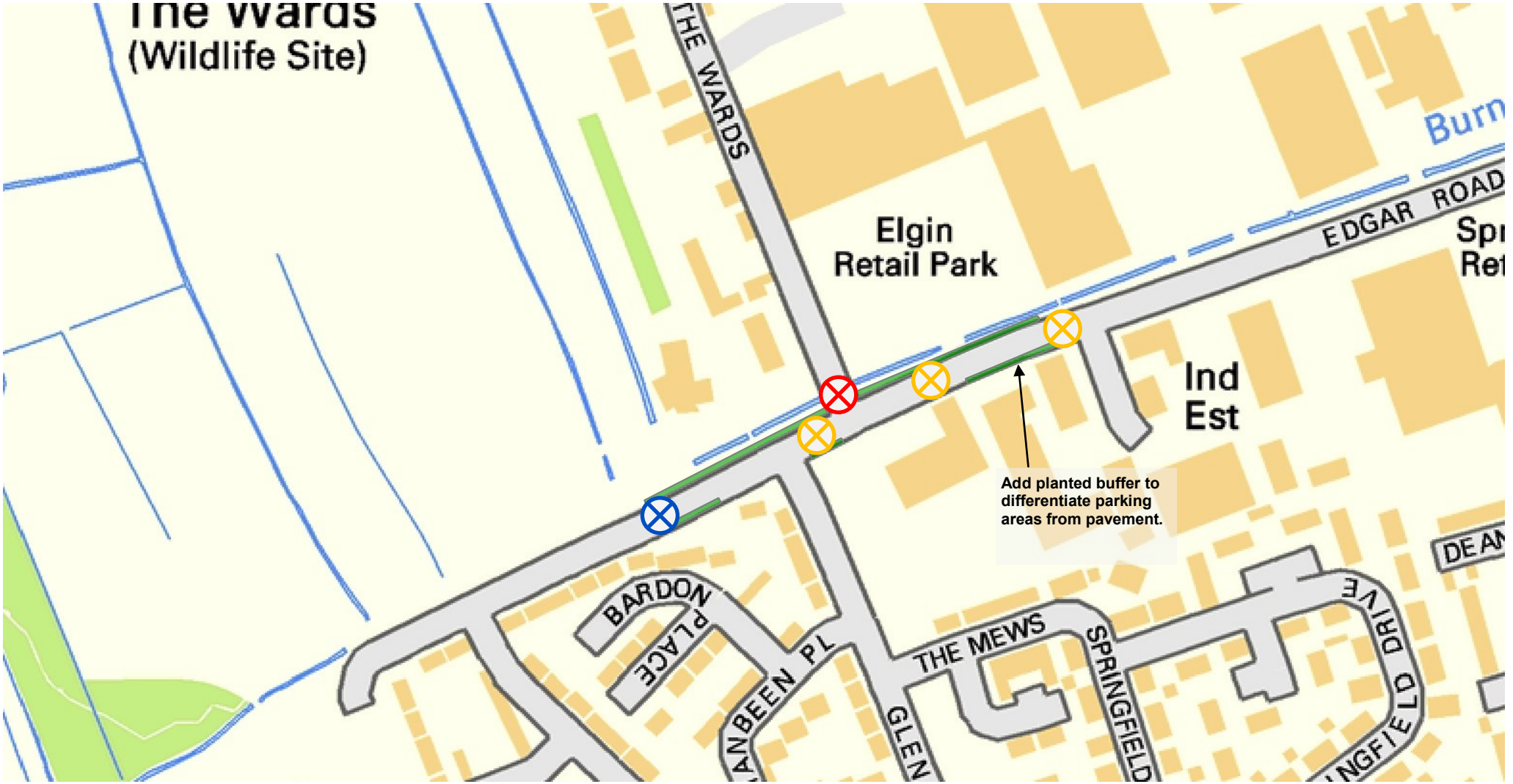
Cycle parking need not take up a large footprint to park each bicycle. This photo shows a post-and-ring type rack, very common in North America.

The pavement area per rack is very small compared with the traditional style used across Scotland and the UK, yet provides parking for the same number of bicycles.

Parking at Minneapolis Public Library, USA. Dero Bike Racks

Standard UK-style cycle

M1A - Edgar Road - Pedestrian Enhancements



Dropped Kerb Installation / Improvement

Install Zebra Crossing

Upgrade dropped kerbs by decreasing kerb radius. Consider a raised crossing.

Street tree / planting opportunity areas

M1A - Edgar Road—Pedestrian Enhancements

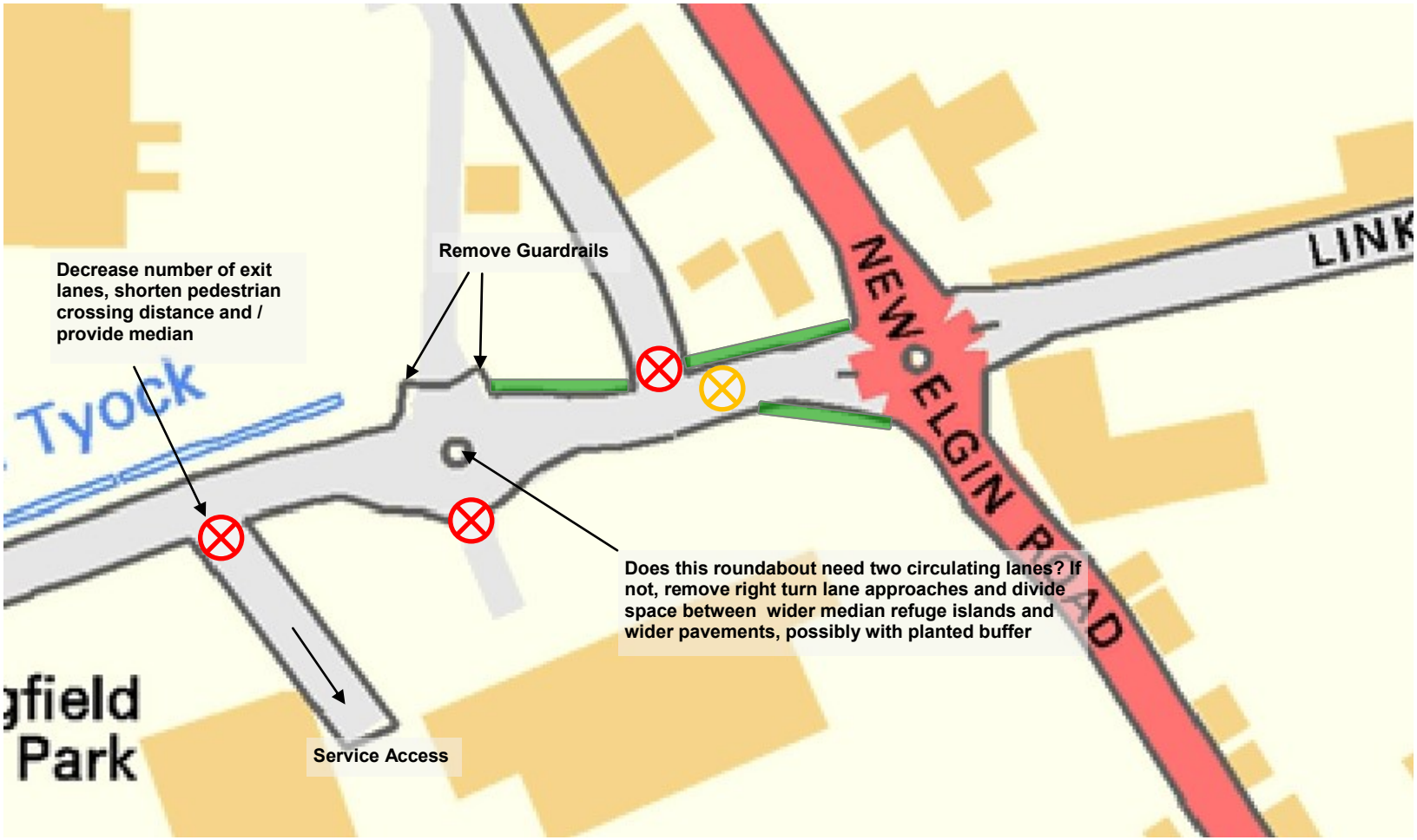
Dropped Kerb Installation / Improvement

Install Zebra Crossing

Upgrade dropped kerbs by decreasing kerb radius. Consider a raised crossing.

