A628 DODWORTH ROAD / BROADWAY JUNCTION IMPROVEMENT

PLANNING APPLICATION SUBMISSION

VOLUME 1

JULY 2018

BARNSLEY
Metropolitan Borough Council

A628 DODWORTH ROAD / BROADWAY

JUNCTION IMPROVEMENT

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Design & Access Statement

VOLUME ONE

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A628 DODWORTH ROAD / BROADWAY JUNCTION IMPROVEMENT

PLANNING STATEMENT SUMMARIES

1.1 INTRODUCTION

1.1.1 This document has been submitted as supporting information to accompany the planning application for the improvement of the A628 Dodworth Road / Broadway Junction.

1.2 Overview

1.2.1 The A628 Dodworth Road is a key route within the borough and a gateway into the town. Over time, both the population of the borough and levels of vehicle ownership have increased, meaning the ability of the road to carry traffic, particularly at peak times in the vicinity of the town, has declined.

1.2.2 To address this traffic growth, there have been a number of highway improvements carried out, principally between Junction 37 of the M1 motorway and Barnsley town centre. In 2006 the Dodworth By-pass was constructed. In 2015 the signalisation the M1 Junction 37 gyratory, together with additional lanes was constructed. These improvements have yielded significant benefits by reducing queuing which improved journey times and also includes improvements of the Dodworth Road Air Quality Management Area (AQMA).

1.2.3 Further mitigation measures are required to reduce congestion on Dodworth Road, together with improving the crossroad junction with Broadway and Pogmoor Road and to provide sufficient capacity to ensure that the current and future growth aspirations of the borough are met. The existing traffic signals are operating at full capacity and nothing more can be done within the confines of the existing highway to improve the efficiency of this junction, therefore a new solution is proposed.

1.2.4 Barnsley Metropolitan Borough Council is proposing a highway improvement scheme on the A628 Dodworth Road / Broadway junction near Barnsley. The proposed scheme is located between Junction 37 of the M1 motorway and Barnsley town centre and will consist of a new signalised gyratory situated on the existing Dodworth Road / Pogmoor Road crossroads and on part of Penny Pie Park adjacent to Dodworth Road and Pogmoor Road.

The proposed scheme will consist of:

- The provision of an elongated, signalised gyratory roundabout encompassing the existing A628 Dodworth Road / Broadway / Pogmoor Road junction;

- Closing off of the Dodworth Road end of Pogmoor Road through the creation of a new access road to serve Whitehill Avenue and closed section of Pogmoor Road;

- The formation of a new signal controlled access to Horizon Community College;

- Provision of new 3.0m wide combined footpath / cycle ways will be incorporated into the scheme improving safety for all users;

- Pedestrian crossing locations are to be signalised to improve pedestrian safety;

- New energy efficient street lighting is to be provided to latest standards;

- Off-line construction to minimise disruption to existing traffic flows during the construction period.

- Proposals to compensate for the impact of the scheme on the green space of Penny Pie Park, including the retention and relocation of the existing LEAP, MUGA and outdoor gym facility. In addition new footpaths and a children's cycle path are proposed. Pogmoor Recreation Ground will benefit from improved pedestrian access with provision of footpath, benches and dog fouling bins. Sugdens Recreation ground on Stocks Lane will be upgraded from an EPA to a NEAP, which has a wider catchment area of 1000m, as oppose to 400m

1.2.5 The proposed carriageway alignment is shown on drawing number: *HD/7122127/C/1 General Layout*

2.0 THE NEED FOR THE PROPOSED SCHEME

2.1 Introduction

2.1.1 The A628 Dodworth Road is a key route within the borough and a gateway into the town. Over time, both the population of the borough and levels of vehicle ownership have increased, meaning the ability of the road to carry traffic, particularly at peak times in the vicinity of the town, has declined.

2.1.2 To address this traffic growth, there have been a number of highway improvements previously out carried principally between Junction 37 of the M1 motorway and Barnsley town centre. These improvements have yielded significant benefits by reducing queuing which improved journey times and improvements in the Dodworth Road Air Quality Management Area (AQMA).

2.1.3 Further mitigation measures are required to reduce congestion on Dodworth Road, together with improving the crossroad junction with Broadway and Pogmoor Road and to provide sufficient capacity to ensure that the current and future growth aspirations of the borough are met. The existing traffic signals are operating at full capacity and nothing more can be done within the confines of the existing highway to improve the efficiency of this junction, therefore a new solution is proposed.

2.2 Need, Potential Problems and 'Do Nothing' Scenario.

2.2.1 The starting point for the council when seeking to address capacity issues on the network is to consider whether or not it would be possible to achieve the necessary modal shift from private car usage to more sustainable modes of transport such as public transport or active travel (cycling & walking). Not only would these potentially be a better way of addressing health and air quality but they would also be a more effective way of reducing carbon emissions and the associated impact of climate change.

2.2.2 In terms of active travel, the Council is involved in a number of initiatives to promote walking and cycling. Over the past 4 years, £3.9m external capital funding has been secured and provided improved and new cycleways within the borough (including Dearne Valley Enterprise Corridor and Pontefract Road to Town Centre) and £1.1m external revenue funding has been secured to promote and encourage active travel in the borough including the Cycle Hub, Dr Bike and Bike Loans. The Council is currently developing its Active Travel Strategy and will seek to ensure that walking and cycling routes are considered and promoted throughout the design and delivery of any potential highway improvements in the borough. However it is recognised that it is unlikely that the modal share of active travel within the borough will increase to such an extent that it

would not be necessary to improve the capacity of the Dodworth Road/Broadway/Pogmoor Road junction.

2.2.3 In respect of modal shift from car to bus, bus patronage has been falling within the borough and this mirrors both the national and regional trend. This is despite significant investment over previous decades in bus priority measures such as bus lanes delivered elsewhere in the borough and investment in newer vehicles. To address this, the Barnsley Bus Partnership was established and is working with the commercial and statutory public transport sector to enhance the bus network, services and ticketing initiatives. However, the increasing congestion on Dodworth Road is continuing to have a detrimental impact on service quality and significant increases in journey times for buses using this corridor between Barnsley Town Centre and Dodworth. Stagecoach have confirmed that in 2000, inbound journeys took 10 mins in both the AM and PM peak. By April 2017, journey times for the inbound AM peak had increased to 26 mins, with the PM peak increasing to 17 minutes. In addition, the, outbound journeys in the AM and PM peak in 2000 took 10 mins. By April 2017, journey times for the outbound AM peak had increased to 14 mins, with the PM peak increasing to 16 minutes. Not only does this make bus use less attractive as a potential travel mode to members of the public, but in a deregulated bus market, the financial viability of providing a bus service along Dodworth Road becomes more difficult to justify as increasing levels of investment are regularly required to maintain the same levels of service and punctuality, and as a result at least one of the bus operators has had to reduce the frequency of their services. In addition to the above, the Dodworth Road corridor does not benefit from any bus priority measures largely due to not being able to be accommodated within the confines of the existing highway. The council acquired a parcel of land at the time when the Dodworth by-pass was constructed, for a potential park and ride. Regrettably, due to the confines of the site, the unfeasibility of providing bus priority measures in the vicinity and park and ride not proving to be as effective as was originally envisaged elsewhere within the borough, the proposal could not be progressed.

2.2.4 In contrast, the borough has seen a notable increase in rail patronage which mirrors the national trend. This has been particularly evident of the Hallam Line which can in part be attributed to the introduction of the fast Sheffield to Leeds service via Meadowhall, Barnsley and Wakefield Kirkgate. In 2015 the Council published its Rail Vision, which is in the process of being updated to reflect significant changes that are likely to emerge through Northern Powerhouse Rail and HS2 as well as the commitments contained within the various franchises. This process has involved significant engagement with Network Rail, South Yorkshire Passenger Transport Executive, both city regions, rail operators and numerous other stakeholders. However there are no firm proposals in the short to medium term of delivering rail improvements that would sufficiently offset car journeys along Dodworth Road during peak times.

2.2.5 Based on the above, the existing highway network has to be expanded to increase capacity therefore a number of highway design solutions with the primary objectives being to:

- improve the strategic highway access from the M1 J37 to Barnsley;
- alleviate congestion at the A628 Dodworth Road / Broadway crossroads;
- alleviate congestion on the M1 J37 Southbound exit;
- incorporate where feasible, design opportunities to encourage active travel (walking and cycling);
- facilitate future growth identified in the Core Strategy,

2.2.6 Due to the delays and long queues forming, coupled with potential development traffic to 'Do Nothing' would result in the network operating over capacity with extensive delays continuing to be experienced on the current identified roads.

2.2.7 Therefore in 2016, Barnsley Metropolitan Borough Council commissioned AECOM to carry out an assessment of the A628 Dodworth Road / Broadway crossroads. AECOM were tasked to ascertain the current capacity of the junction, and also its likely future capacity having regard to current growth that has been committed to as well as additional planned future growth aspirations to assess the existing road layout for capacity and future growth years and compare it with the final scheme proposals by means of a Transport Assessment Report. See Appendix 1.

2.2.8 The Transport Assessment Report included proposals of committed development.

2.2.9 The Council, as Highway Authority has concluded that the Dodworth Road / Broadway Junction is at full capacity once committed developments are factored in. This conclusion is supported by the anecdotal evidence from those using that route on a daily basis that regularly experience long queues on each approach in both the morning and afternoon peak periods.

