3. Proposed Routes

3.1 Introduction

Six routes were identified with Kemnay as the origin for each route and are shown in Figure 3.1. The identification of these routes was based on the desktop study outlined in Chapter 1. Three of the routes connect with Kintore with the other three connecting to Inverurie/Port Elphinstone. The starting point of Routes 1-3 in Kemnay was established as the point on the B993 where there is a speed limit change. This is shown in both Figure 2.5 and Figure 3.1. The endpoints in Kintore and Inverurie were established as points where the routes became urbanised, typically on the fringes of the settlements. The purpose of the study is to propose and assess routes from Kemnay to Kintore and Inverurie and it is not a requirement to establish routes through the settlements. In general, it was observed that the land outwith the settlements was rural and consists of farmland and woodland with isolated housing. Each of the proposed routes is discussed further below.

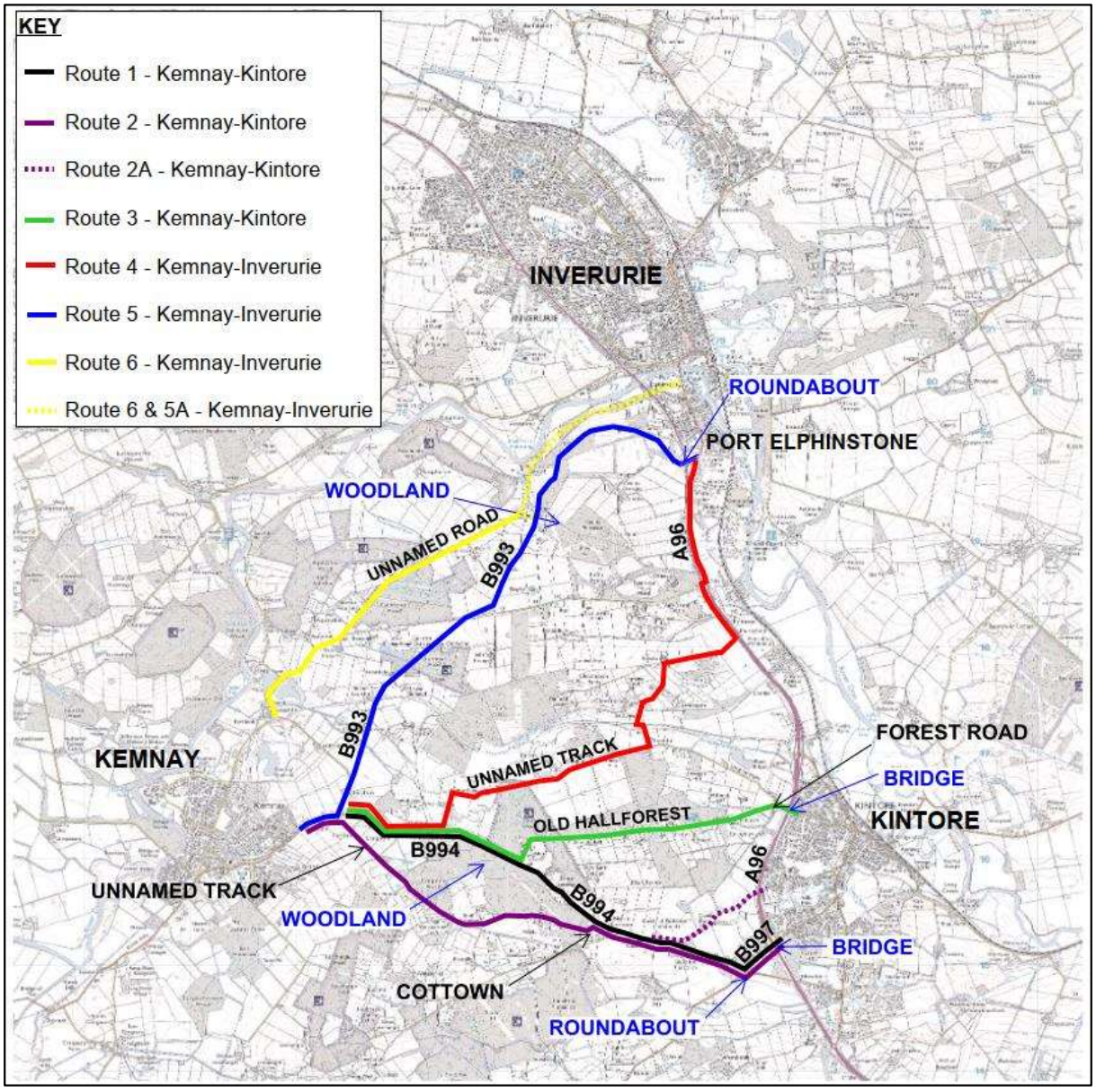


Figure 3.1 - Overview of the proposed routes from Kemnay to Kintore or Inverurie

3.2 Route 1 – Kemnay to Kintore via the B994

Route 1 is from Kemnay to Kintore following the B993 and B994 with the end point being on the B977, just before the Gauchhill Road/ Hallforest Avenue roundabout. It is approximately 5.1km in length. This would be the main route that motorists would use to travel between the two villages. The main constraints identified along this route were the prominent woodland area on the southern edge of the B994, the B994/ B977 roundabout and the Gauchhill Road/ B977 road bridge over the A96(T).

3.3 Route 2 and 2A – Kemnay to Kintore via B994 and Unnamed Track

Route 2 is from Kemnay to Kintore following an unnamed track that runs to the south of and parallel to the B994. The route is approximately 5.3km in length. It was observed that a significant section of this route is composed of an unbound surface that would likely be used for access to individual housing and the adjacent farmland. Woodland areas were also observed on the northern edge of the route. This route could be considered a less trafficked and more attractive alternative to Route 1 with both being of similar length. It bypasses much of the B994 before joining it at Cottown. It has potential to be used as a shared use road for all users as opposed to developing a segregated shared use path adjacent to it. The main constraints anticipated with this route were land ownership of the street, the woodland area, and the maintenance upkeep. Given that it is not a main route between Kemnay and Kintore and landownership is unknown, it is possible that regular maintenance of vegetation is not performed.

An alternative route into Kintore is presented as Route 2A. This alternative would divert users from the B994 and utilises an existing core path that passes under the A96 and connects with Kintore north of where Route 2 ends.

3.4 Route 3 – Kemnay to Kintore via Old Hallforest

Route 3 is from Kemnay to Kintore via the B994 and Old Hallforest. The route is approximately 5.0km in length. The end point for this route differs from Route 1 and Route 2 as it is located at the centre of the western edge of Kintore on Forest Road east of the bridge over the A96(T). This route is similar in some respects to Route 2 as it is comprised of the B994 and a less trafficked street. The entirety of this route is surfaced, however. The main constraints anticipated with this route are the woodland areas on the B944 and Old Hallforest, housing on Old Hallforest and the bridge over the A96(T).

