MOTT MACDONALD

Rossendale Employment Sites Study

Final Report

25 March 2019

Rossendale Borough Council

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
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Contents

Executive summary

This study has been undertaken to provide a review of potential access arrangements to a number of employment sites identified in the emerging Rossendale Local Plan.

This report should be read in conjunction with the Highway Capacity study and forms a key plank of the transport evidence base to support the local plan.

The objective of this report is to provide an understanding of the site-specific constraints associated with each proposed employment site, and the mitigation that is required to make these sites deliverable from a highways and access perspective.

The optioneering process has assessed existing site constraints, statutory undertakers' provisions, junction capacity and road safety.

Recommendations have also been made on buildability and sustainability.

The study has also identified where further investigation will be required as part of the detailed design process. The recommended next steps to be taken forward include:

- Geotechnical investigations at Carrs Industrial Estate (ADD 6) and Land North of Hud Hey (EMP 13),
- Consideration of whether amelioration of Highways England's concerns for the access to ADD 6 at Commerce St are possible or whether an alternative access arrangement would be more viable,
- Potential geotechnical investigations at ADD2 Land at Sykeside, if Rossendale require that this site is considered further, noting the significant constraints identified in this study,
- Further consideration of the stagger arrangement in conjunction with Rising Bridge junction in a variety of setups and perhaps using a more detailed modelling approach,
- Additional Traffic Count information at specific locations,
- Progression to a more refined level of design (detailed).

1 Introduction

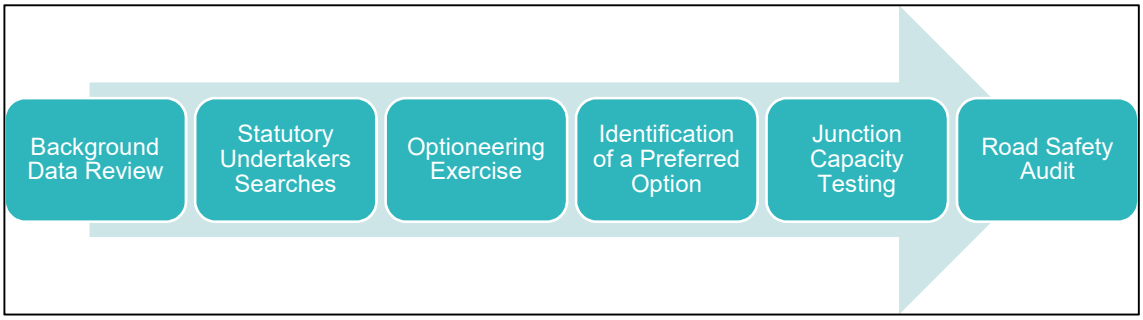
1.1 Preamble

Mott MacDonald have been commissioned by Rossendale Borough Council to undertake a complementary study to a previously commissioned Highway Capacity Study, to identify potential highway access arrangements for a series of key employment allocation sites identified within the draft Rossendale Local Plan from 2019 to 2034.

This study identifies a series of potential new access points from these sites to the existing highway network, including a high-level examination of costs. Design standards, land ownership and utility provision are considered as part of this study.

The assessment process adopted for this study is summarised in **Figure 1** below.

Figure 1: Study Approach



Source: Mott MacDonald

The purpose of this study is to identify a number of potential options which will provide safe and efficient access to the selected employment sites. Value for money, third party land requirements and impacts on site deliverability are also considered.

This report builds on work undertaken during July and August 2018, where an initial set of options was identified and shared with stakeholders. Options were documented in an interim technical note which was issued in advance of the Local Plan consultation period; 23 August - 5 October 2018.

This final report provides a further examination of the access options for the employment sites following:-

- the receipt of stakeholder feedback
- the completion of junction modelling; and
- Road Safety Audits.

1.2 Report Structure

The report incorporates the following chapters of work:

- Chapter 1 – Introduction
- Chapter 2 – Baseline Position
- Chapter 3 – Options Assessment and Shortlisting

- Chapter 4 – Junction Modelling
- Chapter 5 – Road Safety Audits
- Chapter 6 – Final Proposed Designs
- Chapter 7 – Summary, Conclusions and Next Steps

2 Baseline Position

2.1 Preamble

Mott MacDonald have undertaken a baseline review of the proposed key employment sites within the draft Rossendale Local Plan. The employment sites considered in this study are shown below in **Table 1**.

Table 1: Key Proposed Employment Sites within the draft Rossendale Local Plan

Employment Site	Local Plan Site Reference No.	Allocation Ref No.
Land North of Hud Hey	EMP 13	NE2
Carrs Industrial Estate Extension	ADD 6	NE3
New Hall Hey East	EMP 72	NE4
Extension of New Hall Hey	EMP 11	NE4
Land Adjacent to Hollin Gate Farm	ADD 3	Not Allocated
Futures Park	EMP 18	M4
Ewood Bridge	EMP 10	NE1
Barlow Bottoms	EMP 73	Not Allocated
Land South of New Hall Hey Extension	Unknown	Not Allocated
Land at Sykeside	ADD 2	Not Allocated

Source: Mott MacDonald

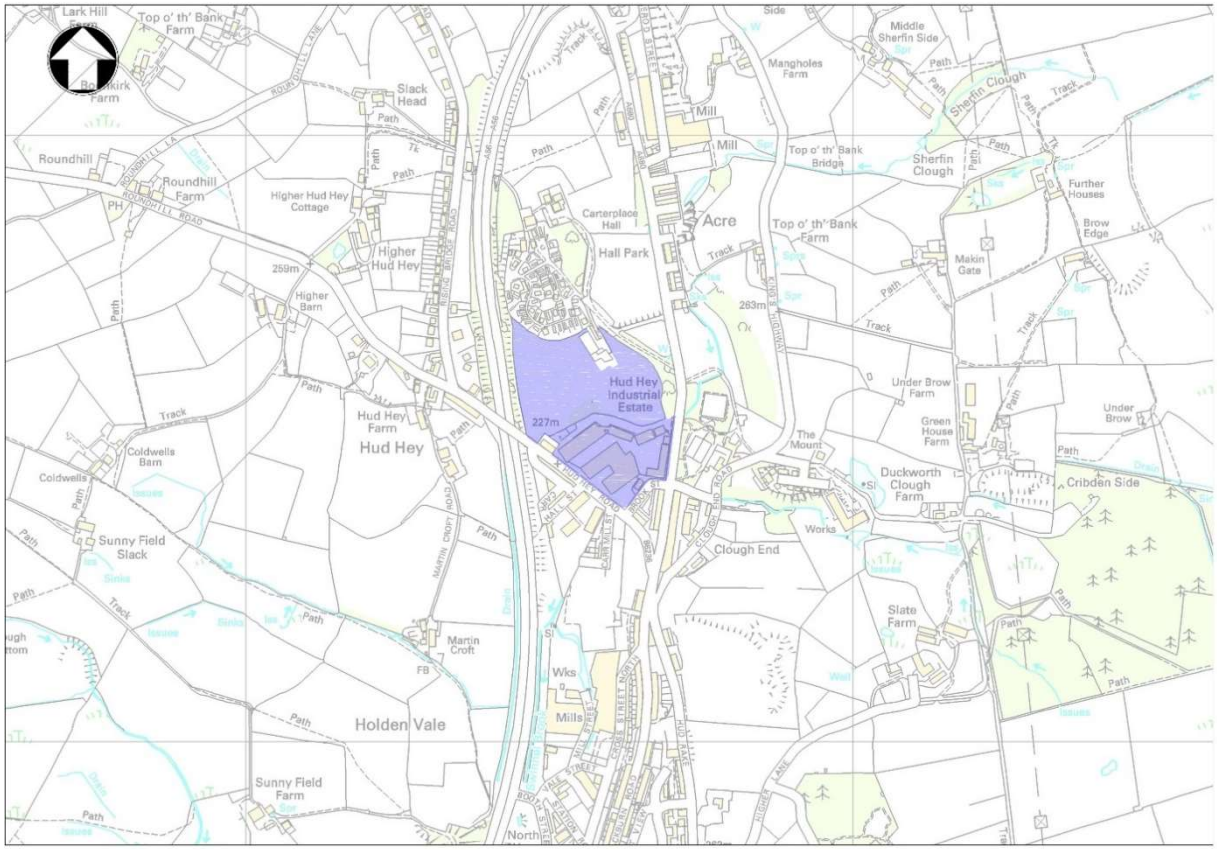
To gain a full appreciation of each site, its local setting and any potential constraints site visits were undertaken on Thursday 19th July 2018. A review of each site along with the location plan is outlined below.

2.2 Land North of Hud Hey (EMP 13 – NE2)

The site, shown in **Figure 2** below, is bounded by the A56 Haslingden bypass to the west, Hud Hey Road to the south and the A680 Blackburn Road to the east. A small industrial estate is located to the south of the site. Carter Hall Park, a residential site, lies to the north.

The site is in a semi-rural location with limited access options from the A56, Hud Hey Road and the A680. There are significant level differences between Blackburn Road and the east of the site and at the southern extent of the site where it is bounded by the existing industrial estate.

Figure 2: Land North of Hud Hey EMP 13 Site Location Plan



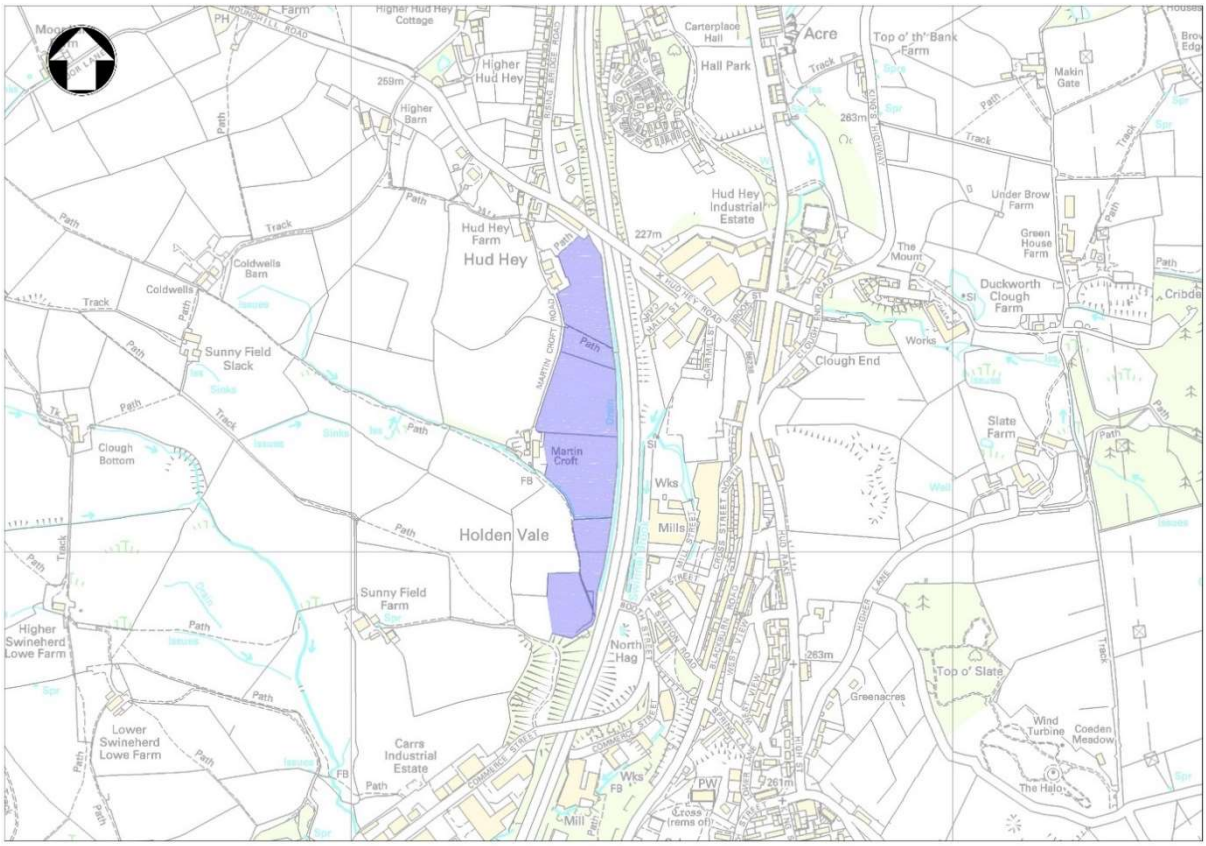
Source: Mott MacDonald 2018

2.3 Carrs Industrial Estate (ADD 6 – NE3)

Site ADD 6, seen in **Figure 3**, is located to the south west of site EMP 13, between the A56 Haslingden bypass (which lies to the east) and Martin Croft Road (which lies to the west). This site is also located in a semi-rural location with limited access options from the A56, Hud Hey Road and Martin Croft Road.

Martin Croft Road is a narrow farm access road serving several residential properties and outbuildings. Approximately 129m from the Martin Croft Road/Roundhill Road junction, the road becomes private. Several terraced residential properties lie to the east of the Martin Croft Road/Roundhill Road junction.

Figure 3: Carrs Industrial Estate Extension ADD 06 Site Location Plan



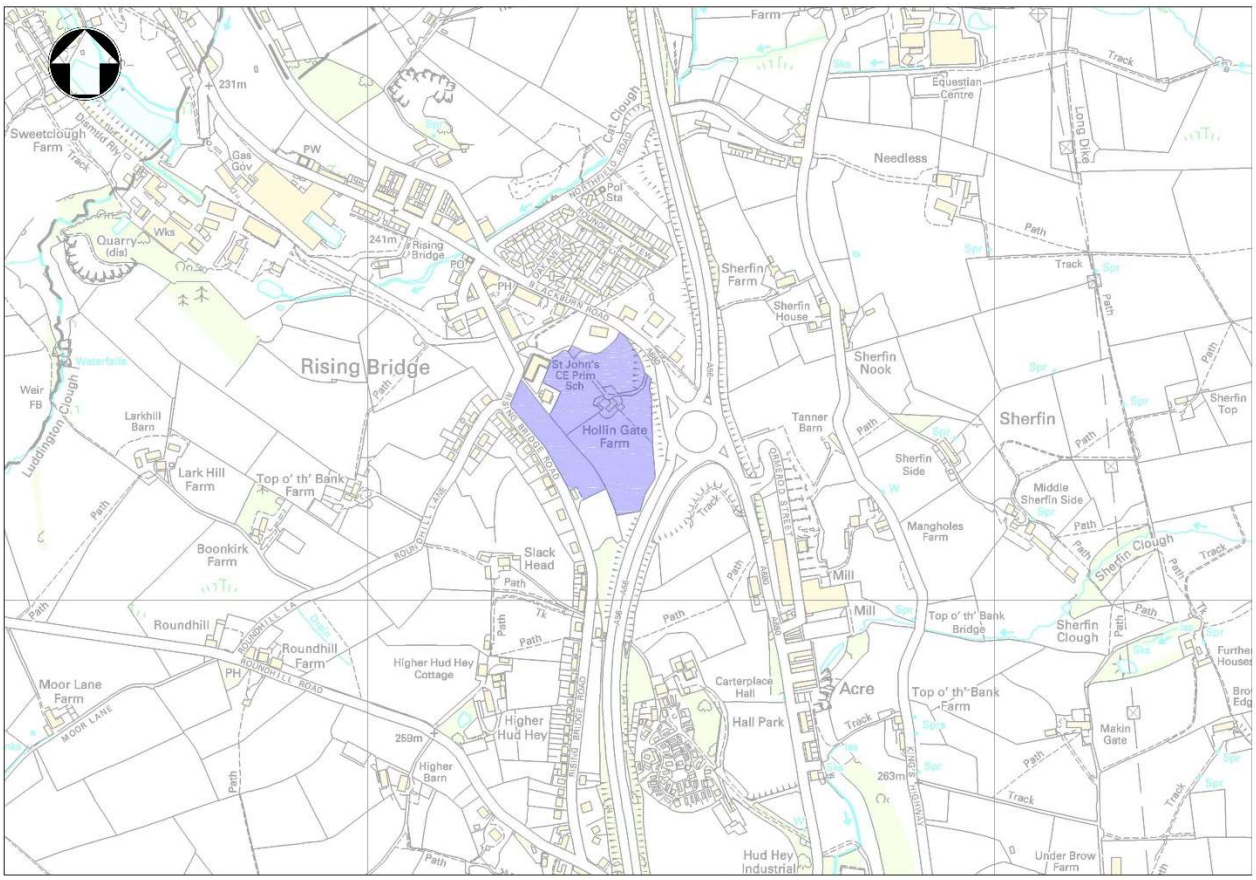
Source: Mott MacDonald 2018

2.4 Land Adjacent to Hollin Gate Farm (ADD 3 – Not Allocated)

Situated to the north east of the A56/A680 interchange, site ADD 3 shown in **Figure 4**, is bounded by Rising Bridge Road to the west, the A56 Haslingden bypass to the east and St Johns Stonefold Church of England school to the north.

The site is located in a semi-rural location with limited access options from the A680 and from Rising Bridge Road. There are significant level differences between the east of the site and the A680.

Figure 4: Land Adjacent to Hollin Gate Farm ADD 3 Site Location Plan

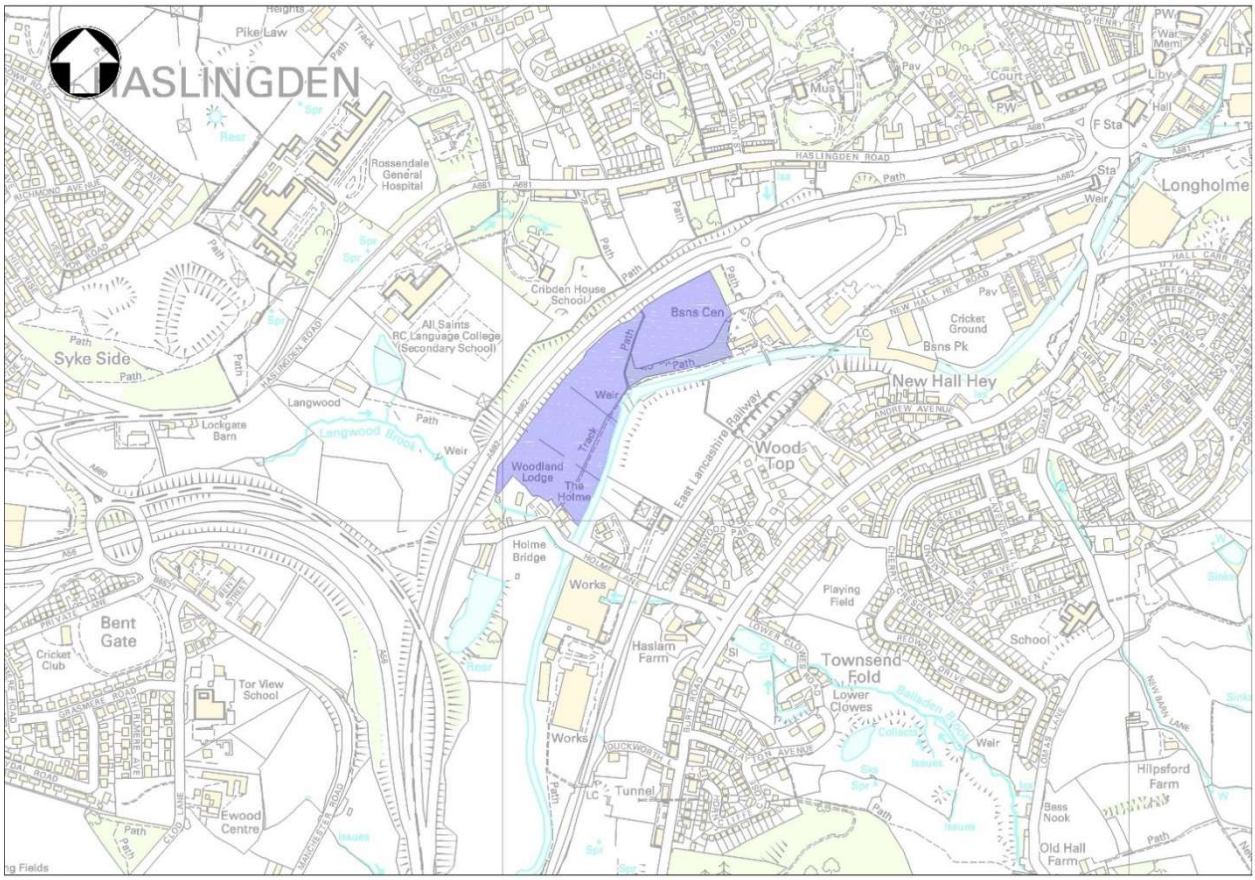


Source: Mott MacDonald 2018

2.5 Extension of New Hall Hey (EMP 11 – NE4)

EMP 11, seen in **Figure 5**, is located to the south of the EMP 08 New Hall Hey site which at the time of the site visit was under construction. The site lies adjacent to the A682 and is situated in an urban setting. The site can be accessed from the A682 utilising an existing roundabout junction connecting the A682 and New Hall Hey Road.

Figure 5: Extension of New Hall Hey EMP 11 Site Location Plan



Source: Mott MacDonald 2018

2.6 New Hall Hey East (EMP 72 – NE4)

Situated to the east of site EMP 11 the EMP 72 site and as shown in **Figure 6** below, the site is bounded by the River Irwell to the west and the East Lancashire Heritage Rail line to the west. These constraints present limited access options for this site. Any option would require additional enabling infrastructure to open up the site.

Figure 6: New Hall Hey East EMP 72 Site Location Plan

Source: Mott MacDonald 2018

2.7 Land south of New Hall Hey Extension (Not Allocated)

Located to the south of the Extension of New Hall Hey Site (EMP 11), the site in Figure 7, lies adjacent to the A682 and to the south of Holme Lane. Holme Manor (a residential care home) and several residential properties are located on Holme Lane which is a narrow road providing access to these properties from Bury Road.

The River Irwell lies to the east of the site. A small industrial estate and the East Lancashire Railway lie further east of the site. A small reservoir is present within the site.

Figure 7: Land South of New Hall Hey Extension

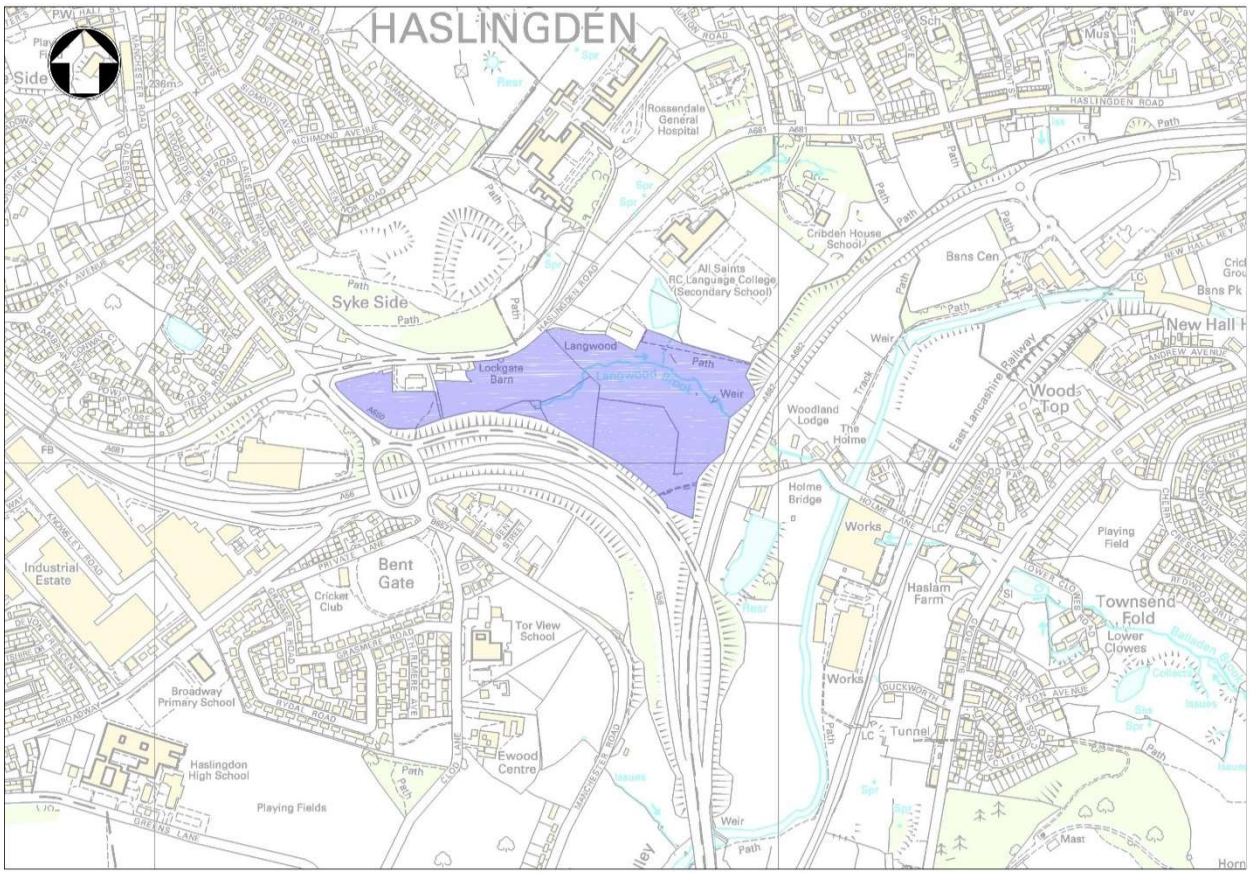
Source: Mott MacDonald 2018

2.8 Land at Sykeside (ADD 2 – Not Allocated)

Lying off the A681 Haslingden Road the site is shown in **Figure 8** below. The site is situated in an urban area between Rawtenstall to the east and Haslingden to the north west. The site is bounded by the A681 to the north, the A682 to the south east and the A56 to the south west.