Street tree / planting opportunity areas

M1A - Edgar Road—Pedestrian Enhancements



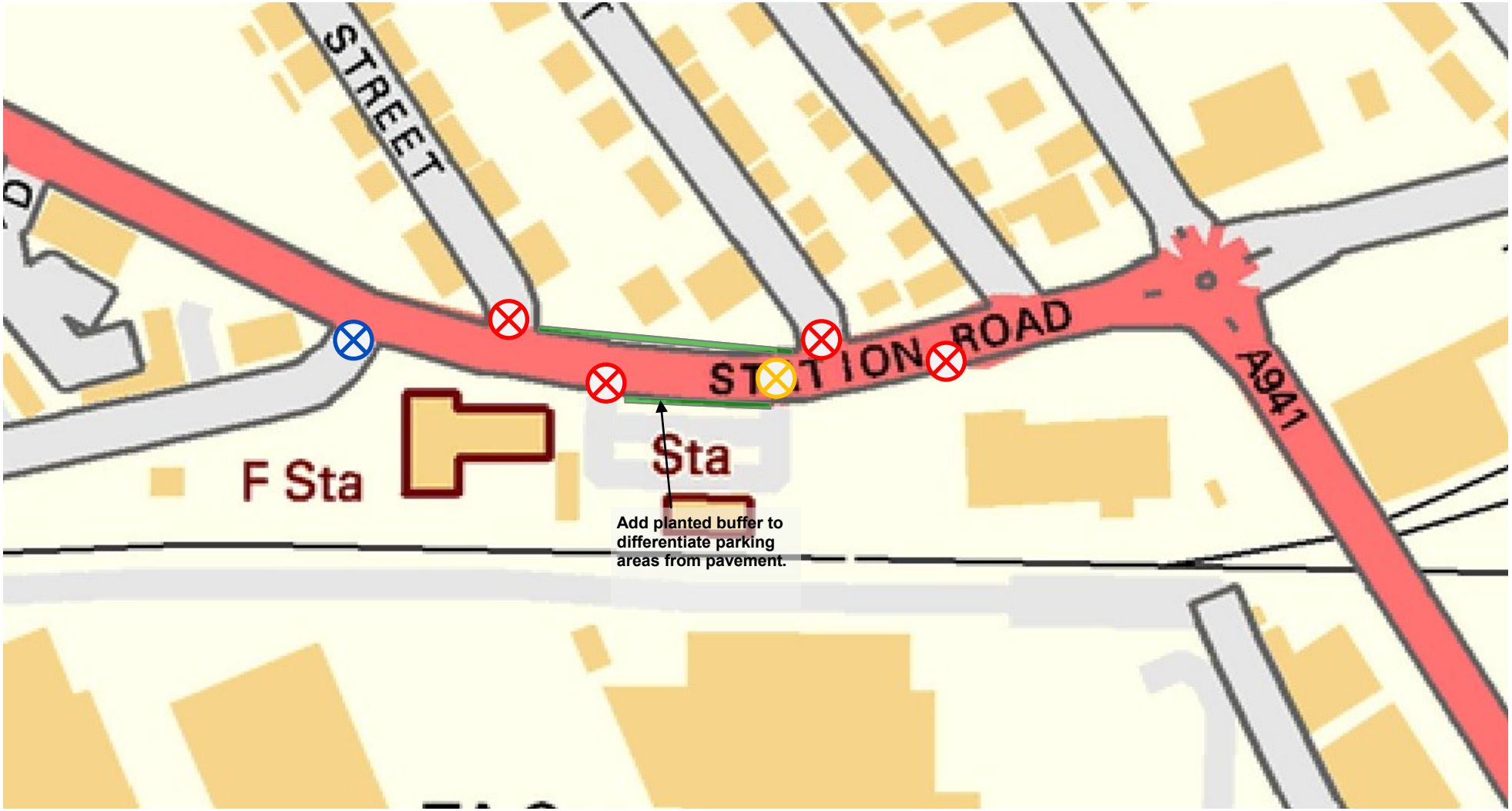
Dropped Kerb Installation / Improvement

Install Zebra Crossing

Upgrade dropped kerbs by decreasing kerb radius. Consider a raised crossing.

Street tree / planting opportunity areas

M1B - Station Road - Pedestrian Enhancements



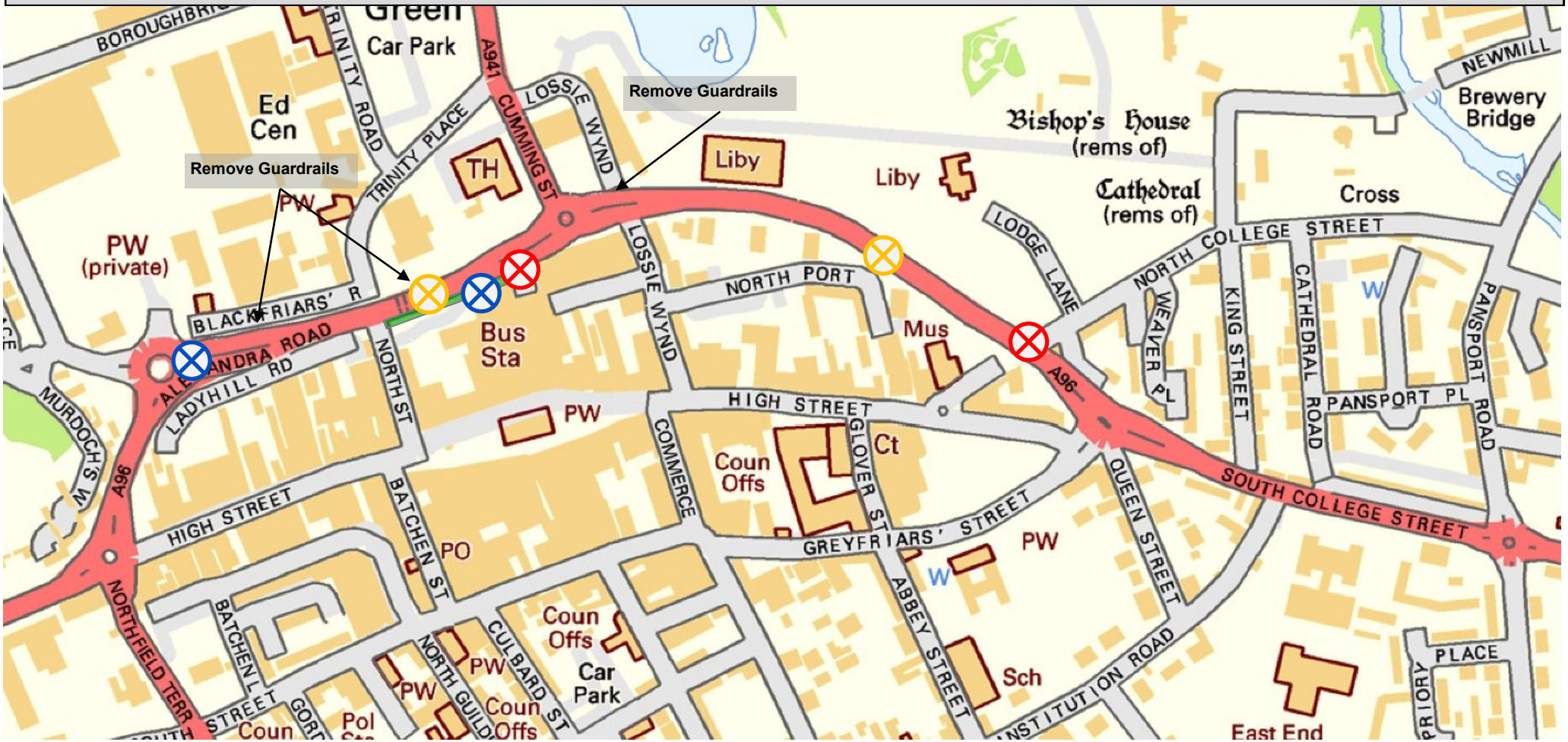
Dropped Kerb Installation / Improvement

Install Zebra Crossing

Upgrade dropped kerbs by decreasing kerb radius. Consider a raised crossing.

Street tree / planting opportunity areas

M1C - A96 in Elgin - Pedestrian Enhancements



Dropped Kerb Installation / Improvement

Install Zebra Crossing

Upgrade dropped kerbs by decreasing kerb radius. Consider a raised crossing.

Street tree / planting opportunity areas

M1D - Thornhill Road - Pedestrian Enhancements

Dropped Kerb Installation / Improvement

Install Zebra Crossing

Upgrade dropped kerbs by decreasing kerb radius. Consider a raised crossing.

Street tree / planting opportunity areas

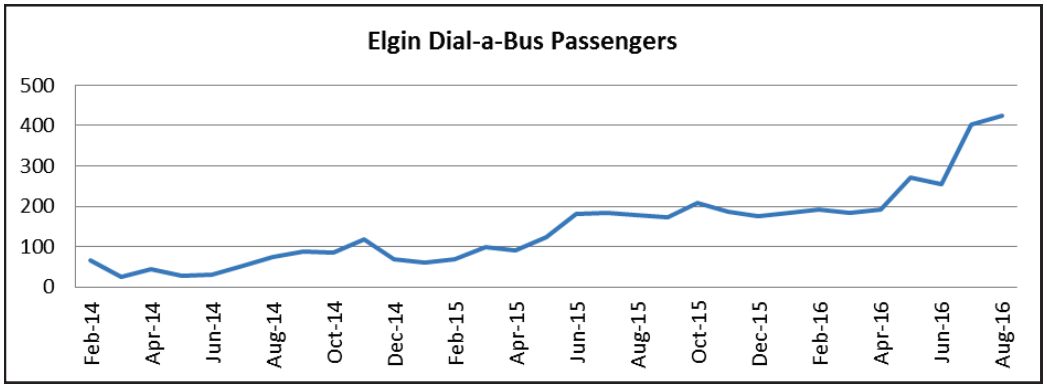
M3A - Elgin / Moray: Investigate use of technology to manage demand responsive bus service provision

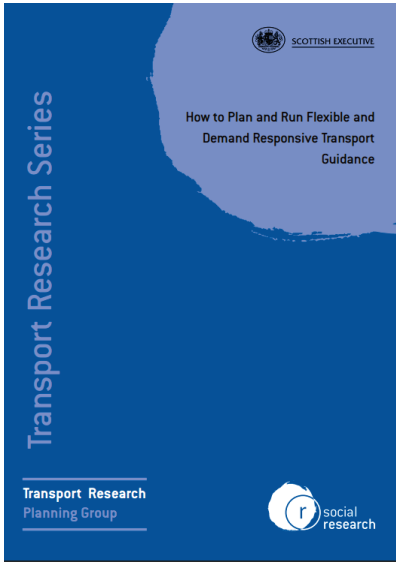
Demand responsive bus service provision, or also known as Demand Responsive Transport (DRT) / Service or Dial-a-Bus / Ride is a form of transport that, rather than operate to set routes and timetables, is much more user-orientated and flexible to 'live' demand. It is more often than not operated by small to medium size vehicles.

Demand Responsive bus service are most often provided in areas based on social necessity, i.e often in rural areas where traditional fixed route based bus provision is often not economically viable. Demand based transport typically caters for the market not catered for fixed route services, requiring a car or taxi to fulfil an essential journey. For this reason they are often, but not always provided by or partially / fully funded by local authorities with large rural areas.

The Moray Council already operates demand responsive bus service provision, branded as 'Dial M for Moray'. This service is for use by anyone within a specified area without access to an alternative bus service, regardless of each or disability.

