

A81 Milngavie – Bearsden Corridor Study



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Introduction

AECOM was commissioned by Strathclyde Partnership for Transport (SPT) and East Dunbartonshire Council (EDC) to update a Scottish Transport Appraisal Guidance (STAG) study undertaken in 2008. The previous study appraised the transport situation on the A81 within Bearsden and Milngavie; this led to the development of intervention options designed to improve the transport situation in the area. This study seeks to identify if the findings from the previous study are still valid through an update of the STAG 1 and STAG 2 appraisal. This study will support delivery of the Council's Local Transport Strategy (LTS) 2013-2017 and emerging Local Development Plan.

Study Area

East Dunbartonshire has a population of close to 110,000 people and trends suggest that the population is both ageing and declining. Located to the north of Glasgow, East Dunbartonshire is home to many commuter towns and villages with strong links to Glasgow. A higher proportion of residents within the study area work in professional or managerial professions compared with the rest of East Dunbartonshire and Glasgow. The study area has high and growing levels of car ownership (86.5% in 2011) and much of the study area is classified as having some of the lowest levels of deprivation in Scotland.

The area under consideration as part of this commission primarily focuses on the larger settlements of Bearsden and Milngavie, but also includes surrounding settlements. It considers trips made within its boundaries and trip attractors and trips made from the study area to trip attractors elsewhere such as Glasgow and Edinburgh.

Evidence Base and Consultation

The study included a comprehensive review of available evidence, including socio-economic and transport data. This sought to identify key trends in the study area, including comparison with the wider East Dunbartonshire and Glasgow area. Consultation formed an integral part of the study to review the evidence base, clarify current transport problems and opportunities as well as to consider the validity of the 2008 interventions suggested and offer alternative potential solutions to any issues raised. In November 2014, a workshop was held with key external stakeholders representing local communities and organisations covering active travel, bus, rail, health and economic development.

Transport Planning Objectives

Through consideration of the range of problems that affect transport in the study area, the aspirations of stakeholders, and both local and national policy, the following nine TPOs were identified:

1. Promote modal shift to sustainable transport for trips (particularly commuting) from or to the study area.
2. Improve access to the public transport network, particularly for the first and last miles of journeys.
3. Provision of a transport network that supports enhanced access to employment, social and leisure opportunities.
4. Improve bus journey times and journey time reliability on the A81 corridor.
5. Development of a transport network that facilitates and complements local economic development, contributing towards the sustainable economic growth of the study area.
6. Delivery of a transport network that supports healthy lifestyles.
7. Delivery of a transport network that enhances local air quality.
8. Development of an integrated transport network, including co-ordination between modes and increased connectivity between active travel infrastructure and public transport.
9. Provision of a transport network that improves safety and security across all modes of transport.

Option Development

Prior to developing a long list of options to consider at STAG 1, the 2008 options were reviewed to determine whether they should be considered. Following the analysis of transport problems, consultation and considering relevant policy additional options were also identified to form a long list of 31 options. As part of the pre-appraisal, each of these options was assessed against the TPOs to identify to have the greatest impact. Walking and cycling measures ranked highest during this appraisal with the top four options all related to walking and cycling. The six lowest scoring options were not progressed and the remaining options packaged into a list of options for STAG 1:

- Option 1: Do Minimum
- Option 2: Rail Park & Ride at Allander
- Option 3: Quality Bus Corridor
- Option 4: Area Wide Smartcard Ticketing

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- Option 5: Improve Integrated Ticketing
- Option 6: Enhanced Walking and Cycling Paths and Links
- Option 7: Secure Cycle Storage
- Option 8: Bus Service Improvements
- Option 9: Junction Improvements
- Option 10: Variable Message Signs
- Option 11: Road Options to Enforce / Reduce Speeds and Enhance Appeal of Sustainable Travel

STAG 1 Appraisal

The STAG 1 appraisal is primarily a qualitative appraisal of each option against the Transport Planning Objectives (TPO's) and the STAG criteria (Accessibility and Social Inclusion, Economy, Environment, Integration and Safety).

