

16th May 2018

Build a Better A27

Situation Summary, Assessment and Recommendations

Summary Report



The mix of through and local traffic on the A27, and consequential problems of road congestion, unreliable journeys, inappropriate traffic diversions, local severance and vehicle emissions, air quality and noise, are real issues challenging the community in and around Chichester

Chichester and the A27

The A27 through Chichester, referred to as the Chichester bypass, is a dual carriageway road around 3 miles (5.5km) long intersecting with the local road network at five roundabouts and one signalised junction. The road is designated as a part of the Strategic Road Network as a Trunk Road and is managed by Highways England.

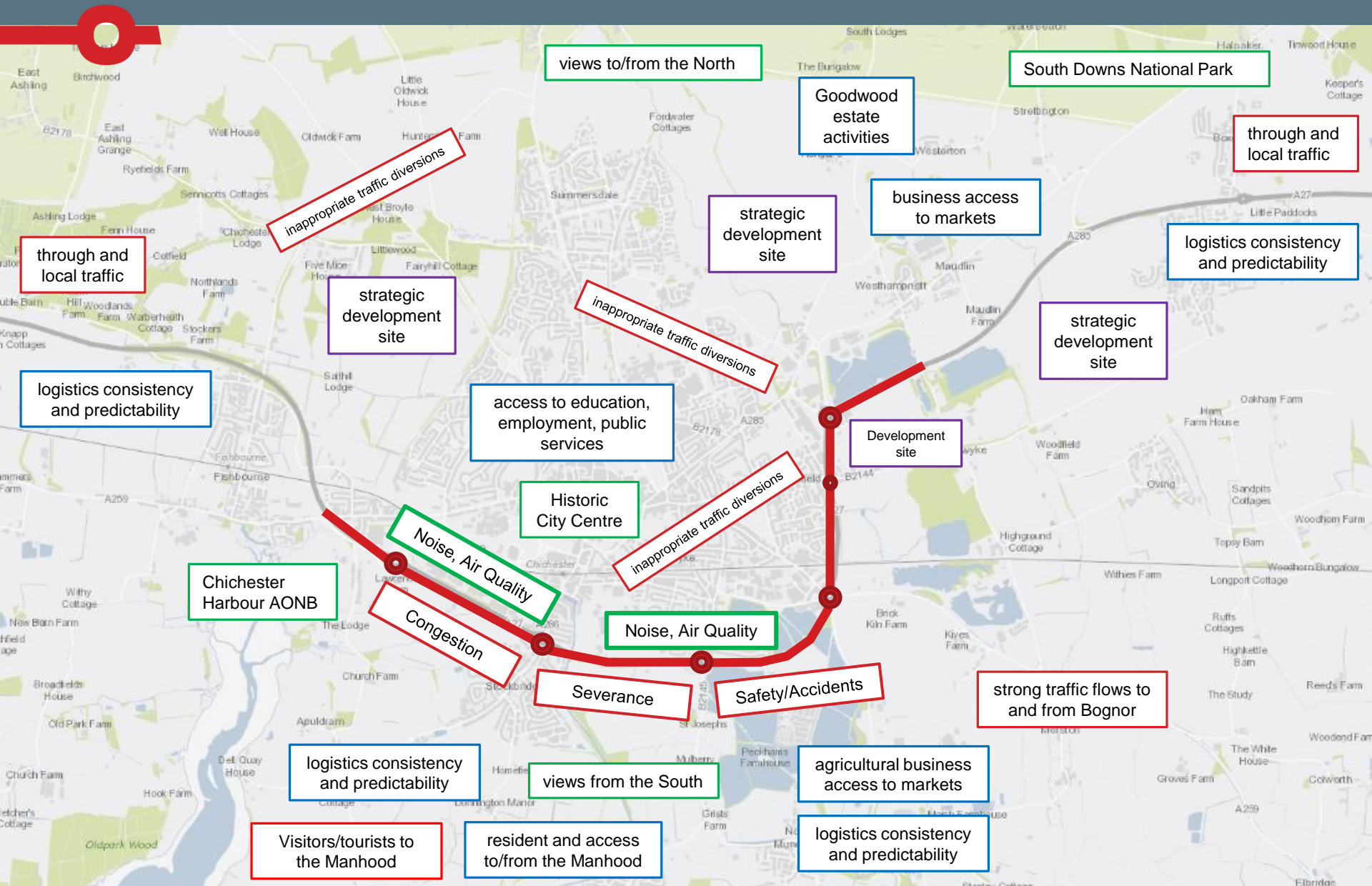
Traffic volumes, congestion and journey time uncertainties on the A27 and approach roads generate serious transport, social, environmental and economic impacts^a. The ability to maintain and grow the economy is threatened by the transport network, especially in supporting business in the city and on the Manhood Peninsula, supporting the tourism industry and supporting the required residential developments needed to meet local demand. The local road network, and the road-based public transport network it supports, is causing problems for residents, both in accessing jobs, education and other facilities, and in the environmental impacts of traffic congestion and use of inappropriate diversionary routes.

