

DEVON COUNTY COUNCIL

**TEIGNBRIDGE - NEWTON ABBOT
INFRASTRUCTURE PACKAGE:
PRELIMINARY ENVIRONMENTAL
APPRAISAL**

May 2009

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Abbreviations

AADT	Annual Average Daily Traffic
AOD	Above Ordnance Datum
AQMA	Air Quality Management Area
AST	Appraisal Summary Table
CAMS	Catchment Abstraction Management Strategies
DCC	Devon County Council
DMRB	Design Manual for Roads and Bridges
EA	Environment Agency
ER	Environmental Report
ES	Environmental Statement
LDF	Local Development Framework
LNR	Local Nature Reserve
LPA	Local Planning Authority
NCN2	National Cycle Network Route 2
NVZ	Nitrate Vulnerable Zone
PB	Parsons Brinckerhoff
PPS	Planning Policy Statement
RPG10	Adopted Regional Planning Guidance for the South West
RSS	Regional Spatial Strategy
SSSI	Site of Special Scientific Interest
SPZ	Source Protection Zone
TDC	Teignbridge District Council
UKBAP	United Kingdom Biodiversity Action Plan

1 INTRODUCTION

1.1 Preliminary Environmental Appraisal

1.1.1 This preliminary environmental appraisal is a high level feasibility study relating to a multiple package of transport works for the Teignbridge – Newton Abbot Infrastructure Package ('the Scheme'). The appraisal has been guided by the principles of WebTAG, albeit a less comprehensive version of TAG, and is used to evaluate five work packages which comprise the Scheme.

1.2 Core Transport Scheme Objectives

1.2.1 Central government has five core objectives for the appraisal of transport schemes: to protect the built and natural environment, to improve safety, to support a sustainable economy and provide good value for money, to improve accessibility for those without a car and to reduce severance and to ensure integration in decision making within the context of the government's integrated transport policy. This appraisal relates to the 'environment' and 'integration' objectives.

1.2.2 Within the core objective of 'environment' there are 10 sub-objectives which comprise: to reduce noise, to protect local air quality, to reduce greenhouse gases, to protect the water environment, to protect and enhance landscape, to protect and enhance townscape, to support biodiversity, to protect the heritage of historic resources, and to encourage physical fitness and to improve journey ambience.

1.2.3 For the purpose of this appraisal, the following sub-objectives have been appraised: noise, air quality, water environment, landscape / townscape / arboriculture, biodiversity and heritage of historic resources.

1.2.4 Within the core objective of 'integration' there are 3 sub-objectives which comprise: to improve transport interchange, to integrate transport policy with land use policy and to integrate transport policy with other government policies. For the purpose of this appraisal, the following sub-objectives have been appraised: land use policy.

1.2.5 Each work package has been appraised against these sub-objectives. The information has been presented in an Appraisal Summary Table (AST) which comprises a qualitative assessment to inform conclusions on the Scheme. The AST provides a ranking decision for each environment criterion: moderately beneficial, slight beneficial, neutral, slightly adverse and moderately adverse. For integration, the criteria are beneficial, neutral or adverse.

2 WORK PACKAGE DESCRIPTIONS

2.1.1 The Scheme comprises five work packages as described below.

2.2 Work Package 1

Proposal: Broadway Road to Greenhill Way Link Road & Cycle Route

Approximate Land Take: 28,000m²

Approximate Construction: 6 months (October 2010 - March 2011)

2.2.1 A new single carriage link road is proposed to extend from a point midway along Broadway Road, in a south-easterly direction across part of the Rackerhayes area to a new four armed signalised junction to the west of Rydon Industrial Area. The eastern arm of the new junction would extend to Newton Road at an additional new junction by Greenhill Way. The south eastern arm has the potential to provide a new rear access into the existing Tesco retail site, which is currently accessed from Newton Road.

2.2.2 The new link road would provide vehicular access into the proposed residential and employment developments at Rackerhayes and Country Park which are part of the Newton Abbot Northern Urban Expansion project for which the planning applications are pending consideration. The development would require the demolition of numbers 17-20 Homers Crescent (inclusively) in order to allow for the proposed junction improvements at Newton Road / Greenhill Way.

2.2.3 The proposal will incorporate designated cycleway and footway provision within its 7.3m width to enable bus services to and from Newton Abbot town centre to be routed to all new developments. The entire length of the link road will be subject to street lighting.

2.3 Work Package 2

Proposal: Connect 2 Cycle Route

Approximate Land Take: 12,000m²

Approximate Construction: 12 months (March 2010 - February 2011)

2.3.1 The Connect 2 Cycle Route will be part of the National Cycle Network Route 2 (NCN2) which was initially developed for Devon County Council (DCC) by Sustrans in 1998. The aim is to encourage fitness and wellbeing by providing non-motorised routes between centres of population that can be accessed by both cyclists and pedestrians.

2.3.2 The proposed cycle route will be approximately 1.7km and seeks to link Church Street, the residential areas of Kingsteignton, Passage House and Town Quay, Newton Abbot. The proposed route will comprise partly of existing cycle pedestrian ways from the Passage House Inn along the northern bank of the River Teign, and will connect to the new part of the route through Newton Abbot Racecourse and Network Rail land.

2.3.3 Facilitating the proposed cycle route will involve:

- The improvement and widening of existing footpaths between Church St and Passage House to accommodate cyclists;
- A new 'toucan' crossing to cross the B3913 to the north at Greenhill Way, Kingsteignton;
- A widening of existing footpaths on Greenhill Way from toucan crossing to Newton Road to accommodate cyclists.
- A new link on the south-east side of Hackney Marshes to Woodmere Way;
- Construction of a new section of the route from Hackney Marshes to the River Teign, which will run along the foot of the railway embankment on Newton Abbot Racecourse land and Network Rail land, passing under the railway bridge adjacent at the river;
- A new cycleway / pedestrian bridge to cross the River Teign adjacent to the existing railway bridge with a down ramp to link Quay Road and Town Quay, Newton Abbot; and
- Associated enabling works including laying down of bitumen gravel surfaces, removal of vegetation and trees and erection of new fencing.

