

DEDC Strategic Outline Business Case

Environmental Impacts Report
December 2015



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1. Introduction

1.1 Background

This technical note documents the methodology and findings of the Environmental Assessment undertaken for the Darwen East Development Corridor scheme.

Capita were commissioned by Blackburn with Darwen Borough Council to undertake an Environmental Assessment of the Darwen East Development Corridor Improvements Scheme in support of the formulation of a Strategic Outline Business Case (SOBC).

Environmental Impact Appraisal is undertaken as part of the transport appraisal process in order to inform the business case for a transport investment proposal.

The environmental impacts include monetised impacts such as Noise, Air Quality and Greenhouse gases and non-monetised impacts like Landscape, Townscape, Historic Environment, Biodiversity and Water Environment.

Appraisal of these impacts should be possible at any stage in the development of proposals. At all stages, a proportionate approach should be adopted; excessive detail should be avoided - the level of detail should be no more than is needed for robust decisions to be taken.

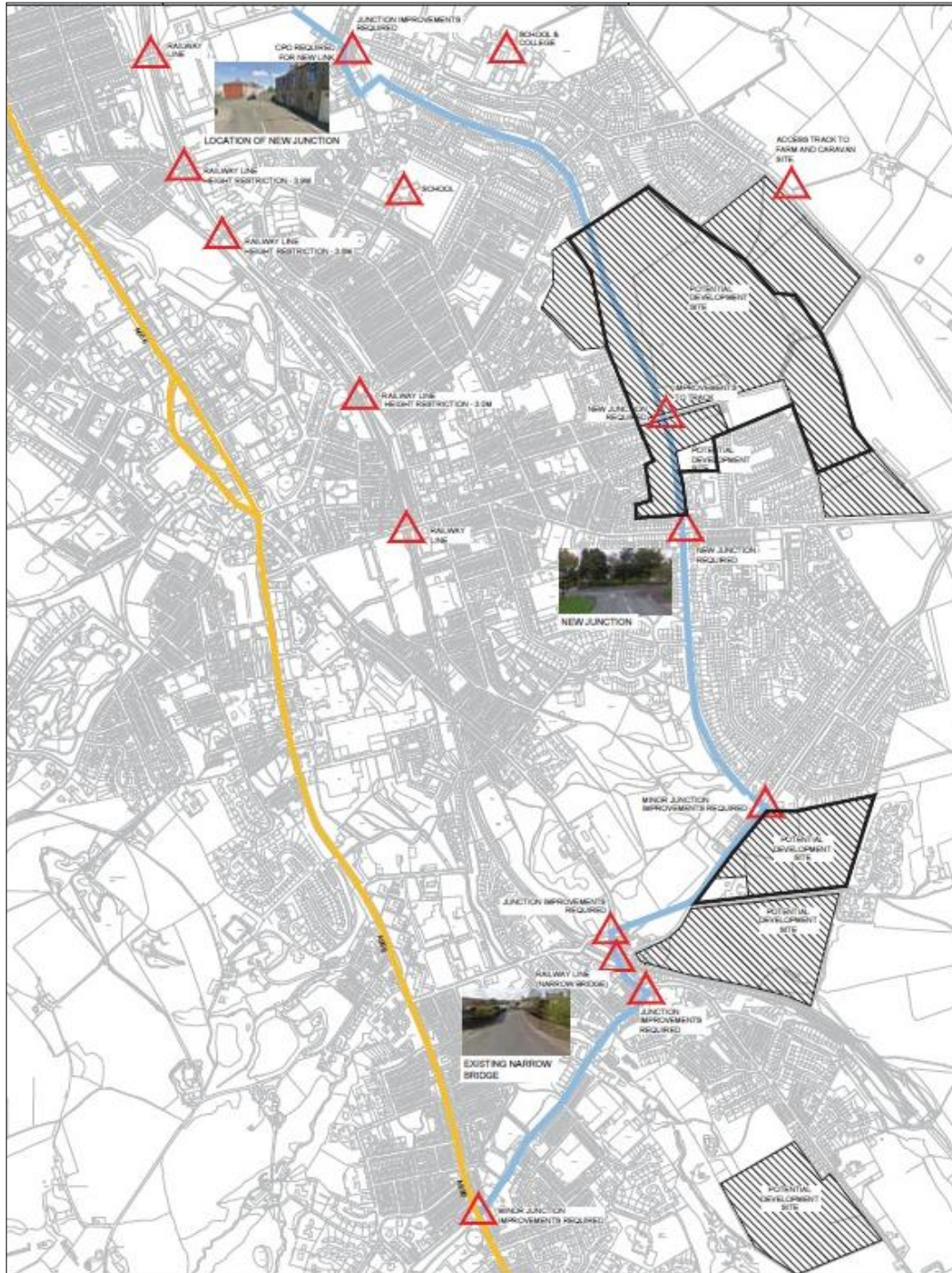
1.2 Overview of Scheme

Figure 1.1 overleaf shows the route of the proposed DEDC, and highlights the areas of constraint.

