CAPITA

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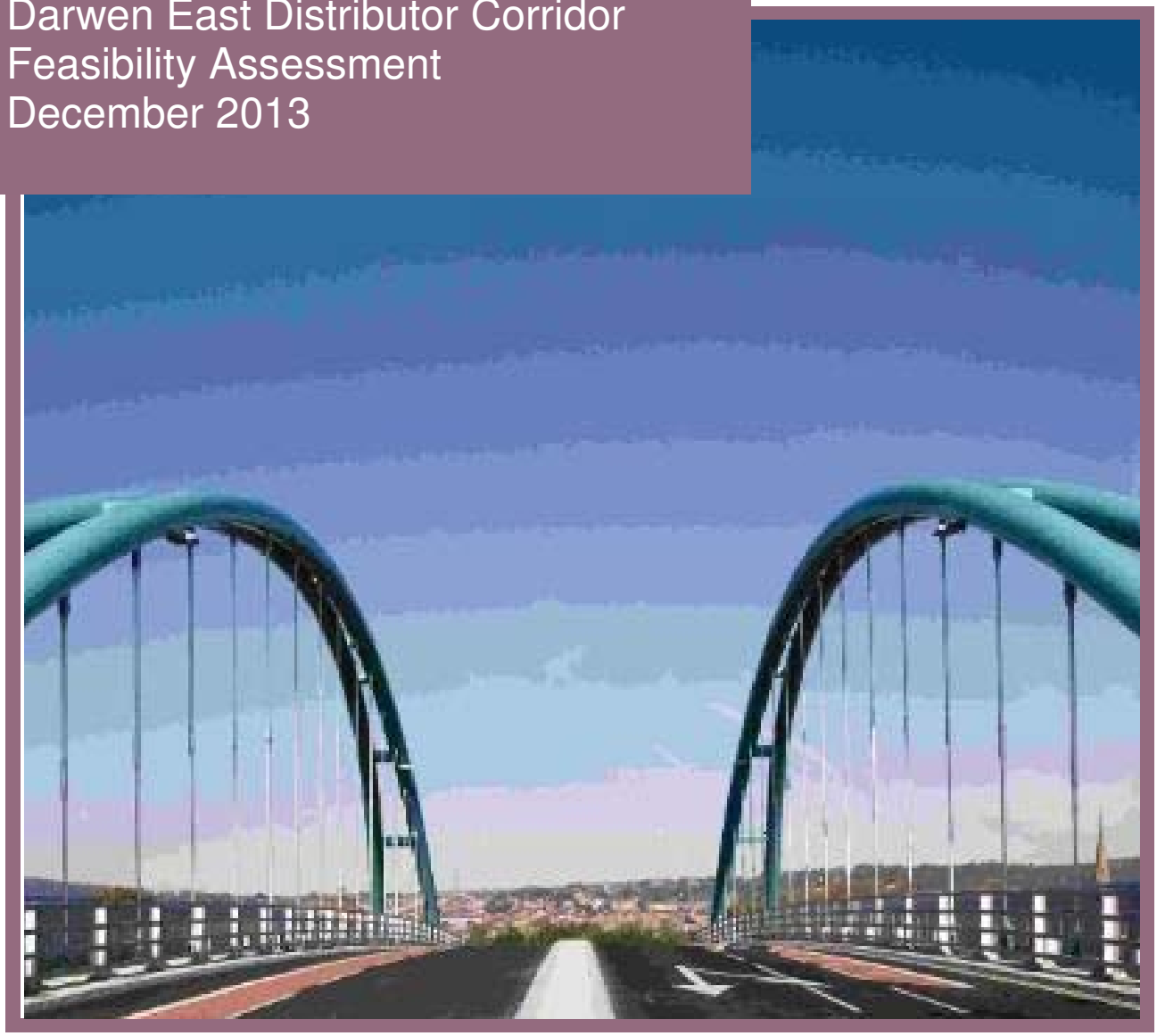
Blackburn with Darwen Local Development Framework

Darwen East Distributor Corridor Feasibility Assessment December 2013



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Executive Summary

Blackburn with Darwen Borough Council is currently exploring the possibility of disposing of council owned land adjacent to Marsh House Lane for housing and that as such there is now a pressing need to undertake a detailed assessment of the proposals to assist in land evaluation and provide evidence for new road infrastructure in a future revision of the LTP and the Local Plan.

Potential Local Plan land allocations up to 2026 across Blackburn with Darwen as of December 2012 consist of a total of 66 hectares of net site area for employment development over 38 sites and 9,365 residential units across 291 sites.

The conclusions from the report Transport Implications on the Local Highway Network – 2013 (TILHN) identified that the existing highway network in Blackburn with Darwen already experiences congestion in the AM period and in particular at some key junctions within the local highway network. When considering the potential impact of additional traffic from development identified in the Local Plan this increases pressures further on the local highway network. The DEDC was considered as a potential mitigation measure as a result of development in the area. This was considered in the TILHN.

Access from the development area to the main highway network is via a limited number of access points across the existing Blackburn – Darwen – Bolton – Manchester railway line. The existing crossing points all have their own constraint characteristics. The existing local highway network has a number of junctions that will require improvement to facilitate access to development sites.

This initial feasibility study seeks to undertake a detailed review and strategic feasibility study of the Darwen East Distributor Corridor (DEDC), to show where the potential route of the corridor and set out the potential approach to implementation based on the information and previous studies to date. It also confirms the understanding of previous work on the Transport Implications for the Local Highway Network.

In developing detailed route proposals and road specification the infrastructure provision has been considered in accordance with the existing constraints with the A666 and Blacksnape Road links and their interconnectivity.

The Corridor Route Layout Options have been assessed against a number of accessibility and technical criteria to determine a preferred option with indicative scheme construction estimates and an implementation and delivery programme provided. The roadway considered for the corridor is a local distributor road that

provides a single two lane carriageway with a width of generally 7.65 metres. The cross section includes for 2.0 to 2.5 metre wide footways on both sides of the roadway

Route Option Layout 1 has, from assessment been deemed the preferred option to take forward for further consideration and development with risk identified with respect to the land and rail crossings required. A construction budget of £4.35M including Optimism Bias and two year implementation programme is estimated based on the current technical assessment. A comprehensive review and amendments to the existing parking and traffic orders along the preferred route would also be required.

Funding options have been identified which include developer contributions. Works to the existing highway directly affected by a development will be subject to Section 278 agreements under the Highways Act. Developer contributions will be sought under Section 106 Agreements under the Town and Country Planning Act. At the planning application stage the developer contribution secured will be subject to an assessment of development viability.

The contribution is based on a calculation per housing unit identified for each plot developed. This is calculated to be £2,880 per unit. Further details are provided later in this document.

To confirm the viability of both the DEDC and associated development land parcels further assessment work is recommended including a topographical survey, initial Flood Risk Assessment and environmental and ecological impact due to the DEDC zone encroaching in to both Green Belt and Moorland designation land.

It is also seen as vital to complete an initial assessment of the existing utilities and potential supply requirements for the DEDC and developable land parcels.

1. Introduction

1.1 Background

Capita has been commissioned by Blackburn with Darwen Council (BwDBC) to undertake a detailed review and feasibility assessment of the highways implications for the Darwen East Development Corridor (DEDC) with regards to the local highway network.

It is intended that this proposal and work interfaces with the Local Plan 2 (Site Allocations and Development Management Policies and recent "Transport Implications on the Local Highway Network" 2013 Report (TILHN) guiding future infrastructure planning proposals.