2.4 Work Package 3

Proposal: Old Exeter Road / Chudleigh Road junction and improvements to Old Exeter Road

Approximate Land Take: 375m²

Approximate Construction: 5 months (June 2010 – October 2010)

2.4.1 The existing roundabout at the junction of Old Exeter Road and Chudleigh Road, Newcross is proposed to be replaced by a traffic signal controlled junction to improve road safety and enable grade crossing facilities for pedestrians and cyclists, with priority for buses. The roundabout does not currently conform to current design standards (Design Manual for Roads and Bridges (DMRB)) or provide adequate crossing facilities for non motorised users. It is also proposed to increase the width of the carriageway along Old Exeter Road by 3m to accommodate right turn lanes.

2.4.2 This proposal is required to facilitate access to the proposed residential development at Newcross sought by Arnold White Estates Ltd which comprises of 586 houses with associated play space, landscaping, parking and access measures.

2.5 Work Package 4

Proposal: Improvements to Strap Lane Junction

Approximate Land Take: 75m²

Approximate Construction: 3 months (February 2011 - April 2011)

2.5.1 The Kingsteignton Community Travel Plan highlights the need for improvements to the junction of Strap Lane with Old Exeter Road and Lindridge Lane.

2.5.2 The Travel Plan envisages a reformatting of the junction to change priorities and deter non-access traffic from entering Old Exeter Road (South). The improvements are expected to include controlled crossing facilities and enhancements to public transport. All works will be within the highway boundary.

2.6 Work Package 5

Proposal: Newton Road Bus Lane

Approximate Land Take: 550m²

Approximate Construction: 3 months (August 2010 -October 2010)

2.6.1 A new bus lane is proposed along Newton Road (B3195) extending from the entrance to the Newton Abbot Racecourse southbound to the industrial site, just south of the River Teign.

2.6.2 The proposal will involve the widening of this section of carriageway by approximately 1m to 2m to incorporate a southbound bus lane. All works will be within the highway boundary.

APPROACH AND METHODOLOGY

2.7 Baseline Information

2.7.1 This preliminary environmental appraisal is a high level desktop study.

2.7.2 In addition to the engineering plans for the Scheme provided and liaison with Parsons Brinckerhoff (PB) Engineers, the following sources of publicly available information were used in determining existing environmental baseline conditions and identifying potential sensitive receptors:

National Planning Policies

- Planning Policy Statement 1: Delivering Sustainable Transport;
- Planning Policy Statement 7: Sustainable Development in Rural Areas;
- Planning Policy Statement 9: Biodiversity and Geological Conservation;
- Planning Policy Guidance Note 13: Transport;
- Planning Policy Guidance 15: Planning and the Historic Environment;
- Planning Policy Guidance 16: Archaeology and Planning;
- Planning Policy Guidance Note 17: Planning for Open Space, Sport and Recreation;
- Planning Policy Statement 23: Planning and Pollution Control;
- Planning Policy Guidance Note 24: Planning and Noise; and
- Planning Policy Statement 25: Development and Flood Risk.

Regional Planning Strategies

- The adopted Regional Planning Guidance for the South West (RPG10); and
- The Draft Regional Spatial Strategy (RSS) for the South West (2006-2026)

2.7.3 RPG10 was published in 2001 and hence is now becoming outdated. The draft RSS provides the strategic framework within which the South West region's development plans and local transport plans will be prepared. It has been through an examination in public and is pending adoption which is expected July 2009, when it will supersede and replace RPG10 (as well as all policies in the Devon County Structure Plan). Given the stage of the document, the policies of the draft RSS should be attributed substantial weight in assessing proposals in the South West.

Local Plans and Policies

- The Devon County Council Structure Plan 1002 – 2016: 'Devon to 2016');
- The Devon County Council Local Transport Plan 2006-2011;
- The Teignbridge District Council Adopted Local Plan 1989-2001; and
- The Devon County Minerals Local Plan 2004.

2.7.4 The Teignbridge District Council (TDC) Adopted Local Plan ('the Local Plan') was adopted in 1996 to provide strategic and detailed policy framework for 1989 - 2001. The majority of the Local Plan policies have been saved by the Secretary of State and therefore the Local Plan remains the current planning document for which planning applications are assessed against.

2.7.5 The Teignbridge Core Strategy, forming the central document within the Local Development Framework (LDF) was completed in 2007 and submitted to independently appointed Planning Inspector who recommended that it be withdrawn as it had failed to meet the government's 'tests of soundness'. As such, the current Local Plan still forms the basis upon which planning application are considered and no weighting is being placed on any LDF documents at this stage.

Other Information Sources

- DCC / TDC websites;
- Environment Agency (EA) website (www.environment-agency.gov.uk);
- MAgiC website (www.magic.gov.uk);
- Natural England (www.natural-england.org.uk); and
- Google Maps (www.maps.google.com);

2.7.6 The following additional sources of information were used to establish baseline conditions and identify potential sensitive receptors:

- Newcross to East Golds Environmental Statement (ES) prepared by Hives Planning Ltd, dated March 2008 (relating to Work Package 1);
- Cycle Route 9 Connect 2 – Kingsteignton Passage House to Newton Abbot Cycle Pedestrian Link Environmental Report (ER) prepared by PB, dated September 2008 (relating to Work Package 2); and
- Proposed Residential Development Land at Newcross, Kingsteignton, Devon Environmental Statement prepared by Nicholas Pearson Associates Ltd, dated October 2007 (relating to Work Package 3).

2.8 Limitations

- 2.8.1 The following preliminary environmental appraisal was undertaken using the baseline information as listed in Section 3.1 above. It is a desk-based, high level appraisal and no site visits have been undertaken.
- 2.8.2 It is recommended that a detailed environmental assessment of the Scheme be undertaken at the next assessment stage in order to aid with the design and environmental approvals required.

2.9 Assumptions

- 2.9.1 This appraisal follows a desk based, high level appraisal exercise. It has been undertaken in May 2009.
- 2.9.2 For Work Packages 1 and 3, it is assumed that relevant information contained in the ESs prepared by other parties (detailed in paragraph 3.1.6) for adjacent / encompassing developments is factually correct. Relevant technical information contained in the ESs have largely contributed to the appraisals, in conjunction with the baseline information listed in Section 3.1 above.
- 2.9.3 It is assumed that all other information sources contained in Section 3.1.5 are the most up to date and contain correct baseline information.
- 2.9.4 PB has significant local and project knowledge of this area which has been drawn upon for some aspects of this appraisal.