The appraisal of options against the TPOs is summarised below.

1 - Promote Modal Shift to Sustainable Transport for Trips (Particularly Commuting) from or to the Study Area

Almost all of the options promote modal shift to sustainable transport; options 2, 3, 4 and 7 focus on public transport improvements whilst options 6 and 7 consider active travel. The impact of options 9, 10 and 11 were expected to be limited, though each would have the potential to have a positive impact.

2 - Improve Access to the Public Transport Network, Particularly For the First and Last Miles

A new rail station at Allander (Option 2) would address the accessibility gap with regards to access to the rail network. Similarly, providing a new bus service or increasing the frequency of existing services (Option 8) would have a notable impact on access to the public transport network. Options 6 and 7 seek to improve walking and cycling infrastructure which should improve the first and last miles to the public transport network. Whilst options 3, 4 and 5 enhance public transport travel, they do little to improve access.

3 - Provision of a Transport Network That Supports Enhanced Access to Employment, Social and Leisure Opportunities

The rail park and ride at Allander (Option 2) is expected to have the biggest impact on this objective as it would provide access to the Kilmardinny development as well as addressing a gap in rail service provision between Milngavie and Hillfoot. Measures to improve bus services and walking and cycling routes would also have a positive impact by creating a transport network that was easier to use.

4 - Improve Bus Journey Times and Journey Time Reliability on the A81 Corridor

The Quality Bus Corridor (Option 3) would have the greatest impact on this objective as it will help to improve bus journey times and reliability through the implementation of bus lanes, bus priority and bus detection through SCOOT. An express bus service from Milngavie to Glasgow would provide a quicker journey time than the regular service.

5 - Development of A Transport Network That Facilitates / Complements Local Development, Contributing Towards the Sustainable Economic Growth of the Study Area

Almost all of the options would have an impact on this objective. The rail Park and Ride at Allander (Option 2) is expected to have a significant impact by supporting rail travel from the Kilmardinny development. Meanwhile, enhancing walking and cycling routes (Option 6) may encourage residents to access local services, rather than leaving the area by car. Junction improvements (Option 9) seek to reduce delay and congestion at key bottlenecks which will facilitate more efficient deliveries and servicing of local businesses.

6 - Delivery of a Transport Network That Supports Healthy Lifestyles

Options 6 and 7 are likely to have the greatest impact in supporting healthy lifestyles as they seek to improve active travel options. Measures to improve public transport may encourage more people to consider it a viable alternative so they may walk or cycle to public transport services.

7 - Delivery of a Transport Network That Enhances Local Air Quality

Almost all of the options, with the exception of option 10 and 11, would have an impact on this objective as they seek to encourage modal shift from the private car to public transport, walking or cycling.

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8 - Development of an Integrated Transport Network, Including Co-Ordination between Transport Modes

Options 4 and 5 seek to address the ticketing aspect of integration. Furthermore, provision of real time information at bus stops / shelters (option 3) would have a notable impact on this objective whilst provision of parking at a new rail station (option 2) demonstrates how access to the station has been considered.

9 - Provision of a Transport Network That Improves Safety and Security across All Modes of Transport

The security of cycle parking at rail stations was raised during the consultation process and option 7 seeks to address this. Furthermore, option 6 considers the important of safety and security along walking and cycling paths.

The STAG 1 Appraisal also considers the technical deliverability, operational summary, financial and public acceptability. It was identified that the rail station at Allander has a number of challenges in terms of deliverability from an operational perspective – this is discussed in further detail under the STAG 2 appraisal.

An appraisal of options against the STAG criteria (Accessibility and Social Inclusion, Economy, Environment, Integration and Safety) was also undertaken and reported in the main report. A summary of the assessment undertaken against these criteria as part of the STAG 2 stage is provided in the following section.