There are significant level differences between the A681 and the site. Langwood Brook, a minor watercourse also runs through the site. An electrical substation is also situated to the north of the site.

Figure 8: Land at Sykeside



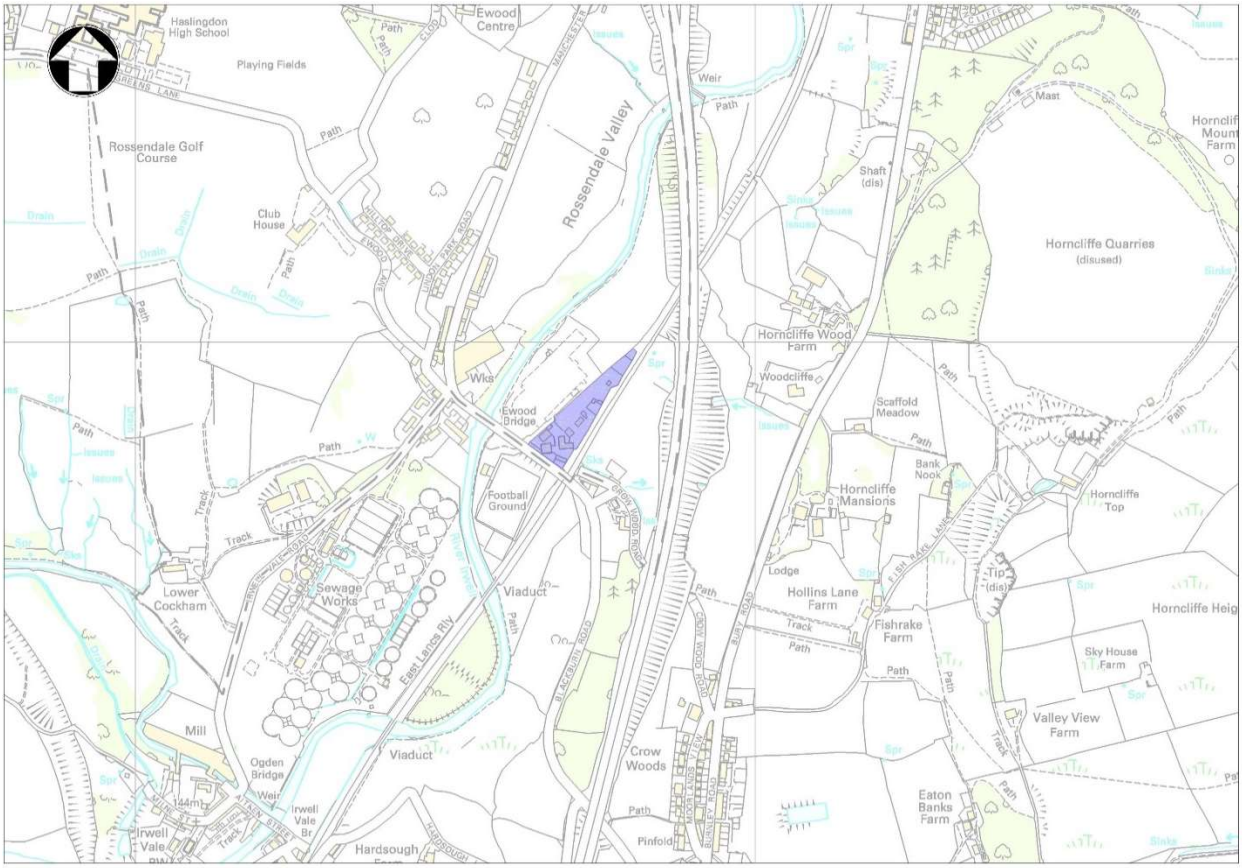
Source: Mott MacDonald 2018

2.9 Ewood Bridge (EMP 10 – part of site NE1)

Located off the B6527 Manchester Road the EMP 10 site is situated in an urban area bounded by a storage yard to the west and the East Lancashire Railway to the east. The A56 lies further east of the site.

Access to the site is currently provided by an existing side road junction with Manchester Road. The site is shown in **Figure 9** below. This site is part of the larger New Employment site 1.

Figure 9: Ewood Bridge EMP 10 Site Location Plan



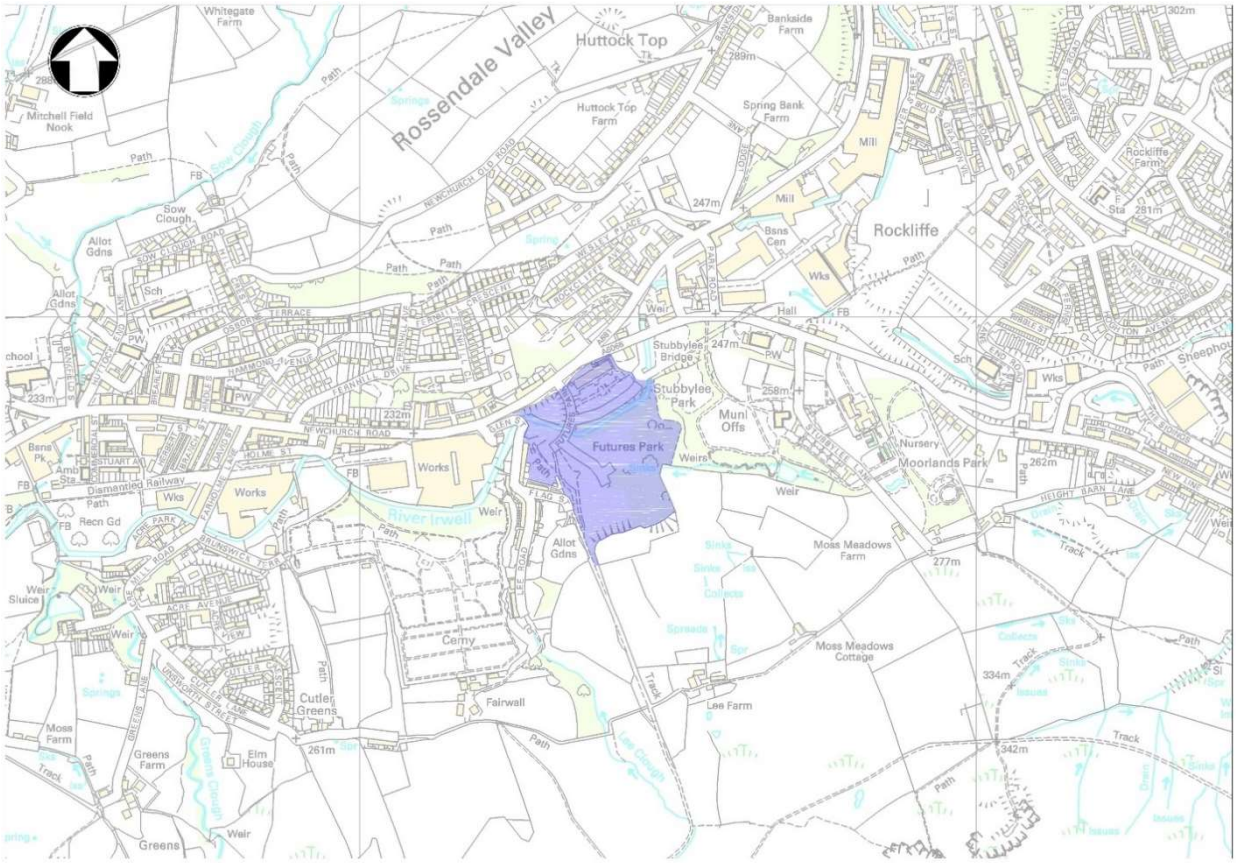
Source: Mott MacDonald 2018

2.10 Futures Park (EMP 18 – M4)

Situated in an urban setting and located off the A681, this site in **Figure 10** accommodates the Rossendale Borough Council office building and a Lancashire County Council Highways Depot.

The site lies adjacent to Stubbylee Park and provides through access to Lee Quarry Mountain Bike Trail. The site is accessed by an existing priority junction with the A681 Newchurch Road.

Figure 10: Futures Park EMP 18 Site Location Plan



Source: Mott MacDonald 2018

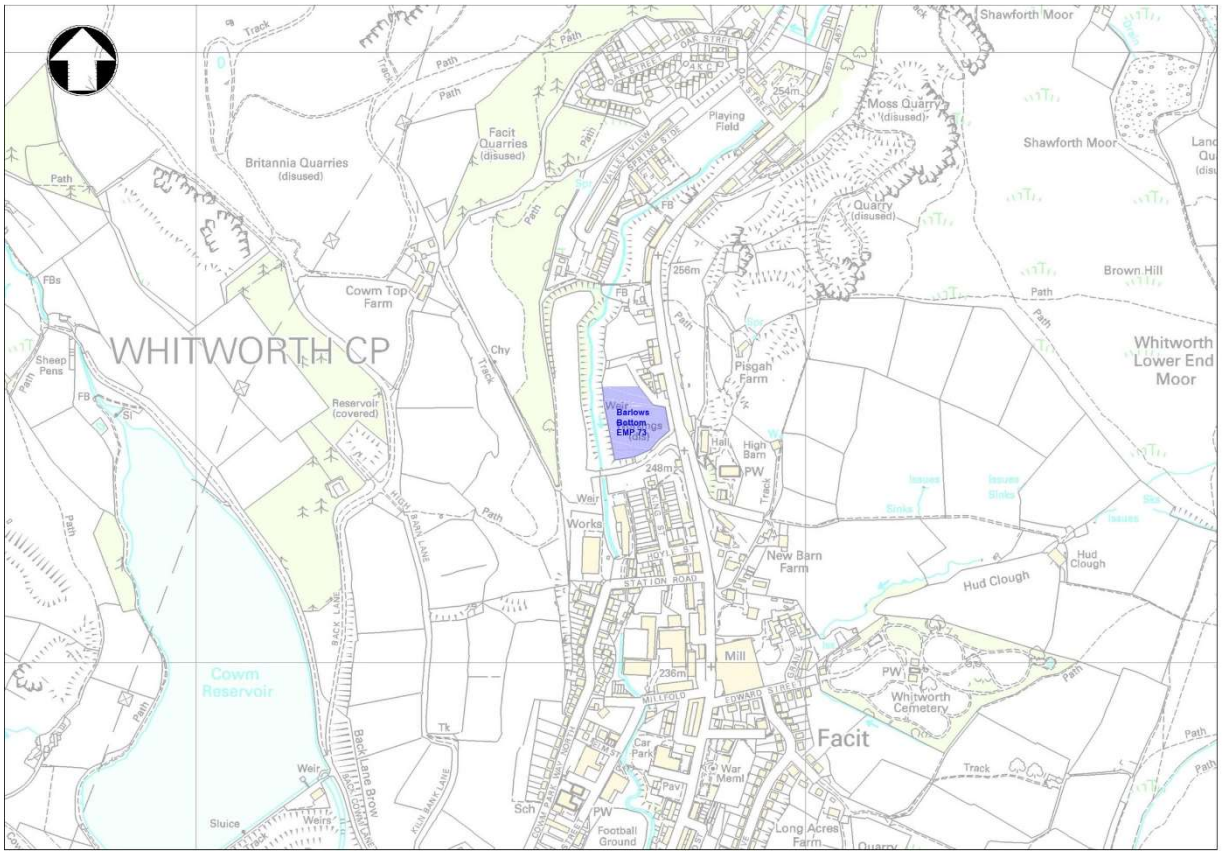
2.11 Barlow Bottoms (EMP 73 – Not Allocated)

Situated between the settlements of Millgate and Whitworth, the EMP 73 site in **Figure 11** is located off the A671 Market Street, within an urban setting, approximately 180m north of Hoyle

Street. Several residential properties are situated to the south of the site, whilst a brook runs through the centre. The site is served by an existing narrow access road off the A671 which also borders the south and west of the area.

Whilst access for motor vehicles is currently restricted through the placement of boulders and bollards, the existing junction provides a link to a multi user sustainable travel route and access is maintained for these user groups. A bus stop is present on the A671 southbound, approximately 15m from the existing junction.

Figure 11: Barlow Bottoms EMP 73 Site Location Plan



Source: Mott MacDonald 2018

3 Options Assessment and Shortlisting

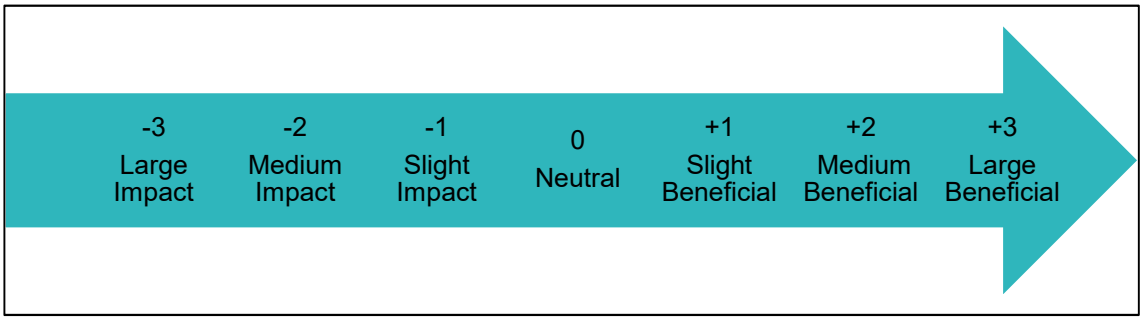
3.1 Preamble

Following the site visits a high level optioneering and sifting process was undertaken for each employment site. This process and findings are described below.

3.2 Option Assessment Approach

When assessing the options for each site, a simple multi criteria assessment tool was used with a range of -3 to +3. The points scale, shown in **Figure 12**, largely mirrors the approach used when undertaking an appraisal of major schemes as advised by Department for Transport Appraisal Guidance (DfTAG). Thus, the adopted approach is similar to the Department of Transport's Early Assessment Sifting Tool (EAST) although not identical due to the emphasis the tool has on providing the appropriate appraisal structure for business cases.

Figure 12: Points Scale Scoring Range



Source: Mott MacDonald

Table 2 below shows the assessment criteria used to appraise the draft access options for each key employment sites.

Table 2: Appraisal Assessment Criteria

Assessment Criteria	What is assessed?
Deliverability	Is the option feasible? Is there any demolition or clearance works required? Relocation of existing tenants/occupiers. Are there any extensive earthworks required?
Environmental constraints	Are there any significant environmental constraints present within the site which may affect the proposed option?
Road Safety Implications	Is the site located near to collision cluster sites? Is there a high number of collision occurrences?
Integration with existing network	Does the proposed option integrate well with the existing road network?
3rd Party Land Required	Is there a requirement to acquire further 3rd party land/property?
Maximises development	Does the proposed option maximise the development potential within the site?

Assessment Criteria	What is assessed?
Impact on local/strategic road network	Is the proposed option likely to have a positive/detrimental impact on traffic flow and movements?
Impact on Utilities	Are there any significant utility diversions required?
Interface with SRN	Does the proposed option interface with the SRN in a positive or detrimental way? Are the proposals likely to be supported by Highways England?
Physical Constraints	Are there any existing physical features such as rail lines, watercourses which may require additional enabling infrastructure? Are there power lines or existing residential properties close by?
Ease of access	Is the site access located close to the SRN, is there a direct route to the site?
Links to the public transport network	Can the site be accessed easily from the public transport network? Are there bus stops or rail links close to the site?
Suitability for large goods vehicles	Can large goods vehicles access the site or are there local constraints which prevent them from doing so?
Cost	Is the proposed option likely to be high, medium, or low cost?

Source: Mott MacDonald

The assessment criteria were selected based on the likely end use of the site, the needs of a Local Plan evidence base and likely questions which would be raised by key stakeholders.

3.3 Initial Options Consideration

A summary of the proposed access options that were assessed against the multiple criteria assessment and scored accordingly is discussed in this section.

3.3.1 Land North of Hud Hey (EMP 13 – NE2)

Due to the significant level differences within the site, access from Blackburn Road could prove difficult and require costly earthworks to provide an access to the site. Level access to the site can be achieved from Hud Hey Road between the A56 overbridge and the row of terraced properties, however the proximity of the structure and the properties would make this unsuitable as an access for large vehicles.

Considering the above access constraints, a potentially suitable option would be to utilise the existing access points which serve the small industrial site between Hud Hey Road and the A680.

3.3.2 Carrs Industrial Estate (ADD 6 – NE3)

The remoteness of Site ADD 6 along with the restricted width and private status of the existing roads, means that the site can be accessed from five potential points. These are:

- Martin Croft Road, which offers a direct route to the site however, it is narrow and would only allow vehicles to travel in one direction. Agricultural outbuildings lie along the road and would also require demolition to enable the junction and access road to be constructed.
- The residents parking area to the east of the row of terraced properties could be utilised as a level access into the site. The residents parking could be relocated to the rear of the properties

as part of this option. The A56 overbridge to the east of this access point is a potential constraint, however.

- To the south of the site via a route from the existing Commerce St. This road is retained by Highways England, due to noted geotechnical constraints in the vicinity, which may need to be considered further.
- A left in left out arrangement on the A56. This option may not fit well with Highways England future proofing, such as Expressway upgrade.
- Provision of an overbridge from the A680. Would need to be futureproofed against any potential A56 widening, and the tie-in location on the A680 would need considerable detailed analysis, thought and design.

3.3.3 Land Adjacent to Hollin Gate Farm (ADD 3 – Not Allocated)

Due to the semi-rural location and significant level differences noted previously, two options which provide direct access from the A680 have been considered. These are:

- The use of the existing access to Hollin Gate Farm via a signalised junction shared with adjacent local services.
- The other option utilises the existing access but proposes a roundabout junction instead.

An additional access to the ADD 3 site from Rising Bridge Road was also considered, however width restrictions on the road, existing on street residential parking, parking during school peak times and the need to negotiate the Rising Bridge Road/Blackburn Road junction make this a challenging option.

Finally, a signalised junction north of the Rising Bridge roundabout on Blackburn Rd was considered. The interaction of this junction with the Rising Bridge junction requires careful consideration.

3.3.4 Extension of New Hall Hey (EMP 11 – NE4)

As seen in the Baseline Position, the New Hall Hey EMP 11 site can be accessed by utilising the roundabout junctions from the A682 and New Hall Hey Road as well as extending the access road constructed for New Hall Hey site EMP 08.

3.3.5 New Hall Hey East (EMP 72 – NE4)

The site is bounded by the River Irwell to the west and the East Lancashire Heritage Rail line to the west. These constraints present limited access options for this site. Any option would require additional enabling infrastructure to provide appropriate access to the site.

As the EMP 72 site is constrained by a river and a railway, the only feasible option therefore, is to access the site from the roundabout junctions on the A682 and New Hall Hey Road and utilise the proposed extended access road for the New Hall Hey EMP 11 site with a link heading south towards the river. A new bridge across the river would also be required to provide access to the site.

3.3.6 Land south of New Hall Hey Extension (Not Allocated)

The existing residential properties situated to the north of the site along with the width constraints of Holme Lane, prevent access to the site from Holme Lane. Access opportunities to the site as a result are limited. The only potentially feasible option is a new roundabout junction on the A682 which could also provide access to the Land at the Sykeside site.

3.3.7 Land at Sykeside (ADD 2 – Not Allocated)

An existing electrical substation, stables and residential properties restrict the number of access options to the site from the A681 Haslingden Road. Options which utilised existing accesses to the stables and substation were considered then discounted due to the proximity of the roundabout junction and the legal and safety issues in sharing access to the substation site.

Further options derived are:

- A priority junction adjacent to the unnamed road leading to Brynbella Drive. The gradient between the A681 and the site at this point is quite steep and may require extensive earthworks to construct the junction and access road.
- Access the site from the roundabout junction on the A682 highlighted for the land south of New Hall Hey Extension site.

3.3.8 Ewood Bridge (EMP 10 – part of site NE1)

In the first instance, any potential access option could look to utilise the existing access to the site.

Whilst the existing priority junction which provides access to this site can be utilised, other options for consideration are:

- Retain access via a priority junction but improve the radii and visibility splays; and
- Introduce an all movements signalised junction.

3.3.9 Futures Park (EMP 18 – M4)

As discussed in the Baseline Position chapter, the EMP 18 site can be accessed by an existing priority junction with the A681 Newchurch Road.

Further potential access options include:

- Upgrading the existing priority junction to a signalised junction. On street parking for the adjacent residential properties and the Royal Oak Pub would, however, be lost.
- Closure of the existing junction and construction of a new signalised junction to the east of the council offices. These council offices would need to be demolished and relocated to accommodate the new access.

3.3.10 Barlow Bottoms (EMP 73 – Not Allocated)

Considering the vehicular restrictions discussed above in the Baseline Position chapter, access to the EMP 73 site was initially proposed using the existing priority junction between the site and the A671 Market Street.

Priority junctions with Millfold and Station Road were also considered.

3.4 Initial Options Summary

The multi criteria assessment of each initial option for each site is summarised in **Table 3** overleaf, so as to derive an initial preferred option for each site which was shared with key stakeholders for comment. The full detailed output for the multi criteria assessment can be found at **Appendix A**.

Table 3: Option Assessment Matrix Summary

Site	Initial Derived Options	Score Total
1. Land North of Hud Hey (EMP 13)	1. Priority junction access from Blackburn Road	-6
	2.Priority junction access from Hud Hey Road, to the east of the A56 overbridge	7
	3. Priority junction access from Carter Hall Park	3
	4. Left in, left out access from A56 to the West	-9
	5. Priority junction access through existing Industrial Park on Hud Hey Road	7
2. Carrs Industrial Estate Northern Extension (ADD 6)	1. Priority junction access Martin Croft Road/Roundhey Road	2
	2. Priority junction access from Hud Hey Road to the east of existing terrace properties	7
	3. Left in/Left out access from the A56	-9
	4. Priority junction utilising existing farm access to the south off Commerce Street.	5
	5. Overbridge from A680	-14
3. Extension of New Hall Hey (EMP 11)	1. Access utilising existing New Hall Hey Roundabout and new access road	25
4. Extension of New Hall Hey East (EMP 72)	1. Access utilising existing New Hall Hey Roundabout with new access road and bridge	8
5. Land adjacent to Hollin Gate Farm (ADD 03)	1. Priority junction access utilising existing farm access	-8
	2. Direct access from A56/A680 roundabout.	-10
	3. Priority junction access to south from Rising Bridge Road.	-3
	4. Signal junction on Blackburn Road north of A56/A680 roundabout	8
6. Futures Park (EMP18)	1. Signalised junction access from existing junction on A681	16
	2. Access from new junction on A6066 to the east of Rossendale BC office building	0
	3. Access from new junction on A6066 through wooded area to east of Futures Park	-2
7. Park and Ride Site at Ewood Bridge (EMP 10)	1. New signalised junction access from B6527 Blackburn Road	25
	2. New roundabout junction access from B6527 Blackburn Road	18
8. Barlow Bottoms (EMP 73)	1. New priority junction access from Station Road	14
	2. New Priority junction access from Millfold	7
	3. New priority junction access from Market Street	4
9. Land South of New Hall Hey Extension	1. New roundabout access off A682 shared with Land at Sykeside site	1
10. Land at Syskeside	1. New roundabout access of A682 shared with Land south of New Hall Hey Extension site	6
	2. Priority junction access utilising substation access road	-6
	3. Access road utilising access road to stables	-5
	4. Ghost island priority junction off Haslingden Road	3

Source: Mott MacDonald

3.5 Initial Preferred Options

Following the multi-criteria assessment, the preferred access options for the employment sites noted in the draft Rossendale Local Plan are summarised in **Table 4** below.

Table 4: Preferred access options for employment sites.

Employment Sites	Site Reference Number	Preferred Option
Land North of Hud Hey	EMP 13 (NE2)	Utilising existing access to industrial estate and improve priority junction, although industrial estate would be compromised.
Carrs Industrial Estate	ADD 6 (NE3)	New priority junction to the east of the terraced properties on Hud Hey Road.
Land Adjacent to Hollin Gate Farm	ADD 3 (Not Allocated)	Utilising the existing access to Hollin Gate Farm and providing a signalised junction on the A680.
Extension of New Hall Hey	EMP 11 (NE4)	Utilising existing roundabout access from the A682 and extending the existing access road.
New Hall Hey East	EMP 72 (NE4)	Utilising existing roundabout access from the A682 and providing a link from the proposed extended access road to EMP 11 site complete with new bridge over the river.
Land south of New Hall Hey Extension	Unknown (Not Allocated)	New roundabout junction from A682 which could be utilised to open the adjacent Sykeside site.
Land at Sykeside	ADD 2 (Not Allocated)	New roundabout junction from A682, shared with adjacent Land South of New Hall Hey site.
Ewood Bridge	EMP 10 (part of site NE1)	Utilising the existing access and upgrading to a signalised junction, incorporating bus priority measures.
Futures Park	EMP 18 (M4)	Utilising the existing access and upgrading to a signalised junction.
Barlow Bottoms	EMP 73 (Not Allocated)	Providing new priority junction access from Millfold.