It is noted that use of the Dial M for Moray service has expanded relatively significantly over the last two years and, whilst overall passenger numbers are relatively low, this shows the real potential for remand responsive services in an area like Moray.





The main attraction of DRT is the fact that it is very flexible to demand and normally provides the consumer with a door to door service. However, pickups often have to be booked some time in advance and therefore usage requires some planning.

The use of technology to optimise the management of DRT services is currently limited however, in much the same way as the management of taxi fleets was prior to the recent introduction of tracking and smart booking technology.

The technology developed for optimising taxi fleet management however is likely to lend itself well to managing demand responsive bus fleets. This technology, mainly smart phone based but can work online and with telephone, takes user submitted requests for pickups and a central management system calculates the optimal vehicle to allocate to that journey and sends the vehicle a route. Where multiple journey requests are received for a similar area and destination, the system can offer to combine these to produce the most cost effective journey for the consumer, or indeed, the transport operator.

Whilst in its infancy, The Moray Council should keep abreast of developments in this area to improve management of their DRT fleet and to reduce costs.

M4A - Travel Planning—Undertake a Robust Travel Plan for The Moray Council

A Travel Plan is a management tool designed to encourage people to consider their travel choices and requirements in order to minimise the adverse impacts of a development on the environment. This is achieved by setting out a strategy for eliminating barriers preventing users of the site from using sustainable travel modes, improving travel choices and managing single occupancy car use. A Travel Plan is an active, dynamic document that requires to be updated on a regular basis.

If designed well, the implementation of a Travel Plan for The Moray Council can lead to economic, environmental, social and health benefits. It can lead to a decrease in the proportion of users reaching the site by private car and an increase in the proportion reaching the site by sustainable modes, including walking, cycling and public transport.

A Travel Plan for Moray Council can:

- Assist in increasing accessibility while reducing congestion;
- Improve local air pollution, greenhouse gases and noise;
- Increase council efficiency and equality;
- Reduce the council's carbon footprint;
- Reduce the traffic impact on the local road network and on on-site / off-site car parking requirements;
- Reduce adverse impacts on local residents and businesses; and
- Improve the health and wellbeing of the workforce through the formation of active travel patterns.

Some example Travel Plan measures may focus on

- Infrastructure improvements;
- Promotion of sustainable and active travel;
- Reduce the need for unnecessary travel; and
- Development of a Travel Options Leaflet to market the travel choices available to staff and visitors

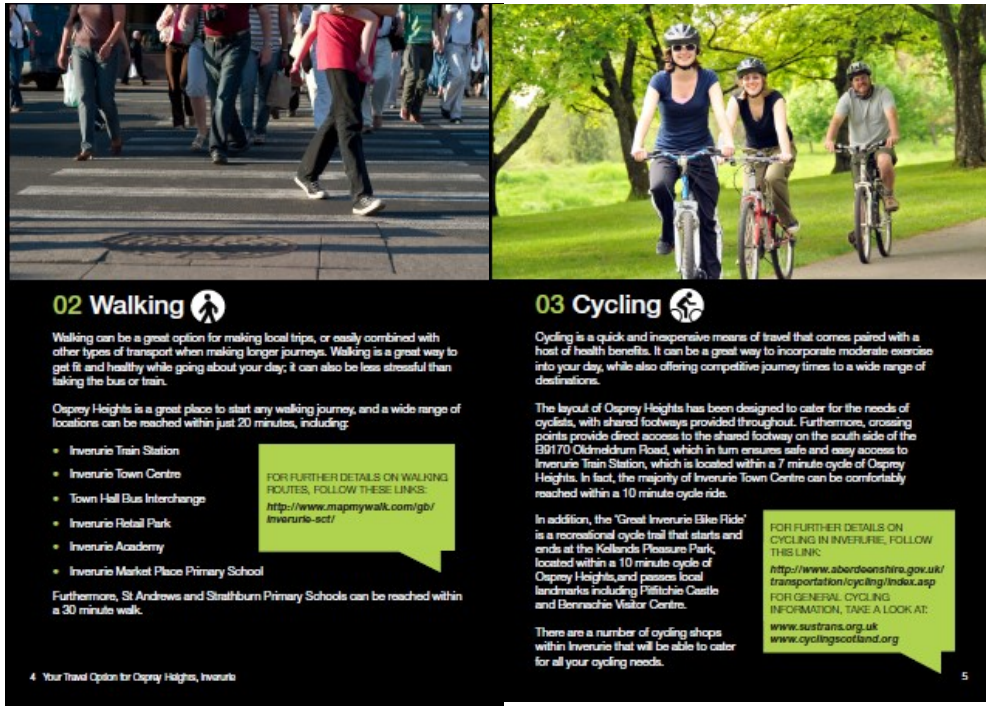
M4C - Travel Planning—Specify Requirement for current best practice Residential Travel Plan for all new development

The requirement for residential developers to design and produce a travel options leaflet and associated travel planning measures for all new residential developments, with the aim of instilling positive travel behaviours from day 1 of the site occupation.

A number of local authorities ensure that the requirement for the development of a travel options leaflet is a planning condition, with the cost to be met by the developer. Notwithstanding this, the cost for the design and production of this leaflet is minimal and while promoting positive travel behaviours for the site, can also be considered as a good marketing tool for the developer.

Example planning condition:

'No development in connection with the permission hereby approved shall take place unless a comprehensive Residential Travel Pack that sets out proposals for reducing the dependency of residents on the private car shall be submitted to and approved in writing by the planning authority. A copy of the Residential Travel Pack shall be given to every new tenant of the dwellinghouses as part of their tenancy agreement package and to purchasers of a dwellinghouse.'



02 Walking

Walking can be a great option for making local trips, or easily combined with other types of transport when making longer journeys. Walking is a great way to get fit and healthy while going about your day; it can also be less stressful than taking the bus or train.

Osprey Heights is a great place to start any walking journey, and a wide range of locations can be reached within just 20 minutes, including:

- Inverurie Train Station
- Inverurie Town Centre
- Town Hall Bus Interchange
- Inverurie Retail Park
- Inverurie Academy
- Inverurie Market Place Primary School

Furthermore, St Andrews and Strathburn Primary Schools can be reached within a 30 minute walk.

FOR FURTHER DETAILS ON WALKING ROUTES, FOLLOW THESE LINKS:
http://www.mapmywalk.com/gb/inverurie-sct/

4 Your Travel Option for Osprey Heights, Inverurie

03 Cycling

Cycling is a quick and inexpensive means of travel that comes paired with a host of health benefits. It can be a great way to incorporate moderate exercise into your day, while also offering competitive journey times to a wide range of destinations.

The layout of Osprey Heights has been designed to cater for the needs of cyclists, with shared footways provided throughout. Furthermore, crossing points provide direct access to the shared footway on the south side of the B9170 Oldmeldrum Road, which in turn ensures safe and easy access to Inverurie Train Station, which is located within a 7 minute cycle of Osprey Heights. In fact, the majority of Inverurie Town Centre can be comfortably reached within a 10 minute cycle ride.

In addition, the 'Great Inverurie Bike Ride' is a recreational cycle trail that starts and ends at the Kellands Pleasure Park, located within a 10 minute cycle of Osprey Heights,and passes local landmarks including Pitfitchie Castle and Bennachie Visitor Centre.

There are a number of cycling shops within Inverurie that will be able to cater for all your cycling needs.

FOR FURTHER DETAILS ON CYCLING IN INVERURIE, FOLLOW THIS LINK:
http://www.aberdeenshire.gov.uk/transportation/cycling/index.asp
FOR GENERAL CYCLING INFORMATION, TAKE A LOOK AT:
www.sustrans.org.uk
www.cyclingscotland.org

5

A typical Residential Travel Plan leaflet includes the following:

1. Generic information relating to: road safety, active and healthy living, cycling tips and working from home;

2. Kids Zone with colourful maps and activities relating to transport for example road sign challenge;

3. Walking & cycling information, including maps of local walking/cycle routes and an indicative layout of where paths will be located within the residential development site. The detail of these maps will be such that wholescale changes to the map may not be necessary should construction not progress as anticipated. The leaflet should also contain details of local cycle shops, carbon calculator comparisons, safety tips and links to websites such as Sustrans.

4. Public transport information including journey planners, bus routes, walk time to bus stops, benefits of public transport travel and ticket options.

5. Managing car travel– the leaflet should focus on reducing the need to travel, car sharing, carbon emission calculators and promotion of any journey sharing scheme.

An electronic version of the booklet should be uploaded to the developer's website, acting as an ideal marketing resource for the site prior to house purchase/rental. The booklet should be in pdf format and 'print ready'.

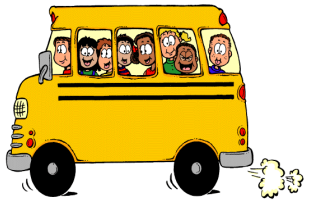
M4D - Travel Planning—Elgin Schools

School Travel Planning – A targeted campaign to engage school pupils, of all ages, in thinking about how and why they travel to school the way they do and promoting the benefits of more sustainable travel choices such as walking, cycling, scootering, and bus.

Targeting children of school age can be highly successful and firstly they grow up with an ethos that sustainable travel is a good thing, but also persuading their families it is a good thing also.