The desire of Highways England to address the problems of the A27 was clear through their commitment to the earlier Road Investment Strategy 2015-2020 (RIS1) scheme. Addressing the A27 is also a priority in the West Sussex Transport Plan, with objectives shared with Highway England to increase capacity, improve reliability and safety to increase local business competitiveness and attract investment.

The views of BABA27, a community led process to address the fundamental issues of the A27, was instrumental in creating an opportunity for Highways England to consider a new A27 concept, subject to acceptance into RIS and community consensus.

Notes. a. see <https://www.gov.uk/government/consultations/a27-chichester-bypass-improvement-scheme>

Transport, environment and economic constraint summary for the Chichester A27



The local consensus that the problems of the A27 need to be addressed has been established through the Build A Better A27 group, with on-going community engagement intended to support the development of how the A27 is addressed

Build a Better A27 Group

The BABA27 group was established to identify and prioritise the ‘themes’ and ‘key requirements’ for the addressing the problems of the A27 in Chichester. BABA27 is not a decision making body, but has, and continues to provide valuable support to WSCC and CDC, particularly in respect of key issues, not all of which were adequately captured and considered in the earlier working supporting the RIS1 scheme consultation.

It is very clear that there is a strong local consensus that the problems of the A27 in Chichester are real and significant, and affect the community in their work, in social interactions and in their quality of life.

Key Chronology

- 2013 – Government commitment to improve the A27 Chichester bypass, and in 2014 to improve four junctions as part of RIS1
- 2016 – extended consideration of wider options for investment, extensive technical work and a formal Public Consultation
- February 2017 - Highway England instructed to stop following serious concerns over community acceptability
- March 2017 – establishment of the Build A Better A27 community group
- Dec 2017 - SYSTRA commissioned to develop ‘long-list’ suggestions for addressing the A27 and sift these to identify a preferred scheme(s) to put forward for a formal sign-off by WSCC, CDC and the local MP, and ultimately to Highways England for RIS2 programme.



Ten guiding principles were established by BABA27 to be adhered to in the development of a new concept for A27 improvements

Guiding principles for the operation of BABA27 were developed during a number of well-attended community-led workshops held in the Spring and Summer of 2017:

BABA27 Guiding Principles

- Develop a clear and broadly acceptable set of requirements for the group for a better A27
- Take a long term view to inform a modern and robust transport solution as part of an integrated transport strategy
- Work in the best interests of the local community and regional economy in the Chichester area, not just the City
- Consider all constructive perspectives to create the best possible win for the Chichester area. No options are off the table
- Take decisions informed by solid evidence
- Work together in a calm and respectful way. Agree to disagree and understand that others may have a different point of view
- To the greatest degree possible, take collective responsibility for any decision made
- Be open-minded and encourage creative/innovative thinking and be prepared to compromise
- To the greatest degree possible, hold to decisions take by this group
- Encourage conversations that are open, honest and transparent.

Alongside the guiding principles, BABA27 also identified a set of critical success factors to steer the development of the long-list suggestions for the A27

Critical Success Factors – these locally derived key requirements were developed and confirmed through the BABA27 meetings and workshops. These have been used in assessing the performance of the long-list suggestions, sitting alongside funding agency drivers and a range of delivery considerations in developing our assessment framework. Although there are some emphasis differences between the key stakeholder objectives and wider considerations, all are broadly aligned, though some potential conflicts will exist in delivery, for example between capacity, economy and the environment.