1.2 Context

The Core Strategy forms the Local Plan Part 1 describing the overall development strategy for the plan area up to 2026. Local Plan 2 Site Allocations, Development Management Policies and the Development Management Development Plan Document forms the Local Plan Part 2 and allocates land required to deliver the development strategy contained within the Core Strategy. It will guide development so that it occurs in the right place, at the right time and in tandem with the necessary new infrastructure.

The Blackburn with Darwen Core Strategy sets a targeted growth strategy over the Plan period directing new development to the two towns of Blackburn and Darwen.

It is important for BwDBC to understand the transport and highway network impacts of the development strategy and proposals detailed in the Local Plan. This informs Blackburn with Darwen's Local Transport Plan Strategy and Implementation Plans. This also allows potential future impacts on the highway network and constraint identified, which may, without intervention make development in a particular location unsustainable.

The Darwen East Development Corridor is seen as a key driver and opportunity to enhance access and infrastructure supporting the release of developable land in the Darwen area. The economic viability of the corridor requires identification and quantification as significant costs associated with delivering such schemes are likely to influence the corridors' routing and provision. It is proposed at this stage of scheme development that the costs associated with the scheme should be developed, tested and assessed to reflect any difference in the standard of road network required and

any associated junction upgrades at intersections with other routes, primarily those being the A666 and Blacksnape Road.

1.3 Purpose

Risk exists where a new development which is intended to boost the local and regional economies results in increased congestion and travel delay that would be detrimental to those economies and local environment.

BwDBC is currently exploring the possibility of disposing of council owned land adjacent to Marsh House Lane for housing and that as such there is a pressing need to undertake a detailed assessment of the proposals to assist in valuation and land sale discussions and provide evidence for new road infrastructure in a future revision of the LTP and the Local Plan.

In order to support an evidence base is required which demonstrates that the corridor and allocated sites are deliverable. This includes showing that the necessary physical infrastructure is in place and will not constrain development going forward. This is further supplemented by the DPD assessment which has shown that key routes/junctions are congested at peak times in proximity to the A666 corridor through Darwen and Blackburn.

It is intended that the findings of this study will act as a base for the allocation of development land in the DPD. When adopted, the DPD will form the statutory Development Plan for Blackburn with Darwen along with the Core Strategy.

The work is required to:

- Assess and review in detail the potential impacts of the Darwen East Distributor Corridor and potential development sites on the local highways network;
- Identify and develop detailed route alignment options;
- Identify and develop the road specification to ensure the infrastructure provision is suitable as consideration of the future corridor proposals; and
- Develop a realistic delivery approach for the road/corridor taking into account council powers, land acquisition, construction phasing and buildability.

1.4 Report Structure

The report includes the following: -

- National and Local Planning Policy;
- Existing Corridor Conditions;
- Route Option Development
- Route and Corridor Option Assessment
- Conclusions and Recommendations.

2. National and Local Planning Policy

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) provides the starting point for infrastructure planning. Paragraph 162 of the NPPF states:

Local Planning authorities should work with other authorities and providers to:

- assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, waste, health, social care, education, flood risk and coastal change management, and its ability to meet forecast demands; and

- take account of the need for strategic infrastructure including nationally significant infrastructure within their areas.

The NPPF states that:

- Local development plans should be supported by a proportionate evidence base;
- Infrastructure requirements should be assessed to enable the amount of development proposed for the area, taking account of its type and distribution;
- The preparation of development plans need to integrate infrastructure planning within overall development strategies; and
- The infrastructure planning process should identify, as far as possible:
    - infrastructure needs and costs;
    - phasing of development;
    - funding sources; and
    - responsibilities for delivery.

2.2 Blackburn with Darwen Local Plan

The Blackburn with Darwen Core Strategy forms Part 1 of the new Local Plan and was adopted in January 2011: it is the borough's overarching local development planning document. It sets out priorities for future planning and development within the borough and is a key policy document used for determining planning applications.

Following the adoption of the Core Strategy, some policies contained within the Blackburn with Darwen Local Plan (2002) were ‘saved’ where they remain consistent with the principles set out within the Core Strategy.

As described in the previous TILHN report, Blackburn with Darwen's emerging Local Plan Part 2 - Site Allocations and Development Management Policies has been published for public consultation provides site allocations and development management policies for the borough and when adopted and will supersede the saved policies in the 2002 Local Plan.

The Spatial Strategy contained within the Core Strategy makes provision for a minimum of 9,365 new homes and up to 66 hectares of new employment land. A key component of the Spatial Strategy is the delivery of key infrastructure required to support this significant level of growth.

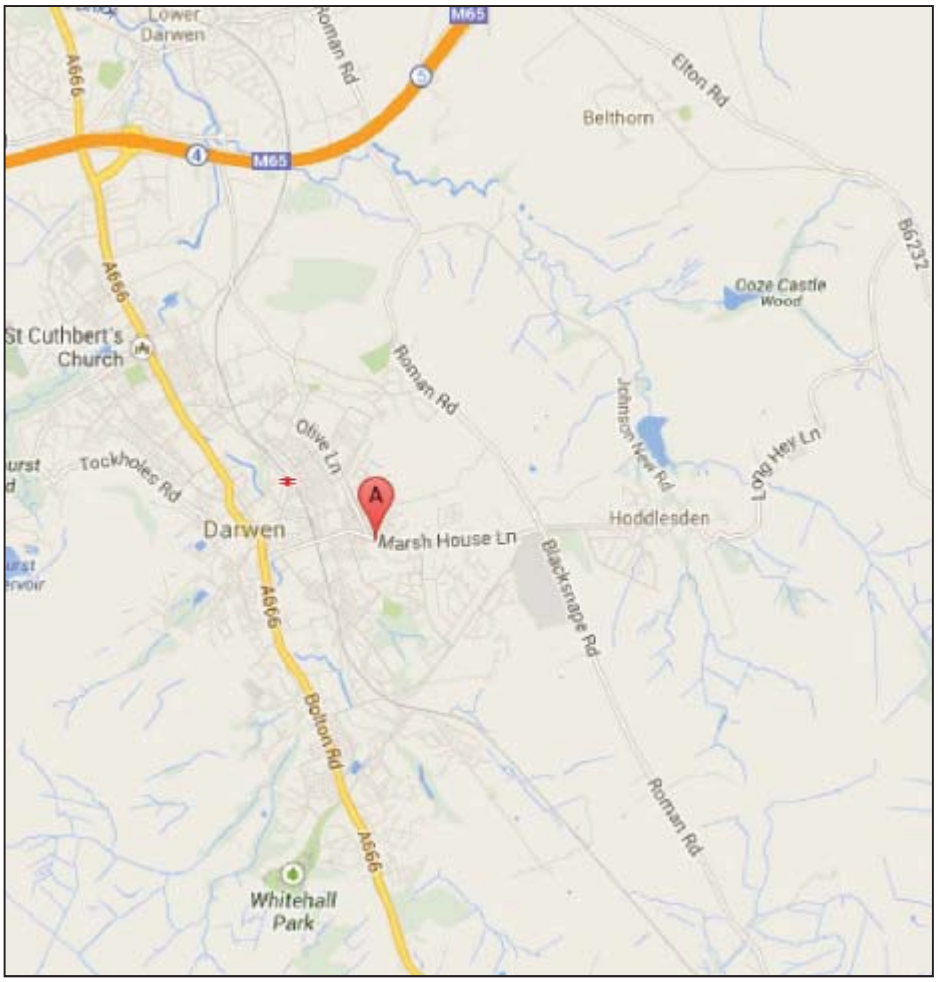
The Core Strategy contains an Infrastructure Priority List which identifies different elements of infrastructure, known capacity issues, possible solutions and where known the likely scheme costs, timeframes, funding sources and delivery leads. This study seeks to provide the evidence base in relation to the local highways network, identifying the DEDC as a key enabler for the Spatial Strategy.

