

North Staffs Road Network Junction Assessment

FEASIBILITY STUDY

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North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

Contents

Introduction

Aims and Objectives

Operational Efficiency; Public Transport; Accessibility; Safety; Cycling / Walking;
Air Quality

Report Methodology

Existing Situation

City Centre Transport Assessment Phase 1 Report

City Centre Transport Assessment Phase 2 Report

Hanley Bentilee Link

Junction Assessment

List of Junctions Assessed (Scheme Specific Notes, NATA Assessments, Option Drawings)

- Site 3 A52 Leek Road / Station Road Traffic Signals
- Site 5 A50 Waterloo Road / A53 Cobridge Road Traffic Signals
- Site 7 A520 Weston Road / A5272 Park Hall Road Traffic Signals
- Site 9 A50 Waterloo Road / B5050 Pitt Street Traffic Signals
- Site 11 A53 Etruria Road / B5369 Basford Park Road Traffic Signals
- Site 12 A50 Scotia Road / A5271 The Boulevard Traffic Signals
- Site 13 A52 Hartshill Road / A52 Shelton Old Road Traffic Signals
- Site 16 A5007 King Street / Times Square Traffic Signals
- Site 17 A50 Waterloo Road / B5051 Moorland Road Traffic Signals
- Site 18 A5009 Leek Road / Bagnall Road Traffic Signals
- Site 19 Blurton Road / Grove Road Traffic Signals
- Site 21 A5038 Belgrave Road / B5035 Trentham Road Traffic Signals
- Site 22 B5050 North Road / Sandbach Road Traffic Signals
- Site 23 A52 Hartshill Road / Queen's Road Priority Junction
- Site 24 B5047 Hulton Street / B5047 Town Road Junction
- Site 28 B5045 Shelton New Road / Victoria Street Traffic Signals
- Site 29 A34 Stone Road / B5041 London Road Traffic Signals
- Site 31 A5035 Trentham Road / B5490 Stanley Matthews Way Traffic Signals
- Site 32 Sutherland Road / Weston Coyney Road Priority Junction
- Site 33 B5041 London Road / Penkhull New Road Priority Junction
- Site 37 A53 Leek New Road / Sandbach Road Priority Junction

NATA Assessment Summary Sheets

Summary

Conclusion

Recommendations

Appendix 1

Junctions considered within the City Centre Transport Assessment Reports

- Site 4 A50 Potteries Way / A5008 Bucknall New Road Traffic Signals
- Site 6 A5008 Bucknall Road / A5272 Bucknall New Road Priority Junction
- Site 10 A52 Leek Road / A 5008 Bucknall Road (Limekiln)
- Site 15 A52 Leek Road / A50 Lichfield Street Roundabout
- Site 20 A52 Bucknall Road / A5272 Dividy Road Traffic Signals
- Site 34 Marsh Street Trinity Street

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

Introduction

The Local Transport Plan overall vision is 'to create and maintain an integrated and sustainable transport system for North Staffordshire to facilitate regeneration and to create opportunities for people to live, play and travel in a safe and pleasant environment'. This reflects the need to support local people to access jobs, services goods and leisure facilities. Reducing the number of accidents and congestion and improving air quality is fundamental to achieve this vision.

Congestion is a major problem in North Staffordshire having a significant negative impact on the local economy, people's quality of life and the prospects for the sustainable regeneration of North Staffordshire. Nationally traffic congestion is amongst the top three concerns of motorists and can be defined as the average time lost by a vehicle on the road network when compared to free-flow conditions.

The Local Transport Plan predicts that road traffic will increase locally by approximately 20% (source : North Staffordshire Integrated Transport Study) between 2002 and 2021. Furthermore peak hours are forecast to spread and congestion is likely to grow faster than traffic.

Congestion causes many difficulties including:-

- unreliability of bus services;
- delays to motorists;
- delays to deliveries and supplies effecting productivity;
- generation of excessive air pollution, noise and dust.

The Local Transport Plan identifies five key strategic aims to reduce congestion. Strategic aim C5 (providing new infrastructure to meet local transport needs) states that the local authority will be undertaking detailed investigations into potential solutions for junctions identified as having congestion and efficiency problems.

A report has been produced by the Transport and Planning Group for the North Staffordshire Integrated Transport Study assessing junction based efficiency problems on the North Staffordshire road network. This report identifies junctions experiencing existing traffic problems or are predicted to experience problems in the future.

Aims and Objectives

The objective of this feasibility Study is to consider a number of options for improvement of these junctions including the following aims:-

- improve operational efficiency,
- improve efficiency for public transport;
- improve accessibility;
- improve safety for all travellers;
- encourage walking and cycling;
- protect and where possible enhance the natural environment;
- improve air quality.

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

Operational Efficiency

Generally operational efficiency of the junctions will not be improved and congestion reduced without the need for additional traffic lanes and the improvement of visibility through the junction.

Public Transport

Stoke-on-Trent's Bus Strategy operational performance statement empowers the local authority to help to improve the reliability and punctuality of services. Consideration should be given to the provision of bus lanes where appropriate and the use of Urban traffic Control systems to assist bus services through the highway network.

Accessibility

Over 30% of households in North Staffordshire have no access to a car (source : North Staffordshire Integrated Transport Study) and are therefore reliant on a good public transport network. North Staffordshire being a non linear polycentric urban conurbation has unique land use patterns resulting in a scattered and complex transport network. Travel patterns are therefore harder to serve by public transport than a conventional hub and spoke type city, thus there is a high and increasing car dependency.

Safety

The objective of improving travel safety is an important component of the transport strategy of the North Staffordshire Transport Plan. Key objectives have been identified including the reduction in all categories of road traffic casualties. This can be achieved by simplification of junction design, providing dedicated pedestrian facilities and upgrading of street lighting to comply with current standards.

Cycling / Walking

In line with Government policy the Stoke-on-Trent City Council's Cycling Strategy identifies key objectives to develop a safe, convenient, efficient and attractive transport infrastructure which encourages and facilitates the use of walking, cycling and public transport.

Air Quality

Air quality is a priority for North Staffordshire as there are many locations where the national air quality objectives for nitrogen dioxide (NO₂) and particulates (PM₁₀) are being exceeded, mainly due to traffic emissions. Although there is evidence that nationally the overall air quality could improve due to emission reduction through improvements in vehicle design it is forecast that the local situation will not show any marked improvement until well after 2010.

The Environment Act (1995) places a requirement on Local Authorities to monitor air quality and produce action plans identifying policy targets, as such it has been identified as a key objective (AQ2 – Implement direct action to improve air quality) and as a performance indicator (M18 – Air Quality) in the Local Transport Plan.

The 'National Atmospheric Inventory' indicates that road transport is responsible for approximately 57% of all NO₂ emissions across the Local Transport Plan area.

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

Report Methodology

24 junctions within the boundaries of the City of Stoke-on-Trent have been considered for analysis.

As a general approach to improve capacity additional lanes have been added to most approaches to the junctions under consideration. Generally two options per junction have been considered. In addition roundabout and traffic signal options have been considered at certain locations.

Options are shown on individual drawings, however land take, property acquisition, landscaping visibility splays etc are not shown and the drawing should be considered for feasibility only.

A qualitative assessment based on the NATA criteria has been carried out on each site and per option. These criteria have been given a score (- for a negative impact and + positive impact) the results tabulated along with the congestion prediction (slight moderate or severe), whether or not the site is on a bus priority corridor and within a Area of Major Housing intervention(AMI) or General Renewal Area (GRA)

Existing Situation

Since the report produced by the Transport and Planning Group for the North Staffordshire Integrated Transport Study was written in 2002 a number of junctions have been altered.

- The roundabouts on the A500 on City Road and Stoke Road have been replaced with grade separated signal junctions as part of the A500 Pathfinder project
- The A53 Leek Road / Norton Lane signal junction has been enlarged as part of a nearby housing development.
- The existing A34 Stone Road / London Road signal was modified in May 2003 to improve capacity

Traffic modeling in the identification of the congested junctions related to a 2002 base-year. Hence the junctions modeled will reflect the layout geometry of the junctions in this base year. Similarly, the modeling of the network for the 2021 scenario will have been updated to reflect committed and predicted highway improvements. Thus the A500 junctions at City Road and Stoke Road, the A34 Stone Road – London Road priority junction and B5047 Town Road – Hulton Street roundabout will have been modeled based on their layout in 2002. For the 2021 scenario these junctions will have been modeled according to their new layouts. However the A53 Leek Road – Norton Lane signalized junction has been modeled based on its 2002 layout.

City Centre Transport Assessment Phase 1 Report

Part of this report produced by Scott Wilson Consultants in January 2007 recommends improvements to the road network between the City Centre and the A500. Junctions identified within this report are included in Appendix 1 of this feasibility study

City Centre Transport Assessment Phase 2 Report

The City Centre Transport Assessment Phase 2 published in June 2007 confirms the preferred line for the Hanley Bentilee Link as the Botteslow Street Option therefore Limekiln junction has

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

not been included in the assessment and only a limited assessment of the other junctions on the existing route has been undertaken

Hanley Bentilee Link

The Hanley Bentilee Link Road has been promoted by the City Council since pre 1979 and the line has been protected. The City Council has acquired and demolished property with a view to its construction. A preliminary design exists but planning permission has not been obtained. At present the scheme is not in a programme for construction but is being assessed as part of the City Centre Transport Assessment Phase 2. As part of this assessment the existing route (Dividy Road / Bucknall Road / Bucknall New Road) is being appraised as an alternative route.

If the link was not constructed on the proposed route (Botteslow Street) then major alterations to Werrington Road / Dividy Road, Limekiln, Bucknall New Road / Keelings Road and Potteries Way / Bucknall New Road junctions would be required.

It may be necessary to reevaluate the above four junctions when a final decision is made on the route of the Hanley Bentilee Link

Junctions not considered

Sites 1, 2, 8, 25, 26, 27, 30, 35 and 36 have not been considered due to these junctions being on the Trunk Road network and, hence are not the responsibility of the City Council. In particular, it should be noted that although the majority of these junctions have been improved or are new junctions (i.e. A50/Trentham lakes grade separated junction) these are still predicted to experience significant congestion problems.

Site No	Junction	Reason for Exclusion
1	A500/ Stoke Road	Junction on Trunk Road Network
2	A500/ City Road	Junction on Trunk Road Network
8	A50/A500 Roundabout	Junction on Trunk Road Network
25	A500 /Whieldon Road	Junction on Trunk Road Network
26	A500 North slip /City Road	Junction on Trunk Road Network
27	A50/TrenthamLakes grade separation	Junction on Trunk Road Network
30	A500 South slip/ City Road	Junction on Trunk Road Network
35	A500 North slip /Stoke Road	Junction on Trunk Road Network
36	A500 South slip/ Stoke Road	Junction on Trunk Road Network

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

Summary

This report has assessed a number of junctions as identified in the “Reassessment of Link and Junction Based Efficiency Problems on the North Staffordshire Road Network” published in 2002. Options to widen the junctions approaches to provide additional carriageway for bus only or all vehicles have been considered. A NATA assessment has been prepared for each option and the results tabulated

From the NATA Assessment Summary Sheet the four junctions which received the top score in terms of Assessment Priority and Congestion Priority are shown below

Assessment Priority

Junction	Assessment Score	Congestion	Bus Priority	AMI
A52 Leek Road / A50 Lichfield St	20	Severe	Yes	Yes
A52 Leek Road /Station Road	18	Mod	Yes	Yes
B5045 Shelton New Rd / Victoria St	17	Mod	Yes	No
A5047 Hulton Street / B5047 Town Road	16	Slight	Yes	Yes
A50 Waterloo Road / B5051 Moorland Road	16	Slight	Yes	No

Congestion Priority

Junction	Assessment Score	Congestion	Bus Priority	AMI
A52 Leek Road / A50 Lichfield St	20	Severe	Yes	Yes
A50 Waterloo Road / A53 Cobridge Road	15 Option 1	Severe	Yes	Yes
A520 Weston Road / Park Hall Road	13 Option 1	Severe	No	No
A520 Weston Road / Park Hall Road	12 Option 2	Severe	No	No
A50 Waterloo Road / A53 Cobridge Road	11 Option 2	Severe	Yes	Yes

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

It can be concluded therefore that the three junctions to be taken forward for further assessment are

1 A52 Leek Road / A50 Lichfield St

2 A52 Leek Road /Station Road

3 A50 Waterloo Road /A53 Cobridge Road

Conclusion

This report provides initial data which can be refined to prioritize a list of junction improvements to reduce congestion within the Stoke on Trent road network. The Hanley Bentilee Link should be given a high priority in reducing congestion within the eastern side of the City

Recommendation

Further examination of the options including statutory undertakers and property acquisition costs and deliverability should be carried out. Liaison with Regeneration and RENEW to refine the options allowing preliminary designs carried out to confirm the order of priority

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

Appendix 1

Junctions considered within the City Centre Transport Assessment Phase 1 Report

Site 4	Potteries Way / Bucknall New Road	Included in City Centre TA Phase 1 See Drg No D110115/D004/603 and 604
Site 15	Leek Road / Lichfield Street	Included in City Centre TA Phase 1 See D110115/D004/617, -618, -619
Site 34	Marsh Street / Trinity Street	Included in City Centre Core Phase 1 See Drgs D110115/D004/Fig 4.18

Junctions considered within the City Centre Transport Assessment Phase 2 Report

Site 6	Bucknall New Road/ Keelings Road
Site 10	Leek Road / Bucknall Road (Limekiln)
Site 20	Dividy Road / Werrington Road

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

- 1 A500(T) / A5006 Stoke Road Roundabout
- 2 A500(T) / A52 City Road Roundabout
- 3 A52 Leek Road / Station Road Traffic Signals
- 4 A50 Potteries Way / A5008 Bucknall New Road Traffic Signals
- 5 A50 Waterloo Road / A53 Cobridge Road Traffic Signals
- 6 A5008 Bucknall Road / A5272 Bucknall New Road Priority Junction
- 7 A520 Weston Road / A5272 Park Hall Road Traffic Signals
- 8 A500(T) / A50(T) Grade Separated Roundabout
- 9 A50 Waterloo Road / B5050 Pitt Street Traffic Signals
- 10 A52 Leek Road / A5008 Bucknall Road Traffic Signals
- 11 A53 Etruria Road / B5369 Basford Park Road Traffic Signals
- 12 A50 Scotia Road / A5271 The Boulevard Traffic Signals
- 13 A52 Hartshill Road / A52 Shelton Old Road Traffic Signals
- 14 A53 Leek New Road / Norton Lane Traffic Signals
- 15 A52 Leek Road / A50 Lichfield Street Roundabout
- 16 A5007 King Street / Times Square Traffic Signals
- 17 A50 Waterloo Road / B5051 Moorland Road Traffic Signals
- 18 A5009 Leek Road / Bagnall Road Traffic Signals
- 19 Blurton Road / Grove Road Traffic Signals
- 20 A52 Bucknall Road / A5272 Dividy Road Traffic Signals
- 21 A5038 Belgrave Road / B5035 Trentham Road Traffic Signals
- 22 B5050 North Road / Sandbach Road Traffic Signals
- 23 A52 Hartshill Road / Queen's Road Priority Junction
- 24 B5047 Hulton Street / B5047 Town Road Junction
- 25 A500(T) / Whieldon Road Traffic Signals
- 26 A500(T) Northbound Off-Slip / A52 City Road Traffic Signals
- 27 A50(T) / Trentham Lakes Grade Separated Traffic Signals
- 28 B5045 Shelton New Road / Victoria Street Traffic Signals
- 29 A34 Stone Road / B5041 London Road Traffic Signals
- 30 A500(T) Southbound On-Slip / A52 City Road Traffic Signals
- 31 A5035 Trentham Road / B5490 Stanley Matthews Way Traffic Signals
- 32 Sutherland Road / Weston Coyney Road Priority Junction
- 33 B5041 London Road / Penkhull New Road Priority Junction
- 34 A5006 Marsh Street / A5010 Trinity Street Traffic Signals
- 35 A500(T) Northbound On-Slip / A5006 Stoke Road Traffic Signals
- 36 A500(T) Southbound Off-Slip / A5006 Stoke Road Traffic Signals
- 37 A53 Leek New Road / Sandbach Road Priority Junction

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

Appendix 1

Junctions considered within the City Centre Transport Assessment Reports

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North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

Deliverability

Consider 10 junctions based on assessment priority and congestion severity

Junction	Assessment Total	Conjestion level	Site on bus priority corridor	AM1 or General Renewal Area	Site No	
A52 Leek Road / A50 Lichfield Street Joiners Sq.	20	Severe	Yes	Yes	6	1
A52 Leek Road / Station Road	18	Mod	Yes	Yes	3	2
A5007 King Street/Times Sq	18	Mod	Yes	No	16	3
B5045 Shelton NR Victoria St.	17	Mod	Yes	No	28	4
A5047 Hulton St B5047 Town Rd	16	Slight	Yes	Yes	24	5
A50 Waterloo Rd/B5051 Moorland Rd	16	Slight	Yes	No	17	6
A50 Waterloo Rd / A53 Cobridge Road	15	Severe	Yes	Yes	5	7
Blurton Road / Grove Road	15	Moderate	No	No	19	8
A5008 Bucknall New Road / A5272 Bucknall Old Road	15	Slight	yes	yes	6	9
A53 Etruria Road / Basford Park Road	15	Slight	Yes	No	11	10 See comments

North Staffordshire Road Network Junction Assessment – Feasibility Study

20th July 2007

Although the A520 Weston Road /A5272 Park Hall Road junction scores 13 on the assessment criteria it severe congestion rating identifies the junction should be included. Land is required but not property. Replace A53 Etruria Road / Basford Park Road signal junction with A520 Weston Road / A5272 Park Hall Road as Etruria Road requies land from frontagers in Newcastle u Lyme

The 10 above junctions in congestion severity order are

1 A52 Leek Road / A50 Lichfield Street Joiners Sq.	Severe	Assessment 20
2 A50 Waterloo Rd / A53 Cobridge Road	Severe	Assessment 15
3 A520 Weston Road / Park Hall	Severe	Assessment 13
4 A52 Leek Road / Station Road	Moderate	Assessment 18
5 A5007 King Street/Times Sq	Moderate	Assessment 18
6 B5045 Shelton New Road /Victoria St	Moderate	Assessment 17
7 Blurton Road / Grove Road	Moderate	Assessment 15
8 A5047 Hulton St /B5047 Town Rd	Slight	Assessment 16
9 A50 Waterloo Rd/B5051 Moorland Rd	Slight	Assessment 16
10 A5008 Bucknall New Road / A5272 Bucknall Old Road	Slight	Assessment 15



Site 3
A52 Leek Road / Station Road Traffic Signals - Option 1

Transport and Access

General	Widen Station Road utilising land currently used for car parking to provide bus lane and to extend the marked route of the National Cycle Route (NCN5) also improve visibility on Glebe Street / Station Road radius. Land currently used for commuters Car Park will need to be purchased from Network Rail, lost spaces could possibly be replaced within new car park to be constructed to the east of the junction off Roebuck Street. Provide bus lanes on Leek Road (North) and Leek Road (South) approaches. Signalised Pedestrian facilities to be provided.	N/A
Regeneration	This junction lies within South Shelton Area of Major Housing Intervention Phase 2.	2
Pedestrians	Provide dedicated pedestrian facilities within the traffic signalisation of the junction.	2
Cyclist	The junction lies on the national Cycle Route (NCN5). The provision of on carriageway cycle route in Station Road on NCN5 route and the widening of the carriageway in Leek Road will create more road space which will be beneficial to cyclists	2
Buses	The provision of bus lanes on Station Road and Leek Road approaches will improve Bus facilities and journey times. Site lies on a route designated as a Bus Priority Corridor.	2 2
Traffic	Widening of the approaches to the junction will improve overall capacity of the junction. However benefits of this will be partially offset by the provision of bus lanes and pedestrian facilities.	0
Congestion	The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - MODERATE	2 1
Safety	The creation of pedestrian facilities will provide safety benefits.	1
Accessibility	The scheme will improve accessibility to Stoke Station and will improve transport links to the University campus.	2
Integration	Improvements to this junction with benefit access to Stoke Station, however land take requirements will reduce the capacity of the Station Car Park.	1

Environment



Site 3 **A52 Leek Road / Station Road Traffic Signals - Option 1**

General

The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.