BABA27 Key Themes developed by the BABA27 group in 2017

- Through and local traffic
- Multi-modal transport
- Environmental factors
- Chichester as a jewel of England
- Landscape and conservation
- Local and regional economy

Highways England aims reported in the A27 consultation leaflet and documents^a

- Improve capacity and support the growth of regional economies
- Improve road safety
- Reduce adverse environmental impacts
- Improve journey time reliability
- Enable housing provision
- Improve regional connectivity
- Improve accessibility to tourist areas

Wider delivery considerations defined by the consultant team

- Policy and planning fit
- Engineering feasibility, including required mitigations
- Acceptability
- Funding potential
- ‘Value for Money’

In addition, there was a strong interest in use of innovation and experimental approaches to address the issues of the A27.

Notes. a. see <https://www.gov.uk/government/consultations/a27-chichester-bypass-improvement-scheme>

The BABA27 guiding principles included a requirement that ‘no options are off the table’ for improving the A27, and no suggestions were to be ruled out without due consideration. The long-list of suggestions that emerged including ‘on-line’, ‘off-line’ and ‘modal’ suggestions

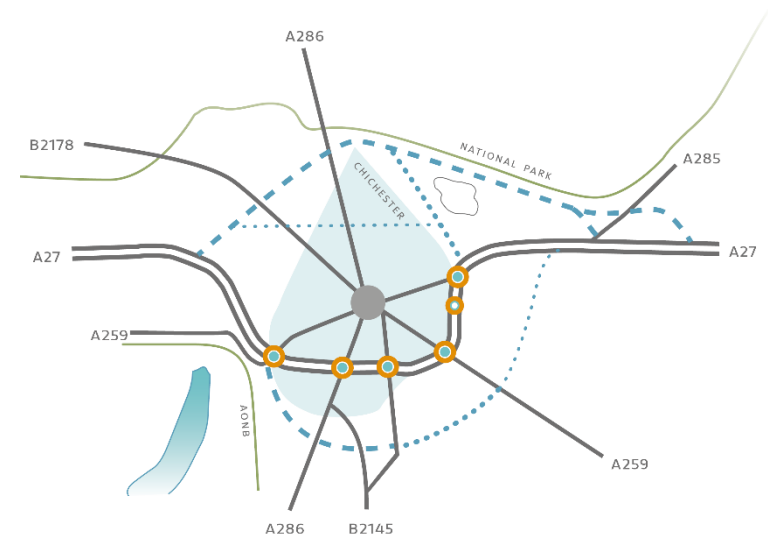
Our initial **Long-List Suggestions** for improving the A27 were developed from a fresh review of potential highway and wider interventions to fully or partially address the critical success factors identified by the BABA27 group. Although the list was developed largely independently of earlier work, many of the highway improvement suggestions have been considered, in some form or other, during earlier more extensive work. For those interventions assessed earlier, there is a strong evidence base identifying outline feasibility, costs and impacts.

Alongside some new variants and modifications, our review identified and sought to draw in a range of key mitigations to address some of the earlier concerns and critical success factors, though illustrating the potential for well designed and configured mitigation is difficult at this stage in the development process.

The intention of ‘modal’ suggestions was to provide a contribution to addressing the A27 issues, accepting alone these measures would not be able to full address all congestion, safety and wider issues. However, they can help to maximise the value of any opportunities, such as released local road capacity being used for pedestrians and cyclists.

The long-list suggestions were primarily:

- ‘On-line’ improvements to the existing A27 and its junctions
- New ‘off-line’ routes to the south of Chichester
- New ‘off-line’ routes to the north of Chichester
- Wider range of supporting ‘modal’ suggestions to complement investment in the road network.



Sifting from the 'long-list' towards a 'short-list', and ultimately a single/limited 'concept' has been based on our judgement of potential feasibility, the ability to address the critical success factors, wider delivery challenges and community feedback, especially from the BABA27 group

Long-List Sifting focused on identifying those suggestions that we consider as offering the greatest delivery potential in meeting the key BABA27 requirements, and in principle meeting Highway England's objectives and wider delivery considerations.

It was accepted that all interventions would have some challenges in meeting many or all of the requirements and that some could only progress with very strong environmental and wider mitigation measures in place.

Many of the issues we identified in sifting assessments were confirmed through the 'long-list' feedback provided through the BABA27 group (shown alongside).