Source: Mott MacDonald

3.6 Stakeholder feedback and changes to preferred options

The initial preferred options were shared with both Lancashire County Council and Highways England, as well as Rossendale Borough Council for comment, via an interim technical note produced by Mott MacDonald.

Following client and stakeholder feedback on the proposed preferred options, some changes were made. These changes related to the following three sites;

- Carrs Industrial Estate,
- Land South of New Hall Hey Extension, and
- Land at Sykeside.

The concerns and changes are discussed and described below. None of the other preferred options in **Table 4** required changes.

3.6.1 Carrs Industrial Estate (ADD 6 – NE3)

The initial proposed access options to this site consisted of an access to the east of the terraced properties on Hud Hey Road and an alternative option utilising Martin Croft Road. Both these options were not progressed due to concerns raised by Highways England and Lancashire County Council.

In light of these concerns, an alternative option was developed which utilises an existing access to the south of the site off Commerce Street and a new access road leading from the existing junction off Commerce street running north to the site.

It is understood that Highways England still retain concerns about use of Commerce St as an access, due to the stability of the adjacent embankment. It is suggested that additional information would need to be provided by Highways England in order that the specifics of this concern can be understood by Rossendale Borough Council in greater detail. This will also assist in determining what treatment would need to be implemented to ensure this proposed access could be built and whether the costs of such treatments would be viable for this access.

3.6.2 Land South of New Hall Hey Extension (Not Allocated)

The access to this site was via a proposed new roundabout on the A682 positioned between the land at Sykeside and Land South of New Hall Hey Extension.

This option was not progressed due to safety concerns from Highways England concerning the introduction of a roundabout junction on a high-speed section of the A682 and the likelihood of queuing vehicles in peak hour traffic.

Following consultation with Rossendale Borough Council, and on the basis that this was the only feasible site access option, this site was removed from the study due to the lack of other suitable access options.

3.6.3 Land at Sykeside (ADD2 – Not Allocated)

The initial proposal for access to this site was via a new proposed roundabout on the A682 shared with the Land South of New Hall Hey Extension site referred to in the previous section.

Due to the concerns raised by Highways England, the proposed roundabout access option has not been progressed. An alternative option which proposes a priority junction access to the site from the A681 Haslingden Road has been assessed instead.

3.7 Final Preferred Options

After the client and stakeholder changes were acknowledged, the final list of preferred options is stated below in **Table 5**. These preferred options for the employment sites were progressed to the modelling stage and the results are provided in the subsequent Junction Modelling chapter.

Table 5: Final Preferred Options

Employment Site	Site Reference Number	Preferred Option
Land North of Hud Hey	EMP 13 (NE2)	Utilising existing access to industrial estate and improve priority junction.
Carrs Industrial Estate	ADD 6 (NE3)	To avoid HE & LCC concerns, there is a need to utilise the existing access to the south of the site off Commerce Street. A new access road would run north from the existing junction off Commerce Street. As noted previously, further investigation into the adjacent

Employment Site	Site Reference Number	Preferred Option
		embankment may be required due to concerns raised by Highways England
Land Adjacent to Hollin Gate Farm	ADD 3 (Not Allocated)	Utilising the existing access to Hollin Gate Farm and providing a signalised junction on the A680.
Extension of New Hall Hey	EMP 11 (NE4)	Utilising existing roundabout access from the A682 and extending the existing access road.
New Hall Hey East	EMP 72 (NE4)	Utilising existing roundabout access from the A682 and providing a link from the proposed extended access road to EMP 11 site complete with a new bridge.
Land south of New Hall Hey Extension	Unknown (Not Allocated)	Site removed from the study due to no suitable access options.
Land at Sykeside	ADD 2 (Not Allocated)	New priority junction to the site from A681 Haslingden Road.
Ewood Bridge	EMP 10 (part of site NE1)	Utilising the existing access and upgrading to a signalised junction.
Futures Park	EMP 18 (M4)	Utilising the existing access and upgrading to a signalised junction.
Barlow Bottoms	EMP 73 (Not Allocated)	Providing new priority junction access from Millfold.

Source: Mott MacDonald

4 Junction Modelling

4.1 Preamble

To determine the impact of the proposed options on the existing road network, each option was tested using industry standard junction modelling software.

The following software packages were used to model the proposed options:

- Junctions 9 (PICADY) – Priority junctions
- Junctions 9 (ARCADY) – Roundabout
- LinSig – Signalised junctions

A model was built for each of the proposed options using geometry measured from the proposed design (based on OS mapping). The 2034 future year traffic scenario was tested using existing and future year forecast traffic volumes from the Rossendale Local Plan Highway Capacity Traffic Study. **Table 6** below shows which software packages were used to model the access arrangements to the employment sites.

Table 6: Modelling software

Employment Site	Site Reference Number	Modelling Software
Land North of Hud Hey	EMP 13 (NE2)	Not modelled (see 4.2)
Carrs Industrial Estate	ADD 6 (NE3)	Junctions 9 - PICADY
Land Adjacent to Hollin Gate Farm	ADD 3 (Not Allocated)	LinSig
Extension of New Hall Hey	EMP 11 (NE4)	Junctions 9 - ARCADY
New Hall Hey East	EMP 72 (NE4)	Junctions 9 - ARCADY
Land south of New Hall Hey Extension	Unknown (Not Allocated)	**Site removed from the study.**
Land at Sykeside	ADD 2 (Not Allocated)	Junctions 9 - PICADY
Ewood Bridge	EMP 10 (part of site NE1)	LinSig
Futures Park	EMP 18 (M4)	LinSig
Barlow Bottoms	EMP 73 (Not Allocated)	Junctions 9 - PICADY

Source: Mott MacDonald

The following sections present and discuss the modelling results for each option. The RFC and DoS output values are reported using a nationally accepted traffic light colouring system. The traffic light colouring system works as follows:

- **Green** – RFC / DoS less than 0.85 / 0.90, junction is likely to operate with minimal or no delays;
- **Amber** - RFC / DoS between 0.85 and 1 / 0.9 and 1, junction is approaching design capacity and may be subject to delay with greater journey time variability;
- **Red** - RFC / DoS greater than 1, junction is over design capacity with frequent delays impacting on journey time reliability.

4.2 Land North of Hud Hey (EMP 13 – NE2)

The access option proposed for this site consists of a priority junction between the site and Hud Hey Road. At the time of writing there was no readily available traffic flow data for this site and consequently this option has not been modelled. It is thought that due to the moderate flows on

Hud Hey Road (observed from site visits), that the proposed access will function with no issues, but traffic flow data would be required to confirm this. This issue was discussed with Rossendale Borough Council prior to production of the final report.

4.3 Carrs Industrial Estate (ADD 6 – NE3)

Access at this site is proposed via an existing priority junction to the south of the site on Commerce Street. The modelling results for this option are shown in **Table 7** andindicate that the proposed junction operates satisfactory in both the morning and evening peaks.

The ratio of flow to capacity for each arm ranged between 0.03 and 0.16, which indicates that the junction is operating well within its capacity and overall delay at the junction was 1.78 seconds in the morning period and 3.14 seconds during the evening period.

Table 7: Carrs Industrial Estate (ADD 6) Results

	AM			PM		
Lane Description	**Q (pcu)**	**RFC**	**LoS**	**Q (pcu)**	**RFC**	**LoS**
Stream B-C	0.0	0.03	A	0.2	0.15	A
Stream B-A	0.1	0.06	A	0.6	0.37	B
Stream C-AB	0.2	0.16	A	0.0	0.03	A

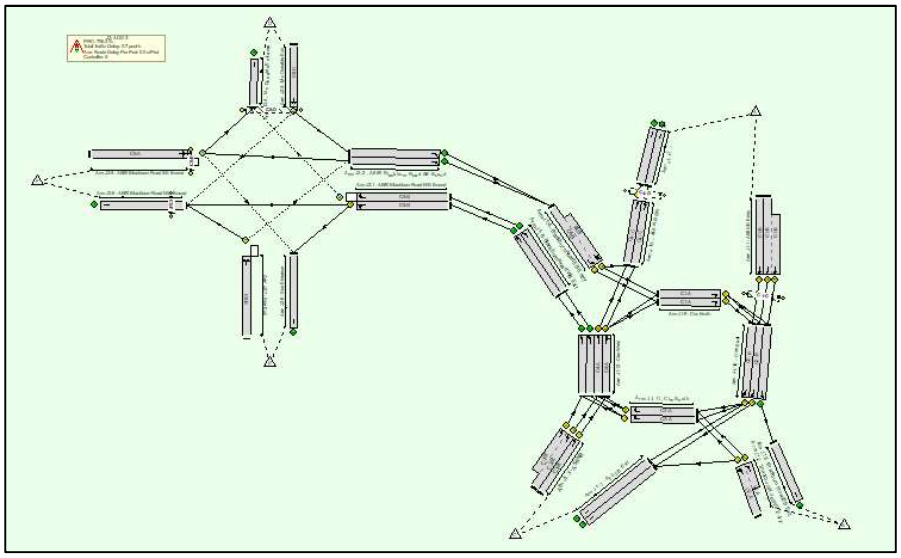
Source: Mott MacDonald

4.4 Land adjacent to Hollin Gate Farm (ADD 3 – Not Allocated)

Access to this site is proposed via an existing priority junction currently used as an access to the site. The option proposes a four-arm signalised junction with a realigned access serving the existing petrol filling station/McDonalds site.

The model for this site was incorporated into an existing model for the A56 Rising Bridge junction. This is shown in **Figure 13** below. The Rising Bridge layout includes mitigation proposed as part of the Highway Capacity Study.

Figure 13: Hollin Gate Farm (ADD3) Junction Assessment



Source: Mott MacDonald

The modelling results, seen in **Table 8**, indicate that during the morning period the arms of the proposed new signalised junction serving the Hollin Gate Farm site were operating within capacity, degree of saturation on all arms were below 90%.

During the evening period, again the arms of the proposed new signalised junction serving the Hollin Gate Farm site were operating within capacity, degree of saturation on all arms were below 90%.

Table 8: Land adjacent to Hollin Gate Farm (ADD 3) Results

	AM		PM	
Lane Description	**Deg Sat (%)**	**MMQ (pcu)**	**Deg Sat (%)**	**MMQ (pcu)**
A680 Blackburn Road NW Bound Ahead Left	75.0%	17.3	76.6%	17.9
A680 Blackburn Road NW Bound Right	10.7%	0.4	14.2%	0.5
McDonalds Exit Left Right	32.2%	1.5	24.8%	1.5
A680 Blackburn Road SE Bound Ahead Left Right	59.4%	11.5	61.2%	12.7
Site Exit Right Left	21.0%	0.8	76.8%	5.5

Source: Mott MacDonald

4.5 EMP 11 Extension of New Hall Hey (Not Allocated)

Access to this site is proposed via an existing roundabout on the A682. The modelling for this option, see **Table 9** below, indicates that at both the morning and evening peaks on all arms of the roundabout, the junction operates within capacity with a Ratio of Flow to Capacity between 0.04 and 0.21 on all arms.

Table 9: EMP 11 Extension of New Hall Hey Results

	AM			PM		
Lane Description	**Q (pcu)**	**RFC**	**LoS**	**Q (pcu)**	**RFC**	**LoS**
New Hall Hey Road North	0.3	0.21	A	0.4	0.28	A
Pets at Home	0.0	0.04	A	0.1	0.10	A
New Hall Hey Road South	0.1	0.11	A	0.6	0.36	A
Development Land West	0.0	0.00	A	0.0	0.00	A

Source: Mott MacDonald

4.6 EMP 72 Extension of New Hall Hey East (NE4)

This site shares the same access as site EMP11 meaning the modelling results, displayed above in **Table 9**, are the same for this proposed site access.

4.7 ADD 2 Land at Sykeside (Not Allocated)

This proposed option comprises of a priority junction between the A680 and the site with a right turn pocket.

The modelling results for this option, shown in **Table 10**, indicate that in both the morning and evening peaks there would be significant queuing and delay for vehicles exiting the site due to the heavy traffic flows of around 1,000 vehicles in each direction on the A680 mainline.

These heavy flows would see queues of around 26 pcus in the morning and 94 during the evening peak.

Table 10: ADD 2 Land at Sykeside Results

	AM			PM		
Lane Description	**Q (pcu)**	**RFC**	**LoS**	**Q (pcu)**	**RFC**	**LoS**
Stream B-C	26.0	9999999999.00	F	94.4	2.11	F
Stream B-A	21.5	9999999999.00	F	77.3	2.10	F
Stream C-B	3.3	0.79	E	0.1	0.10	A

Source: Mott MacDonald

The junction analysis raises some serious questions about the potential sustainability of this proposed site. Although a robust optioneering process has been undertaken, the capacity of the junction is a significant constraint due to existing traffic flows on the A680.

Access constraints impact on the deliverability of the site and as such it is unlikely that the access could operate in a satisfactory manner during the peak hour periods. Hence, there isn't a value for money access solution which would unlock this site and other sites have better potential.

4.8 EMP 10 Ewood Bridge (part of site NE1)

This proposed junction utilises an existing priority junction between the site and the B6527 Blackburn Road and proposes upgrading it to a signalised junction for the park and ride site. As evidenced by the results shown in **Table 11**, all arms of the junction operate well within capacity during the morning and evening peaks.

Table 11: EMP 10 Ewood Bridge Results

	AM		PM	
Lane Description	**Deg Sat (%)**	**MMQ (pcu)**	**Deg Sat (%)**	**MMQ (pcu)**
Site Egress Left/Right	17.0%	0.0	47.7%	3.5
Blackburn Rd WB Right/Ahead	59.1%	10.6	49.5%	8.4
Blackburn Rd EB Left/Ahead	43.1%	7.2	47.5%	8.4

Source: Mott MacDonald

4.9 EMP 18 Futures Park (M4)

This proposed junction utilises an existing priority junction between the site and the A681 Newchurch Road and upgrading it to a signalised junction.

From the results shown in **Table 12**, it is clear that during the morning peak two arms of the junction operate well within capacity, however the A681 Newchurch Road Eastbound Ahead and Right turn arm operates near capacity with a degree of saturation of 93.9%.

During the evening peak all arms operate within capacity, however both the Futures Park and Newchurch Road westbound approaches are very close to the theoretical capacity value of 90% DoS, at 89.6% and 89.2% respectively.

Table 12: EMP 18 Futures Park Results

	AM		PM	
Lane Description	**Deg Sat (%)**	**MMQ (pcu)**	**Deg Sat (%)**	**MMQ (pcu)**
Future Park Entrance Left Right	44.1%	2.1	89.6%	12.6
A681 Newchurch Road Eastbound Right Ahead	93.9%	62.8	80.1%	38.5
A681 Newchurch Road Westbound Left Ahead	71.5%	27.1	89.2%	51.5

Source: Mott MacDonald

Similar to the operational analysis results for the ADD2 Land at Sykeside junction, the results for this junction analysis would suggest that the sustainability of this as a development site is not supported by the junction modelling results.

The operation of junction, as predicted by the modelling results, suggests that any priority-controlled arrangement would be insufficient and potentially unsafe due to flows of over 1,000 pcus on the main A681 road. Under a signalised arrangement, the junction is either close to or at capacity.

Therefore, continued use of a priority-controlled arrangement could unlock some additional development, with an upgrade to a signalised arrangement unlocking a further portion of land. However, the full quantum of land as assessed at present, would be difficult to accommodate with any junction upgrade.

4.10 EMP 73 Barlow Bottoms (Not Allocated)

Access at this site is proposed by utilising the existing priority junction between the site and the A671 Market Street. From the results shown in **Table 13**, all arms on the junction operate well within capacity during the morning and evening peaks.

Table 13: EMP 73 Barlow Bottoms

	AM			PM		
Lane Description	**Q (pcu)**	**RFC**	**LoS**	**Q (pcu)**	**RFC**	**LoS**
Stream B-C	0.0	0.03	A	0.1	0.13	B
Stream B-A	0.0	0.04	C	0.9	0.49	E
Stream C-AB	0.3	0.19	A	0.0	0.02	A

Source: Mott MacDonald

5 Road Safety Audits

5.1 Preamble

To ensure that the proposed options do not compromise highway safety, each of the proposed options were subjected to a stage 1 Road Safety Audit, which is appropriate for this stage of the Local Plan process.

The Road Safety Audits were undertaken on Tuesday 23rd October 2018. The weather conditions were cloudy, and the road surface was dry.

A summary of the issues raised at each site are discussed below, and the full Road Safety Audits can be found at **Appendix B**.

5.2 Land North of Hud Hey (EMP 13 – NE2)

Option EMP13/01 was audited and a total of four issues were raised by the audit team.

- Although new tactile paving was proposed at the junction, there was a lack of tactile paving at existing nearby junctions.
- Visibility is restricted at the junction by an existing stone wall, reducing visibility for motorists and pedestrians using the access.
- Wide junction mouth could encourage vehicles to leave the site side by side and result in side swipe incidents.
- On street parking occurring opposite the access, restricting large vehicle movements entering and exiting the site.

The four issues could be overcome and addressed at the detailed design and therefore not considered to be showstoppers for the proposed site access location.

5.3 Carrs Industrial Estate (ADD 6 – NE3)

Option ADD 6/03 was audited and a total of three issues were raised by the audit team.

- Restricted visibility at the junction of the proposed access and the junction with Commerce Street, which may result in conflict between turning vehicles and those travelling ahead.
- Wide junction mouth could encourage vehicles to leave the site side by side and result in side swipe incidents.
- Downhill gradient on approach to junction could result in vehicles over shooting to give way markings resulting in conflict with vehicles on Commerce Street.

Specific treatments may need to be incorporated to the design at a later detailed stage. These issues are considered minor and do not suggest that this location cannot accommodate the proposed site access.

5.4 Land adjacent to Hollin Gate Farm (ADD 3 – Not Allocated)

Option ADD 3/01 was audited and a total of four issues were raised by the audit team.

- Although new tactile paving was proposed at the controlled crossings within the proposed junction arrangement, there was a lack of tactile paving at existing nearby junctions.
- The proposed new junction arrangement does not include cycle facilities or links to existing cycle facilities.
- Wide junction mouth could encourage vehicles to enter and exit at speed and crossing point is wider than necessary increasing pedestrians' vulnerability to traffic.
- Existing Petrol Filling Station sign could restrict visibility of traffic signal heads and pedestrians waiting on the crossing.

Specific minor treatments may be required at a later stage of design. No alterations to the current proposed layout are proposed at this stage, on the basis of these comments.

5.5 Extension of New Hall Hey (EMP 11-NE4) and New Hall Hey East (EMP 72-NE4)

As the same existing access is proposed for the EMP 11 and EMP 72 sites a common option serving the two sites has been developed. Option EMP 11 EMP 72/01 was audited for both sites and a total of two issues were raised by the audit team.

- It is unclear through the outline designs how the proposed access roads will tie into the developments and whether the proposed footway is suitable. There is no provision for cyclists. A lack of provision could result in conflict between pedestrian, cyclists and motor vehicles.
- The existing roundabout on New Hall Hey Road is small. It is not known whether this roundabout will accommodate an increase in traffic flows.

The two issues could be overcome and addressed at the detailed design and are therefore not considered to be showstoppers for the proposed site access location.

5.6 Land at Sykeside (ADD 2 – Not Allocated)

Option ADD 2/02 was audited and a total of three issues were raised by the audit team.

- Although new tactile paving was proposed at the junction, there was a lack of tactile paving at existing nearby junctions.
- The width of the proposed splitter island may not accommodate all users who may overspill into the carriageway.
- A steep gradient on the access road could increase the risk of collisions or likelihood of loss of control incidents.

These could be addressed within the design at a later detailed stage. These issues are considered minor and do not suggest that this location cannot accommodate the proposed site access. The junction capacity, as outlined in Chapter 4, remains the overriding concern for this location.

5.7 Ewood Bridge (EMP 10 – part of site NE1)

Option EMP 10/02 was audited and a total of five issues were raised by the audit team.

- Queuing behind a stationary bus at the bus stop on Blackburn Road may extend into the junction leading to rear end shunt collisions
- On-carriageway cycle lanes are shown to terminate prior to the junction where cyclists could be vulnerable to passing vehicles.
- The existing stone wall lies within the indivisibility zone, reducing visibility of traffic on the A6527 which could increase the potential for collisions.

- Narrow footways and the introduction of traffic signal equipment could force pedestrians into the carriageway increasing the potential for conflict.
- The proposed access road appears narrow which may not accommodate future traffic leading to side swipe incidents.

The five issues could be rectified at the detailed design stage and are therefore not considered to be requiring of treatment at this stage of design.

5.8 Futures Park EMP 18 (M4)

Option EMP 18/02 was audited and a total of three issues were raised by the audit team.

- On street parking could restrict the visibility of the proposed signal head. Vehicles may wait within the hatched area on the northern side of the junction.
- Narrow footways and the introduction of traffic signal equipment could force pedestrians into the carriageway increasing the potential for conflict.
- Lack of tactile paving within the splitter island at the A681 Newchurch Road Pedestrian Crossing.

These could be addressed within the design at a later detailed stage. Therefore, these issues do not suggest that this location cannot accommodate the proposed site access. The primary concern for this location is still the capacity of any proposed junction with the full quantum of development included, as discussed in Chapter 4.

5.9 Barlow Bottom (EMP 73 – Not Allocated)

Option EMP 73/01 was audited and a total of four issues were raised by the audit team.

- The proposed access does not show any provision for pedestrians, cyclists and horse riders, which will increase their vulnerability and risk of being struck by passing vehicles.
- The width of the proposed splitter island may not accommodate all users who may overspill into the carriageway.
- Lack of crossing point to adjacent bus stop could increase user's vulnerability when crossing Market Street.
- Wide junction mouth could lead to vehicles exiting side by side and narrow access road could result in side swipe incidents.

These four issues could be addressed within the design at a later detailed stage. These issues are considered minor and do not suggest that this location cannot accommodate the proposed site access.

5.10 Summary

Although there were several issues raised for each site by the Road Safety Audit Team, it is thought that these issues will not in isolation, stop of the proposed site accesses being taken to the next stage of design and ultimately delivered. These Road Safety Audit issues can be managed through further design refinement as part of the detailed design stage. The primary concerns for a few of the junctions is the capacity of the layouts. Existing high traffic flows and the generated trip volumes from certain sites result in the sustainability of certain locations, such as Future's Park, being in question at the development quantum currently proposed.

6 Final Proposed Designs

6.1 Preamble

Following the modelling assessment and Road Safety Audit, the final proposed options are discussed below and shown in **Appendix C**. An overview of each of the options is first set out in **Table 14** and notes if each option is deliverable and associated cost of delivering mitigation.

Indicative scheme costs for each proposed design are further detailed in Section Indicative Scheme Costs6.11.

Table 14: Summary of final proposed options

Site	Site Ref No.	Potentially deliverable, pending further technical work	Mitigation costs <500,000	Mitigation costs >£500,000	Deliverability limited or constrained by capacity
Land North of Hud Hey	EMP 13 (NE2)	✓	✓		
Carrs Industrial Estate	ADD6 (NE3)	✓		✓	
Land Adjacent to Hollin Gate Farm	ADD3 (Not Allocated)	✓	✓		
Extension of New Hall Hey & New Hall Hey East	EMP 11 & 72 (NE4)	✓		✓	
Land at Sykeside	ADD2 (Not Allocated)	×		✓	✓
Ewood Bridge	EMP 10 (part of site NE1)	✓	✓		
Futures Park	EMP 18 (M4)	✓		✓	✓
Barlow Bottoms	EMP 73 (Not Allocated)	✓	✓		

Source: Mott MacDonald

6.2 Land North of Hud Hey (EMP 13 – NE2)

The access option proposed for this site consists of a priority junction between the site and Hud Hey Road. This option utilises access into the existing industrial estate. Due to the differences in levels between Hud Hey Road and the proposed site a significant access road would be required to ascend between the existing industrial estate and the site ground level.

The works required for the access road would significantly compromise the existing industrial estate and further geotechnical investigations would be required to determine if an access road was feasible. Although there was no traffic flow data available for this site at the time of undertaking this study, it is considered that the junction would operate well with the traffic flows on Hud Hey Road, as observed from site visits. Further exploration of this point is recommended however.

Some additional measures identified through the Road Safety Audit may be required such as amendments to the existing wall and the introduction of parking restrictions to ensure good visibility and keeping the site access clear for large vehicles.

Therefore, this option is classified as **potentially deliverable** pending further technical work, such as geotechnical investigations near the industrial estate.

6.3 Carrs Industrial Estate (ADD 6 – NE3)

Access at this site is proposed via an existing priority junction to the south of the site on Commerce Street. The access utilises an existing maintenance road currently under the ownership of Highways England. An access road is proposed to link the site from the south off Commerce Street.