N/A

Landscape / Townscape

The scheme will have limited benefits in terms of Landscape and Townscape improvements

0

Noise

No change

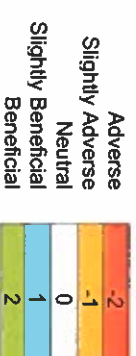
0

Air Quality

Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO₂) and particulates (PM₁₀) emissions.

1

Total Score **18**



Site 3 A52 Leek Road / Station Road Traffic Signals - Option 2

Transport and Access

General

Widen Station Road utilising land currently used for car parking to provide bus lane and to extend the marked route of the National Cycle Route (NCN5) also improve visibility on Glebe Street / Station Road radius. Land currently used for commuters Car Park will need to be purchased from Network Rail, lost spaces could possibly be replaced within new car park to be constructed to the east of the junction off Roebuck Street. Provide bus lanes on Leek Road (North) and Leek Road (South) approaches. Signalised Pedestrian facilities to be provided. Glebe Street to be made Buses, taxis and cyclist only thus reducing the amount of turning manoeuvres within the junction. This option will require further modelling as it could have a major impact on the newly constructed junctions on A500 at City Road and Stoke Road. Modelling should also take into account Scott Wilson's recommendations regarding the University Boulevard.

N/A

Regeneration

This junction lies within South Shelton Area of Major Housing Intervention Phase 2.

2

Pedestrians

Provide dedicated pedestrian facilities within the traffic signalisation of the junction.

2

Cyclist

The junction lies on the national Cycle Route (NCN5). The provision of on carriageway cycle route in Station Road on NCN5 route and the widening of the carriageway in Leek Road will create more road space which will be beneficial to cyclists

2

Buses

The implementation of a buses and taxis only gateway in Glebe Street together with the provision of bus lanes on Station Road and Leek Road approaches will improve Bus facilities and journey times.
Site lies on a route designated as a Bus Priority Corridor.

2
2

Traffic

Widening of the approaches to the junction will improve overall capacity of the junction. However benefits of this could be offset by the closure of Glebe Street to traffic and the provision of full pedestrian facilities.

0

Congestion

The simplification of the junction by the closure of Glebe Street and the additional lanes in Station Road and Leek Road will reduce congestion. However further modelling will be required as the closure of Glebe Street will have a significant impact on the newly constructed junctions on A500 at City Road and Stoke Road. Modelling should also take into account Scott Wilson's recommendations regarding the University Boulevard.
Level of congestion as identified in North Staffordshire Transport Study - MODERATE

2
1

Safety

The creation of pedestrian facilities will provide safety benefits.

1

Accessibility

The scheme will improve accessibility to Stoke Station and will improve transport links to the University campus.

2



Site 3 **A52 Leek Road / Station Road Traffic Signals - Option 2**

Integration

Improvements to this junction with benefit access to Stoke Station, however land take requirements will reduce the capacity of the Station Car Park.

1

Environment

General

The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.

N/A

Landscape / Townscape

The scheme will have limited benefits in terms of Landscape and Townscape improvements

0

Noise

No change

0

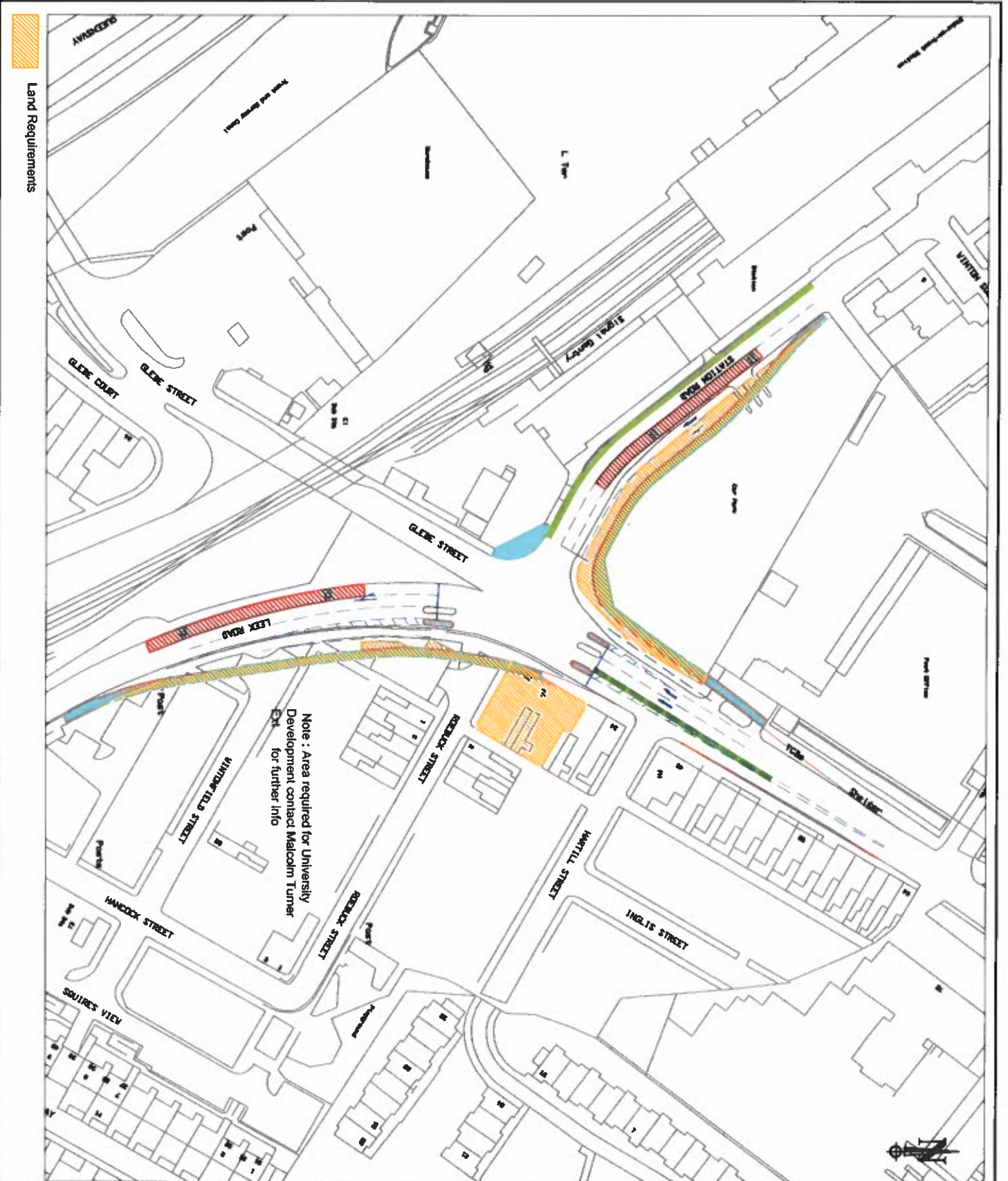
Air Quality

Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO₂) and particulates (PM₁₀) emissions.

1

Total Score

18



Land Requirements

- Contractor to check all dimensions and report errors and omissions to the Engineer or Contract Administrator.
- The Contractor is responsible for all setting out.
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REVISION	No.	DATE	NOTE



**NORTH STAFFORDSHIRE
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PROJECT:
North Staffordshire Road Network
Junction Assessment - Feasibility Study

PROJECT No:
1101123
DWG. TITLE:
A52 Leek Road / Station Road Traffic Signals -
Option 1

DRAWING STATUS
DRAFT CONTRACT AS BUILT

DRAWING FILE NAME

DRAWN BY SCALE
AN/JT 1:1000
DATE CHECKED
January 2007 *****

DWG No: 1101123/03/01
REVISION

Site 4 – A50 Potteries Way / A5008 Bucknall New Road Traffic Signals

Baseline Assessment

Deficiencies identified by North Staffordshire Integrated Transport Study (NSITS).

Significant delays are predicted on all approaches to the junction which will also have an adverse impact on bus journey times as the junction lies on a major bus route. Any potential improvements to the junction will require significant acquisition of property. It should be noted that the operation of the junction will be improved by the implementation of the City Centre Link and Waterloo Road Development Link Road which will reduce traffic through this junction.

The construction of the Hanley Bentilee Link would reduce traffic flows along the A5008 Bucknall New Road / A52 Bucknall Road / A5272 Dividy Road Corridor

Modelled Average Delay Per Vehicle (In Minutes) – Base Year 2002					
		To			
From		A	B	C	D
	A - A50 Potteries Way (North)	-	2.04	2.04	-
	B - A5008 Bucknall New Road	1.12	-	0.86	-
	C - A50 Potteries Way (South)	0.24	1.40	-	-
	D - Old Hall Street	1.09	1.10	1.50	-

Modelled Average Delay Per Vehicle (In Minutes) – 2021					
		To			
From		A	B	C	D
	A - A50 Potteries Way (North)	-	2.24	2.24	-
	B - A5008 Bucknall New Road	1.58	-	1.33	-
	C - A50 Potteries Way (South)	0.24	1.83	-	-
	D - Old Hall Street	1.05	1.10	1.66	-

Accident Record

This junction has been ranked in the top ten accident blackspots within the Stoke-on-Trent conurbation in terms of the number of all categories of accidents. There have been 19 recorded accidents within a 50m radius of the junction over a 5 year period (2001- 2006) involving 34 vehicles. All of the 19 casualties received slight injuries . 6 of the accidents involved pedestrians.

City Centre Transport Assessment

This junction falls within the area assessed by Scott Wilson's in Phase 1 of the Stoke-on-Trent City Centre Transport Assessment.

Renew

The junction lies within City Centre South and East Areas of Major Intervention, RENEW should be consulted to determine if land can be made available to improve the junction.

Buses

The junction lies on a Quality bus route designated as a Bus Priority Corridor. There are currently no specific bus priority measures in operation at this junction.

Cycles

Site 4 – A50 Potteries Way / A5008 Bucknall New Road Traffic Signals

There are currently no specific cycle routes identified through this junction.

Pedestrians

Pedestrian crossing facilities are provided on Potteries Way.

Environmental Issues

The site exceeds the acceptable particulates (PM₁₀) level and the national air quality objectives for nitrogen dioxide (NO₂) mainly due to traffic emissions. Further monitoring of air quality levels is recommended.

Improvement Options

Option 1 – (Drawing Number D110115/D004/603)

Widen the Bucknall New Road approach to three lanes, one of which will be a bus lane. Lining on the Potteries Way (South) approach will be altered to provide three lanes on the approach to the stop line.

The approach from Old Hall Street will be reduced to a single lane with only left turn permitted from this approach.

The existing pedestrian facilities will be maintained.



Site 4 **A50 Potteries Way / A5008 Bucknall New Road Traffic Signals**

Transport and Access

General	Widen the Bucknall New Road approach to three lanes, one of which will be a bus lane. Lining on the Potteries Way (South) approach will be altered to provide three lanes on the approach to the stop line. The approach from Old Hall Street will be reduced to a single lane with only left turn permitted from this approach. The existing pedestrian facilities will be maintained.	N/A
Regeneration	The junction lies within City Centre South and East Areas of Major Intervention,	2
Pedestrians	Existing pedestrian facilities within the junction are to be maintained.	0
Cyclist	No specific improvements for cyclist are proposed at this junction.	0
Buses	The provision of bus lanes on Bucknall New Road approaches will improve Bus facilities and journey times. Site lies on a route designated as a Bus Priority Corridor.	2 2
Traffic	Widening of the Bucknall New Road approach together with the realigning the Potteries Way approach and banning of right turn from Old Hall Street will improve overall efficiency of the junction.	1
Congestion	The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - MODERATE	2 1
Safety	The reduction in turning manoeuvres within the junction will provide safety benefits.	1
Accessibility	The scheme will improve accessibility to the City Centre.	2
Integration	The scheme will have limited benefits in terms of integration with other modes of transport	0
Environment		
General	The scheme has been developed as a Highway scheme to reduce delays and provide improved facilities for buses.	N/A
Landscape / Townscape	The scheme will have limited benefits in terms of Landscape and Townscape improvements	0
Noise	No change	0



Site 4 A50 Potteries Way / A5008 Bucknall New Road Traffic Signals

Air Quality

Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO₂) and particulates (PM₁₀) emissions.

1

14

Total Score

Site 5 – A50 Waterloo Road / A53 Cobridge Road Traffic Signals

Baseline Assessment

Deficiencies identified by North Staffordshire Integrated Transport Study (NSITS).

Significant delays are predicted on all approaches to the junction having an adverse impact on bus journey times. Without significant property acquisition there is no obvious solution other than banning turning movements, however this could have an impact on the surrounding road network. The NSITS report was produced in October 2002 since which time highway improvements have been completed to improve the capacity for vehicles exiting the junction in Cobridge Road. Further modelling of the junction will be necessary.

Modelled Average Delay Per Vehicle (In Minutes) – Base Year 2002					
		To			
From		A	B	C	D
	A –A50 Waterloo Road (South)	-	1.8	1.8	0.68
	B –A53 Cobridge Road	0.57	-	0.52	1.49
	C –A50 Waterloo Road (North)	0.42	0.42	-	0.42
	D – A53 Elder Road	0.72	2.55	0.93	-

Modelled Average Delay Per Vehicle (In Minutes) – 2021					
		To			
From		A	B	C	D
	A –A50 Waterloo Road (South)	-	3.07	3.07	0.73
	B –A53 Cobridge Road	0.61	-	0.50	1.46
	C –A50 Waterloo Road (North)	0.41	0.46	-	0.41
	D – A53 Elder Road	0.94	4.02	2.17	-

Accident Record

This junction has been ranked in the top ten accident blackspots within the Stoke-on-Trent conurbation in terms of the number of all categories of accidents. Highway improvements in the form of anti-skid surfacing throughout the junction and the provision of signalised pedestrian facilities in Cobridge Road were completed in August 2005. There have been 31 recorded accidents within a 50m radius of the junction over a 5 year period (2001- 2006) involving 64 vehicles. All of the 45 casualties received slight injuries

City Centre Transport Assessment

This junction falls within the area to be assessed by Scott Wilson's in phase 2 of the Stoke-on-Trent City Centre Transport Assessment the report is currently programmed for submission in March 2007.

Renew

The junction lies within City Centre North Area of Major Intervention, RENEW should be consulted to determine if land can be made available to improve the junction.

Buses

The junction lies on a bus route (A50) designated as a Bus Priority Corridor. There are currently no specific bus priority measures in operation at this junction.

Site 5 – A50 Waterloo Road / A53 Cobridge Road Traffic Signals

Cycles

There are currently no specific cycle routes identified through this junction.

Pedestrians

Pedestrian crossing facilities have been in Cobridge Road these measures were completed in August 2005

Environmental Issues

The national air quality objectives for nitrogen dioxide (NO₂) and particulates (PM₁₀) are being exceeded at this junction mainly due to traffic emissions.

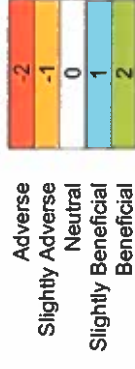
Improvement Options

Option 1 - (Drawing Number 1101123:05:01)

WEST Additional right turn lane from A53 west through junction with 2 lane exit on Waterloo Road for approx m south. **SOUTH** Additional straight on lane from Waterloo Road south through junction with 2 lane exit to junction with Greyhound Way signals Bus lane on approach to A53 junction. **EAST** additional left turn from A53 east to A50 south. **NORTH** additional lane to provide bus lane from Greyhound Way Land will be required from the frontage of a commercial property. Two terraced properties will be required on Douglas Street and Douglas Street will need to be realigned for approx 30m. A retaining wall will need to be constructed between the A50 south and Douglas Street

Option 2 - (Drawing Number 1101123:05:02)

Identical to Option 1 but without the two bus lanes, however buses would benefit by the reduced queues at the junction due to the two additional straight on lanes.



