



# Preliminary Environmental Information for Proposed Bridgwater Highway Improvement Works

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# Introduction

The following presents Preliminary Environmental Information (PEI) relating to the proposed highway improvement works in the Bridgwater area. The PEI is provided in support of this consultation - 'Proposed Changes to the Preferred Proposals including M5 Junction 24 and Highway Improvements in the Bridgwater Area' – allowing stakeholders to be appraised of the Environmental Impact Assessment (EIA) studies which will be undertaken. These will include the requirement for further surveys to allow characterisation of baseline environmental conditions. An initial appraisal of the potential sources of environmental impacts and their likely significance arising from the works is presented.

Views from all stakeholders are welcome with respect to the proposed scope and content of the EIA studies which EDF Energy intends to undertake for the highway works and due consideration will be given to any comments which are received.

## Noise

Route widening or minor realignments could result in traffic being brought closer to existing residential properties thus potentially increasing traffic noise experienced by receptors. There may be limited potential for increased noise during construction activities associated with the improvement works.

The potential impact related to traffic will be assessed at the particular locations at which potential highway works are located. In the majority of cases, the short-term temporary noise impacts associated with improvement works would be of a short-term temporary nature and would be unlikely to be assigned a significance rating of greater than minor adverse.

In some instances, improvement works may be required in very close proximity to residential dwellings, i.e. where properties are situated immediately adjacent to the kerbside. In these circumstances, short-term temporary noise impacts of moderate adverse significance may occur. Where properties are in such close proximity to the works, some activities could result in perceptible levels of vibration at residential properties. However, activities such as breaking of the existing road surface and/or pavements (using a hand-held pneumatic breaker or similar equipment) and compression of newly laid road/pavement surfaces will be controlled and of short-duration, and resultant vibration levels would be below the level sufficient to cause even cosmetic damage to buildings.

## Air Quality

Given the relatively minor scale of earthworks that would be required to complete each of the highway improvements, there is only a low risk relating to the potential for the generation of construction related fugitive dust and PM10 impacts. Therefore, regardless of the separation distance between the works and the closest receptors, fugitive dust and PM10 impacts are, at worst, considered to be of minor adverse significance, and of a short-term temporary nature.

Only relatively small numbers of construction plant and machinery would be required to carry out each of the improvement schemes. Consequently, exhaust emissions to air from plant and machinery would be of a short-term temporary nature and of imperceptible magnitude, with potential air quality impacts of negligible significance.

Once Masterplans of the highway improvement realignments become available, a qualitative assessment of the potential increase or decrease in vehicular air pollutant concentrations that nearby sensitive receptors may experience as a result of either a reduction or increase in separation distance between the road and receptor will be undertaken. A quantitative assessment of any changes to pollutant concentrations will also be undertaken.

## Soils and Land Use

A number of the potential improvement schemes will involve some small areas of land take that is either greenfield, agricultural or woodland/urban trees. Three schemes have no potential to take greenfield land or have an adverse impact on soils and land use.

Small areas of urban trees and/or greenspace may be lost due to some of the schemes, for example, Eastover/A39 Broadway, Wylds Road/The Drove, Wembdon Rise and the A38 Bristol Road/Wylds Road. Small areas of greenfield, primarily semi-matured woodland, may be lost as part of the Huntworth Roundabout, the Quantock Roundabout and the A38 Taunton Road/Marsh Lane schemes. Small areas of greenfield land and agricultural land may also be lost as part of the M5 Junction 24 improvements. Determination of the quantity of greenfield and agricultural land take will be confirmed following the provision of further details relating to the design of the works, however due to the anticipated nature of the works and likely small areas of land take, the potential impacts to land use and soils are unlikely to be assigned a significance of greater than negligible.

## Geology, Land Contamination and Groundwater

Given the nature of the improvement schemes it is anticipated that the extent of in-ground works will be very limited with respect to the requirement for earthmoving. Dependent on ground conditions and depth of excavations some minor intrusion into the underlying geology may occur. However, no distinctive geological features exist in the areas of the schemes and given the nature of the works no significant impacts to geology are predicted to occur.

With regards to land contamination, the improvements at M5 Junction 24 and the Quantock Roundabout would only involve the potential excavation of greenfield land therefore no potential contaminated land impacts are expected. The highway improvement works nearest to the 'Somerfield' site may require some land take of woodland areas which are adjacent to industrial sites. The contamination status of these areas is unknown but significant land contamination is considered unlikely to be present. These areas appear not to have been previously developed. Significant contaminated land impacts associated with these schemes are considered unlikely to occur.