3.5 Route 4 – Kemnay to Inverurie via A96

Route 4 is from Kemnay to Inverurie via the B994, unnamed road and the A96(T). The route is approximately 7.6km in length. Most of this route is composed of an unnamed road with a significant segment utilising the existing shared use path along the A96 which was previously described in Section 2.4. The end point is on Elphinstone Road adjacent to Pinewood House accommodation. Parts of the unnamed road are unsurfaced suggesting that it is not a heavily trafficked route. The main anticipated constraints are sections of woodland along the route and the landownership of the road, particularly the unmade section. An additional constraint would be crossing the A96(T).

3.6 Route 5 and 5A – Kemnay to Inverurie via B993

Route 5 is from Kemnay to Inverurie and is an entirely separate route compared to Route 4. The route is approximately 6.2km in length. This route follows the B993 which is the most direct route from Kemnay to Inverurie and is likely to be more heavily trafficked compared to the unnamed road in Route 4. The end point for this route is the same as Route 4. The main constraints observed with this route were large sections of woodland adjacent to the B993 and crossing the A96(T) at Inverurie Roundabout.

An alternative route into Inverurie is presented as Route 5A. This alternative would divert users from the B993 onto a proposed core path that passes through a woodland area and joins the B993/Elphinstone Road north of where Route 5 ends.

3.7 Route 6 – Kemnay to Inverurie via Unnamed Road

Route 6 utilises an unnamed road that is located furthest west of all the routes. It starts on Aquithie Road and follows the unnamed road up to a point where it then follows the same route described for Route 5A.

4. Site Observations and Constraints

4.1 Introduction

As discussed in Section 1.2 that after consultation with the client and in accordance with government guidelines it was determined that it would not be possible to perform on-site surveys for each route due to the impact of Covid-19. As a result, it was agreed that a desktop survey would be acceptable. Consequently, current photos could not be taken and included in the report to highlight the physical constraints and features. The consequences of this are described in detail in the Project Risk Register which can be found in Appendix E. From here on in the use of the term “site surveys” refers to the desktop survey that was carried out.

The purpose of the site surveys was to record the main constraints and provide a description of the physical features of each route. This information was initially recorded on plans which are given in Appendix A and the information was then compiled in tables which are given in this chapter. A comparison of the opposing sides of the carriageway for each route was made to establish a recommended side for the new infrastructure. The established routes were then appraised as described in Chapter 6.

Most of the recorded constraints such as the number of junctions are quantifiable and their quantity is given. However, non-quantifiable constraints such as the presence and state of vegetation and trees were generalised to highlight what could be expected for each route. The presence of gullies is also simply stated rather than quantified and locations discussed in detail. The typical verge width for every section of each route was compiled to determine the average verge width. The average verge width was calculated by taking the average minimum and average maximum from this compilation to produce a single range for each verge side.

4.2 General Features

The routes share common features such as the rural location and type of land use adjacent to them. The following features are common for each route:

- The verges are generally bounded by farmland and woodland;
- The gradient profile is estimated to be within Sustrans guidance although it must be noted that no measurements were taken to support this and there may be localised areas where this is not adhered to;
- There is an absence of kerbing on the roads and this has been noted as a potential safety concern that has been considered further in Chapter 6;
- Vegetation is typically overgrown on the verges and occasionally there are trees;
- Access is required at various points throughout the routes, mainly to farmland and isolated houses;
- The average verge width indicates that some land is available to accommodate a segregated cycling route, but it would be necessary to acquire private land to ensure the full continuous width throughout;
- Most public utilities are utility poles, and gullies are located intermittently;
- Lighting columns are uncommon and are generally found close to the end of the routes near Kintore and Inverurie; and
- Traffic signs on verges are common.

4.3 Route 1 – Kemnay to Kintore via B994

The information gathered from the site survey for Route 1 is summarised in Table 4.1 along with a recommendation as to which side of the carriageway would be most suitable to accommodate the cycle path. This route predominantly follows the B994 then diverts to the B977 and ends in the south of Kintore after crossing the A96(T).

Table 4.1 - Summary of site survey for Route 1

	North Verge	South Verge
Junctions	11	2
Access Required	22	18
Average Verge Width	2-5m	2-4m
Public Utilities / Gullies	20 / Yes	26 / Yes
Lighting Columns	7	13
Traffic Signs	17	23
Vegetation and Trees	Generally Overgrown	Generally Overgrown
Recommended Side	No	Yes

Typically, there is no significant variation between the constraints on either side apart from the number of junctions that must be traversed which is considerably fewer on the south verge. This was the main factor in choosing the south verge as the recommended side. With fewer junctions to cross the south side would be a safer choice while also enabling a more continuous route with fewer delays. There may be a greater expense incurred with relocating a higher number of constraints such as lighting columns on the south verge.

The main constraints on the recommended side of Route 1 are shown in Figure 4.1. Users of the route would need to traverse the junction of the B994/ B977 which is highlighted as the roundabout in Figure 4.1. Given that the south side of the B994 is the recommended side to align the route, it would be necessary for users to cross the B977 south of the junction and the B994 east of the junction and continue on the south side of the B977 to Kintore. The speed limit on approach to the junction from both the B977 and B994 is 40mph and a further assessment would be required to determine the risk to active travel users crossing at this point and to determine an appropriate crossing provision.

The bridge highlighted in Figure 4.1 is a potential barrier that could affect the continuity of the proposed active travel route. There is limited space on the bridge to accommodate an active travel provision and it is likely that alterations would be necessary to provide a 3m path across it. A further assessment would be required to determine the standard of route feasible in its existing state or to explore the feasibility of altering the existing bridge layout to accommodate a 3m active travel route.