Key Feedback Themes from BABA27 written/meeting responses

- A package of junction improvements could have some merit in conjunction with a 'smart A road' concept of using technology and signage to improve traffic flows and reliability
- Any on-line improvements should avoid flyovers and turning restrictions, but should still offer separation of local / through traffic
- Considerable concerns over the impacts of disruption during construction for on-line improvements
- Southern off-line routes seen as challenging because of land availability and environmental impacts, particularly on Chichester Harbour
- Split views on Northern off-line routes
 - A local route seen as being particularly challenging given conflict with proposed housing developments and impact on Portfield junction and local villages.
 - Strategic northern routes are acknowledged to provide capacity and separation of through/local traffic, but would require significant mitigation of environmental and business impacts
- Modal measures generally supported as a vital part of the wider strategic solution, but will not address the issues of A27 on their own.

These themes are similar to those obtained from the Chichester Observer feedback exercise.

Framing the range of short-list suggestions from the less ambitious ‘marginal gains’ to combined or tunnelling alternative clearly points to two core ‘concepts’ to be considered for a RIS2 submission

The sifting, at this stage, generated a range of suggestions from some of the less ambitious options for delivery, such as ‘marginal gains’, through to combining improvements in both the ‘north’ and the ‘south’, or looking for very ambitious full tunnelling options:

- ‘Marginal gains’ – largely those enhancements in the network configured to support the Local Plan developments
- A new strategic ‘off-line’ route to the north of Chichester to fully separate local and through traffic
- A full set of ‘on-line’ improvements configured to separate traffic and address earlier concerns with the RIS1 consultation options
- Combined investment in both ‘off-line’ routes to the north and significant improvements on the existing ‘on-line’ A27 in the south
- Very ambitious tunnelling options to separate through and local traffic and limit environmental and landscape impacts.

This confirms that the measures supporting the delivery of the Local Plan lack the ambition of BABA27 and ability to address the problem, other than in the short-term.

A combined investment could significantly add to capacities of the transport network, for private vehicles and use by buses, cyclists and pedestrians, but would be fundamentally unaffordable.

The more ambitious full tunnelling suggestion would be address the key through traffic success factor but would again be fundamentally unaffordable.

Therefore, we have focused our more detailed assessment on two ‘concepts’ - a new strategic north ‘off-line’ route and a full set of improvements to the ‘on-line’ route of the existing A27.

There is a limited window of opportunity to get an A27 scheme into the RIS2 programme for Highways England funding. Community consensus will be a crucial element in securing a place in the RIS2 programme

Highways England RIS2 Opportunity

In setting investment priorities in the Strategic Road Network (SRN) the government publishes a multi-year 'Road Investment strategy' (RIS). The second RIS (RIS2) will cover the period 2020/21 to 2024/25, and there is an opportunity for a new Chichester scheme to be considered for RIS2 funding, dependent on timescales and on a need to address the lack of community consensus on how to address the agreed problems of the A27.

Liaison with Highways England has identified a number of key considerations for progressing with any A27 improvements and a wider package components:

- **Timescales** - RIS2 timescales have not been finalised by government, but are likely to be 'imminent' and therefore the compressed timetable for this commission need to be maintained
- **Evaluation process** – has yet to be determined, but is likely to be similar to the RIS1 approach
- **Status of the earlier RIS1 proposals** – there is no longer a Chichester scheme 'on the table', but it is clear that any new submission will need to be 'very different' and to address the lack of community consensus
- **Community consensus** – this has been identified as the most important element of the development process that needs to change. There remains no guarantee of a scheme for Chichester, but it is clear Highways England want to make an improvement, but can only do so if 'consensus risk' can be mitigated
- **Technical requirements** – whilst less developed than other (competing) RIS2 schemes, Highways England has accepted that the BABA27 approach and the level of detail it will be able to provide DfT is acceptable. Much more detailed modelling and design work will follow to support public consultation processes.

Highways England has requested that a 'single' preferred concept is put forward to it for a Chichester scheme. This is challenging as no single suggestion can address the all local and wider requirements for investment, and within the timescale constraints for consideration in RIS2

Single or Multiple Concepts?