3.0 THE PROPOSED DEVELOPMENT

3.1 Introduction

3.1.1 The proposed highway scheme design is based on the Department for Transport Standards and Advice Notes.

3.1.2 The scheme involves creating a new signalised gyratory system within the existing Penny Pie Park and surrounding roads. See Dwg. No. HD/7122127/C-1

3.2 Project Objectives

3.2.1 The A628 Dodworth Road is a key route within the borough and a gateway into the town. Over time, both the population of the borough and levels of vehicle ownership have increased, meaning the ability of the road to carry traffic, particularly at peak times in the vicinity of the town, has declined.

3.2.2 To address this traffic growth, there have been a number of highway improvements carried principally between Junction 37 of the M1 motorway and Barnsley town centre. In 2006, the Dodworth By-pass was constructed and in 2015, the signalisation the M1 Junction 37 gyratory, together with additional lanes was constructed. These improvements have yielded significant benefits by reducing queuing which improved journey times and also includes revocation of the Dodworth Road Air Quality Management Area (AQMA).

3.2.3 Further mitigation measures are required to reduce congestion on Dodworth Road, together with improving the crossroad junction with Broadway and Pogmoor Road and to provide sufficient capacity to ensure that the current and future growth aspirations of the borough are met. The existing traffic signals are operating at full capacity and nothing more can be done within the confines of the existing highway to improve the efficiency of this junction, therefore a new solution is proposed.

3.2.4 The primary objectives of the scheme are to :

- improve the strategic highway access from the M1 J37 to Barnsley;
- alleviate congestion at the A628 Dodworth Road / Broadway crossroads;
- alleviate congestion on the M1 J37 Southbound exit;
- incorporate where feasible, design opportunities to encourage active travel (walking and cycling);
- facilitate future growth identified in the Council's Core Strategy, as well as improving air quality.

3.3 Policy Context

3.3.1 Planning law requires that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise. The development plan for Barnsley currently includes the Core Strategy, the Barnsley, Doncaster & Rotherham Joint Waste Plan and saved Unitary Development Plan policies. The emerging Local Plan, which would supersede the Core Strategy and Unitary Development Plan.

3.3.2 The emerging Local Plan has now reached a very advanced stage with a consultation on main modification to the plan commencing in July 2018. The consultation follows confirmation from the Local Plan inspector that the plan is capable of being found sound. This by no means represents the Inspectors overall judgement, which will not be known until the final report is issued and the examination closes. However, it does mean increasing weight can be given to the policies contained within the document although, in accordance with paragraph 216 of the NPPF, the extent of this will depend on:

- The extent to which there are unresolved objections to relevant policies (the less significant the unresolved objections, the greater the weight that may be given) and;
- The degree of consistency of the relevant policies in the emerging plan to the policies in the NPPF (the closer the policies in the emerging plan to the policies in the NPPF, the greater the weight that may be given).

3.3.3 The spatial approach in the Core Strategy is based on a settlement hierarchy that focusses development in Urban Barnsley and the Principal Towns (Cudworth, Goldthorpe/Dearne Towns, Hoyland, Penistone, Royston & Wombwell). The rationale for this strategy was that it provided a more sustainable pattern of growth. In part this was to encourage and support more sustainable modes of transport which, in turn, would reduce and mitigate the impact of growth on the environment and carbon emissions. However, it is recognised that focussing growth in this way still inevitably leads to pressure on infrastructure within the areas identified to accommodate the growth, in particular Urban Barnsley, where the Core Strategy seeks to distribute around 9,800 additional homes and between 130 & 155 hectares of employment land by 2026.

3.3.4 In terms of transport, the focus of the Core Strategy is firmly on the Accessibility Improvement Zone area to the east of the M1 given it is the main focus for development and renewal. The Core Strategy therefore anticipates that this will be area that receives the majority of the transport investment in the borough focusing on the need to improve passenger and freight connectivity whilst encouraging development in the most

sustainable locations.

3.3.5 Although site allocations have not emerged following the adoption of the Core Strategy, as the main development plan document for the borough, it has enabled sustainable growth to occur in Urban Barnsley and the Principal Towns. This can be evidenced by the demonstrable growth in rail patronage that the borough has seen but, inevitably, it has also manifested itself on parts of the highway network in Urban Barnsley and the arterial routes connecting Urban Barnsley to the Principal Towns.

3.3.6 Whilst the Core Strategy seeks to reduce the need to travel, particularly by car, it is also recognised that there will be occasions where improvements to the highway network are also required (paragraph 9.172). Policy CS26 therefore requires new development to be designed and built to provide safe, secure and convenient access for all road users. The extent to which this would be achieved is then established by requiring transport assessments to be submitted and assessed using relevant transport models.

3.3.7 Improving air quality is a key objective of the scheme and Core Strategy CSP 41 requires development in air quality management areas to not have a harmful effect on the health and living conditions. This is established through the submission and consideration of an air quality assessment.

3.3.8 The proposed scheme will have an adverse impact on Pennie Pie Park and so policies CSP 33 (Green Infrastructure) and CSP 35 (Green Space) are both relevant. In respect of Green Infrastructure, the overall strategy is to protect, maintain, enhance and create an integrated network or connected and multi-functional Green Infrastructure Assets. At the strategic level, five corridors are identified where open space will be protected. However, the application site is not located within any of these strategic corridors. Nonetheless, policy CSP35 only allows loss of greens space where:

- an assessment shows there is too much of that particular type of green space in the area which it serves and its loss would not affect the existing and potential green space needs of the borough; or
- an appropriate replacement green space of at least equivalent community benefit, accessibility and value is provided in the area which it serves

3.3.9 Other relevant Core Strategy policies to be considered are CSP1 (Climate Change), CSP3 (Sustainable Drainage Systems), CSP4 (Flood Risk), CSP 29 which sets out design principles, CSP 36 which expects development to conserve and enhance biodiversity, CSP 39 which relates to potentially contaminated and unstable land, CSP 40 relating to

pollution control and protection covering issues such as air, noise, smell, dust, vibration, light of other forms of pollution.

3.3.10 At a strategic level, the spatial strategy in the emerging Local Plan largely follows that contained in the adopted Core Strategy with development being focussed in Urban Barnsley and the Principal Towns. However, because the Local Plan period extends a further 7 years to 2033, it includes proposals to release large areas of Green Belt to meet objectively assessed housing and employment needs. By virtue of the fact Green Belt boundaries have been reviewed it has then been necessary to look beyond the plan period so that Green Belt boundaries are capable of enduring for at least another 5 years (i.e. to 2038).

3.3.11 The objectively assessed employment need that has been identified derives from a desire to grow the economy in Barnsley with the aim being to reduce the need for residents to commute out of the borough in order to find work. Currently Barnsley has one of the lowest job densities in the country and the region at 0.6. This is anticipated to grow to 0.71 by the end of the local plan period (2033) but such a figure will still leave the borough lagging behind some neighbouring authorities that already have higher job densities. As such, were a job density of 0.71 to come to fruition or not be acheived, it is likely there would remain a desire to continue increasing levels of employment though business growth and inward investment potentially leading to further land allocations beyond the current local plan period.

3.3.12 In a similar vein, demographic projections for the borough anticipate a need for around 900 homes a year before accounting for any additional need that arises as a result of a growing workforce. This basic demographic growth reflects recent trends which have seen population growth of the borough rising due to natural change (birth rates exceeding death rates) but also internal and international migration. Given Barnsley's location within a Leeds-Sheffield corridor, where it is possible to commute to a number of places for work and in light of the relative affordability of house prices compared to other parts of the region, it is not unreasonable to assume that the population of the borough will continue to grow, as least in line with recent demongraphic trends and projections but more probably in excess of these given the employment growth that is being pursued.

3.3.13 By virtue of the fact that the part of the borough to the east of the M1, in particular Urban Barnsley, is considered to be the most sustainable place to accommodate such growth, all things being equal, there will be a need for further employment and housing growth in the borough. Should the Local Plan be adopted, there will be clarity on where development can be expected to come forward but, for the reasons explained above, even if a different development plan had to be pursued, it would have to accommodate growth arising from demographic change as a bare minimum but would be likely to seek higher rates of growth

to improve the low job density and economic conditions within the borough. Moreover, in order to achieve sustainable development, Urban Barnsley would be likely to remain the focus development.

3.3.14 Having regard to the above, it is clear that the existing development plan for the borough and the emerging one both advocate tackling congestion but also provide for significant employment and housing growth within the area containing the application site. Whilst both strategies seek to enourage a move away from the car as the dominant mode of transport this, in itself, is unlikely to enable the existing transport network to remain as is. In recognition of this, the Infrastructure Delivery Plan (published to support the Local Plan) identifies a number of areas of the highway network where physical works will be required to improve capacity. One of these areas is the junction subject to this planning application.

3.3.15 As well as the policies referred to above, there are a range of other policies contained within the emerging local plan which apply to the proposal. These are:

- SD1 – Presumption in favour of sustainable development
- GD1 – General Development
- T1 – Accessibility Priorities
- T3 – New Development & Sustainable Travel
- T4 - New Development & Highway Improvement
- T5 - Reducing the Impact of Road Travel
- D1 – High Quality Design & Place Making
- GS1 – Green Space
- BIO1 – Biodiverity & Geodiversity
- CC1 – Climate Change
- CC3 – Flood Risk
- CC4 – Sustainable Drainage Systems
- CL1 – Contaminated & Unstable Land
- POLL1 – Polution Control & Prevention
- AQ1 – Development in Air Quality Management Areas

3.3.16 As well as the development plan the 2018 National Planning Policy Framework (NPPF) and associated National Planning Practice Guidance are relevant. At the heart of the NPPF is the achievement of sustainable development. The NPPF states that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). These are:

a) an economic objective – to help build a strong, responsive and competitive economy, by

ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy

3.3.17 Chapters 3, 5, 6, 7, 8, 9, 12, 14 and 15 of the NPPF are contain text that is either directly or indirectly applicable to the proposal.