Following the STAG 1 Appraisal, three options were excluded:

- Option 4: Area Wide Smartcard Ticketing;
- Option 5: Improve Integrated Ticketing; and
- Option 10: Variable Message Signs.

STAG Part 2 Appraisal

The options generated in STAG Part 1 were refined and combined into four packages of measures, listed below. In addition, within STAG it is common to define a “Do-Minimum” situation which the options derived from this project are assessed and compared. This Do Minimum package in appraisal terms should include “transport improvement commitments that have policy and funding approval”.

The five packages of options have been assessed in terms of the Government’s objectives: Environment, Safety, Integration, Economy, Integration, and Accessibility and Social Inclusion. Consideration has also been given to Cost, Deliverability and Public Acceptance.

Package 1 (Do Minimum)

- Parking charges and waiting restrictions at Milngavie Town Centre to prevent rail users from using parking earmarked for town centre retail;
- Localised improvements associated with the Kilmardinny development, with developer contributions to support these improvements;
- Kessington Hub to promote interchange between walking, cycling and public transport travel and make Kessington more accessible for all users;
- Implementation of cycle corridor with Phase 1 from Burnbrae Roundabout to Hillfoot and Phase 2 from Hillfoot to Kessington;
- Bus Improvement Fund projects;
- Monitoring and maintenance of the Council’s core path network in line with the Core Path Plan; and
- Signing, lining and general maintenance of the road network, consistent with the future maintenance schedule.

The components of Packages 2 to 5 are identified in the table overleaf.

Capabilities on project:
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Table 1: Package Components

Package	Schemes	Component Options
Package 2 Active Travel Modes	Enhanced Walking and Cycling	<p>19) Extend cycle route on Woodburn Way north of Park Road to enhance the link to Milngavie town centre and the rail station</p> <p>20) Completion of the cycle link between Mains Estate and Allander Leisure Centre</p> <p>22) Secure cycle storage facilities built at rail stations and in town centres</p> <p>23) Development of a local network of walking and cycling paths which serve desire lines and converge on town centres, and stations</p> <p>24) Development of a high quality path which links the Kilmardinnie development and Milngavie station</p>
Package 3: Public Transport and Access Modes	New Rail Station at Allander	7) Provision of a rail station and associated parking (circa 150 spaces)
	Quality Bus Corridor	<p>10) Bus priority / congestion bypasses at key points on the network</p> <p>11) Provision of real time information at stops along the route</p> <p>12) Improvements to bus stops and shelters</p> <p>14) Bus detection included within SCOOT</p>
	Bus Service Improvements	<p>25) New shuttle bus connecting residential areas to stations</p> <p>26) Increase frequency of bus services in the corridor</p>
Package 4: Roads	Junction Improvements	27) Implementation of a gyratory at the A81/Roman Road/Roman Drive junction (incorporating ban of right turn from Boclair Road
	Road Options to Enforce/Reduce Speeds and Enhance Appeal of Sustainable Travel	<p>29) Carriageway marking / localised narrowing</p> <p>31) Place making initiatives to enhance town centre environments</p>
Package 5: Combined	Package 5 is a combination of the measures contained within both Packages 2, 3 and 4.	

The STAG Part 2 appraisal considers each package with regards to the objectives of Environment, Safety, Economy, Integration and ,Accessibility and Social Inclusion. Consideration is also given to Cost to Government, Deliverability and Public Acceptability.

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Environmental Appraisal

None of the packages are considered to have a significantly detrimental impact on the environment, with 'Minor Negative to Moderate Negative'. Furthermore, the impacts upon the environment could be mitigated with appropriate measures. The two options which may have the greatest impact on the environment are the rail station at Allander and the gyratory system at Boclair Road. Although the impact of these measures will not be fully understood until a detail design exercise is undertaken, it is considered highly likely that there will be some negative impacts at a local level. Notwithstanding this, it is considered highly likely that most impacts could be mitigated and reduced. Overall, most of the options are designed to promote modal shift away from the private car onto public transport, the reduction of vehicle trips will help improve air quality.