3 APPRAISAL

- 3.1.1 This section sets out the appraisal of environmental baseline conditions, sensitive receptors and potential impacts for each of the 5 work packages.

WORK PACKAGE 1 - Broadway Road to Greenhill Way Link Road

3.2 Noise

Description of baseline information

- 3.2.2 The proposed Broadway Road to Greenhill Way Link Road ('the proposal') involves a significant length of new highway and as such would represent a significant new local noise source. The nearest existing residential properties, generally located on the south western fringes of Kingsteignton, would be likely to see a significant increase in traffic noise at facades facing the new highway.

Potential impacts / Sensitive receptors

- 3.2.3 The proposal would require detailed assessment in accordance with the DMRB in order to appropriately assess impact and consider mitigation. It is considered that there would be a potential for claims under Part 1 of the Land Compensation Act from affected properties.

3.3 Local Air Quality / Greenhouse Gases

Description of baseline information

- 3.3.2 The proposal transects an area identified by TDC as exceeding the annual mean concentration of Nitrogen Dioxide. TDC are now legally obliged to propose the declaration of an Air Quality Management Area (AQMA) along Newton Road, Kingsteignton.
- 3.3.3 The primary source of emissions of nitrogen dioxide within the Newton Abbot AQMA is road transport. In addition, a second area of high annual nitrogen dioxide concentration has been identified within 500m of the work package area in Gestridge Road, Kingsteignton. It is probable that TDC will also declare Gestridge Road, Kingsteignton an AQMA by April 2010.

Potential impacts / Sensitive receptors

- 3.3.4 Potential receptors for air quality impacts will include:
- Residential properties of terraced properties on Newton Road; and
 - A mixture of residential properties and commercial properties within both Kingsteignton and Newton Abbot.
- 3.3.5 These will need to be given further consideration at the next stage of assessment

3.4 Water Environment

- 3.4.1 The proposal design and signalised junction have been strongly influenced by the requirement to protect the existing areas of Kingsteignton from potential future floods events and has taken into account the worst case predictions of climate change. Having regard to flooding issues, the proposal will therefore need to be constructed on embankments with slopes generally at 1:3 which will range from 6.9m to 7.9m AOD in height. As a result, the link road will be between 1.5m to 4.5m above the existing level of the land.

Description of baseline information

- 3.4.2 The proposal lies within the lower reaches of the catchment area for the River Teign and within Flood Zone 3, which is described as having a greater than 1 in 200 annual probability of sea flooding (>0.5%) since this section of the river is tidally affected. The catchment of the River Teign covers an area of approximately 550km². The River

Teign is highly responsive and in times of heavy rainfall, flood flows along the river do cause area to flood.

- 3.4.3 Based on the EA March 2008 data, typical tidal range is up to 3.5m AOD and the land adjacent to the Whitelake channel and surrounding area is below this level. The flood level is 3.75m AOD for a 1 in 200 year tidal event. The predicted flows from hydraulic modelling in the River Teign in the study area are shown in Table 1, and are based on March 2008 data from the EA.

Table 1: Predicted flows from hydraulic modelling in the River Teign

	Return Period (years)						
	2	5	10	50	100	200	1000
Flow (m ³ /s)	110	115	172	245	330	403	585

- 3.4.4 The proposal is not situated within a groundwater Source Protection Zone (SPZ) and lies outside a groundwater Nitrate Vulnerable Zone (NVZ). The proposal is situated in a Catchment Abstraction Management Strategies (CAMS) and is underlain by a designated Minor Aquifer, which consists of variable permeable formations that may be important both for local supplies and in supplying base flow to rivers.
- 3.4.5 An existing South West Water trunk main runs in proximity of the proposal along Broadway Road southwest towards Kingsteignton.

Potential impacts / Sensitive receptors

- 3.4.6 Potential impacts to the water environment surrounding the proposal during the construction phase may include:
- Risk of pollution resulting from accidental spillages;
 - Deterioration of groundwater quality from accidental spillages;
 - Increased surface water runoff from construction works; and
 - Reduction in surface water quality as a result of increased suspended solids.
- 3.4.7 Potential impacts to the water environment surrounding the site during the operation phase may include:
- Increased risk of surface water runoff;
 - Reduction in surface water quality due to accidental spillages;
 - Reduction of groundwater recharge resulting from an increase in impermeable area; and
 - Ingress of poor quality runoff to groundwater.
- 3.4.8 Potential impacts to the water environment associated with the construction phase will be temporary, localised, of negligible significance, and relatively easily to mitigate.

Provided that best practice measures are implemented, it is assumed that there will be no major adverse residual effects to the water environment associated with the Link road.

- 3.4.9 The river environment is sensitive and ecologically important, therefore the development of surface water and any foul water systems must meet the needs of the local environment.

3.5 Landscape / Townscape / Arboriculture

Description of baseline information

- 3.5.2 The proposal includes the construction of embankments to the western sides of the proposed link road having a maximum width of 20m. The embankments will be planted with a carefully designed mix of native species tree and shrub planting to assist in providing all year round screening.

- 3.5.3 At the county level of landscape character assessment, the proposal lies within the Bovey Basin landscape character area. The proposal and its immediate surroundings can be described as rural floodplain, quarrying related activities and urban fringe. Current and past open cast ball clay workings are located within the vicinity. Rackerhayes Ponds is an area of artificial lakes and ponds from past quarrying activity, comprising woodland blocks and belts, and areas of scrub.

Potential impacts / Sensitive receptors

- 3.5.4 The proposed link road, ranging from 1.5m to 4.5m above existing ground level, would potentially be viewed from nearby residential areas in Kingsteignton and from residential areas on higher ground within Newton Abbot. Street lighting at night would also have an impact in these receptors. Possible mitigation to lessen the impact could include the retention of existing tree and scrub cover wherever possible, and the provision of framework for new structure planting to provide screening and help integrate the embankment into the wider landscape of the valley floor.