Highways England have raised concerns regarding the stability of the embankment which the access road is proposed to run along and have indicated that it may not be stable enough to support a new road with the additional traffic and that further geo-technical investigations are required to determine if the access road leading to the south of the site is viable.

Notwithstanding the potential geotechnical constraints, the junction operates within capacity and some additional measures identified through the Road Safety Audit such as improvements to the existing junction visibility, junction width and gradient of the access road would be required to ensure improved visibility and the reduction in potential collisions at the junction and its access road.

Therefore, this option is classified as **potentially deliverable** pending further technical work, such as geotechnical investigations to determine viability of the access road. If a resolution to this issue cannot be found (which safeguards Highways England's interests whilst providing access to the site), then reversion to an alternative access arrangement location would need to take place.

6.4 Land adjacent to Hollin Gate Farm (ADD 3 – Not Allocated)

Access to this site is proposed via an existing priority junction currently used as an access to the site. The option proposes a four-arm signalised junction with a realigned access serving the existing Shell garage/McDonalds site.

Although realigning the access to the petrol filling station/McDonalds and the access to the site would ensure a more efficient junction operation, the operators of the filling station and McDonalds may object to alterations to their site access. Variant options in terms of the staggered arrangement and the specific location of the Shell garage and McDonalds fast food site access, as well as the ADD3 access on Blackburn Rd could be considered if this site were taken forward for further consideration. The interaction between this junction and the A56 Rising Bridge is a key point in determining the most appropriate nature and operation of the junction, and variations of stagger arrangement will assist Highways England in understanding the setup with which they can be most comfortable with in terms of SRN operation.

At present, junction modelling indicates that the proposed junction operates within capacity in tandem with the existing Rising Bridge junction, however the modelling also indicates that the Rising Bridge junction is operating close to its theoretical capacity in the 2034 scenario. In addition, it should be noted that no assessment of linked trips between the Shell garage / McDonalds site and the ADD 3 site has taken place, whereas in reality there would likely be some ahead movement trips between these two destinations. This is something which could be considered further in combination with variations of this arrangement going forward if this site were to be considered in greater detail for delivery/allocation.

The Road Safety Audit indicated that additional cycle facilities would be required within the proposed junction and that the existing totem sign for the petrol filling station may obscure the signal heads and may require relocating, this may also draw objections from the operator of the petrol filling station.

Therefore, this option is classified as **potentially deliverable** with associated mitigation costs, and subject to further understanding of the interaction with A56 Rising Bridge.

6.5 EMP 11 Extension of New Hall Hey (NE4)

Access to this site is proposed via an existing roundabout on the A682 and a new access road leading from the roundabout to the proposed site. Traffic modelling undertaken for this option indicated that the junction operates within capacity.

The Road Safety Audit indicated that additional measures for pedestrians and cyclists would need to be incorporated into the design if it were to be progressed to further design stages.

Therefore, this option is classified as **potentially deliverable** with associated mitigation costs.

6.6 EMP 72 New Hall Hey East (NE4)

This site shares the same access as site EMP11 and the comments discussed for site EMP 11 also apply to this site access.

The option for this site also includes a new bridge to cross the River Irwell. Further geotechnical and environmental assessments would be required to determine if the proposed bridge was feasible.

Therefore, this option is classified as **potentially deliverable** pending further technical work (geotechnical investigation and environment assessment of the proposed bridge).

6.7 ADD 2 Land at Sykeside (Not Allocated)

This proposed option comprises of a priority junction between the A680 and the site with a right turn pocket.

There is a significant difference in ground levels between the A680 and the site and extensive earthworks would be required to construct an access road with an appropriate gradient.

Junction modelling indicated that in both the morning and evening scenarios there would be significant queuing and delay for vehicles exiting the site due to the heavy traffic flows of around 1000 vehicles in each direction on the A680.

Additional traffic surveys may be required near to this site to verify the operation of the proposed junction or reconfiguring to a signalised junction arrangement.

The Road Safety Audit indicated that the splitter island may not be wide enough to accommodate pedestrians, which may require additional land take to accommodate this proposed junction.

Therefore, access to this side is classified as **potentially not deliverable** due to capacity constraints as well as expected high mitigation costs. Further work, including bespoke traffic surveys would be required if an access to this site was to be progressed further.

6.8 EMP 10 Ewood Bridge (part of site NE1)

This proposed junction utilises an existing priority junction between the site and the B6527 Blackburn Road and upgrades it to a signalised junction for a proposed park and ride site.

Some work would be required to widen the existing access road to ensure it is wide enough for two-way traffic flow and that it is wide enough for buses.

To maintain the junction inter-visibility requirement, alterations to the stone wall would be required and the two existing bus stops on Blackburn road would require relocating away from the junction.

All arms of the junction operate well within capacity during the morning and evening peak scenarios.

Therefore, this option is classified as **potentially deliverable** with associated mitigation costs.

6.9 EMP 18 Futures Park (M4)

This proposed junction utilises an existing priority junction between the site and the A681 Newchurch Road and upgrades it to a signalised junction.

The proposed design would have a negative impact on the existing on street parking and would see at least 3 parking spaces outside the Royal Oak pub lost to accommodate the revised junction layout. In isolation this issue could be mitigated, especially as there is potentially sufficient parking available within Futures Park to offset this loss. Deliveries and servicing would need further consideration however.

The demand for these spaces would be during the evening when the car park at Futures Park would be empty and could potentially accommodate the demand. Pedestrian facilities at the junction would ensure that there was a convenient pedestrian route from the car park to the pub and the Eat-In takeaway.

Junction modelling indicates that whilst two arms operate well within capacity during the morning period, the A681 Newchurch Road Eastbound ahead and right turn arm operates near capacity with a degree of saturation of 93.9%, this may be due to a combination of the constrained length of the right turn lane and the number of vehicles making the right turn into Futures Park from the A681.

During the evening peak period all arms operate within capacity, albeit with significant queuing recorded on two of the approach arms.

The Road Safety Audit highlighted that the on-street parking may obscure the signal heads and that drivers could park vehicles within the hatched area outside the Royal Oak – these issues could be addressed during detailed design. Facilities for cyclists would also need to be considered due to the proximity of Lee Quarry Mountain Bike Trail.

In summary, this option is classified as **potentially deliverable**, however, due to capacity constraints and potential high mitigation costs for including land beyond that already included within the design, further consideration about the maximum capacity of the junction, its fit with the local townscape, the blocking back on Newchurch Road and the loss of current parking provision will require more detailed consideration going forward. A lower quantum of development (or a capped Trip Generation level) might be something that needs consideration to achieve the most desirable access arrangement. A reverse engineering analysis to determine the demand which could be accommodated by the proposed site access would be a valid additional exercise.

6.10 EMP 73 Barlow Bottoms (Not Allocated)

Access at this site is proposed by utilising the existing priority junction between the site and the A671 Market Street. This access is currently stopped up, prohibiting motor vehicles but allowing access to pedestrians, cyclists and equestrians to a sustainable travel route.

The existing access road would require widening to allow two-way traffic flow, however the site appears to be divided by a brook which runs through the centre of the site, which may restrict the amount of the site available for development. Potentially sterilising a part of the development site.

The Road Safety Audit indicated several issues which can be addressed during the detailed design for this proposal.

The junction modelling indicated that All arms on the junction operate well within capacity during the morning and evening peak periods.

Therefore, access to this side is classified as **potentially deliverable** with associated mitigation costs.

6.11 Indicative Scheme Costs

The indicative costs for each option are shown in **Table 15** below. The value of the works is approximate only, and does not allow for any land purchase requirements, alterations to statutory undertakers' requirements, earthworks over and above typical excavation or any unforeseeable construction requirements. The layouts are subject to a detailed highway, signal and drainage design which may impact significantly on the cost.

In addition to the above, any further exploratory work costs, such as ground investigations, is also not included within the indicative costs.

Table 15: Indicative Scheme Costs

Site	Site Ref No.	Cost
Land North of Hud Hey	EMP 13 (NE2)	£341,872
Carrs Industrial Estate	ADD6 (NE3)	£1,616,831
Land Adjacent to Hollin Gate Farm	ADD3 (Not Allocated)	£465,442
Extension of New Hall Hey & New Hall Hey East	EMP 11 & 72 (NE4)	£2,407,213
Land at Sykeside	ADD2 (Not Allocated)	£944,390
Ewood Bridge	EMP 10 (part of site NE1)	£546,406
Futures Park	EMP 18 (M4)	£266,405
Barlow Bottoms	EMP 73 (Not Allocated)	£248,380

Source: Mott MacDonald

7 Summary, Conclusions and Next Steps

7.1 Preamble

Following work undertaken in the Local Plan Highway Capacity Study, Mott MacDonald have been commissioned by Rossendale Borough Council to undertake a complementary study to identify access arrangements to a series of key employment allocation sites identified within the draft Rossendale Local Plan. This study identifies a series of new access points between these sites and the existing highway network.

The study consisted of:

- Site review,
- Option development and assessment process,
- Identification of preferred option
- Junction modelling
- Road Safety Audit
- Selection of final proposed option.

During the option review process, it was determined that access could be provided to all sites, however a series of constraints and issues have been identified at certain locations which may impact upon the final costs/designs of the schemes proposed and those considered.

7.2 Potential constraints

Following the changes to the proposed options described in the previous paragraphs, accesses could be provided to all the sites. The options proposed for the sites utilised existing access in the main and are feasible, however constraints have been identified at the following sites in addition to those discussed in the previous paragraphs.

Land South of New Hall hey Extension (Not Allocated)

This site could not be accessed from Holme Lane, due to the presence of existing residential properties and the width constraints of Holme Lane. In light of this, a further roundabout option was proposed on the A682 which was discounted due to concerns raised from Highways England and this site was subsequently removed from the study due to a lack of alternative suitable options.

Carrs Industrial Estate (ADD 6 – NE3)

Highways England and Lancashire County Council raised road safety and geotechnical concerns for the options proposed to the north of the site from Hud Hey Road. In light of this, an alternative option was developed which utilises an existing access to the south of the site off Commerce Street, a new access road leading from the existing junction off Commerce street running north to the site.

Highways England have raised concerns regarding the alignment of the proposed new access road from the south of the site at Commerce Street which runs near or on a potentially unstable embankment. Further geotechnical investigations would be required to determine the extent of works to stabilise the embankment as part of the access road construction.

It is noted the Highways England would wish to retain ownership of the land at the Commerce St in order to safeguard the stability of the engineered slope, thereby ensuring continued safety of the A56. If a resolution to this issue cannot be found (which safeguards Highways England's interests whilst providing access to the site), then reversion to an alternative access arrangement location would need to take place.

Land at Sykeside (ADD 2 – Not Allocated)

The initial proposal for access to this site was via a new proposed roundabout on the A682 shared with the Land South of New Hall Hey Extension site referred to in the previous paragraph. Due to the concerns raised by Highways England the proposed roundabout access option has not been progressed. The alternative option for this site proposes a priority junction access from the A681 Haslingden Road. Due to the level differences between the A681 and the site, significant earthworks would be required when constructing the access road to achieve an appropriate gradient. As well as the significant earthworks it is also understood that there are significant utilities provisions in the area of the proposed access onto Haslingden Road, which would require costly mitigation irrespective of whether the proposed access was priority or signal controlled.

Land Adjacent to Hollin Gate Farm (ADD 3 – Not Allocated)

This option proposes a new four arm signalised junction with a realigned access serving the existing petrol filling station/McDonalds site. The operators of this site may object to the realignment to the access which may impact on their operations. The road safety audit also identified that the totem sign for the petrol filling station may require relocating, which may also draw objections from the site operator.

Potential variations around the setup of the stagger do exist in terms of the Shell garage and McDonalds fast food site access, as well as the ADD3 access on Blackburn Rd. The interaction between this junction and the A56 Rising Bridge is a key point in determining the most appropriate nature and operation of the junction, and variations of stagger arrangement will assist Highways England in understanding the setup with which they can be most comfortable with in terms of SRN operation.

Land north of Hud Hey (EMP 13 – NE2)

Due to the difference in level between Hud Hey Road and the site, significant earthworks would be required when constructing the access road to achieve an appropriate gradient.

7.3 Road Safety Audit and Junction Modelling

Following the site review, a Road Safety Audit was undertaken on the proposed options for all sites. Several issues were raised for each site; however, it was determined that they would not preclude the delivery of any of the proposed site accesses and could be managed at the detailed design stage.

Each of the proposed options were tested to a future year scenario of 2034 using junction modelling software appropriate to their design. Most of the proposed options operated within capacity, except for the following sites:

- Land at Sykeside (ADD 2)
- Futures Park (EMP 18)

Where one or more of the junction arms were operating at a ratio of flow to capacity of 90% or more during the morning and evening peak periods. Whilst this does not indicate that the junctions are wholly congested throughout the day, it does demonstrate that the junctions are operating

close to capacity and further exploratory work would be required to determine if additional land take could resolve this issue or if it would limit the viability of the site further.

7.4 Conclusions and next steps

This study has identified several feasible access options for employment sites detailed within the Rossendale Local Plan, following outline design junction modelling and Road Safety Audits for each option. These are summarised in **Table 16**.

Table 16: Summary of final proposed designs

Site	Site Ref No.	Suitable access pending further technical work	Potentially unsuitable site or reduced development quantum required
Land North of Hud Hey	EMP 13 (NE2)	✓	
Carrs Industrial Estate	ADD6 (NE3)	✓	
Land Adjacent to Hollin Gate Farm	ADD3 (Not Allocated)	✓	
Extension of New Hall Hey	EMP 11 (NE4)	✓	
New Hall Hey East	EMP 72 (NE4)	✓	
Land at Sykeside	ADD2 (Not Allocated)		✓
Ewood Bridge	EMP 10 (part of site NE1)	✓	
Futures Park	EMP 18 (M4)	✓	✓ (reduced dev quantum)
Barlow Bottoms	EMP 73 (Not Allocated)	✓	

Source: Mott MacDonald

In final summary, a number of options do present constraints which will require further investigation as part of any ongoing (detailed) design process.

Following the conclusion of this study, the recommended next steps include:

- Geotechnical investigations at Carrs Industrial Estate (ADD 6) and Land North of Hud Hey (EMP 13),
- Consideration of whether amelioration of Highways England's concerns for the access to ADD 6 at Commerce St are possible or whether an alternative access arrangement would be more viable,
- Potential geotechnical investigations at ADD2 Land at Sykeside, if Rossendale require that this site is considered further, noting the significant constraints identified in this study,
- Further consideration of the stagger arrangement in conjunction with Rising Bridge junction in a variety of setups and perhaps using a more detailed modelling approach,
- Additional Traffic Count information at specific locations,
- Progression to a more refined level of design (detailed).

A. Option Assessment Matrix

Rossendale Employment Sites Assessment Criteria

Site	Option	Deliverability	Environmental Constraints	Road Safety Implications	Integration with Existing Network	3rd Party Land Required	Maximises Development	Impact on Local/Strategic Road Network	Impact on Utilities	Interface with SRN	Physical Constraints	Ease of access	Links to Public Transport Network	Suitable for large goods vehicles	Cost	Total
1. Land North of Hud Hey (EMP 13)	1. Priority junction access from Blackburn Road	-2	-1	1	1	-3	2	-1	0	0	-3	1	1	1	-3	-6
	2.Priority junction access from Hud Hey Road, to the east of the A56 overbridge	0	2	0	2	-3	1	1	0	0	-1	2	1	0	2	7
	3. Priority junction access from Carter Hall Park	-1	0	-1	2	-3	2	1	0	0	-2	1	1	1	2	3
	4. Left in, left out access from A56 to the West	-3	-1	-1	1	-3	2	-3	0	1	-1	1	-3	3	-2	-9
	5. Priority junction access through existing Industrial Park on Hud Hey Road	2	2	2	2	-3	1	0	0	0	-2	3	1	2	-3	7
2. Carrs Industrial Estate Northern Extension (ADD 6)	1. Priority junction access Martin Croft Road/Roundhey Road	2	0	0	2	-3	3	1	0	0	-2	1	-2	1	-1	2
	2. Priority junction access from Hud Hey Road to the east of existing terrace properties	2	0	0	2	-3	1	1	0	0	1	2	-1	0	2	7
	3. Left in/Left out access from the A56	-3	-1	-1	1	-3	2	-3	0	1	-1	1	-3	3	-2	-9
	4. Priority junction utilising existing farm access to the south off Commerce Street.	2	0	-2	1	-3	2	-1	1	0	2	2	-3	2	2	5
	5. Overbridge from A680	-3	-2	0	-1	-3	3	-2	-1	1	-2	-1	-3	3	-3	-14
3. Extension of New Hall Hey (EMP 11)	1. Access utilising existing New Hall Hey Roundabout and new access road	3	2	2	3	0	3	2	0	1	3	3	-1	2	2	25
4. Extension of New Hall Hey East (EMP 72)	1. Access utilising existing New Hall Hey Roundabout with new access road and bridge	1	-1	2	3	0	3	2	0	1	-2	0	-1	1	-1	8
5. Land adjacent to Hollin Gate Farm (ADD 03)	1. Priority junction access utilising existing farm access	3	0	-3	-1	-2	3	-2	0	-3	-1	-1	-1	-2	2	-8
	2. Direct access from A56/A680 roundabout.	-2	0	-2	-2	-2	3	-2	0	-2	-1	2	-1	1	-2	-10
	3. Priority junction access to south from Rising Bridge Road.	2	0	-3	-1	3	1	-2	0	0	1	-2	-2	-2	2	-3
	4. Signal junction on Blackburn Road noth of A56/A680 roundabout	1	0	-1	-1	3	3	-2	0	0	1	3	0	2	-1	8
6. Futures Park (EMP18)	1. Signalised junction access from exsiting junction on A681	1	0	-1	2	3	3	1	0	0	0	1	3	1	2	16
	2. Access from new junction on A6066 to the east of Rossendale BC office building	-1	0	-1	1	1	1	-1	0	0	-2	-1	3	-1	1	0
	3. Access from new junction on A6066 through wooded area to east of Futures Park	-1	-3	0	1	-1	1	-1	0	0	-1	-1	2	1	1	-2
7. Park and Ride Site at Ewood Bridge (EMP 10)	1. New signalised junction access from B6527 Blackburn Road	2	3	2	2	3	3	2	0	0	0	3	3	0	2	25
	2. New roundabout junction access from B6527 Blackburn Road	-1	3	2	2	3	3	2	0	0	-3	3	3	0	1	18
8. Barlow Bottoms (EMP 65)	1. New priority junction access from Station Road	2	3	-1	2	-3	2	2	0	0	0	1	3	1	2	14
	2. New Priority junction access from Millfold	1	3	0	0	-3	2	1	0	0	0	0	3	0	0	7
	3. New priority junction access from Market Street	-1	3	0	0	-3	2	1	0	0	-2	2	3	0	-1	4
9. Land South of New Hall Hey Extension	1. New roundabout access off A682 shared with Land at Sykeside site	2	-3	1	1	-1	3	-1	0	-1	-3	3	-1	3	-2	1
10. Land at Syskeside	1. New roundabout access of A682 shared with Land south of New Hall Hey Extension site	1	-2	1	1	-1	3	-1	0	1	-1	3	-1	3	-1	6
	2. Priority junction access utilising substation access road	-1	-1	-2	-1	-2	3	-1	-3	1	-1	-1	3	-1	1	-6
	3. Access road utilising access road to stables	1	-1	-2	-1	-2	3	-1	-3	1	-1	-2	3	-1	1	-5
	4. Ghost island priority junction off Haslingden Road	2	-1	0	0	-3	3	-1	0	1	-1	1	1	1	0	3

Key

Large Beneficial	3
Medium Beneficial	2
Slight Beneficial	1
Neutral	0
Slight Impact	-1
Medium Impact	-2
Large Impact	-3

B. Road Safety Audits

MOTT MACDONALD

Land at Sykeside, ADD 2/02

Stage 1 Road Safety Audit

08 November 2018

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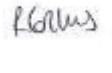
Land at Sykeside, ADD 2/02

Stage 1 Road Safety Audit

08 November 2018

Rossendale Borough Council

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	08/11/18	R Collins	H Palmer	T Blaney	First Issue
					

Document reference: 399721/TPN/ITD/287864/398/A

Information class: Standard

Contents

1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on a priority junction on the A681 Haslingden Road.

The Road Safety Audit has been undertaken at the request of the Design Organisation (Mott MacDonald) on behalf of their client Rossendale Borough Council, who are the Highway Authority.

The audit took place at the Manchester office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A.**

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the preliminary design work.

The Road Safety Audit Team consisted of:

Rachael Collins	BA (Hons), MSc, MCIHT (Certificate of Competency in Road Safety Audit, July 2016) Audit Team Leader, Mott MacDonald
Hayley Palmer	BSc (Hons), MSc, MCIHT Audit Team Member, Mott MacDonald

The Audit Team visited the site of the proposed works together on Tuesday 23rd October 2018 at 10:45 hrs. During the site visit, the weather conditions were cloudy and the road surface was dry. Traffic conditions were free flowing. Pedestrian activity was low and no cycle activity was observed whilst on site.

This Road Safety Audit was carried out in accordance with Highways England Departmental Standard GG119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report to the audit should be completed by the Design Team and kept on file for future reference.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

Scheme Description

The works include the provision of a new access road to be accessed off the A681 Haslingden Road via a priority-controlled junction with a ghost island right turn lane. An uncontrolled crossing point to include a splitter island and tactile paving is to be provided on the access road. The proposed usage of the site is currently not known.

2 Items Raised at this Stage 1 Safety Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

2.1 Problem 101

Location: Scheme wide.

Summary: Tactile paving is proposed across the new access road, however in isolation, blind or partially sighted pedestrians may be unaware of its presence and may inadvertently enter the carriageway.

The Audit Team are concerned that tactile paving is proposed across the new access arm only and does not extend across nearby junctions. Used in isolation blind or partially sighted pedestrians may not be anticipating it and may inadvertently enter the carriageway at an inappropriate location which may lead to a collision between visually impaired pedestrians and passing vehicles.

Recommendation

A route-wide approach to the provision of tactile paving is required which should be provided as specified in the 'Guidance on the use of Tactile Paving Surfaces'. The provision of tactile paving should be accompanied by dropped kerbs.

2.2 Problem 102

Location: Splitter island on new access road.

Summary: Insufficient splitter island may not accommodate all users who may overspill into the carriageway.

The proposed splitter island on the new access road is approximately 1.2m in width, the absolute minimum recommended. This width may not be appropriate if there are large numbers of pedestrians crossing who may overspill into the carriageway, increasing the risk of collisions between pedestrians and passing vehicles.

Recommendation

The width of the splitter island should be suitable for the expected number of pedestrians crossing. If cyclists are likely to cross then this should be increased further.

2.3 Problem 103

Location: Land at Sykeside.

Summary: A steep gradient could increase the risk of collisions or increase the likelihood of loss of control incidents.

The Audit Team are concerned that there is a significant difference in the levels on the A681 Haslingden Road compared to the development site. A steep uphill gradient at the junction may make it difficult, particularly for large vehicles to pull away in a safe manner increasing the risk of collisions or may encourage motorists to continue onto the main road without giving-way. A steep downhill gradient may lead to an increased risk of vehicles losing control.

Recommendation

Provide an appropriate gradient at and on approach to Haslingden Road and the development site.

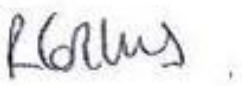
3 Audit Team Statement

We certify that this audit has been carried out in accordance with the principles of GG119.