3. Existing Corridor Conditions

3.1 Overview

The A666 is current one of the key transport corridors linking Blackburn and Darwen and both with Bolton, Manchester and the wider northwest region. The corridor passes through Darwen town centre within the base of the topographical valley with multiple local and side roads accessing and egressing the arterial route providing public and commercial connectivity.

In the southern extent of the BwDBC boundary with Bolton, the A666 corridor links to the secondary Blacksnape Road/Roman Road corridor by means of a number of principal routes which provide interconnectivity for the conurbations and businesses. The principal corridor links are via Pole Lane, Marshhouse Lane (noted as location “A” on map below) and Hollins Grove Street/Pot House Lane prior to both the A666 and Blacksnape Road passing under the M65.



The assessment of DEDC within A666 and Blacksnape Road constraints has been undertaken in five stages as follows:

- Potential development plot areas;
- Existing highway network constraints;
- Local highway network modelling;
- Land and ownership within the corridor extents;
- Identification and appraisal of future infrastructure requirements.

3.2 Potential Development Sites

The accessibility of a potential development site is key within the development of a strategic corridor and Spatial Plan. The accessibility of a site should score positively according to and potential for sustainable modes of travel and nearby facilities.

Three primary sites have been identified within the A666, Blacksnape Road and potential DEDC those being;

- Land to the northeast of the existing Watery Lane and Sough Road, adjacent to Pole Lane;
- Land to the northeast of Marshhouse Lane
- Land to the southwest of Blacksnape Road between Ellison Fold Lane and Hawthorn Avenue/Coniston Drive

Drawing H-065844-101 in Appendix A shows the existing A666 and safe guarded sites for future development.

The sites identified are in close proximity to the A666 and Blacksnape primary routes and adjacent to the interconnecting link network allowing multimodal access to key local infrastructure.

3.3 Existing Highway Network Constraints

The existing highway network within the DEDC influence zone is the arterial route between Blackburn and Darwen with Bolton and its surrounding boroughs other than utilising the motorway network by means of the M65 and M61.

From previous studies and the TILHN assessment the A666 has a number of current constraints and traffic management measures in proximity to the potential developments and serving DEDC.

The primary finding of the TILHN report in proximity to the potential DEDC was high traffic volumes and the constrained nature of the junction of the A666 with Watery Lane and Grimshaw Street, where junction intervention measures could be provided. There are also multiple locations of non-motorised user facilities highlighted along the A666 route between Watery Lane and Darwen Town Centre providing key infrastructure.

Between the A666 and Blacksnape Road the existing highway and transport infrastructure has a further level of constraints which affect the interconnectivity links which are shown on drawing H-065844-103 in Appendix C. The key constraints are listed below:

- Watery Lane / Causeway Street / Cranberry Lane – Reduced cross-section:
- Sough Road Railway Bridge – reduced cross-section with railway parapets (Clitheroe to Manchester Line):
- Sough Road / Grimshaw Street Junction – current crossroads:
- Grimshaw Street / Pole Lane / Pickup Fold Road – skewed junction:
- Pole Lane / Priory Drive Junction
- Restricted Height rail crossings at Fredrick Street and Dove Lane – sub 4.0m;
- Rail crossing (over) at Snape Street and Sudell Road;
- Former school and college to the north and south of Moor Lane and Ivinson Lane;
- Goose House Lane / Moor Lane junction.

3.4 Local Highway Network Modelling

The impact of future development on the local highway network has been assessed using the Blackburn with Darwen Borough Council's borough wide SATURN traffic model as part of the previous TILHN study. The SATURN model has been used to interrogate the impacts of development on highway links, junctions and route choice across the local and wider network which may impact the DEDC.

This study provides consideration in development of the route layout options for the DEDC in line with the findings of the TILHN study and highlighting network constraints at locations such as Watery Lane and Grimshaw Street.

3.5 Land Ownership

Appendix B contains drawing H-065844-102 where existing known land ownership within the potential DEDC zone has been identified from the BwDBC records.

Three main stakeholders and landowners are evident within the potential DEDC and may be affected by the proposals, those being BwD, Twin Valley Homes and Network Rail. There are also a number of individual private landowners in the area close to the DEDC.

As the local highway authority, BwDBC have adoption and ownership rights on the existing highway network within the potential development zone and corridor. A number of land parcels are owned, predominantly being to the north of the potential development zone adjacent to Ivinson Road and Moor Lane, by Twin Valley Homes. However it should be noted that BwDBC maintains ownership and adoption rights on the highways that cross this land.

A number of existing public footpaths have been identified within the DEDC zone and are shown on the drawing in Appendix C. The routes provide connectivity to Blacksnape Road and northeastern routes towards Grane Road and surrounding areas of interest.

The proposed route layouts and level of infrastructure to be provided will interface and make provision of existing links and routes in order that the connectivity and links are not severed.

3.6 Key Route Constraints

Section 3.4 describes the constraints which are likely to arise on the local highway network as a consequence of future development corridor routing. Consideration has been given to these specific constraints, practicality and affordability in determining the most feasible route layout which is discussed in sections 4 and 5 of this study.

The interaction of the proposed DEDC with the potential severance of the development plots and optimisation of the developable land is considered so as to not compromise the viability of the proposals in provision of access and egress to the sites.

3.7 Identification of Future Infrastructure Requirements

Having identified the future issues likely to arise on the local highway network as a consequence of the DEDC and future developments, possible routing and improvement schemes are identified. In order to minimise potential impact on the existing network, properties and infrastructure a balance and accord with current infrastructure including highway cross-section and the rail network is required.

The connectivity to the existing public footway routes is fundamental to the connectivity and sustainability of the sites with links between Pole Lane / Grimshaw Street and Moor Lane and Ivinson Road prioritised for the corridor with the former education facilities nearby. Non-motorised user (NMU) provision is also seen as a key driver where cyclists and equestrian users may be able to access the development area and corridor optimising sustainability, by means of wider NMU facilities being provided where possible.

Additional widening where possible will also assist in providing spatial area within the cross-section in order to accommodate future statutory undertaker's infrastructure.

At this stage of assessment, a specific "utilities" corridor has not been identified or assessed however as with all new developments, corridors for supplies and integration with the current network is of high importance. It is envisaged that utilities and statutory undertaker's infrastructure would be accommodated in the footways and verges adjacent to the new carriageway where applicable.

4. Route Option Development

4.1 Purpose

In order to inform each of the stages of assessment it was essential to undertake a review of the existing area, key links and site constraints as discussed in Section 3 of this report.

As a consequence of the challenging economic conditions it was not practicable to undertake a significant new data collection exercise in conjunction with the TILHN report assessment and as such an approach which makes best use of existing data sources and previous reports and investigations wherever possible.

The data collected has been interrogated in order to provide an overview of existing links and modal travel characteristics within the DEDC area of impact. A site visit was completed to review the practical constraints and observe current traffic and NMU activity in support of the historical data.

4.2 Data Sources

These following data sources have been reviewed and used in developing the route layout options for the DEDC:

i) OS Mapping, Google Maps, Street View and Local Knowledge;
ii) Borough wide permanent automatic traffic monitoring data and additional 2001 and 2008 origin/destination data;
iii) Blackburn with Darwen Core Strategy;
iv) Blackburn with Darwen Local Transport Plan;
v) Design Manual for Roads and Bridges; and
vi) Blackburn with Darwen Report – “Transport Implications on the Local Highway Network – 2013”

4.3 Accessibility and Connectivity Assessment

The current development proposals for the primary areas adjacent to Blacksnape Road, Marshhouse Lane and Pole Lane have been identified as potential housing sites with a potential maximum footprint area at this stage.