Safety Appraisal

Safety is considered to improve under the packages, with a possible reduction in accidents as a result of a modal shift towards public transport, as well as the road options to reduce/enforce speeds. Notwithstanding this, the gyratory Option 27 may present road safety issues, notably concerning traffic queuing into preceding junctions, lane designations and impacts on neighbouring junctions. Security will generally increase as a result of enhanced active travel and public transport facilities.

Economic Appraisal

Analysis has been undertaken of the likely costs of each option contained within the packages and the journey time/journey time reliability improvements that may be achieved as a result of their implementation. The impact on the generalised cost of travel, taking account of service frequency for public transport services, and the overall quality of journeys has also been considered. A reduction in the generalised cost of travel is considered to have a positive impact on the economy owing to improved access for both labour and goods to workplaces and markets.

It should be noted that the 2008 study did not include a full economic appraisal, modelling and cost benefit analysis. The scope of this project was limited to refreshing and updating the 2008 STAG study, with an equivalent level of appraisal and analysis.

It is recommended that EDC/SPT explores the possibility of undertaking a full cost benefit analysis for schemes that are to be taken forward. This will require significant data collection and model development work. A number of the schemes within this study may require significant levels of external funding – as such, these schemes will need to be supported and justified by a robust cost benefit analysis.

Package 1: Do Minimum

Whilst the schemes identified in the Do Minimum package are not expected to have significant benefits in terms of journey times in relation to baseline conditions, the package of improvements to be implemented as part of the Kilmardinny development will assist in mitigating the impact of additional traffic generated by the development. In addition, the Kessington Hub scheme is expected to deliver benefits to the local economy through improved public realm and accessibility. Introducing parking waiting restrictions and charges at Milngavie town centre will deliver benefits to the local economy by reducing the spaces occupied by staff and commuters and increasing the number of spaces available to shoppers. The cycle scheme on the A81 will also assist deliver indirect economic benefits through improved accessibility for cyclists and enhanced journey ambiance through the corridor.

Package 2: Active Travel Modes

Whilst the direct journey time savings are limited, this package will improve overall accessibility to the network, which is expected to reduce the generalised cost of travel. The package also has the potential to reduce the number of car trips on the network, which could reduce journey times relative to the Do Minimum. These benefits will be offset to some extent through the requirement to provide additional crossing facilities. It should be noted that in order to maximise the uptake of the component schemes within the package, marketing and promotion work is required, which would be an additional component to current the package. The overall capital cost of this package, including optimism bias of 44% is estimated at £1,403,200.

Package 3: Public Transport and Sustainable Modes

For public transport, the overall journey time benefits are considered to be positive, primarily due to the Allander rail station proposal. However, the journey time benefits of this option are very much dependant on the timetable changes required not adversely affecting the wider rail network. It is outside the scope of this project to evaluate the timetable requirements beyond the study area. Double tracking the line would enable the station to be accommodated within the existing timetable and possibly improve network resilience, but the additional cost implications of this are significant.

The overall capital cost of this package, including optimism bias of 44% is estimated at £7,914,364 – this assumes the single platform option for Allander rail station (£5,882,564). If Network Rail concludes that the double tracking option is required the cost of this element of the package would increase to £22,871,360 - this factors up the estimate produced by Atkins (in 2003) to 2014 prices, plus 44% optimism bias.

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Regarding high cost items such as the shuttle bus service and in particular the rail station option, in the absence of demand forecasting and cost benefit analysis it is difficult to determine the demand and justification for the options in economic terms, although there is anecdotal demand from residents and community groups. However, it has not been determined whether the demand generated for a shuttle bus or by a station at Allander would be sufficient to justify the level capital investment and ongoing revenue costs.

