

RIS SCHEMES A47 Improvements

Minutes of Meeting V 0.8

Meeting	A47 Preferred Route Decision – Blofield to North Burlingham	
Venue & Date	Woodlands Lime 14 June 2017 1pm-4pm	
	Name	Role
Chairperson	Phil Davie (PD)	HE Programme Leader
Attendees	Dave Masters (DM)	HE Senior Project Manager
	(HEPM)	HE Project Manager
	(HESEA)	HE Senior Environmental Advisor
	(APM)	Amey Project Manager
	(APrM)	Amey Programme Manager
	(ASM)	Amey Stakeholder Manager
	(AHTL)	Amey Highway Technical Lead
	(AEC)	Amey Environmental Coordinator
	(MOM)	MMS Operations Manager
Apologies		
Distribution		

Minutes

		Action by	Date
1.0	<p>Introductions</p> <p>Chair, Phil Davie, thanked everyone for attending, adding that the previous day's PRD Meetings with AECOM went well and gave confidence for going forward.</p> <p>The Chair highlighted that the discussions and outcome would be based not on PCF Stages running consecutively as time constraints have resulted in some overlapping of the PCF Stages and that this approach was instigated by Highways England.</p> <p>As a result, some of the information being presented and discussed will be incomplete and/or have limitations. Highways England acknowledged that this is a risk but are prepared to accept that risk in order to deliver to the required timescales.</p> <p>The Amey team highlighted these areas as information was presented and discussed (see also section 4.0)</p> <p>All parties present introduced themselves to the room</p>	-	-
2.0	<p>Health & Safety Moment</p> <p>Fire in London Tower block – reminding ourselves to what the fire regulations are within the HE Woodlands office.</p> <p>Discussed fire exits. No alarm test due today.</p>		
3.0	<p>Purpose of PRD Session</p> <p>PC outlined the purposed of the meeting as “Need to ensure that all evidence has been presented and discussed with all views aired and recorded, including expectations for the Preferred Route Announcement (PRA).”</p> <ul style="list-style-type: none"> • The meeting should conclude with an unqualified decision on the preferred route • Last opportunity to ensure all views are aired prior to route decision being made 		

<p>4.0</p>	<p>Available Information to Inform Preferred Route Decision</p> <p>Status of Products, limitations & exceptions</p> <p>Due to the timing of the PRD being part way through PCF Stage 2 all of the PCF Stage 2 information assessments and reporting were not available to inform the meeting.</p> <p>A list of PCF Stage 2 Products and their status was tabled and discussed. The table showed the status of each of the products which were complete, incomplete including limitations and what further work was required for interim and final SGAR. (it was noted that most of the required products were incomplete and had low levels of analytical assurance). See attachment A – Exceptions and Limitation Document</p> <p>Complete products: Public Consultation Leaflet Public Consultation Publicity Checklist Public Consultation Exhibition</p> <p>The remaining products (other than those to be advised by HE) were DRAFT and incomplete using mainly Stage 1 data, including critical products e.g. SAR, AST, EAR (x2) etc.</p> <p>It was also noted that the NATS transportation model was not yet complete although the model had now been validated and do-minimum scenarios were being run. There were no forecasting results for the 4 options and the BCRs reported are derived from PCF Stage 0 and 1 transportation assessments. A single representative forecast model run and benefits derived from it will be available for interim SGAR in July but this will not include for construction delay effects.</p> <p>It was noted that the air quality and noise assessment information presented was not based on a full air and noise assessment. Rather it had been based on a simple qualitative analysis of the geographical position of the proposed options to individual properties.</p>		
<p>5.0</p>	<p>Present Information</p>		
<p>5.1</p>	<p>Supplier Scheme Overview</p> <p>APM presented the following <u>information RIS Statement</u>.</p> <p>In December 2014 the DfT published the RIS for 2015-2020, which sets out the list of schemes that are to be</p>		

developed by Highways England over the period of April 2015 to March 2020). The RIS confirmed the commitment to the A47 Improvements Programme, A47 Blofield to North Burlingham Dualling being one of those schemes.

The RIS announced the Scheme as “dualling of the single carriageway section of the A47 between Norwich and Acle, linking together two existing sections of dual carriageway”

The A47 is ranked 2nd nationally for fatalities on A roads and the accident severity ratio is above average

The A47 is a mixture of dual carriageway (47%) and single carriageway (53%) and the traffic flows generally exceed capacity

Rapid growth is planned in the area; Norwich, Cambridge and Peterborough are amongst the fastest growing cities in the country.

Scheme Overview.

The Blofield to North Burlingham section of the A47 is located approximately 9km to the east of Norwich. This 3.2km section of single carriageway forms a part of the main arterial highway route connecting Great Yarmouth to the east.

Travelling from west to east towards Acle the A47 narrows from dual carriageway to single carriageway at the eastern outskirts of the town of Blofield, returning to dual carriageway to the south east of the village of North Burlingham.

The villages in the surrounding area contain a number of domestic properties, businesses and places of interest; there are number of side roads along the length, including the roads in and out of North Burlingham, via at grade priority simple and right turn lane T junctions. There are also direct accesses from the A47 into surrounding fields, farm access tracks and direct property access.

Key problems.

Capacity – The section suffers from congestion and is currently operating at over capacity, which affects journey reliability along the link.

Growth in Norwich and the immediate local area around Blofield will exacerbate this condition in the future. Traffic volumes and queue lengths will increase and the existing carriageway will become more congested with resultant traffic delays.

There are a number of side roads joining the A47 along the scheme length, via at grade priority simple and right turn lane T junctions, where turning traffic from the A47 contributes to the congestion problems on the route.

Speed – National speed limit applies on the sections of dual carriageway at either end of the scheme, while the speed limit within the single carriageway section is 50mph.

There is an average speed significantly lower than the daily average during the AM peak. This is an indicator of congestion and affects journey reliability on the link.

Resilience – Due to the lack of nearby alternative routes, the route resilience on this link is an issue.

Safety and Accidents – The A47 Blofield to North Burlingham stretch of single carriageway has a poor safety record.

A total of 33 collisions were recorded in the study area during the 5 year period between 1 Oct 2011 and 30 June 2016. This included 27 slight, 5 serious and 1 fatal collision.

The problems along the existing A47 are expected to have worsened by the design year due to the large increase in traffic volumes which are predicted to be approximately 30%. Traffic and queue lengths will increase and the existing carriageway will become more congested with resultant traffic delays.

Constraints Overview.

- Existing properties and buildings
- Existing local access roads and property access
- Historic and listed buildings
- Areas of nature conservation
- Areas of potential ecological importance
- River and water bodies
- Statutory Undertakers
- Ground Conditions

The existing single carriageway is generally between 7.3 and 7.9m wide with central markings to delineate east and west bound traffic.

The existing A47 carriageway has very low gradients and is generally at ground level.

Option Sifting and Review.

