

Midland Metro

8 Conclusions

This section of the ES sets out the conclusions from the EIA and provides a summary of the main impacts of the scheme. It lists the key mitigation measures that will be applied, confirms the means by which this mitigation will be delivered and identifies the significant residual effects persisting after mitigation. This summary is set out in *Table 8.1* below.

On a wider level, the scheme will aid urban regeneration in the area it serves, by encouraging investment, improving the image of the area and encouraging civic pride. The scheme will also improve public transport links by providing interchange with heavy rail at Dudley Port and Snow Hill stations, in addition to Wolverhampton Station via Midland Metro Line 1.

The scheme will inevitably cause a degree of disruption while it is being constructed, as with most major transport infrastructure schemes. Construction plant and hoardings will be in relatively close proximity to properties, particularly when the scheme is located in the existing railway corridor, and will be visible to those adjacent to the route. In particular, noise impacts are expected to occur at some properties located adjacent to the proposed alignment during enabling works and track works. However, these works will be temporary in nature. Drivers, public transport users, pedestrians and cyclists will experience delays during temporary road and footway closures and diversions.

In street running sections, in Dudley and Brierley Hill, the scheme will also modify highway priorities. In some areas, where the level of traffic is reduced, this will give rise to an improvement in the environment for pedestrians and cyclists. This may also have a positive effect on traffic-related levels of noise and air pollution in the city centre. In other areas, where there is an increase in traffic, congestion may be unavoidable.

The scheme will introduce new infrastructure such as poles, stops, sub-stations and park and ride sites. High quality design, materials and workmanship will be used in agreement with Sandwell and Dudley Metropolitan Borough Councils to ensure that any impacts on townscape, and on the setting of listed buildings and conservation areas, is minimised. In a number of areas this will result in an improvement to the existing townscape. However, in other areas, some long term negative impacts will be unavoidable.

It will also be necessary to remove some existing vegetation where the scheme follows the existing railway corridor. This will be mitigated through improved management of existing nature conservation resources and, where possible, replacement planting. Where it is not possible to replace this vegetation due to the potential for interference with the operation of the scheme, the overall value of the existing railway corridor for nature conservation will be reduced.

Overall, the introduction of the Wednesbury to Brierley Hill scheme will have a significant, positive effect on the Sandwell and Dudley areas, in particular giving rise to socio-economic benefits and supporting existing and planned developments by improving access. The scheme will provide an alternative to the private car and a clean, efficient and reliable transport system to supplement the existing Midland Metro route from Snow Hill to Wolverhampton, and heavy rail and bus services.

The scheme will improve accessibility for all passengers, including the mobility impaired. Vehicles will provide level boarding and the entire system, including all stops and park and ride sites, will be fully compliant with the Disability Discrimination Act 1995. Non-car owning residents will also have better access to facilities outside their locality, including shopping, cultural and historic sites, educational and health care facilities and employment opportunities. The scheme will also offer opportunities to enhance the townscape value of areas along the route with high quality design and will become a prominent and positive new feature of the area, particularly in Dudley and Brierley Hill town centres.

Table 8.1 Impacts, Mitigation and Significant Residual Effects

| Impact Type | Key Potential Impacts (without mitigation) | Mitigation | Residual Effect | Means by which mitigation will be delivered |
|----------------------------|--|---|---|---|
| <i>Permanent/Long Term</i> | | | | |
| Socio-economics | Positive scheme-wide effects | - | Positive scheme-wide effects | - |
| Traffic and Transport | Potential for positive and negative effects on the way people are able to use roads on street-running sections of the scheme | Implementation of measures for junction alterations at Dudley and Brierley Hill as detailed in the Transport Assessment | Potential for positive and negative effects on traffic on street running sections | Traffic Regulation Orders |
| Noise and Vibration | Significant noise impacts at specific noise sensitive | Use of noise barriers, where appropriate, to be | No significant effects expected | Planning Condition and Concession Deed |