Site 5 A50 Waterloo Road Cobridge Road Traffic Signals - Option 1 (Bus Priority)

Transport and Access

General	<p>WEST Additional right turn lane from A53 west through junction with 2 lane exit on Waterloo Road for approx m south. SOUTH Additional straight on lane from Waterloo Road south through junction with 2 lane exit to junction with Greyhound Way signals Bus lane on approach to A53 junction. EAST additional left turn from A53 east to A50 south. NORTH additional lane to provide bus lane from Greyhound Way Land will be required from the frontage of a commercial property. Two terraced properties will be required on Douglas Street and Douglas Street will need to be realigned for approx 30m. A retaining wall will need to be constructed between the A50 south and Douglas Street</p>	N/A
Regeneration	<p>This junction lies within City Centre North West Area of Major Housing Intervention Phase 2.</p>	2
Pedestrians	<p>Pedestrian facilities unchanged</p>	0
Cyclist	<p>No specific improvements for cyclist but cyclists will be able to use bus lanes.</p>	2
Buses	<p>Bus lanes are proposed at each of the A50 approaches to this junction This junction is on a route designated as a Bus Priority Corridor.</p>	2 2
Traffic	<p>Widening of the approaches to the junction will improve overall capacity of the junction.</p>	1
Congestion	<p>The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SEVERE</p>	2 2
Safety	<p>No change</p>	0
Accessibility	<p>The increase in capacity of the junction will provide benefits for private and public transport</p>	2
Integration	<p>Improvements to this junction with have limited benefit in terms of integration with other modes of transport.</p>	0
Environment		
General	<p>The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.</p>	N/A



Site 5 A50 Waterloo Road Cobridge Road Traffic Signals - Option 1 (Bus Priority)

Landscape / Townscape	Grassed area off Douglas Street required for additional lane. Parking removed for 18 terraced houses for bus lane	-1
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		15



Site 5 A50 Waterloo Road Cobridge Road Traffic Signals - Option 2

Transport and Access

General	Provide additional lane on A53 approach, also include bus lanes either approach from A50 This option will require land acquisition from a commercial premises.	N/A
Regeneration	This junction lies within City Centre North West Area of Major Housing Intervention Phase 2.	2
Pedestrians	Pedestrian facilities unchanged	0
Cyclist	No specific improvements for cyclists	0
Buses	No bus lanes proposed but improvement in traffic flow times through junction will assist busses This junction is on a route designated as a Bus Priority Corridor.	1 2
Traffic	Widening of the approaches to the junction will improve overall capacity of the junction.	2
Congestion	The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SEVERE	2 2
Safety	No change	0
Accessibility	The increase in capacity of the junction will provide benefits for public and private transport	2
Integration	Improvements to this junction with have limited benefit in terms of integration with other modes of transport.	0
Environment		
General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A
Landscape / Townscape	Grassed area off Douglas Street required for additional lane. Parking removed for 18 terraced houses for bus lane	-1
Noise	No change	0

Site 5 A50 Waterloo Road Cobridge Road Traffic Signals - Option 2

Adverse	-2
Slightly Adverse	-1
Neutral	0
Slightly Beneficial	1
Beneficial	2

Air Quality

Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.

1
13

Total Score

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REVISION	No.	DATE	NOTE



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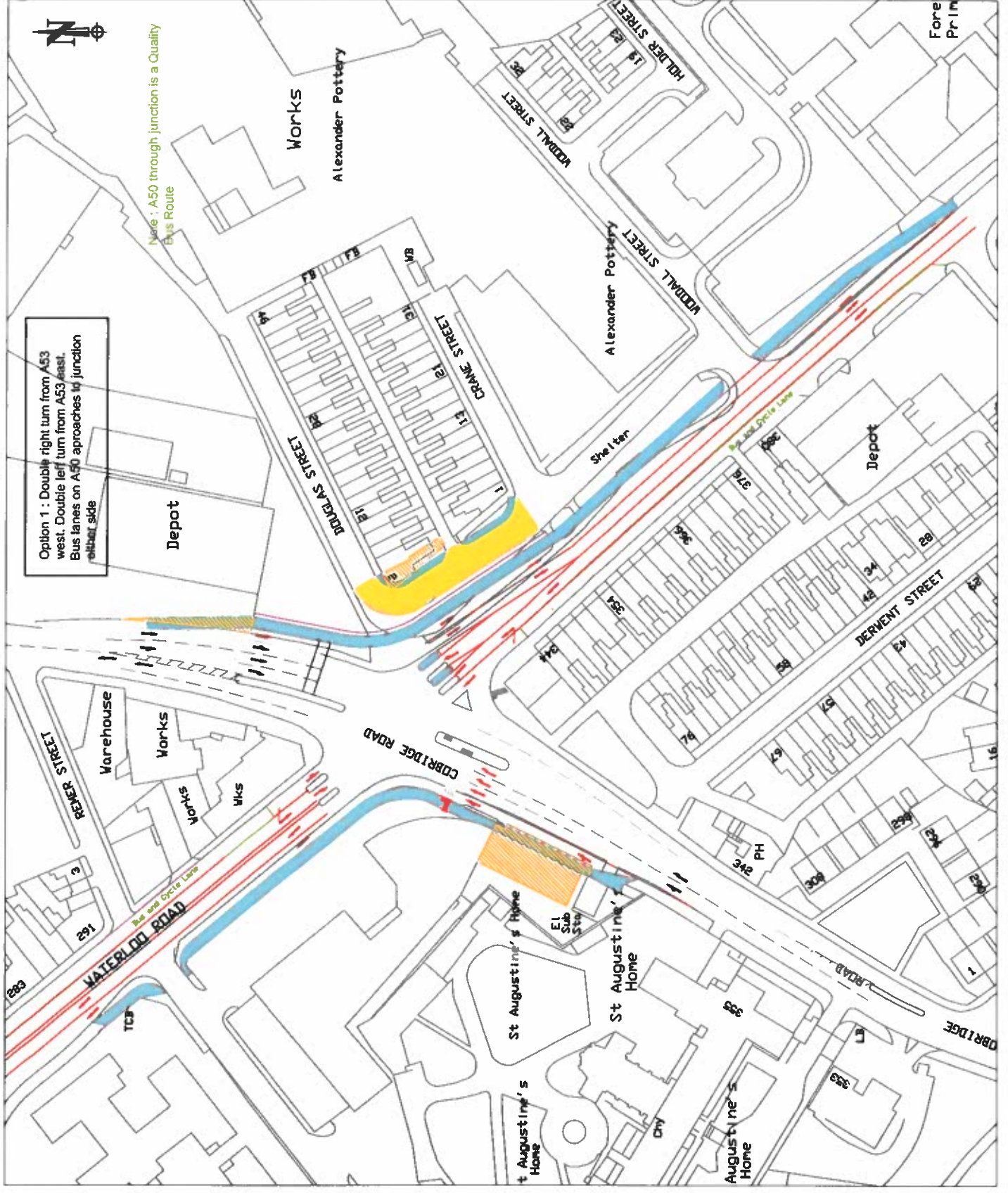
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PROJECT:
 North Staffordshire Road Network
 Junction Assessment - Feasibility Study

PROJECT No:
 1101123
DWG. TITLE:
 A50 Waterloo Road / A53 Cobridge Road Traffic
 Signals OPTION 1

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PROJECT:
 North Staffordshire Road Network
 Junction Assessment - Feasibility Study

PROJECT No:
 1101123
DWG. TITLE:
 A50 Waterloo Road / A53 Cobridge Road Traffic Signals OPTION 2

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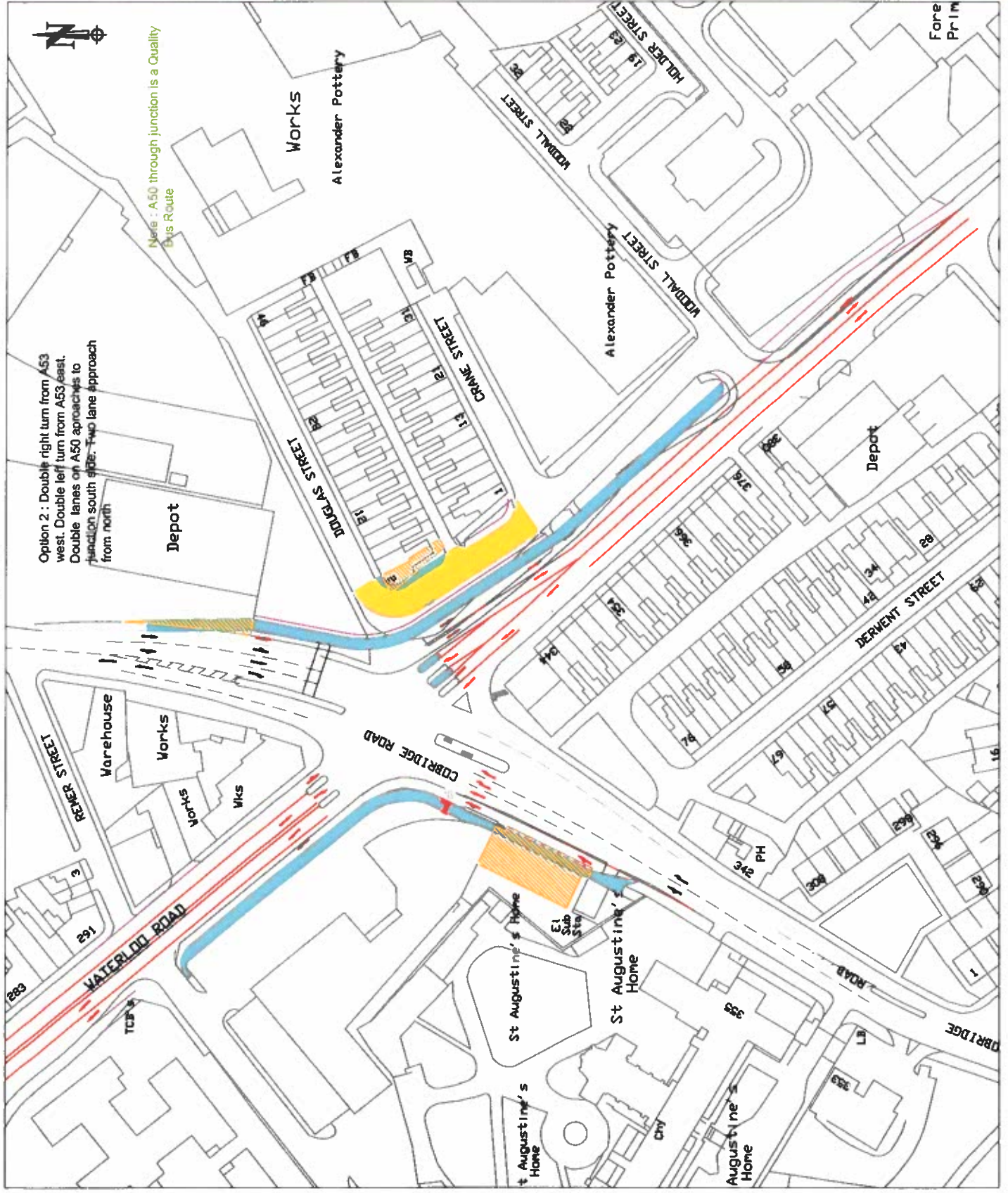
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Site 6 – A5008 Bucknall Road / A5272 Keelings Road Junction**Baseline Assessment****Deficiencies identified by North Staffordshire Integrated Transport Study (NSITS).**

The right turn from the A5008 and the left turn from the A5272 are the cause of significant delays predicted on all approaches to the junction having an adverse impact on bus journey times. Without significant property acquisition there is no obvious solution. Should land become available from the RENEW proposals the signalisation of the junction should be considered along with widening of the A5008 corridor.

The construction of the Hanley Bentilee Link would reduce traffic flows along the A5008 Bucknall New Road / A52 Bucknall Road / A5272 Dividy Road Corridor

Modelled Average Delay Per Vehicle (In Minutes) – Base Year 2002					
		To			
		A	B	C	D
From	A - A5008 Bucknall Road (East)	-	0.09	0.02	1.39
	B - Ivy House Road	-	-	0.23	-
	C - A5008 Bucknall New Road (West)	0.02	-	-	0.10
	D - A5272 Keelings Road	3.26	-	-	-

Modelled Average Delay Per Vehicle (In Minutes) – 2021					
		To			
		A	B	C	D
From	A - A5008 Bucknall Road (East)	-	0.09	0.02	1.13
	B - Ivy House Road	-	-	0.25	-
	C - A5008 Bucknall New Road (West)	0.02	-	-	0.10
	D - A5272 Keelings Road	2.86	-	-	-

Accident Record

There have been 8 recorded accidents within a 50m radius of the junction over a 5 year period (2001- 2006) involving 16 vehicles. All of the 10 casualties received slight injuries

City Centre Transport Assessment

This junction falls within the area to be assessed by Scott Wilson's in Phase 2 of the Stoke-on-Trent City Centre Transport Assessment the report is currently programmed for submission in March 2007.

Renew

The junction lies within City Centre North Area of Major Intervention, RENEW should be consulted to determine if land can be made available to improve the junction.

Buses

The junction lies on a Quality bus route (A5008) designated as a Bus Priority Corridor. There are currently no specific bus priority measures in operation at this junction.

Site 6 – A5008 Bucknall Road / A5272 Keelings Road Junction

Cycles

There are currently no specific cycle routes identified through this junction.

Pedestrians

There are currently no specific pedestrian facilities identified through this junction

Environmental Issues

The site exceeds the acceptable particulates (PM₁₀) level and the national air quality objectives for nitrogen dioxide (NO₂) mainly due to traffic emissions. Further monitoring of air quality levels is recommended.

Improvement Options

Both Option 1 (Bus Measures) and Option 2 assume that the Hanley Bentilee Link will not be built and substantial widening and improvement will be made to this corridor

Option 1 - (Drawing Number 1101123:06:01)

WEST Additional lane from A5008 west through junction with 2 lane exit on Bucknall Road.
EAST bus lane from A52 Bucknall Road east through junction and extending along Bucknall New Road .

NORTH additional lane to provide a double left turn on to A5008 east.

Nine terraced houses and a public house will be required as well as land from the frontage of a commercial property

Option 2 - (Drawing Number 1101123:06:02)

Identical to option 1 but without the two bus lanes, however buses would benefit by the reduced queues at the junction due to the two additional straight on lanes.



Site 6 A5008 Bucknall New Road / A5272 Bucknall Old Road Traffic Signals - Option 1 (Bus Lanes)

Transport and Access

General	WEST Additional lane from A5008 west through junction with 2 lane exit on Bucknall Road. EAST bus lane from A52 Bucknall Road east through junction and extending along Bucknall New Road . NORTH additional lane to provide a double left turn on to A5008 east. Nine terraced houses and a public house will be required as well as land from the frontage of a commercial property	N/A
Regeneration	This junction lies in the boarder of the City Centre South and City Centre East Phase 2 Areas of Major Housing Intervention.	2
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction however cyclists can use the 4m wide bus lanes	1
Buses	Bus lanes provided at Bucknall New Road and Bucknall Road approach to the junction This junction is on a route designated as a Bus Priority Corridor.	1 2
Traffic	Widening of the approaches to the junction will improve overall capacity of the junction.	1
Congestion	The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SLIGHT	2 0
Safety	The creation of pedestrian facilities will provide safety benefits.	1
Accessibility	The increase in capacity of the junction will provide benefits for private and public transport	2
Integration	Improvements to this junction with have limited benefit in terms of integration with other modes of transport.	0
Environment General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A
Landscape / Townscape	The scheme will have limited benefits in terms of Townscape improvements	0



Site 6 A5008 Bucknall New Road / A5272 Bucknall Old Road Traffic Signals - Option 1 (Bus Lanes)

Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		15



Site 6 A5008 Bucknall New Road / A5272 Bucknall Old Road Traffic Signals - Option 2

Transport and Access

General	Provide an additional lane on each approach to junction on Bucknall New Road and from Bucknall Old Road with pedestrian facilities at new signalised junction. Option requires land acquisition from 10 residential and 2 commercial premises.	N/A
Regeneration	This junction lies in the boarder of the City Centre South and City Centre East Phase 2 Areas of Major Housing Intervention.	2
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction	0
Buses	No bus lanes but buses will benefit from reduced queues and improved journey times This junction is on a route designated as a Bus Priority Corridor.	1 2
Traffic	Widening of the approaches to the junction will improve overall capacity of the junction.	1
Congestion	The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SLIGHT	2 0
Safety	The creation of pedestrian facilities will provide safety benefits.	1
Accessibility	The increase in capacity of the junction will provide benefits for private and public transport	2
Integration	Improvements to this junction will have limited benefit in terms of integration with other modes of transport.	0
Environment		
General	Scheme developed as a Highway scheme to reduce delays and improved facilities for buses, cyclists and pedestrians.	N/A
Landscape / Townscape	The scheme will have limited benefits in terms of Townscape improvements	0
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1

Site 6 **A5008 Bucknall New Road / A5272 Bucknall Old Road Traffic Signals - Option 2**



14

Total Score

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PROJECT:
North Staffordshire Road Network
Junction Assessment - Feasibility Study

PROJECT No:
1101123
DWG. TITLE:
A5008 Bucknall Road / A5272 Keelings Road
Priority Junction OPTION 1