Feasibility work undertaken in PCF Stage 0 identified

	<p>dualling of the A47 as representing a potential solution to the identified transportation problem.</p> <p>In PCF Stage 1 a number of defined route options were developed. These were numbered 1 – 8. Each of the options were assessed using the HE Delivery Plan objectives and KPI's to ensure that they represented solutions which would solve the problem based on desktop information and a walk through</p> <p>Each option was rated as Red, Amber or Green RAG. There was no appreciable difference in the RAG rating and therefore in order to differentiate and compare options a more detailed assessment of the options was necessary to identify the differentiators between the route options. This was based on engineering parameters, environmental factors, transportation and high level economics.</p> <p>Option sifting resulted in Options 1, 2, 7 and 8 being taken forward to Stage 2. (renumbered 1, 2, 3 and 4 in advance of the non-statutory public information events))</p>		
<p>5.2</p>	<p>Identify Constraints</p> <p>APM with input from AEC and AHTL outlined the key constraints/issues – (setting the scene)</p> <p>Environmental Constraints</p> <ul style="list-style-type: none"> • Historic Environment Record (HER) which includes cropmarks to the north of the existing A47, adjacent to existing carriageway at the western end of the scheme. Options 1 and 2 both have impact on this HER record. • There are 3 villages close to the A47, Blofield, North Burlingham and Lingwood. Other farm and commercial buildings, churches and community facilities are near to the A47 and properties are scattered throughout the rural area. • There are 20 listed buildings in the study area; and two Grade 1 listed churches in the vicinity • There are 2 county wildlife sites (CWS) nearby. Church and Drive plantation CWS being the closest • A number of ponds and watercourses are within the area. • There are limited nature/conservation/ecology constraints for the scheme. <p>Engineering Constraints</p> <ul style="list-style-type: none"> • Statutory Undertakers – There is a major gas main running parallel with the existing A47 and 		

	<p>just to the south.</p> <ul style="list-style-type: none"> • There are a number of other statutory undertaker's plant in the existing verges (including fibre optics) and several overhead lines cross the existing A47, including British Telecom and several HV electricity cables. • Ground Conditions – there is a risk of differential settlement of earthworks and materials susceptible to weathering. Ground Investigation is needed. • Access – A number of side roads (incl. North Burlingham access) joining the A47 and a number of properties, both commercial and residential have direct access. <p>Existing Properties and Buildings</p> <ul style="list-style-type: none"> • Village of North Burlingham adjacent to and north of the Existing A47. • Village of Lingwood to the South of all scheme Options. • 2 properties on Yarmouth Road very close to western tie-in for all Options which will require extensive accommodation works. • Existing care home on Dell Corner Road. 		
5.3	<p>Description of Each Option</p> <p>APM confirmed options taken forward from Stage 1 sifting review and taken to public consultation were as follows:-</p> <p>Option 1 an online dualling approximately following the existing A47</p> <p>Option 2 an offline dualling to the north of the existing for the western part of the route and to the south of the existing for the eastern part of the route</p> <p>Option 3 an offline dualling to the south of the existing A47</p> <p>Option 4 an offline dualling to the south of the existing A47 route, but closer to the existing A47 than Option 3</p> <p><i>See attachment H – Blofield Options 1,2,3&4 Access Description</i></p>		
6.0	<p>Assessment of the Options</p> <p>A number of assessments have been made of the 4 Options in order to inform the meeting and assist in the choice of a preferred route. These are detailed in sections 6.1 - 6.6 below:-</p>		
6.1	<p>Strategic Outcomes</p>		

	<p>A table showing how the 4 Options had been scored against each of the national high level KPIs was presented</p> <p>APM confirmed that there were no discernible differences between any of the 4 options when taking into account assessment against HE KPI's.</p> <p>Each option had been RAG rated See attachment B – Highway England KPI Assessment RAG Rated</p>		
6.2	<p>Individual Appraisal Summary Table (AST) for Each Option</p> <p>APM outlined the contents of the individual draft AST's with contributions from Discipline Leads</p> <p>The AST for each of the route options were available; See attachment C – A47 IMPS2-AMY-BB-ZZ-DO L0004 AST OPTIONS 1 - 4</p> <p>The information on the 4 assessments had also been extracted into a summary table in order to compare the 4 Options. This summary table was been RAG rated to enable the options to be compared against each other See attachment D – AST A47 Blofield to North Burlingham Option 1 2 3 4 RAG Rated</p> <p>Supplementary Information to the AST e.g. cost estimates, BCR, etc. was also provided (see sections below)</p> <p>Key points</p> <p>Economic</p> <p>There were no discernible differences between the 4 Options in terms of the economic categories (Business users and transport providers; reliability impact on business users; regeneration and wider impacts); all options showing a beneficial rating when assessed against these economy criteria.</p> <p>Environmental</p> <p>Noise – although all Options had been assessed as slight adverse, Options 1 and 2 would have little difference to existing conditions, Option 3 and 4 would benefit some properties and adversely affect others</p> <p>Physical activity opportunity would be less on Option 1; as the existing A47 wouldn't be available for pedestrian and cycle use. For all the other Options the existing carriageway could be utilized.</p> <p>No impact perceived upon listed buildings and churches</p>		

	<p>in environmental terms as the Options are not severing churches from their visual and historical surrounding landscapes.</p> <p>Social Aspects The social elements of the AST's as scored and presented were not informative due to the level of available information to populate these.</p> <p>The AST's presented showed there was little significance difference in social aspects with most consistently being rated beneficial or neutral. However, it was noted that these were based on the Stage 1 outputs and data. It was agreed that these factors would be reassessed in more detail, if possible, prior to the Interim SGAR meeting.</p> <p>A RAG rated sheet was tabled showing the 4 Options against the AST categories.</p> <p>This assessment showed that for Environmental categories there were no discernible differences between any of the 4 options and as such would not be a major contributing factor affecting the PRD.</p> <p>An environmental assessment of the 4 Options had been undertaken in the draft EAR resulting in a ranking of the Options based on the severity of their respective predicted environmental impacts.</p> <p>The option ranking for each environmental topic had been colour coded to assist in the comparison of Options.</p>		
6.3	<p>PIE Summary</p> <p>Including Preferred Option, key comments & data analysis</p> <p>Three public events had been held plus a static location in central Norwich.</p> <p>The large majority of the 290 respondents who responded to the question asking "do you think that improvements are needed to the A47 Blofield to North Burlingham route;" agreed that improvements were needed to the route with 279 selecting yes compared to 11 who selected no.</p> <p>Looking at the overall responses, Option 4 received the highest amount of support with 92 strongly in favour and 72 somewhat in favour. 66 say they are strongly against or somewhat against Option 4 compared to 134 against Option 1, 148 against Option 2 and 128 against Option 3.</p>		

	<p>Options 1 and 3 have very similar levels of support and opposition amongst respondents compared to Option 2 which has the lowest amount of support (24 strongly in favour).</p> <p>Other key points</p> <ol style="list-style-type: none"> 1) Concern was raised regarding NMU connectivity north/south, also linking into the retirement home on Dell Corner Lane for workers and visitors alike. 2) It was noted that respondents felt that there would be most disruption during construction for Option 1 but also significant on Option 2. 3) Option 3 had the potential largest impact on farmland and field severance, although Option 4 would also leave some land un-useable. <p>It was confirmed that there had been a lot of discussion at the public events about improving safety of the White House junction. However, as junction strategy had not yet been developed, all routes had a similar effect.</p> <p>It was confirmed that Options 3 and 4 were generally most preferred by local authorities, with Option 3 being slightly more favoured.</p> <p>See attachment E – Key Parties CONSULTATION for PRD and attachment F – PIE – Consultation from organisations RAG Rated</p>		
6.4	<p>Buildability Analysis</p> <p>The buildability contractor had confirmed the construction programmes included in the cost estimates were largely correct. The largest time constraint in Option 2 is building the bridge over the existing A47 carriageway.</p> <p>Key points</p> <p>The gas main is a significant constraint but would likely be diverted similarly on all options.</p> <p>Options 3 and 4 with mainly offline construction gave greater programme flexibility, with the opportunity for the offline underbridge to utilise box culverts to reduce programme.</p> <p>It was noted that all the Option programmes showed a start for construction as October 2020. It was agreed that there should be further scope to challenge the construction programme.</p>		
6.5	<p>Key Risks & Opportunities</p>		