3.6 Biodiversity

Description of baseline information

- 3.6.2 The embankments will be planted to include a high percentage of tree and shrub species suitable for any identified protected species to create enhanced ecological movement and feeding corridors.

- 3.6.3 There are three statutory designated sites of conservation importance within of 2km of the proposal – the Southacre Clay Pit Site of Special Scientific Interest (SSSI) designated for its earth heritage, and Hackney Marshes and Jetty Marshes Local Nature Reserves (LNRs) located 500m south-east and 400m south-west of the proposal (respectively). A number of non-statutory designated sites are also present within 2km of the site.

- 3.6.4 The habitats within the footprint of the proposal consist of grassland (playing field and agricultural grazing land), broadleaved woodlands, scrub and a hedgerow along Broadway Road. The surrounding landscape contains similar habitat and several areas of open water to the west of the proposal.
- 3.6.5 Previous surveys within 1km of the proposal have identified ten bat species including European protected species listed under the Conservation (Natural Habitats, &c.) Regulations (1994), also known as the Habitat Regulations, including barbastelle (*Barbastella barbastellus*), greater horseshoe (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*).
- 3.6.6 Other European protected species including dormouse (*Muscardinus avellanarius*) and otter (*Lutra lutra*) have also been recorded in both areas. Several species of birds and invertebrates listed in the Teignbridge and UK Biodiversity Action Plans have been recorded within 1km of the proposal. A number of records of badgers (*Meles meles*) also exist for the area. Water voles and otters are also known to be present on the River Teign.

Potential impacts / Sensitive receptors

- 3.6.7 Permanent and temporary land-take for the proposal, including supporting infrastructure, contractors' compounds and temporary access roads, may result in negative effects as a result of loss of habitat, fragmentation of species and / or habitats, direct mortality of species during clearance and displacement of adjacent reliant species.
- 3.6.8 Permanent and temporary changes to the visual, lighting, air quality, noise and vibration baselines as a result of construction and operation may result in the disturbance and displacement of adjacent species and / or damage to adjacent ecologically sensitive receptors. Lighting in particular may have a significant impact on commuting and foraging species of bats.
- 3.6.9 Temporary construction compounds involving the storage of materials and permanent increase in hard surfaces (run off) may result in increased potential for pollution incidences (direct mortality) and damage to adjacent ecologically sensitive receptors.

3.7 Heritage of Historic Resources

Description of baseline information

- 3.7.2 There are no Scheduled Monuments, Registered Parks and Gardens, Historic Battlefields or Areas of Archaeological Importance within 300m of the proposal.
- 3.7.3 The Kingsteignton Conservation Area is located to the east of the proposed Newton Road / Greenhill Way junction of the link road, and represents the historic core of Kingsteignton village and contains one Grade II* and 22 Grade II Listed Buildings. The area is designated under the Local Plan as an area where the character of the historic environment is of a sufficient quality to conserve or enhance.

Potential impacts / Sensitive receptors

- 3.7.4 The proposed link road has the potential to impact on the character of the Conservation Area. The preservation or enhancement of the character or appearance of the area should be given further consideration at the next assessment stage.

3.8 Land Use Planning Policy / Integration

Description of baseline information

- 3.8.2 The baseline information is contained in Section 3.1 above.

Potential impacts / Sensitive receptors

- 3.8.3 The proposal is located within an area designated for Countryside under the Local Plan, where particular attention will be paid to the scale of development and to its siting, layout and appearance when considering development proposals in this area. It is also located within a Mineral Consultation Area: Sandygate, Kingsteignton, Sand and Gravel, Dormant site. The proposal will need to be reviewed inline with the saved polices from the Devon County Minerals Local Plan.
- 3.8.4 Land designated for Footpaths runs the length of Broadway Road and Newton Road, and forms part of the Long Distance Footpath Routes for which TDC seek to safeguarded and encourage improvement.
- 3.8.5 In terms of the Kingsteignton Conservation Area, developments outside but close to conservation areas, will be considered in terms of any impact on the conservation area. Detailed consideration of this, and potential impacts on land designated for landscape character, and nearby SSSI and LNRs should be given at the next assessment stage.
- 3.8.6 It is anticipated that the proposal will act as a catalyst for the delivery of residential housing and employment with respect to the adjacent developments at Rackerhayes and Country Park as detailed in Section 2.2.2, and will also integrate well with allocated land in the immediate vicinity allocated for major residential development under the Local Plan.
- 3.8.7 The proposal would work in conjunction with other planned transport infrastructure such as the Kingsteignton Broadway Stage 1 Highways Scheme, and support the Local Transport Plan which identifies the need to remove through traffic from Kingsteignton by way of traffic management measures and an enhanced road network on the periphery of the village.

WORK PACKAGE 2 – Connect 3 Cycle Route

3.9 Noise

Description of baseline information

- 3.9.2 The proposed Connect 2 Cycle Route ('the proposed route') would have a negligible noise / vibration impact on the local noise sensitive receptors as a cycle / pedestrian way would not represent a significant new noise source, nor would it be located in close proximity to local noise receptors.

Potential impacts / Sensitive receptors

- 3.9.3 No noise related risks have been identified at this stage.

3.10 Local Air Quality / Greenhouse Gases

Description of Baseline Information

- 3.10.2 The proposed route enters into a proposed AQMA along Newton Road, Kingsteignton. The AQMA was required due to the annual mean concentration of Nitrogen Dioxide being exceeded at the location of residential terraced properties on Newton Road. The primary source of emissions of nitrogen dioxide within the Newton Abbot AQMA is road transport. In addition a second area of high annual nitrogen dioxide concentration has been identified within 500m of the proposed route in Gestridge Road, Kingsteignton. See paragraph 4.3.3.

Potential Impacts/ Sensitive Receptors

- 3.10.3 There is expected to be no long-term impact given the proposed route is only to be used by cyclists and pedestrians.

3.11 Water Environment

- 3.11.1 The proposed route is predominantly located on the northern banks of the River Teign within a recreational / wetlands area. The Hackney Marsh wetlands are located to the north and the River Teign Estuary is located to the south.