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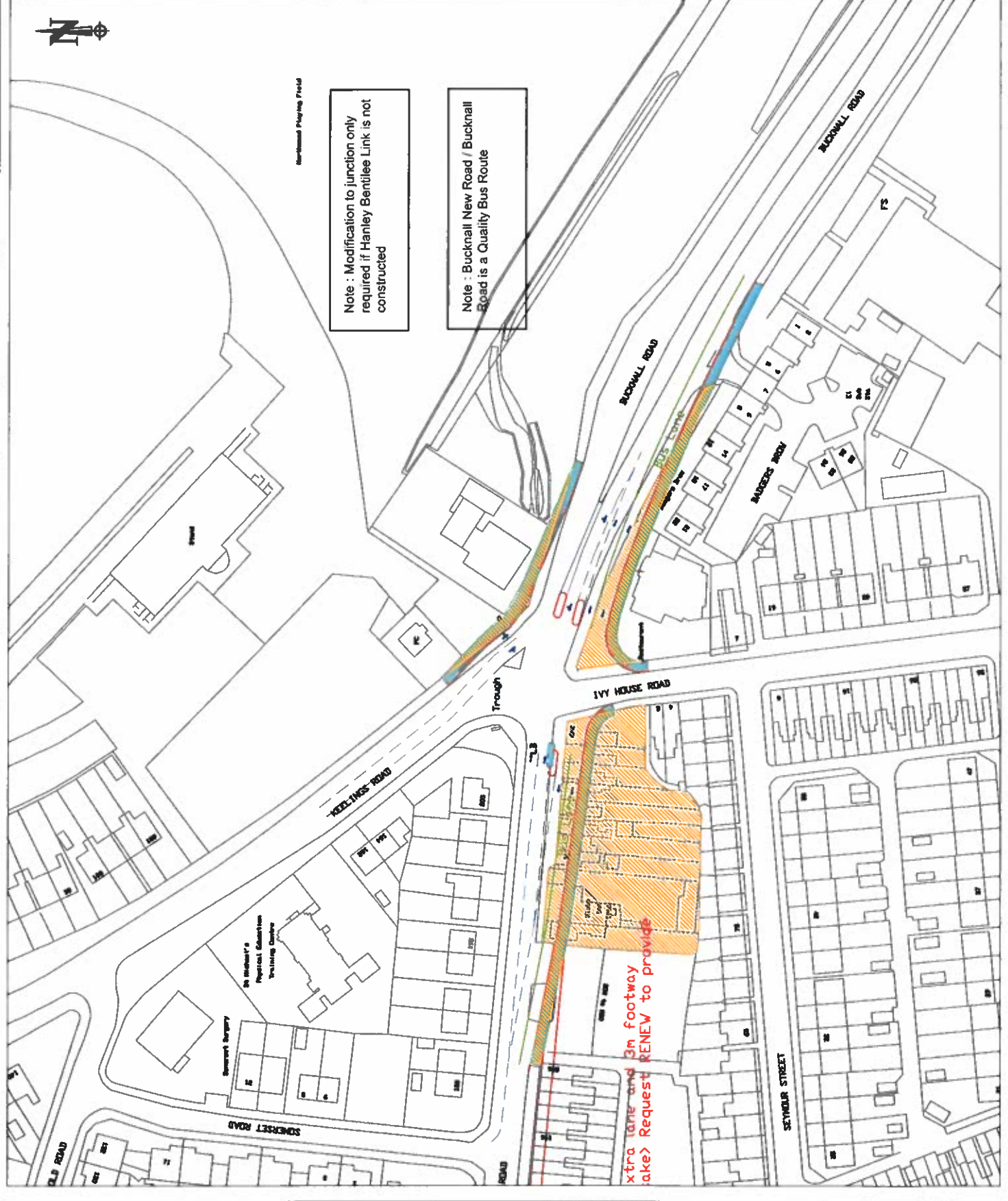
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DWG No: 1101123:06:1

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Note : Modification to junction only required if Hanley Bentilee Link is not constructed

Note : Bucknall New Road / Bucknall Road is a Quality Bus Route

extra lane and 3m footway
make Request RENEW to provide

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CITY OF Stoke-on-Trent

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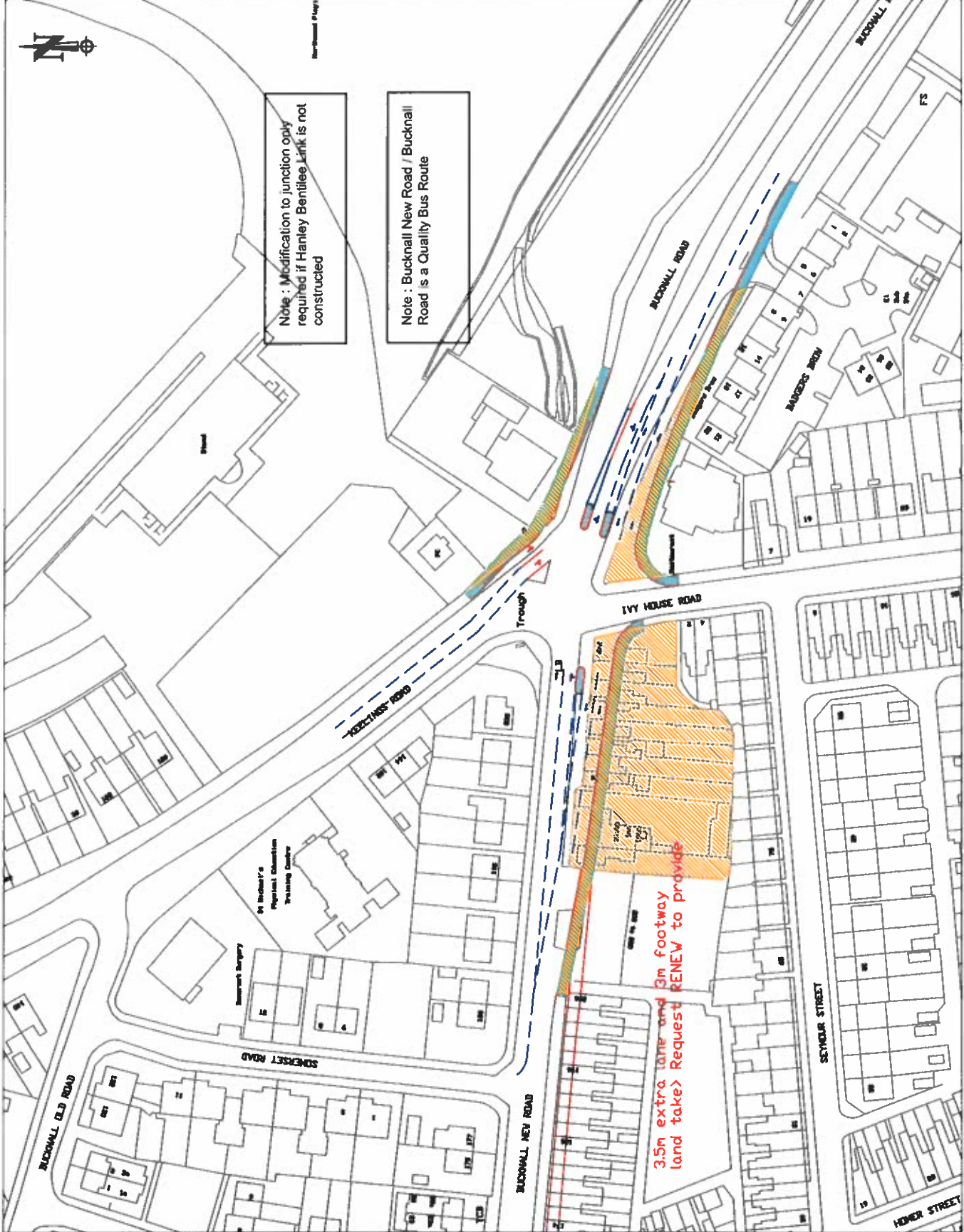
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 Priority Junction OPTION 2

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Land Requirements



Site 7 - A520 Weston Road / A5272 Park Hall Road Traffic Signals**Baseline Assessment****Deficiencies identified by North Staffordshire Integrated Transport Study.**

Significant delays are predicted on all approaches to the junction. The problems are exacerbated by the lack of right-turn lanes on the major road approaches to the junction (i.e. A520 Weston Road and the A5272 Park Hall Road). There is potential for local widening of the A5272 Park Hall Road approach within the existing highway boundary to incorporate a right-turn facility.

Modelled Average Delay Per Vehicle (In Minutes) – Base Year 2002					
		To			
From		A	B	C	D
	A - A520 Weston Road (South)	-	0.44	0.44	0.45
	B - A5272 Park Hall Road	2.87	-	2.86	2.86
	C - A520 Weston Road (North)	0.29	0.30	-	0.29
	D - Caverswall Road	1.54	1.54	1.55	-

Modelled Average Delay Per Vehicle (In Minutes) – 2021					
		To			
From		A	B	C	D
	A - A520 Weston Road (South)	-	0.76	0.76	0.77
	B - A5272 Park Hall Road	4.79	-	4.78	4.78
	C - A520 Weston Road (North)	2.24	2.25	-	2.24
	D - Caverswall Road	3.36	3.36	3.38	-

Accident Record

There were 7 recorded accidents within a 50 metre radius of the junction over a five year period (2001 – 2005) all of these accidents were classified as 'slight' and involved a total of 8 casualties. Only one of the accidents involved pedestrians.

Buses

The junction lies on a frequently used bus route.

Cycles

There are currently no specific facilities provided for cyclist at this junction.

Pedestrians

There are currently no specific signalised facilities provided for pedestrians at this junction.

Environmental Issues

The national air quality objective for particulates (PM₁₀) is being exceeded at this junction mainly due to traffic emissions.

Site 7 - A520 Weston Road / A5272 Park Hall Road Traffic Signals

Improvement Options

Option 1 - (Drawing Number 1101123:07:01)

Provide right-turn lanes on all four approaches, also include a left filter lane from A520 Weston Road to A5272 Park Hall Road. Provide pedestrian facilities at the new signalised junction.

This option will require significant land acquisition from 10 residential properties and 2 commercial premises. Although land required is predominantly from front gardens 4 properties may need to be acquired. Compulsory Purchase Orders will be required.

Option 2 - (Drawing Number 1101123:07:02)

Provide right turn lanes on A5272 Park Hall Road and the southern approach on A520 Weston Road also install left filter lane on south western corner of junction. Localised widening on Weston Road to facilitate additional lanes will be necessary. Pedestrian facilities will be provided at the new signalised junction.

This option has been developed predominantly within the highway boundary and requires only minimal land acquisition.



Site 7 A520 Weston Road / A5272 Park Hall Road Traffic Signals - Option 1

Transport and Access

General	Provide right turn lanes on all four approaches with a left filter lane from A520 Weston Road to A5272 Park Hall Road. Pedestrian facilities will be provided at the new signalised junction. This option will require significant land acquisition from 10 residential and 2 commercial premises.	N/A
Regeneration	This junction does not fall within an area designated as a General Improvement Area or Area of Major Housing Intervention.	0
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction however the creation of more road space should be beneficial to cyclists.	1
Buses	No specific bus lanes are proposed at this junction however the creation of more road space should be beneficial for all road users. This junction is not on a route designated as a Bus Priority Corridor.	1 0
Traffic	Widening of the approaches to the junction will improve overall capacity of the junction.	1
Congestion	The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SEVERE	2 2
Safety	The creation of pedestrian facilities will provide safety benefits.	1
Accessibility	The scheme will provide general benefits of access through the City.	1
Integration	Improvements to this junction will have limited benefit in terms of integration with other modes of transport.	0
Environment		
General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A



Site 7 A520 Weston Road / A5272 Park Hall Road Traffic Signals - Option 1

Landscape / Townscape

The scheme will have limited benefits in terms of Townscape improvements however there will be the opportunity for the provision of a high quality landscaping scheme to be incorporated into the improvement.

1

Noise

No change

0

Air Quality

Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.

1

Total Score

13



Site 7 A520 Weston Road / A5272 Park Hall Road Traffic Signals - Option 2

Transport and Access

General	Provide right turn lanes on A5272 Park Hall Road and the southern approach on A520 Weston Road also install left filter lane on south eastern corner of junction. Localised widening on Weston Road to facilitate additional lanes will be necessary. Pedestrian facilities will be provided at the new signalised junction	N/A
Regeneration	This junction does not fall within an area designated as a General Improvement Area or Area of Major Housing Intervention.	0
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction however the creation of more road space should be beneficial to cyclists.	1
Buses	No specific bus lanes are proposed at this junction however the creation of more road space should be beneficial for all road users. This junction is not on a route designated as a Bus Priority Corridor.	1 0
Traffic	Widening of the approaches to the junction will improve overall capacity of the junction.	1
Congestion	The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SEVERE	1 2
Safety	The creation of pedestrian facilities will provide safety benefits.	1
Accessibility	The scheme will provide general benefits of access through the City.	1
Integration	Improvements to this junction with have limited benefit in terms of integration with other modes of transport.	0
Environment		
General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A



Site 7 A520 Weston Road / A5272 Park Hall Road Traffic Signals - Option 2

Landscape / Townscape

The scheme will have limited benefits in terms of Townscape improvements however there will be the opportunity for the provision of a high quality landscaping scheme to be incorporated into the improvement.

1

Noise

No change

0

Air Quality

Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.

1

Total Score

12

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PROJECT:
 North Staffordshire Road Network
 Junction Assessment - Feasibility Study

PROJECT No:
 1101123
DWG. TITLE:
 A520 Weston Road / A5272 Park Hall Road Traffic
 Signals - Option 1

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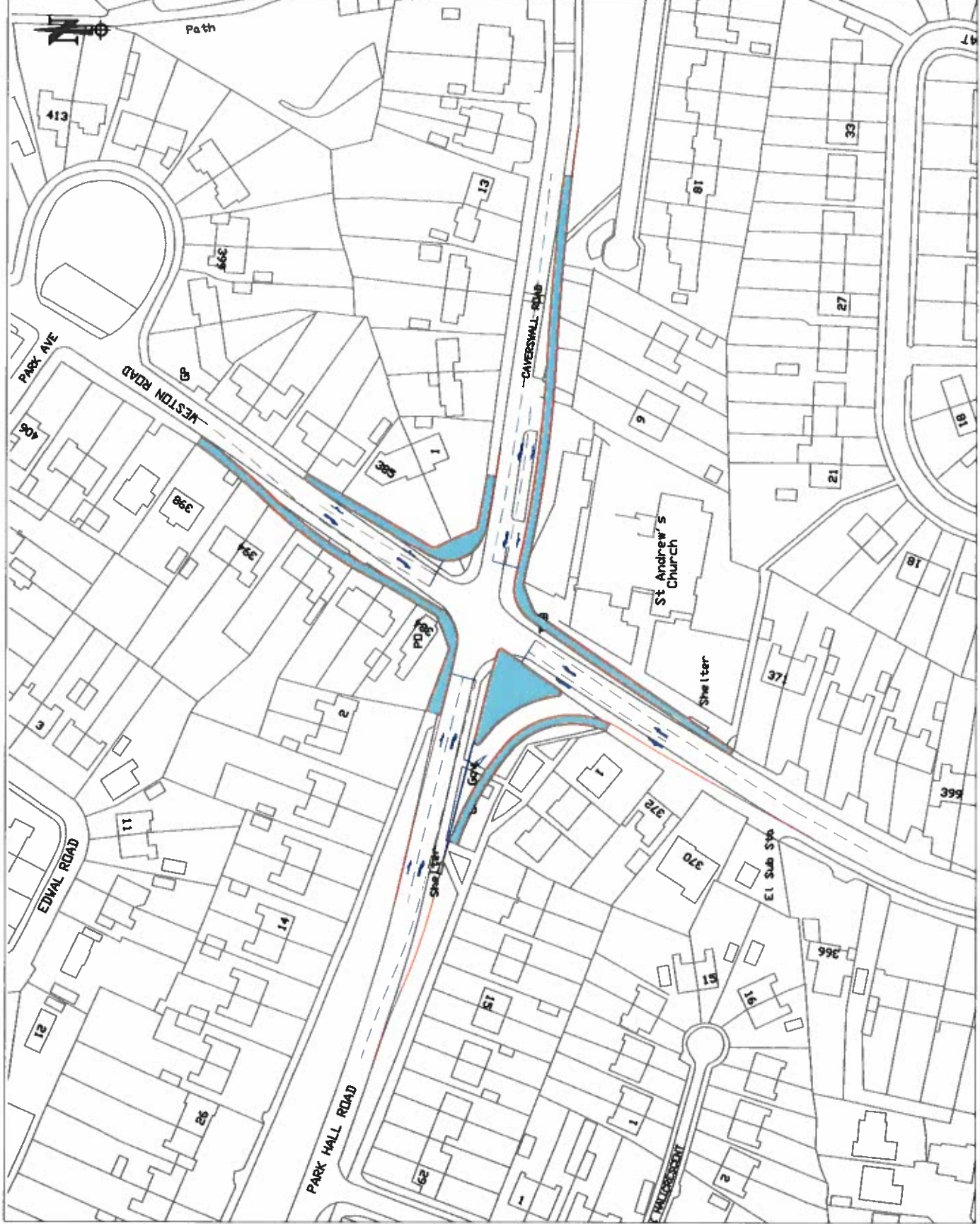
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PROJECT:
 North Staffordshire Road Network
 Junction Assessment - Feasibility Study

PROJECT No:
 1101123

DWG. TITLE:
 A520 Weston Road / A5272 Park Hall Road Traffic
 Signals - Option 2

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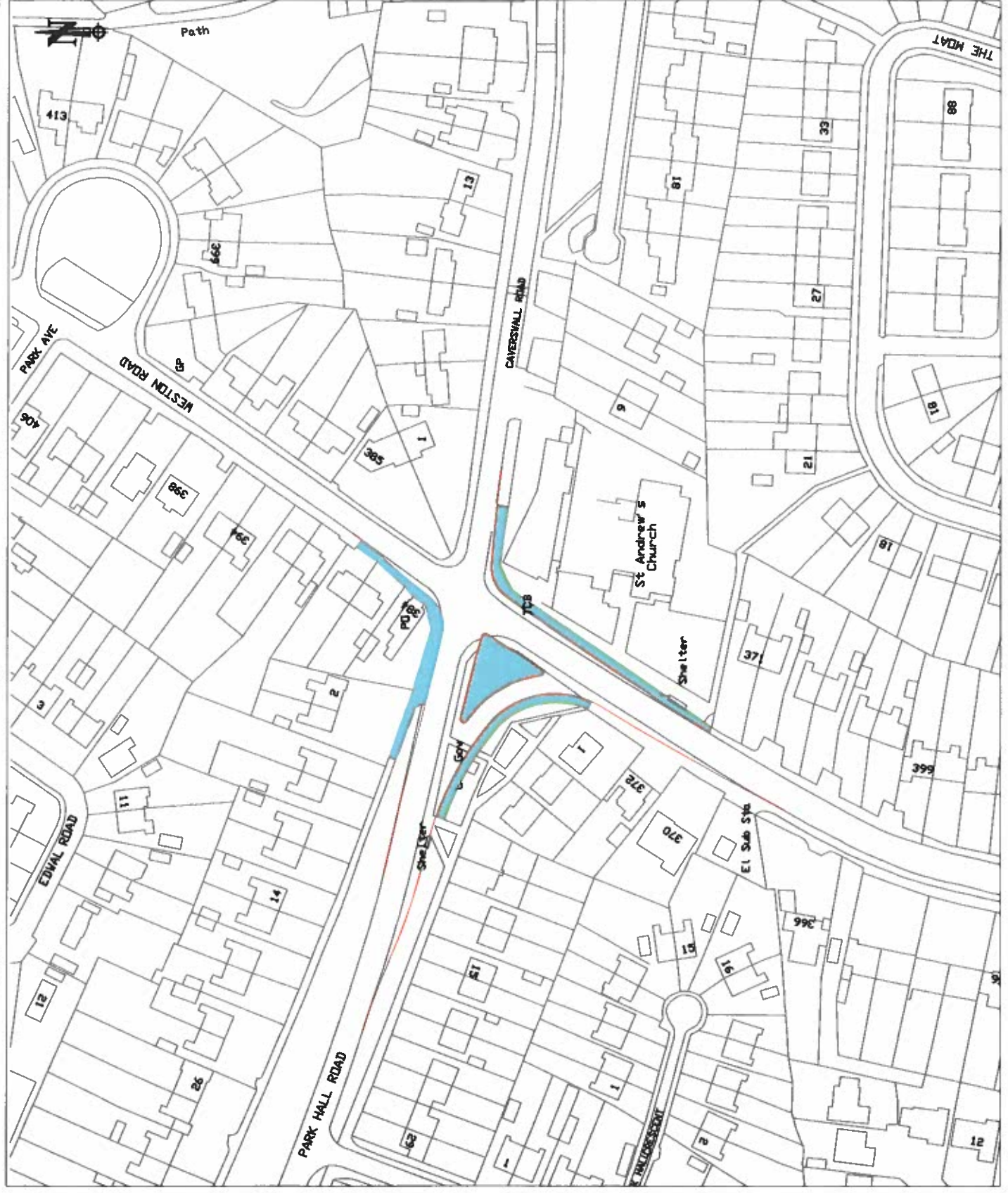
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Site 9 - A50 Waterloo Road / B5050 Pitt Street Traffic Signals**Baseline Assessment****Deficiencies identified by North Staffordshire Integrated Transport Study.**

Significant delays are predicted on all approaches to the junction having an adverse impact on bus journey times. The close proximity of and interaction with the A50 Waterloo Road / Zion Street traffic signals exacerbates the problems. These junctions are characterised by having single lane approaches on the major road. Pitt Street is a one way street flowing in a westerly direction.