	<p>A table showing a qualitative review and comparison of risks to highlight areas where risk profile differs across options was tabled, which showed no significant variance across the options. See attachment G – A47 Blofield to North Burlingham risk comparison – 10-05-2017</p> <p>Benefits and Opportunities</p> <ul style="list-style-type: none"> • All options meet the RIS commitments:- <ul style="list-style-type: none"> • Supports economic growth • A Safe and Serviceable Network • A More Free-Flowing Network and improved journey times • Improved Environment • An Accessible and Integrated Network <p>Issues and Risks</p> <ul style="list-style-type: none"> • Programme – Starting construction in March 2020 and 15 month construction will be challenging but achievable • Other Developments, planning permissions (Food Hub Site) • High estimate at end of Stage 1 Estimates provided for Stage 2 are above budget figure for all options. (HE to consider this further). • Value Engineered Scheme introduces delays/congestion with the provision of an “at grade” roundabout • Line of Preferred Route – Objections from Local Residents • Connectivity of local road access (large number of side roads and local accesses to accommodate) • Ground conditions most likely soft compressible ground and/or chalk susceptible to weathering. 		
6.6	<p>Cost</p> <p>APM confirmed that the 2015 order of magnitude outturn cost had been estimated with a most likely cost off £90.974m, giving a BCR of 1.25 (Low VfM)</p> <p>At the end of PCF Stage 1 HE commercial had re-estimated a single Option (Option 4) at £126.92m which gave a BCR, based on the PCF Stage 0 Transportation and Economics, of 3.50 (High VfM)</p> <p>This figure was considerably higher than the scheme budget of £66.90m therefore a Value Engineering exercise was carried out in March 2017 to reduce scheme costs.</p> <p>This involved removal of the proposed grade separated junction at the eastern end of the scheme, reduction of</p>		

	<p>earthworks and retention of all material on site. Other measures included changing the drainage provision from a positive system with kerbs and gullies to an over the edge Sustainable Drainage (SUDs) solution; kerbs reduced to 20% to reflect over the edge drainage rather than positive drainage. Reductions were also made in the costs associated with statutory undertaker's diversions and the removal of purchase costs of 2 properties. This exercise reduced the estimate costs to £83.40m giving a BCR of 3.30 – 1.98 with the most likely 2.48.</p> <p>Further revised draft cost estimates had been received from HE commercial on 14th June 2017 which showed costs as</p> <p>Option 1 Min £62.69m, Most Likely £94.04m, Max £157.78m</p> <p>Option 2 Min £63.64m, Most Likely £94.03m, Max £161.69m</p> <p>Option 3 Min £58.45m, Most Likely £86.01m, Max £153.17m</p> <p>Option 4 Min £56.64m, Most Likely £83.05m, Max £146.80m</p> <p>It was noted that all the estimates were in excess of the scheme budget at £66.90M</p> <p><i>Post meeting note:- The above costs have been confirmed by HE commercial</i></p> <p>After the VE exercise in March 2017 the cost for option 4 was estimated at £83.40, giving a BCR of 3.30 – 1.98 Most likely 2.48</p> <p>BCR figures were unavailable for the new cost estimates.</p>		
7.0	<p>Scoring Matrix Preferred Route Viability</p> <p>It was noted that much of the information presented was based on incomplete Stage 2 products and had low analytical assurance. The assessments overall were discussed and the following were agreed in the room</p> <p><u>Alignment to Strategic Objectives and HE KPI's</u> All Options aligned to the high level strategic assessment of the Delivery Plan objectives and showed little if any difference when considered against the National high level KPI's.</p> <p><u>AST comparison</u> There was no real differentiation between the options from the AST's. Economy rated as beneficial across all</p>		

the options and there was also no discernible difference considering the environment categories.

In terms of the Environmental ranking the EAR information the options ranked 1-3-2-4 in order of preference, option 1 being the best.

- Option 1 is the environmentally preferred option;
- Option 3 is the second preferred option;
- Option 2 is the third preferred option; and
- Option 4 is the least preferred option

As an action from the PRD meeting it was confirmed that there was a need to review the environmental rankings. The results of this review are noted below:-

Along with a desk top study, a number of environmental surveys were undertaken to inform the option selection process. The findings of these studies are included within an Environmental Assessment Report with a ranking assigned to each option to provide a preferred option.

A summary of the assessment findings is provided below; however it should be noted that although ranked the difference in the potential effects across the certain environmental topics is not significant and as such for these topics the weighting of the ranking is reflected in the overall option preference.

The report concluded that option 1 was the most preferred environmental option, as the online dualling would result in less impact on land take and ecology.

In terms of air quality and noise, all the options would have similar effects, with some receptors having a beneficial impact, while others would have an adverse effect.

Options 2 and 4 had similar impacts with option 2 only marginally preferred as it was more favourable in terms of requiring less landtake and having less of an effect on the public rights of way in the area.

Option 3 was the least preferred. This is an entirely offline option and was assessed as having adverse effects on ecology through habitat loss, would affect public rights of way and community woodland as well as resulting in the greatest ground disturbance. The impact of an entirely new road in an existing area of arable fields was also considered to have a significant effect on the local landscape.

The revised Environmental ranking is therefore detailed as follows:-

- Option 1 is the environmentally preferred option;
- Option 2 is the second preferred option
- Option 4 is the third preferred option; and
- Option 3 is the least preferred option;

Consultation Feed back

The overall result from the consultation feedback with regard to route preference was that the Options ranked

	<p>4-3-1-2 in order of preference with Option 4 being favoured by more responses and having fewer responses against.</p> <p>It was confirmed that Options 3 and 4 were generally most preferred by local authorities, with Option 3 slightly more favoured.</p> <p><u>Cost</u> In terms of costs provided by HE commercial the options ranked 4-3-2-1 in order of preference, with Option 4 clearly having the lowest cost estimate.</p> <p><u>Options 1 and 2 discounted</u> Consideration of the cost estimates (high), disruption to the public, longer construction periods and the low level of support from both the public and local authorities (more against than in favour) for Options 1 and 2 resulted in these being discounted at this point.</p> <p><u>Options 3 and 4 comparison</u></p> <p>Considerable discussion continued regarding the merits of Options 3 and 4. It was noted that there was no discernible difference on economic or environmental considerations.</p> <p>Both gave the opportunity for improvements for pedestrians, cyclists and equestrian riders, with both allowing the utilisation of the existing A47 for this purpose.</p> <p>Both Option 3 and 4 had been estimated as requiring 18 months to construct.</p> <p>Option 3 was slightly more expensive (£86.01m compared to £83.05m) than Option 4 and potentially could lead to greater severance to farms, community woodland and dwellings. However, Option 3 did have a slight majority in favour from the local authorities from the consultation results.</p> <p>Option 4 was the only option that showed an overall majority of support from the public and was the most favoured by the public; it was also the cheapest.</p> <p>OPTION 4 WAS SELECTED AS THE PREFERRED ROUTE.</p>		
8.0	<p>Preferred Route Viability</p> <p>Option 1 Pros</p> <ul style="list-style-type: none"> • Least land take • The most environmentally preferred option 		

	<p>Cons</p> <ul style="list-style-type: none"> • Online so high disruption during construction • Highest Cost <p>Option 2</p> <p>Pros</p> <ul style="list-style-type: none"> • Allows for improvements for pedestrians, cyclists and equestrian riders on the existing A47 <p>Cons</p> <ul style="list-style-type: none"> • Longest and most complicated construction period <p>Option 3</p> <p>Pros</p> <ul style="list-style-type: none"> • Most supported by local authorities • Completely off line so easy to construct • Joint shortest construction period • Allows for improvements for pedestrians, cyclists and equestrian riders on the existing A47 <p>Cons</p> <ul style="list-style-type: none"> • Possible severance of farmland communities and woodland • Highest land take • Least preferred option for environmental considerations <p>Option 4</p> <p>Pros</p> <ul style="list-style-type: none"> • Most supported by general attendees of the Public Information Events. • Lowest cost • Completely off line so less disruptive during construction. • Joint shortest construction period • Allows for improvements for pedestrians, cyclists and equestrian riders on the existing A47 <p>Cons</p> <ul style="list-style-type: none"> • Third environmentally preferred route • Loss of un-useable farmland between existing A47 and new alignment 		
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Date of Next meeting:

A47 Blofield to North Burlingham

PRD Meeting

Agenda

- Introductions
- H&S Moment
- Purpose of the PRD Discussion Session
- Available information to inform the decision
- Present Info
 - Scheme Overview
 - Identify constraints
 - Description of each Option
- Assess the Options
 - Strategic Outcomes, alignment to Delivery Plan
 - AST for each option
 - Supplementary info to the AST
 - PIE Summary
 - Buildability Analysis
 - Key Risks and Opportunities
- Scoring Matrix – LIVE.
- Determine and confirm the viability of a Preferred Route

PRD Meeting

Introductions

PRD Meeting

Health and Safety Moment

PRD Meeting

Purpose of the PRD Meeting

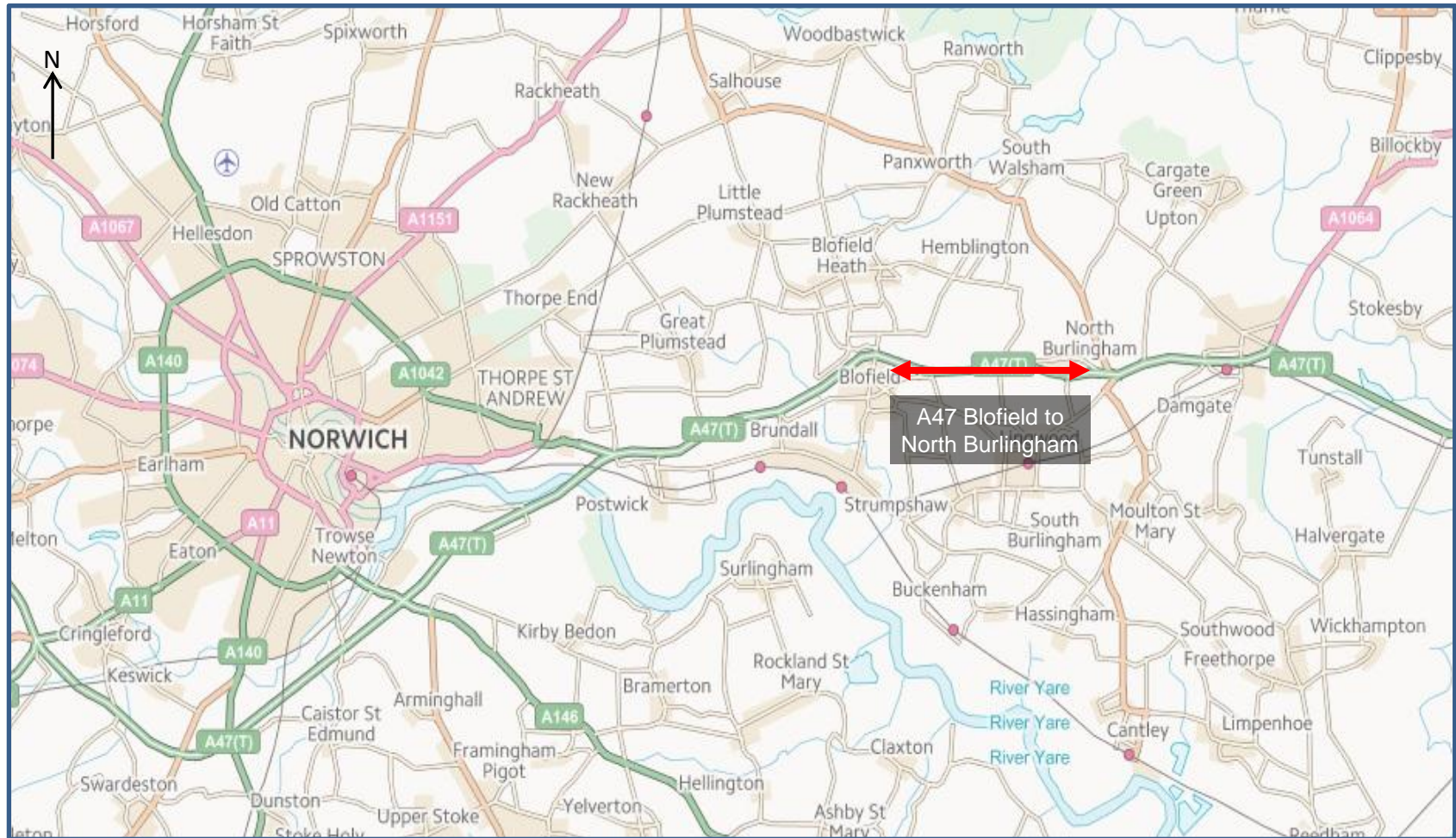
Need to ensure that all evidence has been presented and discussed with all views aired and recorded, inc expectations for PRA announcement