Description of baseline information

- 3.11.2 The proposed route is located within a Flood Zone 3b which is a functional floodplain. This is defined as land where water has to flow or be stored in times of flood and / or has an annual probability of 1 in 20 years or greater in any year. In accordance with Planning Policy Statement (PPS) 25, the proposed Cycle route is considered to meet the requirements to be deemed as "appropriate use" in a Flood Zone 3b in

accordance with PPS25 Table D.1 and an Exception Test is not required.

- 3.11.3 Potential sources of flooding are tidal flooding from the Teign Estuary and the Rivers Teign and Lemon, fluvial flooding from the Rivers Teign and Lemon, and from various watercourses within the Hackney Marshes.
- 3.11.4 Modelled Fluvial / Tidal Flood Levels (m AOD) for the 2002 condition in the River Teign near the proposed route are shown in Table 2, and are based on the EAs March 2008 data.

Table 2: Modelled Fluvial / Tidal Flood Levels for 2002 condition in the River Teign

	Return Periods (Years) 2002 Condition							
	1	5	10	25	50	100	200	1000
Tidal Flood Level (mAOD)	1.90	2.21	2.63	3.02	3.20	3.58	3.66	4.20

- 3.11.5 The proposed route is not situated within a groundwater SPZ and lies outside a groundwater NVZ. It is situated in a CAMS area and is underlain by two different Vulnerability Zones including a designated Major Aquifer (highly permeable) and Minor Aquifer (variably permeable). Major Aquifers may support large abstractions for public water supply and other purposes. Minor Aquifers are important for local water supplies and supplying base flow to rivers.

Potential impacts / Sensitive receptors

- 3.11.6 Potential impacts to the water environment surrounding the proposed route during the construction phase may include those identified in paragraph 4.4.6.
- 3.11.7 It is expected that no additional impacts to the water environment will occur during the operation phase.

3.12 Landscape / Townscape / Arboriculture

Description of baseline information

- 3.12.2 The proposed route is partially located within an Area of Great Landscape Value designation. At the county level of landscape character assessment, the proposed route lies within the Bovey Basin landscape character area and the western end of the Tourist Riviera landscape character areas. The visual envelope for the proposed route includes the hills on the west side of Newton Abbot and the visually open land of the Teign Estuary. There are a number of significant individual and belts of trees in the study area. Hackney Marshes, at the head of the Teign Estuary, with seasonal flood meadows has cultural associations with Hackney Canal and Quay and the Templar Way and has a particular sense of place.

Potential impacts / Sensitive receptors

- 3.12.3 The proposed route may be viewed from nearby residential areas at the southern end of Kingsteignton, at high ground to the west of Newton Abbot and from the A380 across the visually open Teign Estuary. The retention of existing trees and use of local chippings to surface the cycle / pedestrian way could provide mitigation of visual impacts on landscape character.

3.13 Biodiversity

Description of baseline information

- 3.13.2 The Hackney Marshes LNR is located in the footprint of the proposed route. Jetty Marsh LNR is situated adjacent to the proposed route along River Teign. A number of non-statutory designated sites have been recorded in within 2km of the proposed cycle route.
- 3.13.3 The habitats within the footprint of the proposed route consist of amenity grassland, poor semi-improved grassland, ephemeral / short grassland, marshy grassland, bare ground, broad-leaved woodland / tree lines, continuous scrub, swamp, standing water, running water / ditch, saltmarsh, inter-tidal mud/sand and hard standing. The surrounding landscape contains similar habitat including the River Teign, Hackney channel and associated drainage lines within Hackney Marshes.
- 3.13.4 Previous surveys within the area of the proposed route have identified the presence of otters, a European protected species listed under the Habitat Regulations (1994) and several bird species listed in the Teignbridge and UK Biodiversity Action Plans. Surveys within 1km of the proposed route include ten bat species of bat all of which are also afforded European protected status. These include the barbastelle bat, greater horseshoe, lesser horseshoe.
- 3.13.5 Dormice have also been identified within the general area, and the area of the proposed route supports habitats suitable for this species. Several species of birds and invertebrates listed in the Teignbridge and UK Biodiversity Action Plans have also been recorded within 1km of the proposed route and the area contains suitable habitat for common species of reptile, several species of which are also listed on the UK Biodiversity Action Plan (UKBAP). Badgers are also known to occur within the area.

Potential impacts / Sensitive receptors

- 3.13.6 Potential impacts as for those described in Work Package 1.
- 3.13.7 In addition, direct impacts on Hackney Marshes LNR will need to be considered in detail at the next assessment stage.

3.14 Heritage of Historic Resources

Description of baseline information

- 3.14.2 There are no Scheduled Monuments, Registered Parks and Gardens, Historic Battlefields or locally based designations (such as Areas of Archaeological Importance or Conservation Areas) within 300m of the proposed route. The existing cycle / pedestrian way from the Passage House Inn along the northern bank of the River Teign is believed to pass two historic lightermen cottages.

Potential impacts / Sensitive receptors

- 3.14.3 No potential impacts or sensitive receptors have been identified at this stage.

3.15 Land Use Planning Policy / Integration

Description of baseline information

- 3.15.2 The baseline information is contained in Section 3.1 above.

Potential impacts / Sensitive receptors

- 3.15.3 The proposed route is located within an area designated for Countryside (as described in Work Package 1), and an area designated as Open Land Between Settlements which seeks to retain sufficient open land between settlements in order to maintain their individual identity. Both these designations seek to protect the countryside from non-essential development.
- 3.15.4 Land designated for Footpaths runs along the River Teign to the south for which TDC seek to safeguard and encourage its improvement.
- 3.15.5 The proposal supports Local Plan Policy T19 where new development is expected to integrate within the existing network, and Policy T28 which pledges support for any new developments which provide, improve and extend cyclists facilities. The proposal also supports Policy TR7 of the Devon Structure Plan which identifies the need to improve pedestrian/cycle links between settlements and adjacent rural areas.
- 3.15.6 Detailed consideration of these and potential impacts on the Area of Great Landscape Value, landscape character areas, and LNRs should be given at the next assessment stage.

WORK PACKAGE 3 – Old Exeter Road / Chudleigh Road junction and improvements

3.16 Noise

Description of baseline information

- 3.16.2 The proposed signalised junction at Old Exeter Road / Chudleigh Road ('the site') would be unlikely to have any significant noise or vibration impacts on local noise sensitive receptors, however, slight changes in local noise levels could arise as a result of changes in traffic speed and / or flow, or realignment of the roads.