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| | receptors located adjacent to the proposed alignment | determined during the detailed design phase Maintenance regime to ensure that unnecessary increase in noise levels are avoided | | Centro/Concessionaire |
| | Potential for perceptible vibration and properties directly adjacent to the alignment | Provision of further studies during the detailed design phase to inform the design of the track form | No significant effects expected | Concession Deed |
| | Noise impacts associated with the use of audible announcements at stop, and from the use of stops by passengers | Positioning of audible announcements to screen noise and/or use of a passenger activated announcement for hearing impaired passengers | No significant effects expected | Planning Condition and Concession Deed |
| Air Quality and Climate Change | No significant effects envisaged | - | - | - |
| Landscape and Visual | Moderate significant effects (positive and negative) on landscape/townscape adjacent to residential properties, in town centres and in conservation areas | Stops and OHLE to designed to a high standard Provision of high quality pedestrian surfacing Provision of replacement planting on the railway corridor wherever possible, and amenity planting at stops | Slight to moderate significant landscape/townscape effects (positive and negative) | Planning Condition and Concession Deed Planning Condition and Concession Deed Planning Condition and Concession Deed |
| | Slight significant effects (positive and negative) on landscape/townscape elsewhere | As above | No significant effects expected | As above |
| | Moderate significant visual impacts (positive and negative) adjacent to residential properties, in town centres and in conservation areas | Use of an environmental barrier adjacent at specific properties and replacement planting wherever possible Use of downlighters positioned to minimise light spillage Provision of a screening fence or wall at the rear of stops | Slight to moderate significant visual effects (positive and negative), depending on the degree to which replacement vegetation can be provided | Planning Condition and Concession Deed Planning Condition and Concession Deed Planning Condition and Concession Deed |
| | Slight significant | Use of replacement | No significant effects | As above |

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| | visual impacts (positive and negative) elsewhere | planting wherever possible Use of downlighters positioned to minimise light spillage Provision of a screening fence or wall at the rear of stops | expected | |
| Ecology and Nature Conservation | Habitat loss at the Ocker Hill Site of Local Importance for Nature Conservation, and at along the existing railway corridor | Habitat loss will be minimised wherever possible, and all sites will be checked for the presence of protected species prior to work commencing. Mitigation measures relating to protected species will be agreed with English Nature and Sandwell MBC Replanting with native species where vegetation is lost Measures to improve the habitat will be implemented during the reinstatement of the balancing ponds, in consultation with Sandwell MBC. | Where it is not possible to replace vegetation lost as a result of the scheme, the overall value of the railway corridor for nature conservation will be reduced. | Planning Condition, Concession Deed and CoCP, in agreement with English Nature and Sandwell MBC |
| | Disturbance and/or displacement of protected species and species of note | All sites will be checked for the presence of protected species prior to work commencing. Mitigation measures relating to protected species will be agreed with English Nature Wherever possible habitat will be removed outside the breeding bird season The use of 'bat bricks' where appropriate Enhancement of existing nature conservation areas during landscaping works Translocation of grassland community supporting orchid | No significant effects expected | As above |

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| | | species | | |
| | Secondary impacts on adjacent wetland habitats and watercourses | Best site management practices will be adopted to minimise the risk of secondary impacts to adjacent habitat Use of appropriate drainage techniques | No significant effects expected | CoCP and Concession Deed CoCP and Concession Deed |
| Archaeology and Cultural Heritage | Potential for loss of archaeological resource | Archaeological desk-based assessment, prior to works taking place Provision of an archaeological evaluation, following a specification agreed with Sandwell and Dudley MBCs and English Heritage Archaeological fieldwork where features of archaeological interest are revealed Provision of an Archaeological Watching brief during earthworks | No significant effects expected | CoCP, Planning Condition and Concession Deed CoCP, Planning Condition and Concession Deed CoCP, Planning Condition and Concession Deed CoCP, Planning Condition and Concession Deed |
| | Impacts on the setting of listed buildings and conservation areas | High quality design, workmanship and materials | No significant effects expected | Planning Conditions |
| <i>Short term/Construction</i> | | | | |
| Socio-economics | Positive scheme-wide effects | - | Positive scheme-wide effects | - |
| Traffic and Transport | Disruption due to lane and road closures and footway/cycleway diversions | Temporary traffic measures to be agreed with the highway authority prior to the commencement of works Temporary diversion of cycleways and footways Construction traffic routed to main roads | Potential for disruption to road users, at street-running section of the proposed alignment, although reduced | CoCP, Concession Deed and temporary Traffic Regulation Orders CoCP, Concession Deed and temporary Traffic Regulation Orders CoCP, Concession Deed and temporary Traffic Regulation Orders |
| Noise and Vibration | Moderate to severe short term noise impacts and noise | Various noise management practices including | Slight short term noise impacts are expected to occur at | CoCP and agreement under Section 61 of the Control of Pollution Act |