Modelled Average Delay Per Vehicle (in Minutes) – Base Year 2002					
		To			
From		A	B	C	D
	A - A50 Waterloo Road (South)	-	0.70	0.70	-
	B - Pitt Street West	-	-	-	-
	C - A50 Waterloo Road (North)	0.53	0.54	-	-
	D - Pitt Street East	1.46	1.46	1.47	-

Modelled Average Delay Per Vehicle (in Minutes) - 2021					
		To			
From		A	B	C	D
	A - A50 Waterloo Road (South)	-	1.64	1.64	-
	B - Pitt Street West	-	-	-	-
	C - A50 Waterloo Road (North)	0.50	0.51	-	-
	D - Pitt Street East	2.87	2.87	2.88	-

Accident Record

There were 7 recorded accidents within a 50 metre radius of the junction over a five year period (2001 – 2005). One of the casualties was classified as serious and there were 6 accidents classified as 'slight' involving a total of 18 individuals. 10 passengers and one driver were injured in one individual accident. One of the accidents involved pedestrians.

Buses

The junction lies on a frequently used bus route.

Cycles

There are currently no specific facilities provided for cyclist at this junction.

Pedestrians

There are currently no specific pedestrian facilities provided at this junction.

Environmental Issues

The site exceeds the acceptable particulates (PM₁₀) level and may possibly also exceed the national air quality objectives for nitrogen dioxide (NO₂) mainly due to traffic emissions. Further monitoring of air quality levels is recommended.

Site 9 - A50 Waterloo Road / B5050 Pitt Street Traffic Signals

Improvement Options

Option 1 - (Drawing Number 1101123:09:01)

The junction of Waterloo Road and Pitt Street is situated 50 metres to the south east of the Waterloo Road – Zion Street junction and therefore any measures implemented to improve its efficiency must consider traffic conditions at both locations. Option 1 involves the provision of additional bus lanes on the approaches on Waterloo Road to both of these signalised junctions also the carriageway between the junctions will be widened to two lanes in each direction. The Signals installations are to be linked to improve efficiency.

It will be necessary to acquire land from a number of commercial premises on Waterloo Road therefore Compulsory Purchase Orders will be required.

Option 2 - (Drawing Number 1101123:09:02)

Option 2 involves the provision of an additional lane in Waterloo Road (south) to accommodate a left turn lane into Pitt Street West. The opportunity should also be taken to improve the radius and visibility into Pitt Street. An additional lane can also be provided in Waterloo Road between its junctions with Zion Street and Pitt Street to improve the capacity for the right turning manoeuvre from Baptist Street. This option involves minimal land take requiring acquisition of land currently used for car parking in addition to one property on the corner of Pitt Street West.



Site 9 A50 Waterloo Road / B5050 Pitt Street Traffic Signals - Option 1

Transport and Access

General	This option involves the provision of additional bus lanes on the approaches on Waterloo Road to both of these signalised junctions also the carriageway between the junctions will be widened to two lanes in each direction. The Signals installations are to be linked to improve efficiency.	N/A
Regeneration	This junction lies within Middleport Area of Major Housing Intervention Phase 1.	2
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction however the creation of more road space and the introduction of bus lanes should be beneficial to cyclists.	1
Buses	The provision of bus lanes on the Waterloo Road approaches will improve Bus facilities and journey times. This junction is on a route designated as a Bus Priority Corridor.	2 2
Traffic	Widening of the approaches to the junction will improve overall capacity of the junction. However benefits of this could be partially offset by the provision of pedestrian facilities.	1
Congestion	The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - MODERATE	2 1
Safety	The creation of pedestrian facilities will provide safety benefits.	1
Accessibility	There are a number of commercial premises fronting Waterloo Road, consideration should be given to implement traffic regulation orders restricting delivery times to off peak hours.	-1
Integration	Improvements to this junction with have limited benefit in terms of integration with other modes of transport.	0
Environment		
General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A



Site 9 A50 Waterloo Road / B5050 Pitt Street Traffic Signals - Option 1

Landscape / Townscape	The scheme will have limited benefits in terms of Townscape improvements however there will be the opportunity for the provision of a high quality landscaping scheme to be incorporated into the improvement.	0
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		14

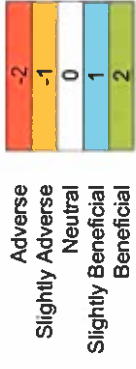


Site 9 A50 Waterloo Road / B5050 Pitt Street Traffic Signals - Option 2

Transport and Access

General	<p>This option involves the provision of an additional lane in Waterloo Road (south) to accommodate a left turn lane into Pitt Street West. The opportunity should also be taken to improve the radius and visibility into Pitt Street. An additional lane can also be provided in Waterloo Road between its junctions with Zion Street and Pitt Street to improve the capacity for the right turning manoeuvre from Baptist Street. This option involves minimal land take requiring acquisition of land currently used for car parking in addition to one property on the corner of Pitt Street West.</p>	N/A
Regeneration	<p>This junction lies within Middleport Area of Major Housing Intervention Phase 1.</p>	2
Pedestrians	<p>Pedestrian facilities will be incorporated within the traffic signalisation of the junction.</p>	2
Cyclist	<p>No specific improvements for cyclist are proposed at this junction however the creation of more road space should be beneficial to cyclists.</p>	1
Buses	<p>There are no specific provisions in this option for bus priority measures, however widening of the approaches will improve overall capacity at the junction therefore improving Bus journey times. This junction is on a route designated as a Bus Priority Corridor.</p>	1 2
Traffic	<p>Widening of the approaches to the junction will improve overall capacity of the junction. However benefits of this could be partially offset by the provision of pedestrian facilities.</p>	1
Congestion	<p>The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - MODERATE</p>	1 1
Safety	<p>The creation of pedestrian facilities will provide safety benefits.</p>	1
Accessibility	<p>There are a number of commercial premises fronting Waterloo Road, consideration should be given to implement traffic regulation orders restricting delivery times to off peak hours.</p>	-1
Integration	<p>Improvements to this junction with have limited benefit in terms of integration with other modes of transport.</p>	0

Environment



Site 9 A50 Waterloo Road / B5050 Pitt Street Traffic Signals - Option 2

General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A
Landscape / Townscape	The scheme will have limited benefits in terms of Townscape improvements however there will be the opportunity for the provision of a high quality landscaping scheme to be incorporated into the improvement.	0
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		12

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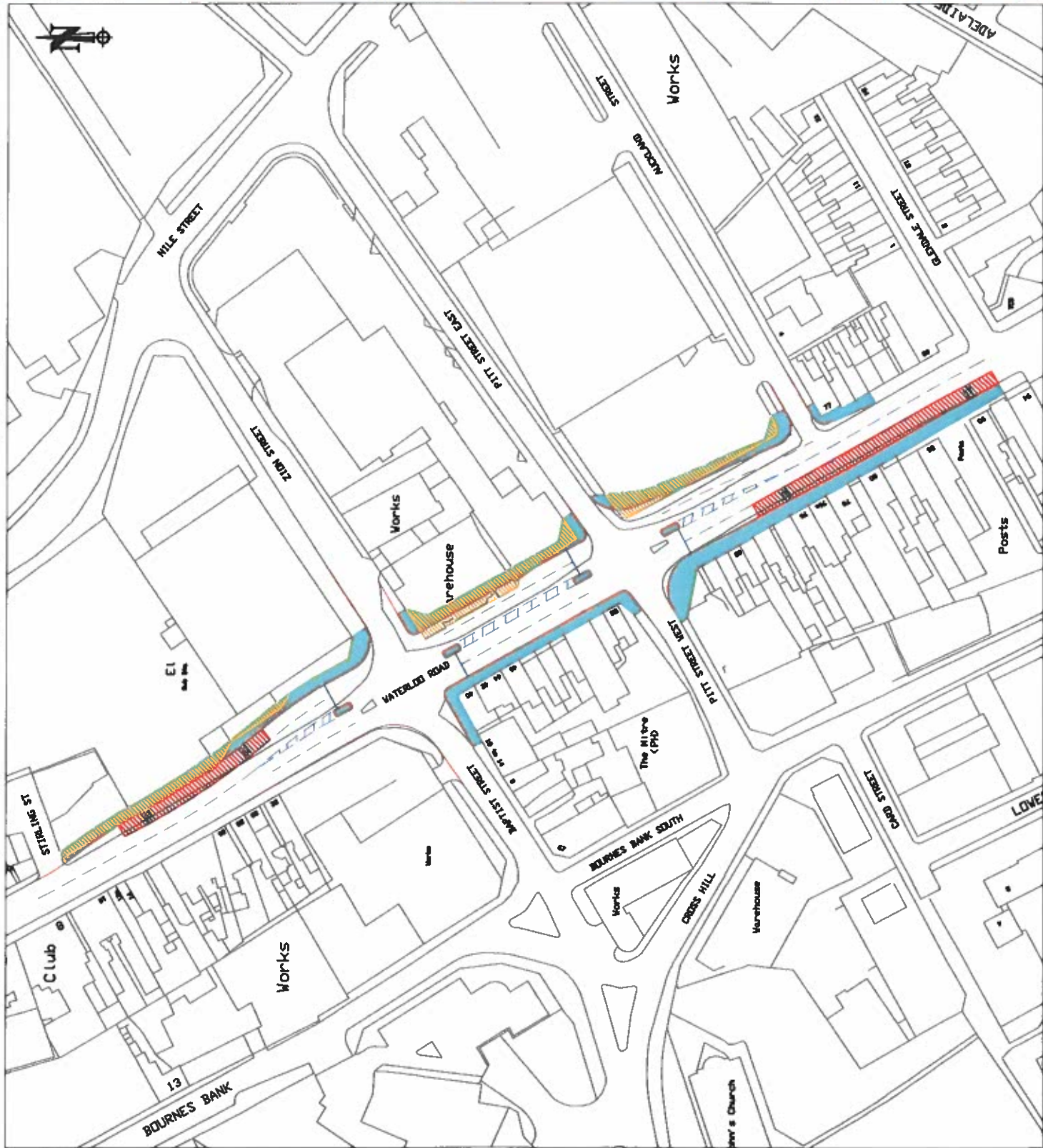
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PROJECT:
 North Staffordshire Road Network
 Junction Assessment - Feasibility Study

PROJECT No:
 1101123
DWG. TITLE:
 A50 Waterloo Road / Pitt Street Traffic Signals
 Option 1

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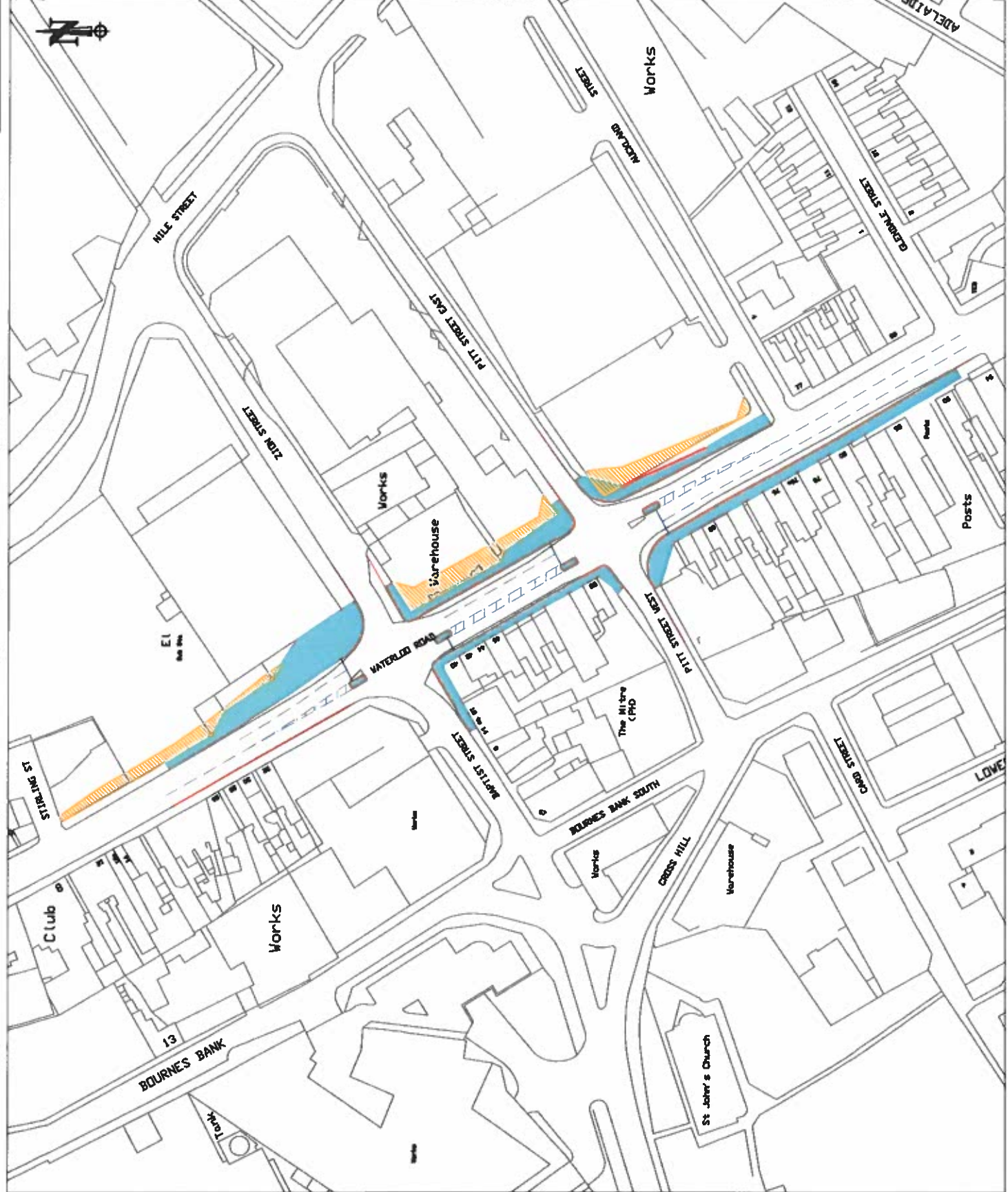
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1101123
DWG. TITLE:
A50 Waterloo Road / Pitt Street Traffic Signals
Option 2

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Site10 – A52 Leek Road / A5008 Bucknall New Road / (Limekiln) junction**Baseline Assessment****Deficiencies identified by North Staffordshire Integrated Transport Study (NSITS).**

Significant delays are expected on all approaches to the junction which will have an adverse impact on bus and vehicle journey times. Constraints include adjacent commercial properties, the Caldron Canal Bridge and a mothballed railway line bridge. The proximity of the Werrington Road junction prevents a flyover being considered due to insufficient weaving lengths between junctions.

The construction of the Hanley Bentilee Link would reduce traffic flows along the A5008 Bucknall New Road / A52 Bucknall Road / A5272 Dividy Road Corridor. This would enable bus priority measures to be installed along the corridor between Potteries Way / Bucknall New Road junction and Dividy Road.

Modelled Average Delay Per Vehicle (In Minutes) – Base Year 2002					
		To			
		A	B	C	D
From	A - A52 Leek Road (South)	-	0.83	0.83	0.90
	B - A5008 Bucknall Road (West)	0.64	-	0.68	0.68
	C - A5009 Leek Road (North)	1.39	1.33	-	1.39
	D - A52 Bucknall Road (East)	0.21	0.40	0.55	-

Modelled Average Delay Per Vehicle (In Minutes) – 2021					
		To			
		A	B	C	D
From	A - A52 Leek Road (South)	-	0.59	0.59	1.34
	B - A5008 Bucknall Road (West)	0.64	-	1.08	1.08
	C - A5009 Leek Road (North)	1.91	1.60	-	1.91
	D - A52 Bucknall Road (East)	0.22	0.44	0.55	-

Accident Record

This junction has been ranked in the top ten accident blackspots within the Stoke-on-Trent conurbation in terms of the number of all categories of accidents. There were 27 recorded accidents within a 50 metre radius of the junction over a five year period (2001 – 2005) involving 56 vehicles. All of the 27 casualties were classified as receiving 'slight' injuries. 2 of the accidents involved pedestrians.

City Centre Transport Assessment

This junction falls within the area assessed by Scott Wilson's in Phase 2 of the Stoke-on-Trent City Centre Transport Assessment.

Buses

The junction lies on a Quality bus route designated as a Bus Priority Corridor. There are currently no specific bus priority measures in operation at this junction.

Cycles

There are currently no specific cycle routes identified through this junction.