Road Safety Audit Team Leader

R J Collins BA (Hons), MSc
(Certificate of Competency in Road Safety Audit, July 2016)

Signed:



Date: 08 November 2018

Senior Road Safety Engineer
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Road Safety Audit Team Member

H Palmer, BSc (Hons), MSc

Signed:

Date: 08 November 2018

Senior Transport Planner
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Appendices

A. List of Documents Reviewed

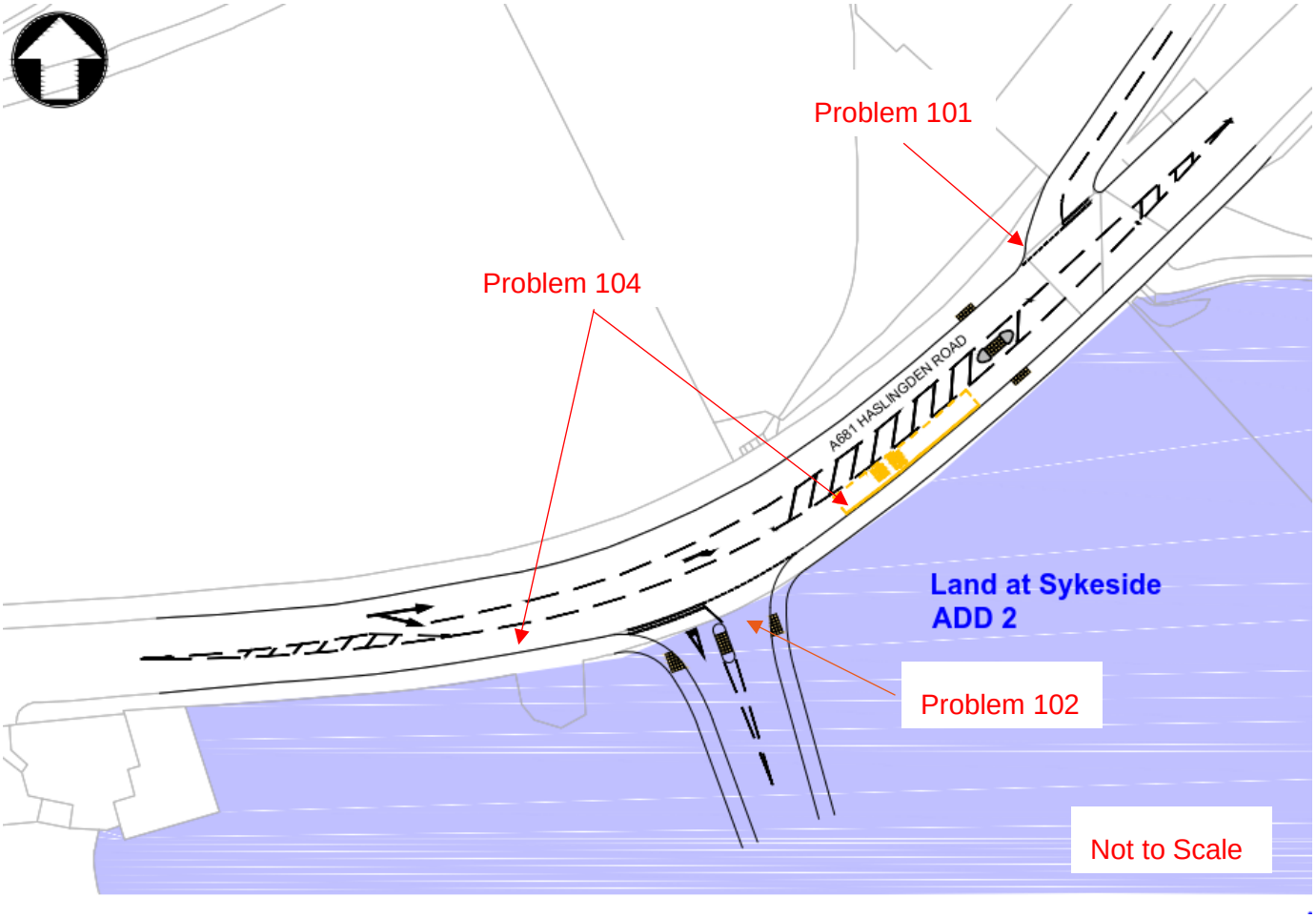
A.1 Drawings

Drawings Reviewed by Audit Team

Drawing	Rev	Title
ADD 2/02	P1	Land at Sykeside. Ghost island priority junction on A681

Source: Mott MacDonald

B. Key Plan


Problem 101
Problem 104
A681 HASLINGDEN ROAD
Land at Sykeside
ADD 2
Problem 102
Not to Scale

MOTT MACDONALD

Ewood Bridge, EMP 10/02

Stage 1 Road Safety Audit

08 November 2018

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Ewood Bridge, EMP 10/02

Stage 1 Road Safety Audit

08 November 2018

Issue and Revision Record

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A	08/11/18	R Collins	H Palmer	T Blaney	First Issue
					

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Information class: Standard

Contents

1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on proposed signalised junction on the A6527 Blackburn Road.

The Road Safety Audit has been undertaken at the request of the Design Organisation (Mott MacDonald) on behalf of their client Rossendale Borough Council, who are the Highway Authority.

The audit took place at the Manchester office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A.**

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the preliminary design work.

The Road Safety Audit Team consisted of:

Rachael Collins	BA (Hons), MSc, MCIHT (Certificate of Competency in Road Safety Audit, July 2016) Audit Team Leader, Mott MacDonald
Hayley Palmer	BSc (Hons), MSc, MCIHT Audit Team Member, Mott MacDonald

The Audit Team visited the site of the proposed works together on Tuesday 23rd October 2018 at 11:15 hrs. During the site visit, the weather conditions were cloudy and the road surface was dry. Traffic conditions were low. No pedestrian or cycle activity was observed whilst on site.

This Road Safety Audit was carried out in accordance with Highways England Departmental Standard GG119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report to the audit should be completed by the Design Team and kept on file for future reference.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

Scheme Description

The works include the provision of a signalised junction on the A6527 Blackburn Road at the site of an existing access to warehousing and housing units. Controlled crossing facilities are to be provided on the A6527 Blackburn Road northern arm and the access arm. The existing on-carriageway cycle lanes are to be amended to provide advance cycle stop lanes on the main road.

It should be noted that the land opposite the access road is that of a former football ground which is currently for sale. It is not known how this land will be developed or accessed in the future. The proposed junction may need to take account of any development at this site.

2 Items Raised at this Stage 1 Safety Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

2.1 General

2.1.1 Problem 101

Location: Proposed junction.

Summary: Queuing behind a bus may extend into the junction, affecting its operation, potentially leading to rear end shunt collisions if vehicles don't expect to stop.

Although not shown on the drawings there are bus stops on both the A6527 Blackburn Road carriageways. The Audit Team are concerned that queuing may occur behind a stationary bus which may extend through the junction, affecting its operation, which could lead to rear end shunt collisions if vehicles are not expecting to stop.

Furthermore, queuing may block the pedestrian crossing creating a potential risk for blind or partially sighted pedestrians and those pedestrians who require wheelchair or pushchair access.

Figure 1: Proposed access location

Source: Mott MacDonald

Recommendation

The location and usage of the bus stops should be reviewed and if necessary re-located further away from the junction.

2.1.2 Problem 102

Location: Proposed junction.

Summary: The on-carriageway cycle lanes are shown to terminate prior to the junction, where cyclists could be vulnerable to being struck by passing vehicles.

The existing on-carriageway cycle lanes are shown to terminate at the advanced cycle stop lines and not continue through the junction. Cyclists could be vulnerable to being struck by a passing motor vehicle.

Recommendation

On-carriageway cycle markings should continue through the junction.

2.1.3 Problem 103

Location: Proposed junction.

Summary: The stone wall is within the inter-visibility zone reducing visibility of traffic on the A6527 which could increase potential for collisions.

A stone wall is present either side of the access junction restricting visibility in the inter-visibility zone which should be avoided. Restricted visibility could result in collisions between turning traffic and traffic travelling ahead on the A6527 Blackburn Road.

Figure 2: Existing stone wall east of proposed access road

Source: Mott MacDonald

Recommendation

The inter-visibility zone should be clear of obstructions.

2.1.4 Problem 104

Location: Proposed junction.

Summary: Narrow footways and the introduction of traffic signal equipment could force pedestrians into the carriageway increasing the potential for conflict.

The location of the traffic signal poles and controller have not been shown on the drawings. The Audit Team are concerned that the footways at this junction appear narrow and such equipment could restrict the footway width, forcing some pedestrians, particularly those in wheelchairs or those with pushchairs into the carriageway in order to pass by increasing the potential for collisions between pedestrians and motor vehicles.

Recommendation

Adequate footway width will be required to hold the traffic signal poles and controller cabinet.

2.1.5 Problem 105

Location: Proposed access road.

Summary: The access road appears narrow which may not accommodate future traffic leading to side swipe incidents.

Away from the junction, the access road appears to narrow. This could lead to side swipe incidents if the road is not sufficiently wide to accommodate expected traffic flows.

Recommendation

The access road should be sufficient in width to accommodate expected traffic flows.

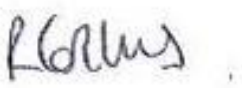
3 Audit Team Statement

We certify that this audit has been carried out in accordance with the principles of GG119.

Road Safety Audit Team Leader

R J Collins BA (Hons), MSc
(Certificate of Competency in Road Safety Audit, July 2016)

Signed:



Date: 08 November 2018

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Road Safety Audit Team Member

H Palmer, BSc (Hons), MSc

Signed:

Date: 08 November 2018

Senior Transport Planner
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Appendices

A. List of Documents Reviewed

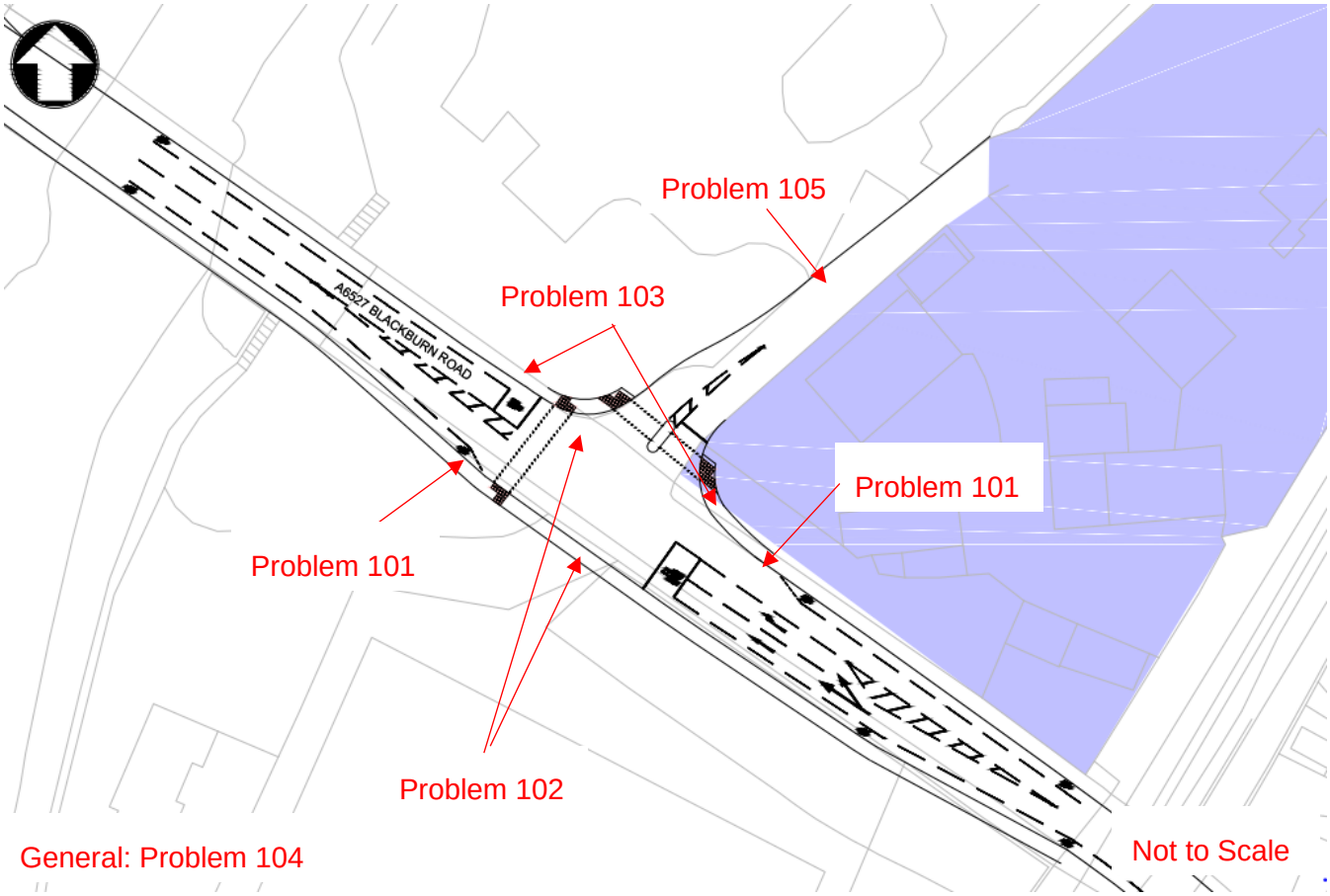
A.1 Drawings

Drawings Reviewed by Audit Team

Drawing	Rev	Title
EMP 10/02	P1	Ewood Bridge signal junction on Blackburn Road

Source: Mott MacDonald

B. Key Plan


Problem 105
Problem 103
A6527 BLACKBURN ROAD
Problem 101
Problem 101
Problem 102
General: Problem 104
Not to Scale

MOTT MACDONALD

Land North of Hud Hey EMP 13/01

Stage 1 Road Safety Audit

15 November 2018

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Land North of Hud Hey EMP 13/01

Stage 1 Road Safety Audit

15 November 2018

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Contents

1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on proposed changes to an access to provide a priority controlled junction on Hud Hey Road near Carr Hall Street, Rossendale.

The Road Safety Audit has been undertaken at the request of the Design Organisation (Mott MacDonald) on behalf of their client Rossendale Borough Council, who are the Highway Authority.

The audit took place at the Manchester office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A.**

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the preliminary design work.

The Road Safety Audit Team consisted of:

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Hayley Palmer	BSc (Hons), MSc, MCIHT Audit Team Member, Mott MacDonald

The Audit Team visited the site of the proposed works together on Tuesday 23rd October 2018 at 11.30 hrs. During the site visit, the weather conditions were cloudy and the road surface was dry. Traffic conditions were moderate. No pedestrian or cycle activity was observed whilst on site.

This Road Safety Audit was carried out in accordance with the principles of GG119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report to the audit should be completed by the Design Team and kept on file for future reference.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

Scheme Description

The works will formalise an existing access on Hud Hey Road near Carr Hall Street to provide a priority controlled junction. A controlled crossing point to include a splitter island with tactile paving is proposed within the access road.

2 Items Raised at this Stage 1 Safety Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

2.1 Problem 101

Location: Scheme wide.

Summary: Tactile paving is proposed across the new access road, however in isolation, blind or partially sighted pedestrians may be unaware of its presence and may inadvertently enter the carriageway.

The Audit Team are concerned that tactile paving is proposed across the new access arm only and does not extend across nearby junctions. Used in isolation blind or partially sighted pedestrians may not be anticipating it and may inadvertently enter the carriageway at a more inappropriate location which may lead to a collision between visually impaired pedestrians and passing vehicles.

Recommendation

A route-wide approach to the provision of tactile paving is required which should be provided as specified in the 'Guidance on the use of Tactile Paving Surfaces'. The provision of tactile paving should be accompanied by dropped kerbs.

2.2 Problem 102

Location: Proposed junction.

Summary: Restricted visibility could result in conflict between turning vehicles and those travelling ahead. Pedestrians view of oncoming vehicles may also be restricted which could result in conflict.

The Audit Team are concerned that visibility on Hud Hey Road is restricted by a stone wall. Motorists exiting the access road may not have adequate visibility of a vehicle approaching on Hud Hey Road resulting in vehicles turning in front of another vehicle travelling ahead.

Visibility may also be restricted for pedestrians wishing to cross the access road who may not see an approaching vehicle resulting in potential for conflict.

Recommendation

Adequate visibility should be provided for those turning at the junction and those crossing the access road.

2.3 Problem 103

Location: Proposed junction.

Summary: Wide junction mouth could lead to vehicles exiting side by side which could result in side swipe incidents.

Although the exact use of the site is not known, the proposed junction mouth appears wide. This could lead to vehicles attempting to exit side by side which may result in side swipe incidents.

Recommendation

Tracking should be undertaken to determine appropriate junction widths. Either it should be marked as a single lane or if width allows, then the two lanes should be marked.

2.4 Problem 104

Location: Hud Hey Road opposite junction.

Summary: On-street parking occurs opposite the junction which could affect vehicles ability to turn into and out of the junction resulting in side swipe collisions.

Hud Hey Road opposite the access has no parking restrictions and on-street parking was present outside the housing. On-street parking opposite the junction could affect vehicles ability, particularly large vehicles to turn into and out of the access potentially leading to side-swipe incidents.

Recommendation

Tracking should be undertaken to ensure turning movements can be accommodated.

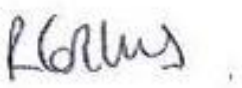
3 Audit Team Statement

We certify that this audit has been carried out in accordance with the principles of GG119.

Road Safety Audit Team Leader

R J Collins BA (Hons), MSc
(Certificate of Competency in Road Safety Audit, July 2016)

Signed:



Date: 15 November 2018

Senior Road Safety Engineer
Mott MacDonald
9 Portland Street
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Road Safety Audit Team Member

H Palmer, BSc (Hons), MSc

Signed:

Date: 15 November 2018

Senior Transport Planner
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Appendices

A. List of Documents Reviewed

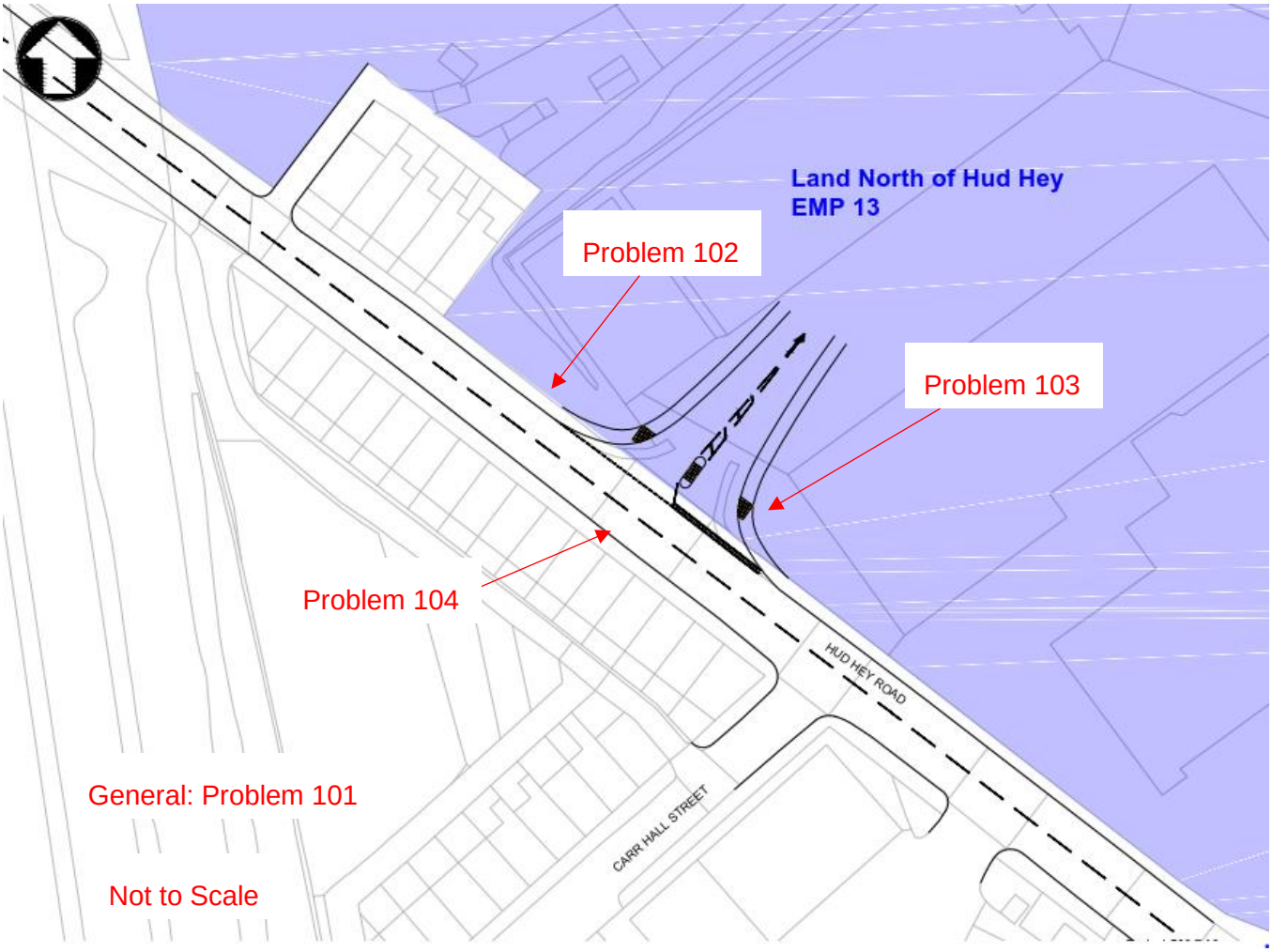
A.1 Drawings

Drawings Reviewed by Audit Team

Drawing	Rev	Title
EMP 13/01	P1	Land north of Hud Hey. Priority junction on Hud Hey Road.

Source: Mott MacDonald

B. Key Plan


Land North of Hud Hey
EMP 13
Problem 102
Problem 103
Problem 104
HUD HEY ROAD
CARR HALL STREET
General: Problem 101
Not to Scale

mottmac.com

MOTT MACDONALD

Carrs Industrial Estate, ADD 6/01

Stage 1 Road Safety Audit

08 November2018

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Carrs Industrial Estate, ADD 6/01

Stage 1 Road Safety Audit

08 November2018

Rossendale Borough Council

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	08/11/18	R Collins	H Palmer	T Blaney	First Issue
					

Document reference: 399721/TPN/ITD/287864/401/A

Information class: Standard

Contents

1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on proposed priority junction on Hud Hey Road, Rossendale.

The Road Safety Audit has been undertaken at the request of the Design Organisation (Mott MacDonald) on behalf of their client Rossendale Borough Council, who are the Highway Authority.

The audit took place at the Manchester office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A.**

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the preliminary design work.

The Road Safety Audit Team consisted of:

Rachael Collins	BA (Hons), MSc, MCIHT (Certificate of Competency in Road Safety Audit, July 2016) Audit Team Leader, Mott MacDonald
Hayley Palmer	BSc (Hons), MSc, MCIHT Audit Team Member, Mott MacDonald

The Audit Team visited the site of the proposed works together on Tuesday 23rd October 2018 at 12:00 hrs. During the site visit, the weather conditions were cloudy and the road surface was dry. Traffic conditions were moderate. No pedestrian or cycle activity was observed whilst on site.

This Road Safety Audit was carried out in accordance with Highways England Departmental Standard GG119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report to the audit should be completed by the Design Team and kept on file for future reference.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

Scheme Description

The works include the modification of an existing junction on Hud Hey Road to allow for the extension to Carrs Industrial Estate. The junction currently allows access to a farm and associated buildings. It is signed as a public footpath. The proposed scheme will formalise the junction to priority controlled and allow for two-way traffic and provide a footpath on the western side of the link road which will tie into the footway on Hud Hey Road. Tactile paving is proposed across Hud Hey Road south of the access road and across the farm access road.

2 Items Raised at this Stage 1 Safety Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

2.1 General

2.1.1 Problem 101

Location: Proposed junction.

Summary: Restricted visibility could result in conflict between turning vehicles and those travelling ahead. Pedestrians view of oncoming vehicles may also be restricted which could result in conflict.

The Audit Team are concerned that visibility on Hud Hey Road is restricted to the east. Motorists exiting the access road may not have adequate visibility of a vehicle approaching westbound on Hud Hey Road resulting in vehicles turning in front of another.

Visibility may also be restricted for pedestrians wishing to cross Hud Hey Road who may not see an approaching vehicle resulting in potential for conflict.

Figure 1: Visibility on Hud Hey Road

Source: Mott MacDonald

Recommendation

Adequate visibility should be provided for those turning at the junction and those crossing Hud Hey Road.

2.1.2 Problem 102

Location: Proposed junction.

Summary: Wide junction mouth could lead to vehicles exiting side by side which could result in side swipe incidents.

Although the exact use of the site is not known, the proposed junction mouth appears wide. This could lead to vehicles attempting to exit side by side which may result in side swipe incidents.

Recommendation

Tracking should be undertaken to determine appropriate junction widths. Either it should be marked as a single lane or if width allows, then the two lanes should be marked.

2.1.3 Problem 103

Location: Proposed access road.

Summary: The downhill gradient could result in vehicles overshooting the give-way markings resulting in conflict with those on Hud Hey Road.

The proposed access road is on a downhill gradient. This could lead to drivers overshooting the give-way markings, potentially resulting in conflict with motorists on Hud Hey Road.

Recommendation

Provide an appropriate gradient which may also require high friction surfacing.

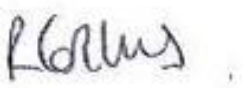
3 Audit Team Statement

We certify that this audit has been carried out in accordance with the principles of GG119.