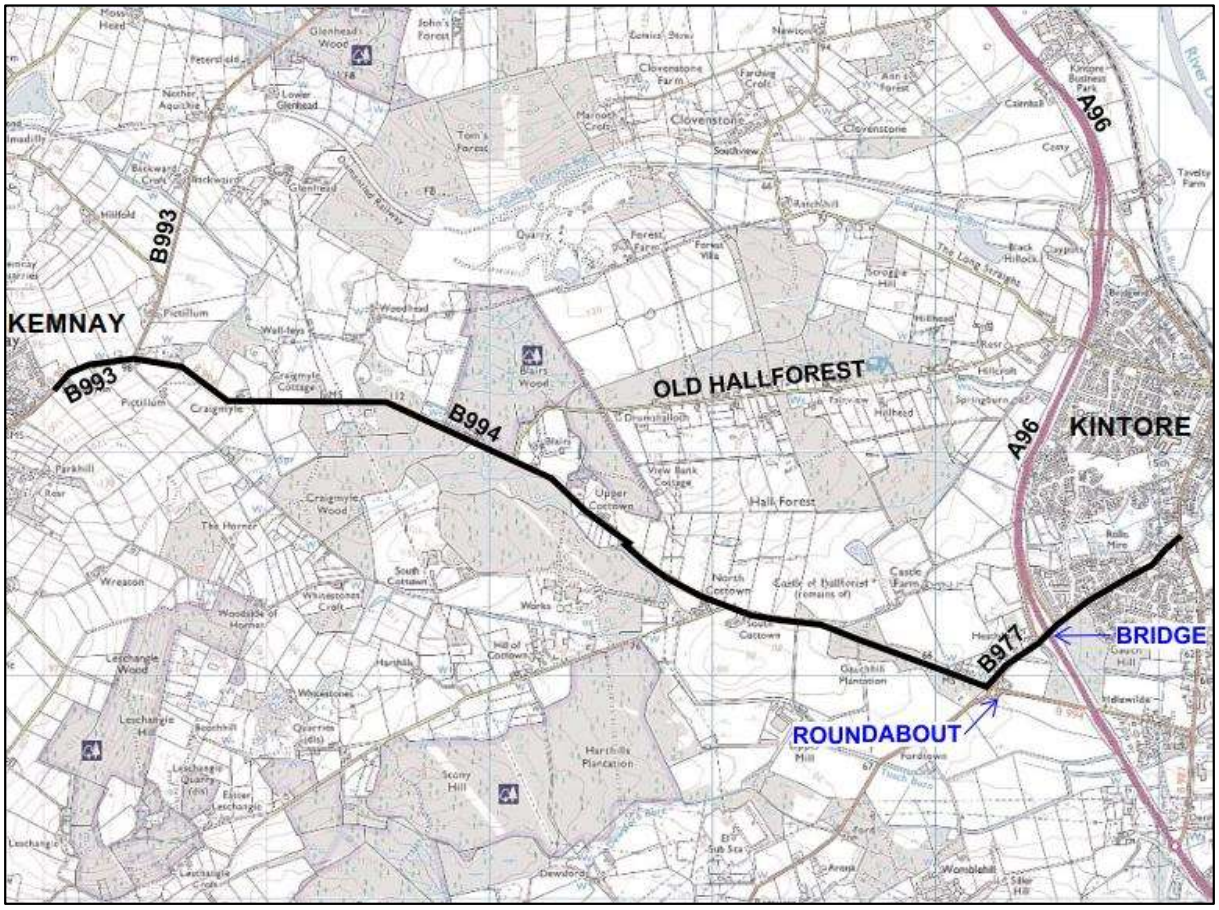


Figure 4.1 - The main technical constraints for Route 1 on the established side

4.4 Route 2 and 2A – Kemnay to Kintore via Unnamed Track

The information gathered from the site survey for Route 2 is summarised in Table 4.2 along with a recommendation as to which side of the carriageway would be most suitable to accommodate the cycle path. In contrast to Route 1, this route diverts from the B993 in Kemnay onto an unnamed track south of the B994. It then joins the B994 and continues to Kintore as Route 1 does. Route 2 could be considered a more scenic and potentially more attractive route compared to Route 1 and this is discussed in greater detail in Chapter 6.

The unnamed track is generally made from unbound material with loose chippings and potholes evident. It is only wide enough to accommodate one vehicle and there are no passing places. The track in its current condition would be largely unsuitable for cycling. There is potential to develop either a segregated cycle route on the south verge or a shared use track that improves on the existing track making it suitable for cycling.

Table 4.2 - Summary of site survey for Route 2

	North Verge	South Verge
Junctions	5	2
Access Required	24	18
Average Verge Width	2-5m	1-4m
Public Utilities/Gullies	22 / Yes	16 / Yes
Lighting Columns	7	12
Traffic Signs	12	15
Vegetation and Trees	Generally Overgrown	Generally Overgrown
Recommended Side	No	Yes

Typically, there is no significant variation between the constraints on either side of the route though the south verge has fewer junctions and points of access to traverse. These were the main factors in choosing the south verge as

the recommended side. With fewer junctions to cross the south side would be a safer choice while also enabling a more continuous route with fewer delays.

The main technical constraints on Route 2 for the recommended side are shown in Figure 4.2. The bridge and roundabout located at the eastern end of the route are the same as those discussed for Route 1. The gradient profile generally appears to be gentle but there is a short section that is notably steep where the B993 joins the unnamed track. A further assessment by site visit could be done to establish if the gradient at this location is within the range recommended by Sustrans.

An alternative route could be taken into Kintore that connects with a core path that forms the basic framework for the Aberdeenshire path network. This is highlighted in Figure 4.2. The core path's location was obtained from a core paths plan for Kintore and Fintray[2] and can be found in Appendix F. This route would take users into Kintore further to the north from the B977 route. This alternative route allows active travel users to avoid the roundabout and bridge on the B977, thus eliminating the need to either traverse a roundabout, or to carry out additional construction work to reconfigure this roundabout and bridge to accommodate an active travel provision. Users would then be required to cross the B994 to divert to the core path. The speed limit on the B994 at this location is 60mph and a further assessment would be required to determine the risk to active travel users crossing at this point and to determine a suitable crossing provision.

The core path appears mainly to be used to access a small number of properties. The condition of the core path could not be accurately assessed as it was not available on Google Streetview and was assessed using Google Maps aerial view. The route is mainly bounded by farmland with some trees at the southern end. A small number of properties are located together near the midpoint of the route on both sides of the core path. The core path appears to be an access road and is approximately 3m wide. Rollomire Burn passes under the path and could prove to be a barrier in developing the route. The route leads into Kintore via a pedestrian underpass under the A96 and this may be a barrier to development depending on the width of the underpass. It is unclear who owns the land adjacent to the core path and obtaining it may be another barrier to its development.