Site10 – A52 Leek Road / A5008 Bucknall New Road / (Limekiln) junction

Pedestrians

There are currently no specific pedestrian facilities identified through this junction

Environmental Issues

The site exceeds the acceptable particulates (PM₁₀) level and may possibly also exceed the national air quality objectives for nitrogen dioxide (NO₂) mainly due to traffic emissions. Further monitoring of air quality levels is recommended.

Improvement Options

Option 1 – (Drawing Number D110115/D004/691)

The improvements proposed for this junction form part of the Bucknall Road corridor which creates a tree lined boulevard between Leek Road and Potteries Way to include for bus lanes on both carriageways. Its implementation assumes that Hanley Bentilee Link will be constructed.

Improvements proposed include reconfiguring the lane on the Werrington Road approach to convert one of the existing two ahead lanes to a bus lane. Leek Road approach will be modified to provide a left turn lane, two ahead lanes and a right turn lane. Pedestrian facilities will be provided across all arms of the junction.



Site 10 A52 Leek Road / A52 Bucknall Road (Limekiln) Traffic Signals

Transport and Access

General	<p>The improvements proposed for this junction form part of the Bucknall Road corridor which creates a tree lined boulevard between Leek Road and Potteries Way to include for bus lanes on both carriageways. Its implementation assumes that Hanley Bentilee Link will be constructed.</p> <p>Improvements proposed include reconfiguring the lane on the Werrington Road approach to convert one of the existing two ahead lanes to a bus lane. Leek Road approach will be modified to provide a left turn lane, two ahead lanes and a right turn lane. Pedestrian facilities will be provided across all arms of the junction.</p>	N/A
Regeneration	This junction does not fall within an area designated as a General Improvement Area or Area of Major Housing Intervention.	0
Pedestrians	Full pedestrian facilities will be provided on all legs of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction, however the creation of bus lanes and linkage to the canal	1
Buses	<p>The provision of bus lanes on Bucknall New Road and Werrington Road approaches will improve Bus facilities and journey times.</p> <p>Site lies on a route designated as a Bus Priority Corridor.</p>	2
Traffic	The reduction of traffic through this junction assumes the construction of the Hanley Bentilee Link Road. Upgrading Bucknall New Road to a Boulevard and the improvements indicated for the junction will have minimal impact on the capacity.	1
Congestion	The construction of Hanley Bentilee Link and the subsequent reduction of traffic using the junction will reduce congestion. However this will be partially offset by the bus priority and pedestrian measures being introduced. Level of congestion as identified in North Staffordshire Transport Study - SLIGHT	1
Safety	The reduction in traffic using the junction and the provision of pedestrian facilities will provide safety benefits.	2
Accessibility	The scheme will improve accessibility to the City Centre.	2
Integration	The scheme will have limited benefits in terms of integration with other modes of transport	0

Environment



Site 10 A52 Leek Road / A52 Bucknall Road (Limekiln) Traffic Signals

General	The scheme has been developed as a Highway scheme to reduce delays and provide improved facilities for buses.	N/A
Landscape / Townscape	The scheme will have limited benefits in terms of Landscape and Townscape improvements	0
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO ₂) and particulates (PM ₁₀) emissions.	1
Total Score		14

Site 11 – A53 Etruria Road / A5369 Basford Park Road Traffic Signals

Baseline Assessment

Deficiencies identified by North Staffordshire Integrated Transport Study.

The main delays are experienced on the A53 Etruria Road approaches to the junction having an adverse impact on bus journey times as the junction lies on a major bus route. The operation of this junction and the overcapacity problems experienced by the A53 Etruria Road between this junction and A500(T) also have a detrimental effect on the operation of the A500(T) / A53 grade separated junction.

It should be noted the Wolstanton Link Road will yield some benefits to the A53 corridor by slightly reducing traffic flows along this corridor.

Accident Record

There were 4 recorded accidents within a 50 metre radius of the junction over a five year period (2001 – 2005). All of the 6 individual casualties received slight injuries.

Buses

The junction lies on a bus route (A53) designated as a Bus Priority Corridor. There are currently no specific bus priority measures in operation at this junction.

Cycles

There are currently no specific facilities provided for cyclist at this junction.

Pedestrians

There are currently no specific pedestrian facilities provided at this junction.

Environmental Issues

The national air quality objectives for nitrogen dioxide (NO₂) and particulates (PM₁₀) are being exceeded at this junction mainly due to traffic emissions.

Improvement Options

Option 1 - (Drawing Number 1101123:11:01)

The overcapacity problems experienced by the A53 Etruria Road between this junction and A500(T) also have a detrimental effect on the operation of this junction. Therefore any meaningful redesign of this junction should be undertaken in conjunction with upgrading the link between A500(T) and Newcastle.

Option 1 assumes a dual carriageway link on Etruria Road together with improvements to all radii to side streets. There would be an opportunity to ban right turns from all minor road junctions, however this would necessitate the possible construction of a roundabout at Etruria Roads junction with Sandy Lane. The additional lanes on Etruria Road could be utilised for bus priority lanes or to improve the capacity for all vehicles.

Site 11 – A53 Etruria Road / A5369 Basford Park Road Traffic Signals

Option 2 - (Drawing Number 1101123:11:02)

This option extends the two lane approaches on Etruria Road and Basford Park Road and enhances the efficiency of the junction by the improvement of the radii into the side roads. Consideration should be given to making Gladstone Street and Haydon Street 'one-way'. Land will be required from 10 properties.



Site 11 **A53 Etruria Road / A5369 Basford Park Road Traffic Signals - Option 1**

Transport and Access

General	This option assumes a dual carriageway link on Etruria Road together with improvements to all radii to side streets. There would be an opportunity to ban right turns from all minor road junctions, however this would necessitate the possible construction of a roundabout at Etruria Roads junction with Sandy Lane. The additional lanes on Etruria Road could be utilised for bus priority lanes or to improve the capacity for all vehicles	N/A
Regeneration	This junction does not fall within an area designated as a General Improvement Area or Area of Major Housing Intervention.	0
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction however the creation of more road space should be beneficial to cyclists.	1
Buses	The provision of bus lanes on the Etruria Road will improve Bus facilities and journey times. This junction is on a route designated as a Bus Priority Corridor.	2 2
Traffic	The operation of this junction and the overcapacity problems experienced by the A53 Etruria Road between this junction and A500(T) also have a detrimental effect on the operation of the A500(T) / A53 grade separated junction. The provision of a dual carriageway will improve efficiency on this link however further studies are required to determine the effect on the overall traffic strategic traffic flows.	1
Congestion	The improvement of the junction and the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SLIGHT	2 0
Safety	The creation of pedestrian facilities and improvement of minor road junctions will provide safety benefits.	1
Accessibility	The option if implemented with a widening scheme of Etruria Road will provide greatly improved benefits of access to the City Centre.	2
Integration	Improvements to this junction with have limited benefit in terms of integration with other modes of transport.	0



Site 11 A53 Etruria Road / A5369 Basford Park Road Traffic Signals - Option 1

Environment

General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A
Landscape / Townscape	The scheme will have limited benefits in terms of Townscape improvements however there will be the opportunity for the provision of a high quality landscaping scheme including tree planting in the central reserve to be incorporated into the improvement.	1
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		15



Site 11 **A53 Etruria Road / A5369 Basford Park Road Traffic Signals - Option 2**

Transport and Access

General	This option extends the two lane approaches on Etruria Road and Basford Park Road and enhances the efficiency of the junction by the improvement of the radii into the side roads. Consideration should be given to making Gladstone Street and Haydon Street 'one-way'. Land will be required from 10 properties.	N/A
Regeneration	This junction does not fall within an area designated as a General Improvement Area or Area of Major Housing Intervention.	0
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction however the creation of more road space should be beneficial to cyclists.	1
Buses	The improvement of the junction and the reduction in congestion will improve Bus facilities and journey times. The opportunity could be taken to install bus lanes on the Etruria Road approaches to the junction This junction is on a route designated as a Bus Priority Corridor.	1 2
Traffic	The operation of this junction and the overcapacity problems experienced by the A53 Etruria Road between this junction and A500(T) also have a detrimental effect on the operation of the A500(T) / A53 grade separated junction. Redesign of this junction in isolation will not significantly improve traffic flows.	0
Congestion	The improvement of the junction and the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SLIGHT	1 0
Safety	The creation of pedestrian facilities and improvement of minor road junctions will provide safety benefits.	1
Accessibility	This option will provide limited benefits in terms of accessibility.	0
Integration	Improvements to this junction with have limited benefit in terms of integration with other modes of transport.	0
Environment		
General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A



Site 11 A53 Etruria Road / A5369 Basford Park Road Traffic Signals - Option 2

Landscape / Townscape	The scheme will have limited benefits in terms of Townscape improvements.	0
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		9

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PROJECT:
 North Staffordshire Road Network
 Junction Assessment - Feasibility Study

PROJECT No:
 1101123
 DWG. TITLE:
 A23 Etruria Road / BS980 Basford Park Road Traffic
 Signals - Option 1

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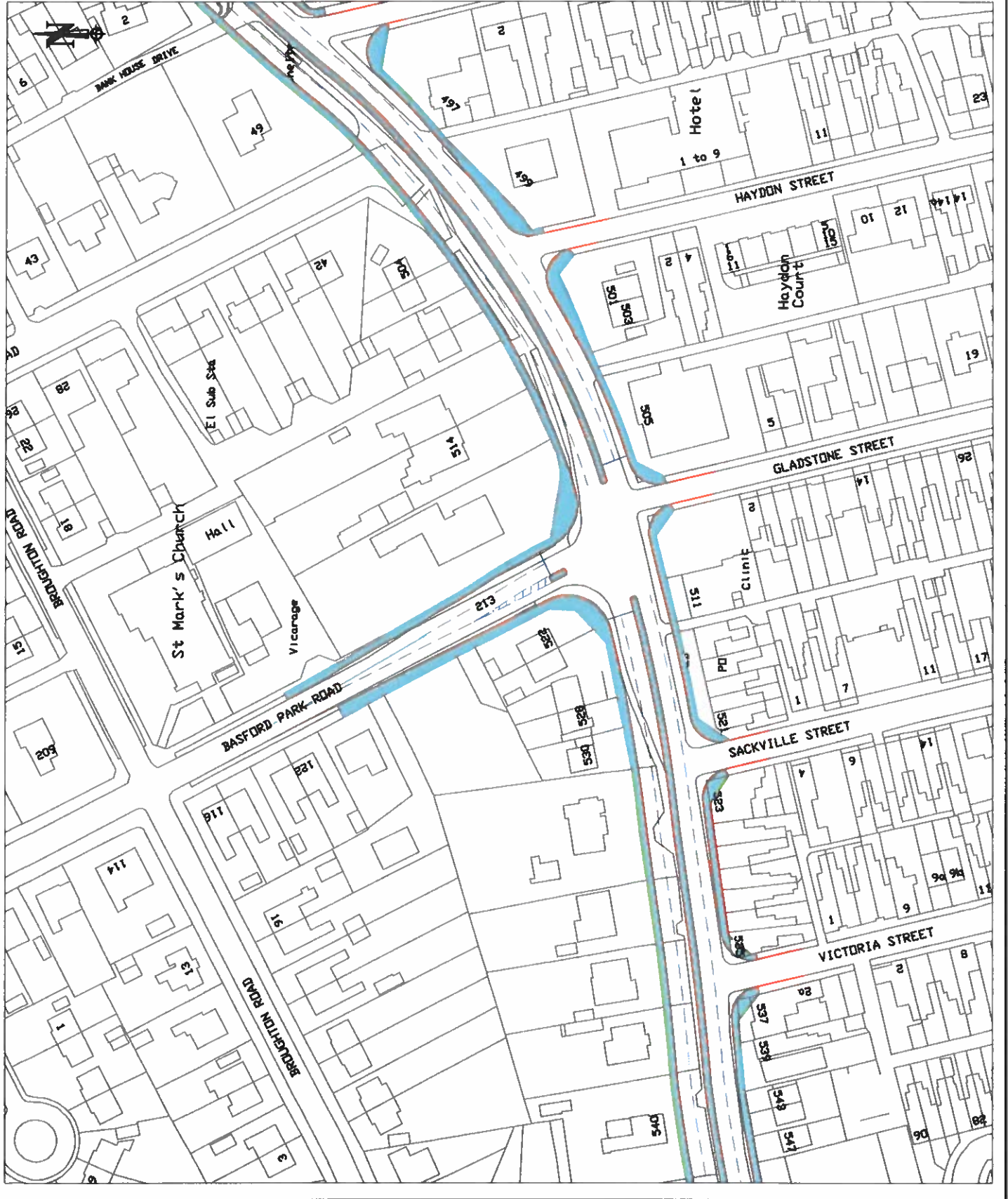
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Site 12 – A50 Scotia Road / A527 The Boulevard

Baseline Assessment

Deficiencies identified by North Staffordshire Integrated Transport Study (NSITS).

Significant delays are predicted on all approaches to the junction having an adverse impact on bus journey times as the junction lies on a quality bus corridor. Without significant property acquisition there is no obvious solution, however the construction of the Tunstall Northern Bypass is predicted to slightly reduce traffic problems at this junction in relation to the 2002 baseline case

Modelled Average Delay Per Vehicle (In Minutes) – Base Year 2002				
		To		
From		A	B	C
	A –A50 Scotia Road (North)	-	2.26	2.23
	B –B5271 The Boulevard	1.4	-	0.15
	C –A50 Scotia Road (South)	0.13	0.3	-

Modelled Average Delay Per Vehicle (In Minutes) – 2021					
		To			
From		A	B	C	D
	A –A50 Scotia Road (North)	-	1.06	1.66	
	B –B5271 The Boulevard	-	-	0.19	
	C –A50 Scotia Road (South)	0.11	0.22	-	

Accident Record

There have been 7 recorded accidents within a 50m radius of the junction over a 5 year period (2001- 2006) involving 15 vehicles. 2 casualties received serious injuries

Renew

The junction lies within the Tunstall General Renewal Area , RENEW should be consulted to determine if land can be made available to improve the junction.

Buses

The junction lies on a bus route (A50) designated as a Bus Priority Corridor. There are currently no specific bus priority measures in operation at this junction.

Cycles

There are currently no specific cycle routes identified through this junction.

Pedestrians

A scheme to install pedestrian crossing facilities across The Boulevard is proposed to be implemented in autumn 2007

Environmental Issues

The national air quality objective for particulates (PM₁₀) is being exceeded at this junction mainly due to traffic emissions.

Site 12 – A50 Scotia Road / A527 The Boulevard

Improvement Options

Option 1 - (Drawing Number 1101123:12:01)

Additional carriageway lanes on both approaches to the junction on the A50

Option 2 - (Drawing Number 1101123:12:02)

Identical to Option 1 but the additional carriageway lanes are used as bus lanes.



Site 12 A50 Scotia Road / A5271 The Boulevard junction - Option 1

Transport and Access

General	Delays predicted on all approaches to the junction. This option provides an additional lane on the A50 approach in both directions	N/A
Regeneration	This junction falls within the Tunstall General Renewal Area	1
Pedestrians	Pedestrian facilities will remain as existing	0
Cyclist	No specific improvements for cyclist are proposed at this junction however the creation of more road space should be beneficial to cyclists.	1
Buses	No specific improvements for buses are proposed at this junction however the creation of more road space should be beneficial to buses This junction is on a route designated as a Bus Priority Corridor.	1 2
Traffic	Creation of additional road space will improve traffic flow	1
Congestion	The improvement of the junction and the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SLIGHT	2 0
Safety	No Change	0
Accessibility	The option if implemented will provide improved benefits of access to Tunstall Centre.	1
Integration	Improvements to this junction will have limited benefit in terms of integration with other modes of transport.	0
Environment		
General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A



Site 12 A50 Scotia Road / A5271 The Boulevard junction - Option 1

Landscape / Townscape	The scheme will have limited benefits in terms of Townscape improvements however there will be the opportunity for the provision of a high quality landscaping scheme including tree planting in the central reserve to be incorporated into the improvement.	1
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		11



Site 12 A50 Scotia Road / A5271 The Boulevard junction - Option 2

Transport and Access

General	Delays predicted on all approaches to the junction. This option provides an additional lane on the A50 approach in both directions which is to be used as a bus lane	N/A
Regeneration	This junction falls within the Tunstall General Renewal Area	1
Pedestrians	Pedestrian facilities will remain as existing	0
Cyclist	No specific improvements for cyclist are proposed at this junction however the implementation of bus lanes will be beneficial to cyclists.	1
Buses	Bus lanes are proposed at this junction This junction is on a route designated as a Bus Priority Corridor.	2 2
Traffic	Creation of additional road space will improve traffic flow	1
Congestion	The improvement of the junction and the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SLIGHT	1 0
Safety	No Change	0
Accessibility	The option if implemented will provide improved benefits of access to Tunstall Centre.	1
Integration	Improvements to this junction will have limited benefit in terms of integration with other modes of transport.	0
Environment		
General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A
Landscape / Townscape	The scheme will have limited benefits in terms of Townscape improvements	1



Site 12 A50 Scotia Road / A5271 The Boulevard junction - Option 2

Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		11

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PROJECT:
North Staffordshire Road Network
Junction Assessment - Feasibility Study

PROJECT No:
1101123
DWG. TITLE:
A50 Scotla Road / A527 The Boulevard Traffic
Signals OPTION 1