3.4 Description of the Proposed Scheme

3.4.1 Key components of the proposed scheme will consist of:

- The replacement, upgrade and reconfiguration of the existing A628 Dodworth Road / Broadway crossroads with localised widening within the highway boundary;
- The realignment of Pogmoor Road into Penny Pie Park;
- The construction of a new highway drainage system;
- The creation of a circulatory gyratory within the Penny Pie Park.
- The design will be to current design and safety standards;
- The construction of a new section of carriageway behind the existing substation linking northwards towards Pogmoor Road, to improve traffic flows and overall capacity;
- The creation of a new signalised junction to The Horizon Community College with a repositioned access road;
- Provision of new signals and associated traffic signing;
- Proposals to compensate for the impact of the scheme on the green space known as Penny Pie Park include the retention and relocation of the existing LEAP, MUGA, Outdoor Gym facility in the vicinity known as Penny Pie Park, with new footpaths and children's cycle path proposed. Pogmoor Recreation Ground will benefit from improved pedestrian access with provision of

footpath, benches and dog fouling bins. Sugdens Recreation ground on Stocks Lane will be upgraded from an EPA to a NEAP, which has a wider catchment area of 1000m, as oppose to 400m

3.4.2 A new 3.0m wide combined footpath / cycleway would be incorporated into the scheme improving safety for users linking in to existing routes.

3.4.3 New environmentally friendly Street lighting is to be provided which will also reduce light pollution.

3.4.4 The new gyratory junction would be signalised and linked to the Highways England signals at Junction 37 of the M1.

3.4.5 The scheme has been designed to follow the existing ground contours where possible or on minimum embankment. Most of the scheme would be phased and constructed off-line to minimise disruption to existing traffic flows during the construction period.

3.5 Land Use and Land Take

3.5.1 The site is located on the existing Dodworth Road / Broadway Crossroads and also land known as Penny Pie Park

3.5.2 The application site is approximately 6ha and comprises land on the existing A628 Dodworth Road / Broadway and Pogmoor Road and part of Penny Pie Park.

3.5.3 The location of the site is approximately 1km west of Barnsley Town Centre. The scheme is to be constructed on land situated adjacent Dodworth Road / Broadway and Pogmoor Road

3.5.5 The site boundaries are to the north, the Barnsley to Huddersfield Railway, the west is Pogmoor Road, to the south Dodworth Road and encompasses the existing junction.

3.5.6 Previous uses of the land known as Penny Pie Park were mining, Brick manufacturing and Landfill. It is now predominantly grassed land k with isolated landscape areas containing trees and shrubs around the perimeter adjacent the existing public highway, there is also a Multi-Use Games Area (MUGA), outdoor gym and a LEAP standard play facility within the park area. A detailed appraisal of ground conditions and mining review has been submitted with this planning application.

3.5.7 Whilst having a positive effect on the traffic flow and accessibility of Barnsley, it is

recognised that the proposed Dodworth Road Highway scheme significantly encroaches into the area known as Penny Pie Park Therefore a Greenspace Appraisal has been carried out by Aecom, using Green Flag Assessment criteria to identify compensatory measures to address the impact of the delivery of the proposed A628 Dodworth Road Highway improvement scheme, and to suggest potential solutions that could upgrade and enhance the green space. This piece of work explores these effects, against a number of impact receptors, including access; facilities and features; and noise and visual amenity before suggesting potential solutions to compensate for the impact of the proposed scheme.

3.5.8 There are footpaths that cross the site.

3.6 Construction, Operation and Long Term Management

3.6.1 Construction activities would include:

- Site establishment, selective vegetation clearance and preparation
- Establishment of Contractor's site compound
- Temporary diversions and temporary access restrictions
- Temporary watercourse diversions
- Site stripping, levelling and earthworks
- Construction of the new carriageway
- Use of generators, machinery and temporary lighting
- Construction vehicle movements for the import / export of material
- Stockpiling of waste and storage of material
- Restoration of landscape and temporary use areas
- Installation of new Traffic Signals
- Installation of new Street Lighting
- Installation of directional & regulatory signing

3.6.2 The proposed scheme will require publication of a new Side Roads Order (SRO), including determination.

3.6.3 Construction is expected to extend over a 12 month period.

3.6.4 The A628 Dodworth Road, Broadway and Pogmoor Road, are all local authority roads maintained by BMBC as the Local Highway Authority.

4.0 SCHEME ALTERNATIVES CONSIDERED

4.1 Introduction

4.1.1 The starting point for the council when seeking to address capacity issues on the network is to consider whether or not it would be possible to achieve the necessary modal shift from private car usage to more sustainable modes of transport such as public transport or active travel (cycling & walking). Not only would these potentially be a better way of addressing health and air quality but they would also be a more effective way of reducing carbon emissions and the associated impact of climate change.

4.1.2 In terms of active travel, the Council is involved in a number of initiatives to promote walking and cycling. Over the past 4 years, £3.9m external capital funding has been secured and provided improved and new cycleways within the borough (including Dearne Valley Enterprise Corridor and Pontefract Road to Town Centre) and £1.1m external revenue funding has been secured to promote and encourage active travel in the borough including the Cycle Hub, Dr Bike and Bike Loans. The Council is currently developing its Active Travel Strategy and will seek to ensure that walking and cycling routes are considered and promoted throughout the design and delivery of any potential highway improvements in the borough. However it is recognised that it is unlikely that the modal share of active travel within the borough will increase to such an extent that it would not be necessary to improve the capacity of the Dodworth Road/Broadway/Pogmoor Road junction.

4.1.3 In respect of modal shift from car to bus, bus patronage has been falling within the borough and this mirrors both the national and regional trend. This is despite significant investment over previous decades in bus priority measures such as bus lanes delivered elsewhere in the borough and investment in newer vehicles. To address this, the Barnsley Bus Partnership was established and is working with the commercial and statutory public transport sector to enhance the bus network, services and ticketing initiatives. However, the increasing congestion on Dodworth Road is continuing to have a detrimental impact on service quality and significant increases in journey times for buses using this corridor between Barnsley Town Centre and Dodworth. Stagecoach have confirmed that in 2000, inbound journeys took 10 mins in both the AM and PM peak. By April 2017, journey times for the inbound AM peak had increased to 26 mins, with the PM peak increasing to 17 minutes. In addition, the, outbound journeys in the AM and PM peak in 2000 took 10 mins. By April 2017, journey times for the outbound AM peak had increased to 14 mins, with the PM peak increasing to 16 minutes. Not only does this make bus use less attractive as a potential travel mode to members of the public, but in a deregulated bus market, the

financial viability of providing a bus service along Dodworth Road becomes more difficult to justify as increasing levels of investment are regularly required to maintain the same levels of service and punctuality, and as a result at least one of the bus operators has had to reduce the frequency of their services. In addition to the above, the Dodworth Road corridor does not benefit from any bus priority measures largely due to not being able to be accommodated within the confines of the existing highway. The council acquired a parcel of land at the time when the Dodworth by-pass was constructed, for a potential park and ride. Regrettably, due to the confines of the site, the unfeasibility of providing bus priority measures in the vicinity and park and ride not proving to be as effective as was originally envisaged elsewhere within the borough, the proposal could not be progressed.

4.1.4 In contrast, the borough has seen a notable increase in rail patronage which mirrors the national trend. This has been particularly evident of the Hallam Line which can in part be attributed to the introduction of the fast Sheffield to Leeds service via Meadowhall, Barnsley and Wakefield Kirkgate. In 2015 the Council published its Rail Vision, which is in the process of being updated to reflect significant changes that are likely to emerge through Northern Powerhouse Rail and HS2 as well as the commitments contained within the various franchises. This process has involved significant engagement with Network Rail, South Yorkshire Passenger Transport Executive, both city regions, rail operators and numerous other stakeholders. However there are no firm proposals in the short to medium term of delivering rail improvements that would sufficiently offset car journeys along Dodworth Road during peak times.

4.1.5 Based on the above, the existing highway network has to be expanded to increase capacity and so BMBC Highways and Engineering Service have produced a number of highway design solutions with the primary objectives being to:

- improve the strategic highway access from the M1 J37 to Barnsley;
- alleviate congestion at the A628 Dodworth Road / Pogmoor Road crossroads;
- alleviate congestion on the M1 J37 slip roads;
- incorporate where feasible, design opportunities to encourage active travel (walking and cycling);
- facilitate future growth identified in the Core Strategy,

4.2 Scheme Options Reviewed.

4.2.1 AECOM were commissioned to undertake a feasibility and option appraisal for the proposed scheme and following consultation with BMBC, six potential options were

identified, from which AECOM then identified numerous sub-option variants with differing types of traffic control/junction type and location of pedestrian facilities.

5.0 AIR QUALITY

5.1 Introduction

5.1.1 Barnsley Metropolitan Borough Council commissioned AECOM to undertake an Air Quality Assessment of the proposed improvement scheme. This was carried out in June 2018. (See Appendix 8)

6.0 CULTURAL HERITAGE

6.1 Introduction

6.1.1 Barnsley Metropolitan Borough Council commissioned West Yorkshire Archaeological Services to undertake a Desk Top Study for the proposed scheme which was undertaken in January 2018 and is in Appendix 3

7.0 MATERIALS, GEOLOGY AND CONTAMINATED LAND

7.1 Introduction

7.1.1 Barnsley Metropolitan Borough Council commissioned Abbeydale Building Environment Consultants to undertake a Geotechnical Desk Study Report of the proposed improvement scheme. This was carried out in November 2017 and is included in Appendix 5.