Potential impacts / Sensitive receptors

- 3.16.3 No noise related risks have been identified at this stage.

3.17 Local Air Quality / Greenhouse Gases

Description of baseline information

- 3.17.2 The site is not located within an AQMA. No local monitoring has taken place within the vicinity as there are currently no known relevant receptors.

Potential impacts / Sensitive receptors

- 3.17.3 It is considered that currently, there are no receptors adjacent to the site although the Old Exeter Road area is locally known to be sensitive to air quality.

3.18 Water Environment

Description of baseline information

- 3.18.2 The site is located within Flood Zone 1 (Low Probability), which means that the risk of flooding is less than 0.1% and the land is suitable for all uses.
- 3.18.3 New Cross Pond is located north-west of the junction and consists of a former clay pit which has now been backfilled. The site is not situated within a groundwater SPZ and lies outside a groundwater NVZ. The site is situated in a CMAS area, and is underlain by a designated Minor Aquifer, which consists of variable permeable formations that may be important both for local supplies and in supplying base flow to rivers.
- 3.18.4 The South West Water trunk main, distribution main and public surface water sewer are located in within the boundary of the site.

Potential impacts / Sensitive receptors

- 3.18.5 Potential impacts to the water environment surrounding the site during the construction and operation phases are similar to those described in Work Package 1.

3.19 Landscape / Townscape / Arboriculture

- 3.19.1 No appraisal of Landscape / Townscape / Arboriculture has been undertaken for Work Package 3.

3.20 Biodiversity

Description of baseline information

- 3.20.2 There are three statutory designated sites of conservation importance within 2km of the site - Southacre Clay Pit SSSI, and Hackney Marshes and Jetty Marshes LNRs. A number of non-statutory designated sites are within 2km of the site.
- 3.20.3 The habitats within the footprint of the proposal consist of roadside grassland, scrub, broadleaved woodland and hedgerows.
- 3.20.4 Previous surveys within 1km of the site have identified ten species of bat listed on the Habitats Directive (1994) including barbastelle bat, greater horseshoe, lesser horseshoe. An important bat commuting route has been identified in land to the east of the proposals which intersects with the roundabout of Old Exeter Road and the B3193. Otters and dormice have also been recorded from within the area.
- 3.20.5 No habitats suitable for otters are present within or close to the site however the scrub and woodland habitat to along Old Exeter Road are likely to be suitable for dormice. Several species of birds and invertebrates listed in the Teignbridge and UKBAP have also been recorded within 1km of the site, and the area of the site supports habitat which may be suitable for common species of reptiles, also listed on the UKBAP. The general area is also known to support badgers.

Potential impacts / Sensitive receptors

- 3.20.6 Permanent and temporary changes to the visual, lighting, air quality, noise and vibration baselines as a result of construction and operation may result in the disturbance and displacement of adjacent species and / or damage to adjacent ecologically sensitive receptors. As the proposal is for a new signal at the existing roundabout, impacts are considered minor. Given the important bat commuting route which intersects with the roundabout, detailed consideration will be required on the impacts of any new lighting within this area.
- 3.20.7 Permanent and temporary land-take for the improvements to Old Exeter Road involving supporting infrastructure, contractors' compounds and temporary access roads may result in negative effects as a result of loss of habitat and direct mortality of species during clearance. These impacts are anticipated to be minor given the works will only constitute improvement to an existing carriageway.

3.21 Heritage of Historic Resources

Description of baseline information

- 3.21.2 There are no Scheduled Monuments, Registered Parks and Gardens, Historic Battlefields or locally based designations (such as Areas of Archaeological Importance or Conservation Areas) within 300m of the proposal.

Potential impacts / Sensitive receptors

- 3.21.3 No potential impacts or sensitive receptors have been identified at this stage.

3.22 Land Use Planning Policy / Integration

Description of baseline information

- 3.22.2 The baseline information is contained in Section 3.1 above.

Potential impacts / Sensitive receptors

- 3.22.3 The site is located within an area designated for Countryside, and Mineral Consultation Area: Sandygate, Kingsteignton, Sand and Gravel, Dormant site.
- 3.22.4 Land directly to the south is area designated Major Residential Commitment which forms part of the land now being taken forward as part of the residential development at Newcross. At the next assessment stage, detailed consideration should also be given to potential impacts on the nearby SSSI and LNRs.
- 3.22.5 This proposal will act a catalyst for the delivery of the residential development at Newcross.

WORK PACKAGE 4 – Improvements to Strap Lane Junction

3.23 Noise

Description of baseline information

- 3.23.2 The proposed improvements to the junction at Strap Lane ('the site') would be unlikely to have any significant noise or vibration impacts on local noise sensitive receptors, however, slight changes in local noise levels could arise as a result of changes in traffic speed and / or flow, or realignment of the roads.

Potential impacts / Sensitive receptors

3.23.3 No noise relates risks have been identified at this stage.

3.24 Local Air Quality / Greenhouse Gases

Description of baseline information

3.24.2 This study area is not within an AQMA. No local monitoring has taken place within the vicinity.

Potential impacts / Sensitive receptors

3.24.3 Potential receptors for air quality impacts will include:

- Residential properties of terraced properties on Strap Lane and Exeter Road; and
- A mixture of residential properties and commercial properties within both Kingsteignton.

3.24.4 These will need to be given further consideration at the next stage of assessment

3.25 Water Environment

Description of baseline information

3.25.2 The junction at Strap Lane is located within Flood Zone 1 (Low Probability), which means that the risk of flooding is less than 0.1% and the land is suitable for all uses.

3.25.3 The River Teign is located approximately 700m west of the site. The site lies 300m south of a Flood Zone 3 area, generated from a tributary of the River Teign and Ugbrooke Stream.

3.25.4 The site is not situated within a groundwater SPZ and lies outside a groundwater NVZ. The site is situated in a CAMS area and is underlain by a designated Minor Aquifer, which consists of variable permeable formations that may be important both for local supplies and in supplying base flow to rivers.