Each of the sites has been assessed in order to develop Route Layout Options taking in to account a number of criteria relating to accessibility, linkage to the existing highway network, adjacent conurbation, third party infrastructure and proximity of services. These have been identified using available mapping, Google Streetview,

highways and transportation standards, design good practice, other web based resources and local knowledge.

4.3.1 Local Highway Network Modelling

The original Blackburn with Darwen SATURN model was developed to assess the East Lancashire Rapid Transit (now known as Pennine Reach) major scheme business case proposal with a base year model representing 2005 network conditions. The model network was developed using OS mapping and local knowledge with model calibration and validation using available traffic count data and journey time survey data respectively and evaluated within the previous TILHN report.

The assessment findings and output from the TILHN report have also been considered in the development of the Route Layout Options and identification of junction and intervention measures which are required in order to ensure option viability.

4.4 Route Layout Options

Based on the consideration of accessibility, constraints, connectivity and findings from the highway network modelling, four primary Route Layout Options have been developed and are as shown on drawings H-065488-104 and 108 in the Appendices to this report.

A layered approach has been taken in assessing the existing network which can be seen from drawings H-065488-101, 102 and 103 which assists in understanding the potential DEDC zone.

4.4.1 Route Layout Option 1 (RL1)

RL1 is the historic route as shown on drawings H-065844-103 and 108 travelling from the A666 to the Marsh House Lane area utilising Watery Lane. It is proposed to upgrade the A666/Watery Lane junction from a priority junction to a traffic signal controlled junction.

From travelling along Watery Lane vehicles will turn left at Causeway Street and onto Sough Road.

There is currently a narrow bridge on Sough Road which passes over the Clitheroe to Manchester railway line. The bridge is currently wide enough to accommodate one vehicle at a time to pass over it. It is proposed to widen this bridge to allow two vehicles to pass each other with works to both the deck and parapets which would require a possession from Network Rail. These works may also require the purchase of a small quantity of private land adjacent to the crossing.

Upon negotiating Sough Road, vehicles will travel along Pole Lane and Priory Road. Priory Road has previously been currently been constructed to a distributor road (carriageway width of 7.5m) standard and makes a suitable route for vehicles to reach Marsh House Lane.

When vehicles reach Marsh House Lane, from Priory Road, a new junction is proposed with the addition of an extra arm. This will allow a new link to be created from this junction to Ivinson Road. The new Link will match the current standard of Priory Drive and Ivinson Road and will consist of a 7.3m carriageway with soft verges and footways to provide NMU facilities. A design speed of 60kph (30mph speed limit) is proposed for this link and thus desirable minimum standards would be met. This proposed Link will connect Priory Drive with Ivinson Road, which has again been constructed to a high standard of distributor road (minimum carriageway width of 7.0m).

To complete the route layout option and connectivity a final link to Goose House Lane is required taking the form of a new signal controlled junction to replace the existing and accommodating a new link from Ivinson Road.

This option utilises the existing infrastructure as intended, by connecting the previously constructed distributor standard highways allowing a suitable alternative route to the A666 and Blacksnape Road.

The route layout option also takes accord of the development proposals with the new “offline” alignment located so as to allow significant development and internal links to be optimised to the north of the route.

4.4.2 Route Layout Option 2 (RL2)

RL2 is similar to RL1 utilising the historic route as shown on drawings H-065844-103 and 108 travelling from the A666 to the Marsh House Lane area and Watery Lane. It is proposed to upgrade the A666/Watery Lane junction from a priority junction to a traffic signal controlled junction.

From travelling along Watery Lane vehicles will turn left at Causeway Street and onto Sough Road

There is currently a narrow bridge on Sough Road which passes over the Clitheroe to Manchester railway line. The bridge is currently wide enough to accommodate one vehicle at a time to pass over it. It is proposed to widen this bridge to allow two vehicles to pass each other with works to both the deck and parapets which would require a possession from Network Rail. These works may also require the purchase of a small quantity of private land adjacent to the crossing.

Upon negotiating Sough Road, vehicles will travel along Pole Lane and Priory Road. Priory Road has previously been currently been constructed to a distributor road (carriageway width of 7.5m) standard and makes a suitable route for vehicles to reach Marsh House Lane.

When vehicles reach Marsh House Lane, from Priory Road, a new junction is proposed with the addition of an extra arm. This will allow a new link to be created from this junction to Hawthorn Road. The new Link will match the current standard of Priory Drive and will consist of a 7.3m carriageway with soft verges and footways to provide NMU facilities, this will then need to reduce in width to tie in with the narrower cross section of 4.5m at Hawthorn Road and ultimately Moor Lane. The proposed link will consist of a reverse curve utilising suitable horizontal and vertical curves within current standards and will connect directly to the existing Hawthorn Road without the requirement for a junction.

Although this option utilises a lesser standard of existing infrastructure in Hawthorn Road/Moore Lane, it minimises the new junction/link to be provided at Goose House Lane as the existing arrangements as practical would be utilised.

4.4.3 Route Layout 3 (RL3)

RL3 is similar to RL1 and RL2 utilising the historic route as shown on drawings H-065844-103 and 108 travelling from the A666 to the Marsh House Lane area and Watery Lane. It is proposed to upgrade the A666/Watery Lane junction from a priority junction to a traffic signal controlled junction.

From travelling along Watery Lane vehicles will turn left at Causeway Street and onto Sough Road

There is currently a narrow bridge on Sough Road which passes over the Clitheroe to Manchester railway line. The bridge is currently wide enough to accommodate one vehicle at a time to pass over it. It is proposed to widen this bridge to allow two vehicles to pass each other with works to both the deck and parapets which would require a possession from Network Rail. These works may also require the purchase of a small quantity of private land adjacent to the crossing.

Following negotiating Sough Road, vehicles will travel along Pole Lane, a new junction will be required on Poole Lane North of Stork Street, this will allow the new link to be created heading North towards and crossing Marsh House Lane with a further Junction and continuing through the proposed development site connecting to Ivinson Road. As with RL 1, this link would be created to the same standard providing a 7.3m carriageway with verges and NMU facilities.

A further link will connect Poole Lane with Ivinson Road, which is proposed to be constructed to a high standard of distributor road (minimum carriageway width of 7.0m).

To complete the route a final connection to Goose House Lane would be required; this would take the form of a new signal controlled junction to replace the existing and accommodating a new link from Ivinson Road. This option, although not utilising Priory Drive, provides direct access to the northern land parcels with the longer proposed primary link from Marshhouse Lane.

4.4.4 Route Layout 4 (RL4)

RL4 proposes a new arterial route running north-south feeding traffic from Lisbon Drive at the southern end, to Hawthorn Avenue at the northern end via a new 7.3m wide single carriageway. This route will require development through open fields and grassland over a distance of approximately 700 metres by opening up both local cul-de-sac roads at either end and forming new junctions.

This route option is significantly shorter than the previous options and provides accessibility to the land parcel adjacent to Blacksnape Road only.

The route will re-direct north bound traffic from Priory Drive by turning right on to Marsh House Lane then left onto Lisbon Drive before meeting the new link which will also supply unobstructed access to the potential development land parcel. The route will then leave Hawthorn Avenue by joining Holden Fold and continuing on to Moor Lane before turning left and rejoining Goose House Lane as shown in route options 1, 2 and 3.