The remaining schemes are located in residential and commercial areas where significant sources of contamination are considered unlikely to be present. Some potential sources of contamination have been identified in the immediate vicinity of selected schemes, including a petrol station adjacent to the A38 Taunton Road at the junction with A39 Broadway, electricity substation adjacent to the red line area of Wembdon Rise and industrial areas adjacent to the A38 Bristol Road and Wylds Road. However, as the excavations required for the schemes are likely to be limited and in the event that any contaminated soils are present within the footprint, the amount of contaminated arisings which would be generated would be very limited in volume and readily managed.

From consideration of the published 1:50,000 scale geological map, the solid geology for all the schemes comprises Mercia Mudstone, overlain by alluvial superficial deposits or terrace superficial deposits at, or adjacent to, the scheme locations. None of these formations are significant in terms of groundwater resource.

In many cases the schemes represent modifications to highways or junctions that are already in place, so measures such as grit traps and interceptors will already exist as required to protect the road drainage and any seepage to subsoil from road-related contamination. It is expected that the improvement schemes will augment these measures as appropriate if required.

It is not expected that any extensive deep excavations would be required, and in any event groundwater inflows from the anticipated superficial and/or solid formations would not be significant, thus any dewatering would be of a temporary and minor magnitude. As a result it is anticipated that there would be negligible impact on the groundwater environment.

## Surface Water

A number of the schemes have the potential to impact upon surface water features. A surface drainage channel is indicated to originate in the south-eastern corner of the red line bounded area of the Quantock Roundabout scheme. This drainage feature appears to flow north-eastwards at the rear of the properties on Bouverie Road. During both the construction and operational phases of the highways improvements management measures may need to be adopted to ensure the protection of water quality conditions in this surface water feature.

The Huntworth Roundabout is in close proximity to the balancing ponds associated with the surface water drainage from the Sedgemoor Auction Centre site located to the south of the roundabout. A drain is indicated within the red line boundary of the scheme at M5 Junction 24 southern slip road. From the aerial images it is not clear if this is an open drainage channel or buried

drainage pipe and this will be confirmed by walkover survey. There appears to be an open drainage channel that runs along the perimeter of the agricultural field to the south-east of the junction. This is likely to be an agricultural drainage ditch of low sensitivity but as with all surface waters should be afforded protection against the potential impacts on water quality that may arise during construction and operation.

A pond is located in close proximity to the red line boundary at the south-east corner of the A38 Taunton Road / Marsh Lane on the depot land. This surface water feature may potentially be impacted from surface drainage leaving the improvement works area, particularly during the construction phase. There is a surface drainage ditch located to the east of the improvement works area but this appears sufficiently distant from the boundary to be outside the area of potential surface drainage impact influence. Details of the scheme with respect to how the land in south-east will be used will be reviewed once they are available in order to further assess the potential impact.

A surface drainage channel is indicated on the red line boundary plan, flowing into the red line bounded area of the Wembdon Rise scheme from the south-west (north side of the B3339). This drainage feature appears to flow beneath (or in close proximity) to the road junction. During both the construction and operational phases of the highways improvements, management measures may need to be adopted to ensure the protection of water quality conditions in this surface water feature.

## Flood Risk and Drainage

The highway improvement works would not increase the risk from flooding. Several of the sites are located within Flood Zone 3, however, as the improvements are to existing roads and junctions, no additional receptors would be introduced. Any potential increase in flood risk to off-site receptors could be mitigated against to ensure flood risk is not increased. However, it is likely (given the limited nature of the scope of the works in each case) that the existing highways drainage system would provide sufficient capacity to cope with any limited anticipated increase in surface water runoff. In those areas, if there are any locations which are currently vulnerable to surface water ponding/flooding, the improvement works would include measures to improve the highway drainage system to reduce the surface water flood risk.

## Ecology

Due to the lack of vegetation at most of the highway improvement locations, the potential for valued habitats or species to occur is limited (particularly for the schemes at Eastover/A39 Broadway and A38 Bristol Road/The Drove). Within the centre of Bridgwater there appear to be broadleaved trees at some locations (for example A38 Taunton Road/A39 Broadway, A38 Bristol Road/Wylds Road, West Street/A39 Broadway, Wembdon Rise and Wylds Road/The Drove), which may have features suitable for roosting bats and which may contribute to the Bridgwater Urban Greenspace Local Biodiversity Action Plan habitat. Semi-natural vegetation also occurs along Homberg Way at Quantock Roundabout. Surveys will be undertaken to assess the baseline conditions with respect to bats and general habitat quality. Potential impacts on biodiversity features that may occur at these sites are unlikely to result in significant impacts.