3.25.5 The South West Water trunk main, distribution main and public surface water sewer are located in close proximity to the site.

Potential impacts / Sensitive receptors

3.25.6 Potential impacts to the water environment surrounding the site during the construction and operation phases are similar to those described in Work Package 1.

3.26 Landscape / Townscape / Arboriculture

3.26.1 No appraisal of potential impacts / sensitive receptors to landscape, townscape and arboriculture has been undertaken for Work Package 4.

3.27 Biodiversity

Description of baseline information

3.27.2 The Southacre Clay Pit SSSI is located within 2km of the site. A number of non-statutory designated sites are within 2km of the proposed site.

3.27.3 The natural habitats within the footprint of the site consist principally of managed amenity grassland. The surrounding landscape comprises of managed amenity grassland and residential housing and associated gardens. The existing habitat is of negligible value for protected species and species of conservation concern that have been identified within the area. Such species include 13 European protected species, including 10 species of bats, dormice and otters.

Potential impacts / Sensitive receptors

3.27.4 Permanent and temporary changes to the visual, lighting, air quality, noise and vibration baselines as a result of construction and operation may result in the disturbance and displacement of adjacent species and / or damage to adjacent ecologically sensitive receptors. As the proposal constitutes improvements to the existing roundabout any such impacts are considered likely to be minor.

3.28 Heritage of Historic Resources

Description of baseline information

3.28.2 The baseline information is as for Work Package 3.

Potential impacts / Sensitive receptors

3.28.3 Potential impacts are as for Work Package 3.

3.29 Land Use Planning Policy / Integration

Description of baseline information

3.29.2 The baseline information is contained in Section 3.1 above.

Potential impacts / Sensitive receptors

- 3.29.3 Land designated for Countryside and Mineral Conservation Area is located approximately 200m west of the junction.
- 3.29.4 Land to the south-east is designated for Residential Development and Major Residential Commitment. Detailed consideration of these, and potential impacts on the nearby SSSI, should be undertaken at the next assessment stage.

WORK PACKAGE 5 – Newton Road Bus Lane

3.30 Noise

- 3.30.1 No appraisal of potential noise impacts and sensitive receptors has been undertaken for Work Package 5.

3.31 Local Air Quality / Greenhouse Gases

Description of baseline information

- 3.31.2 The proposed Newton Road Bus Lane ('the proposal') falls within / borders upon an AQMA which has been required due to the annual mean concentration of Nitrogen Dioxide being exceeded in the area. The primary source of emissions of nitrogen dioxide within the Newton Abbot AQMA is road transport. Any improvements that introduce additional peak flows or significant Annual Average Daily Traffic (AADT) may be subject to a request for a detailed air quality impact assessment.

Potential impacts / Sensitive receptors

- 3.31.3 Potential receptors for air quality impacts will include:
- Residential properties of terraced properties on Newton Road; and
 - A mixture of residential properties and commercial properties within both Kingsteignton and Newton Abbot.

3.32 Water Environment

Description of baseline information

- 3.32.2 The proposal lies wholly within Flood Zone 3 (High Probability). Flood Zone 3 is described as having a greater than 1 in 100 annual probability of fluvial flooding (>1%) or a greater than 1 in 200 annual probability of tidal flooding (>0.5%).
- 3.32.3 The River Teign is a potential source of fluvial and tidal flooding.

- 3.32.4 The site is not situated within a groundwater SPZ and lies outside a groundwater NVZ. The site is situated in a CAMS area and is underlain by a designated Minor Aquifer, which consists of variable permeable formations that may be important both for local supplies and in supplying base flow to rivers.

Potential impacts / Sensitive receptors

- 3.32.5 Potential impacts to the water environment surrounding the site during the construction and operation phases are similar to those described in Work Package 1.

3.33 Landscape / Townscape / Arboriculture

- 3.33.1 No appraisal of potential impacts / sensitive receptors to landscape, townscape and arboriculture has been undertaken for Work Package 5.

3.34 Biodiversity

Description of baseline information

- 3.34.2 There are seven statutory designated sites of conservation importance within 2 km of the proposal. These are the River Lemon Valley Woods and Wolborough Fen SSSIs, and Hackney Marshes, Jetty Marsh, Decoy Country Park, Aller Brook and Churchills LNRs. A number of non-statutory designated sites are also present within 2km of the proposal.
- 3.34.3 The habitats within the footprint of the proposal consist principally of hard standing and roadside verge grassland and landscape planting. The surrounding landscape contains industrial development, a small wooded copse, and several areas of open grassland. The proposal also includes an existing bridge over the river Teign.
- 3.34.4 A range of European protected species have been recorded from the area. This includes 10 species of bat including barbastelle bat, greater horseshoe and lesser horseshoe, records of dormice and otter. Water vole are also known to be present on the River Teign. Several species of birds and invertebrates listed in the Teignbridge and UK Biodiversity Action Plans have been recorded from within the area. Records of badgers also exist for the general area.

Potential impacts / Sensitive receptors

- 3.34.5 Permanent and temporary changes to the visual, lighting, air quality, noise and vibration baselines as a result of construction and operation may result in the disturbance and displacement of adjacent species and / or damage to adjacent ecologically sensitive receptors.
- 3.34.6 Permanent and temporary land-take for the improvements to Old Exeter Road; supporting infrastructure; contractors' compounds and temporary access roads may result in negative effects as a result of loss of habitat; direct mortality of species during clearance. These impacts are anticipated to be minor given the works will only constitute minor improvements to an existing carriageway.

- 3.34.7 Temporary construction compounds involving storage of materials and permanent increase in hard surfaces (run off) may result in increased potential for pollution incidences within River Teign leading to damage of this ecologically sensitive habitat and harm to the species within it.

3.35 Heritage of Historic Resources

Description of baseline information

- 3.35.2 The baseline information is the same as for Work Package 3.

Potential impacts / Sensitive receptors

- 3.35.3 Potential impacts are the same as for Work Package 3.

3.36 Land Use Planning Policy / Integration

Description of baseline information

- 3.36.2 The baseline information is contained in Section 3.1 above.