Improvement opportunities are restricted on Lisbon Drive as the highway is currently fronted by residential properties for its full length and accommodates on-street parking by a series of “build-out” areas leaving an effective width of 4 metres for opposing flows of traffic. Hawthorn Avenue also introduces cross sectional constraints due to the current carriageway width of 4.5 metres and level differences between the footways and adjacent private properties. Hawthorn Avenue is also currently utilised by many residents for regular on-street parking thus potentially requiring provision of parking facilities and relevant traffic orders to be considered as part of any proposal.

4.4.5 Sub Route Options

The three primary route options which are linked to the A666 are proposed to be accessed via a junction improvement scheme at the existing A666 / Watery Lane junction. As part of the route option development two sub alignments have been developed which support access off the A666 by means of Grimshaw Street and the use of Pickup Fold Road instead of works to the existing Sough Bridge Railway Bridge.

Both sub alignment options are shown on drawings H-065488-104 and 108 for context with the main route layouts.

The sub alignment option at Grimshaw Street provides an alternate A666 junction improvement scheme and link east along Grimshaw Street to Pole Lane with the requirement for a revised crossing of the existing Clitheroe to Manchester rail line. The current bridge is of restricted width and weight and at a skew angle requiring reconstruction however with the land available it is thought feasible to “straighten” the bridge and potential construct and launch a new crossing with minimal impact on the existing route and traffic flow.

A potential option of utilising Pickup Fold Road has also been considered where a new crossing of the railway line would be required with junction intervention measures at both the northern and southern ends of the existing road. Due to the topography of the area a crossing of the rail line achieving suitable headroom to standard would be extremely difficult and may require short steep highway gradients on approach from Watery Lane. Although achievable, departures from standard for the vertical elevation of the new carriageway, would most likely be required and gradients in excess of 6%.

5. Route and Corridor Option Assessment

A feasibility assessment of each route layout option has been undertaken by reviewing the option against a number of different criteria with scores awarded out of 5 for each category. These include:

- Impact on Environment and Ecology;
- NMU Linkages and Severance;
- Impact on Existing Network Infrastructure;
- Construction Cost (benchmarked against the average of the four primary options);
- Delivery Programme;
- Buildability;

The scoring assessment criteria are determined as below:

1 - Significantly Unbeneficial / Disadvantageous
2 – Unbeneficial / Disadvantageous
3 – Moderate
4 – Beneficial /Advantageous
5 – Significantly Beneficial / Advantageous

Descriptions of the impacts or benefits of the criteria and their context for each route layout are described in detail in following sections.

5.1 Impact on Environment and Ecology

The potential corridor route and development area encroach within and are adjacent to Green Belt land as identified in the BwDBC Local Plan. The area and DEDC zone has also been identified to impact land of West Pennine Moors designation.

The option Route Layout Options assessment is based on minimising the impact on the potential habitats and considerations noted in the BwDBC Local Plan noting clause 10.4:

The Council attaches great importance to Green Belts. The Council will promote positive planning policies which check the outward spread of the built-up areas, safeguard the surrounding countryside from development and pursue the objectives of urban regeneration. The fundamental aim of Green Belt policy is to keep land

predominantly open and its essential characteristic is its permanence. There are four purposes of the Green Belts in Blackburn with Darwen:
to check the unrestricted sprawl of large built-up areas;
to prevent neighbouring towns from merging into one another;
to assist in safeguarding the countryside from encroachment; and
to assist in urban regeneration by encouraging the recycling of derelict and other urban land.

Further investigation, survey and consultation with respect to the environmental and ecological constraints within the DEDC impacted zone are required to complete a detailed assessment of any significant obstacles to delivery.

5.2 NMU Linkages

Public footpath links dissect all four primary route layout options between Priory Drive and Blacksnape Road.

As discussed earlier in this study, the ability to maintain and improve NMU linkages between the A666, land development parcels and Blacksnape Road are seem as vital in providing a sustainable transport corridor.

RL Option 3 has the most significant impact on the existing east/west links dissecting both adjacent to Marshhouse Lane and Ellison Fold Lane. Connectivity would need to be provided along the route option and further considered in any development proposals in order to negate severance.

5.3 Impact on Existing Network Infrastructure

5.3.1 Local Highway Network Junction Capacity

The analysis of aggregate values of capacity at key junctions within the DEDC zone shows the requirement for intervention and junction improvement measures at the A666 / Watery Lane and A666 / Grimshaw Street locations dependent on which sub alignment option is taken forward. Analysis of the results for the do-something modelling as compared to the do-minimum modelling indicates that the proposed mitigation measures on the whole improve the operation of the junctions where they are implemented both for traffic and NMU's. However, given the nature of the model as a strategic local highway network model as described in the TILHN report, further detailed junction analysis is required to inform detailed design proposals.

5.3.2 *Utilisation of the Existing Highway Network*

RL Option 4 is the shortest option providing access to the land parcel adjacent to Blacksnape road only.

RL Option 1 utilises the longest length of existing carriageway and optimises the existing network as much as practical in conjunction with being the shortest RL Option in overall length. RL Option 3 is the longest route option at 3.8km in length

The utilisation of the existing network does not at this stage take in account works which may be required i.e. full pavement reconstruction due to condition and is based on resurfacing and strategic widening. This approach is reflected in the cost estimates developed in Section 5.4.

5.4 Route Corridor Layout Construction Estimates

Construction estimates have been produced for each Route Layout Option based on BwD previous scheme costs and benchmarked against SPONS 2013 typical unit rates.

Route Layout	Sub Alignment Option	Highway Construction Estimate (£)	Intervention Measure (£)	Optimism Bias (£)	Construction Estimate (£)
RL 1	N/A	2,166,436	855,000	1,329,432	4,350,867
RL 2	N/A	2,845,256	880,000	1,639,112	5,364,370
RL 3	N/A	3,687,924	880,000	2,009,886	6,577,810
RL4	N/A	1,785,882	200,000	873,788	2,859,670
	RL1 (Grimshaw Street)	422,720	230,000	287,197	939,920
	Variance on RL 1, 2 and 3				(-) 276,620
	RL1 (Pickup Fold Rd)	378,333	315,000	305,066	998,400
	Variance on RL 1, 2 and 3				(+) 351,970

Based on the stage of development of the Route Layout Options an Optimism Bias factor of 44% of the construction works total has been applied to each option. Optimism Bias is a factor which provides a level of risk and allowance for the scheme data and assessment available at key stages within the scheme. The factor allows for items such as statutory undertakers impact, risk, and contingency, inflation prior to construction and third party fees. As a scheme develops in detail through its lifecycle from concept to preliminary design to detailed design and construction the factor reduces from 44% to 22% and 12/10% accordingly.

The construction estimates show RL 4 to be the least cost which is in accord with the low impact nature of this option. Option 1 is the least cost of 1, 2 and 3 which corresponds with the reduced length of the option and increased length of utilisation of the existing carriageway where possible.

Two potential areas of land would be required in order to construct the Route Layout Options depending on which option is taken forward. Where works are proposed to the existing bridges at Sough Lane or Grimshaw Street.

Appendix G contains a more detailed breakdown of the construction estimates for each option, including the intervention and junction improvement works.

5.5 Existing and Proposed Cross-Sections

Assessment for each RL Option of the existing highway network has been completed in order to ensure the concepts and interfaces are suitable within the context of the DEDC proposals.