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| | sensitive receptors adjacent to construction works | <p>the use of mobile noise barriers and inherently quiet plant, where possible CoCP, Concession Deed and temporary Traffic Regulation Orders. Controlled hours of working and the use of Section 61 'prior consent' agreement with Sandwell and Dudley MBCs to ensure Best Practicable Means to control noise and vibration</p> <p>During bored and sheet piling works it may be necessary to temporarily relocate residents from a small number of properties located directly adjacent to the works – to be subject to further investigation during the detailed design phase</p> | noise-sensitive receptors adjacent to the route | 1974 |
| Air Quality and Dust | Scheme-wide effects associated with dust emissions | Good site practice including enclosure of stockpiles, damping down, sheeting of HGVs carrying spoil etc | No significant effects expected | CoCP |
| Landscape and Visual | Moderate to slight negative scheme-wide townscape/landscape effects | Limited opportunities for mitigation | Moderate to slight negative scheme-wide townscape/landscape effects | - |
| | Substantial negative townscape/landscape effects associated with works to the Parkhead Viaduct | Limited opportunities for mitigation | Substantial negative townscape/landscape effects associated with works to the Parkhead Viaduct | - |
| | Moderate to substantial negative visual effects where the construction works are in the vicinity of residential properties and in town centre areas. | <p>Hoarding will be erected around site work areas and materials/machinery stored in a tidy manner</p> <p>Roads and access tracks will be kept free from dust and dirt</p> <p>Lighting of work areas will be positioned to avoid unnecessary spillage and restricted to that</p> | Moderate negative visual effects in residential areas and town centres | CoCP CoCP CoCP |

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| | | which is required for security outside normal working hours | | |
| | Slight negative visual impacts elsewhere on the proposed alignment. | As above | No significant effects expected | CoCP |
| Ecology and Nature Conservation | Potential for pollution of habitat and disturbance to species using the network of canals crossed by the route, which are Wildlife Corridors. | Best site management practices will be adopted to minimise the risk of secondary impacts to adjacent habitat | No significant effects expected | CoCP |
| | Disturbance to and displacement of protected species during construction works | All sites will be checked for the presence of protected species prior to work commencing. Mitigation measures relating to protected species will be agreed with English Nature | No significant effects expected | CoCP and agreement with English Nature and local authority |
| Archaeology and Cultural Heritage | Impacts on the setting of listed buildings and the Castle Hill and Parkhead conservation areas | Limited opportunities for mitigation | Temporary effects to the setting of listed buildings and conservation areas | CoCP, Concession Deed and consultation with Sandwell and Dudley MBCs and English Heritage |
| Water Resources | Potential for pollution of surface and groundwaters during construction | Control and management of site drainage Control and management of foul drainage Secondary containment facilities for fuel and oils Protection of groundwater | No significant effects expected | CoCP CoCP CoCP CoCP |
| Contaminated Land | Potential to encounter contaminated land during construction. Resultant impacts associated with mobilisation of pollutants, waste disposal and health and safety. | Site investigation prior to works Protection of surface watercourses and groundwater Management plans to comply with handling and disposal legislation | No significant effects expected | CoCP CoCP CoCP |
| Non-hazardous Waste | Handling and disposal of waste materials | Management plan to comply with handling and disposal legislation | No significant effects expected | CoCP |