8.0 NOISE & VIBRATION

8.1 Introduction

8.1.1 Barnsley Metropolitan Borough Council commissioned AECOM to undertake a Noise and Vibration Assessment of the proposed improvement scheme. This was carried out in July 2018. An executive summary is included in Appendix 7

9.0 COMMUNITY AND PRIVATE ASSETS

9.1 Introduction

9.1.1 This section will consider the loss of land used by the community, the effects on development land, and the effects on ability for residents to access and use community facilities.

9.4 Baseline Conditions

9.4.1 The proposed scheme is located in the Pogmoor Community.

9.4.2 The proposed scheme is located predominantly at the existing highways of Dodworth Road, Broadway and Pogmoor Road and on part of Penny Pie Park.

9.5 Likely Significant Effects

9.5.1 The following issues have been identified:

- Additional land located on Penny Pie Park is required to facilitate the propose scheme.
  - Whilst having a positive effect on the traffic flow and accessibility of Barnsley, it is recognised that the proposed scheme significantly encroaches into Penny Pie Park.
  - The completed road scheme will be adopted as public highway.
  - The proposed scheme will reduce congestion and journey times between Barnsley Town Centre and the M1 Junction 37 interchange.

9.6 Mitigation and Enhancement

9.6.1 A Greenspace appraisal (see Appendix 9) has been carried out that will seek to address and compensate for the impact of the proposed scheme on Penny Pie Park, by enhancing the facilities on offer, and create a high quality, functional and attractive environment for the neighbourhood area. The existing LEAP, MUGA, Outdoor Gym facility will be retained and relocated in the Penny Pie Park area, with new footpaths and a children's cycle path. Pogmoor Recreation Ground will benefit from improved pedestrian access with provision of footpath, benches and dog fouling bins. Sugdens Recreation ground on Stocks Lane will be upgraded from an EPA to a NEAP, which has a wider catchment area of 1000m, as oppose to 400m.

10.0 ROAD DRAINAGE AND WATER ENVIRONMENT

10.1 Introduction

10.1.1 An assessment on the likely significant effects of the proposed development upon existing water resources and drainage will be carried out with the aim of avoiding and reducing potential impacts and selecting appropriate means to prevent significant predicted impacts.

Consideration will be given to:

- the construction and operational phases of the scheme:
- Effects of routine runoff on surface water
- Effects of routine runoff on groundwater
- Pollution Impacts from spillages
- Assessing flood impacts

10.2 The Study Area

10.2.1 The study area is the site. Extent to be determined by the desk based assessment. This will incorporate local land drainage, water courses, existing highway drainage.

10.3 Methodology

10.3.1 The assessment will comply with DMRB Volume 11.3.10 Road Drainage and the Water Environment (HD45/09). A desk base assessment will be undertaken to review information currently available. The assessment will include collection of existing data and records from regulatory authorities such as the Environment Agency, Yorkshire Water, Land Drainage Authority and Barnsley Metropolitan Borough Council.

10.3.2 The regulatory framework will be considered.

10.3.3 Existing drainage and groundwater system will be reviewed to identify the likely receptors, their sensitivity effects of the proposed development. The assessment will then determine likely impacts and any mitigation which may be required.

10.3.4 A spillage pollution risk assessment during construction will be undertaken in accordance with Method D in DMRB Volume 11.3.10. (HD45/09).

10.3.5 Consultation with the Environment Agencies Flood Map confirms the site is not at risk of

flooding and does not lie within a flood plain. The EA indicate that the site area has a low chance of flooding from external sources.

However a Flood Risk Assessment will be provided in due course (in line with NPPF & Technical Guidance. BMBC Core Strategy Policies CSP 3 & 4)

10.4 Baseline Conditions

10.4.1 A desktop study and field survey has been undertaken to fully determine baseline conditions.

10.4.2 The scheme is located in a relatively level location and in close proximity to Junction 37 M1 cutting.

10.4.3 Drainage / sewer pipes exist crossing the site, foul & surface water and a watercourse exists nearby.

10.4.4 Anticipated ground conditions mean that soakaways are considered not suitable. An attenuation storage feature will be required (SUDS) with the highway being drained by Combined Kerb and Drainage Blocks and gullies with conventional pipework to the outfalls etc.

10.5 Likely Significant Effects

10.5.1 Consideration has been given to potential increased surface water run-off and pollution risk from the proposed junction improvements and potential changes and impacts this may have on local ecology and the existing drainage system.

10.5.2 The following key issues have been identified:

- Options for drainage to be assessed in accordance with the drainage hierarchy with SUDs being the preferred option with disposal to watercourses as an alternative and connection to existing sewers being the final consideration.

- Land acquisition requirements for attenuation facilities have been assessed and can be accommodated within Barnsley Metropolitan Borough Council owned land.

- Any requirements to enter third party land to improve receiving watercourses will be sought prior to site work commencing.

10.6 Mitigation and Enhancement

10.6.1 Drainage of the proposed scheme is by SUDs / attenuation, intention is to provide this feature within the main gyratory section of the scheme.

10.6.2 Further investigation has determined no land acquisition for attenuation will be required.

10.6.3 The proposed scheme outfall is by way of the existing pipework and ultimately to a watercourse. Yorkshire Water have been consulted on the proposed drainage outfall for the scheme.

10.6.4 The construction process has the highest risk of significant environmental impact on receiving surface waters as described above. Provided reasonable precautions in line with the EA's recommendations are incorporated from an early stage of the construction, adverse impacts resulting from this aspect of the site development will be negligible. Provision of settling ponds will allow the suspended solids to settle and can remove the majority of silt particles. Carefully planned and controlled de-watering of the site following rain can help to minimise effects on the surrounding areas. Provided these steps are taken to prevent silt laden site run-off water from reaching the receiving watercourses any adverse impact of the construction process in this respect should be negligible.
Both the EA and YW will be consulted on the construction process.

10.6.5 Appropriate storage and security of fuel/oil and construction materials. The requirement to consult with the EA will be included in all contracts relating to the site. Established practice is to locate fuel tanks within a bonded enclosure, providing 110% of the capacity of the tank, at a reasonable distance (min 10m) from any watercourses. The additional volume allows for some rainwater accumulation, which will be removed to a suitable disposal point on a regular basis. The security of filling, delivery and other valves and pipes will be ensured. The duration of storage on site will be kept to a minimum.

10.6.6 Wheel cleaning at the egress from the site should prevent mud being spread onto the existing road and therefore into the existing drainage system.

10.6.7 Provided reasonable steps are taken to prevent site material spreading beyond the existing site limits, any adverse effects from this operation will be slight to negligible and of short duration.

10.6.8 Attenuation of flows into the existing drainage network will be achieved by use of underground storage facilities.

10.7 Residual Impacts

10.7.1 Surface waters will receive run-off from the scheme for a long period. Limiting discharges from the completed scheme to the watercourses are to be agreed with the Environment Agency and or the Land Drainage Authority as appropriate. These discharges will be consented and a discharge standard retained. Therefore, the residual impact for surface waters is considered negligible. Similarly, it is not expected that there will be any residual impact on groundwater. Yorkshire Water have been consulted on discharge rates.

10.8 Summary

10.8.1 Proposed scheme drainage is to be dealt with within the site confines with a sustainable urban drainage system.

10.8.2 It is intended to renew / protect existing pipework crossing the line of the new highway with Yorkshire Water agreement.

10.8.3 The main carriageways will be drained by use of combined drainage and kerb blocks and road gullies where required.

Environment Agency

Flood map for planning

Your reference	Location (easting/northing)	Created
DODWORTH ROAD	**432754/406267**	**5 Jun 2018 10:13**

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

The Open Government Licence sets out the terms and conditions for using government data.
https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/


Environment Agency
Flood map for planning
Your reference
DODWORTH ROAD
Location (easting/northing)
432754/406267
Scale
1:2500
Created
5 Jun 2016 10:13
Selected area
Flood zone 3
Flood zone 3; areas benefitting from flood defences
Flood zone 2
Flood zone 1
Flood defence
Main river
Flood storage area
0 20 40 60m
Page 2 of 2
Penny Pie Park
A628 DODWORTH ROAD
ST MARTINS WAY
ST MARTINS CLOSE
HAREWOOD AVENUE
WHITE HILL AVENUE
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11.0 OUTLINE ENVIRONMENTAL MANAGEMENT PLAN

11.1 Introduction

General

11.1.1 The Outline Construction Environmental Management Plan (OCEMP), has been produced to describe how a detailed, site specific, Construction Environmental Management Plan (CEMP) will be developed to avoid, minimise or mitigate any construction effects on the environment and the surrounding community. An Environmental Statement has been produced describing and assessing the effects of the construction and operation of the road on the environment. This OCEMP gives detail on how some of those effects will be managed.

11.1.2 This OCEMP has been developed to provide the management framework needed for the planning and implementation of construction activities in accordance with environmental commitments identified in the ES and in legislator requirements

11.1.3 The adopted structure stage CEMP should be considered by the Principal Contractor as a living document with reviews being undertaken at predetermined intervals and data added as appropriate. The measures identified in the CEMP should be:

- Viewed as mandatory and common practice on site.
- Embedded within the company's policies and site procedures.

11.1.2 Purpose

11.1.2.1 The purpose of the adopted CEMP is to:

- Identify Stakeholder requirements.
- Set out the Environmental Management System requirements (ISO14001)
- Ensure compliance with current legislation.
- Effectively minimise any potential adverse environmental effects during construction.
- Translate committed mitigation, set out in the ES, into committed site procedure.

11.1.3 Structure

11.1.3.1 This OCEMP has been drafted during the planning/ outline design phase to ensure that the necessary measures become incorporated as the scheme progresses.