The strategic links between the A666 and Blacksnape Road are predominantly (Marshhouse Lane and Pole Lane) constructed to 7.0m or wider with a minimum verge width of 0.6m up to 2.4m to one or both sides. Wider cross-sections can be found on Ivinson Road. Moor Lane however to the northern extents of the scheme is not currently to Distributor standard and is of a reduced cross-section of 4.5m with varying parking and traffic order status as it is akin to a residential road.

The new proposals for all new link roads in each option is to construct a carriageway of distributor standard with a 7.3m standard single carriageway, minimum 0.6m verges to both sides and a 2.0m and 2.5m footways to accommodate NMU's.

The cross-section is suitable to provide shared cycleway facilities to one side should off-road provision be required. In all RL options the proposed cross-section would continue within the existing highway footprint where achievable however for RL Option 2 and 4 the cross-section of the new link would reduce upon adjoining Moor Lane. A full review and revisions to the existing parking arrangements, carriageway build-outs and traffic orders would be required along this section of existing highway in order to facilitate the extension of the DEDC.

5.6 Delivery Programme

Route Layout options 1, 2 and 3 all require works to the Clitheroe to Manchester Network Rail line. The current bridges on Sough Lane and Grimshaw Street would

require either widening or replacement deck, and parapet works dependent on the sub alignment option taken forward.

The works to Grimshaw Street would most likely consist of construction of a new crossing, with the new bridge constructed on a “straighter” alignment which may allow construction to be partially offline enabling a shorter diversion or period of contraflow and Network Rail possession.

Works to either bridge would require assessment and approval from Network Rail through their GRIP (Guide to Railway Investment Process) process and would require a possession of a number of weeks for working in proximity or over the existing railway line. This process is extensive in terms of gateways which are required to be achieved and the planning of a rail possession can take a substantial time period. This element can extend from six months to potentially eighteen months depending on the complexity.

At this stage we would estimate a modest saving on the programme with the inclusion of the Grimshaw Street option should “offline” construction be suitable. Detailed further assessment of this option is required to confirm this opportunity.

The overall programme for delivery of RL Options 1, 2 or 3 is anticipated to be completed as the developments are progressed.

As noted should an option be taken forward where a new rail crossing could be constructed “offline” it may be possible to reduce the programme by a modest period. A further consideration which would significantly impact the delivery programme is the requirement for land by means of Compulsory Purchase (CPO). Should this be required following further preliminary design this may be viable in tandem with the rail GRIP process confirming most likely a 24 month delivery programme or extend it beyond this estimate due to consultation and statutory approval periods.

RL Option 4 could be developed and constructed in a much shorter period due to reduced size of the DEDC proposal and lack of interaction with a rail crossing and third party interaction. There may be the requirement for CPO however most likely the motorised user trip generation would be substantial less and therefore the opportunity to develop a junction arrangement within the existing highway ownership footprint at the Goose House Lane / Knowles Lane increased.

5.7 Summary Findings

In assessment of the RL Options a scoring matrix has been developed based on the criteria discussed earlier in this section and is shown below:

Summary of Initial Assessment and Feasibility Scoring of Route Layouts							
	Scoring Matrix Criteria						
	Impact on Environment & Ecology	NMU Linkages and Severance	Impact on Existing Network Infrastructure	Construction Cost (benchmarked against average)	Delivery Programme	Buildability	Total Score
Route Layout Option 1	2	3	4	4	3	4	20
Route Layout Option 2	1	3	3	3	3	3	16
Route Layout Option 3	2	2	2	2	3	2	13
Route Layout Option 4	2	3	3	4	4	4	20

Scoring (1 Significant Unbeneficial/Disadvantageous, 2 Unbeneficial / Disadvantageous, 3 Moderate, 4 Beneficial / Advantageous, 5 Significantly Beneficial / Advantageous)*

5.8 Recommendations from Assessment

The assessment indicates that there would be relatively no difference in benefit between RL Options 1 and 4 however the premise and extent of works including within the scope of RL Option 4 is significantly different than that of Options 1, 2 and 3.

Should a reduced scheme be proposed RL Option 4, its alignment, connectivity, construction value and impact on the existing network shows clear benefits and that this option should be developed further however it would be prudent to develop and compare the feasibility of subsequent reduced scheme options of a similar scale and objective.

RL Option 1 from the matrix is shown to be the more preferred route option for the potential DEDC highway network link being least costly option (£4.35M approx) and optimising the land parcel access, linkages with the existing network and reducing severance. The potential delivery programme includes risk with the crossing of the existing rail line however this is applicable to RL Options 2 and 3 similarly. All options are subject to further detailed investigation as to the feasibility of works to Grimshaw Street in preference to Watery Lane which may both save programme and cost.

5.9 Developer Contributions

An assessment of the potential developments linked to the East Darwen area has been undertaken and forms part of the Local Plan 2 – Site Allocations and Development Management Policies (DPD). This indicates a potential for a total of 890 units contributing towards the DEDC as follows.

Site Ref	Location	Housing units in DPD
16/12	Former Darwen Moorlands High School	200
16/14	East Darwen	400
16/15	Pole Lane, Darwen	130
16/16	Ellerslie House	50
16/17	Kirkhams Farm, Cranberry Lane	110
	Total	890

The estimated costs for the mitigation interventions at the junction's and highways that form the route are £1.015M. This excludes the site specific junction's impacts directly attributable to individual development sites. The offsite online highway improvements to existing highways are estimated to be £1.547M. Total £2,562M.

This indicates a development contribution of £2,880 per unit.

Based on the contribution the development contributions are estimated as:

Site Ref	Location	Housing units in DPD	Contribution to DEDC per housing unit (S106)	Specific site contribution (S278)
16/12	Former Darwen Moorlands High School	200	£576,000	
16/14	East Darwen	400	£1,152,000	£108,000
16/15	Pole Lane, Darwen	130	£374,400	£108,000
16/16	Ellerslie House	50	£144,000	
16/17	Kirkhams Farm, Cranberry Lane	110	£316,800	
	Totals	890	£2,044,800	£216,000

Works to the existing highway directly affected by a development will be subject to Section 278 agreements under the Highways Act.

Developer contributions will be sought under Section 106 Agreements under the Town and Country Planning Act.

At the planning application stage the development contribution secured will be subject to an assessment of development viability. This will be presented for assessment to the Council.

6. Conclusions

The feasibility investigation and assessment undertaken demonstrates that there are a broad range of Route Layout Options and sub alignment options which at the concept level could be further developed as the arterial route of the Darwen East Distributor Corridor and therefore enabling developable land packages in conjunction with BwD Spatial and Local Plans.

In line with government guidance provided in the National Planning Policy Framework and other supporting documentation, key principles with respect to motorised, non-motorised and infrastructure constraints need detailed consideration in developing and the assessment of the Route Layout Options.

The DEDC will provide a link and route providing north – south connectivity supporting the A666 and Blacksnape / Roman Road in combination with acting as access and egress for potential development land parcels. The primary route principles and considerations are the interface with the A666 by means of Watery Lane or Grimshaw Street, alignment from Pole Lane and Marshhouse Lane, and junction connectivity at Goose House / Knowles Lane at the northern extent.

A significant constraint in the choice of the Route Layout Option for the DEDC is the crossing of the existing Clitheroe to Manchester railway line, by means of existing or new bridge structure.

As identified in the recent TILHN report, the junctions in proximity and direct link to the potential DEDC from the A666 although currently not at critical capacity saturation require improvement works in order to facilitate improved links and access to the existing conurbation and new potential development land parcels.

Utilising a number of data sources, investigations and existing route knowledge a “layered” approach was completed identifying the key drivers, constraints and challenges of a potential DEDC route. In overlaying the various layers of constraints, existing infrastructure and land ownership four Route Layout Options were developed of varying lengths, standards and alignments.