The aims of a school travel plan are generally to:

- Significantly reduce the number of car trips on journeys to and from schools
- Remove the barriers, both perceived and actual, to walking, cycling and using public transport for school journeys
- Increase the number of young people and adults choosing 'active travel' options over that of the car
- Increase understanding among whole school communities of the travel options that are available to them
- Provide information to allow school communities to understand the benefits of active, sustainable transport and to use this information to inform how they choose to travel



The benefits of a school travel plan can be summarised as:

- Less cars and congestion around the school site
- Healthier, more active pupils, families and staff
- Less pollution around schools
- Safer walking and cycling routes around the school
- Improved school grounds with provision for bicycle storage (where possible)
- A more accessible school sites
- Improved attendance and achievement

B.2 Medium Term Core Package

The Medium Term Core Package (2022) includes the following list of options:

- I1B - New north / south rail bridge: Ashgrove / Linkwood Rd to Maisondieu Rd - two way arrangement w' signals
- I3A - New Elgin Road - improve performance / replace junctions N/S of railway
- I3B - A96 between Northfield Terrace & North Street - replace existing roundabout junctions with signals - controlled pedestrian provision
- I4B - New cycle / pedestrian north / south rail bridge: Ashgrove Road
- I4C - New cycle / pedestrian north / south rail bridge: Bilbohall Road / Fleurs Road
- I4H - Provide cycle lanes alongside Linkwood Road
- I4K - Active Travel Route between Pinefield and East End Primary School
- I4M - A941/Lesmurdie Road: improvements to pedestrian/cycle provision and crossing
- M2B - Congested areas (A941 / A96): Investigate Urban Traffic Control
- M3D - Main Road entry points into Elgin: investigate sites for park and change with direct access to active travel corridors into town via key destinations.
- M4B - Elgin: Expand TMC Travel Plan initiatives to other Elgin businesses

I1B – New north/south rail bridge: Ashgrove / Linkwood Road to Maisondieu Road – two way arrangement with signals

Considerations:

- Road to be formed at grade if agreement can be reached with Network Rail regarding use of sidings area
- Signals provided at junction with Maisondieu Road/Maisondieu Place and at Linkwood Road/Ashgrove Road
- Maisondieu Road may have to be re-aligned locally to achieve suitable visibility

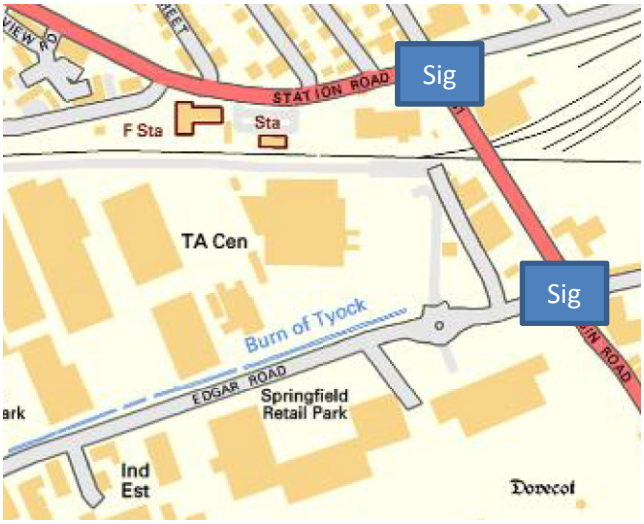
Considerations:

- If sidings to be crossed by bridge sufficient offset required to accommodate gradients and structure
- Landtake required to provide four arm signals
- Seafield Crescent to be stopped up at eastern extents

Considerations:

- If sidings to be crossed by bridge sufficient offset required to accommodate gradients and structure
- Signals formed at three arm junction of re-aligned Maisondieu Road and new road
- Land take minimised
- Priority junction with Seafield Crescent and Victoria Crescent maintained

I3A – New Elgin Road – improve performance / replace junctions N/S of railway



Considerations:

- Upgrade from roundabouts to signals
- Provides improved pedestrian and cycle facilities
- Signal timings have greater flexibility to accommodate peak flows and fluctuations

I3B – A96 between Northfield Terrace & North Street – replace existing roundabout junctions with signals – controlled pedestrian provision

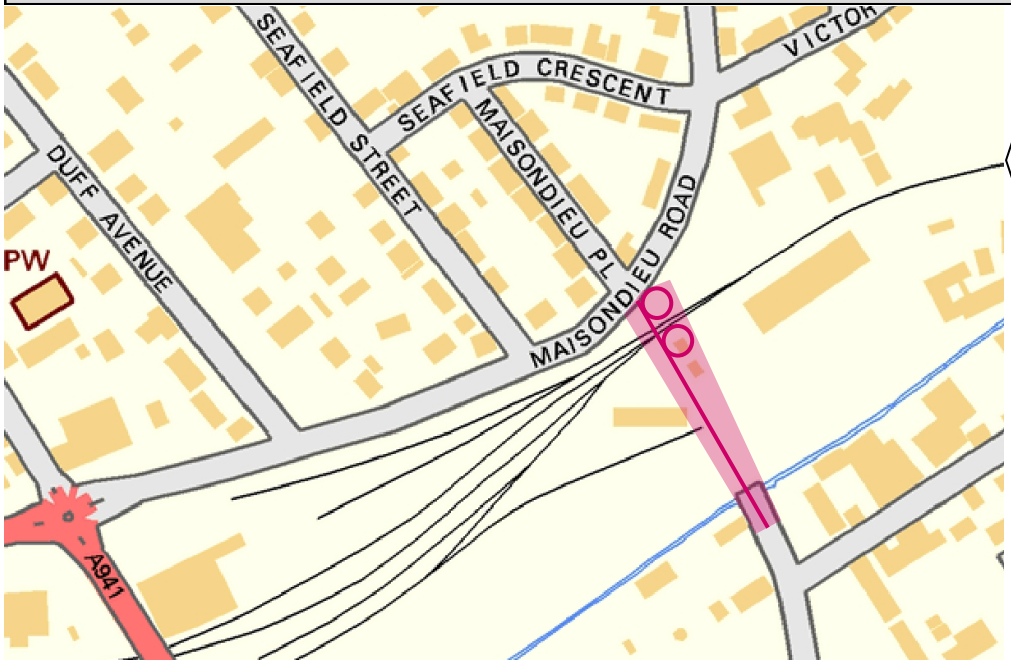
Considerations:

- Trunk road infrastructure
- Upgrade from roundabouts to signals
- Provides improved pedestrian and cycle facilities
- Signal timings have greater flexibility to accommodate peak flows and fluctuations

Considerations:

- Re-design of North Street and Alexandra road junctions
- Indicative map layout shows potential improvements without bypass.

I4B - New cycle/pedestrian north-south bridge - Ashgrove Rd

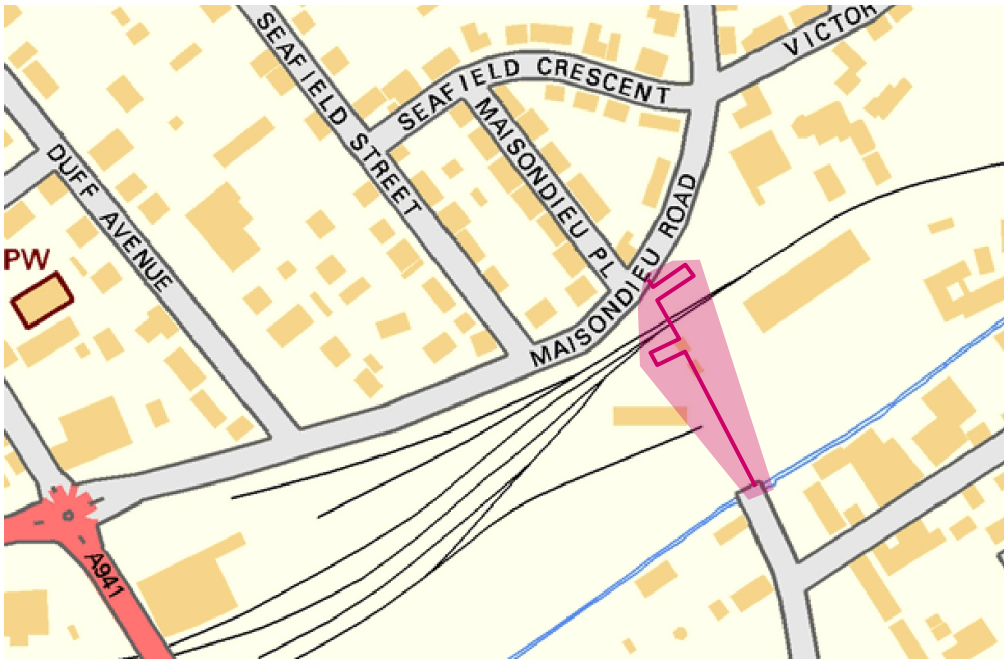


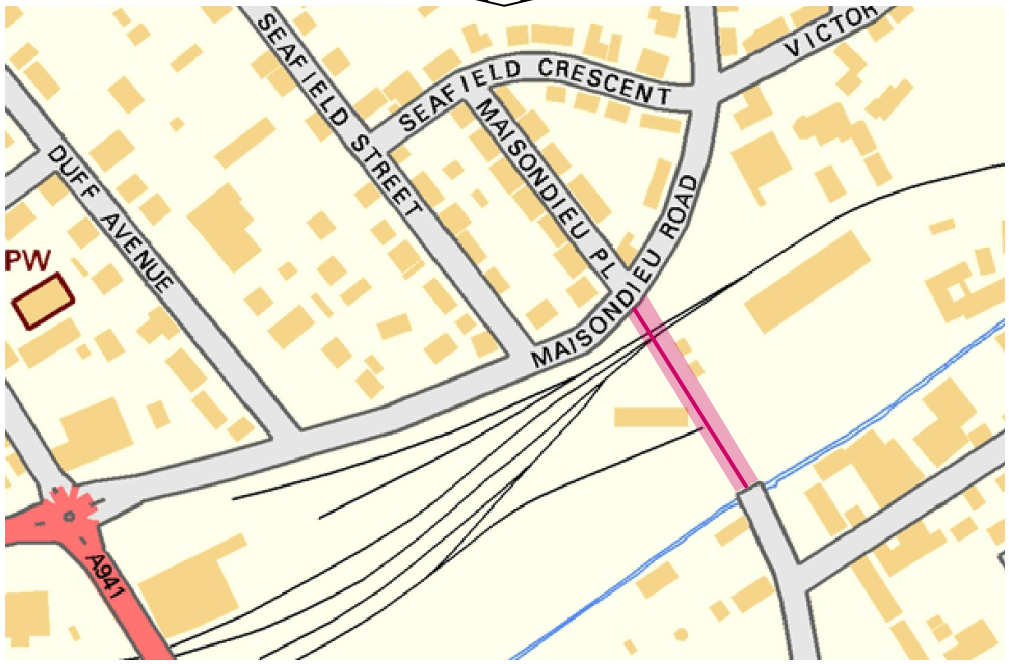
Considerations:
There are surface uses both north and south of the railway tracks. Land must be assembled in order to construct a bridge.