Road Safety Audit Team Leader

R J Collins BA (Hons), MSc
(Certificate of Competency in Road Safety Audit, July 2016)

Signed:



Date: 08 November 2018

Senior Road Safety Engineer
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Road Safety Audit Team Member

H Palmer, BSc (Hons), MSc

Signed:

Date: 08 November 2018

Senior Transport Planner
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Appendices

A. List of Documents Reviewed

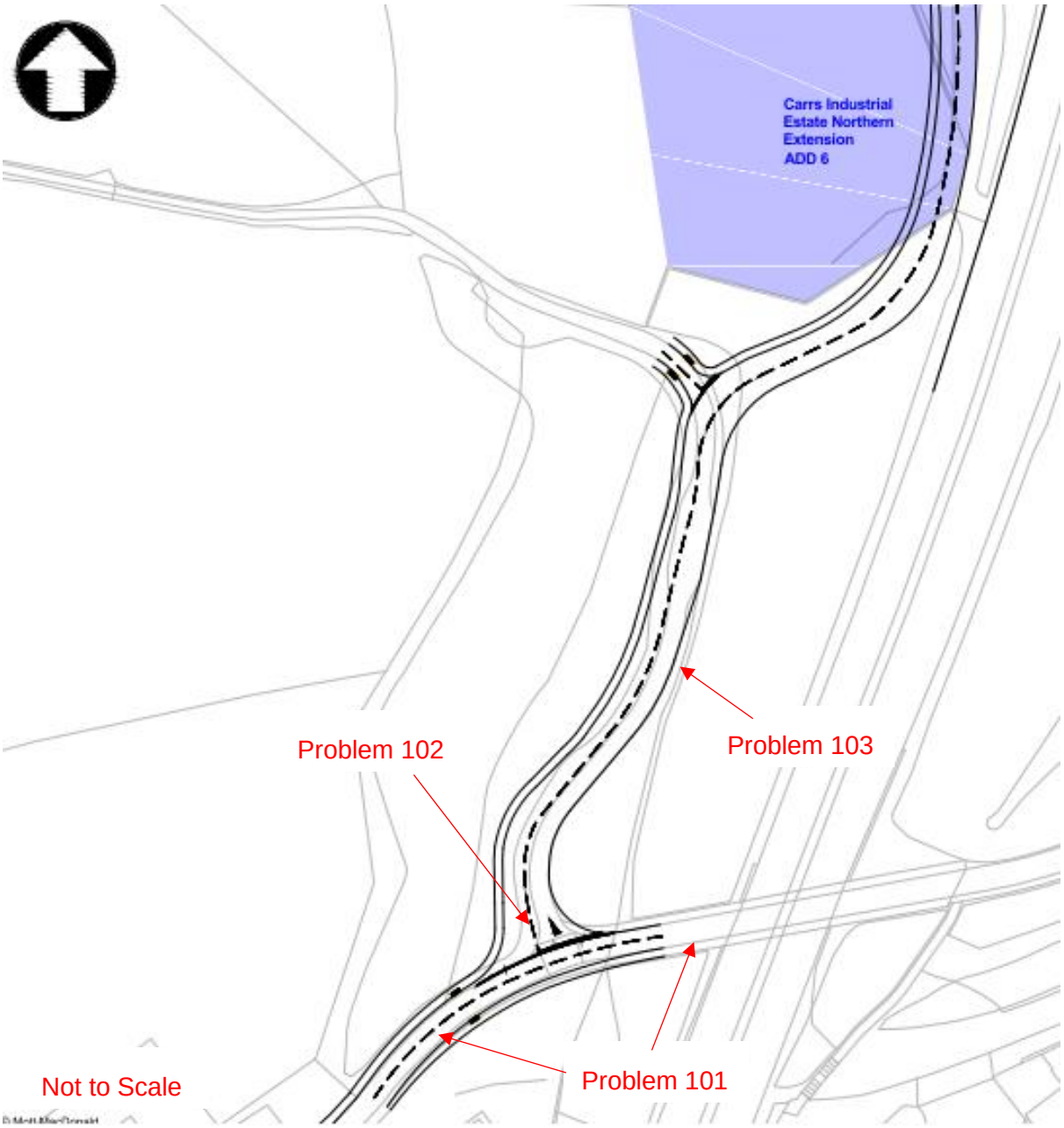
A.1 Drawings

Drawings Reviewed by Audit Team

Drawing	Rev	Title
ADD 6/01	P1	Carrs Ind Estate northern extension. Priority junction on Hud Hey Road

Source: Mott MacDonald

B. Key Plan


Carrs Industrial
Estate Northern
Extension
ADD 6
Problem 102
Problem 103
Problem 101
Not to Scale

MOTT MACDONALD

Hollin Gate Farm, ADD 3/01

Stage 1 Road Safety Audit

08 November 2018

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Hollin Gate Farm, ADD 3/01

Stage 1 Road Safety Audit

08 November 2018

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	08/11/18	R Collins	H Palmer	T Blaney	First Issue
					

Document reference: 399721/TPN/ITD/287864/402/A

Information class: Standard

Contents

1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on a proposed signalised junction on Blackburn Road, Rossendale

The Road Safety Audit has been undertaken at the request of the Design Organisation (Mott MacDonald) on behalf of their client Rossendale Borough Council, who are the Highway Authority.

The audit took place at the Manchester office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A.**

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the preliminary design work.

The Road Safety Audit Team consisted of:

Rachael Collins	BA (Hons), MSc, MCIHT (Certificate of Competency in Road Safety Audit, July 2016) Audit Team Leader, Mott MacDonald
Hayley Palmer	BSc (Hons), MSc, MCIHT Audit Team Member, Mott MacDonald

The Audit Team visited the site of the proposed works together on Tuesday 23rd October 2018 at 12:30 hrs. During the site visit, the weather conditions were cloudy and the road surface was dry. Traffic conditions were moderate. No pedestrian or cycle activity was observed whilst on site.

This Road Safety Audit was carried out in accordance with Highways England Departmental Standard GG119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report to the audit should be completed by the Design Team and kept on file for future reference.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

Scheme Description

The works include the provision of a four-arm signalised junction on A680 Blackburn Road. This will involve modification to the existing accesses for the petrol station and McDonalds. Controlled pedestrian crossing facilities are proposed on the A680 Blackburn Road northern arm and across the revised access to McDonalds. The existing access to McDonalds is to be closed. The proposed usage of the site is currently not known.

2 Items Raised at this Stage 1 Safety Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

2.1 Problem 101

Location: Scheme wide.

Summary: Tactile paving is proposed at the controlled crossings only, however in isolation, blind or partially sighted pedestrians may be unaware of its presence and may inadvertently enter the carriageway.

The Audit Team are concerned that tactile paving is proposed at the controlled crossings only and does not extend across nearby junctions. Used in isolation blind or partially sighted pedestrians may not be anticipating it and may inadvertently enter the carriageway at a more inappropriate location which may lead to a collision between visually impaired pedestrians and passing vehicles.

Recommendation

A route-wide approach to the provision of tactile paving is required which should be provided as specified in the 'Guidance on the use of Tactile Paving Surfaces'. The provision of tactile paving should be accompanied by dropped kerbs.

2.2 Problem 102

Location: Scheme wide.

Summary: The absence of cycle facilities could leave cyclists vulnerable to being struck by passing vehicles or unable to transition between the footway and carriageway to access the shared footway / cycleway leading to potential for conflict with pedestrians.

The proposals show no facilities for cyclists or how the scheme will tie into an existing shared use footway / cycleway at the eastern end of the service road. Cyclists in the carriageway may be vulnerable to being struck by passing vehicles, a lack of a dropped kerb may result in cyclists not being able to transition between the footway and carriageway and may therefore remain in the footway leading to potential for conflict with pedestrians using the footway.

Recommendation

Adequate measures should be provided for cyclists which tie in with the existing facilities.

2.3 Problem 103

Location: Proposed junction.

Summary: The wide junction mouth could result in vehicles entering and exiting at speed. It also results in a wider than necessary crossing point, increasing pedestrians' vulnerability to traffic.

The proposed access road has a wide junction mouth with a relaxed radius on exit which could lead to vehicles entering and exiting at high speed. It also results in a wider than necessary crossing point increasing pedestrians' vulnerability to traffic.

Recommendation

Tracking should be undertaken to determine appropriate junction widths. If possible, the junction radius should be tightened to reduce speeds and crossing width over Blackburn Road.

2.4 Problem 104

Location: Proposed junction.

Summary: Sign could restrict visibility of traffic signal heads and pedestrians waiting on the crossing.

A large sign for the garage is present to the north of the controlled crossing on Blackburn Road which would block visibility to the signal heads and pedestrians view of approaching traffic potentially resulting in conflict either between vehicles and pedestrians.

Figure 1: Existing signage

Source: Mott MacDonald

Recommendation

The sign will need to be re-located away from the crossing point so not to obstruct traffic signal heads or pedestrians waiting at the crossing.

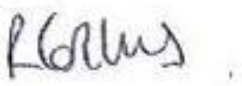
3 Audit Team Statement

We certify that this audit has been carried out in accordance with the principles of GG119.

Road Safety Audit Team Leader

R J Collins BA (Hons), MSc
(Certificate of Competency in Road Safety Audit, July 2016)

Signed:



Date: 08 November 2018

Senior Road Safety Engineer
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9 Portland Street
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Road Safety Audit Team Member

H Palmer, BSc (Hons), MSc

Signed:

Date: 08 November 2018

Senior Transport Planner
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Appendices

A. List of Documents Reviewed

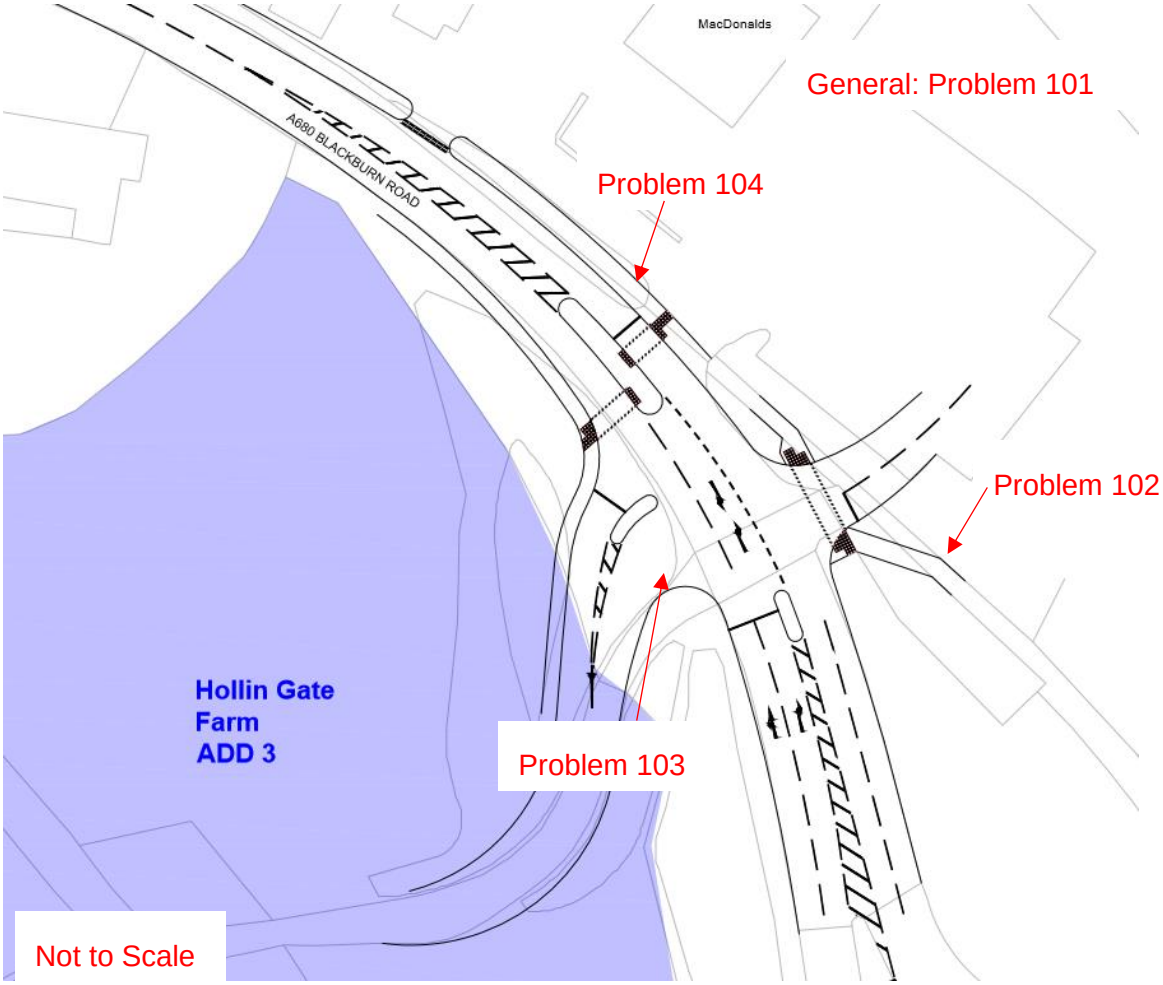
A.1 Drawings

Drawings Reviewed by Audit Team

Drawing	Rev	Title
ADD 3/01	P1	Hollin Gate Farm. Signal Junction on Blackburn Road.

Source: Mott MacDonald

B. Key Plan


MacDonalds
General: Problem 101
A680 BLACKBURN ROAD
Problem 104
Problem 102
Hollin Gate
Farm
ADD 3
Problem 103
Not to Scale

MOTT MACDONALD

Extension of New Hall Hey and New Hall Hey East

Stage 1 Road Safety Audit

15 November 2018

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Extension of New Hall Hey and New Hall Hey East

Stage 1 Road Safety Audit

15 November 2018

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	15/11/18	R Collins	H Palmer	T Blaney	First Issue
					

Document reference: 399721/TPN/ITD/287864/403/A

Information class: Standard

Contents

1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on an extension to New Hall Hey Road and a proposed priority junction at New Hall Hey Road, Rossendale.

The Road Safety Audit has been undertaken at the request of the Design Organisation (Mott MacDonald) on behalf of their client Rossendale Borough Council, who are the Highway Authority.

The audit took place at the Manchester office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A.**

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the preliminary design work.

The Road Safety Audit Team consisted of:

Rachael Collins	BA (Hons), MSc, MCIHT (Certificate of Competency in Road Safety Audit, July 2016) Audit Team Leader, Mott MacDonald
Hayley Palmer	BSc (Hons), MSc, MCIHT Audit Team Member, Mott MacDonald

The Audit Team visited the site of the proposed works together on Tuesday 23rd October 2018 at 13:30 hrs. During the site visit, the weather conditions were cloudy and the road surface was dry. Traffic flows on New Hall Hey Road were high and some vehicle movement was seen going to the premises on the access road. No pedestrian or cycle activity was observed whilst on site.

This Road Safety Audit was carried out in accordance with Highways England's Departmental Standard GG119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report to the audit should be completed by the Design Team and kept on file for future reference.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

Scheme Description

The works include the extension of New Hall Hey Road to give access to employment site 11 with a new priority-controlled junction off it to allowing access to employment site 72.

A pedestrian footway is to be provided on the northern side of the extended section of New Hall Hey Road and on the eastern side of the new access road. Tactile paving is to be provided where the footway crosses from New Hall Hey Road to the new access road.

2 Items Raised at the Stage 1 Safety Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

2.1 Problem 101

Location: Scheme wide.

Summary: It is not clear how the proposed access roads will tie into the developments and therefore whether the proposed footway is suitable. There is no provision for cyclists. A lack of provision could result in conflict between pedestrians and cyclists and motor vehicles.

The drawings do not show how the access roads tie into the proposed developments. Although footways are shown they are only on one side. No facilities are shown for cyclists, without further detail it is not possible to determine whether this is appropriate.

There may also be a desire for pedestrians to access the other commercial / retail units accessible from New Hall Hey Road.

The lack of a suitable provision for pedestrians and cyclists could result in the potential for conflict.

Recommendation

Adequate measures should be provided for pedestrians and cyclists which are suitable for the proposed developments.

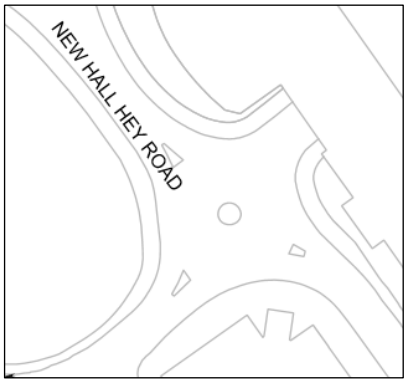
2.2 Problem 102

Location: New Hall Hey Road Roundabout.

Summary: It is not clear whether the existing roundabout will accommodate an increase in traffic flows in number or size of vehicle.

The existing roundabout on New Hall Hey Road is small and during the site visit traffic flows were high. The development sites will not only increase the number of traffic flows through this junction but the type / size of vehicle using it may change. It is not known whether this roundabout will accommodate an increase in traffic flows, which could result in rear end shunt collisions and side swipe incidents if vehicles attempt to pass by each other.

Figure 1: New Hall Hey Road



Source: Mott MacDonald

Recommendation

The roundabout should be modelled to determine its suitability for an increase in traffic flows and likely type/size of vehicle to be using it.

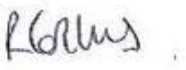
3 Audit Team Statement

We certify that this audit has been carried out in accordance with the principles of GG119.

Road Safety Audit Team Leader

R J Collins BA (Hons), MSc, MCIHT
(Certificate of Competency in Road Safety Audit, July 2016)

Signed:



Date: 15 November 2018

Senior Road Safety Engineer
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Road Safety Audit Team Member

H Palmer, BSc (Hons), MSc

Signed:

Date: 15 November 2018

Senior Transport Planner
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Appendices

A. List of Documents Reviewed

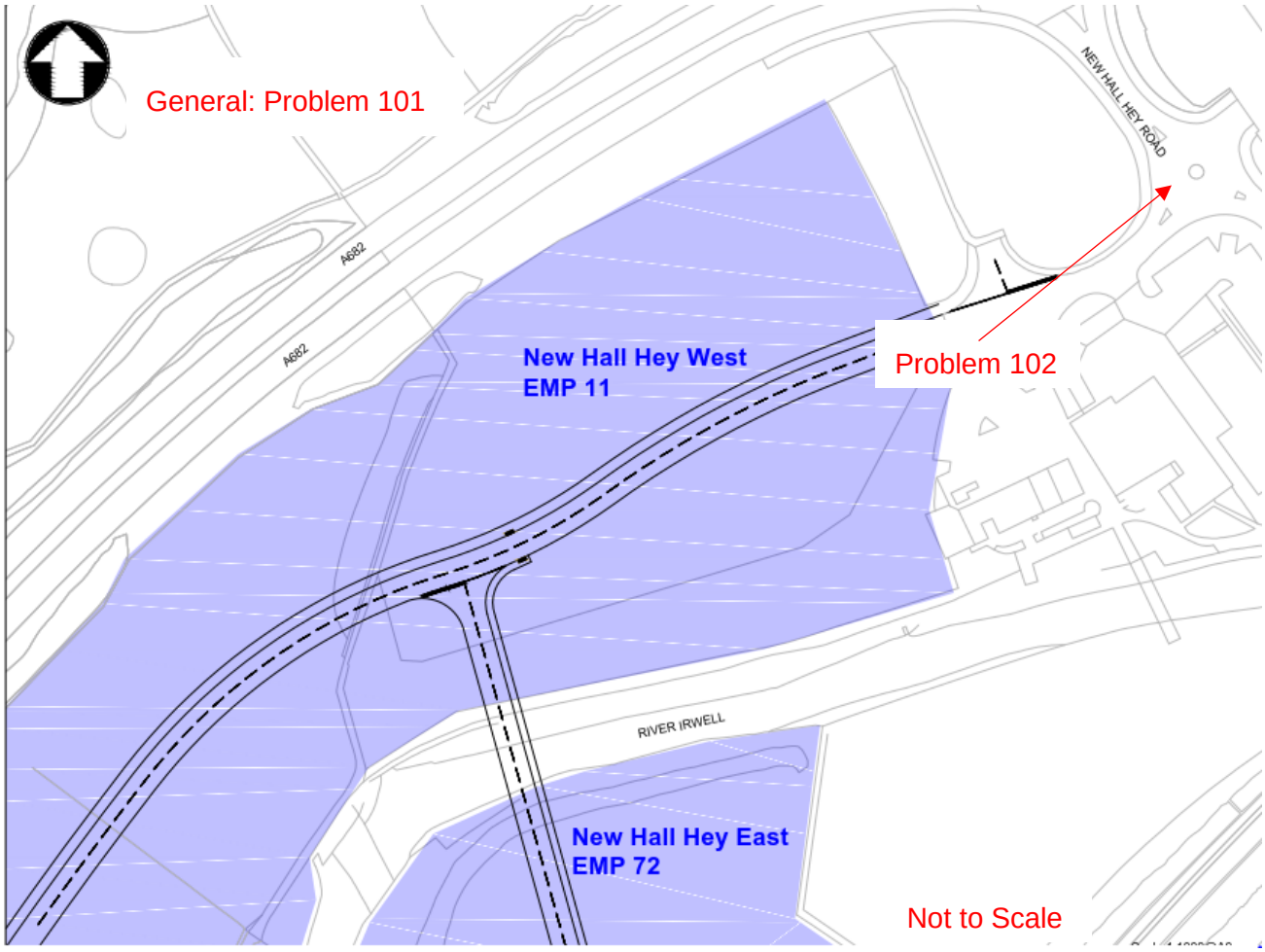
A.1 Drawings

Drawings Reviewed by Audit Team

Drawing	Rev	Title
EMP 11 & EMP 72/01	P1	New Hall Hey East & West. Access Road and Bridge.

Source: Mott MacDonald

B. Key Plan


General: Problem 101
NEW HALL HEY ROAD
A682
A682
New Hall Hey West
EMP 11
Problem 102
RIVER IRWELL
New Hall Hey East
EMP 72
Not to Scale

MOTT MACDONALD

Futures Park
EMP 18-02

Stage 1 Road Safety Audit

15 November 2018

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Futures Park EMP 18-02

Stage 1 Road Safety Audit

15 November 2018

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	15/11/18	R Collins	H Palmer	T Blaney	First Issue
					

Document reference: 399721/TPN/ITD/287864/405/A

Information class: Standard

Contents

1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on a proposed signalised junction on A681 Newchurch Road, Bacup.

The Road Safety Audit has been undertaken at the request of the Design Organisation (Mott MacDonald) on behalf of their client Rossendale Borough Council, who are the Highway Authority.

The audit took place at the Manchester office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A.**

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the preliminary design work.

The Road Safety Audit Team consisted of:

Rachael Collins	BA (Hons), MSc, MCIHT (Certificate of Competency in Road Safety Audit, July 2016) Audit Team Leader, Mott MacDonald
Hayley Palmer	BSc (Hons), MSc, MCIHT Audit Team Member, Mott MacDonald

The Audit Team visited the site of the proposed works together on Tuesday 23rd October 2018 at 14:30 hrs. During the site visit, the weather conditions were cloudy and the road surface was dry. Traffic conditions were moderate. Pedestrian activity was low. No cycle activity was observed whilst on site.

This Road Safety Audit was carried out in accordance with Highways England Departmental Standard GG119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report to the audit should be completed by the Design Team and kept on file for future reference.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

Scheme Description

The works include the conversion of the existing priority junction of A681 Newchurch Road / Futures Park to a three-arm signalised junction with controlled pedestrian crossing facilities on all arms of the junction. The exact usage of the proposed development site is currently not known.

2 Items Raised at this Stage 1 Safety Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

2.1 Problem 101

Location: A681 Newchurch Road opposite junction.

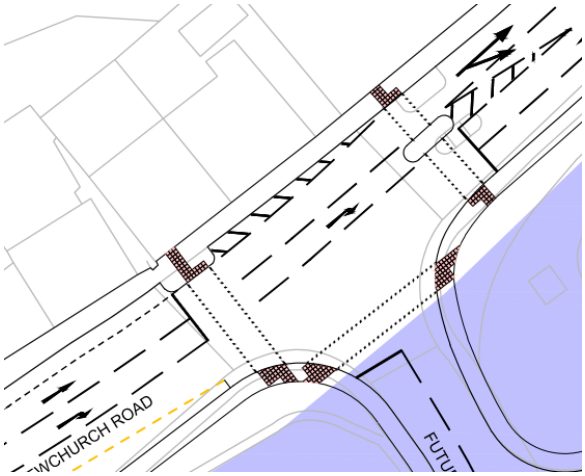
Summary: On-street parking could restrict visibility of the signal head. Vehicles may wait within the hatched area on the northern side of the junction.

Parking currently takes place on the A681 Newchurch Road opposite Futures Park and a parking bay is proposed south of the junction. Parked vehicles, particularly a high sided vehicle could block visibility to the signal heads which could result in late braking and rear end shunt collisions.

The Audit Team are also concerned that as there is a take away and Public House directly opposite the junction, there are likely to be deliveries and motorists may be tempted to pull up within the hatched area. This would be within the signal control junction and could restrict visibility to the signal heads and may also lead to collisions with other vehicles when pulling out into the junction.

During the site visit a vehicle was parked alongside the Royal Oak, which would be within the proposed signalised junction which when re-joining the A681 could lead to collisions with motorists travelling through the junction.

Figure 1: Parking opposite junction



Source: Mott MacDonald

Recommendation

The length of the parking bay may need to be reduced. The kerb should be re-aligned between the crossing points to deter motorists from pulling over within the junction.

2.2 Problem 102

Location: Proposed junction.

Summary: Narrow footways and the introduction of traffic signal equipment could force pedestrians into the carriageway increasing the potential for conflict.

The location of the traffic signal poles and controller have not been shown on the drawings. The Audit Team are concerned that the footways, particularly on the northern side of the A681 Newchurch Road are narrow and the addition of the traffic signal equipment could restrict the footway width forcing some pedestrians, particularly those in wheelchairs or those with pushchairs, into the carriageway in order to pass by increasing the potential for collisions between pedestrians and motor vehicles.