The DEDC package includes the following improvements:

- Widening of the railway bridge crossings at Sough Road and Grimshaw Street;
- Junction Improvements at Sough Road/Grimshaw Street/Pole Lane;
- Junction Improvements at Pole Lane/Priory Drive;
- A new junction at Priory Drive/Marsh House Lane in order to facilitate a new Link Road;
- A new Link Road across the East Darwen Allocation Site between the above junction and Ivinson Road;
- A short extension to Ivinson Road to create a link to Chapels
- Junction Improvements at Chapels/Goose House Lane/Moor Lane.

Figure 1.1 – Darwin East Development Corridor, Constraints Plan



1.3 Overview of Approach

The purpose of this environmental assessment is to identify potential environmental constraints along the proposed route and at each proposed intervention. Potential adverse or beneficial environmental impacts associated with the proposed scheme are identified.

The baseline situation is identified and is then used to inform an overview environmental assessment.

The study area for this report includes the entirety of the DEDC route, primarily focussing on the specific improvements identified in Section 1.2 above. The specific study area varies depending on the variable being analysed and is described in the corresponding section.

The environmental assessment has been carried out under the sections, definitions and guidance provided in WebTAG Unit A3: *Environmental Impact Appraisal*. The assessments are qualitative, as appropriate for non-monetised impacts, and informed by professional judgement and available guidance. The remainder of the report will therefore cover the following topics:

- Air Quality;
- Noise;
- Greenhouse Gasses;
- Landscape Assessment;
- Townscape Assessment;
- Historic Assessment; and
- Appraisal Summary Report

2. Environmental Assessment

2.1 Environmental: Air Quality

DfT WebTAG guidance (Unit A3: Environmental Impact Appraisal) states that “scoping should be carried out consistent with the scoping of the environmental assessment. The air quality appraisal should be proportional to the scheme and its proposed impact.”

The need for air quality assessment is determined in accordance with traffic change criteria set out in HA207/07 DMRB Vol 11, Sec 3, Pt 1, based on comparing the ‘Without Scheme’ (Do Minimum) and ‘With Scheme’ (Do Something) scenarios in the opening year. The following thresholds are given to indicate a need for further assessment:

- Road alignment will change by 5m or more; or
- daily traffic flows will change by 1,000 annual average daily traffic (AADT) or more; or
- HDV flows will change by 200 AADT or more; or
- daily average speed will change by 10 km/hr or more; or
- peak hour speed will change by 20 km/hr or more.

The DEDC is not intended to provide relief to the existing arterial routes through Darwen (primarily the A666 and Roman Road); the purpose of the scheme is to facilitate the growth identified in the Local Development Plan. As such, the assessment of the scheme does not take into account any transferring of vehicular trips from one route to another; junctions are improved to increase capacity and reduce queuing and delay. The ‘Do Minimum’ scenario still includes the development sites, but assumes there is no improvement at existing junctions, only the minimum required to allow the proposed development sites to connect to the existing network.

Because of this adopted approach, the AADTs along the proposed route do not significantly alter between the ‘Do Minimum’ and ‘Do Something’ scenarios. As a result of the scoping undertaken, it is considered that there will be minimal change between the two scenarios, and no change will approach the thresholds detailed above.

WebTAG Unit A3 states that “Where air quality impacts are deemed to be minimal, the analysis of air quality impacts may be scoped out.” It is therefore considered that, given the minimal changes expected along the route, it is proportional and appropriate to remove the need for further analysis of air quality impacts. Potentially, this approach may understate the benefits of the scheme, as improvements in junction efficiency and the associated reduction in delay per PCU could lead to a decrease in vehicles queuing, congestion, and associated emissions.

2.2 Environmental: Noise

Changes in the highway network can result in changes in noise levels, from alterations to the physical infrastructure to changes in the level of demand or proportion of HDVs utilising the network. The general principle of DMRB Vol 11 Sec 2 allocates an assessment method according to risk, and the assessment of noise and vibration impacts follows the same process. This process uses three levels of assessment: i) scoping; ii) simple; iii) detailed.