To achieve the height necessary to clear the railway tracks, some sort of vertical connector will need to be used in the relatively small amount of space either side of the railway.

Given that this railway line appears little used, it is worth determining if this section of track could be closed and its function moved elsewhere.

If it can be, a far more cost effective way to make this connection is simply to build a new roadway or level pathway connecting Ashgrove Road to Maisondieu Road. If a new roadway is considered, then cycle and pedestrian facilities should be included in the design.





I4C - New cycle/pedestrian bridge - Bilbohall Road / Fleurs Road

Considerations:

- This bridge is intended to provide a cycle and pedestrian crossing over the railway. This would enable Option I3G to remove the footpath on its eastern side to provide a two-lane crossing for motorised traffic.
- There is no footpath or cycleway on Wards Road here. The intention of this bridge would be to provide a connection to a new shared use pathway.
- There is a stairway down to the railway tracks adjacent to the northern side of the bridge. This must be avoided.
- An alternative would be reconstruction of the Bilbohall Road Bridge to provide two-way motorised access alongside cycles and pedestrians.
- Any bridge at this site should consider future railway electrification and potential dualling of the railway corridor.

I4H - Linkwood Road Cycle Lanes

Enhanced cycle markings at roundabout

Cycle lane

Before

Linkwood Road looking east, just west of Ashgrove Road—existing

After

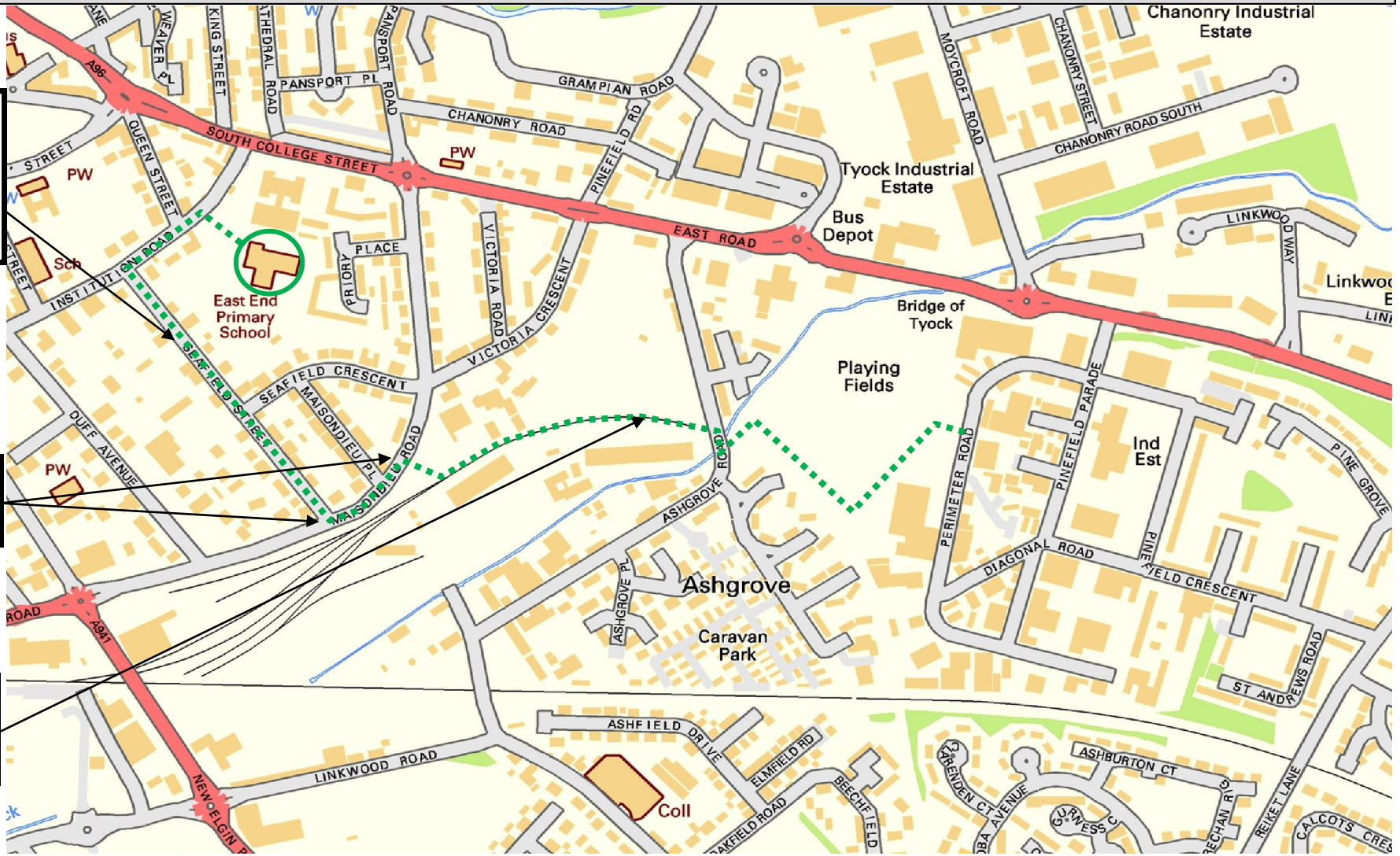
Linkwood Road, advisory cycle lanes added, parking prohibited. Very limited centre line removal required.

I4K - Active travel route: Pinefield and East End primary school

Active travel measures on field street to allow for safe travel on foot and bike. See Standard Advisory Cycle lane.

Safe crossing facilities on Maisondieu Road.

See I4D for further information about this section.



I4K - Active travel route: Pinefield and East End primary school

Considerations:

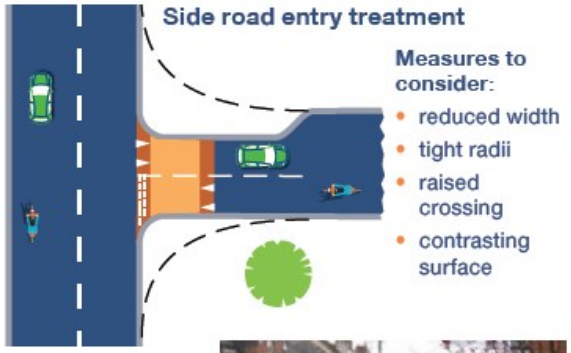
- Side road entry from Seafield Street to Mainsondieu Road will require appropriate cycling measures according to guidance.

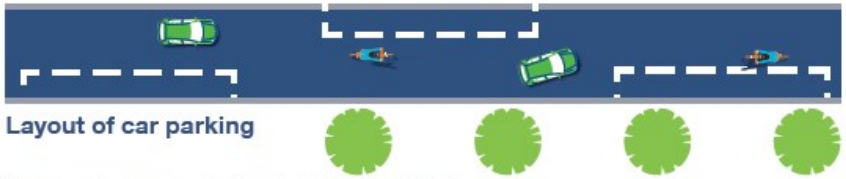
- Entry from Maisondieu Rd to proposed active travel corridor on rail-way line may require a central island for safe crossing.

- Re-appropriating the layout of Seafield Street to accommodate Active Travel including cycle lanes .

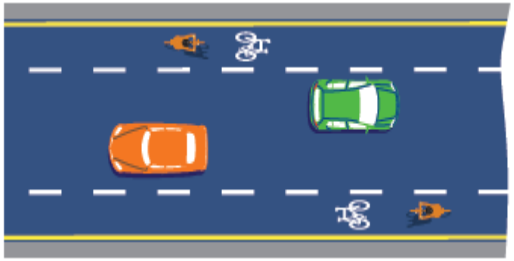
- Appropriate considerations to be taken if Active Travel bridge is built over the railway line.

Entry treatment, London

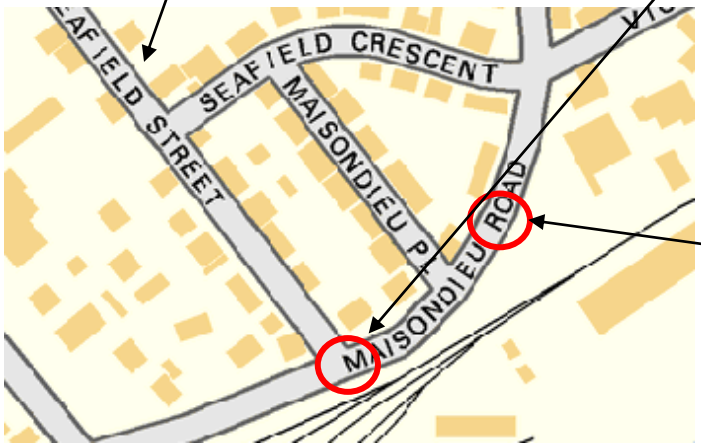




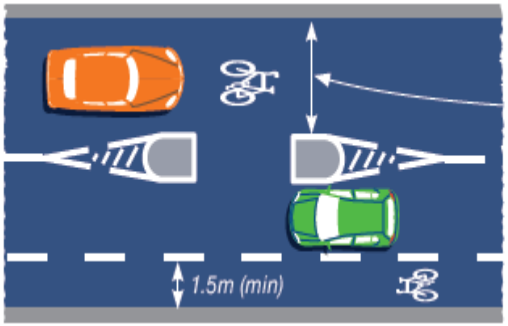
Staggered parking, Wokingham



Changed priority, London



Images taken from Sustrans: Handbook for Cycle Friendly design (2014)