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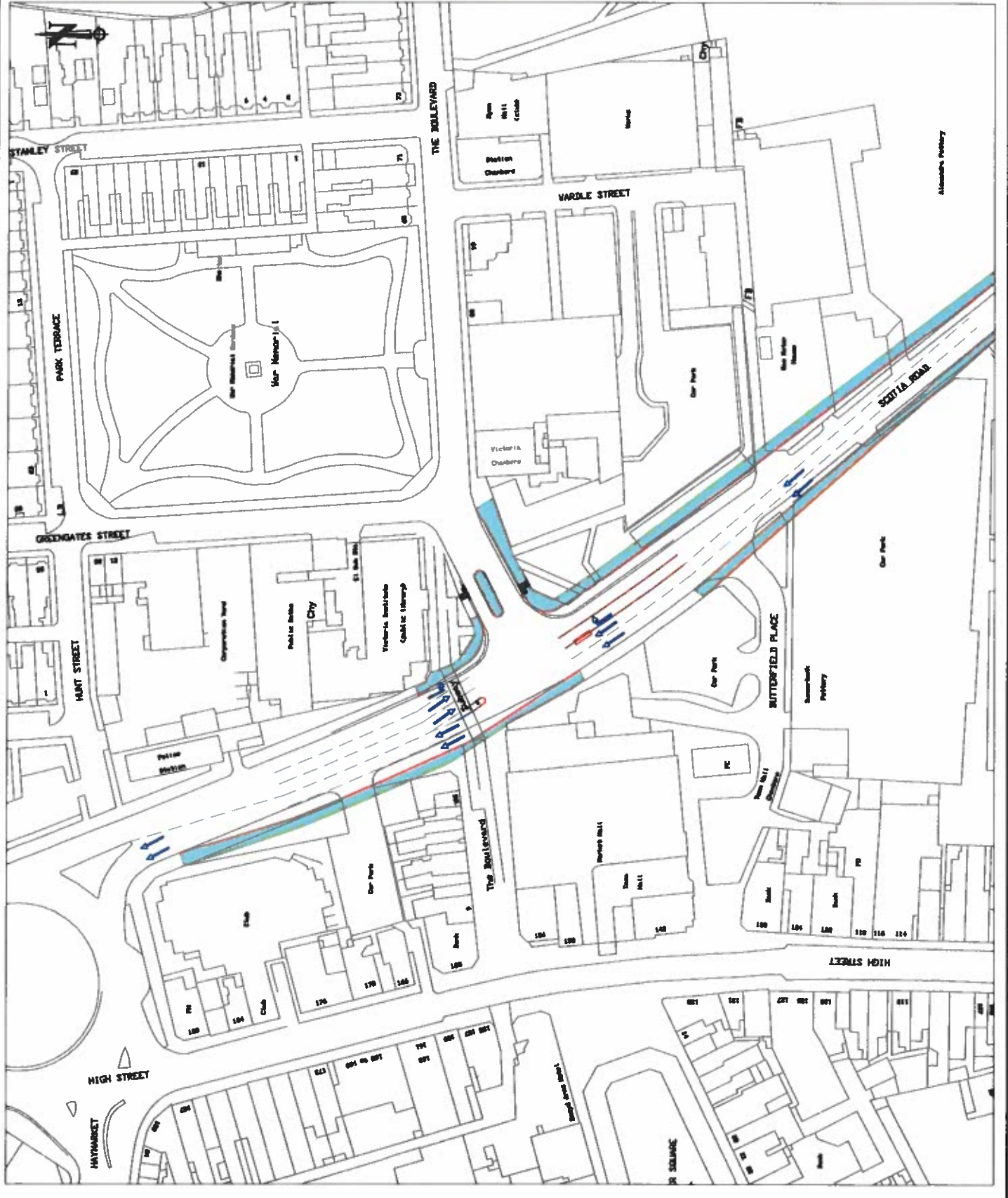
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A50 Scotia Road / A527 The Boulevard Traffic
Signals OPTION 1

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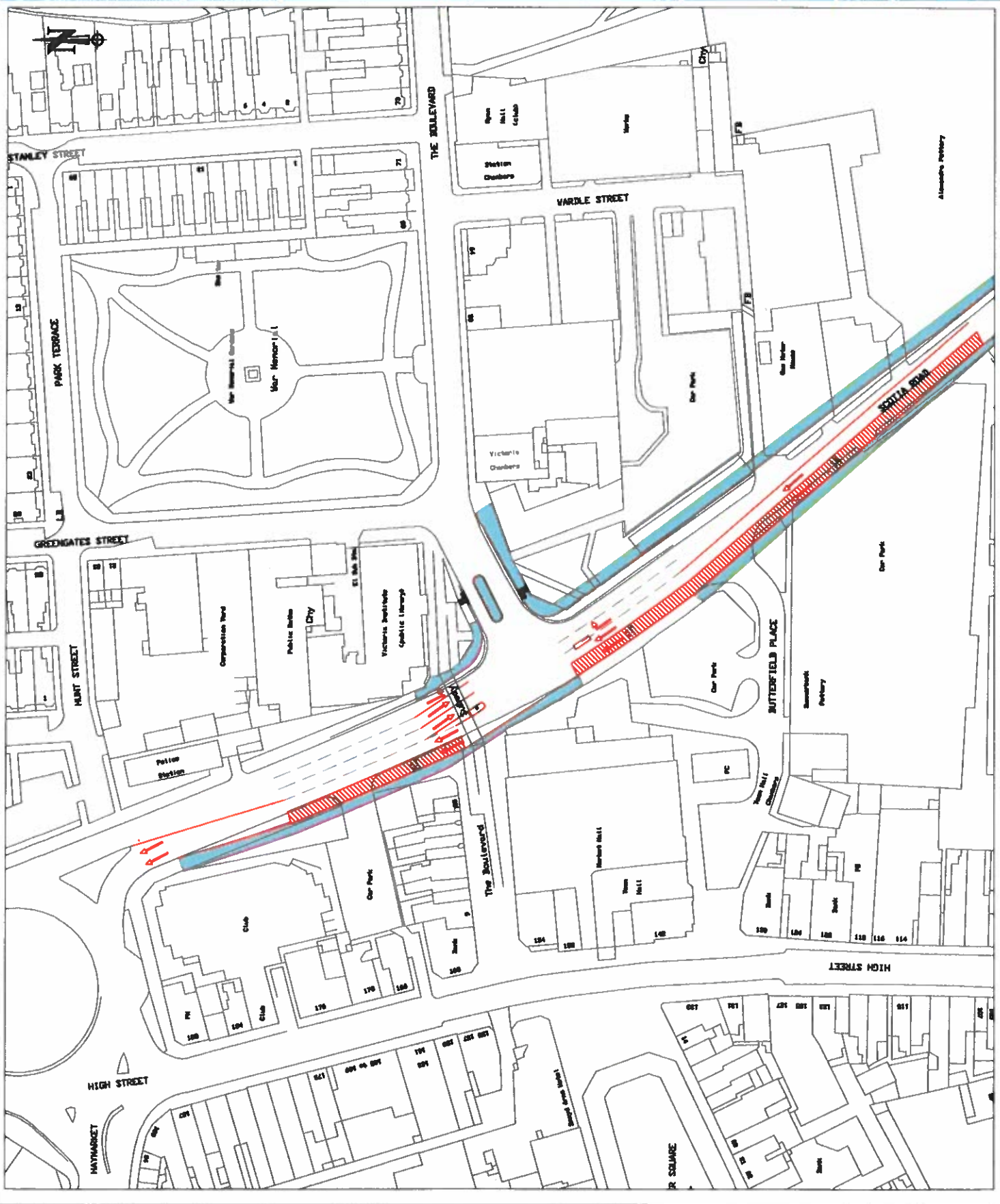
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Site 13 - A52 Hartshill Road / A52 Shelton Old Road Traffic Signals**Baseline Assessment****Deficiencies identified by North Staffordshire Integrated Transport Study.**

The main delay at this junction is experienced by right-turn movement from A52 Hartshill Road to Shelton Old Road which also has an adverse impact on bus journey times.

Modelled Average Delay Per Vehicle (in Minutes) – Base Year 2002				
		To		
From		A	B	C
	A – A52 Hartshill Road (North)	-	0.00	0.53
	B – Shelton Old Road	-	-	-
	C - A52 Hartshill Road (South)	0.00	4.72	-

Modelled Average Delay Per Vehicle (in Minutes) – 2021				
		To		
From		A	B	C
	A – A52 Hartshill Road (North)	-	0.00	0.48
	B – Shelton Old Road	-	-	-
	C - A52 Hartshill Road (South)	0.00	4.05	-

Accident Record

There were 4 recorded accidents within a 50 metre radius of the junction over a five year period (2001 – 2005). 4 of the casualties received slight injuries

Buses

The junction lies on a bus route (A52) designated as a Bus Priority Corridor. There are currently no specific bus priority measures in operation at this junction.

Cycles

There are currently no specific facilities provided for cyclist at this junction.

Pedestrians

There are currently no specific pedestrian facilities provided at this junction.

Environmental Issues

The site exceeds the acceptable particulates (PM₁₀) level and may possibly also exceed the national air quality objectives for nitrogen dioxide (NO₂) mainly due to traffic emissions. Further monitoring of air quality levels is recommended.

Improvement Options**Option 1 - (Drawing Number 1101123:13:01)**

The main delays experienced at this junction are by right turning traffic from Hartshill Road into Shelton Old Road. This option provides additional lanes in Hartshill Road and the provision of a dedicated bus lane. However it should be noted that queuing traffic from the new signalised junction on the A500(T) at Stoke Road tails back through this junction and

Site 13 - A52 Hartshill Road / A52 Shelton Old Road Traffic Signals

therefore any improvements to this junction maybe ineffective unless capacity of the Shelton Old Road Link is improved. Further traffic assessments are recommended. Additional traffic surveys are also recommended to assess the requirements for the provision of dedicated pedestrian facilities at this junction.



Site 13 **A52 Hartshill Road / A52 Shelton Old Road Traffic Signals - Option 1**

Transport and Access

General	The main delays experienced at this junction are by right turning traffic from Hartshill Road into Shelton Old Road. This option provides additional lanes in Hartshill Road and the provision of a dedicated bus lane.	N/A
Regeneration	This junction does not fall within an area designated as a General Improvement Area or Area of Major Housing Intervention.	0
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction however the creation of more road space should be beneficial to cyclists.	1
Buses	The provision of a bus lane on Hartshill Road will improve Bus facilities and journey times. This junction is on a route designated as a Bus Priority Corridor.	2 2
Traffic	Queuing traffic from the new signalised junction on the A500(T) at Stoke Road tails back through this junction and therefore further traffic assessments are recommended..	1
Congestion	The improvement of the junction and the provision of additional lanes will reduce congestion, however this assumes the efficient operation of the A500 junction.. Level of congestion as identified in North Staffordshire Transport Study - SLIGHT	1 0
Safety	The creation of pedestrian facilities will provide safety benefits.	0
Accessibility	The scheme will provide general benefits of access through the City.	1
Integration	Improvements to this junction with have benefits in terms of integration with rail travel.	1
Environment		
General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A



Site 13 A52 Hartshill Road / A52 Shelton Old Road Traffic Signals - Option 1

Landscape / Townscape	The scheme will have limited benefits in terms of Townscape improvements however there will be the opportunity for the provision of a high quality landscaping scheme including tree planting in the splitter islands.	1
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		13

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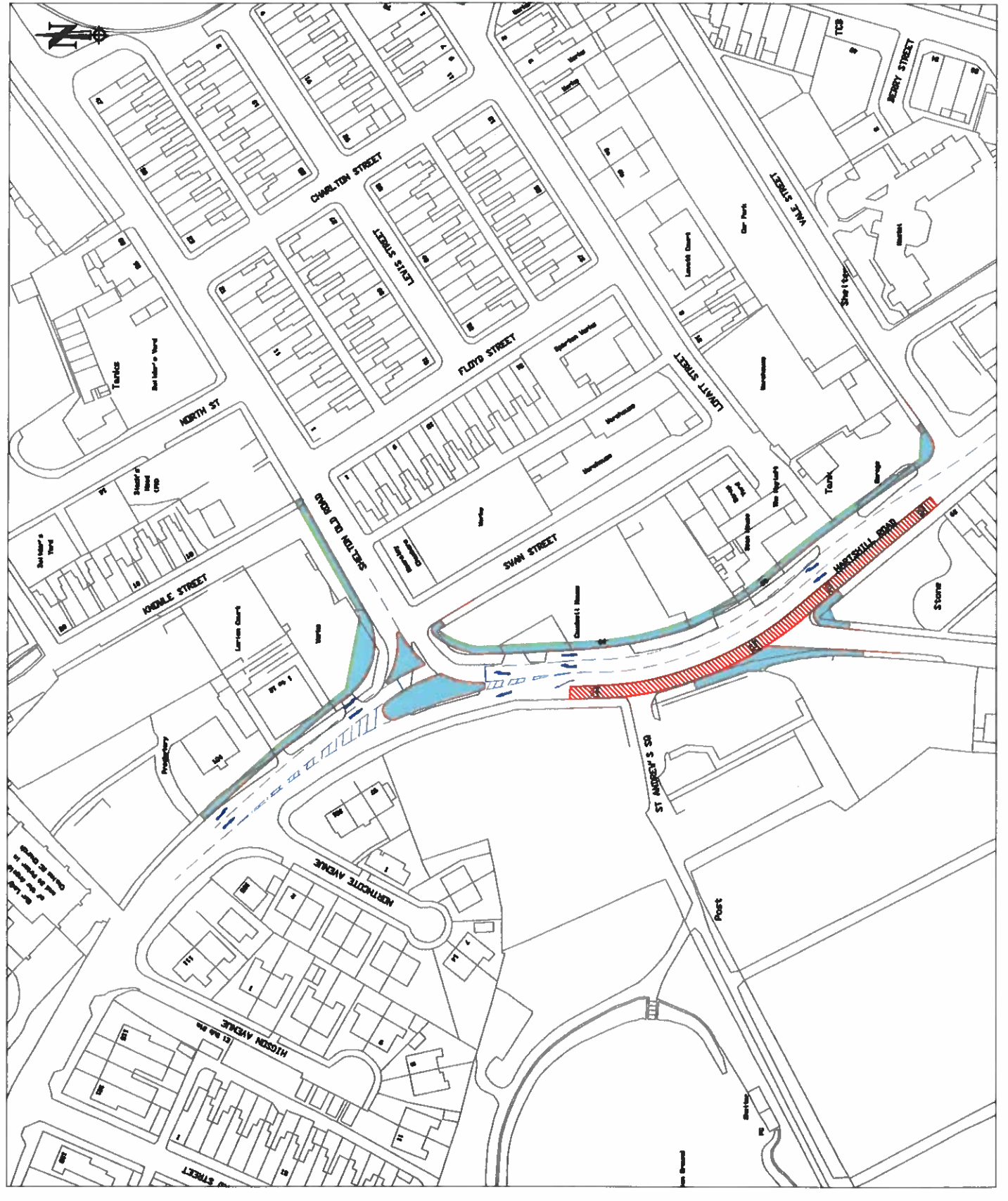
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PROJECT:
 North Staffordshire Road Network
 Junction Assessment - Feasibility Study

PROJECT No:
 1101123
DWG. TITLE:
 A52 Hertsall Road / Shelton Old Road Traffic
 Signals - Option 1

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Site 15 - A52 Leek Road / A50 Lichfield Street Roundabout**Baseline Assessment****Deficiencies identified by North Staffordshire Integrated Transport Study (NSITS).**

Significant delays are expected on all approaches to the junction which will have an adverse impact on the capacity of the A52 Leek Road, A50 Lichfield Street and A50 Victoria Road routes. The A50 corridor is also a major bus route.

Potential improvements to the junction will be subject to significant acquisition of property. However, should land become available from the RENEW proposals then improvements of this junction are considered to be paramount. Signalisation of the junction should be considered in order to provide bus priority measures.

Modelled Average Delay Per Vehicle (In Minutes) – Base Year 2002					
		To			
From		A	B	C	D
	A - A52 Leek Road (South)	-	0.57	0.57	0.57
	B - A50 Lichfield Street	1.71	-	1.71	1.71
	C - A52 Leek Road (North)	0.22	0.22	-	0.22
	D - A50 Victoria Road	0.45	0.45	0.45	-

Modelled Average Delay Per Vehicle (In Minutes) – 2021					
		To			
From		A	B	C	D
	A - A52 Leek Road (South)	-	1.28	1.28	1.28
	B - A50 Lichfield Street	1.47	-	1.47	1.47
	C - A52 Leek Road (North)	0.24	0.24	-	0.24
	D - A50 Victoria Road	3.90	3.90	3.90	-

Accident Record

There were 22 recorded accidents within a 50 metre radius of the junction over a five year period (2001 – 2005) involving 44 vehicles. All of the 22 casualties were classified as receiving 'slight' injuries. One of the accidents involved pedestrians.

Renew

The junction lies within South Shelton Area of Major Intervention, RENEW should be consulted to determine if land can be made available to improve the junction.

City Centre Transport Assessment

This junction falls within the area assessed by Scott Wilson's in Phase 1 of the Stoke-on-Trent City Centre Transport Assessment.

Buses

The junction lies on a Quality bus route designated as a Bus Priority Corridor. There are currently no specific bus priority measures in operation at this junction.

Cycles

There are currently no specific cycle routes identified through this junction.

Pedestrians

Site 15 - A52 Leek Road / A50 Lichfield Street Roundabout

Puffin crossings are provided on all approaches to the junction. However these are mostly sited some distance from the junction and crossing onto the roundabout splitter islands is a common practice.

Environmental Issues

The site exceeds the acceptable particulates (PM₁₀) level and may possibly also exceed the national air quality objectives for nitrogen dioxide (NO₂) mainly due to traffic emissions. Further monitoring of air quality levels is recommended.

Improvement Options

Option 1 – (Drawing Number D110115/D004/619)

The preferred option presented as part of Scott Wilson's City Centre Transport Assessment proposes radical changes to the junction with major acquisition of residential and commercial premises.

The scheme proposes the realignment of both the Victoria Road and Lichfield Street approaches to the junction creating a staggered junction and will include the provision of bus lanes and cycle facilities.

Leek Road is to be widened to dual carriageway either side of the junction with additional widening within the junction.

Landscaping by way of tree lined carriageways and planted central reserve will be incorporated into the scheme.