PRD Meeting

Available Information to Inform the Decision

status of products,
limitations and exceptions

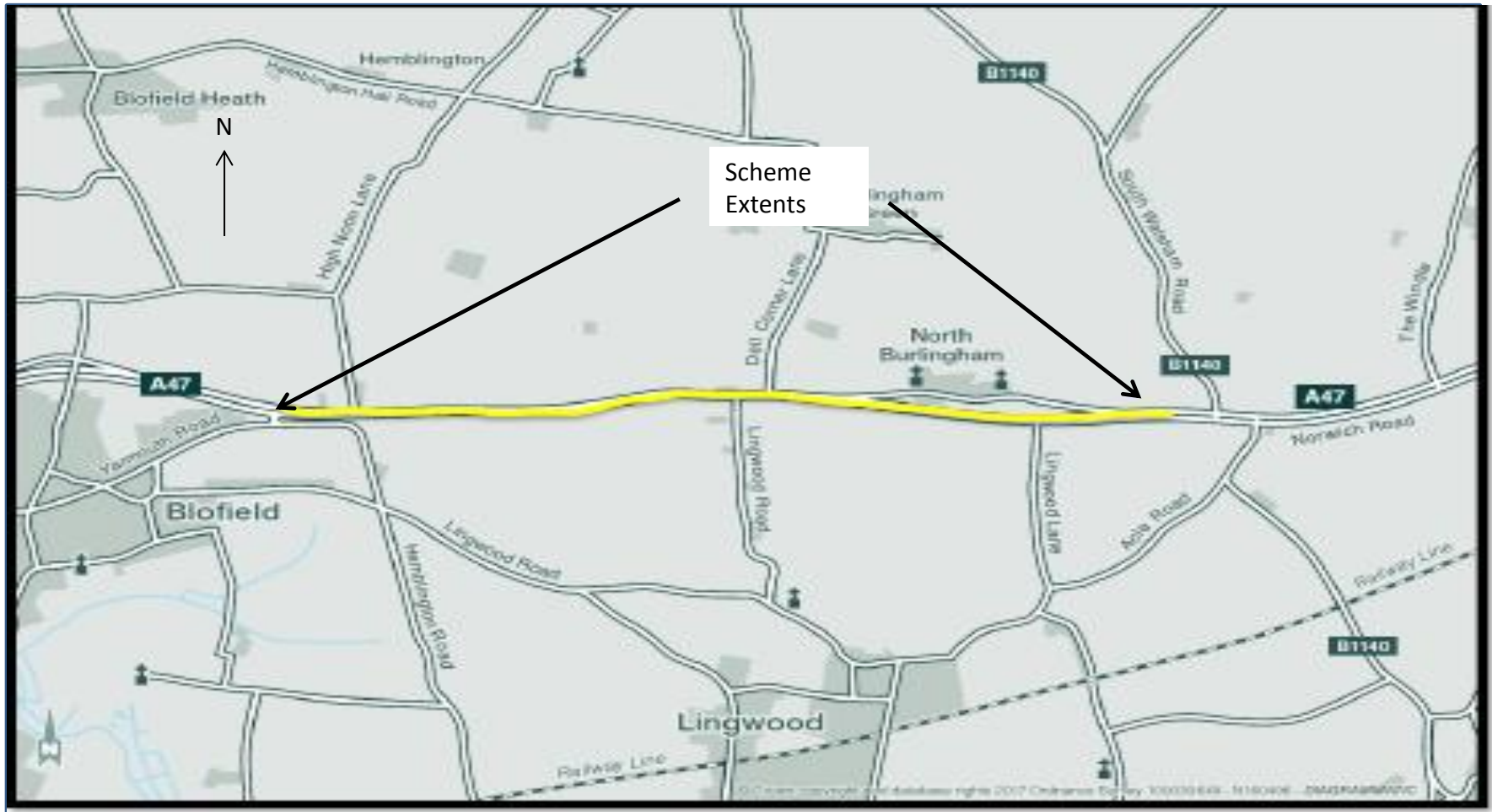
SCHEME LOCATION



RIS Commitment

Dualling of the single carriageway section of the A47 between Norwich and Acle, linking together two existing sections of dual carriageway

EXISTING LAYOUT



A47 GENERAL CONDITIONS

The A47 is ranked 2nd nationally for fatalities on A roads and the accident severity ratio is above average

The A47 is a mixture of dual carriageway (47%) and single carriageway (53%) and the traffic flows generally exceed capacity

Rapid growth is planned in the area, Norwich, Cambridge and Peterborough are amongst the fastest growing cities in the country.

EXISTING LAYOUT

Key Problems – Capacity

Speed

Resilience

Safety and Accidents

Existing Conditions and Constraints

Properties

Access

Historic / listed Buildings

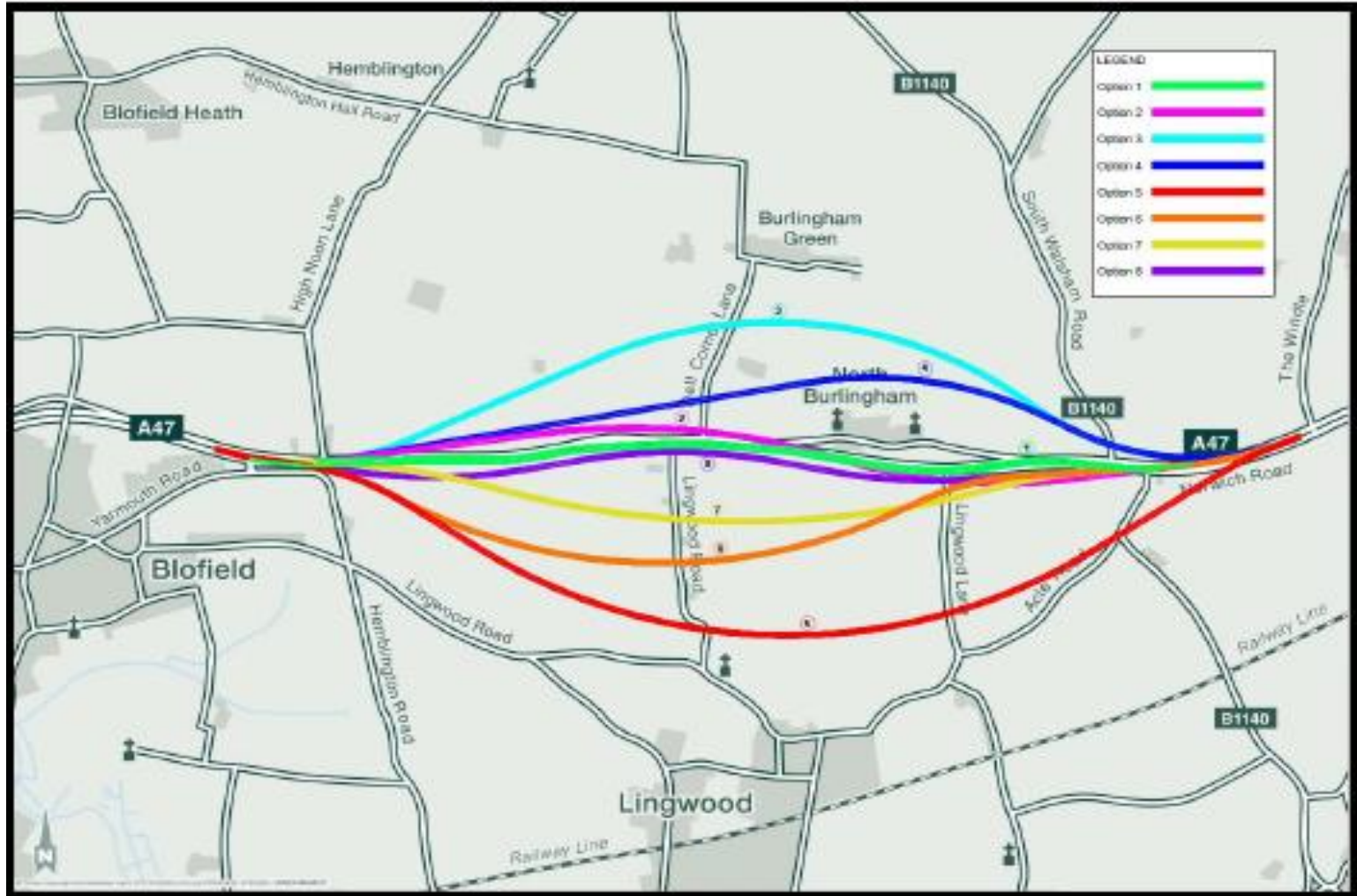
Nature conservation

Ecological importance

Scheme Overview PCF Stage 1 Options Development

- Constraints - overview
 - Existing properties and buildings
 - Existing local access roads and property access
 - Historic and listed buildings
 - Areas of nature conservation
 - Areas of potential ecological importance
 - River and water bodies
 - Statutory Undertakers
 - Ground Conditions
- Development of Route Options
 - 8 Options were identified (see next slide)

Stage 1 Preliminary Proposed Options



Scheme Overview PCF Stage 2 Option Selection

October 2015 Order of Magnitude Estimate

Representative Scheme	Range MIN (£M)	Most Likely (£M)	Range MAX (£M)
Outturn Costs	76.994	90.974	111.189

At the estimated cost for the scheme of £90.974 results in a BCR of 1.25. (Low VfM)

At the end of PCF Stage 1

Single HE Commercial Estimate £126.92M

BCR based on Stage 0 Transportation and Economics 3.50 (High VfM)

NATs model still being updated

SGAR 1 – Nov 2016

Stage 2 – Options Selection

Cost estimate > Budget (£126.92 - £66.90M)

Prior to Consultation Early Stage 2 VE exercise to bring cost estimate inline with budget

Cost estimate £83.40 BCR 3.30 – 1.98 Most likely 2.48

Scheme Overview PCF Stage 2 Option Selection

June 2017 Estimated Scheme Costs

Representative Scheme	Range MIN (£M)	Most Likely (£M)	Range MAX (£M)
Option 1	62.69	94.04	157.78
Option 2	63.64	94.03	161.69
Option 3	58.45	86.01	153.17
Option 4	56.64	83.05	146.80