Central island

Recommended width depends on speed, but avoid gaps of 3.1 - 3.9m. Where pinch point cannot be removed consider marking large cycle symbol centrally. Where a cycle lane is provided it should be continued through the pinch point with a width of at least 1.5m

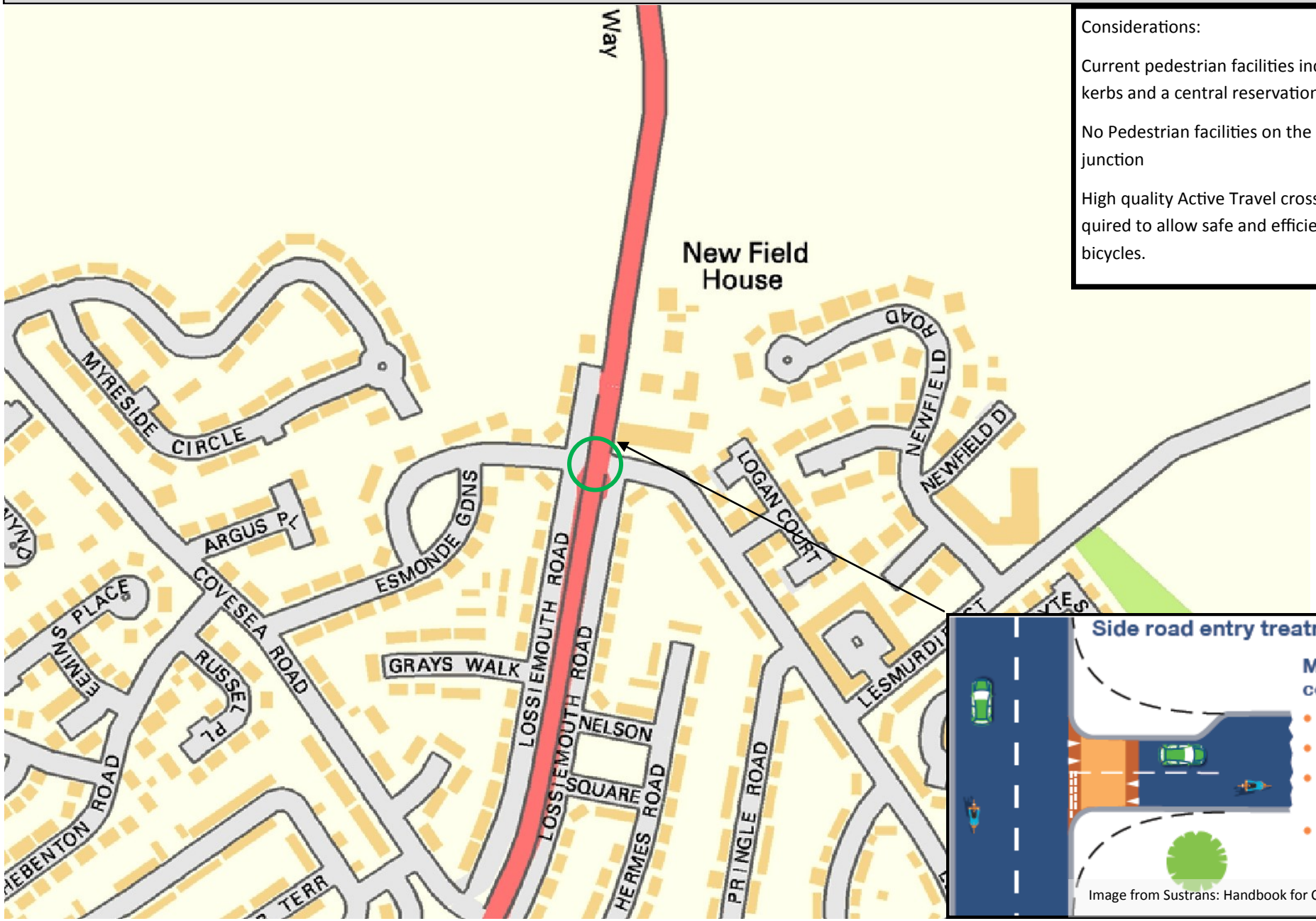
I4M - A941/Lesmurdie Road - improvements to pedestrian/cycle provision/crossing

Considerations:

Current pedestrian facilities include dropped kerbs and a central reservation.

No Pedestrian facilities on the north side of the junction

High quality Active Travel crossing feature required to allow safe and efficient crossing for bicycles.



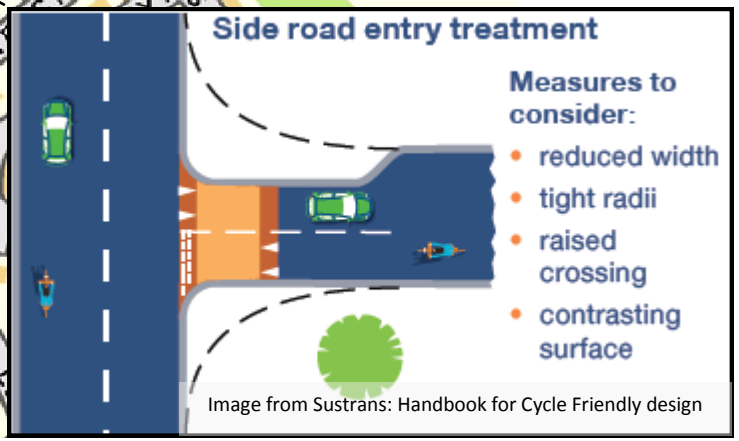


Image from Sustrans: Handbook for Cycle Friendly design

M2B—Congested Areas: Investigate Urban Traffic Control

Urban Traffic Control

Urban Traffic Control, or Urban Traffic Management Control (UTMC), is a means of controlling traffic operation within a set area to achieve a variety of goals. A UTMC system can take information from a number live data sources to manage a traffic network to operate as efficiently overall as possible, to prioritise key route performance or to optimise things such as air quality and urban car parking.

Urban Traffic Control requires a number of devices to control traffic and these typically consist Variable Message Signs (VMS) and traffic signals. As Elgin currently has a limited number of junctions and no VMS's, any future UTMC system would need to operate in conjunction with a number of other infrastructure.

A number of the junction improvement options included within the Elgin Transport Strategy have been developed to include signal control at key junctions around the city centre. A UTMC system could therefore be used to control the signal timings of many, if not all, of these junctions taking data from live monitoring stations recording data on traffic, to better control the traffic network that currently uses mostly priority control.

The system could also be used in conjunction with the speed limit review option, potentially only operating at required times, and also car park occupancy monitors, using VMS's to guide vehicles to under utilised car parks.

Additionally, whilst Elgin does not suffer from a particular air quality issues at present, emission concentration monitors could also be used to ensure the traffic network operates as efficiently as possible in terms of air quality.

M3D - Main Road entry points into Elgin: investigate sites for park and change with direct access to active travel corridors into town via key destinations.

Park and Ride sites are relatively common at the entry points to many cities, facilitating the parking of a vehicle and change of transport to access the city centre and its surrounds, typically by bus or tram. The main purpose of these sites is to reduce the number of vehicles entering and exiting a congested urban environment, as public transport vehicles can accommodate a far greater number of travels in a comparative road space to a private vehicle.

There are currently no Park and Ride sites in or around Elgin and discussions with TMC officers concluded that Elgin is likely too small an urban area to generate enough patronage to facilitate the provision of park and ride via public transport only sites.

There is considered to be merit in the introduction of these kind of sites however, but rather than design them to only accommodate car parking and then bus interchange, these sites should accommodate change to a range of modes, particularly cycling, walking and demand responsive public transport.

Similar types of initiatives have previously been successfully promoted through school transport plans and the idea of 'park and stride'. This involves parents parking a distance from their child's school and walking with them for the remainder of the journey. Often a designated parking areas is not provided however. There are a range of benefits to this including:

- Reduced numbers of vehicles are schools, resulting in safety and air quality benefits
- Increased physical activity for both parent and child resulting in health benefits

Park and change sites shown be located on the main entry points to Elgin that ready, or will in future, have access to high quality walking and cycling routes as well as bus routes, or at least the potential to be accessed by demand responsive travel. Suggested locations include the A941 north of Elgin and A96 east of Elgin.

Site should be developed to include cycle parking or potentially the provision of easy cycle hire.

M4B - Travel Planning—Expand TMC Travel Plan initiatives to other Elgin businesses

Business Engagement – A targeted campaign to engage with the Elgin business community through workshops, seminars and 1-1 engagement with the aim of promoting the benefits of active / sustainable travel initiatives and smarter working initiatives.

This engagement can be very effective in maximising exposure to measures that can have a significant positive impact on mode share, particularly for organisations that perhaps aren't aware of the benefits to them financially, environmentally and operationally. While there is a cost associated with this, in terms of commissioning a consultant to undertake business engagement in Elgin, the potential benefits are significant. Furthermore, when compared with the potential costs and benefits associated with the implementation of hard infrastructure measures, then this option can represent good value for money.

Following initial engagement, it is recommended that support is provided to businesses in terms of drafting action plans which take cognisance of the content of the initial presentations and discussions with each organisation's IT, HR, facilities, senior management etc.