The assessment approach is designed to be proportionate; consequently, the level of assessment will depend upon the potential for impacts to occur, and this will in turn depend upon the scale of the proposed road project, the site and local circumstances, and the location of sensitive receptors. This approach can be equally applied to all road projects, including new construction, improvement and maintenance. A key part of the process is to be able to conclude when either no effects will occur or the level of assessment is sufficient for the effect to be understood. Therefore the process includes several exits points when these points have been reached to avoid unnecessary effort.

During the scoping exercise, it has been identified that there are a number of sensitive receptors within the calculation area specified in the DMRB (Vol 11 Sec3 Pt 7), primarily consisting of residential properties but also consisting of a small number of schools.

However, due to the nature of the scheme, there is no change in the 18-Hour AAWTs between the Do Minimum and Do Something scenarios in each assessment year. The only additional infrastructure is the link road between Marsh House Lane and Ivinson Road, with a priority junction into Chapels at the northern extent in the Do Something scenario; the rest of the Do-Something scheme consists of improvements to existing junctions. Therefore, the only section of the DEDC that is likely to cause increases in the level of noise is along the intended route of the link road, where no road currently exists. Table 2.1 below shows the predicted 18-hour AAWTs based on the assumptions outlined in the agreed methodology.

Table 2.1 – Ivinson Road AAWTs

Iverson Road AAWT (18hr)		
Scenario	2018	2026
Core Scenario	421	1182
Low Growth	404	1105
High Growth	438	1258

The predicted AAWTs indicate that the link road will experience relatively low demand even in the highest expected growth scenario. Utilising the CRTN (Calculation of Road Traffic Noise, 1988) it is suggested that such a low demand will create a basic noise level (L_{10} 18-Hour) of

less than 60db, less than would be expected due to existing traffic in the vicinity of affected receptors.

Consequently, it is considered that the proposed DEDC scheme will have a negligible impact on noise in the vicinity, and in accordance with WebTAG Unit A3 that any further evaluation should be 'scoped out'.

2.3 Environmental: Greenhouse Gasses

The Climate Change Act 2008 creates a new approach to managing and responding to climate change in the UK. At the heart of the Act is a legally binding target to reduce the UK's greenhouse gas emissions to at least 80 per cent below base year levels by 2050, to be achieved through action at home and abroad. To drive progress towards this target, the Act introduces five year "carbon budgets", which define the emissions pathway to the 2050 target by limiting the total greenhouse gas emissions allowed in each five year period, beginning in 2008.

It is important that the impacts of proposed transport schemes on greenhouse gas emissions - whether they are increased or decreased – are incorporated within the appraisal in a consistent and transparent way. Changes in greenhouse gas emissions from vehicles depend on changes in flows, speeds and distance travelled.

Determining a proportional approach to assessing these changes is initially done as part of a scoping exercise. As guided by WebTAG Unit A3, scoping follows the same guidelines and utilises the same thresholds as those used in assessing air quality.

As described above, changes in air quality associated with the proposed DEDC have been deemed to be minimal based on the scoping exercise. As such it is appropriate to also 'scope out' the appraisal of Greenhouses Gasses, as any impact is likely to be negligible.

2.4 Environmental: Landscape

The methodology to be used for appraising the landscape and townscape is based on a qualitative 'environmental capital' style approach. Assessing the landscape requires more than simply an assessment of the views. It is concerned with the combination of the physical and cultural characteristics of the land itself (i.e. its use and management) and the way in which we perceive those characteristics. This mix of characteristics and perceptions contributes to the landscape character and gives a location a "sense of place".

It is important to recognise that both the characteristics of the landscape themselves and the way in which we perceive these characteristics may change over time in the absence of a scheme. As far as possible, any significant changes should be taken into account during the formulation of the baseline against which the impact of a scheme on the landscape is to be appraised.

The impact assessment on landscape was undertaken using the standard Landscape Worksheet from WebTAG Unit A3. The output of the assessment is that the scheme without mitigation would have a slight adverse effect on the landscape in the immediate vicinity, as the creation of new infrastructure—particularly over the open space of Bailey's Field—is likely to impact slightly on certain views into and across the area and cannot be completely integrated into the landscape.