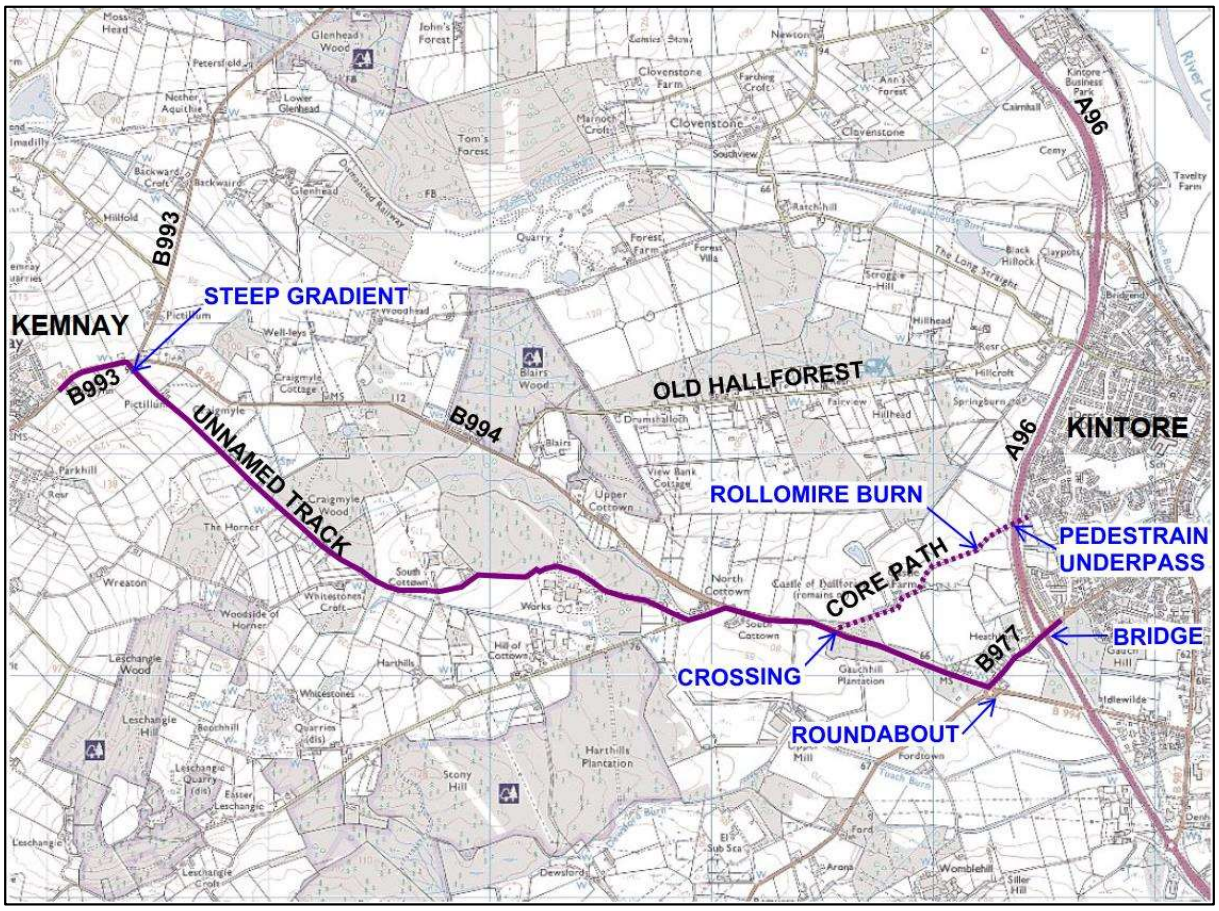


Figure 4.2 - The main technical constraints for Route 2 and 2A on the established side

[2] https://www.aberdeenshire.gov.uk/media/15226/kintore-fintray-cpp.pdf

4.5 Route 3 – Kemnay to Kintore via Old Hallforest

The information gathered from the site survey for Route 3 is summarised in Table 4.3 along with a recommendation as to which side of the carriageway would be most suitable to accommodate the cycle path. Like Route 1 the route follows the B994 but diverts to Old Hallforest and continues towards the west of Kintore via Forest Road which crosses the A96(T). Anecdotal evidence suggests that this route is currently well used by cyclists and cycle counts could be used to verify this.

Table 4.3 - Summary of site survey for Route 3

	North Verge	South Verge
Junctions	7	1
Access Required	25	40
Average Verge Width	1-4m	1-3m
Public Utilities/Gullies	25	34 / Yes
Lighting Columns	0	0
Traffic Signs	18	18
Vegetation and Trees	Generally Overgrown	Some
Recommended Side	See supporting text	See supporting text

The recommendation for which verge side to develop the route on is unconventional compared to Route 1 and Route 2. Groups of houses on Old Hallforest make it unfeasible for the route to be located entirely on one side of the carriageway. It was decided that the route would start on the north verge of the B993/ B994 and turn to Old Hallforest and continue the same side of the carriageway. This would avoid houses and limited space on the south verge and prevent the need to cross the B994 to access Old Hallforest.

The route would continue the north verge until another group of houses on both carriageway sides would hinder its continuation. It is recommended that at this point the route would briefly become a quiet lane until the houses are passed. This would involve a reduced speed limit past the houses, and measures to enforce this as well as to create an environment that is conducive to walking and cycling. An alternative to this is the introduction of one-way working that may allow a continuous segregated cycle route. After this, the route would continue along the south verge to Kintore as there are fewer constraints there compared to the north verge and it would avoid the need to cross Forest Road. The points where the quiet lane would start and end are shown in Figure 4.3.

The main technical constraints on Route 3 for the established side are shown in Figure 4.3. The highlighted bridge crosses the A96(T) and could affect the continuity of the proposed segregated cycle route. The highlighted junction has small radii thereby giving a relatively large junction to cross.

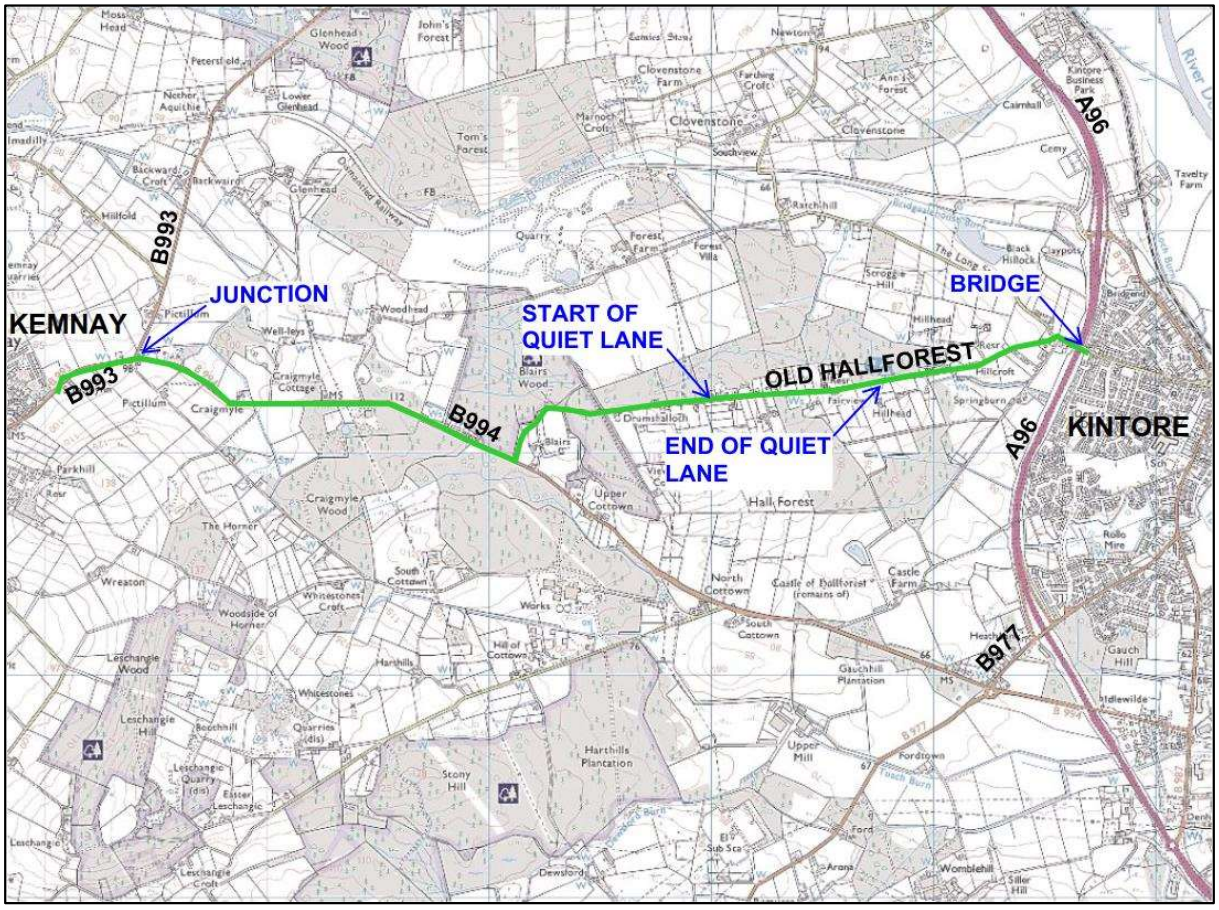


Figure 4.3 - The main technical constraints for Route 3 on the recommended side

4.6 Route 4 – Kemnay to Inverurie via A96

The information gathered from the site survey for Route 4 is summarised in Table 4.4 along with a recommendation as to which side of the carriageway would be most suitable to accommodate the cycle path. It was intended that this route utilises the existing cycle infrastructure located along the east side of the A96(T). The route follows the B994 initially before diverting onto an unnamed road which forms most of the route. The route then continues alongside the A96(T) before diverting to the south of Inverurie via Mill Road.