Recommendation

Adequate footway widths will be required to hold the traffic signal equipment.

2.3 Problem 103

Location: A681 Newchurch Road Controlled Pedestrian Crossing.

Summary: Lack of tactile paving within splitter island.

A splitter island is proposed within the northern crossing point on the A681 Newchurch Road and it is therefore expected that pedestrians / cyclists may wait. A lack of tactile paving may make it difficult for blind or partially sighted pedestrians to identify the splitter island.

Recommendation

Tactile paving should be provided within the splitter island in accordance with DETR ‘Guidance on the use of tactile paving surfaces’.

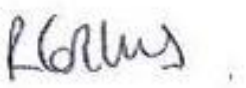
3 Audit Team Statement

We certify that this audit has been carried out in accordance with the principles of GG119.

Road Safety Audit Team Leader

R J Collins BA (Hons), MSc, MCIHT
(Certificate of Competency in Road Safety Audit, July 2016)

Signed:



Date: 15 November 2018

Senior Road Safety Engineer
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Road Safety Audit Team Member

H Palmer, BSc (Hons), MSc

Signed:

Date: 15 November 2018

Senior Transport Planner
Mott MacDonald
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Appendices

A. List of Documents Reviewed

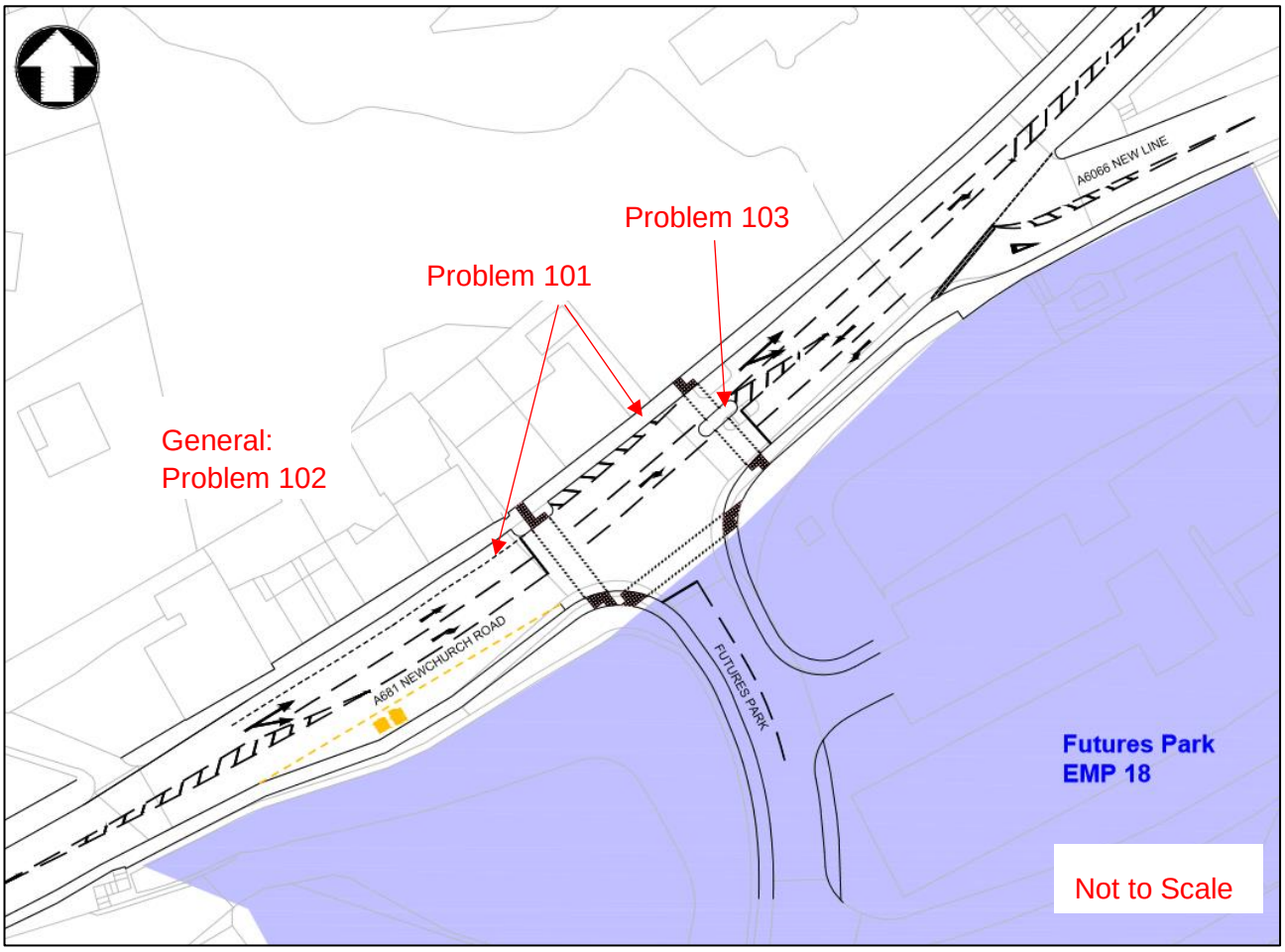
A.1 Drawings

Drawings Reviewed by Audit Team

Drawing	Rev	Title
EMP 18/02	P1	Futures Park. Signal Junction at Newchurch Road/Futures Park.

Source: Mott MacDonald

B. Key Plan


Problem 103
Problem 101
General:
Problem 102
A6066 NEW LINE
A661 NEWCHURCH ROAD
FUTURES PARK
Futures Park
EMP 18
Not to Scale

MOTT MACDONALD

Barlows Bottom EMP 73

Stage 1 Road Safety Audit

15 November 2018

Rossendale Borough Council

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Barlows Bottom EMP 73

Stage 1 Road Safety Audit

15 November 2018

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	15/11/18	R Collins	H Palmer	T Blaney	First Issue
					

Document reference: 399721/TPN/ITD/287864/406/A

Information class: Standard

Contents

1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on a proposed priority junction on Market Street, Rossendale.

The Road Safety Audit has been undertaken at the request of the Design Organisation (Mott MacDonald) on behalf of their Client Rossendale Borough Council, who are the Highway Authority.

The audit took place at the Manchester office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A.**

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the preliminary design work.

The Road Safety Audit Team consisted of:

Rachael Collins	BA (Hons), MSc, MCIHT (Certificate of Competency in Road Safety Audit, July 2016) Audit Team Leader, Mott MacDonald
Hayley Palmer	BSc (Hons), MSc, MCIHT Audit Team Member, Mott MacDonald

The Audit Team visited the site of the proposed works together on Tuesday 23rd October 2018 at 15:30 hrs. During the site visit, the weather conditions were cloudy and the road surface was dry. Traffic conditions were moderate and free-flowing. Pedestrian activity was low. No cycle activity was observed whilst on site.

This Road Safety Audit was carried out in accordance with Highways England Departmental Standard GG119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report to the audit should be completed by the Design Team and kept on file for future reference.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

Scheme Description

The works include modifications to an existing access to provide a priority controlled junction on Market Street which is currently stopped up to traffic. An uncontrolled crossing point to include a splitter island and tactile paving is to be provided on the access road. The exact usage of the proposed site is currently not known.

2 Items Raised at this Stage 1 Safety Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

2.1 Problem 101

Location: Proposed site access.

Summary: The proposals do not show any provision for pedestrians, cyclists and horse-riders which will increase their vulnerability and risk of being struck by passing vehicles.

The existing access is stopped up to traffic and is a byway signed for pedestrians, cyclists and horse-riders. It is not clear if or how these users will be accommodated within the proposals. The introduction of motor vehicles would increase their vulnerability and potential for being struck by passing vehicles.

Figure 1: Existing byway

Source: Mott MacDonald

Recommendation

Appropriate provisions should be made for pedestrians, cyclists and equestrians.

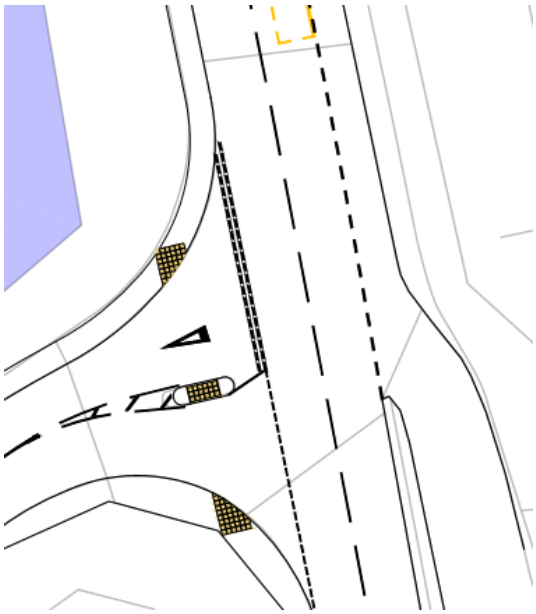
2.2 Problem 102

Location: Splitter island within proposed junction.

Summary: Insufficient splitter island may not accommodate all users who may overspill into the carriageway.

The proposed splitter island on the new access road is approximately 1.2m in width, the absolute minimum recommended. This may not be appropriate in width if used by cyclists or horse-riders who would overspill into the carriageway, increasing the risk of collisions between users and passing vehicles.

Figure 2: Proposed splitter island



Source: Mott MacDonald

Recommendation

The width of the splitter island should be suitable for the expected users.

2.3 Problem 103

Location: Proposed junction.

Summary: Lack of crossing point could increase users' vulnerability when crossing Market Street.

To the north of the junction is a double length (approximately 34m) bus stop. Although the frequency and patronage of buses is not known, the Audit Team are concerned that a lack of a crossing facility could increase the risk of those most vulnerable being struck by a passing vehicle whilst attempting to cross Market Street.

Figure 3: Bus stop provision

Source: Mott MacDonald

Recommendation

If demand warrants, a crossing point should be provided to link with the crossing point on the eastern side of Market Street.

2.4 Problem 104

Location: Proposed junction.

Summary: Wide junction mouth could lead to vehicles exiting side by side and narrow access road could result in side swipe incidents.

Although the exact use of the site is not known, the proposed junction mouth appears wide. This could lead to vehicles attempting to exit onto Market Street side by side which may result in side swipe incidents. The distance also increases pedestrians' vulnerability to being struck whilst crossing the junction.

The width of the access road and site access junction are significantly narrower and vehicles may have difficulty negotiating the access or passing another vehicle increasing the potential for side swipe collisions.

Figure 4: Road and junction widths

Source: Mott MacDonald

Recommendation

Tracking should be undertaken to determine appropriate junction and road widths. Either, the junction should be marked as a single lane or if width allows, then the two lanes should be marked.

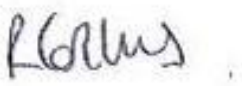
3 Audit Team Statement

We certify that this audit has been carried out in accordance with the principles of GG119.

Road Safety Audit Team Leader

R J Collins BA (Hons), MSc, MCIHT
(Certificate of Competency in Road Safety Audit, July 2016)

Signed:



Date: 15 November 2018

Senior Road Safety Engineer
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Road Safety Audit Team Member

H Palmer, BSc (Hons), MSc

Signed:

Date: 15 November 2018

Senior Transport Planner
Mott MacDonald
Royal Liver Building
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Appendices

A. List of Documents Reviewed

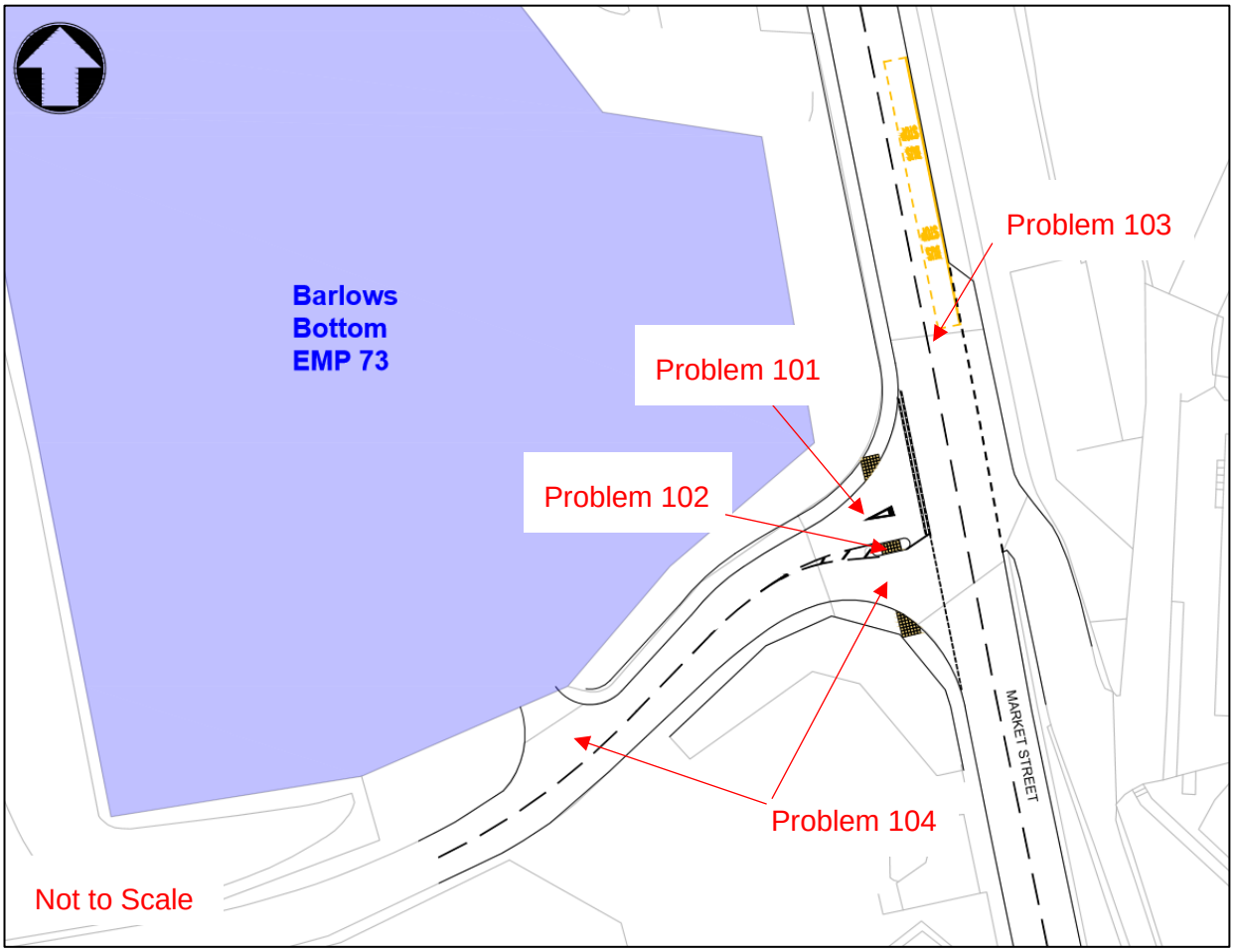
A.1 Drawings

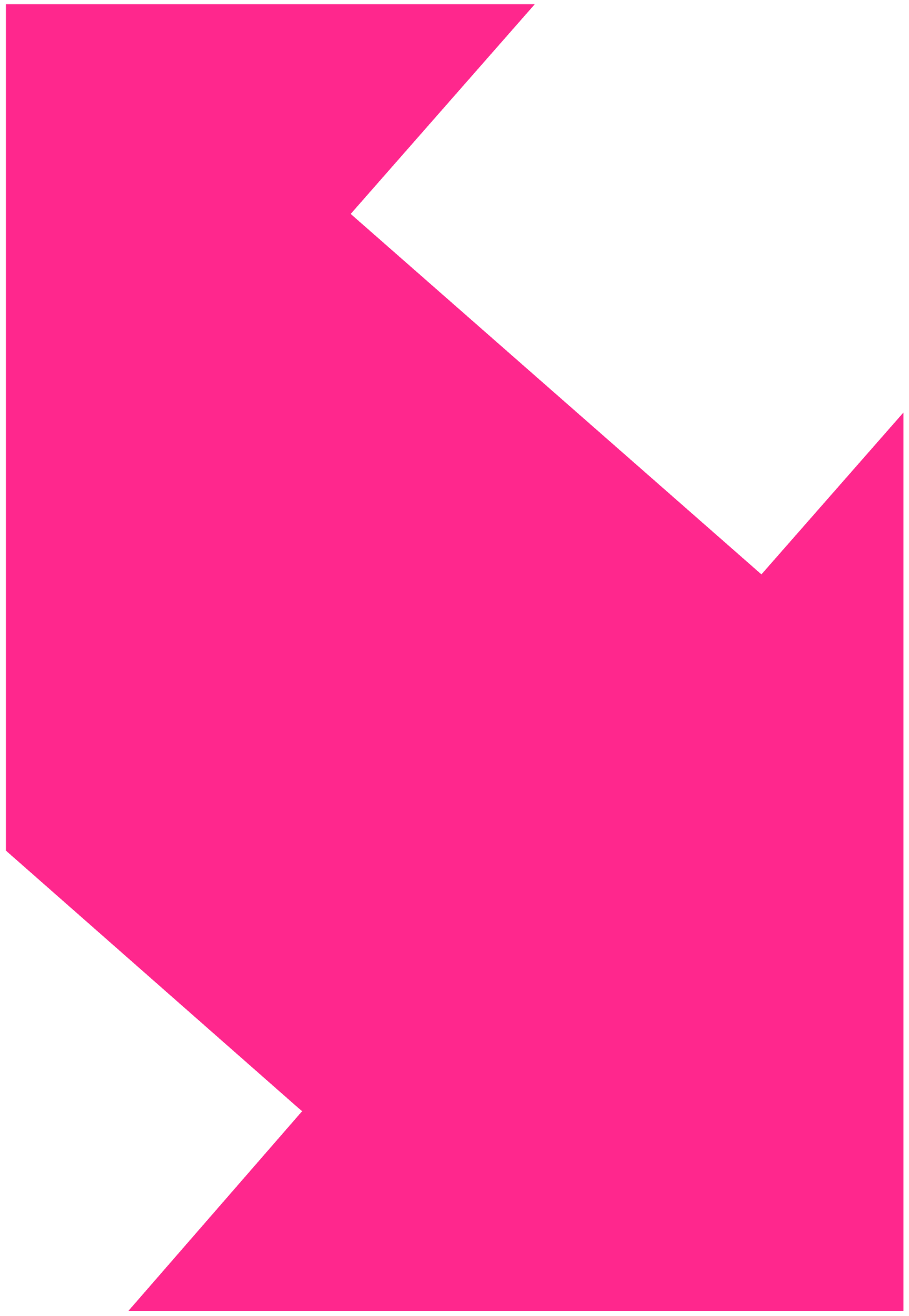
Drawings Reviewed by Audit Team

Drawing	Rev	Title
EMP 73 -01	P1	Barlows Bottom. Priority junction off Market Street

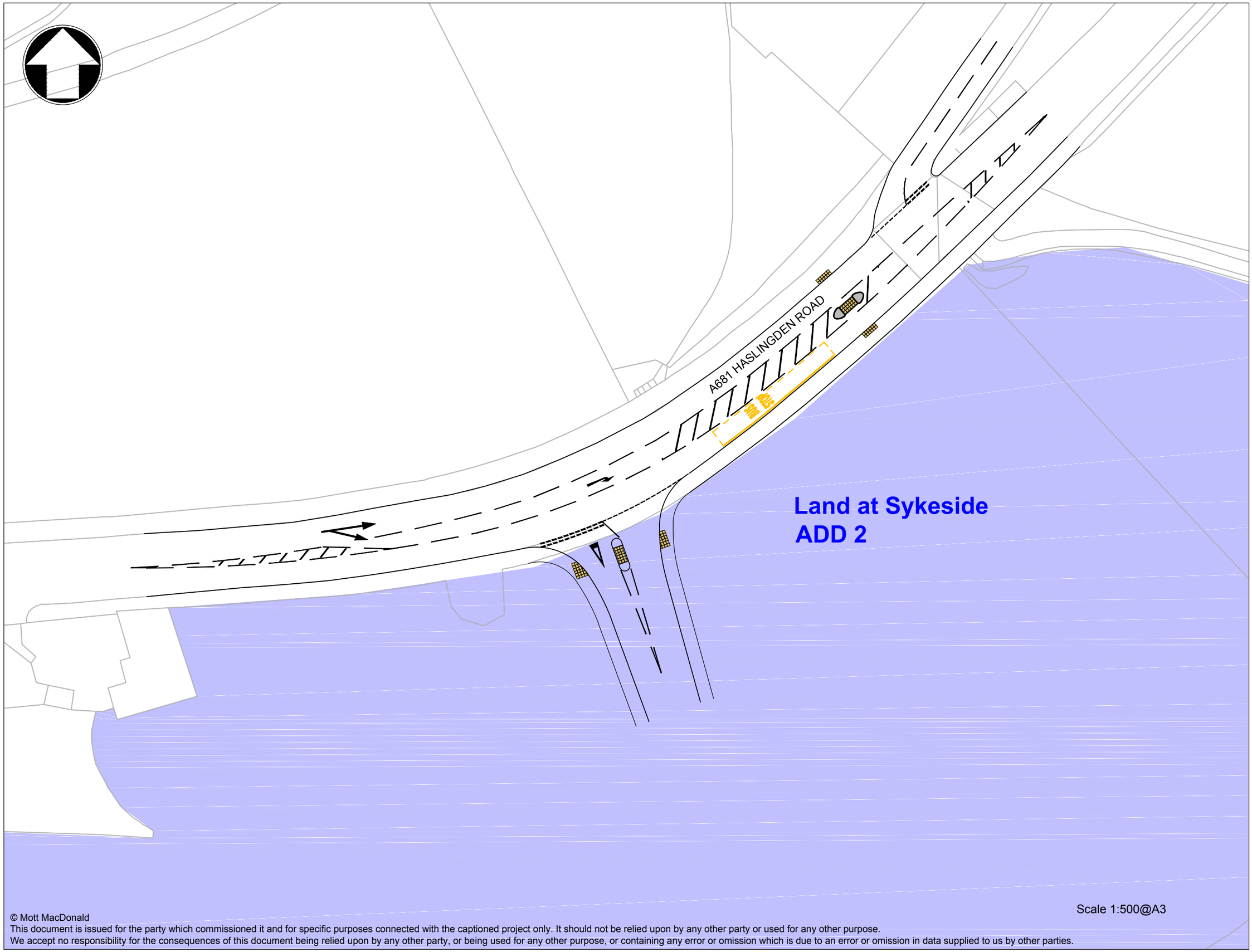
Source: Mott MacDonald

B. Key Plan


Barlows
Bottom
EMP 73
Problem 101
Problem 102
Problem 103
Problem 104
MARKET STREET
Not to Scale



C. Final Preferred Options



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MM MOTT MACDONALD

Rossendalealive BOROUGH COUNCIL

ADD 2/02 - LAND AT SYKESIDE. GHOST ISLAND PRIORITY JUNCTION ON A681

MacDonalds

A680 BLACKBURN ROAD

Hollin Gate
Farm
ADD 3

Scale 1:500@A3

MOTT MACDONALD

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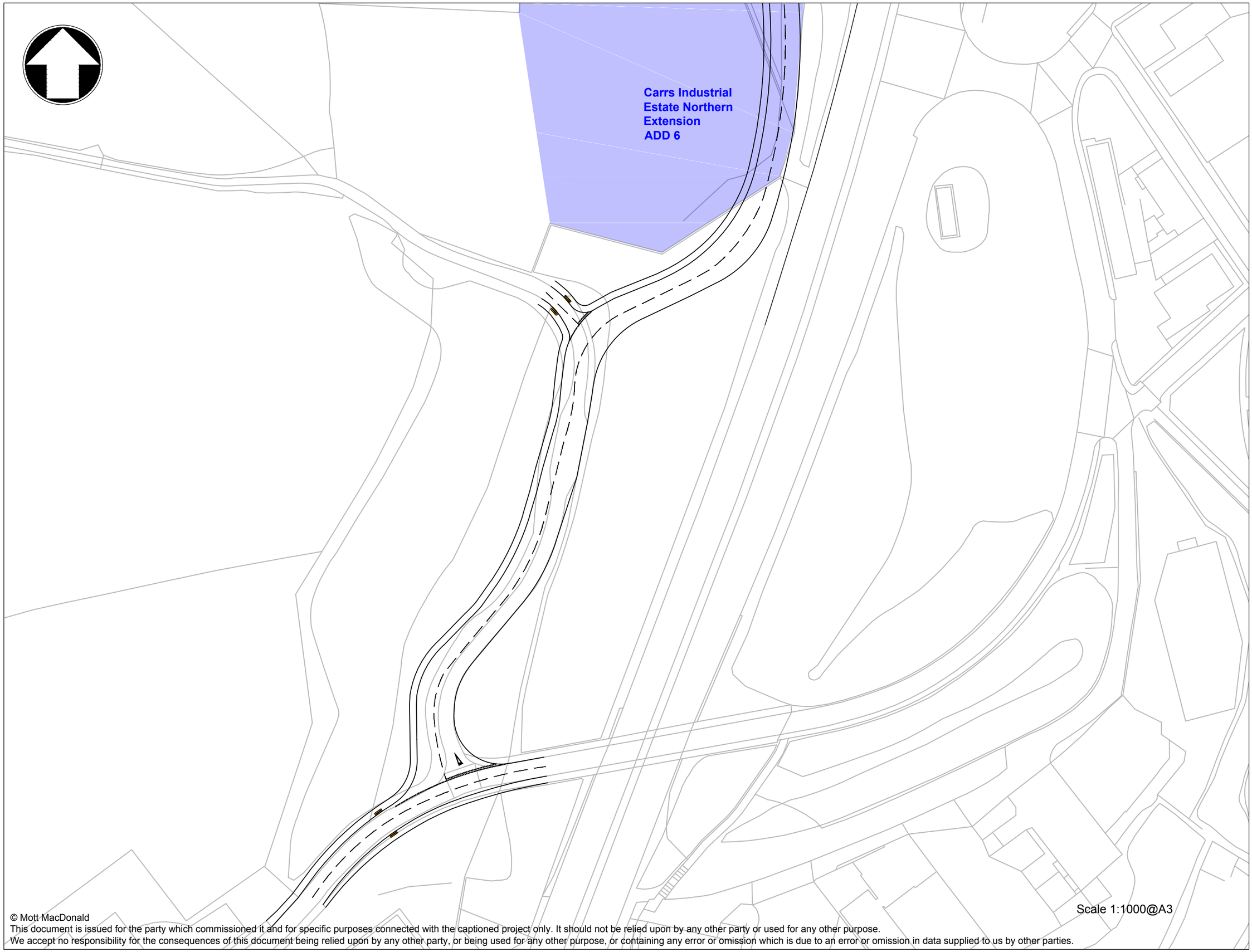
BOROUGH COUNCIL