The delivery of a package of sustainable transport measures to drive the DEDC will improve the level of accessibility of potential sites. Where the DEDC link is provided and therefore connectivity with the A666 and Blacksnape Road improved, sustainable transport links to any potential development should be delivered through the planning process prior to occupation to ensure travel choices exist from the outset.

6.1 Corridor Options Assessment

In order to establish a preferred Route Layout Option for the proposed DEDC a scoring matrix on key drivers and criteria which the link impacts or needs to achieve was developed. The criteria was based purely not on cost but also on the buildability, delivery programme, severance of existing and potential development land and impact on the environment and ecology.

The assessment completed shows that although four options were developed and assessed a “reduced” option as in Option 4 has significant benefits but is a substantially different scheme than Options 1, 2 and 3 and potential biased in appraisal. Of the three core Route Layout Options, Option 1 was identified as the preferred option based on the assessment completed. The option optimises the use of the existing highway network as much as practical and also the developable land parcels. It is also has a clear benefit in the carriageway cross-section between the new and existing sections of the route would be comparable to a Distributor standard with minimal change in width of complications with existing parking and traffic orders.

Further investigation is required in to the viability and inclusion of the two sub alignment options in proximity to Sough Road and the Pole Lane Junction i.e. Grimshaw Street and Pickup Fold Lane as benefits in both cost and programme terms may be achievable.

6.2 Future Infrastructure Requirements and Funding

This strategic feasibility study has been developed in order to identify and assess the strategic transport impacts of planned development and to develop a coherent route and scheme package which would act as a driver for the potential developments. The assessment and scoring matrix identified Route Layout Option 1 as the preferred delivery vehicle at this stage:

Route Layout Option - 1 (*Preferred Route Option)* £4,350,870

The construction estimate for Option 1 includes an Optimism Bias factor of 44% which would be refined should the scheme be progressed in more detail through concept and preliminary design stages.

Under the current premise and statutory guidelines it is anticipated that the route would be completed as the developments are progressed. However, advance co-ordination would be required to strategise land purchase and Network Rail coordination.

Capita understands that Blackburn with Darwen Borough Council are currently considering mechanisms for jointly funding scheme delivery with partners including the Highways Agency, Network Rail, Northern Rail, Department for Transport, Local Enterprise Partnership and private developers.

The DEDC will form access through pockets of developable land and as such the significant costs associated with delivering such schemes could likely be borne by a series of developers. As such the costs associated with these schemes should reflect any difference in the standard of road required and any associated intervention or junction upgrades by means of potential Section 278 or 106 contributions.

The size of contribution has be based on the number of units from sites and hence the contributing level of impact on the network. The resulting funding split for the DEDC which based on the Route Layout Option 1 construction estimate could be estimated as follows:

- *Development Access Road - £1.193M*
- *Developer Contribution to S106/S278 interventions - £2.260M*
- *Potential Funding Gap - £0.897M*

The figures above and apportionment should be taken as an estimate and early indication only at this stage of the schemes development and subject to detailed development and negotiation.

6.3 Third Party Interaction

From recent traffic model analysis, the existing highway network in Blackburn with Darwen already experiences congestion in the AM period at some key junctions within the local highway network and A666.

When the Local Plan developments are considered in 2026 the level of congestion increases, demonstrating that the existing highway network would not be able to accommodate the proposed levels of Local Plan development without additional reinforcement of the network which the DEDC would support.

6.4 Recommendations for Future Investigation

It is recommended that further detailed development and assessment is completed based on the initial findings of this study. Clarification and detailed assessment of the range of intervention measures identified should be considered and determined.

To confirm the viability of both the DEDC and associated development land parcels we would advise that a topographical survey and assessment be completed in conjunction with a drainage strategy and potentially initial Flood Risk Assessment in line with NPPF requirements. Further assessment of the environmental and ecological impact is would also be of significant benefit due to the DEDC zone being within both Green Belt and Moorland designation.

As noted in this study an assessment of the existing utilities and potential supply requirements for the DEDC and developable land parcels would also be of significant benefit in assessing proposals for viability as substantial diversions may be required and or energy and communications upgrades out with the study extents in order to supply the DEDC as required.

Appendix A
Existing Corridor

NOTES:-

HAZARD/WARNING

A666 ROUTE

THE A666 IS A MAJOR ROUTE THROUGH DARWEN. IT IS CURRENTLY OPERATING AT NEAR CAPACITY AND WITH THE ADDITION OF NUMEROUS HAZARDS, AS IDENTIFIED ON THIS DRAWING, AND BUS STOPS MAKES TRAVELING ALONG THIS ROUTE DIFFICULT.

WITH AREAS OF POTENTIAL DEVELOPMENT ALREADY EARMARKED, AND ALSO THE IMPACT OF ANY FUTURE PLANS FOR THE AREA, THERE IS A REQUIREMENT TO PROVIDE ALTERNATIVE ROUTES AROUND DARWEN.

REV	DESCRIPTION	DRWN	CHK	APP	DATE
01	FIRST ISSUE	KCP	PAW	AMB	OCT 13

CAPITA

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client: BLACKBURN WITH DARWEN B.C.
TOWN HALL
BLACKBURN BB1 7DY

project title: DARWEN EAST DEVELOPMENT CORRIDOR FEASIBILITY STUDY

drawing title: EXISTING A666 CORRIDOR ARRANGEMENT

scale @ A1	designed by	drawn by	checked by	approved by	date drawn
1:5000	PAW	KCP	PAW	AMB	OCT 13