Highways England has been clear that any new scheme for the A27 needs to be 'different' from earlier RIS1 proposals, primarily in what is to be delivered and to address community consensus. The strong suggestion for a single 'concept' and the RIS2 timescales provides a real challenge in further sifting from the short-list suggestions.

Through our assessments of the short-list suggestions across the wide range of success factors, wider considerations and community feedback, we have not been able to develop a single concept that we can recommend to WSCC, CDC and the local MP.

Both of the concepts we have put forward are feasible. These are buildable, can be delivered with significant mitigations, lie within a reasonable funding envelope and are likely to have benefit to cost ratios that support a value for money case that meets or exceeds Highway England's minima.

However, each carry different risk profiles, including engineering, cost and mitigation uncertainties, compliance to the BABA27 guiding principles and wider community feedback.

The following summary identifies the key factors driving our assessment, and the challenges in taking forward either of the identified concepts to Highways England for consideration as part of RIS2. We see three overarching concerns that could materially affect further progress:

- Highways England stated desire to see a 'single' preferred concept
- the need to address the earlier lack of community consensus
- the need to meet RIS2 timescales for delivery. If we fail to meet these timescales there is no certainty of a concept being considered for RIS3 (2025/26 to 2029/30).

Our further assessment has been unable to develop a single preferred approach, but has led to two 'concepts' emerging. These concepts draw on the success criteria and feedback from BABA27 process to address key concerns and issue with the earlier options for the A27

'Mitigated North' Concept –

New strategic northern route with free-flow junctions with the existing A27

Concept specification

- Feasible dual carriageway routes following the RIS1 routes exist, with the potential for tactical variants, including at the 'tie-in' points with the existing A27
- Principle of using vertical alignments to sink carriageways. Extensive use of 'green bridges' to maintain views, place and setting, especially around Lavant and the Goodwood Estate
- Strong use of other mitigations, including 'living walls', noise barriers, noise reducing road surfacing, and low level and directional lighting
- Consideration of a junction at A286. Not providing a junction will allow better opportunities for mitigation and avoid major changes to access routes into the city, but would limit some local connectivity
- Local road closures, primarily New Road
- Need to maintain Goodwood operations and mitigate impacts of construction works

'Full South' Concept –

Major works at all six junctions on the A27 at Chichester including Fishbourne and Portfield

Concept specification

- Provision of 'through' dual carriageway route following the A27 and building on some of the components of the earlier RIS1 options at junctions
- Underpasses at Fishbourne and Stockbridge, maintaining full connectivity
- Flyovers at Whyke, Bognor Road, maintaining most/all turning movements
- Partial closure at Oving
- Flyover and remodelling at Portfield
- Engineering challenges may require land take for slip-roads to maintain local connectivity. Likely need for works on the canal (move or sink)
- Need to maintain connectivity, journey times and reliability as best as possible for business, resident and tourist access, including to the Manhood
- Tactical realignment of carriageways may help in long-term and in mitigation of construction impacts

Strong mitigation measures are essential components of our concepts. But mitigation can be costly and there is a risk of ‘value engineering’ to save money. This cannot happen with our concepts, although some compromises below ‘gold-standards’ may need considering

Strong mitigation measures are essential components of our concepts. Mitigations can include strong visual, noise and wider environmental interventions, using a range of techniques. In the context of the A27 these integral mitigations will be required to primarily offer a retention of ‘place and setting’.

In the following pages we provide a number of examples of the potential mitigations that could be deployed, particularly in respect of our ‘Mitigated North’ concept.

Green Land Bridges A21 Lamberhurst Bypass – 40m wide ‘green bridge’ approach to NT Scotney Castle along the ridge stretching E-W across the AONB (Fira Landscape Architecture and Urban Design). Applicability – Mitigated North Concept - around A286 Lavant, Goodwood estate, especially in maintaining place and setting between Goodwood House and Motor Racing Circuit



Potential mitigations to be deployed as integral components of our delivery concepts (2)

Green Bridges and Sunken Roads – Green bridge to maintain eco-corridor. North Brabant Province, Holland, and ‘eco-aqueduct’ over ‘sunken’ motorway on the new A4 in Holland