Approximately half of the unnamed track is made from unbound material with loose chippings and potholes evident. The remaining half is of a better standard and improves after the junction with Forest Road which is highlighted in Figure 4.4. The unnamed track is only wide enough to accommodate one vehicle and there are no passing places. This route is not believed to be highly trafficked given its condition, the sparsity of houses along it and the fact that the B993 is of a higher standard.

Table 4.4 - Summary of site survey for Route 4

	North Verge	South Verge
Junctions	9	9
Access Required	31	31
Average Verge Width	2-3m	1-3m
Public Utilities/Gullies	18 / Yes	26 / Yes
Lighting Columns	6	32
Traffic Signs	22	19
Vegetation and Trees	Some	Some
Recommended Side	No	Yes

Typically, there is no significant variation between the constraints on either verge side, but it is recommended that the route runs continuously on the south verge of the B994 and unnamed road. This is due to the quarry that is situated on the north verge and its location is shown in Figure 4.4. There is a lack of space to accommodate the cycle route at that location and proximity to the quarry could be hazardous. The route would then continue the existing shared use path on the west side of the A96(T) to Thainstone Roundabout where it would then be necessary to cross the A96(T) to the existing shared use path on the east side. The route would then divert from the A96(T) to the east side of Mill Road and end on Elphinstone Road via a footway.

The main technical constraints on Route 4 for the recommended side are shown in Figure 4.4. The highlighted bridge crosses a quarry access road and due to limitations with space it could affect the continuity of the proposed segregated cycle route. A one-way system is currently implemented to cross this bridge with priority given to northbound traffic.

The route would require users to cross a carriageway at two different locations. Users would be required to cross the B994 to the unnamed track at the western end of the route. The speed limit on the B994 at this location is 60mph and a further assessment would be required to determine the risk to active travel users crossing at this point and to determine an appropriate crossing provision.

The route would also require users to cross over Camiestone Road and the A96 at Thainstone Roundabout. The volume of traffic on Carniestone Road is unknown but it is apparent that the road is used to access an industrial area adjacent to the A96. The route then follows an existing uncontrolled crossing point to cross over to the eastern side of the A96 in a two-stage crossing and utilise the existing shared use path there. Further assessment would be required to determine the risk to active travel users crossing both roads and to determine if crossings are appropriate at those locations.

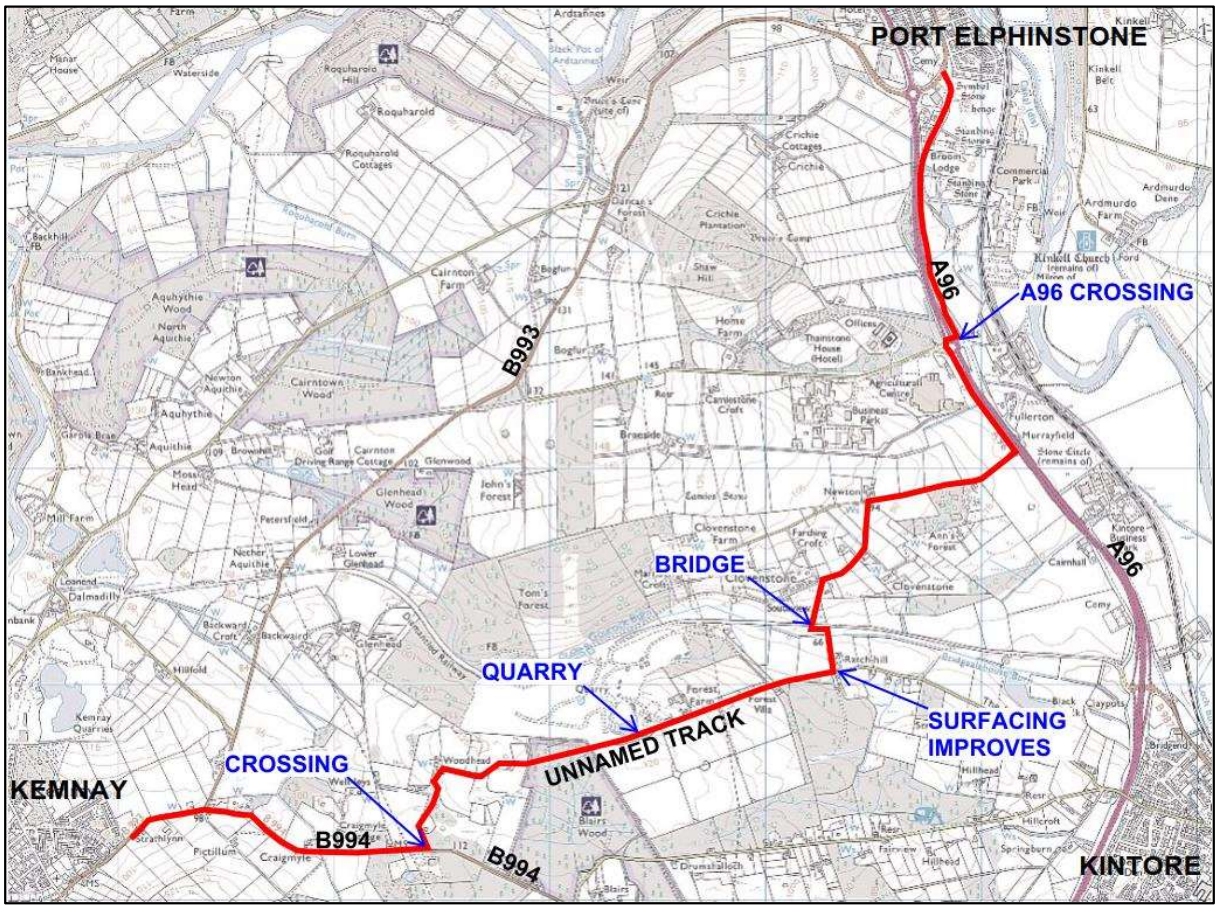


Figure 4.4 - The main technical constraints for Route 4 on the established side

The Scottish government is committed to dualling the A96 between Inverness and Aberdeen. The eastern section of the A96 Dualling Programme includes a new 36km dual carriageway between east of Huntly and Aberdeen that would encompass the proposed crossing point on the A96 discussed previously. A DMRB Stage 2 assessment has been completed and a preferred option was selected in December 2020. A section of the preferred option is given in Figure 4.5 which highlights Thainstone Roundabout and a copy of the plan can be found in Appendix G[3]. The

[3] https://www.transport.gov.scot/media/48883/preferred-option-sheet-5-of-5-map.pdf

drawing indicates the preferred option alignment, the designed layouts for all junctions and alterations to side roads. The location and layout of road drainage basins/ ponds is indicative. These aspects will be subject to further design and development as the scheme progresses. Non-Motorised User (NMU) facilities will be incorporated into the scheme design as part of the DMRB Stage 3 Assessment. This option includes the removal of Thainstone Roundabout and redesign of the carriageway with slip roads providing access to Camiestone Road.