The full results of the Landscape impact appraisal are presented in **Appendix A**

2.5 Environmental: Townscape

Townscape refers to the physical and social characteristics of the built and non-built urban environment and the way in which we perceive those characteristics. It is this mix of characteristics and perceptions that make up and contribute to townscape character and give a 'sense of place' or identity.

It is sometimes difficult to distinguish the boundaries between townscape and landscape and between townscape and historic environment. It is often the success of the interaction between all three that determines how well a place works. The impacts of a transport proposal on all three (landscape, townscape and historic environment) should therefore be appraised, recognising the interplay where appropriate.

The approach for appraising townscape is analogous to the methodology used for landscape and incorporates the principles of good practice urban design. The appraisal was undertaken using the standard Townscape Worksheet from WebTAG Unit A3. The output of the assessment is that the scheme without mitigation would have a slight adverse effect on the townscape in the immediate vicinity of the link road and extension of Ivinson Road through the loss of Bailey's field and the introduction of new infrastructure in close proximity to dwellings.

The full results of the Townscape impact appraisal are presented in **Appendix B**.

2.6 Environmental: Historic Environment

The evaluation of impacts on the historic environment ('heritage', or heritage resource, heritage assets) comprises:

- buildings (individually or in association) of architectural or historic significance;
- areas, such as parks, gardens, other designed landscapes or public spaces, remnant historic landscapes and archaeological complexes; and
- sites (e.g. ancient monuments, places with historical associations such as battlefields, preserved evidence of human effects on the landscape, archaeological sites and so on).

The historic environment also includes the sense of identity and place which the combination of these features provides.

The scoping work carried out shows that there are 26 listed buildings in Darwin, and that there are no historic resources within the scheme corridor. It has been determined that there should be no physical impacts to above-ground heritage assets (e.g. Listed Buildings), arising from the DEDC. Ground works associated with the proposed local highway improvements would have the potential to truncate or destroy any as yet unknown archaeological remains buried within the scheme's land take; however, this is very unlikely due to the extent of the scheme.

Considering the limited extent of the scheme, any potential impact is anticipated to be minor, and any further historic assessment is therefore 'scoped out'.

3. Summary

3.1 Appraisal Summary Table

The Environmental Assessment and the potential effects from the proposed improvement works are summarised in the Appraisal Summary Table below.

Table 3.1 – Appraisal Summary Table

Environmental Impacts		
Impact	Qualitative Assessment	
Noise	The scoping undertaken indicates that the levels of noise are unlikely to significantly change, and will be of an insignificant level where new infrastructure is created. It is therefore determined that further analysis is unnecessary and impacts negligible.	0
Air Quality	The scoping undertaken indicates that air quality in the area is unlikely to change significantly as a result of the proposals. Therefore it is determined that further analysis is unnecessary and impacts negligible.	0
Greenhouse Gasses	The negligible predicted changes in air quality should also result in minimal changes to the levels of greenhouse gasses in the area. Therefore it is determined that further analysis is unnecessary and impacts negligible.	0
Landscape	The scale and scope of the DEDC is likely to have minimal or no impact on the character and landscape overall. In the immediate vicinity, the creation of new infrastructure, particularly over the open space of Bailey's Field, is likely to have a slight adverse effect, as it will impact slightly on certain views into and across the area and cannot be completely integrated into the landscape.	-1
Townscape	The majority of the proposals will have a minimum effect on the townscape, comprising mainly of improvements to existing junctions. The link road and extension of Ivinson Road may have impacts through the loss of Bailey's field, and the introduction of new infrastructure in close proximity to dwellings.	-1

Historic Environment	The scoping exercises indicates that there are unlikely to be any above-ground impacts on the historic environment caused by the proposals. Therefore it is determined that further analysis is unnecessary and impacts negligible.	0
+3	Large Beneficial Impact	
+2	Moderate Beneficial Impact	
+1	Slight Beneficial Impact	
0	Neutral	
-1	Slight Adverse Impact	
-2	Moderate Adverse Impact	
-3	Large Adverse Impact	