Living Walls and Vertical Gardens – Brisbane Airport Link Green Wall (Deicke Richards), Willmot Dixon, Southampton (Biotecture), ‘Via Verde’ Mexico City, around 60,000 m² of vertical gardens to address pollution and visual impacts of overpasses (New Civil Engineer). Applicability – Mitigated North and Full South Concepts where retaining walls and overbridges or /flyovers are required



Potential mitigations to be deployed as integral components of our delivery concepts (3)

Noise Bunds – EcoSoundBlok® noise barrier - earth bund alternative and GreenSoundBlok® - acoustic barrier (Gramm Barrier Systems). Applicability - Mitigated North and Full South Concepts – where noise and headlight mitigations are required



Photovoltaic noise barrier, A13 motorway, Switzerland (Fanzun, Architects and Engineers). The world's first photovoltaic noise barrier, and recently renewed with three times original output. The 800m2 barriers provides power for 92 homes



Noise Barriers – Hong Kong Forest Corridor BREAD Studio, ESKYIU architecture. Two finalists in the Open Hong Kong Government International Competition for Noise Barrier/Enclosure



The two concepts for a 'mitigated' northern route and a 'full' improvements to the A21 in the south both have strong merits in some areas, but a range of real challenges in key delivery areas, and by being more ambitious than the earlier scheme option, increased costs and increased benefits

'Mitigated North' Concept - *New strategic northern route with free-flow junctions with the existing A27, with or without a new junction with the A286*

Positives

- Strong separation of 'through/local traffic'
- Significant increase in capacity for long-term growth
- Released capacity can support wider benefit delivery,
- Strong network resilience and reduced use of inappropriate diversionary routes
- Engineering feasibility has been established

Negatives

- Significant environmental impacts with land-take, introducing new noise, air quality and visual intrusion in some residential and rural settings. Strong mitigation possible, but key residual impacts
- Potential policy/delivery conflicts due to SDNP
- Potential for disruption to Goodwood and other business operations during development
- Mitigation costs could be significant, potentially reducing the BCR in the RIS1 Economic Assessment Report. Changes are unlikely to materially affect any wider 'value for money' assessment

'Full South' Concept - *Major works at all junctions between Fishbourne and Portfield, including underpasses (F,S/B) and flyovers (W,B/R,P) with some carriageway realignment*

Positives

- Separation of 'through/local traffic', maintaining local connectivity relative to earlier RIS1 schemes options
- Modest capacity increases to support growth in the medium to long-term
- Limited visual impacts in some locations, reduced local severance and some emissions/AQ benefits
- Engineering feasibility established in part

Negatives

- Challenging engineering, likely to include land-take
- Marginal impacts on setting of CCH AONB
- Significant challenges on the existing A27 during construction impacting on local and other businesses, residents and tourists
- Engineering solutions and mitigation could be significant. Increased costs, but alongside increased benefits are likely to alter the BCR from the earlier RIS1 assessment, but are unlikely to materially change the wider 'value for money' assessment

We believe both concepts are deliverable, but with different cost, benefit and risk profiles, and reliance on strong mitigations to address community concerns. With the RIS2 opportunity being time limited, pragmatism may need to drive, or firmly assist, in political decision making

‘Mitigated North’ Concept - our view

- A new Mitigated Northern Bypass offers the best long-term **transport** solution to problems of the A27. It adds capacity and resilience to maintain long-term economic vitality, and provides opportunities to maximise wider urban benefit delivery.
- The **environmental** impacts will be significant, even with carefully configured mitigations [that are difficult to illustrate at this development stage], and there may be some challenging business impacts. There may be conflicts with national and local policies.
- Mitigations are likely to increase **costs** compared to the RIS1 schemes to around £350-400m, with additional uncertainties over land and business impact costs. Benefits remaining broadly similar.
- There is unlikely to be a material change in the **value for money** from the earlier RIS1 assessment

We consider this concept to offer the best long-term solution for the A27 in best fitting with the Success Criteria and wider considerations. We are also of the view that the environmental and business impacts can be largely mitigated, but with a risk of compliance with planning and policy fit. We recommend WSCC/CDC/MP consider whether the ‘mitigated north’ concept offers enough to build community consensus for the promoters and HE to invest ‘capital’ in taking this concept forward now and to later development phases.