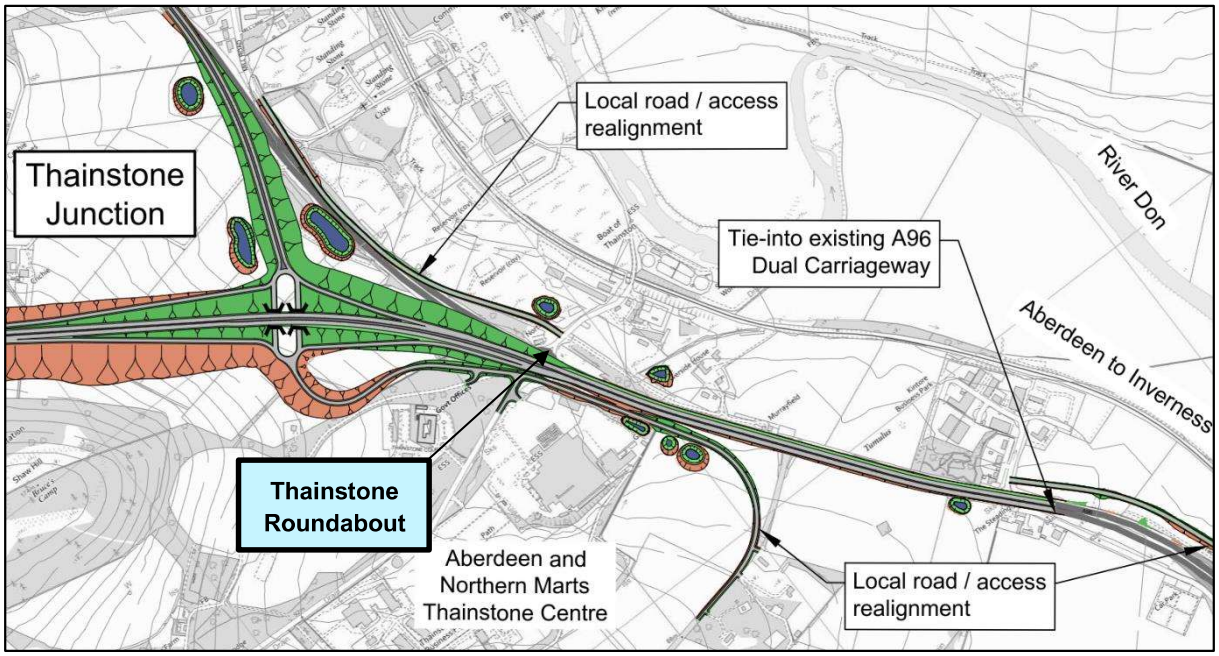


Figure 4.5 - Preferred option for A96 dualling at Thainstone Roundabout

Given the layout of the preferred option for dualling the A96, any crossing point at the existing Thainstone roundabout would be made redundant by these proposals, and any decision regarding costs incurred as part of this project to provide a suitable method of crossing the A96, should be considered with the dualling proposals in mind. At present, there is no published timeline for individual sections of the A96 dualling, although the Scottish Government has committed to completion of the A96 dualling between Inverness and Aberdeen by 2030[4]. A further assessment would be necessary to understand if a crossing would be feasible here or to establish the outcome for the provision for NMU's from the DMRB Stage 3 assessment.

4.7 Route 5 and 5A – Kemnay to Inverurie via the B993

The information gathered from the site survey for Route 5 is summarised in Table 4.5 along with a recommendation as to which side of the carriageway would be most suitable to accommodate the cycle path. This route follows the B993 from Kemnay and intersects the A96(T) at Inverurie Roundabout then ends on Elphinstone Road.

Table 4.5 - Summary of site survey for Route 5

	West Verge	East Verge
Junctions	7	10
Access Required	24	20
Average Verge Width	2-4m	2-3m
Public Utilities/Gullies	22 / Yes	21 / Yes
Lighting Columns	15	20
Traffic Signs	21	22
Vegetation and Trees	Generally Overgrown	Some
Recommended Side	No	Yes

[4] https://www.transport.gov.scot/media/33651/a96-dualling-faqs-march-2017.pdf

Typically, there is no significant variation between the constraints on either verge, but the east verge is recommended for developing the route. There is more space on the east side of the quarry road bridge to accommodate a cycle route and in general it appears more suitable.

The main technical constraints on Route 5 for the recommended side are shown in Figure 4.6. There are two bridges that could affect the continuity of the proposed segregated cycle route due to limitations with the space available on them to accommodate a 3m active travel route. One of these bridges crosses a burn and the other crosses a quarry access road.

If the route was situated on the south side of the B994 and continued along the eastern side of the B993 as recommended then it would be necessary for users to cross from the B994 to the B993. The speed limit here is 60mph and the traffic volume is unknown. The existing 30mph limit is approximately 365m west of this potential crossing point.

At the northern end of the route users would be required to cross the A96 south of Inverurie Roundabout from the B993 onto Elphinstone Road. There are no existing controlled or uncontrolled crossing points at the roundabout and the traffic volume is unknown although it could be presumed to be relatively high given that the A96 is a Trunk Road. Further assessment would be required to determine the risk to active travel users crossing the A96 and to determine if a crossing provision would be appropriate at this location.

An alternative route could be taken that utilises a proposed core path that runs parallel to the B993 and connects with the B993 north of the blue route and closer to Inverurie. This is highlighted as route 5A by the dashed yellow alignment in Figure 4.6.