Adverse
Slightly Adverse
Neutral
Slightly Beneficial
Beneficial

-2
-1
0
1
2

Site 15 **A52 Leek Road / A50 Lichfield Street Roundabout**

Transport and Access

General	<p>The preferred option presented as part of Scott Wilson's City Centre Transport Assessment proposes radical changes to the junction with major acquisition of residential and commercial premises. The scheme proposes the realignment of both the Victoria Road and Lichfield Street approaches to the junction creating a staggered junction and will include the provision of bus lanes and cycle facilities. Leek Road is to be widened to dual carriageway either side of the junction with additional widening within the junction. Landscaping by way of tree lined carriageways and planted central reserve will be incorporated into the scheme.</p>	N/A
Regeneration	<p>This junction lies within City Centre South Area of Major Housing Intervention Phase 1.</p>	2
Pedestrians	<p>Full pedestrian facilities will be provided on all legs of the junction.</p>	2
Cyclist	<p>Cycle lanes will be provide on two of the approaches to the junction.</p>	1
Buses	<p>The provision of bus priority measures through the junction will improve Bus journey times. Site lies on a route designated as a Bus Priority Corridor.</p>	2 2
Traffic	<p>Widening of the approaches to the junction will improve overall capacity of the junction.</p>	2
Congestion	<p>The improvement of the junction by the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SEVERE</p>	2 2
Safety	<p>The reduction in traffic using the junction and the provision of pedestrian facilities will provide safety benefits.</p>	2
Accessibility	<p>The scheme will improve accessibility to the City Centre.</p>	2
Integration	<p>The scheme will have limited benefits in terms of integration with other modes of transport</p>	0
Environment		
General	<p>The scheme has been developed as a Highway scheme to reduce delays and provide improved facilities for buses.</p>	N/A
Landscape / Townscape	<p>Landscaping by way of tree lined carriageways and planted central reserve will be incorporated into the scheme</p>	1



Site 15 A52 Leek Road / A50 Lichfield Street Roundabout

<p>Noise</p> <p>The creation of additional traffic capacity within the junction will have a minor detrimental impact on noise levels. However it should be noted that in order to implement this scheme a significant number of the residential properties will need to be demolished.</p>	<p>-1</p>
<p>Air Quality</p> <p>Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO₂) and particulates (PM₁₀) emissions.</p>	<p>1</p>

Total Score 20

Site 16 - A5007 Kings Street / Times Square Traffic Signals**Baseline Assessment****Deficiencies identified by North Staffordshire Integrated Transport Study.**

This a complex junction consisting of 5 major approaches linked by a combination of signalised and priority junctions with some intermediate link roads. Significant delays are predicted on all approaches.

Modelled Average Delay Per Vehicle (In Minutes) – Base Year 2002					
		To			
From		A	B	C	D
	A – A5005 The Strand	-	0.53	0.53	0.33
	B – Moulton Road	-	-	1.01	1.01
	C – A5007 King Street	-	-	-	-
	D – A5007 Market Street	-	0.54	-	-

Modelled Average Delay Per Vehicle (In Minutes) – 2021					
		To			
From		A	B	C	D
	A – A5005 The Strand	-	1.22	1.22	0.33
	B – Moulton Road	-	-	1.83	1.83
	C – A5007 King Street	-	-	-	-
	D – A5007 Market Street	-	0.53	-	-

Accident Record

There were 14 recorded accidents within a 50 metre radius of the junction over a five year period (2001 – 2005). All of the 18 casualties involved in these accidents were classified as having 'slight' injuries. 2 of the accidents involved pedestrians.

Buses

The junction lies on a bus route (A52) designated as a Bus Priority Corridor. There are currently no specific bus priority measures in operation at this junction.

Cycles

There are currently no specific facilities provided for cyclist at this junction.

Pedestrians

There are signalised pedestrian facilities provided on two legs of this junction crossing King Street and The Strand.

Environmental Issues

The national air quality objectives for nitrogen dioxide (NO₂) and particulates (PM₁₀) are being exceeded at this junction mainly due to traffic emissions.

Site 16 - A5007 Kings Street / Times Square Traffic Signals

Improvement Options

Option 1 - (Drawing Number 1101123:16:01)

The modifications indicated in this option have been designed as part of a section 106 agreement between Stoke City Council and St Modwen Developments Limited forming part of planning approvals for the development of 'Phoenix Timber Yard'. This option provides for a bus lane in The Strand linking to Moulton Road and Longton Bus Station. Pedestrian facilities will also be provided crossing all of the major approaches to the junction. Works are currently programmed to commence on site in the summer of 2007.

Option 2 - (Drawing Number 1101123:16:02)

This option adds an extra bus lane on King Street and assumes that the 106 works described in option one are implemented.



Site 16 A5007 Kings Street / Times Square Traffic Signals - Option 2

Transport and Access

General	The modifications indicated in this option incorporate works associated with section 106 agreement between Stoke City Council and St Modwen Developments Limited forming part of the planning approval. This design incorporates a bus lane in The Strand linking to Moulton Road and Longton Bus Station. Pedestrian facilities will also be provided crossing all of the major approaches to the junction. This option adds an extra bus lane on King Street and assumes that the 106 works described above are implemented	N/A
Regeneration	This junction does not fall within an area designated as a General Improvement Area or Area of Major Housing Intervention.	0
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction however the creation of more road space should be beneficial to cyclists.	1
Buses	The provision of a bus lane on the Strand and King Street will improve Bus facilities and journey times. This junction is on a route designated as a Bus Priority Corridor.	2 2
Traffic	The simplification of the junction layout will improve traffic flow	1
Congestion	The improvement of the junction and the provision of additional lanes will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - MODERATE	1 1
Safety	The creation of pedestrian facilities will provide safety benefits.	2
Accessibility	The scheme will substantially improve the transport links for all modes of transport with the provision of bus lanes and pedestrian facilities.	2
Integration	Improvements to this junction will have benefit in terms of integration with other modes of transport improving access to Longton Bus and Train Stations.	1

Environment



Site 16 A5007 Kings Street / Times Square Traffic Signals - Option 2

General	The scheme has been developed as a Highway scheme to reduce delays and where possible provide improved facilities for buses, cyclists and pedestrians.	N/A
Landscape / Townscape	The scheme will have benefits in terms of Townscape improvements providing the opportunity for the provision of a high quality landscaping scheme including tree planting.	2
Noise	No change	0
Air Quality	Reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		18

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PROJECT:
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 Junction Assessment - Feasibility Study

PROJECT No:
 1101123
DWG. TITLE:
 A5007 King Street / Times Square Traffic Signals
 Option 1 - Base on Developers Design

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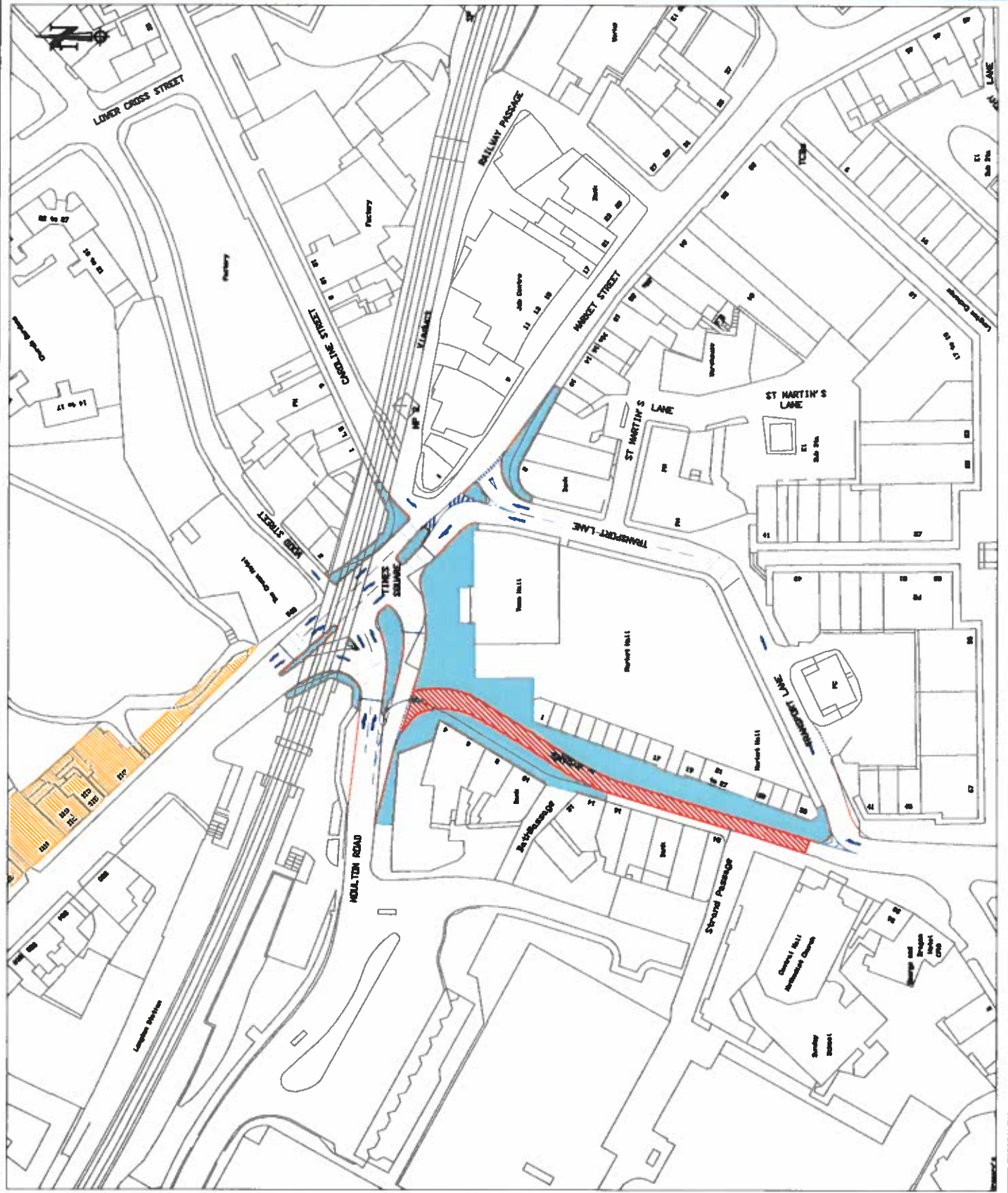
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 REGENERATION PARTNERSHIP**
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 Stuart Davies M.B.A., B.Eng., C.Eng., M.I.C.E.

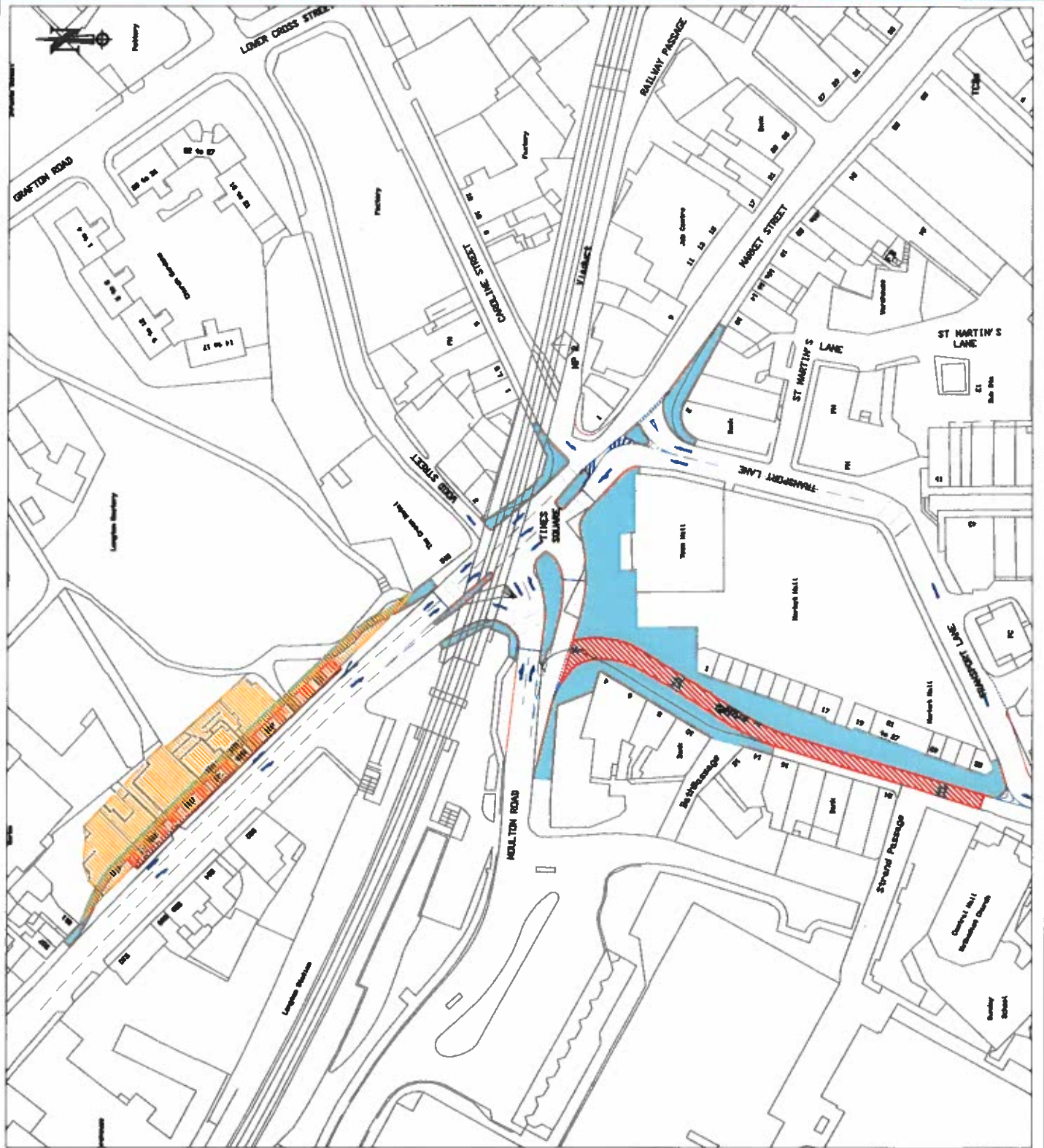
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PROJECT:
 North Staffordshire Road Network
 Junction Assessment - Feasibility Study

PROJECT No:
 1101123
DWG. TITLE:
 A5007 King Street / Times Square Traffic Signals
 Option 2

DRAWING STATUS	CONTRACT	AS BUILT
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January 2007	*****
DWG No:	REVISION
1101123:16:02	



Land Requirements

Site 17 - A50 Waterloo Road / B5051 Moorland Road Traffic Signals

Baseline Assessment

Deficiencies identified by North Staffordshire Integrated Transport Study.

Delays are predicted on all approaches to the junction which will have an adverse impact on bus journey times.

Modelled Average Delay Per Vehicle (In Minutes) – Base Year 2002					
		To			
From		A	B	C	D
	A – A50 Waterloo Road	-	0.74	0.74	0.67
	B – B5051 Market Place	0.53	-	0.66	0.66
	C – A50 Scotia Road	0.51	0.54	-	0.51
	D – B5051 Moorland Road	0.48	0.48	0.49	-

Modelled Average Delay Per Vehicle (In Minutes) – 2021					
		To			
From		A	B	C	D
	A – A50 Waterloo Road	-	0.73	0.73	0.55
	B – B5051 Market Place	0.64	-	0.88	0.88
	C – A50 Scotia Road	0.69	0.47	-	0.69
	D – B5051 Moorland Road	0.63	0.63	0.59	-

Accident Record

There were 15 recorded accidents within a 50 metre radius of the junction over a five year period (2001 – 2005). Two of the casualties were classified as having serious injuries and there were 13 individuals who's accidents were classified as 'slight'. One of the accidents involved a pedestrian.

Buses

The junction lies on a bus route (A50) designated as a Bus Priority Corridor. There is currently a short length of bus lane on Scotia Road.

Cycles

There are currently no specific facilities provided for cyclist at this junction.

Pedestrians

Waterloo Road / Scotia Road / Moorland Road Junction is sited within Burslem Town Centre and has full signalised pedestrian facilities provided.

Environmental Issues

The national air quality objective for particulates (PM₁₀) is being exceeded at this junction mainly due to traffic emissions.

Site 17 - A50 Waterloo Road / B5051 Moorland Road Traffic Signals

Improvement Options

Option 1 - (Drawing Number 1101123:17:01)

A major scheme promoting the regeneration of Burslem Town Centre is currently being prepared. This option proposes the closure of Market Street to non-bus traffic with local traffic being rerouted via Westport Road and Federation Road. Non local traffic will be diverted further a field. It is therefore recommended that further modelling work is undertaken.



Site 17 A50 Waterloo Road / B5051 Moorland Road Traffic Signals

Transport and Access

General	A major scheme promoting the regeneration of Burslem Town Centre is currently being prepared. This option proposes the closure of Market Street to non-bus traffic with local traffic being rerouted via Westport Road and Federation Road. Non local traffic will be diverted further a field. It is therefore recommended that further modelling work is undertaken.	N/A
Regeneration	This junction does not fall within an area designated as a General Improvement Area or Area of Major Housing Intervention. However it forms a fundamental element for the proposals to regenerate Burslem Town Centre.	2
Pedestrians	Pedestrian facilities will be incorporated within the traffic signalisation of the junction.	2
Cyclist	No specific improvements for cyclist are proposed at this junction, however the creation of bus lanes will be beneficial to cyclists.	1
Buses	The provision of a bus lane on Market Street will improve Bus facilities and journey times. This junction is on a route designated as a Bus Priority Corridor.	2 2
Traffic	The simplification of the junction layout will improve traffic flow	1
Congestion	The improvement of the junction will reduce congestion. Level of congestion as identified in North Staffordshire Transport Study - SLIGHT	1 0
Safety	The implementation of the full scheme to regenerate Burslem will significantly improve pedestrian movement and safety in the town centre, however pedestrian facilities already exist at this junction and these proposals will have little impact on pedestrian movement within the junction.	0
Accessibility	The scheme will improve the accessibility for buses, however this will be offset by the detrimental effect on servicing of the business premises in Market Street.	0
Integration	Improvements to this junction with have limited benefit in terms of integration with other modes of transport.	1

Environment



Site 17 A50 Waterloo Road / B5051 Moorland Road Traffic Signals

General	The scheme has been developed as part of a regeneration package for Burslem and where possible provides improved facilities for buses, cyclists and pedestrians.	N/A
Landscape / Townscape	The scheme will have benefits in terms of Townscape improvements providing the opportunity for the provision of a high quality landscaping scheme including tree planting.	2
Noise	Through traffic will be removed from Market Street	1
Air Quality	The removal of through traffic from Market Street together with the reduction in queue lengths and congestion will provide improvement in air quality by reducing nitrogen dioxide (NO2) and particulates (PM10) emissions.	1
Total Score		16

- Contractor to check all dimensions and report errors and omissions to the Engineer or Contract Administrator.
- The Contractor is responsible for all setting out.
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REVISION	No.	DATE	NOTE



**NORTH STAFFORDSHIRE
REGENERATION PARTNERSHIP**
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PROJECT:
North Staffordshire Road Network
Junction Assessment - Feasibility Study

PROJECT No:
1101123

DWG. TITLE:
A50 Waterloo Road / B5051 Moorland Road Traffic
Signals - Option 1

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