‘Full South’ Concept – our view

- A fuller development of the on-line improvements to address key **transport** concerns of some of the less ambitious RIS1 options. Engineering mitigation may reduce the adverse impacts during construction, but residual impact will remain. Network resilience will improve to support medium to long-term economic vitality.
- Key **environmental** issues affecting the Chichester Harbour AONB can be largely addressed.
- Challenging engineering and mitigations are likely to increase **costs** compared to the RIS1 schemes to around £300-350m, with additional uncertainties over land and business impact costs. With an expanded scope, benefits will increase.
- There is unlikely to be a material change in the **value for money** from the earlier RIS1 assessment

We consider this concept provides a medium- to long-term solution addressing all key concerns raised with earlier ‘south’ RIS1 options and many of the Success Criteria and wider considerations, but not fully. We believe this concept to be deliverable, but with some difficult and costly engineering challenges to overcome. We recommend WSCC/CDC/MP consider whether the ‘full south’ concept is now sufficiently different from RIS1 to build community consensus and for HE to take forward now and to later development phases.

Whilst the majority of funding for any agreed A27 improvements will be forthcoming from Highway England, it is likely that local funding will be required to contribute to or deliver complementary measures to support this investment and maximise local benefits - a Chichester Transport Package

A27 Improvements – a wider Chichester Transport Package

Significant investment in the A27 corridor will provide an opportunity for complementary measures to maximise the value of the investment and potentially widening delivery benefits. The direct investment in the A27 will deliver, for example, reduced use of informal diversionary routes, reductions in local severance (especially north-south separation across the existing A27) and better air quality.

Taking forward a number of the ‘modal suggestions’ a part of a wider Chichester Transport Package offers the area an opportunity to build on any investment in the A27:

- maximise the use any released road space for vulnerable road users or environmental gain
- further mitigate any delivery impacts
- further improve conditions for pedestrians and cyclists
- to improve bus service reliability, to enhance the urban environment
- better manage traffic on alternative routes - through the centre of Chichester, to the north via Lavant.

Whilst the majority of funding for the main A27 improvements works will be expected to be provided by Highways England, including potentially for some of these complementary measures, it is most likely that other funding sources will be required to deliver a fuller and wider transport package.

A ‘funding cocktail’ could be developed to deliver elements of any package drawing in contributions from a range of sources, including local authorities, specifically targeted Government grants/funding and private sector contributions. A key challenge will be to ‘locking in’ elements of the package through any disparate funding channels.

In taking forward one/both concepts and a supporting package, significant further work will be required beyond this commission, both in terms of scope and timescales. But the rewards, if they can be achieved, will be significant for the local communities

Further Development Work Required

Whilst Highway England has indicated that the BABA27 approach and level of detail in the current work is reasonable at this stage in scheme development, it is clear that significant further work will be required to take any proposals to RIS2. It is likely that the majority of such work over the following two to three years will be covered by Highways England's development budgets, though there may be an expectation that local contributions are made, including in working up a wider Chichester Transport Package. This will involve a real commitment, financial and political support, to support key development tasks, including:

- very close working with Highways England, including local support
- on-going stakeholder engagement, including the BABA27 processes and with key and statutory stakeholders, ultimately leading to a full public consultation
- concept development work, particularly mitigation measures for construction and delivery phases. Development of 'lower cost' concept variants
- further work on any 'other' concept to support consultation
- engineering design and costing work, including detailed alignments, opportunities and constraints
- traffic, transport and environmental forecasting work
- economic, social and environmental appraisal and business case development
- consideration of potential funding opportunities – the 'funding cocktail'.



The ultimate reward of the BABA27 process and our work is a place in RIS2 and potential delivery of significant improvements to transport infrastructure in and around Chichester



Highways England RIS2 programme will only be open for a short period of time.

Establishing a Chichester scheme in RIS2 will be a major achievement given the previous history of A27 proposals and the exceptionally tight timescale to respond to cancellation of the RIS1 scheme.

The level of detail of this assessment may not seem ideal, with at least two to three years more work required before the start of any formal consultation. But, the short RIS2 window is open now, and Highways England are content to take forward a concept based on our assessment if it is different from RIS1 and has sufficient community consensus.

If we fail to meet the RIS2 timescales there is no certainty that a Chichester concept will be considered for RIS3 (2025/26 to 2029/30). The problems of the A27 will remain, albeit with marginal gains linked to Local Plan developments.