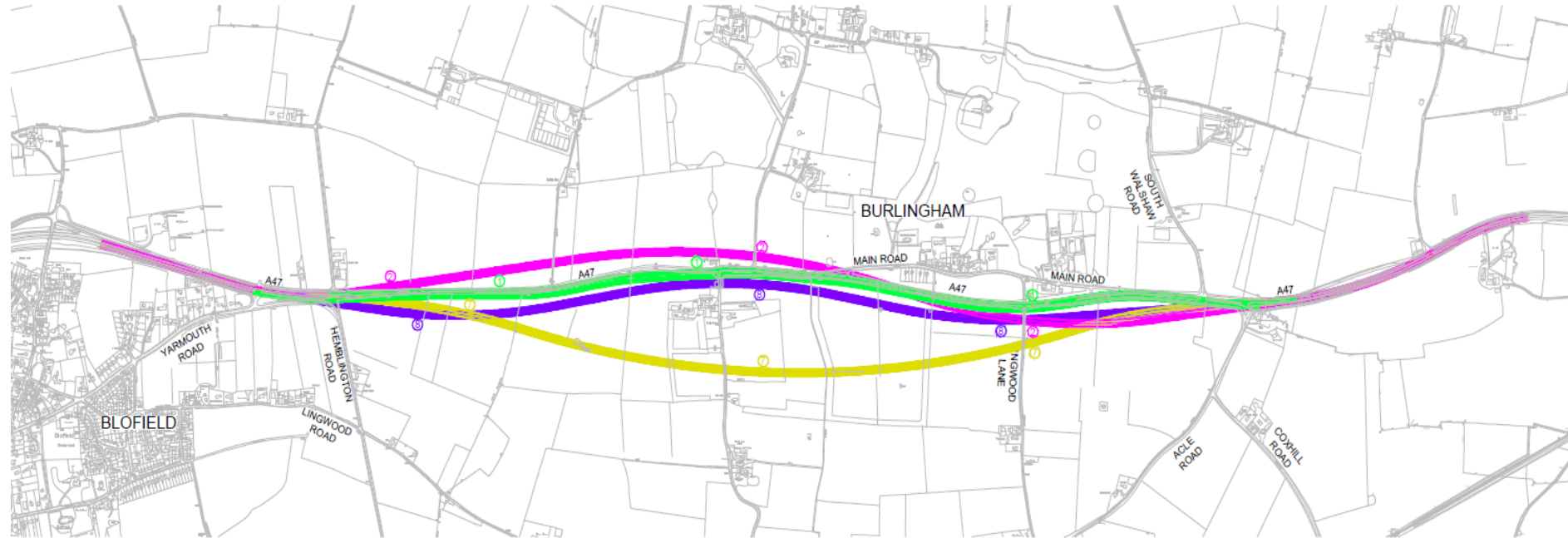
STAGE 1 OPTIONS SIFTING

Option	Option Rank				Overall Rank
	Environment Assessment	Engineering Assessment	Traffic Assessment	Economic Assessment	
Option 1	1	8	1	6	4
Option 2	5	5	3	1	3
Option 3	7	6	7	7	8
Option 4	7	2	5	4	5
Option 5	6	4	8	8	7
Option 6	4	7	6	5	6
Option 7	1	3	4	3	2
Option 8	1	1	2	2	1

Proposed Solutions (Options 1, 2, 7 & 8)

Option	Comparative Qualitative RAG Rating				Option taken forward to consultation	Comment
	Environment	Engineering	Traffic	Economic		
Option 1	Green	Red	Green	Red	yes	option provides a feasible route offline dualling option along the existing A47 for public consultation
Option 2	Yellow	Yellow	Yellow	Green	yes	option provides a feasible route offline dualling option to the north and the south of the existing A47 for public consultation
Option 3	Red	Red	Red	Red	no	all four assessments red
Option 4	Red	Green	Yellow	Yellow	no	one out of the four assessments red and two amber
Option 5	Red	Yellow	Red	Red	no	three out of the four assessments red and one amber
Option 6	Yellow	Red	Red	Yellow	no	two out of the four assessments red and two amber
Option 7	Green	Yellow	Yellow	Yellow	yes	option provides a feasible route offline dualling option to the south of the existing A47 for public consultation
Option 8	Green	Green	Green	Green	yes	option provides a feasible route offline dualling option to the south of the existing A47 for public consultation

Proposed Solutions (Options 1, 2, 7 & 8)

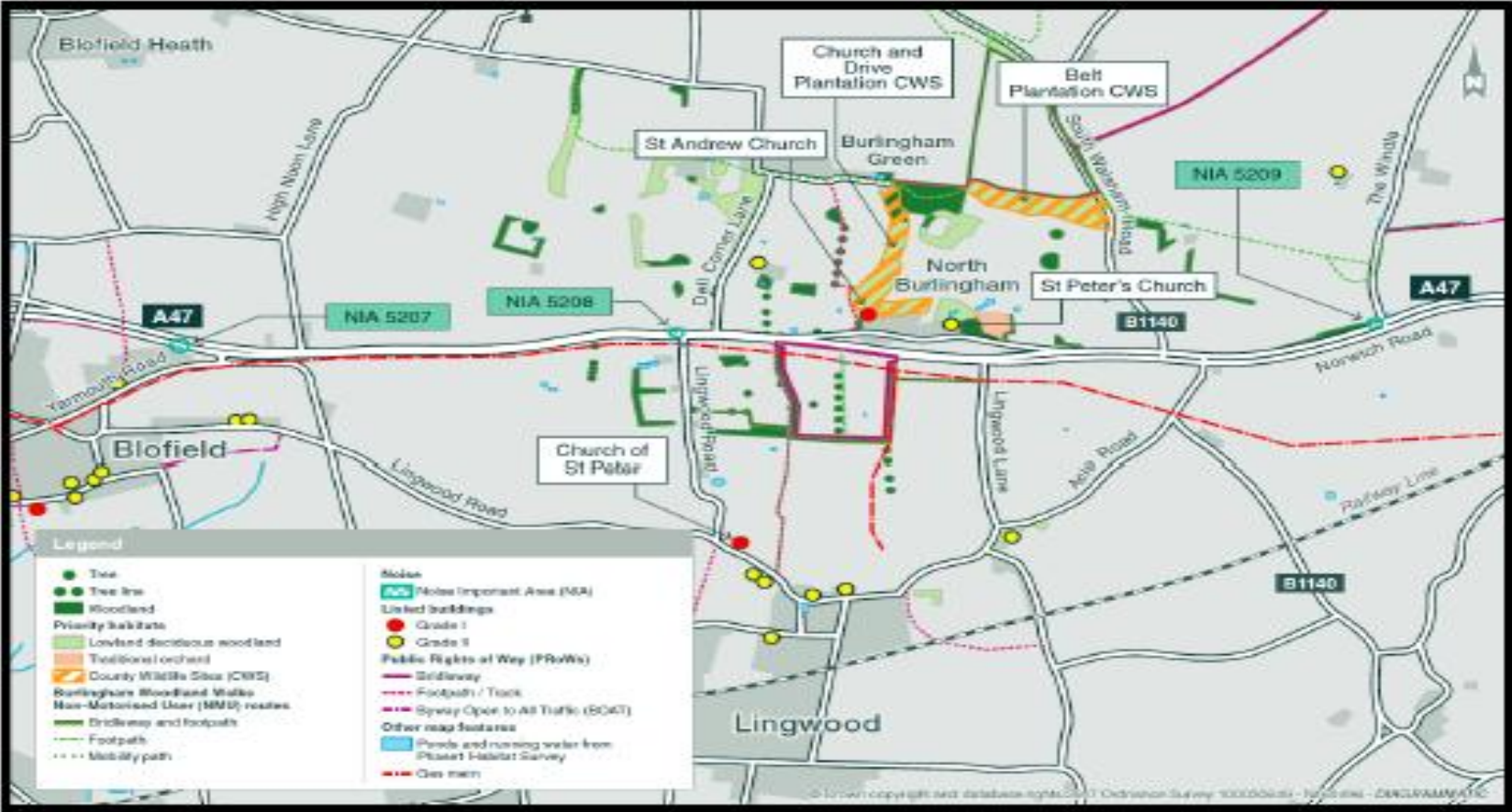


PRD Meeting

Review of Constraints

- Environmental
- Engineering
- Consultees/Stakeholders/Developments

KEY ENVIRONMENTAL CONSTRAINTS



Description of Options / Drawings

Review of 4 Options

Option 1 an online dualling following the existing A47

Option 2 an offline dualling to the north of the existing for the western part of the route and to the south of the existing for the eastern part of the route

Option 3 an offline dualling to the south of the existing A47

Option 4 an offline dualling to the south of the existing A47 route, but closer to the existing A47 than option 3

PRD Meeting

Assessment of the Options

- Strategic Outcomes, alignment to Delivery Plan
- AST for each option
- Supplementary info to the AST
- PIE Summary
- Buildability Analysis
- Key Risks and Opportunities

STRATEGIC ALIGNMENT

As part of the Highways England Delivery Plan, a series of KPIs have been developed to ensure that schemes that Highways England deliver, achieve their strategic outcomes.