11.1.3.2 Prior to construction, this OCEMP may be revised to address all construction issues and ensure that any residual effects following the design process are mitigated as far as reasonably practicable. The document is to be reissued by the Contractor as the Construction Environmental Management Plan (CEMP).

11.2 Scope of Work

11.2.1 Location and Site Use

11.2.1.1 The site is located on the existing Dodworth Road / Broadway Crossroads and also land known as Penny Pie Park

11.2.1.2 The application site is approximately 6ha and comprises land at the existing A628 Dodworth Road / Broadway Crossroads and Part of Penny Pie Park.

11.2.1.3 The application site is within the ownership of Barnsley Metropolitan Borough Council.

11.2.1.4 The location of the site is approximately 1km west of Barnsley Town Centre. The scheme is to be constructed on land situated adjacent Dodworth Road / Broadway and Pogmoor Road

11.2.1.5 The site boundaries are to the north, the Barnsley to Huddersfield Railway, the west is Pogmoor Road, to the south Dodworth Road and encompasses the existing junction.

11.2.1.6 Previous uses of the land known as Penny Pie Park were mining, brick manufacturing and landfill. it is now predominantly grassed land with isolated landscape areas containing trees and shrubs around the perimeter adjacent the existing public highway, there is also a Multi-Use Games Area (MUGA), outdoor gym and a LEAP standard play facility within the park area. A detailed appraisal of ground conditions and mining review has been submitted with this planning application.

11.2.1.7 Whilst having a positive effect on the traffic flow and accessibility of Barnsley, it is recognised that the proposed Dodworth Road Highway scheme significantly encroaches into the area known as Penny Pie Park Therefore a Greenspace Appraisal has been carried out by Aecom, using Green Flag Assessment criteria to identify compensatory measures to address the impact of the delivery of the proposed A628 Dodworth Road Highway improvement scheme, and to suggest potential solutions that could upgrade and enhance the green space.

11.2.1.8 There are footpaths that cross the site.

11.2.2 Description of Works

11.2.2.1 The proposed scheme is located between Junction 37 of the M1 motorway and Barnsley town centre and will consist of a new signalised gyratory situated on the existing Dodworth Road / Pogmoor Road crossroads and on part of Penny Pie Park adjacent to Dodworth Road and Pogmoor Road.

The proposed scheme will consist of:

- The provision of an elongated signalised gyratory roundabout encompassing the existing A628 Dodworth Road / Broadway / Pogmoor Road Junction.

- Closing off of the Dodworth Road end of Pogmoor Road with the creation of a new access road to serve Whitehill Avenue and closed section of Pogmoor Road.

- The formation of a new access to Horizon Community College under signal control.

- Provision of new 3.0m wide combined footpath / cycle ways would be incorporated into the scheme improving safety for all users.

- A key consideration during the design process was the need to minimise disruption to the existing highway network during the schemes phased construction.

- Pedestrian crossing locations are to be signalised to improve pedestrian safety.

- New energy efficient Street lighting is to be provided on the new section of road to latest standards.

- The scheme fits into the landscape by following the existing ground level where possible or on minimum embankment.

- Most of the scheme would be phased and such is the design, constructed off-line to minimise disruption to existing traffic flows during the construction period.

- Proposals to compensate for the impact of the scheme on the green space known as Penny Pie Park include the retention and relocation of the existing LEAP, MUGA, Outdoor Gym facility in the vicinity known as Penny Pie Park, with new footpaths and children's cycle path proposed. Pogmoor Recreation Ground will benefit from improved pedestrian access with provision of footpath, benches and dog fouling bins. Sugdens Recreation ground on Stocks Lane will be upgraded from an EPA to a NEAP, which has a wider catchment area of 1000m, as oppose to 400m

11.2.2.4 A key consideration during the design process was the need to minimise disruption to the existing highway network during the phased construction.

11.2.2.5 All footways have been designed on the basis of shared usage in order to comply with guidance within Local Transport Note 2/08.

11.2.2.6 The Scheme has been designed in accordance with the D.f.T. Design Manual for Roads and Bridges. It is proposed that the gyratory will be constructed to Council standards and will be surfaced with bituminous material. Combined kerb drainage units and road gullies will be incorporated to deal with the surface water run off and will be connected to an attenuated drainage system. New energy efficient street lighting will be provided along with new traffic signals, traffic signs and road markings.

11.2.2.7 These proposals form a traffic strategy to reduce journey times along the Dodworth Road / Broadway & Pogmoor Road corridors, alleviate current congestion and unlock capacity constraints to deliver future growth aspirations of the borough

11.2.3 Construction Programme

11.2.3.1 Subject to consent, it is anticipated that construction would commence, following any required advance mitigation measures, in 2019 with a completion in 2020.

11.2.3.2 Working hours will be determined by agreement with the local authority regulatory services.

11.2.4 Equipment and Plant

11.2.4.1 The Contractor will identify the equipment and plant to be used, including type, size and number. Plant is likely to comprise of conventional earthworks, and highways construction plant.

11.3 Environmental Management Framework

11.3.1 Environmental Policy

11.3.1.1 The project will be carried out in accordance with the policies / objectives listed below:

- Barnsley Metropolitan Borough Council's Environmental Policy and Procedures

- During the pre-construction and construction phases, management of the project will also need to comply with the Principal Contractor's Environmental Policy and procedures.

11.3.2 Environmental Aspects and Impacts

11.3.2.1 A schedule of potential significant environmental effects relating to each activity will be developed by the Contractor and included within the CEMP. This information should be drawn on by the Contractor when developing the schedule of significant effects prior to construction.

11.3.2.2 The schedule should be reviewed and updated at each project phase or where changes are made to the project scope, changes should be reflected in the CEMP and Impacts and Aspects register.

11.3.3 Objectives and Targets

11.3.3.1 Environmental objectives for the construction phase will be developed and should refer to legal compliance and environmental good practice, these may include:

- Zero pollution incidents.
- Minimise waste sent to landfill.
- Minimise disruption to residents (and therefore complaints).
- Protect and where possible enhance biodiversity.

11.3.3.2 Procedures for monitoring construction processes against the project environmental objectives will be proposed by the Contractor and agreed with the Client Project Manager.

11.3.4 Structure and Responsibilities

11.3.4.1 A management structure that includes an organisational chart encompassing all staff responsible for environmental work is to be included within the CEMP. This will set out the respective roles and responsibilities with regard to the environment and identify the nominated Construction Environmental Manager. Illustrative key roles and responsibilities are set out in Table 1 below.

Table1 – Roles and Responsibilities

Role	Responsibility
Construction Manager	Responsible for management of the construction phase of the project. Has overall responsibility for the environmental performance of the project
Site Materials & Waste Manager	Responsible for implementing the Site Waste Management Plan during the construction phase to ensure that waste is disposed of legally, economically and safely
Construction Environmental Manger	Compliance with environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the Environmental Statement.
Site Staff	To receive general environmental awareness training, and undertake work in accordance with Method Statement Briefings and toolbox talks. Trained personnel to manage particular tasks

	such as refuelling plant and equipment, managing the stores, water quality monitoring and supervising the segregation and collection of waste.
Client Project Manager	To ensure that the Contractor complies with all the relevant legal requirements, commitments and targets agreed for the scheme.
Designer	To provide information relevant to construction that may assist the Contractor to manage environmental aspects of the scheme.
Community Liaison Officer	Communications with the public and interested parties, outreach and education, where appropriate.

11.3.5 Training Awareness and Competence

11.3.5.1 Site staff shall be competent to perform tasks that have the potential to cause a significant environmental impact. Competence is defined in terms of appropriate education, training and experience. Project specific training is required.

11.3.5.2 Environmental awareness and training shall be achieved by:

- Site induction, including relevant environmental issues.
- Environmental posters and site notices.
- Method statement and risk assessment briefings.
- Toolbox talks, including instruction on incident response procedures.
- Key project specific environmental issues briefings.

All managers and supervisors will be briefed on the CEMP.

11.3.5.3 Method Statements will be prepared for specific activities prior to the works commencing and will include environmental protection and mitigation measures and emergency preparedness appropriate to the activity covered. The Construction Environmental Manager will review key Method Statements prior to their issue.

11.3.5.4 Method Statement briefings will be given before personnel carry out key activities for the first time.

11.3.6 Communication

11.3.6.1 The CEMP will be distributed to the project team, including sub-contractors, to ensure that the environmental requirements are communicated effectively. Key activities and environmentally sensitive operations will also be briefed to staff and Contractors. Project, client and company environmental policies, where available, should be displayed on site.

11.3.6.2 The Contractor will define procedures for internal and external communication. The client may require that any communication with external parties such as environmental regulators or the public is undertaken through a nominated client representative.

11.3.6.3 The agreed CEMP will be published on the project website.

11.3.6.4 During the construction phase, internal communication will include regular progress meetings, which should cover:

- Training undertaken
- Progress reports
- Inspections, audits and non-conformance
- Complaints received
- Visits by external bodies and the outcome or feedback from such visits
- Objective / target achievement, including reporting on environmental performance.

External communication, including letter drops or meetings and liaison with statutory authorities will be overseen by the Client Project Manager.

11.3.7 Complaints, Compliments and Inquiries

11.3.7.1 A Community Liaison Officer will be available on site and a telephone number will be published for use by members of the public wishing to complain, provide other feedback, or make enquiries.

11.3.7.2 All complaints or information requests will be made aware to the Client Project Manager and will be logged promptly.

11.3.7.3 Noise may be a key subject of complaint where construction works take place close to residential areas. Working hours, plant types, construction methods and

noise mitigation measures are likely to be subject to Section 61 consent, under the Control of Pollution Act which is granted by the local authority. Close liaison with the local authority environmental health team is likely to be necessary to develop mitigation measures.