At Huntworth Roundabout the red line boundary overlaps with the J24 Embankment County Wildlife Site (CWS), which has been designated for supporting Roesel's bush-cricket and there are also broadleaved trees. The habitats that appear to occur within the red line boundary may also provide habitat for potentially valuable biodiversity receptors such as reptiles and great crested newts. The A38 Taunton Road/Marsh Lane highway improvement site appears to contain areas of scrub, trees and grassland which may provide habitat for protected species such as birds and reptiles. These sites have the potential to support legally protected and/or potentially valued biodiversity receptors. However, it is anticipated that the magnitude of impact would be low and significant impacts are unlikely to occur (although there may be a requirement to comply with the relevant protected species legislation). Depending on the scale of the works, ecological survey work may be required for these scheme proposals.

## Historic Environment

Due to the urban location of the majority of the schemes it is likely that previous ground disturbance associated with construction of the existing highways or junctions would have removed any buried archaeological remains.

The Huntworth roundabout is located in an area of high archaeological potential. The Quantock Roundabout is located in an area of uncertain archaeological potential. The land take required for these schemes is minimal and therefore the likely impact magnitude to any buried archaeological remains would be very low. Groundworks and works compounds for these schemes may result in an increased, low magnitude of impact. The impact significance is not expected to be greater than minor adverse, and in all probability, would be negligible.

## Landscape and Visual Impact

The majority of the highway improvements would have negligible impact on landscape/townscape character and visual amenity during their construction and operation. Most of the schemes are located predominantly within the existing highway boundaries. For some of the proposals (for example the M5 Junction 24, Wylds Road/The Drove and A38 Bristol Road/Wylds Road schemes) there is the potential for the works to encroach into areas of existing roadside vegetation which is of variable density and character. In all cases the vegetation is not considered to be of high landscape value. If vegetation is removed, local visual impacts of minor adverse significance would potentially occur during the operational phase of certain of the schemes. Generally, significant visual changes would not be readily perceptible on completion.

Due to the short-term nature of highway improvements the construction phase, impacts are not anticipated to be significant.

Typically the potential lighting impacts would be negligible, apart from the Quantock Roundabout, where the proximity of the Quantock Hills AONB and residential properties could increase the significance of adverse impacts on selected receptors from negligible to minor adverse.

## Socio-economics

There are a number of potential areas which may be impacted as part of the schemes which include garden areas, car parks, landscaping, paths and a post box. The boundaries of some schemes directly abut a number of properties. The scheme designers will confirm the impacts on accessibility of commercial and residential properties, including parking.

The temporary impacts during construction are likely have a minor adverse impact on amenity and possibly on the operation of business in adjacent properties.

The permanent socio-economic impact on commercial sites will be negligible subject to agreement with relevant parties and the ability to continue to operate facilities effectively. The loss of garden areas from a very limited number of residential properties may be necessary, but this will be kept to an absolute minimum. If garden space is required, EDF Energy will liaise closely with homeowners, recognising the sensitivities that could be involved. An appropriate compensation package may be required for any loss of land. Potential impacts on amenity from increased traffic will be confirmed by noise and air quality assessments.

## Recreation and Amenity

No key receptors with respect to recreation and amenity have been identified in the immediate vicinity of the Huntworth Roundabout or West Street/A39 Broadway. Therefore no impacts are expected to be associated with these schemes.

Recreational facilities including gardens, parks, health and fitness clubs and the Bridgwater Lawn Tennis Club have been identified in the vicinity of the schemes. A cemetery is also located to east of the scheme at A38 Bristol Road/Wylds Road. These facilities are located at distances ranging from 60m to 550m (typically greater than 100m) therefore no direct impact or loss to the receptors would be expected. However, potential indirect noise disturbance, and at a few locations at shorter distances, visual disturbance could occur during construction works.

A Public Rights of Way (PRoW) (reference BW38/26) connects the south-west corner of the junction on the left hand site of the A38 at the A38 Taunton Road/A39 Broadway scheme. A PRoW (reference BW23/69) also connects to the lay-by on the theon roundabout on the right hand side of the Quantock Road out of Bridgwater, just before the road joins the roundabout (reference BW38/13). At these locations short-term obstruction to the PRoW could arise during construction.