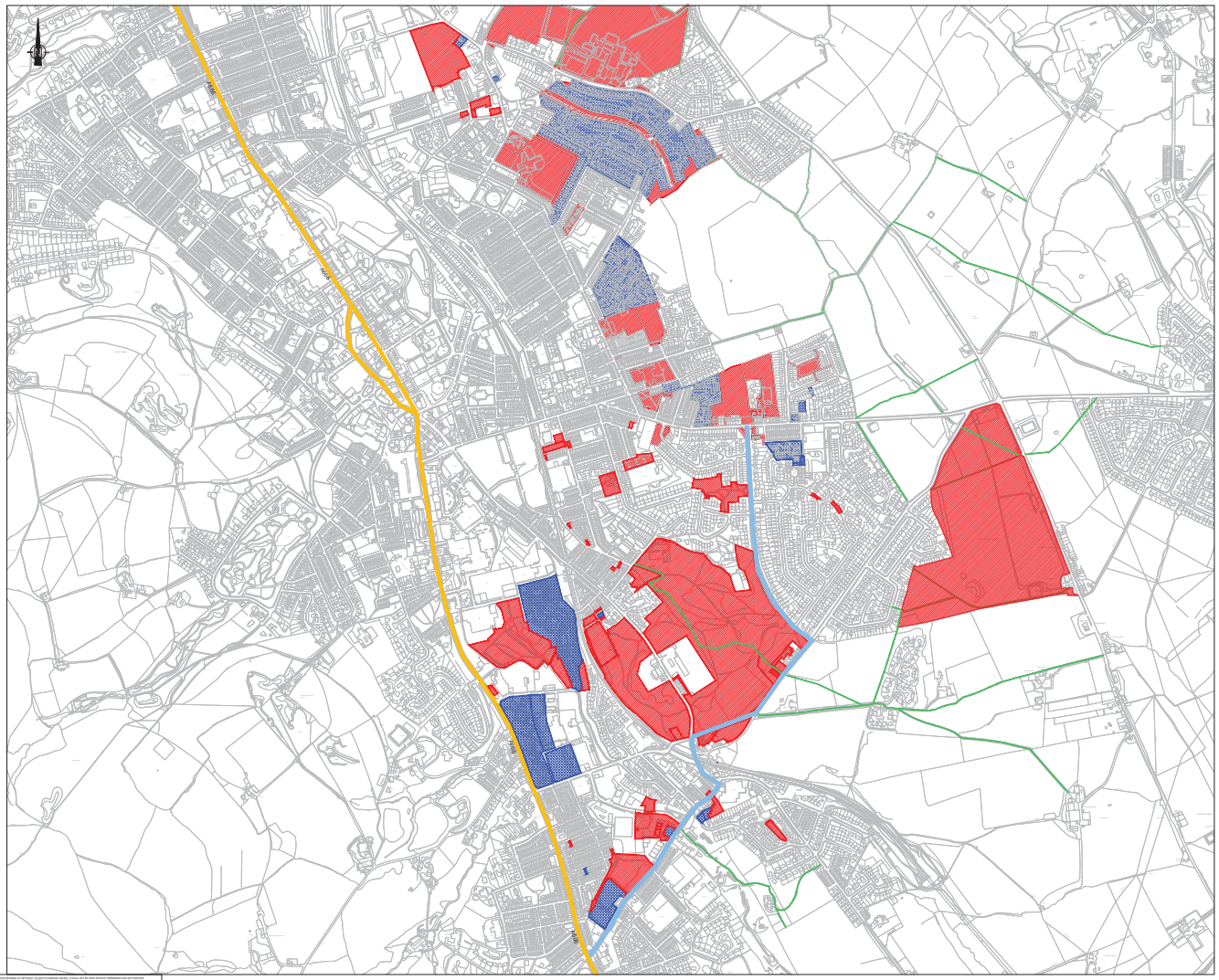
project no: CS065844

drawing no: H-065844-101

revision: 01

Do Not Scale From This Drawing

Appendix B
Existing Land Plans



NOTES:-

1) REFER TO LOCAL PLANS FOR ADOPTED HIGHWAY

KEY:

- AREA/VERGE OWNED BY BLACKBURN WITH DARWEN BOROUGH COUNCIL (BwD)
- AREA OWNED BY TWIN VALLEY HOMES. WHERE AREA CROSSES HIGHWAY THIS IS STILL MAINTAINED BY BwD.
- PUBLIC FOOTPATH ROUTE
- A666 ROUTE
- HISTORIC ROUTE FROM A666 TO THE MARSH HOUSE LANE AREA

01	FIRST ISSUE	KCP	PAW	AMB	NOV 13
REV	DESCRIPTION	DRWN	CHK	APP	DATE

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drawing title: LAND PLAN

scale @ A1	designed by	drawn by	checked by	approved by	date drawn
1:5000	PAW	KCP	PAW	AMB	NOV 13

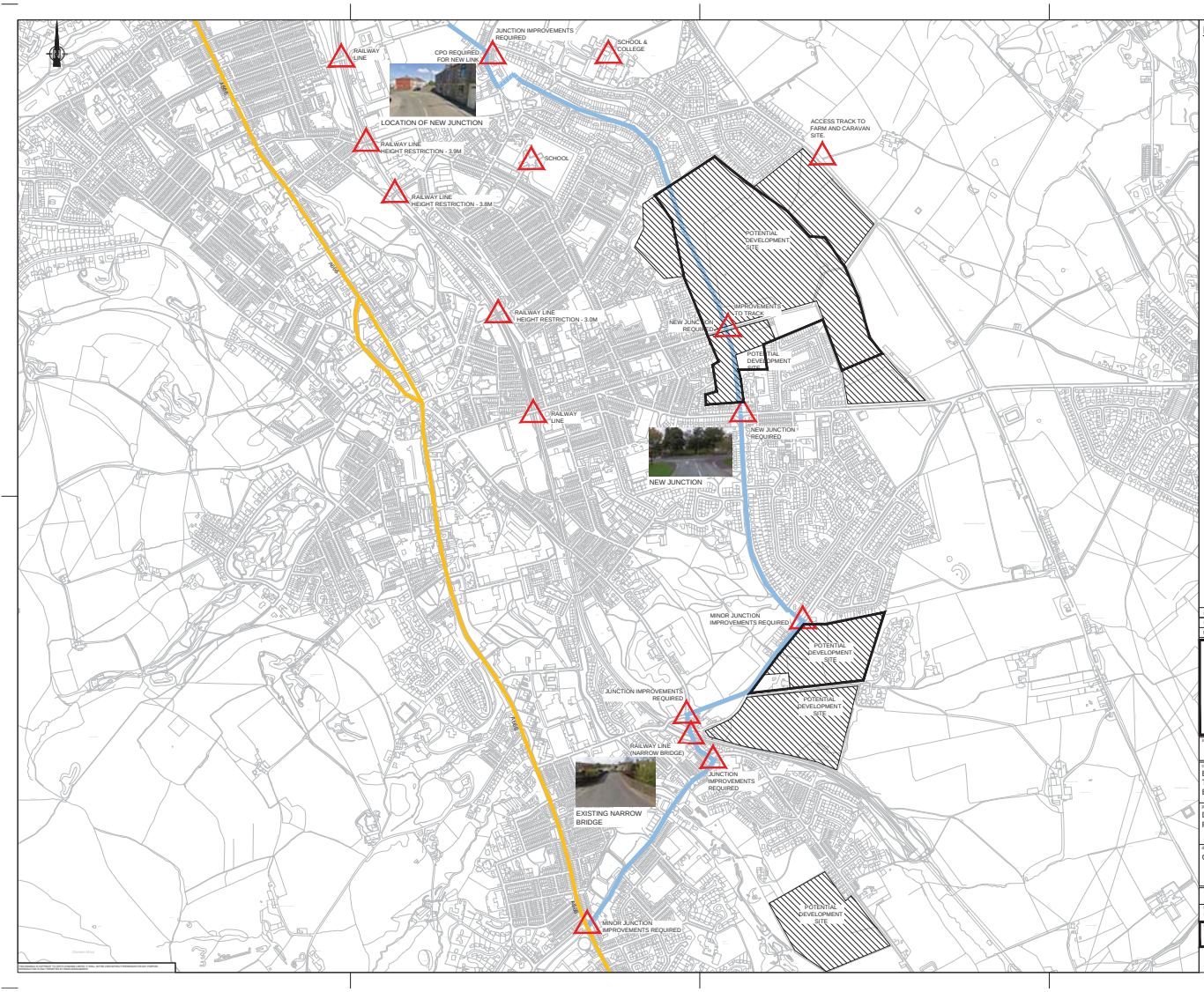
project no: CS065844

drawing no: H-065844-102

revision: 01

Do Not Scale From This Drawing

Appendix C
Route Corridor and Constraint Plan



NOTES:-

- EXISTING HIGHWAY CORRIDOR
- INDICATIVE LINKS
- HAZARD/WARNING
- POTENTIAL DEVELOPMENT SITES

02	SECTION 5 LINK AMENDED	MWV	PAW	AMB	MAY 14
01	FIRST ISSUE	KCP	PAW	AMB	NOV 13
REV	DESCRIPTION	CHVN	DR	ATP	DATE

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drawing title: CORRIDOR PLAN - OVERVIEW

scale @ A1	designed by	drawn by	checked by	approved by	date issued
1:5000	PAW	KCP	PAW	AMB	MAY 14

project no: CS065844

drawing no: H-065844-103

revision: 02

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