B.3 Long Term Core Package

The Long Term Core Package (2030) includes the following list of options:

Without A96 Bypass:

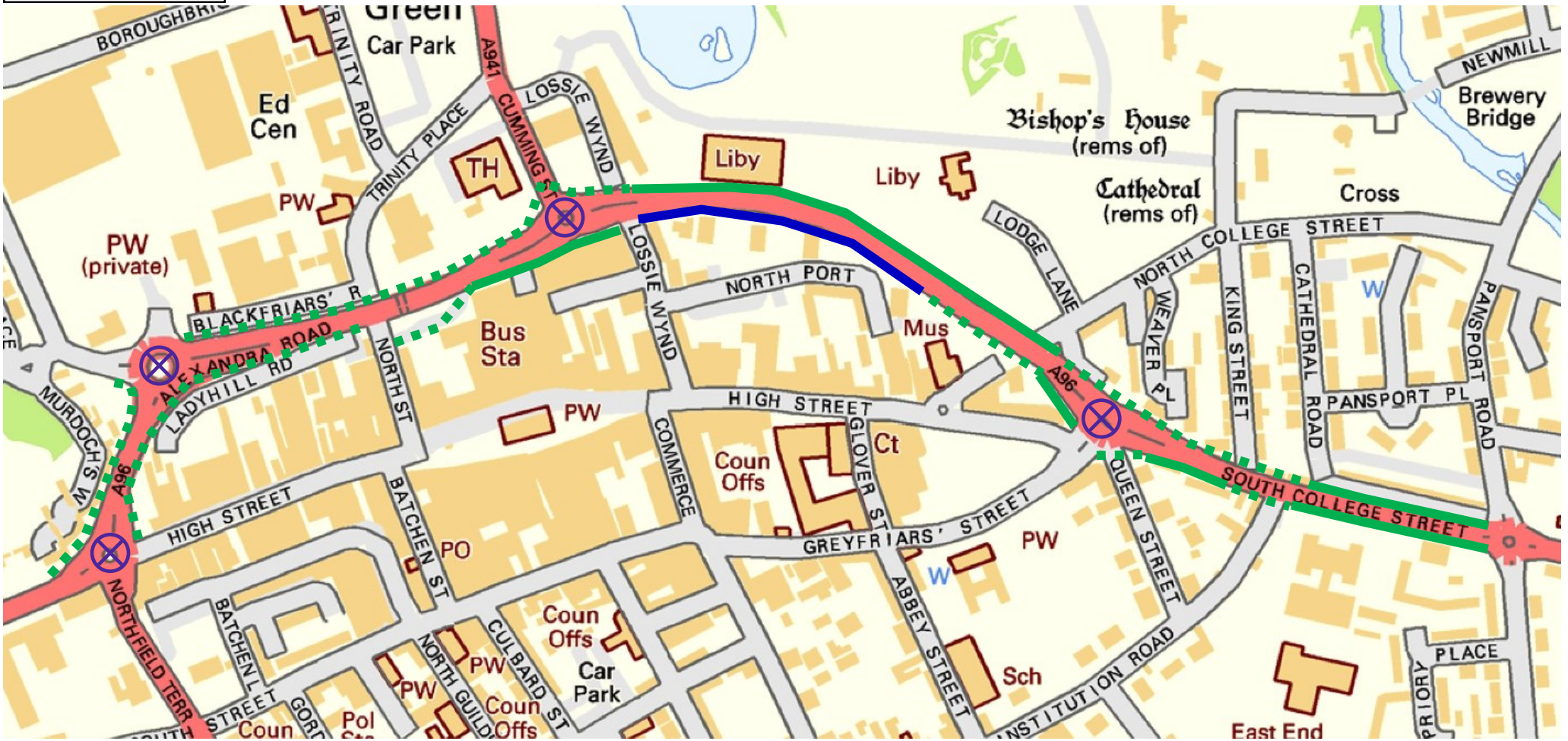
- I2Fa - A96 between Northfield Terrace & Pansport Roundabout : remove barriers to pedestrian movements across A96 (Partial Streetscape Treatment)
- I3B - A96 between Northfield Terrace & North Street: replace existing roundabout junctions with signals - controlled pedestrian provision
- I3C - A96 / Maisondieu Road: improve performance / replace
- M3B - Bus station: redesign / improve operation (second phase)

With A96 Bypass:

- I2E - South Street - pedestrianise between Commerce & Batchen Street
- M3B - Bus station: redesign / improve operation (finalise)

I2F—A96 Streetscape and Pedestrian Improvements Northfield Terrace to Pansport Roundabout

Existing Situation



Pedestrian Provision

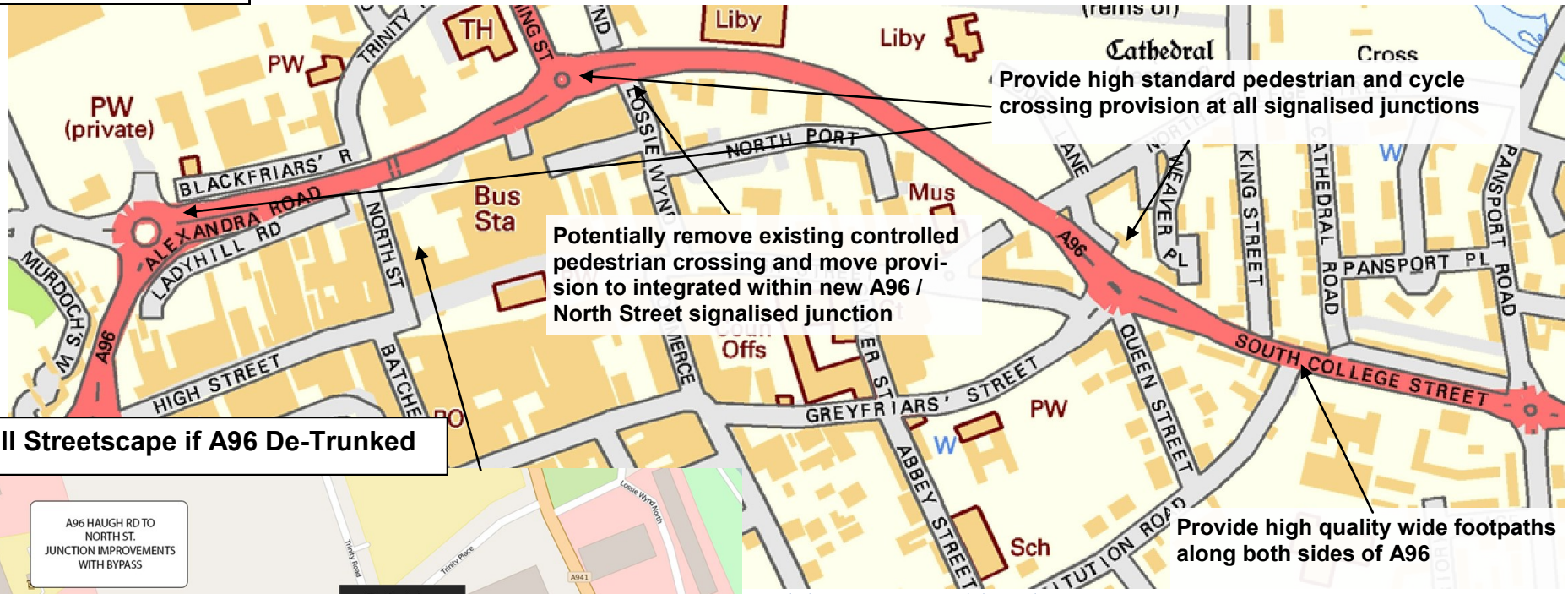
- Path with no Guardrail
- Path with Guardrail
- No Path

Junction arrangements

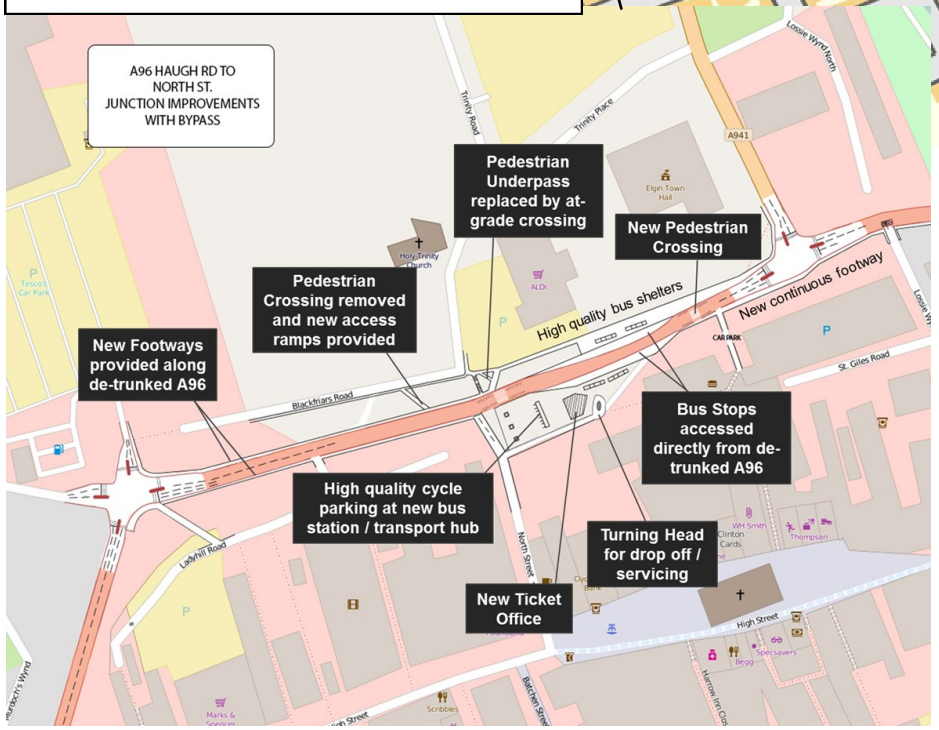
- Roundabouts junctions—unfriendly to pedestrian and cycle activity. Acts as barrier to non-vehicular movement

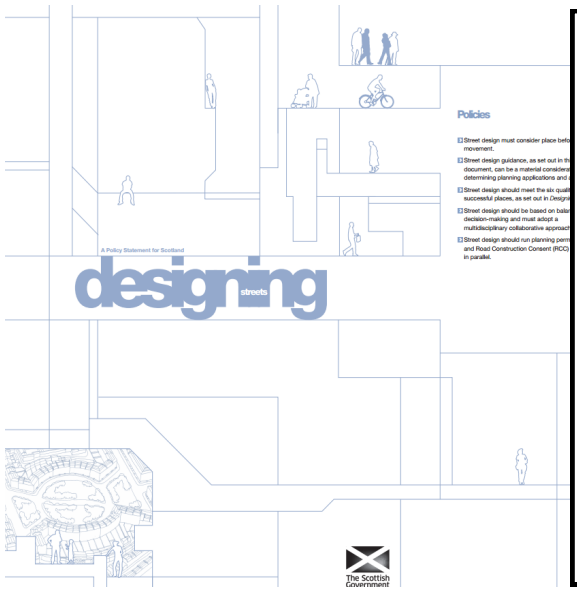
I2F—A96 Streetscape and Pedestrian Improvements Northfield Terrace to Pansport Roundabout

Potential Changes



Full Streetscape if A96 De-Trunked





Treatment applied will depend on whether A96 is de-trunked or not.