Each of the options was appraised and scored 1 to 5 where 1 is poor and 5 is good. The overall score is rounded average of the eight assessed KPIs scores, which are then ranked accordingly.

These KPIs are based on the following topics,

Managing the Network Safer

Improving User Satisfaction

Supporting the Smooth Flow of Traffic

Encouraging Economic Growth

Deliver Better Environmental Outcomes

Helping Cyclists, walkers and other vulnerable users

Achieving Real Efficiency

STRATEGIC ALIGNMENT

This is based on a qualitative analysis of the 8 KPIs as follows

Option	Fit with wider transport and government objectives								Average	Rank
	Managing the network safer	Improving user satisfaction	Supporting the Smooth Flow of Traffic	Encouraging Economic Growth	Delivering better environmental outcomes	Helping cyclists, walkers and other vulnerable users	Achieving real efficiency	Keeping the Network in Good Condition		
1	4	4	5	4	3	4	3	4	3.9	1
2	4	4	5	4	3	4	3	4	3.9	1
3	4	4	5	4	3	4	3	4	3.9	1
4	4	4	5	4	3	4	3	4	3.9	1
5	4	4	5	4	3	4	3	4	3.9	1
6	4	4	5	4	3	4	3	4	3.9	1
7	4	4	5	4	3	4	3	4	3.9	1
8	4	4	5	4	3	4	3	4	3.9	1

The conclusion of the assessment against the Highways England KPIs was that as the KPIs are at a reasonably high level that each of the route options were likely to meet the KPIs and score against the KPIs in a very similar way.

Summary of Key Performance Indicators

Strategic Outcome	KPI	Things to Consider	Scheme Contribution – Qualitative	Scheme Contribution - Quantitative
Supporting Economic Growth	Average delay (time lost per vehicle per mile).	<p>How the scheme is contributing to:</p> <ul style="list-style-type: none"> • Being an active and responsive part of the planning system; • Supporting the business, and freight and logistics sectors; and • Helping the government support small and medium sized enterprises. 	Dualling of the A47 at Blofield will add additional lane capacity throughout the section. The Scheme is expected to be appraised by the Planning Act (DCO). The improved section may attract further investment and development in the surrounding area.	No quantitative data exists at this time, will be reviewed in future PCF Stages
A safe and serviceable network	The number of KSIs on the SRN.	<p>How the scheme will contribute to decreasing:</p> <ul style="list-style-type: none"> • Incident Numbers • Casualty Numbers 	The section currently performs poorly for safety. Congestion appears to cause a number of incidents. Dualling of the section will increase capacity and therefore reduce the risk of accidents due to congestion. Proposed reduction in junctions joining to the A47 may increase safety and reduce incidents especially with view to slow moving vehicles joining the A47.	No quantitative data exists at this time, will be reviewed in future PCF Stages

Summary of Key Performance Indicators

Strategic Outcome	KPI	Things to Consider	Scheme Contribution – Qualitative	Scheme Contribution - Quantitative
More free flowing network	<p>Network Availability: the percentage of the SRN available to traffic.</p> <p>Percentage of motorway incidents cleared within one hour</p>	<p>Detail the impact of the scheme, and the influence of other external factors, on traffic flow.</p> <p>This should include, at a minimum, reliability of journey times.</p>	<p>Dualling of the section will improve capacity, whether online or offline. Journey times should therefore decrease and reliability of journey times should increase.</p>	<p>No quantitative data exists at this time, will be reviewed in future PCF Stages</p>
Improved environment	<p>Noise: Number of Noise Important Areas mitigated.</p> <p>Biodiversity: Delivery of improved biodiversity, as set out in the Company's Biodiversity Action Plan (due to be published end of June 15)</p>	<ul style="list-style-type: none"> Noise Important Areas impacts / mitigations / Biodiversity impacts / mitigations / improvements Air Quality impacts / mitigations / improvements <p>How the scheme will contribute:</p> <ul style="list-style-type: none"> to facilitating ULEV fleet uptake to network resilience to flooding and improve water quality 	<p>At PCF Stage 2 there are four Options under review, each of which may have a different impact upon the environmental asset. The Scheme does not aim to worsen the existing situation but at this stage the impact requires further review in future PCF Stages.</p>	<p>No quantitative data exists at this time, will be reviewed in future PCF Stages</p>

Summary of Key Performance Indicators

Strategic Outcome	KPI	Things to Consider	Scheme Contribution – Qualitative	Scheme Contribution - Quantitative
Accessible and integrated network	The number of new and upgraded crossings	<p>Consider and provide details if the scheme will:</p> <ul style="list-style-type: none"> • Provide any safe crossings • Integrate with other existing and emerging networks • Deliver commitments under Public Sector Equality Duty • Improve provision of / considered cycling improvements 	Impact at this Stage is currently unknown. Future Stages will undertake NMU Assessment and look to utilise Additional Funding for network improvements where applicable.	No quantitative data exists at this time, will be reviewed in future PCF Stages

Individual AST's

Rag Rated AST's

Supplemental Information to AST's

An environmental assessment of the four scheme options has been undertaken for each environmental topic which has provided a ranking of these four options from the preferred option with the least expected environmental effects, through to the worst option with the most expected environmental effects.

In order to determine which option performs best from an environmental perspective it is necessary to combine these individual assessments to reach a view on the overall environmentally preferred option. This has been done by simply comparing the option rankings with the option that is preferred by the majority of the environmental topics, this being considered to be the overall environmental preferred option.

The option ranking for each environmental topic has been colour coded to assist the comparison. The preferred option for each topic is coloured green and the least preferred option coloured red. The second and third options are coloured yellow and orange respectively

Preferred option	Second option	Third option	Forth option
Green	Yellow	Orange	Red

Supplemental Information to AST's

Environmental topic	Option 1	Option 2	Option 3	Option 4
Air Quality	Green	Orange	Yellow	Red
Cultural heritage	Red	Orange	Yellow	Green
Landscape and Visual	Green	Red	Orange	Yellow
Nature conservation and biodiversity	Green	Yellow	Red	Orange
Noise and vibration	Grey	Grey	Grey	Grey
Road drainage and the water environment	Grey	Grey	Grey	Grey
People and communities	Green	Yellow	Red	Orange
Geology and soils	Orange	Yellow	Green	Red
Materials	Grey	Grey	Grey	Grey

Supplemental Information to AST's

Option ranking comparison

	Number of topics 'preferred option'	Number of topics second option	Number of topics third option	Number of topics fourth option
Option 1	4	0	1	1
Option 2	0	3	2	1
Option 3	1	2	1	2
Option 4	1	1	2	2

An environmental assessment of the four options under consideration for the A47 Blofield to North Burlingham has been undertaken in accordance with DMRB and is reported in the 3 interim PCF Stage 2 EAR. It found that:

- Option 1 is the environmentally preferred option;
- Option 3 is the second preferred option;
- Option 2 is the third preferred option; and
- Option 4 is the least preferred option

Consultation

Public Information Exhibitions Details and Numbers of Attendees

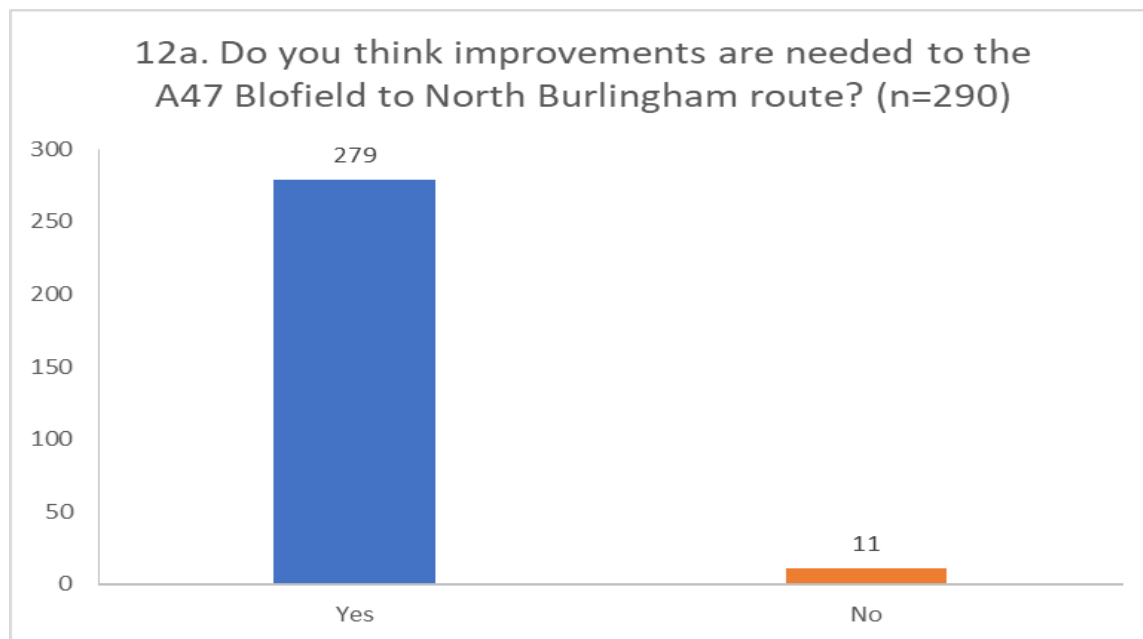
Venue	Date	Opening Times	Number of Visitors
The Forum Millennium Plain Norwich NR2 1TF	Tue 14 Mar	1pm – 3pm MPs, Councillor and stakeholder Preview	Not recorded
Lingwood Village Hall	Wed 29 Mar	3pm – 8pm	154
Blofield Courthouse	Fri 31 Mar	10am – 5pm	94
Lingwood Village Hall	Sat 1 Apr	10am – 2pm	75

An additional 'static' panel was set up at The Forum in central Norwich during the course of the consultation period.

The total number of respondents to the consultation is **441**, which includes responses from stakeholders and members of the public

Consultation

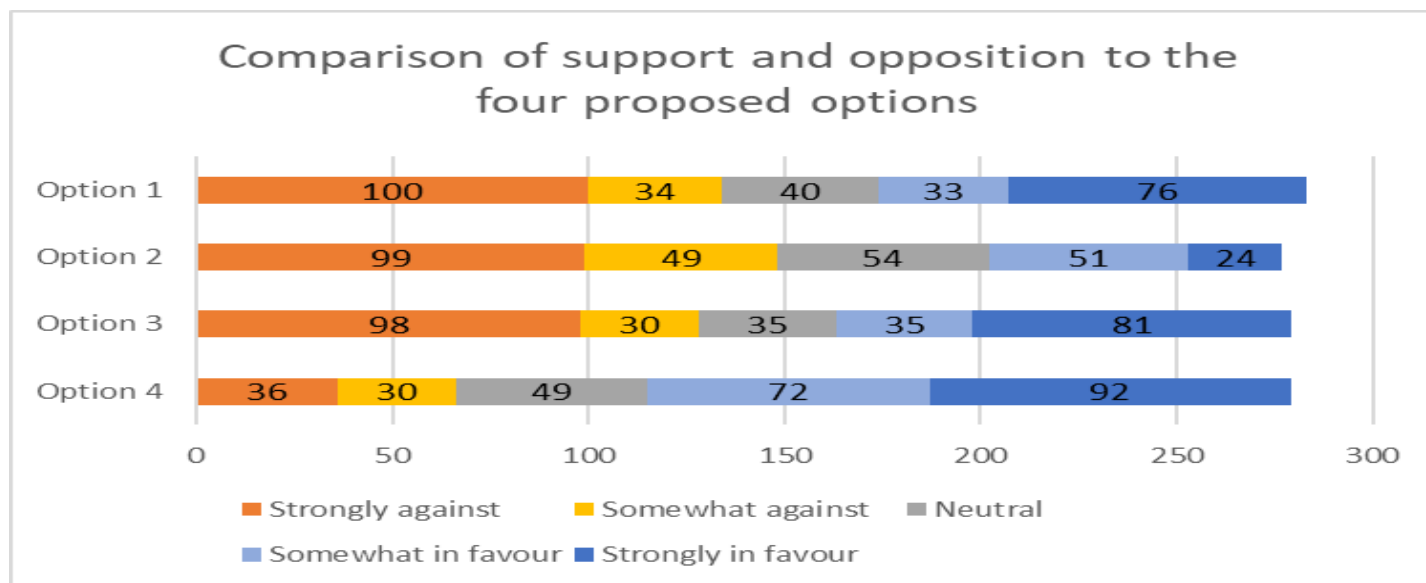
Respondents were asked to select whether they agree or disagree that improvements are needed to the A47 Blofield to North Burlingham route.



The large majority of the 290 respondents who responded to this question agree that improvements are needed to the A47 Blofield to North Burlingham route with 279 selecting yes compared to 11 who selected no.

Consultation

Responses to Option Preferences



Looking at the responses, Option 4 receives the highest amount of support with 92 strongly in favour and 72 somewhat in favour. 66 say they are strongly against or somewhat against Option 4 compared to 134 against Option 1, 148 against Option 2 and 128 against Option 3. Options 1 and 3 have very similar levels of support and opposition amongst respondents compared to Option 2 which has the lowest amount of support (24 strongly in favour).

Consultation

PRD Meeting

Scoring Matrix - LIVE

- Do we need to score/rank the 5 assessments?
- How should the assessment scores be combined to give a result?
- Develop Matrix – in meeting
 - simple 1-4 on each assessment?
 - Any of assessments more important / weightings
- Score and discuss result

PRD Meeting

Determine Preferred Route and record decisions

Determine and confirm the viability of a Preferred Route

- Record Justification for Preferred Route
- Record Reason for discarding Option x
- Record Reason for discarding Option x
- Record Reason for discarding Option x

Main Benefits and Potential Risks

Benefits and Opportunities

- Meets RIS Commitment
- Supports Economic Growth
- A Safe and Serviceable Network
- A More Free-Flowing Network and improved journey times
- Improved Environment
- An Accessible and Integrated Network

Issues and Risks

- Programme – Start in March 2020 and 15 month construction will be challenging
- Other Developments, planning permissions (Food Hub Site)
- High estimate at end of Stage 1
- Value Engineered Scheme introduces delays/congestion
- Line of Preferred Route – Objections from Local Residents
- Connectivity of local road access (large number of side roads and local accesses to accommodate)