Appendix A

Landscape Impacts Proforma

TAG Landscape Impacts Worksheet

Features	Step 2	Step 3				Step 4
	Description	Scale it matters	Rarity	Importance	Substitutability	Impact
Pattern	The landscape of Darwen is characterised by the valley in which the town is sited. The DEDC climbs from the valley floor in the south up the eastern slope in a northward direction. The majority of the immediate surrounding area consists of an urban landscape interspersed with green open areas. Open countryside is visible at the outer extents of the town, characterised by farming and moorland.	The pattern matters locally, as it contributes to the sense of place.	The pattern is not uncommon regionally.	The landscape is important locally and regionally, lying at the outskirts of the green belt and supporting local farming industry.	Substitution is not required.	The introduction of further road infrastructure into the area is expected to have a slight adverse impact pattern in the immediate vicinity. The effects will be neutral from further afield.
Tranquillity	The tranquillity of the study area is largely dependant on the proximity to the A666 and the town centre, running along the valley floor. As the DEDC moves north-east it moves into residential areas close to the rural regions, where there is a greater degree of tranquillity. Despite this, the urban environment and high-trafficked roads limit the potential tranquillity.	Tranquillity matters at a local, regional and national level.	This level of tranquillity is not uncommon locally or regionally.	Considering the urban environment, the level of tranquillity is not considered to be of high importance.	It would not be possible to substitute the level of tranquillity.	The introduction of further road infrastructure into the area is expected to have a slight adverse impact on tranquillity.
Cultural	The landscape across Darwen in the vicinity of the DEDC varies depending on the exact location. Toward the northern extent the views are more extensive, and take into account more of the historic town, with the India Mills chimney and Jubilee Tower dominant. There is a marked contrast between the urban and rural environments visible. Locally, Bailey's Field (which comprises the majority of the East Darwen allocation site) is considered to be an asset to the community, providing a place where local people can make recreational use of the natural surroundings.	The cultural aspects of the landscape matter both locally and regionally, with listed buildings of regional importance.	The cultural aspects are specific to Darwen and are therefore rare.	The cultural aspects are important locally and regionally, and to a lesser degree nationally.	Substitution is not required.	The scheme will not have an impact on the cultural aspects, and is therefore considered to have a neutral effect .
Landcover	Landcover in the vicinity of the DEDC is predominately composed of urban elements. The urban environment is broken up by areas of improved grassland and semi-natural woodland providing recreation and open areas. To the east there is a mix of agricultural land used for grazing livestock, and moorland. Bailey's Field is an old mining site, since left untended, and is now an area of semi-improved grassland with a variety of species.	The landcover matters locally, creating a sense of place and is integral to certain types of employment.	The land cover is not uncommon.	The landcover is important locally and regionally.	Substitution is not desirable. It is expected that any development will feature elements of green space to mitigate any loss; however, this is outside the scope of the DEDC.	The scheme will have a slight adverse impact where the link road and extension to Ivinson Road will result in the loss of open areas used to a degree for recreational purposes.
Summary of character	In the vicinity of the DEDC Darwen is a locally and regionally common urban/suburban landscape, influenced by modern infrastructure and housing developments. This is interspersed by a number of pre-war terraces, industrial units and open green spaces. The landscape across Darwen has a number of culturally significant buildings contributing to the local character.	The character matters locally, as it creates a sense of place to the town.	The character is typical of a post-industrial town, and is not considered rare.	The character is important locally and regionally.	Substitution is not necessary.	The DEDC will not have an impact on the character of the town overall, and will have a slight adverse effect locally.

Reference Sources

TAG Unit A3: Environmental Impact Appraisal, National Planning Policy Framework (NPPF), Blackburn with Darwen Local Plan Part 2, IAN 81/06 Vol 11 Sec 2 Pt 5 Assessment and management of Environmental Effects, IAN 135/10 Landscape and Visual Effects Assessment, Natural England: An Approach to Landscape Character Assessment.

Step 5 - Summary Assessment Score

Slight Adverse Effect

Qualitative Comments

The scale and scope of the DEDC is likely to have minimal or no impact on the character and landscape overall. In the immediate vicinity, the creation of new infrastructure, particularly over the open space of Bailey's Field, is likely to have a slight adverse effect, as it will impact slightly on certain views into and across the area and cannot be completely integrated into the landscape.