Package 4: Road

Time savings for car journeys are expected to be negligible, whilst public transport may actually experience minor improvements in journey times. This is primarily a result of the issues regarding the operation of the gyratory scheme at A81 / Boclair Road junction and its effects on neighbouring junctions. Transport modelling and assessment is required in order to understand the relative benefits and disbenefits more fully.

The other schemes in the package are primarily reduced vehicular speeds. These measures are considered to be localised and will have minimal effects on overall corridor journey times.

The overall capital cost of this package is estimated to be £813,600, including 44% for optimism bias. The majority of this cost is attributable to the gyratory scheme.

Package 5: Integrated Road and Public Transport/Sustainable Modes

Overall, the combined journey time savings for car drivers are considered negligible and minor positive for public transport. This is mainly attributable to Package 3 where public transport is likely to generate positive journey time benefits. The total capital cost is estimated to be £10,131,164, which includes 44% uplift for optimism bias.

Integration

Transport Integration

Package 1 (Do Minimum) may achieve marginal improvements to integration through the implementation of travel planning and walking and cycling measures. The segregated cycle route, the “Bearsway” will improve cycle links throughout the corridor which will improve integration. Overall, the package is expected to have a broadly neutral to moderate positive impact on transport integration.

Package 2 (Active Travel Modes) will facilitate improved and convenient access from residential areas to transport services and local services. Option 23 and 24 will provide enhanced walking and cycling links from residential areas to rail stations. Option 22 will provide good quality and secure cycle parking at key transport halts, this will improve transport integration.

Package 3 (Public Transport and Access) in general will have a positive impact on transport integration as the Quality Bus Corridor will improve integration between modes and bus feeder services will enhance integration with rail.

Package 4 (Road) is unlikely to have a positive or negative impact on transport integration, although reduced traffic speeds and place making initiative may encourage more people to walk / cycle to rail or bus services.

Package 5 (Combined) will generally have a positive impact on transport integration. Particularly the combination of Option 20 (cycle link between Mains Estate and Allander) and Option 7 (new rail station at Allander). If delivered on its own Option 20 will have a negligible impact on transport integration.

Land Use Integration

Package 1, the Do Minimum scenario, will have a neutral impact on land-use integration through the construction of committed schemes.

The options associated with Package 2 have a positive impact on local land-use integration as it will facilitate safer and more convenient access from residential areas to transport services, local services and employment opportunities. Options 20, 23 and 24 in particular will provide new or enhanced links between large dormitory areas and key services but active modes.

With regard to Package 3, the QBC proposal has a negligible impact on land-use integration beyond what already exists, although it is noted that improved facilities and journey time reliability may have a minor benefit. The provision of service improvements will have a positive effect on land-use integration. A new shuttle bus, which will access new areas, some of which have no public transport links within a 10 minute walk, will enhance local and corridor land use integration.

A rail station at Allander would encourage more sustainable travel to the Glasgow from the new Kilmardinny development, which is a major local development. The station would be located within a ten minute walk of most properties in Kilmardinny and a number of properties within the vicinity of Mosshead Road, Kilmardinny Avenue and Galbraith Drive.

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Package 4 (Road) will result in improved traffic flow through the corridor may have a minor impact on land use integration however this would be counterbalanced by the speed reduction option. Overall the impact on land use integration is considered negligible.

Package 5 (Combined) would have a positive impact on land use integration for the reasons discussed above.

Policy Integration

- Do Minimum – minor / negligible impact on policy integration through the implementation of measures such as travel plans, segregated cycleway and sustainable travel policies which will encourage modal shift.
- Packages 2, 3 and 5 promote sustainability Quality Bus measures, new rail stations, new bus services, improved active travel links and improved access to existing public transport facilities, all of which could encourage modal shift and assist in achieving a healthy, prosperous and inclusive society.