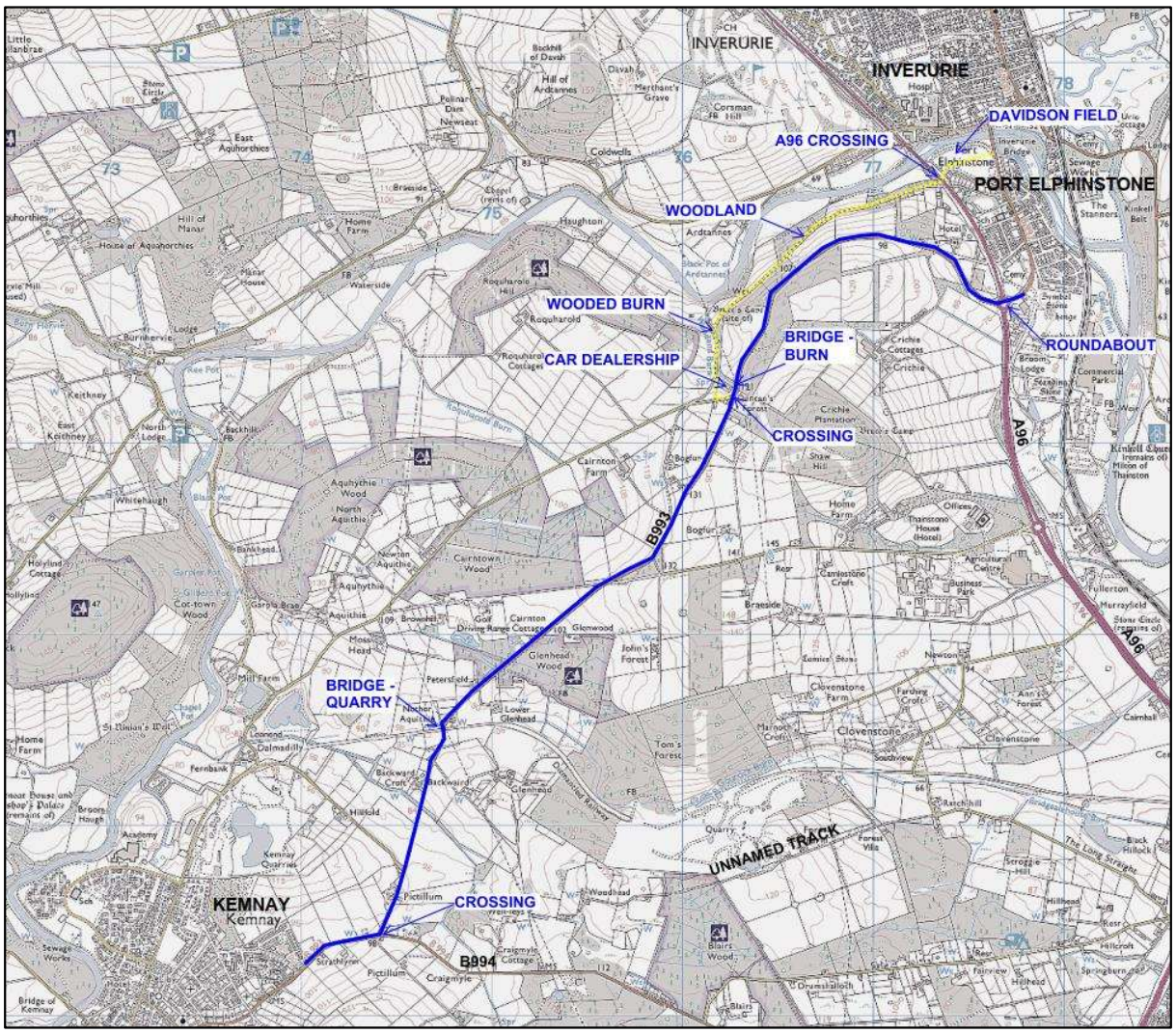


Figure 4.6 - The main technical constraints for Route 5 and 5A on the recommended side

The alignment of this route is within the Dandara proposal which is within OP5 of the proposed Local Development Plan 2020[5]. OP5 covers an area west of the A96 as shown in Figure 4.7. Davidson Field is within an area designated as P9 to protect the playing fields there. The route through Davidson Field in Figure 4.6 is indicative of a route that could be considered for further assessment. A condition of the proposed development is that cycling and pedestrian permeability is to be provided and a formal route provided linking to the existing networks in Inverurie and Port Elphinstone crossing the A96. It is understood that as of June 2021, the formal route location and the detail of the A96 crossing had not been confirmed by the developer, Significant areas of woodland within and adjoining the site should be retained and enhanced wherever possible.

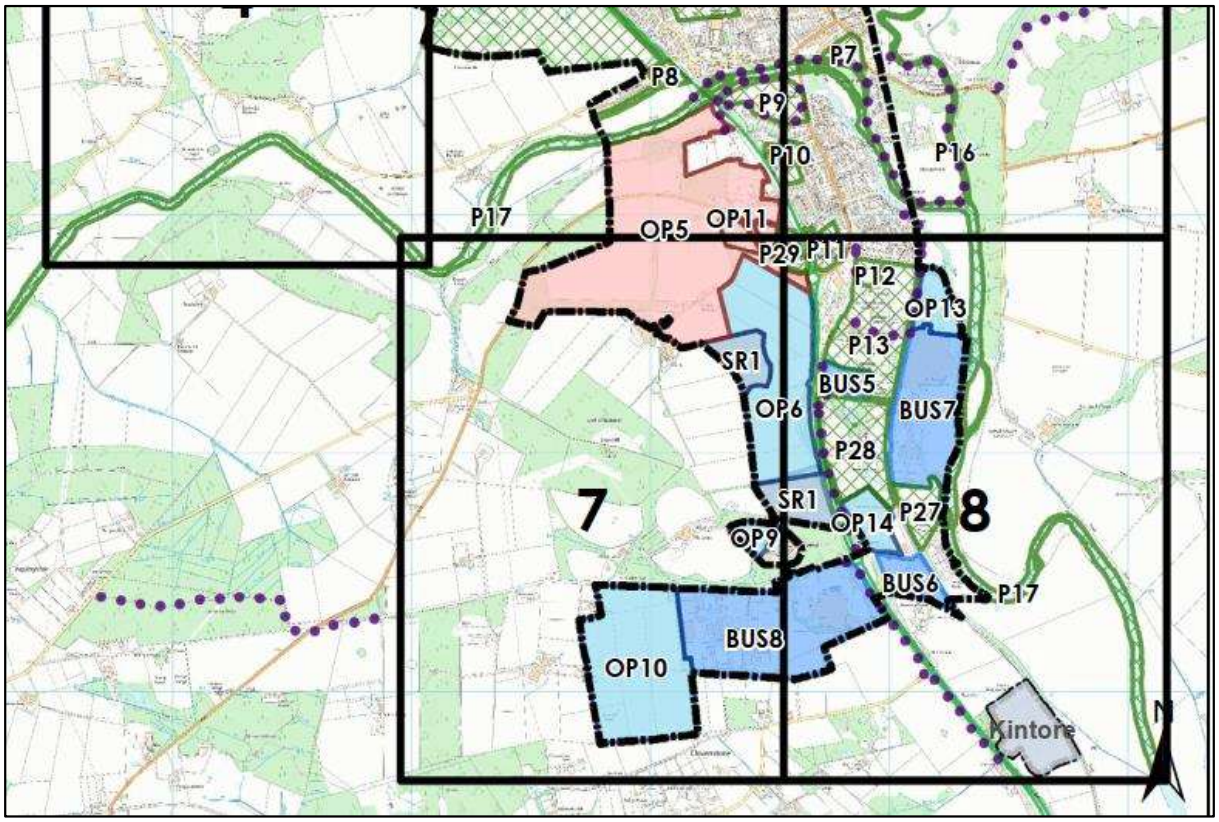


Figure 4.7 - Inverurie and Port Elphinstone Key Map

If the route was developed on the eastern side of the B993 as recommended, then users would be required to cross the B993 to divert along route 5A. The speed limit at this point is 60mph and a further assessment would be required to determine the risk to active travel users crossing here and to determine if a crossing would be appropriate. From here the route would continue along a short section where it may be preferable to develop a route on the north side that passes the car dealership so that conflict with houses on the south side is avoided. From here the route diverts north along an access road that is likely to be lightly trafficked where there are opportunities to develop a route on the adjacent land. The route crosses Wooded Burn and joins a proposed core path that appears to skirt the edge of a wooded area before passing under the A96 using the existing underpass and entering Davidson Field.