Appendix B

Townscape Impacts Proforma

TAG Townscape Impacts Worksheet

Features	Step 2	Step 3					Step 4
	Description	Scale it matters	Rarity	Importance	Substitutability	Changes in Without-scheme case	Impact
Layout	The route of the DEDC is pass through various residential areas across eastern Darwen. The townscape along the route is characterised by suburban housing interspersed by areas of recreational green space. Properties vary from large terraces along Watery Lane to detached and semi-detached single-storey dwellings along Priory Drive and terraced / semi-detached council properties around Ivinson Road.	The layout matters at a local and regional level.	This layout of development is not uncommon.	This layout is important locally, especially considering the preponderance of gardens and open space.	Substitution is not desirable. Future developments will take into account the layout of the area and be sympathetic to the existing character.	No significant changes to the townscape are foreseen beyond the sites currently allocated for housing discussed within this document.	The DEDC is primarily focussed on junction improvements that will not affect the townscape. The creation of the link road and the associated east Darwen housing development across Bailey's Field would have a slight adverse effect to the local immediate townscape, resulting in the loss of a popular resource.
Density and mix	The density and mix in the vicinity of the DEDC predominantly consists of residential properties, with schools and local shops creating elements of mixed use. Properties generally have front and rear gardens, and in conjunction with the open green spaces creates a lower density.	The density and mix matters at a local and regional level.	This density and mix of housing is not uncommon.	This density and mix is important at a local and regional level.	Substitution is not necessary.	The proposed developments in the vicinity of the scheme are expected to maintain the current density and mix.	The scheme will not have an impact on density or mix.
Scale	Buildings are almost exclusively two-storey and below, creating a low-lying townscape. The valley floor location adds more scale as the townscape climbs the valley sides.	The scale matters at a local and regional level.	This scale is not uncommon locally or regionally.	The scale is important at a local and regional level.	Substitution is not necessary.	It is expected that any proposed developments in the vicinity will maintain the townscape.	The proposals will not affect the scale.
Appearance	The route pass through a number of housing estates, each constructed in a fashion reflecting their age and available materials. Along the valley floor homes are predominantly built from local stone, while the new estates to the east are red brick, with a number having pebbledashed facades.	The appearance matters at a local and regional level.	This appearance is not uncommon locally or regionally.	The appearance is important at a local and regional level.	Substitution is not necessary.	It is expected that any proposed developments in the vicinity will maintain the townscape.	The proposals will not have an impact on the appearance.
Human interaction	The area is predominantly formed of private dwellings, and the distance from the town centre means pedestrian flows are minimal. Common interactions occur within the local open areas popular with dog walkers. Pedestrian facilities are of a high standard with some traffic calming measure where appropriate, and the area is well maintained.	Human interaction matters greatly at a local level and matters at a regional level.	The level of human interaction is not uncommon.	The level of interaction is important at a local level, and provides a sense of community and vibrancy.	Substitution is not desirable. It is expected that any development will feature elements of green space to mitigate any loss; however, this is outside the scope of the DEDC.	No significant changes to the levels of human interaction are foreseen beyond the sites currently allocated housing discussed within this document.	The proposals may have a slight adverse effect on human interaction as they necessitate the creation of a link road across Bailey's Field, which is used locally for recreational purposes. The route will cross a Public Right of Way.
Cultural	In the vicinity of the A666 there are a number of older buildings and Whitehall public park which contribute to the traditional feel of the local townscape. The majority of the buildings along the route are modern builds from a number of developments.	The cultural effects matter at a local and regional level.	The cultural elements are not rare.	The buildings are important locally to provide a sense of place.	Substitution is not necessary.	It is expected that any proposed developments in the vicinity will maintain the cultural elements of the townscape.	The proposals will not have a cultural impact.

Land use	The land use is predominantly residential properties, with a small number of industrial properties, schools and public facilities.	The land use matters at a local and regional level.	The land use is not rare.	The townscape is important locally and regionally.	Substitution is not necessary.	It is expected that any proposed developments in the vicinity will maintain the townscape.	The proposals will facilitate further land use in the area and promote growth.
Summary of character	East Darwen features some older properties evoking the industrial heritage of the town, but is predominantly modern developments comprised of various estates.	The character matters at a local level as it creates the sense of place. The modern aspects matter less at a regional level.	This character is not rare.	The townscape is important locally and regionally.	Substitution is not necessary.	No significant changes to the townscape are foreseen beyond the sites currently allocated for housing discussed within this document.	The scheme will not have an impact on character.

Reference Sources

TAG Unit A3: Environmental Impact Appraisal, National Planning Policy Framework (NPPF), Blackburn with Darwen Local Plan Part 2, IAN 81/06 Vol 11 Sec 2 Pt 5 Assessment and management of Environmental Effects, IAN 135/10 Landscape and Visual Effects Assessment.

Step 5 - Summary Assessment Score

Slight Adverse Effect

Qualitative Comments

The majority of the proposals will have a minimum effect on the townscape, comprising mainly of improvements to existing junctions. The link road and extension of Ivinson Road may have impacts through the loss of Bailey's field, and the introduction of new infrastructure in close proximity to dwellings.

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