Accessibility

Accessibility defines the ability of people and businesses to access goods, services, people and opportunities.

Some locations within the study area that are located further than a 10 minute walk from a bus stop and as such have relatively poor access to the bus network. Furthermore, bus journey times do not compare favourably with car journey times in general and services are often unreliable due to a lack of bus priority along the A81 corridor and delays incurred on other parts of the network.

While the study area contains a number of rail stations, there are certain sections of the study area which are located further than a 10 minute walk from a rail station and as such are poorly connected. Existing services to access the rail stations, such as Mybus, are inflexible and often do not meet the needs of residents.

Package 2 and 3 (and Package 5 by definition) aim to increase accessibility to public transport, with key benefits realised by those who do not have access to a private car and the socially disadvantaged. The proposals to implement Quality Bus Corridor measures and bus feeder services will enhance the level of accessibility to public transport services. The rail station at the Allander site would increase accessibility to the rail network for those currently outside a reasonable walking distance. Overall, Packages 2, 3 and 5 will have a positive impact in improving access to key services and destinations via the public transport network.

Package 4 is expected to have a neutral impact on public transport network coverage owing to the fact that it contains only road measures.

Deliverability and Public Acceptability

Deliverability has been a key consideration during the development of the packages. Clearly, any package which cannot be realistically delivered cannot be taken forward. Within STAG Part 1 the preceding chapters a number of potential options have been excluded from further investigation as they were not considered deliverable noting existing and future constraints.

Package 2: Active Travel Modes

The components of the package are considered to be both deliverable and publically acceptable. However, it is noted that the deliverability, and to a lesser extent public acceptability, for Option 23 will depend on the nature and scope of the scheme. Routing active travel schemes along pedestrian desire lines may not always be possible due to barriers such as buildings and roads. Significant deviation from desire lines can reduce schemes effectiveness.

Package 3: Public Transport and Access Modes

Provision of a rail station and associated parking (circa 150 spaces)

AECOM has undertaken a high level review of the operational and engineering feasibility of a new rail station at Allander - this is contained within Appendix B of the main study report. In summary there are no apparent engineering barriers which could not be overcome to deliver a rail station at Allander. However the study did not undertake any ground investigation, topographical survey, flooding / drainage and environmental investigate, beyond a desk top study.

The review has been based on the assumption that the construction of the station will not require any new sections of double track, beyond the existing arrangement on the line and that only one platform will be required. From an operational perspective, for a service to operate reliably an adjustment of two to three minutes is needed to the times of trains from Milngavie towards Glasgow at Westerton. Without this adjustment resilience on the line will be reduced. Feedback from the stakeholder consultation exercise highlighted that often an outbound service from Milngavie is delayed by an inbound train passing along the single track section of line south of Milngavie.

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The timetable adjustment may have a knock-on effect across the greater Glasgow railway network. More detailed work, including in-depth discussions with Network Rail, is required to confirm the feasibility/acceptability of adjusting the timetable. If this cannot be achieved, the track would require doubling in order to maintain levels of reliability, which will clearly have significant cost implications. It is likely that adjustments to the timetables may only be permitted if there are no disbenefits to the rail network.

Noting the operational uncertainties, which should be investigated further, doubling the track, may be a preferable solution from an operational perspective. This may receive more external support as it would not require timetable changes. The single and double track options both have affordability issues - the scheme had previously been investigated assuming developer contributions would be available from Kilmardiny. As discussed previously developer contributions have now been set by a Scottish Government appointed reporter and did not include any provisions for a rail facility. Reviewing the proposed LDP and existing Local Plan 2 there are no proposed developments of sufficient size within the vicinity of the A81 which developed contributions for the rail station could be reasonably sought. Therefore, funding would need to be provided by public sector agencies, namely EDC/SPT. Given the existing pressures on public sector finances funding the scheme, including the design and development costs is likely to be challenging.