Potential impacts / Sensitive receptors

- 3.36.3 The proposed site is located within land designated for Countryside, Mineral Consultation Area: Sandygate, Kingsteignton, Sand and Gravel, Dormant site, and Open Land Between Settlements.
- 3.36.4 Land designated for Footpath currently runs the length of Newton Road which the Council seek to safeguarded and encourage the improvement of.
- 3.36.5 The proposal is consistent with saved Policy TR16 of the Devon Structure Plan which prescribes that investment in the Devon road network should be focused on schemes that would reduce the environmental effects of traffic by reducing congestion, or promote public transport effectiveness by introducing bus priority.
- 3.36.6 The proposal would also support the Local Transport Plan which identifies the need to remove through traffic from Kingsteignton village by way of traffic management measures and an enhanced road network on the periphery of the village. The core of the village is to be made significantly more attractive to pedestrians and cyclists and effective linkages to Newton Abbot town via the bus network.
- 3.36.7 Detailed consideration of these and potential impacts on the nearby SSSIs and LNRs should be given at the next assessment stage.

4 CONCLUSIONS / FURTHER WORKS REQUIRED

4.1.1 The following conclusions on the Scheme are drawn from the appraisal of the 5 work packages.

4.2 Noise

4.2.1 There is potential for Work Package 1 to generate a significant new local noise source in respect of existing and future nearby residential receptors. There may be a significant potential for claims under Part 1 of the Land Compensation Act from affected properties.

4.2.2 Work Package 2 is expected to have a negligible noise / vibration impact on the local noise sensitive receptors. Work Packages 3, and 4 are considered unlikely to have any significant noise or vibration impacts on local noise sensitive receptors. Work Package 5 has not been considered as part of this appraisal.

4.3 Local Air Quality / Greenhouse Gases

4.3.1 There is potential for some air quality impacts to result at the construction stage of all five Work Packages.

4.3.2 In terms of operation, Work Packages 1 and 5 are located with AQMAs and have the potential for slight adverse impacts. Two groups of potential receptors have been identified.

4.3.3 Work Package 2 is also located in an AQMA however given the nature of the proposal there is expected to be no long-term air quality impacts. Work Packages 3 and 4 are not located within an AQMA, and as no local monitoring has taken place within the vicinity, there are no known relevant receptors at present.

4.4 Water Environment

4.4.1 There is potential for some water quality impacts to result at the construction stage of all five Work Packages.

4.4.2 Due to the increased area of hard standing, all Works Packages have the potential for adverse impacts during operation. It is considered that the effects of surface water runoff for Work Packages 1, 2 and 3 are likely to be able to met mitigated provided good practice measure are implemented.

4.4.3 Consultation with the EA would be required to determine if a Flood Risk Assessment is be necessary for Work Packages 4 and 5. Consequently, any effects of surface water runoff for these work packages has not been considered that this stage.

4.5 Landscape / Townscape / Arboriculture

4.5.1 Work Packages 1 and 3 have the potential for adverse impacts giving rise to loss of landscape and potential loss of visual amenity for nearby residential areas in

Kingsteignton and on higher ground within Newton Abbot, however impacts may be lessened with appropriate mitigation.

4.5.2 Work Packages 3, 4 and 5 have not been considered as part of this appraisal.

4.6 Biodiversity

4.6.1 There is potential for all five Works Packages to impact on protected species which would be established through timely surveys for breeding birds, dormice, badgers, reptiles and invertebrates at the next assessment stage. Any impact may be lessened with the implementation of appropriate mitigation.

4.7 Heritage of Historic Resources

4.7.1 Work package 1 has the potential to impact on the character of the nearby Conservation Area however given its location in relation the proposal. There are no Scheduled Monuments, Registered Parks and Gardens, Historic Battlefields or Areas of Archaeological Importance within 300m of Work Package 1.

4.7.2 There are no Scheduled Monuments, Registered Parks and Gardens, Historic Battlefields or locally based designations (such as Areas of Archaeological Importance or Conservation Areas) within 300m of the sites of Work packages 2, 3, 4 and 5, therefore it is considered that there are no potential impacts or sensitive receptors.

4.8 Planning / Integration

4.8.1 Provided that appropriate mitigation measures are put in place, the Scheme is generally in keeping with National, Regional and Local Planning Policies, and integrates well with other proposed developments in the immediate vicinity.

4.8.2 A more detailed environmental assessment of all five Works Packages would be required at the next assessment stage.

5 APPRAISAL SUMMARY TABLE

OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE ASSESSMENT	ASSESSMENT
ENVIRONMENT	Noise	The Scheme is likely to generate a significant new local noise source in respect of existing and future residential receptors. There may be a significant potential for claims under Part 1 of the Land Compensation Act from affected properties. The assessment score is based on appropriate mitigation and further assessment is required.	No quantitative assessment has been undertaken at this time	Neutral
	Local Air Quality / Greenhouse Gases	The Scheme has the potential for slight adverse air quality impacts, however it could also benefit AQMAs. Further assessment is required. The assessment score may be reduced following the review of complete quantitative assessment data for the Scheme.	No quantitative assessment has been undertaken at this time	Slight Adverse
	Water Environment	Due to the increased area of hard standing, the Scheme has the potential for adverse impacts during operation. It is considered that impacts on the water environment could be mitigated provided good practice measures are implemented.	--	Neutral
	Landscape / Townscape / Arboriculture	Aspects of the Scheme has the potential for adverse impacts giving rise to loss of landscape and potential loss of visual amenity to nearby sensitive receptors. The assessment score may be reduced with appropriate mitigation.	--	Slight Adverse
	Biodiversity	There is potential for the Scheme to impact on biodiversity. The assessment score may be reduced following habitat surveys to complete the baseline information, and with the implementation of appropriate mitigation.	--	Slight Adverse



	Heritage of Historic Resources	There are no Scheduled Monuments, Registered Parks and Gardens, Historic Battlefields within 300m of the Scheme. In terms of locally based designations, the Kingsteignton Conservation Area is situated nearby the Scheme which gives rise to potential impacts on its character. This has been identified as the only sensitive receptor at this stage and in relation to the Scheme has been scored as Neutral.	--	Neutral
INTERGRATION	Land use Policy	Complies with Local and Regional growth agendas. Likely to be catalyst for new housing and employment.	--	Beneficial