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- ([1]) Centro (February 2002) **Midland Metro Future Routes, Position Statement Number 1, The Midland Metro.**
- ([2]) HM Treasury (1995) **A Framework for the Evaluation of Regeneration Projects and Programmes.**
- ([3]) The gross number of jobs is the total number of jobs created by the construction of the scheme. The net number of jobs refers to those taken up in the local area.
- ([4]) Babbie (February 2003) **Construction Strategy Report, Midland Metro Line 3 (Wednesbury to Brierley Hill), Rev. C.**
- ([5]) BS 5228 **Noise and vibration control on construction and open sites, Part 1, Code of practice for basic information and procedures for noise and vibration control**, BSi 1997.
- ([6]) Institute of Environmental Management and Assessment and Institute of Acoustics (April 2002) **Guidelines for Noise Impact Assessment**, Consultation Draft.
- ([7]) British Standard BS 5228 Part 4 (1992) **Noise control on construction and open sites, Part 4. Code of practice for noise and vibration control applicable to piling operations.**
- ([8]) BS 5228 Part 4, op cit, Table 8 Reference 105.
- ([9]) Defined in section 79 (9) of the Environmental Protection Act 1990
- ([10]) A reduction in noise levels of 3 dB will give rise to a noticeable reduction in noise levels. A reduction of 10 dB equates approximately to a halving of the loudness of the noise.
- ([11]) The effects of screening provided where the works are in a cutting has not be taken into account in predicting construction noise levels, and hence, these levels should be considered to be worst case
- .
- ([12]) Data obtained from BS 5228: Part 4, Appendix C, Table 10.
- ([13]) Baughan C J (1980) **Nuisance from road construction: a study at the A31 Poulner Lane Diversion, Ringwood** - TRRL Supplementary Report 562, from DTLR (1994) Design Manual for Roads and Bridges.
- ([14]) Department of Transport et al (August 1994) **Design Manual for Roads and Bridges, Volume 11, Environmental Assessment, Section 3, Part 3, Disruption due to Construction.**
- ([15]) Building Research Establishment (July 2002) **Guidance on the Control of Dust from Construction and Demolition Activities**, www.bre.co.uk.
- ([16]) www.environment-agency.gov.uk.
- ([17]) Environment Agency (March 1999) **Local Environment Agency Plan, West Midlands - Tame** and associated Consultation Report, March 1998.
- ([18]) Sandwell Metropolitan Borough Council **Unitary Development Plan**, Revised Deposit Draft, March 2001.
- ([19]) Dudley Metropolitan Borough Council, **Revised Deposit Draft**, February 2002 and First Deposit June 2000.
- ([20]) BOD is a measure of the oxygen used by micro-organisms to decompose organic waste. High levels of BOD indicate that the demand for oxygen is high, which affects the survival of fish and other species dependant on dissolved oxygen.
- ([21]) Health and Safety Commission (2002) **Managing Health and Safety in Construction - Construction (Design and Management) Regulations 1994, Approved Code of Practice and Guidance.**
- ([22]) In this context 'designer' includes architects, civil and structural engineers, building surveyors, landscape architects and designers (of whatever discipline) contributing to, or having overall responsibility for, any part of the design.
- ([23]) Sandwell Metropolitan Borough Council , **Revised Deposit Unitary Development Plan**, March 2001.
- ([24]) Metropolitan Borough of Dudley, **Revised Deposit Unitary Development Plan**, February 2002.
- ([25]) The likelihood of contaminants reaching a receptor.
- ([26]) The potential significance of contamination reaching a receptor.
- ([27]) Landmark Information Group Service (June 2002) **Envirocheck Report on: Brierley Hill Line**, prepared for ERM.
- ([28]) By letter dated 21st August 2002.
- ([29]) Based on estimates provided by Babbie Group, February 2003.
- ([30]) HMSO (1996) **Waste Management: The Duty of Care - A Code of Practise.**

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