Without de-trunking focus should be on improving pedestrian / cycle crossing provision and slowing vehicles.

With de-trunking focus should be on enhancing the pedestrian experience with low vehicle speeds and level crossing. Should be integrated with bus station redesign sensitively.

Use should be made of Designing Streets

I3B – A96 between Northfield Terrace & North Street – replace existing roundabout junctions with signals – controlled pedestrian provision

Considerations:

- Trunk road infrastructure
- Upgrade from roundabouts to signals
- Provides improved pedestrian and cycle facilities
- Signal timings have greater flexibility to accommodate peak flows and fluctuations

Considerations:

- Re-design of North Street and Alexandra road junctions
- Indicative map layout shows potential improvements without bypass.

I3C – A96 /Maisondieu Road – improve performance / replace

Considerations:

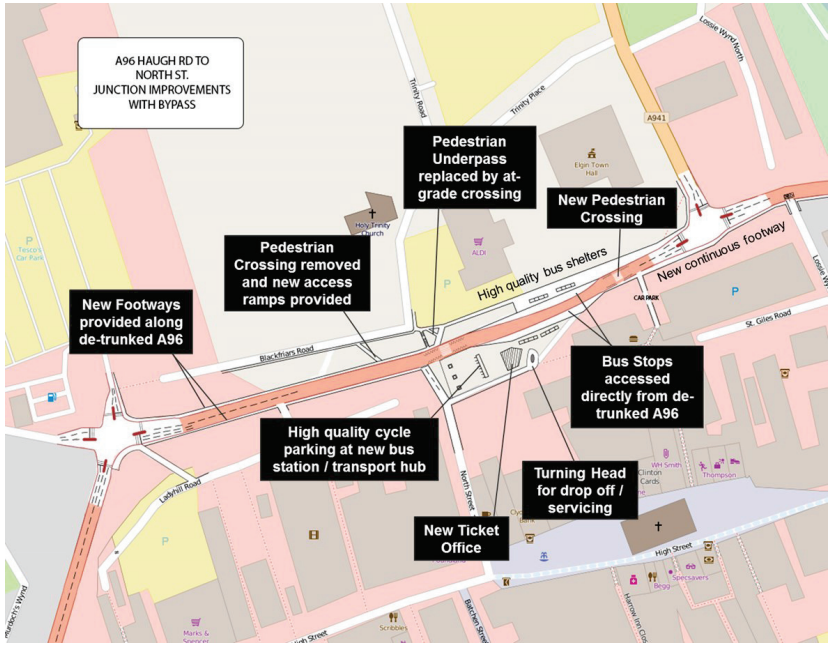
- Trunk road infrastructure
- Upgrade from roundabouts to signals
- Provides improved pedestrian and cycle facilities
- Signal timings have greater flexibility to accommodate peak flows and fluctuations

M3B - Elgin / Moray: Bus station - redesign / improve operation

The Elgin Bus Station is currently located on the south side of the A96. Buses access it exclusively from the A96, often requiring a turning movement at either, or both, the A96 / Northfield Terrace roundabout and A96 / North Street roundabout.

Not only is the manoeuvring of bus services in and out of the bus station currently considered difficult and subject to delay at the moment, but the Transport Strategy for Elgin proposes replacement of the A96 / Northfield Terrace and A96 / North Street roundabout junctions with signal controlled junctions. The option for bus services to turn at these junctions will therefore likely no longer be an option as a result.

A survey of bus passengers has highlighted a perception that the layout of the bus station is not conducive to a high quality passenger experience and that there is segregation felt between the bus station and the north side of the A96.

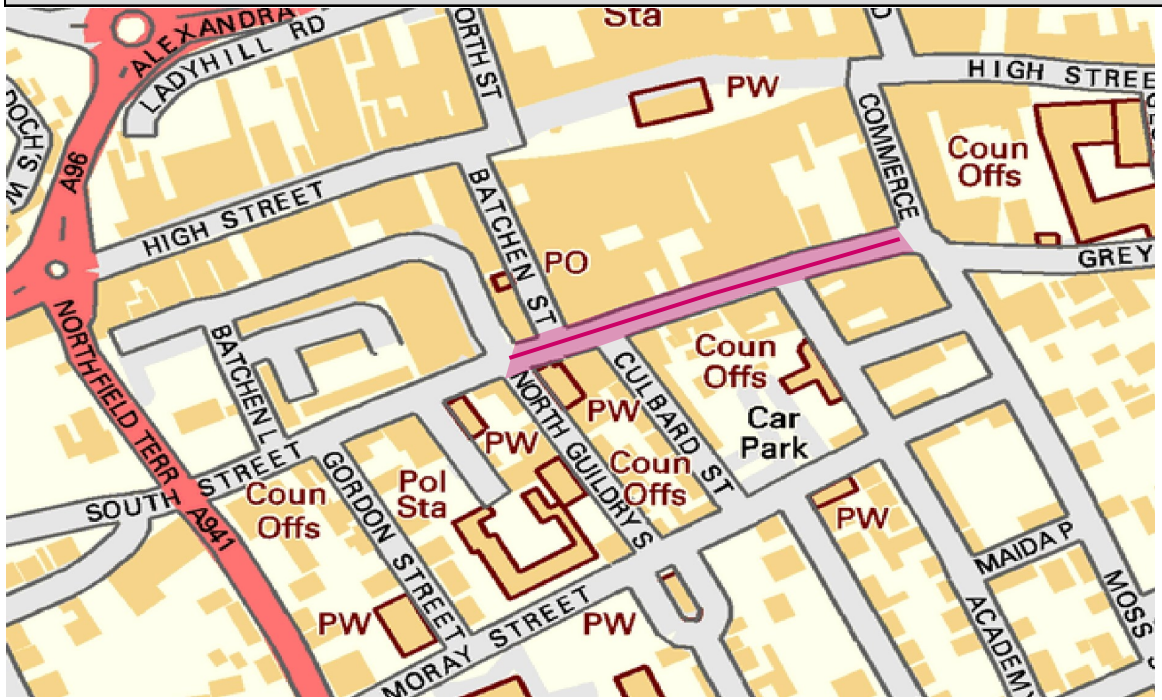


The redesign of the bus station should be undertaken giving due consideration to other bus station redesigns that have been successfully implemented. Key considerations include:

- Creating a bright and welcoming environment through use of appropriate light and materials
- Adequate provision of bus service information, likely incorporating use of real time passenger information
- A layout that gives due consideration of all users needs rather than only the manoeuvring of vehicles, via accessible to pedestrian movements from various entry points and cycle parking infrastructure.

The redesign of the bus access arrangements, and manoeuvring area, will need to take due cognisance of traffic levels on the A96 past the bus station accesses at various stages of the strategy. For example, should the A96 be de-trunked, the bus station layout may vary, likely requiring increased accessibility to the north to take advantage of a more streetscaped environment provided by option I2Fb

I2E - South Street - pedestrianise between Commerce Street and Batchen Street



Benefits/Considerations:

- Pedestrianisation would greatly increase the walkability of Elgin town centre which in turn increase personal health and well-being.

- Promoting this retail based street as primarily a pedestrian space will reinvigorate the area in a similar way to the pedestrianised are of High Street.

- Continual active frontage along South St coupled with a widened pavement space will allow for opportunities in outdoor café/dining experiences.

- When altering the surface material and adding street furniture key considerations would include adequate drainage systems, utilities access, planning locations and contextually sensitive material usage. Additionally surface would need to accommodate vehicles to maintain access for deliveries, disabled parking and private car parking access.

- Good quality lighting to sure that pedestrians utilising the space feel that they are in a safe environment.

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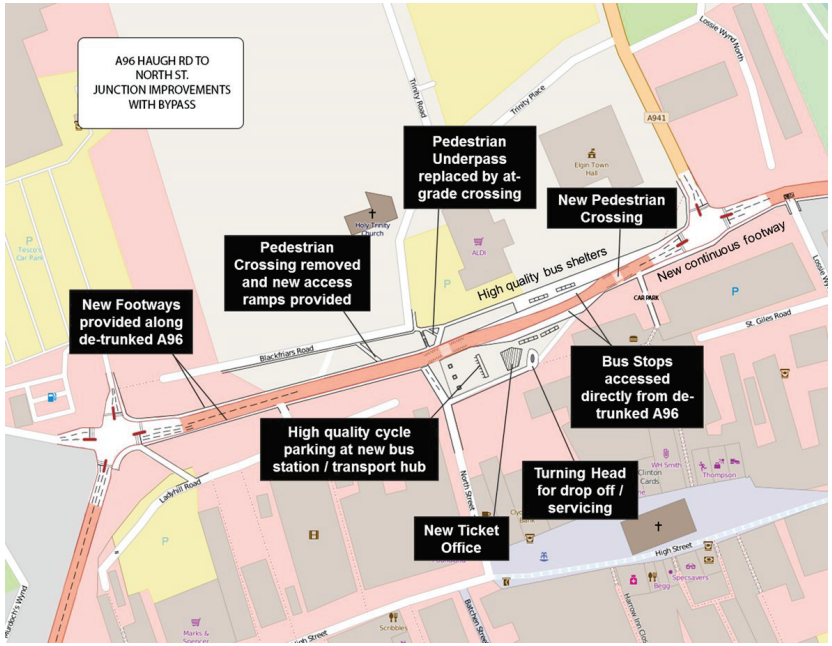

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