Figure 4.8 shows potential routes around Davidson Field. There is an existing core path around Davidson Field with the option to continue the track beside the river or divert to Riverside Park where both eventually join the B993/Elphinstone Road. There is anecdotal evidence that suggests a new underpass could be created but there are ongoing discussions with Roads Development and the developer about using the existing underpass. The progression of this development in terms of the cycling and pedestrian provision should be monitored. A plan showing the location of the previously discussed core paths can be found in Appendix F[6].

[5] appendix-7d-settlement-statements---garioch.pdf (aberdeenshire.gov.uk)
[6] https://www.aberdeenshire.gov.uk/media/15221/inverurie-cpp.pdf



Figure 4.8 - Potential routes through Davidson Field

4.8 Route 6 – Kemnay to Inverurie via unnamed road

The information gathered from the site survey for Route 6 is summarised in Table 4.6 with a recommendation as to which side of the carriageway would be most suitable to accommodate the cycle path. This route follows an unnamed road from Kemnay and joins a proposed core path through a woodland area within which developers intend to provide a path for pedestrians and cyclists. The route crosses Davidson Field and ends on the B993/Elphinstone Road.

Table 4.6 - Summary of site survey for Route 6

	West Verge	East Verge
Junctions	1	0
Access Required	14	8
Average Verge Width	1-2m	1-3m
Public Utilities/Gullies	Some utility poles	Several utility poles
Lighting Columns	0	0
Traffic Signs	1	2
Vegetation and Trees	Some woodland	Some woodland
Recommended Side	No	Yes

Typically, there is no significant variation between the constraints on either verge, but the east verge is recommended for developing the route as it would avoid private properties situated at the southern end of the route and potentially avoid trees in the woodland area. A disadvantage to developing a route on the eastern side is the number of telecoms poles that would need to be relocated.

The main technical constraints on Route 6 for the recommended side are shown in Figure 4.9. There are generally no insurmountable constraints to developing this route. Land would need to be acquired from farmland along most of the route and land ownership would need to be identified. The route utilises a section previously described for route 5A and it can be assumed that the development in the woodland area to the north of the route will include provision for walking and cycling.

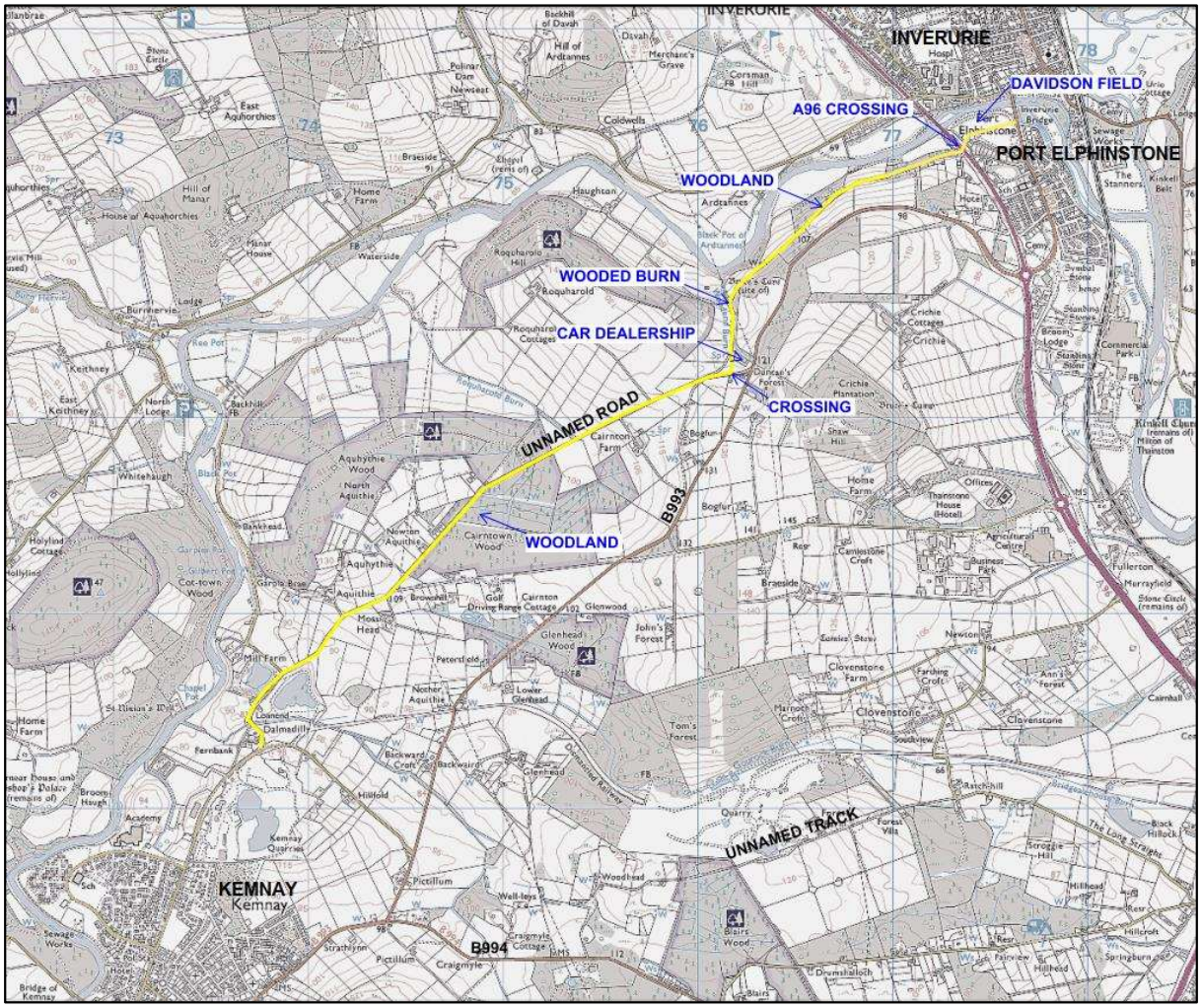


Figure 4.9 - The main technical constraints for Route 6 on the recommended side

4.9 Summary

This chapter has discussed the constraints for each route and provided a recommendation for which side of the carriageway the proposed active travel route should be located. This is summarised in Table 4.6.

Table 4.7 - Summary of established routes

Route	1	2	3	4	5	6
Recommended side	South	South	North-quiet lane-south	South	East	East