11.3.7.4 Liaison will also be undertaken with local councillors and town/parish councils as representatives of the local community to discuss and address any issues

11.3.7.5 The local authority environmental heath team may also be the first to be contacted by residents affected by noise and will require to be kept appraised of progress, programme and upcoming phases of works that may give rise to disturbance in order that they can respond to complainants.

11.3.7.6 Careful monitoring of complaints received, including recording details of the location of the affected party, time of the disturbance and nature of the noise can assist with managing the works to reduce the likelihood of further complaint.

11.3.8 Checking

11.3.8.2 The Contractor's Environmental Advisor is responsible for establishing a programme of environmental monitoring. This will include monitoring against any consent requirements and objectives and targets.

11.3.8.3 Pre-construction monitoring should be considered, in order to set a baseline against which construction effects can be assessed. The ES should be referred to in establishing baseline conditions.

11.3.9 Evaluation of Compliance

11.3.9.1 The Contractor will define procedures for regular site surveillance to evaluate performance against legal requirements and the requirements of the CEMP.

11.3.10 Non-conformance and Corrective / Preventative Action

11.3.10.1 Procedures for addressing non-conformance and corrective actions are to be provided. These may include, for example:

- A Non Conformance Report (NCR) that will be raised to record any environmental incident and work that has not been carried out in accordance with the CEMP or Method Statement.

- A Corrective Action Report (CAR) that will be raised where a deficiency is identified as a result of monitoring, inspection, surveillance and valid complaints.
- Any actions identified shall nominate an owner to follow through the action to be taken, along with a specified timescale for it to be closed out.

11.3.11 Control of Records

11.3.11.1 Environmental records, including waste management records, will be maintained in accordance with the respective company procedure and legal requirements. The records are to be maintained, in either hard copy or electronic format as required by the individual procedure that the records relate to, in such a way that they are readily identifiable, retrievable and protected against damage, deterioration or loss. The procedure that the records relate to also specifies the retention time for the records and who has the authority to dispose of them.

11.3.12 Management Review

11.3.12.1 The outputs from section 3.8 Checking will be reviewed on an on-going basis at progress meetings to ensure continual improvement in accordance with the BS EN ISO 14001 model.

11.3.12.2 Review of the CEMP will be carried out at each project phase and where changes are made that affect the scope of the works to ensure its continuing relevance and accuracy.

11.4 Legal and Other Requirements

11.4.1 Legislation

11.4.1.1 A schedule of appropriate environmental legislation and good practice that will be adhered to is to be included within the CEMP.

11.4.2 Consents and Licenses

11.4.2.1 A register of permissions and consents that may be required, with responsibilities allocated and a programme for obtaining them is to be developed by the Contractor. Environmental consents and licenses that may be required to enable the construction works are given in Table 2.

Table 2 - Environmental Consents & Licences

Legislation	License / permission requirement
Planning Act 2008	Consent for the scheme. Any requirements attached to the consent will need to be adhered to.
Control of Pollution Act 1974	Prior consent to carry out construction works from the Local Authority under Section 61.
Badgers Act 1992	A license is required from Natural England for works within 30 m of a badger sett.
Conservation (Natural Habitats & c.) Regulations 1994	A license may be required if protected species are disturbed by a development e.g. bats
Environmental Permitting Regulations 2007	It is not anticipated that a waste management permit will be required as part of the works. However certain activities are exempt from waste management licensing and must be notified to the Environment Agency in advance.

11.5 Operational Control Procedures

11.5.1 General

11.5.1.1 Specific management proposals to be included in the CEMP are to be developed relating to the following topics:

Site establishment

- Boundary fencing
- Protection of existing environmental features
- Access routes/points
- Site housekeeping
- Water quality and drainage
- Nature conservation
- Compensation & enhancement
- Landscape design
- Noise and vibration
- Air quality
- Archaeology and cultural heritage

- Soils
- Contaminated land
- Waste
- Energy
- Materials
- Transport

11.5.1.2 Outline management proposals for each of these topics are described in sections 5.2 to 5.19 below.

11.5.2 Site Establishment

11.5.2.1 Facilities will be established to minimise risk to the environment and promote efficient use of resources. This will include:

- Temporary protective fencing will be erected to delineate the working areas, site boundaries and protect sensitive features from disturbance.
- Temporary offices, welfare facilities and secure storage of equipment.
- Any necessary fuel and oil will be stored in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001. Refuelling will only be undertaken in a designated area, designed to contain contaminated runoff, and by trained personnel. Emergency spill kits are to be readily available.
- Materials storage areas will be set up and managed.
- Waste segregation areas will be established utilising containers of an appropriate design to ensure that no waste can escape.
- Sewerage effluent from the site office and welfare facilities will be removed from site using a vacuum tanker, if no sewer connection is available.
- Temporary lighting will be designed to minimise spillage of light, and oriented away from residential properties.
- The temporary site compound will be reinstated to its former condition, suitable for agricultural use, following completion of the project.

11.5.3 Boundary Fencing

11.5.3.1 The site boundary will be fenced as necessary for security, to prevent windblown litter or waste from polluting the wider environment and to exclude species such as badgers that may be trapped or harmed in excavations or around plant or

materials.

11.5.4 Protection of Existing Environmental Features

11.5.4.1 Temporary fencing will be provided to protect existing environmental features to be retained, including existing trees which will be protected in accordance with BS5837 2012 - 'Trees in relation to design, demolition and construction - Recommendations'. The fencing will be established prior to the start of the construction works. The location will be agreed on site with the Construction Environmental Manager and client. The fencing will be of sufficient durability to be in place for the duration of the works.

11.5.5 Access Routes / Points

11.5.5.1 The Contractor shall obtain approval from the Local Highway Authority for the method of delivery / removal of materials and plant from the site, including the identification of access routes for deliveries and personnel.

11.5.6 Site Housekeeping

11.5.6.1 A 'good housekeeping' policy will be adopted across the site. This will include the following requirements:

- No fires on site
- Considerate behaviour of all site staff, including on the highways
- Maintenance of staff welfare facilities
- Removal of food waste and other rubbish at frequent intervals
- Maintenance of road cleanliness surrounding the site

11.5.7 Water Quality and Drainage

11.5.7.1 The Contractor shall adopt good construction management practices that will reduce the risks of accidental discharge of pollutants into streams, rivers or ponds, or contamination of groundwater. Such practices shall be incorporated into the CEMP and adhered to (see also section 6 below and Chapter 14 of the ES).

11.5.7.2 A pollution control and contingency plan will be prepared to set out the requirements for pollution prevention during the works. See Section 6 for the outline plan.

11.5.7.3 Environmentally sensitive lubricants, such as synthetic non-toxic biodegradable

hydraulic fluids, will be used. Biodegradable oils must be stored, handled and disposed of as any other oil and must not be disposed to surface water or foul drains.

11.5.7.4 Drainage during the construction phase will use the permanent drainage system where possible.

11.5.7.5 The Contractor is required to give consideration to minimisation of water use during the construction phase.

11.5.7.6 The Contractor shall identify or verify the extent and status of all ground waters below land used for the works, including any temporary works and land used for the extraction of materials or tipping. The Contractor shall identify or verify the extent and categories of any source protection zones for abstraction sources for public potable water supplies within this land.

11.5.7.7 The works shall comply with the "Policy and Practice for the Protection of Groundwater. Environment Agency; TSO 1998 ISBN 0-11-310145-7".

11.5.7.8 Authorisations for the use in earthworks of borrowed or waste materials may be required under The Groundwater Regulations 1998, or under other relevant legislation. The Contractor shall consult the Environment Agency and shall apply for and comply with such authorisations as they advise are necessary.

11.5.7.9 The Contractor shall consult the Environment Agency and agree with them any special measures to be taken within source protection zones (if present) in respect of the excavation and tipping of materials, the siting of Contractor's facilities and measures to prevent the spillage of potential pollutants.

11.5.8 Nature Conservation

11.5.8.1 Plans for managing any protected species are to be finalised, implemented and monitored. The Construction Environmental Manager is required to monitor ecological measures and ensure protected species are safeguarded.
Ecological surveys have been undertaken to establish whether protected species use the habitat types found within the site such as:

- Semi-improved grassland

There are potentially protected species using the site, these include:

- Nesting birds

- Bats

Specific mitigation measures to prevent adverse impacts on protected species and high quality habitats are set out below.

11.5.8.2 Site clearance will in general take place outside the bird breeding season (late February to early August). If any clearance is necessary within the bird breeding season then it will only take place if the areas concerned have been checked by a competent ecologist and found not to contain any breeding birds.

11.5.9 Compensation & Enhancement

11.5.9.1 Some habitat will be lost due to the construction of the road. To mitigate loss and disturbance, drainage design and landscape measures have been developed to enhance habitats. Mitigation measures aim:

- To compensate for any adverse effects of the scheme.
- By the use of locally appropriate species, to create semi-natural habitats that reflect and complement those existing in the surrounding area.
- To provide habitat linkages between areas of the scheme and between adjoining areas, reducing habitat fragmentation.
- To contribute to appropriate local Biodiversity Action Plan (BAP) targets.

11.5.10 Landscape Design

11.5.10.1 The design has aimed to retain as much existing vegetation as possible given the location of the works.

11.5.10.2 A scheme of landscaping will be included with the project proposals in order to mitigate land take, limit habitat loss and to reduce visual intrusion.

11.5.11 Noise and Vibration

11.5.11.1 The Contractor shall prepare a Management Plan for the control and monitoring of noise and vibration (see also Chapter 13 of the ES).