Generally public acceptability of this option is considered to be high; there has been significant support / campaigning for a rail facility at Allander. However, once Kilmardiny is further developed there may be concern from future residents regarding noise, light, traffic and visual pollution associated with the construction and operation of a rail station.

Notwithstanding the above, the deliverability and economic viability of a rail station at Allander has still to be fully established in line with Scottish Planning Policy. Further work, including demand forecasting is required to determine whether the scheme would have a positive business case and provide value for money given the likely capital investment costs.

Quality Bus Corridor Options

In general the options for a QBC are considered to be deliverable, all are within the existing road environment and do not encroach on any additional land. The measures have minimal visual intrusion and implementation is unlikely to face significant opposition. However, if options such as bus priority remove parking or increase congestion for general traffic there may be a level of public criticism. It should be noted that due to carriageway constraints full deliverability of the Bearsway may limited the deliverability of bus priority at constrained parts of the network.

Bus Service Improvement Options

A shuttle service within the local area of Bearsden and Milngavie is unlikely to generate sufficient demand to encourage commercial operators to run the service. SPT can support services such as this where a social need is identified, demand is sufficient, it is affordable and there is a realistic chance of becoming commercially viable. Most properties in the study area are within a 10 minute walk of a bus service which serves a town centre and rail station. Those areas which are further away from a bus stop are unlikely to be penetrated further by shuttle service. Therefore, the shuttle service may not improve accessibility significantly beyond existing service provision. For this reason the level of demand may not be sufficient to justify the implementation of publically funded service. Other issues arise with the legality of a supported service SPT are not permitted to operate a service which may be in competition with commercial services. It may be argued that a shuttle service would double up significantly on existing commercial provision which may prevent its implementation..

Package 4: Roads

From an engineering perspective the road options are considered to be feasible and deliverable. Operational issues are likely to arise from option 27 which may limit its deliverability. Diversion of traffic onto a gyratory will lead to increased traffic levels on Roman Drive and Roman Road, including HGVs. The gyratory will require the negotiation of two priority junctions (currently) and it is unclear whether capacity will be sufficient to meet the demand. Constraints at the Roman Drive / Roman Road junction, particularly the presence of driveways may also be an issue. Further investigation, beyond the scope of this study, is required to determine the traffic impacts of the gyratory system.

It is likely this scheme will give rise to significant concerns from local residents, particularly those on Roman Drive and Roman Road where traffic levels, noise and pollution will inevitably increase. The scheme is likely to provide a benefits and disbenefits to drivers depending on their routing. Overall, it is anticipated that the scheme will be deliverable although there are a number of challenges which would need to be overcome and it is unclear whether the benefits will outweigh the disbenefits.

Package 5: Combined Active Travel, Public Transport and Road

This package reflects the deliverability of Packages 2, 3 and 4.

Costs to Government

The estimated capital cost associated with each Option is displayed within Table 2, below.

Capabilities on project:
Transportation

Table 2: Capital Costs

Option	Cost (£)
Package 2	£1,403,200
Package 3	£7,914,364
Package 4	£813,600
Package 5	£10,131,164

Monitoring and Evaluation

The Scottish Government requires monitoring and evaluation to be undertaken and documented for any proposal for which it provides funding or approval. For the purposes of this study, it is anticipated that the Base Case will be developed and agreed with EDC, Transport Scotland, SPT, Network Rail and bus operators, as appropriate, during the period immediately prior to completion / operation of the preferred option.

It is not possible at this stage to be specific about the nature of the process evaluation. It seems likely that there will be a need to provide data which will measure changes in the baseline scenario such as various environmental parameters, public transport passenger counts, mode choice surveys and junction performance. Before the monitoring programme is agreed upon, consideration must be given to the actual availability of the data, practicalities from collecting new data, its format, whether it will properly reflect the indicators proposed and the cost of obtaining it. Indicators and targets should be subject to regular reviews to ensure that they continue to properly reflect the performance of the project against its objectives, throughout the monitoring period.