ADD 3/01 - HOLLIN GATE FARM. SIGNAL JUNCTION ON BLACKBURN ROAD



ADD 6/01 - CARRS IND ESTATE NORTHERN EXTENSION. PRIORITY JUNCTION ON HUD HEY ROAD

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BOROUGH COUNCIL

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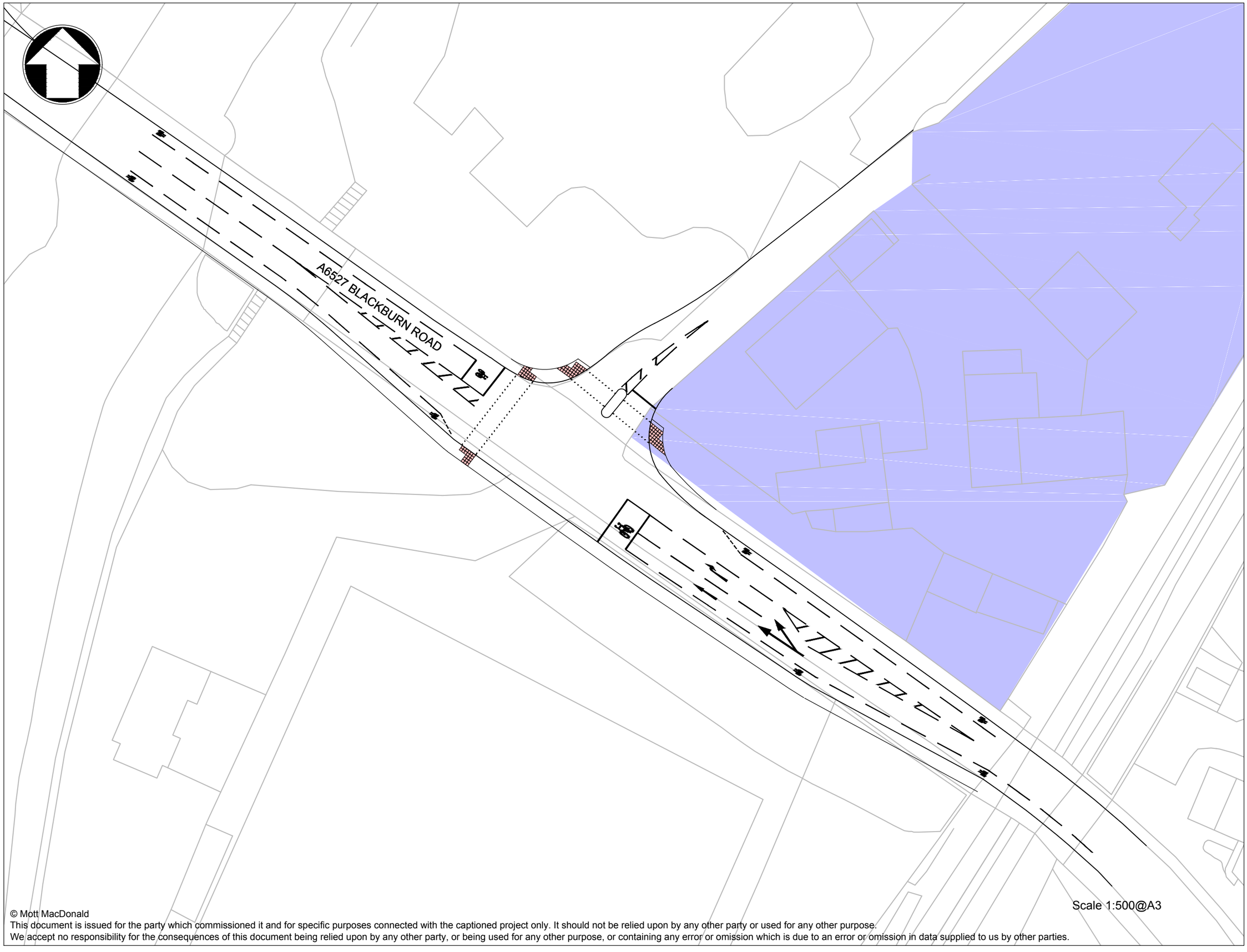

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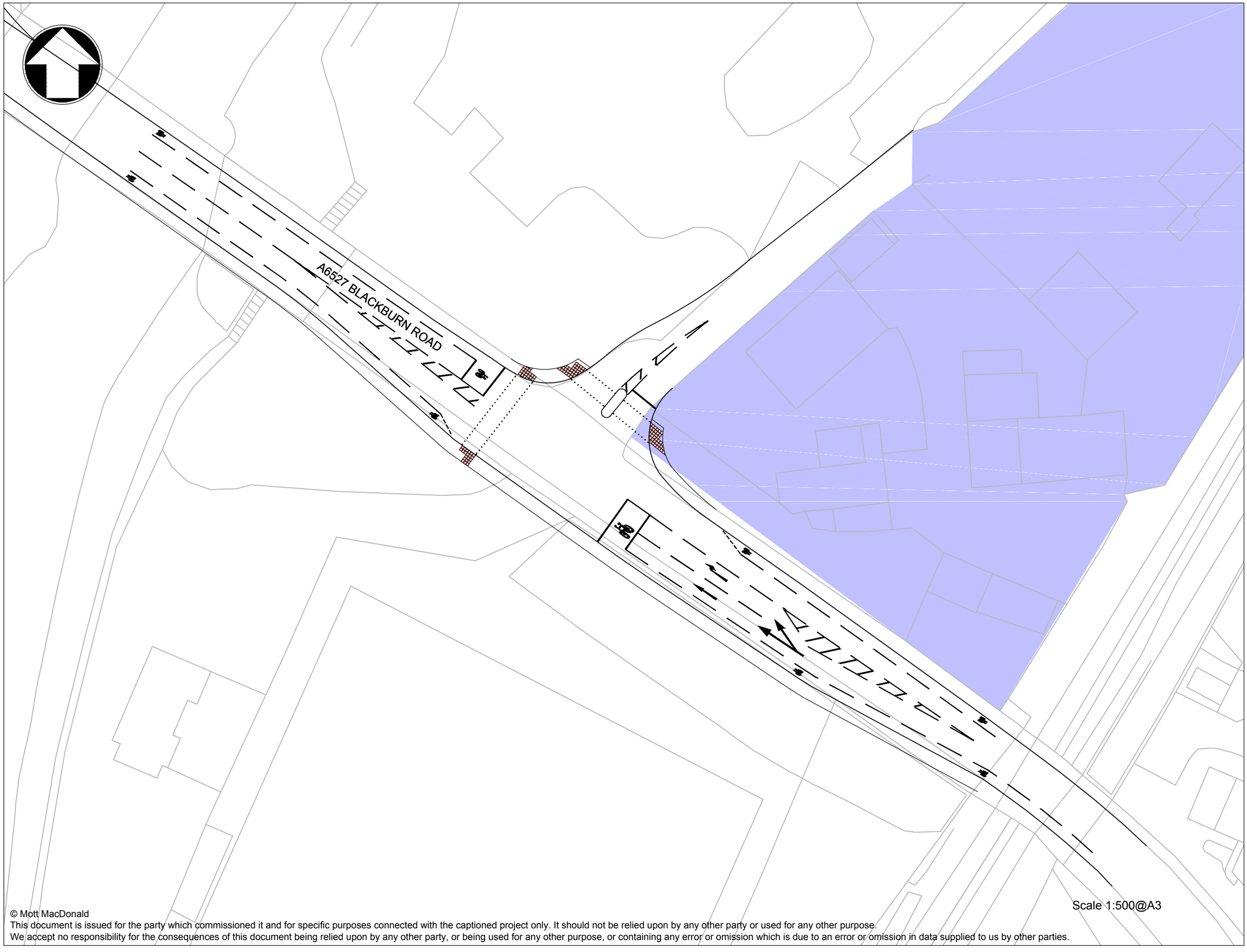
BOROUGH COUNCIL

EMP 10/02 - EWOOD BRIDGE. SIGNAL JUNCTION ON BLACKBURN ROAD



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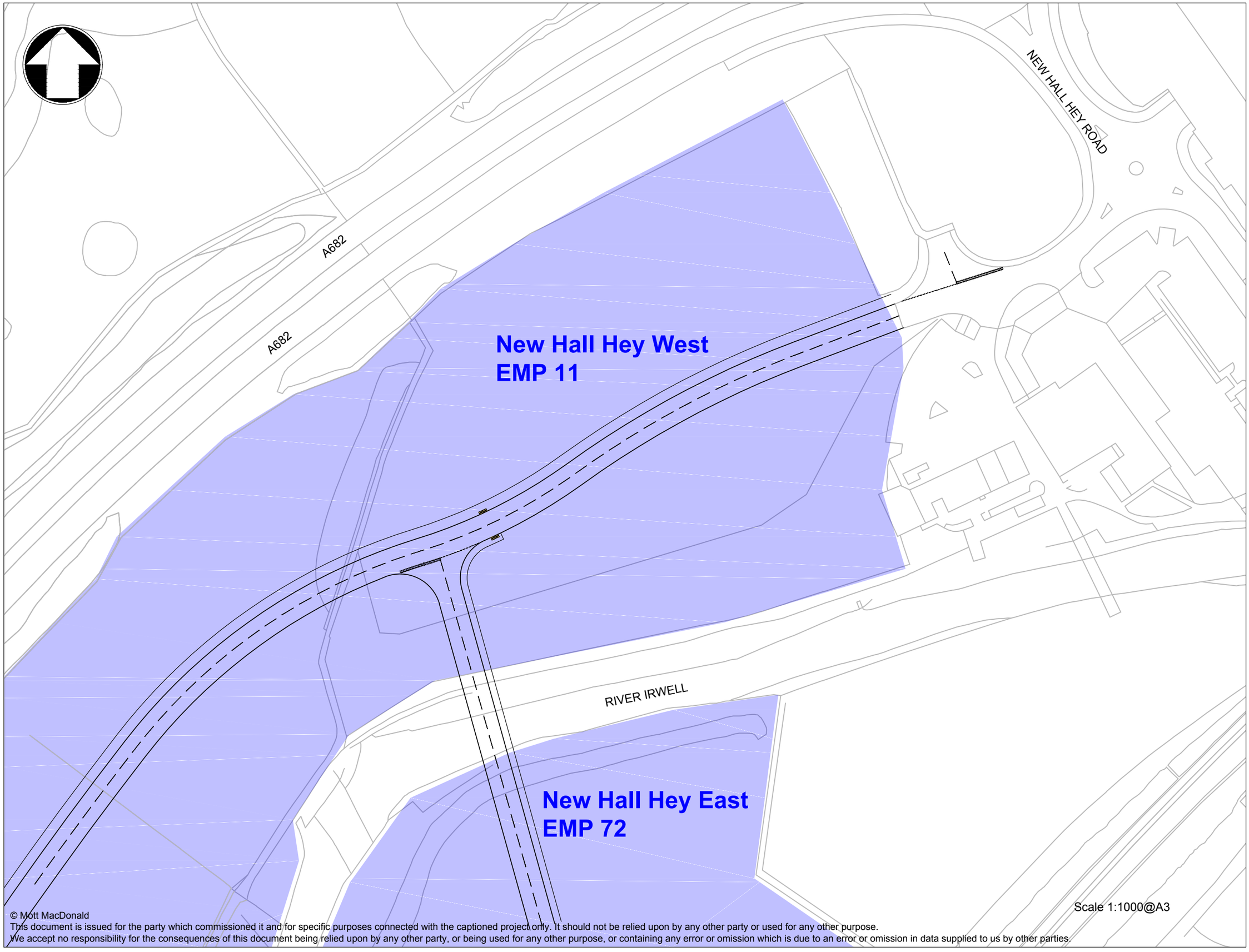
EMP 10/02 - EWOOD BRIDGE. SIGNAL JUNCTION ON BLACKBURN ROAD



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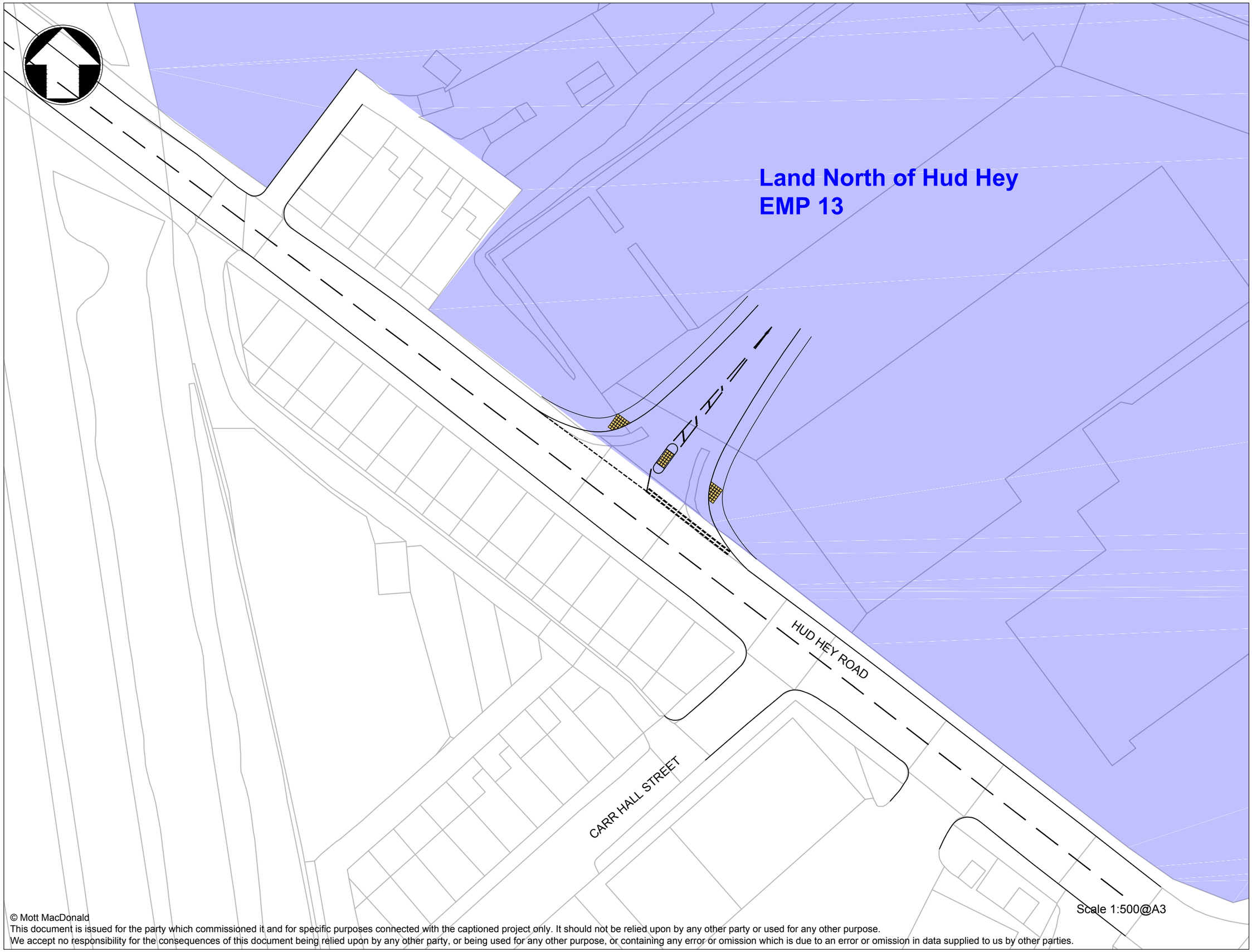
EMP 11 & EMP 72/01 - NEW HALL HEY EAST & WEST. ACCESS ROAD AND BRIDGE



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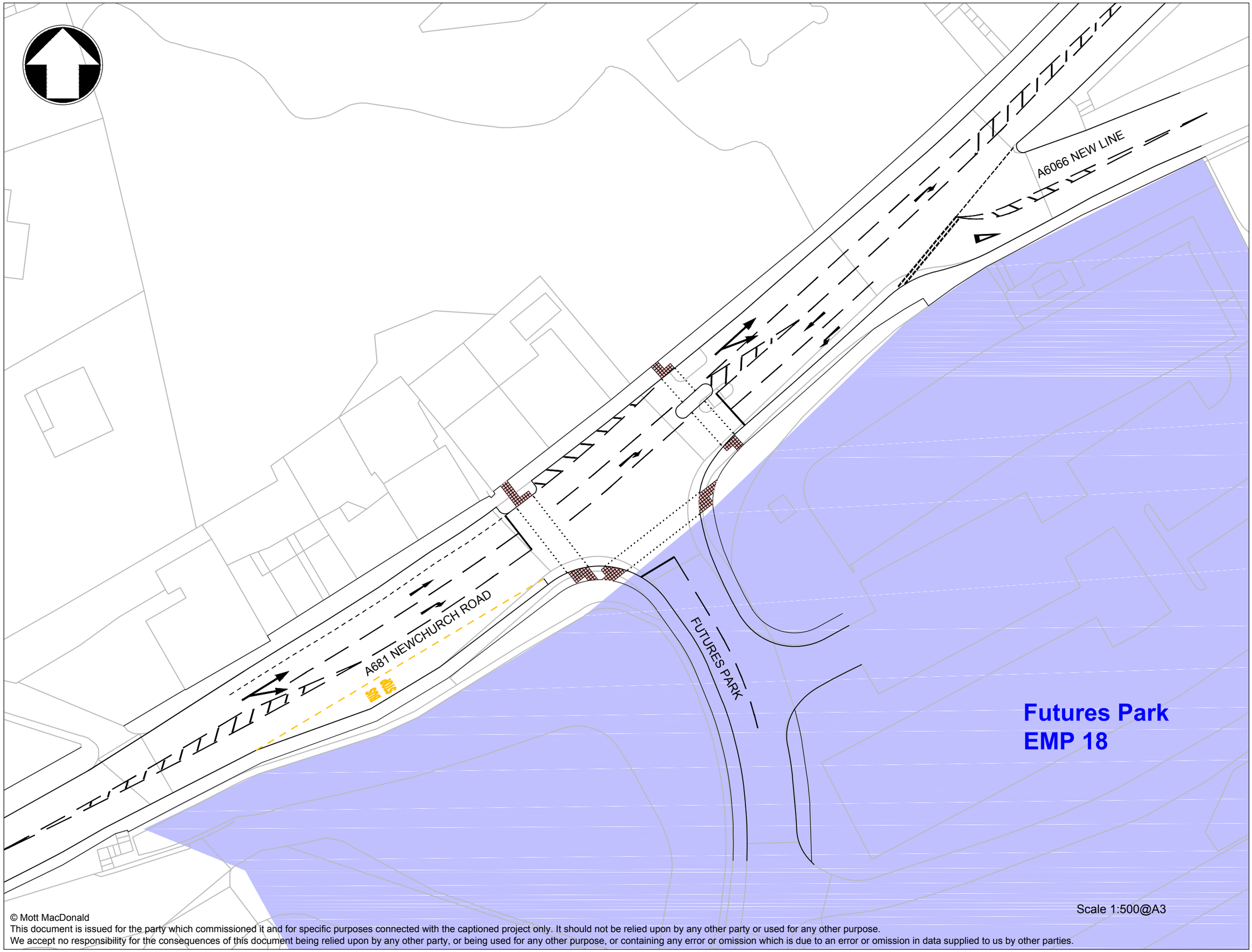
EMP 13/01 - LAND NORTH OF HUD HEY. PRIORITY JUNCTION ON HUD HEY ROAD



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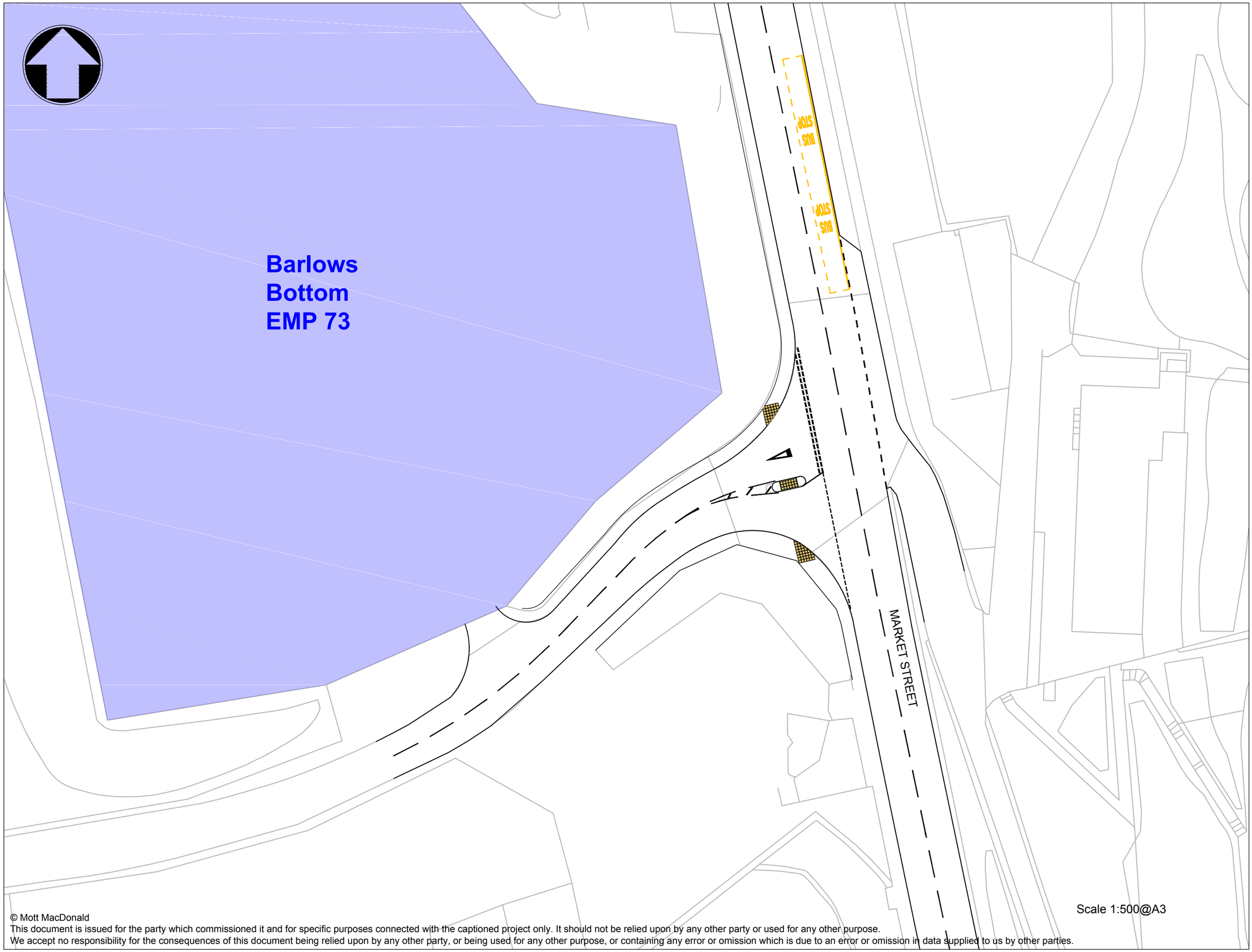
EMP 18/02 - FUTURES PARK. SIGNAL JUNCTION AT NEWCHURCH ROAD/FUTURES PARK



Scale 1:500@A3

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EMP 73 - BARLOWS BOTTOM. PRIORITY JUNCTION OFF MARKET STREET

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