11.5.11.2 The Contractor shall make any necessary separate application(s) to all relevant Local Authorities, under Section 61 of the Control of Pollution Act 1974, and obtain consent(s) to undertake the works. Application(s) shall be made at least 28 days before commencement of any activity or works, which may cause noise

and vibration disturbance. The application(s) shall include the Contractor's proposals for minimising noise from the construction works to the level(s) agreed with the Local Authority. The Contractor shall comply with the terms of the consent(s) so obtained. Notwithstanding the terms of any consent obtained under Section 61 of the Control of Pollution Act 1974, the Contractor is required to comply with the provisions of the statutory code of practice BS5228: Noise Control on Open and Construction Sites. The Contractor shall provide a draft copy of the Section 61 Agreement to the Client Project Manager for comments and a copy of the final agreement.

11.5.11.3 Noise and vibration will be controlled and limited so far as reasonably practicable so that sensitive receptors are protected from excessive noise and vibration arising from construction.

11.5.11.4 Certain activities may extend outside normal working hours to enable safe working or as a result of unforeseen events. The Environmental Health Team will be contacted to agree the activities required.

11.5.11.5 The principles of Best Practicable Means will be employed to minimise noise levels during construction. Recommendations for the control of noise and vibration on construction sites are set out in BS 5228. The following measures will be used where appropriate:

- Hydraulic plant will be used in preference to pneumatic plant where possible.
- Plant and equipment will be maintained in good working order and fitted with silencers and acoustic panels where appropriate.
- All plant will be shut down or throttled back between periods of use.
- Methods used for concrete breaking and demolition should be carefully considered, non-percussive means should be used where possible.
- In sensitive locations, acoustic enclosures may be required for fixed plant such as generators.
- 'White noise' type reversing warnings should be used on mobile plant in preference to 'bleepers', in order to minimise intrusion.

11.5.12 Air Quality

11.5.12.1 The Contractor shall prepare a Management Plan for the control and monitoring of dust, smoke and any other airborne pollutants (see also Chapter 6 of the ES).

11.5.12.2 The Contractor shall, prior to the commencement of the works on site, make any necessary application(s) for authorisation to the relevant Pollution Control Authority (Local Authorities and the Environment Agency) under the terms of the Environmental Protection Act 1990 and the Pollution Prevention and Control Act 1999.

11.5.12.3 Emissions to the air including dust and exhaust fumes can be caused from certain construction activities, including:

- Earthworks / excavation / demolition
- Use of diesel powered plant and equipment

11.5.12.4 The site is close to residential properties. Best Practicable Means shall be employed where appropriate.

11.5.12.5 All necessary and practicable measures to control dust emissions through good housekeeping and site operational practices shall be carried out including:

- Sheeting of vehicles: all HGVs carrying loose material capable of spillage or which has the potential to give rise to dusty emissions from the vehicles during transit shall be sheeted. This requirement shall be enforced by the Contractor and any transgressions shall be recorded in a log book by the Contractor with details of measures to be taken to prevent further occurrences. The log book shall be available for inspection by the Client Project Manager and local authority at any time during working hours.

- Compound: an area of hard standing of reasonable size shall be provided by the Contractor around site offices and over vehicle management areas, so that dust will be kept to a minimum by appropriate control methods. Drainage arrangements will be included where necessary. The area will be swept at least once every two days or more frequently as the Client Project Manager considers appropriate.

- Water bowsers/sprays: Water sprays shall be applied to all demolition operations as the Client Project Manager considers appropriate.

- Prevention of wind-blown dust arising from storage mounds: storage mounds shall be profiled to reduce erosion where the nature of the material could lead to it being rain washed or windblown. Mound surfaces shall be kept sufficiently damp to prevent wind blow unless and until the surface is sprayed, sealed or stabilised by means of

vegetation. Materials that have the potential to give rise to dust emissions shall be stored as far away from the site boundaries as is reasonably practicable.

- Dust collection during cutting and grinding works: if this is not carried out in an enclosure, tools shall be used that are fitted with dust collection devices (excluding small tools which require a continuously wet working surface).

- Fires: these will be prohibited on site.

- Compliance by construction vehicles with emissions legislation, servicing and MOT requirements: all vehicles regularly used on site shall comply with the relevant emissions standards and shall be serviced in accordance with the manufacturer's recommendations. MOT and service documentation shall be produced for the local authority's inspection. The Contractor is encouraged to use vehicles and plant that meet the latest emissions regulations.

- Engine idling time: No construction plant or vehicle shall leave its engine running when not directly in use, except where the Client Project Manager considers that there are operational or other reasons to justify an exception.

11.5.12.6 The Contractor shall keep a log book available for inspection by the local authorities, in order to record the following matters:

- Any complaint relating to emissions alleged to be due to construction activity received from a local resident or business, including date and nature of the complaint and any measures taken as a result of that complaint;

- The date and location of cleaning of paved areas and off-site roads; and

- The date and vehicle registration number of any construction vehicle that is observed carrying material that has the potential to release dust during transit and is not covered. Details of measures taken to prevent further occurrence shall be included.

11.5.13 Archaeology and Cultural Heritage

11.5.13.1 No areas of archaeological sensitivity have been identified on the route, however the Contractor will be required to have measures in place to manage the risk of adversely affecting historic resources, including reporting any potential finds and how potential archaeological investigations or recording would be accommodated in the programme.
A registered monument – milestone will be protected during the works.

11.5.14 Soils

11.5.14.1 Soil resources will (by volume) constitute the dominant material used in the construction of the scheme and in order to maximise the potential resource available on site and minimise waste needing to be disposed, careful handling of soils is critical.

11.5.14.2 A Soil Resource Plan, based on Defra guidance 'Construction Code of Practice for the Sustainable Use of Soils on Construction Sites' will be developed for agreement prior to construction. The Soil Resource Plan will describe the measures to be taken to prevent loss of soils or deterioration in their quality resulting from soil handling or other construction activities such as traffic movement. Measures may include:

- Comprehensive survey, prior to works of the soils and soil types present on site, in order to quantify material types and plan their use and handling.
- Only stripping, stockpiling or placing soil in the driest condition possible and using tracked equipment where possible to reduce compaction.
- Confining traffic movement to designated routes.
- Keeping soil storage periods as short as possible.
- Clearly defining stockpiles of different soil materials and minimising mixing.

11.5.15 Contaminated Land

11.5.15.1 Contamination risk assessments should be undertaken and areas of suspected contamination identified.

11.5.15.2 Proposals are required for dealing with areas of contamination, and these proposals are to include validation of the effectiveness of any remediation.

11.5.15.3 A comprehensive programme of materials testing will be required to demonstrate that earthworks materials are to highways standards and this testing programme should be extended to cover contamination testing of materials where appropriate.

11.5.16 Waste

11.5.16.1 The Clean Neighbourhoods & Environment Act 2005 established powers to create Regulations to require the mandatory production of Site Waste Management Plans (SWMP) for construction projects. SWMPs are mandatory for all construction projects over £300,000.

11.5.16.2 An outline SWMP will be drafted at the detailed design/construction stage to comply with the requirements of the Regulations.

11.5.16.3 The Contractor shall, in order to reduce the need for waste disposal, minimise the generation and environmental impacts of wastes arising during the works and shall maximise opportunities for the re-use and recovery of wastes. The Contractor shall include within the CEMP proposals for the identification, segregation, handling and storage, with necessary protection to prevent contamination of surrounding stockpiles and underlying ground, of the different types of wastes identified as arising from the works.

11.5.16.4 The Contractor shall make any necessary applications to the Local Authority and/or the Environment Agency, under the terms of the Environmental Permitting Regulations 2007, and the Town and Country Planning Act (1990) for the storage, treatment or disposal of wastes.

11.5.17 Energy

11.5.17.1 In line with the UK Energy Efficiency Action Plan, energy efficiency measures and greener energy sources should be considered and implemented where possible. Using energy more efficiently assists with cutting carbon dioxide emissions:

- Energy consumption is to be minimised and energy use during construction monitored.
- Construction plant and equipment is to be maintained to

maximise fuel efficiency.

- Utilise energy from renewable sources where practicable.
- Ensure efficient materials handling / husbandry.
- Minimise workforce travel.
- Incorporate and source local materials to minimise associated transportation.

11.5.17.2 The completed scheme will have minimal energy requirements in operation, but electricity for lighting should be procured according to a measure of the sustainability of the supply.

11.5.18 Materials

11.5.18.1 Timber used in permanent and temporary works, such as for noise fencing is to be from sustainably managed sources with recognised timber labelling or from re-use.

11.5.18.2 Local materials will be sourced to minimise associated transportation, where possible.

11.5.18.3 Material procurement procedures are to be employed that involves purchasing materials based on their environmental impact.

11.5.18.4 A materials register is to be provided to the Client Project Manager at hand-over that identifies the main material types to facilitate recycling on demolition.

11.5.19 Transport

11.5.19.1 Road transport is a major source of local air and noise pollution and contributes to carbon dioxide emissions. Opportunities to minimise construction traffic are to be considered, measures may include for example, reducing the transport impacts of materials and construction staff.

11.5.19.2 Consent requirements may stipulate public routes that must, or must not, be used by construction traffic and this information will be publicised to site staff, suppliers and hauliers required to access the site.

11.6 Outline Pollution Control and Contingency Plan

11.6.1 General

11.6.1.1 A pollution control and contingency plan will be developed by the Contractor and included within the CEMP to provide details of the measures to be implemented to prevent pollution of the aquifer and the actions to be taken in the event of an environmental incident or emergency.

11.6.1.2 A pollution control and contingency plan will be developed by the Contractor and included within the CEMP to provide details of the measures to be implemented to prevent pollution of the aquifer and the actions to be taken in the event of an environmental incident or emergency.