Risk and Uncertainty

Consideration of risk and uncertainty is essential throughout project development. The identification, management and mitigation of risks will involve inputs from all appropriate stakeholders and it is recommended that Transport Scotland and SPT be involved in discussions, together with Network Rail and rail and bus operators, as appropriate.

This report outlines clear and active processes to identify and mitigate project risks in accordance with industry best practice. It is recognised that the identification of risks and uncertainties will form an ongoing process. A number of risks have been identified; each risk has been assessed for its likelihood of occurrence and impact. At this stage the greatest risks are regarding appraisal, stakeholders, funding, land and compensation and commercial viability.

Conclusions

After the STAG Part 2 appraisal the packages of options were refined into the following;

- Package 1 (Do Minimum);
- Package 2 (Active Travel); and
- Package 3 (Public Transport and Access).

Table 3: Package 2 (Active Travel)

Option	Component schemes
Enhanced Walking and Cycling	19) Extend cycle route on Woodburn Way north of Park Road to enhance the link to Milngavie town centre and the rail station 20) Completion of the cycle link between Mains Estate and Allander Leisure Centre 22) Secure cycle storage facilities built at rail stations and in town centres 23) Development of a local network of walking and cycling paths which converge on town centres and stations 24) Development of a high quality path which links the Kilmardinny development and Milngavie station
Approximate Capital Cost - £1.4million	

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Package 2 promotes schemes designed to make active travel an attractive alternative to car travel in the local area. The package includes the completion of the cycle link between the Allander Sports Centre and Mains Estate and extending the link on Woodburn Way north of the junction with Park Road. The largest scale option is developing a network of walking and cycling routes in both Bearsden and Milngavie converging on the town centres and rail stations. This option is designed to encourage local active travel trips and reduce short car journeys.

Table 4: Package 3 (Public Transport and Access)

Option	Component schemes
New Rail Station at Allander	7) Provision of a rail station and associated parking (circa 150 spaces)
Quality Bus Corridor	10) Bus priority / congestion bypasses at key points on the network (not compatible with Do Minimum cycleway option) 12) Improvements to bus stops and shelters 14) Bus detection included within SCOOT
Road Options to Enforce / Reduce Speeds and Enhance Appeal of Sustainable Travel	29) Carriageway marking / localised narrowing 31) Place making initiatives to enhance town centre environments
Approximate Capital Cost – £6.5million (£19.9million if double tracking for the Allander Rail Station is required)	

Package 3 offers a number of initiatives with the ultimate aim of encouraging modal shift to public transport and sustainable modes, while reducing congestion on the A81 Corridor. The package as a whole, through its various components, meets the five Government objectives of Environment, Safety, Economy, Integration, and Accessibility and Social Inclusion. It should be note that elements of a fourth package with road based options have been amalgamated into Package 3.

Package 5 is a combination of Package 2 and 3 and would offer a holistic approach to providing solutions to the transport problems experienced in the study area. Taking into account public transport/sustainable modes and road improvements, this integrated package would meet the five Government objectives as well as the specific TPOs set for this study. This is because the combined benefits of both Packages 2 and 3 would be realised. Evidently, this package has the highest associated capital cost at an estimated £7.9million, including Optimism Bias and reflects the combined cost of Packages 2 and 3 following refinement. This is based on a rail station at Allander not requiring double tracking.

Having assessed each individual package against Government and Planning objectives, it is considered that an Active Travel and, Public Transport and Access package would be best placed to provide a range of solutions to address the pressing travel issues in the study area. While Package 5 represents the greatest capital costs, it will also provide the greatest level of benefits when compared to the individual Packages 2 and 3.

The next stage is for EDC and SPT to consider the findings of the study and identify components of the packages that are to be progressed for further work. In some cases, this will require more detailed assessments of individual schemes, including cost benefits analysis and business case work.