11.6.1.3 An 'environmental incident' is defined as any event, activity or condition that causes, or has the potential to cause harm to people, or damage to property or the environment. 'Pollution' is defined as any harmful impact on the local atmospheric, aquatic or land environment caused by release of hazardous or nuisance-causing substances or excessive noise and vibration.

11.6.2 Pollution Prevention

11.6.2.1 Works are taking place near existing drainage assets which could be affected by the works. Potential pollutants from the works include:

- Silt
- Cement and concrete
- Oils and fuels
- Waste materials
- Effluent/waste water from site accommodation

11.6.2.2 Concrete and cement are very alkaline and can cause serious pollution. To minimise the risk of run-off entering any watercourse, concrete and cement mixing will be sited at least 10m away from any watercourse and plant cleaned within designated washout areas. Wash water from concrete and cement works must never be discharged into a watercourse.

11.6.2.3 To minimise the risk of pollution from oils on site, measures are required in relation to their storage, use and disposal. Environmentally considerate lubricants, such as synthetic, non-toxic biodegradable hydraulic fluids are available and may be used at sensitive locations.

11.6.2.4 Measures will be developed to control site runoff and prevent contamination. Account will be taken of the Environment Agency Pollution Prevention Guidelines:

- PPG 1 'General guide to the prevention of pollution'
- PPG 5 'Works and maintenance in or near water'
- PPG 6 'Working at construction and demolition sites'
- PPG 18 'Managing fire-water and major spillages'
- PPG 21 'Pollution Incident Response Planning'
- PPG 22 'Dealing with spillages on highways'

11.6.2.5 Appropriate pollution prevention measures will be proposed by the principal Contractor and will be detailed in the CEMP.

11.6.3 Fuel and Oil Handling

11.6.3.1 All fuel and oil will be stored in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001 and they will be handled in such a way that risk of pollution is minimised, this will include:

- Fuel and oil storage tanks will comply with the Control of Pollution (Oil Storage) (England) Regulations 2001 and will be locked when not in use.
- Storage areas will not be located within 10m of the watercourse or highway gully.
- Bowsers will be bunded and will comply with the Control of Pollution (Oil Storage) (England) Regulations 2001 and will be locked when not in use.
- Drums will be stored in bunded areas with a minimum capacity of 25% of the total volume contained within the bund, or 110% of the largest container, whichever is greater.
- Drums will be maintained in good condition, fitted with lids and labelled to indicate the contents.
- Trained operatives only will carry out refuelling of plant and equipment.
- Static combustion engine plant (e.g. compressors, lighting sets) will be integrally bunded or placed on drip trays.
- Plant will be regularly checked for leaks and will be regularly maintained.
- Spill kits will be provided within close proximity to fuel and oil storage areas and operatives will be trained in their use.

11.6.4 Maintenance of Plant

11.6.4.1 Any maintenance of plant and equipment will be carried out at least 10m away from any watercourse or drain. Spill kits will be available during all plant maintenance operations and drip trays used to contain any leakage of oil.

11.6.4.2 Any plant or equipment considered to be a pollution risk will either be repaired or removed from site.

11.6.5 Concrete Washout

11.6.5.1 A designated concrete washout area will be provided for washing out concrete delivery lorries, concrete pumps and grout lines. This will consist of a small skip lined with an impermeable membrane or similar arrangement.

11.6.6 Control of Sedimentation

11.6.6.1 Natural, local materials can present a pollution risk in some contexts. Disturbance and handling of soils, particularly in wet weather, can lead to particles being carried by running water into watercourses. Measures to minimise the risk may include good soils management (see 5.14) as well as:

- Locating activities likely to give rise to sediment away from watercourses.
- Ensuring vegetated areas are set aside to act as buffer zones along the top of each bank of a watercourse.
- The provision of silt fencing to remove suspended particles from running water.
- Settlement tanks or lagoons or the use of flocculants to treat water containing suspended particles prior to its release to any water body.

11.6.7 Notification Procedure

11.6.7.1 Procedures for reporting any spillages or pollution incidents are to be set out.

11.6.7.2 The procedure will include recording all incidents in the project progress report and providing details to the Client Project Manager.

11.6.7.3 Contact details for key site and emergency response personnel with responsibilities relating to the protection of the environment will be kept and

publicised in key locations on site. Key contacts will include:

- Contractor's Project Manager
- Construction Manager
- Construction Environmental Manager
- Client Project Manager
- Community Liaison Officer
- Fire, Police, Ambulance
- Environment Agency 0800 80 70 60

11.7 Handover Environmental Management Plan

11.7.1 Requirements

11.7.1.1 The CEMP is a live document that will consider maintenance implications of the design and construction phase of the project. Maintenance requirements will be recorded in the relevant section of the CEMP and will be updated to provide a Handover Environmental Management Plan (HEMP) at the end of the construction phase. The HEMP will set out the proposed strategy for the future maintenance and management of all environmental areas and will include the following:

- Strategies for the regular maintenance of all Environmental Areas.
- A timetable for the implementation of each regular maintenance operation.
- A timetable showing the anticipated date at which the 'Environmental Function' attributed to each Environmental Area will be achieved.
- A timetable showing the regular monitoring requirements for each Environmental Area, including those in relation to protected species and/or water quality, as agreed with the relevant Statutory and Non-Statutory bodies.
- Any supporting information e.g. agreements made with third parties.

12. Summary and Conclusion

12.1 These documents have been submitted in support of the planning application by Barnsley MBC (BMBC) to construct a new gyratory at the A628 Dodworth Road/Pogmoor Road/Broadway crossroads located just to the east of junction 37 of the M1.

12.2 The existing crossroads junction currently experiences congestion at peak times along Dodworth Road and Pogmoor Road, with queues extending back to the motorway at times.

12.3 Therefore, there is a well understood requirement to improve this junction as it is a key node on one of the strategic links into the town.

12.4 Having established that existing congestion could not be practically and viably remedied by schemes and investments that would promote modal shift from the private car to bus, rail and active travel, AECOM were commissioned to undertake a feasibility and option appraisal for the proposed scheme and following consultation with BMBC, six potential options were identified, from which AECOM then identified numerous sub-option variants with differing types of traffic control/junction type and location of pedestrian facilities

12.5 These options and sub-option variants were then tested at a high level to determine which ones provided the greatest level of capacity to then take forward to a more detailed VISSIM assessment.

12.6 Each of the options was then tested based upon the following criteria, and compared against the base, do nothing scenario:

- Journey times - a decrease in journey time compared to the base indicating an increased level of capacity;
- Link flows in the network - an increase compared to the base indicating that more vehicles are using the network, which is an indication of increased capacity ;
- Total delay - a reduction in overall delay compared to the base indicating an improved level of capacity;

- Latent demand - a decrease compared to the base situation indicating that more vehicles can enter the network which indicates an increased capacity.

12.7 From the results of the above, Option G (full gyratory) consistently gave the best results and as such is recommended to be taken forward as the preferred solution.

12.8 The preferred solution consists of a new signalised gyratory situated on the existing Dodworth Road/Broadway crossroads and on part of Penny Pie Park adjacent to Dodworth Road and uses the principles of Sustainable Urban Drainage Systems (SUDS) for drainage of the scheme.

12.9 The proposed carriageway layout is shown on drawing number *HD/7122127/C/1 General Layout*.

12.10 As well as delivering an improved traffic flow and accessibility to Barnsley, it is recognised that the proposed scheme significantly encroaches into the area known as Penny Pie Park. A Greenspace Appraisal (see Appendix 9) has been carried out, that will inform the compensatory requirements to mitigate the impact of the proposed scheme on Penny Pie Park. This will be achieved by enhancing the facilities on offer, creating a high quality, functional and attractive environment for the neighbourhood area which will include a landscape scheme to mitigate for any loss of existing trees and shrubs.

12.11 AECOM was commissioned to undertake a noise and vibration assessment for the proposed junction improvement. An analysis of the opening year results has identified that mitigation measure are necessary to offset an increase in noise at some receptors as a result of the scheme. These are currently being developed.

12.12 AECOM was commissioned to undertake a local air quality assessment for the proposed junction improvements. The proposed scheme is considered to improve air quality within the AQMA on Dodworth Road. At sensitive receptors located to the west of the crossroads, the proposed scheme is predicted to result in large reductions in annual mean Nitrogen Dioxide (NO2) concentrations of up to 'substantial significance'. By 2023, annual mean NO2 concentrations are anticipated to be below or close to the objective. To the east of the crossroads, slight adverse impacts are predicted at sensitive receptors; however the absolute concentrations will

remain below the objective. All modelled receptors were anticipated to experience annual mean PM10 and PM2.5 concentrations below the objective in all scenarios with negligible impacts.

12.13 Along with the reduced congestion and improvements to air quality the scheme will help support the vitality and viability of the town centre by reducing delays on a key arterial route. It also has sufficient capacity for future growth therefore avoiding the need for further disruption that would come about as a result of a more incremental approach arising from an underestimation of the likely growth or an attempt to avoid encroachment in the park. The proposal therefore has the potential to enable horizon school to further reduce the number of staggers within their timetable, which would yield further benefits over and above those identified when the successfully managed to reduce the number of staggers from 5 to 4.

12.14 As indicated previously, it is acknowledged that the scheme will inevitably have an adverse impact on the park. Although mitigation is proposed, this will not prevent some harm associated with loss of functionality, the need to cross a highway to access the central area and the traffic noise. However, in the absence of a viable and practical alternative, it is considered that the benefits of the scheme will outweigh the harm and that in various ways the scheme contributes towards meeting economic, social and environmental objective such that it can be considered sustainable development.