

West Yorkshire+ Transport Fund

Gateway 1 Review

A650 Hard Ings Road Improvements

Gateway 1 Review Submission

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Strategic Case

1.1. Business Strategy

The primary objective of the West Yorkshire Plus Transport Fund is to:

'Increase employment and productivity by completion of transport schemes across West Yorkshire by improving connectivity'.

The A650 Hard Ings Road is a strategically important route which links Bradford to Keighley and onwards to Skipton via the A629 and the Pendle area of Lancashire via the A6088. The A650 is mostly dual carriageway except for a short section, Hard Ings Road which is indicated below in Figure 1 and runs between the Bradford Road and Skipton Road in Keighley. The single carriageway section is a key pinch point causing congestion not only on the main A650 but also impacts Keighley Town Centre as drivers avoid this length of road.

Keighley is the principal town of Airedale, it is an important industrial economic base and is also establishing itself as centre for research and development. Increasing congestion levels will make the area less attractive for inward investment resulting in a detrimental impact on future economic growth.

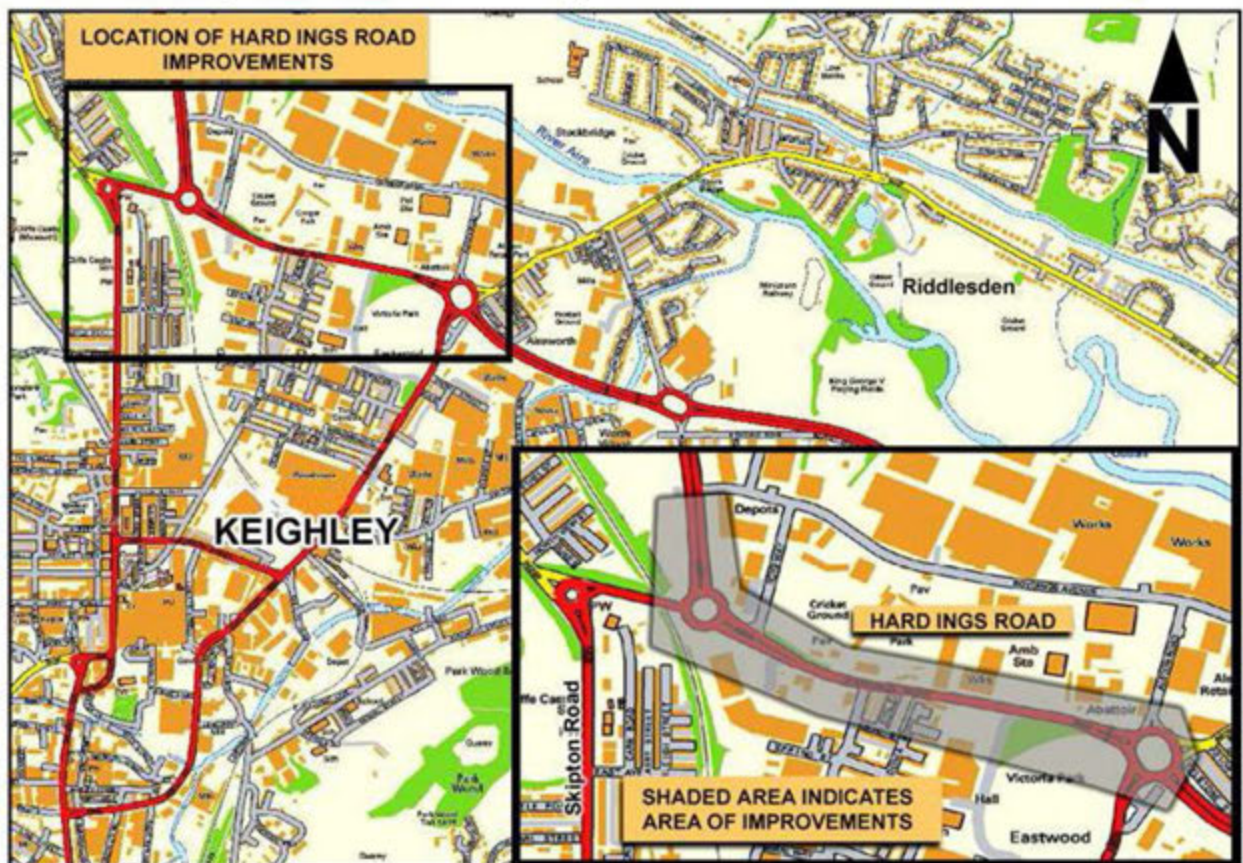


Figure 1 - Location Plan - Hard Ings Road Improvements.

Improvements to Hard Ings Road will improve traffic flows and reduce traffic congestion on the A650 and in Keighley town centre. Air quality and safety will also be improved and the local environment will be enhanced through the use of high quality materials in the design of the scheme. Where feasible, new cycling and pedestrian facilities will be provided to try and encourage the use of sustainable modes for local journeys.

It will also facilitate housing development in the immediate area. In the local plan for the District there are long term growth aspirations for housing development (approximately 4,500 dwellings within the Keighley area) and economic development to encourage investment from the digital, design, knowledge and service sectors. Keighley town centre will see high quality mixed use development centred on the former Keighley college site, Market Hall, Cavendish Court and Cavendish Retail park. A plan indicating Housing and Employment Spatial Vision Diagram – Airedale by 2030, is included as Appendix 1.

Improving the A650 Hard Ings Road fulfils the objectives of the West Yorkshire Plus Transport Fund and also those of the West Yorkshire Local Transport Plan which include supporting economic growth and improved quality of life through safer walking, and cycling and reduced air pollution. This case has been developed in full compliance with WebTAG.

1.2. Existing problems and issues

Historically the A650 was a trunk road that was de-trunked around 2008. Though no details are available the principle of an improvement to Hard Ings Road had been considered by the trunk road authority and was included as a potential scheme in the Council's 'Bradford District Transport Strategy 2006-2021'.

Following de-trunking and a return to Local Highway Authority control, outline details subsequently formed part of the 'Connecting Airedale' package in a Regional Funding Allocation bid in October 2008. That bid was unsuccessful with no scheme development work taking place until the current opportunity afforded by the West Yorkshire Transport Fund.

The A650 Hard Ings Road carries a significant volume of traffic with an average of 34,000 vehicles using the road on a typical weekday. AM peak time traffic levels average 2,600 vehicles in the morning peak and 2,500 vehicles in the evening peak with traffic flows evenly balanced in both directions. Its is a key commuter route carrying traffic from Keighley, Skipton and East Lancashire along Airedale to / from Leeds and Bradford. The Keighley retail park situated just off Hard Ings Road also generates a significant amount of traffic on a weekend, Saturday lunchtime traffic levels on Hard Ings Road approach those experienced in the commuting peaks during the week.

The lack of capacity on Hard Ings Road results in considerable congestion at peak times with traffic queuing on beyond both Bradford Road and Beechcliffe roundabouts. The average delay on each leg is indicated in Table 1 below and average weekday speeds in the evening peak are illustrated in Figure 2.

Time period	Eastbound	Westbound
07.30-09.30	2 min 51 secs	3 min 4 secs
16.30-18.30	4 min 27 secs	3 min 28 secs

Table 1 - Average journey time on Hard Ings (CJAMS weekday 2014)

In addition to significant peak time congestion the junction can also suffer from considerable delays at times in particular on a Saturday with local traffic trying to access the Keighley retail park which can only be accessed from Hard Ings Road.

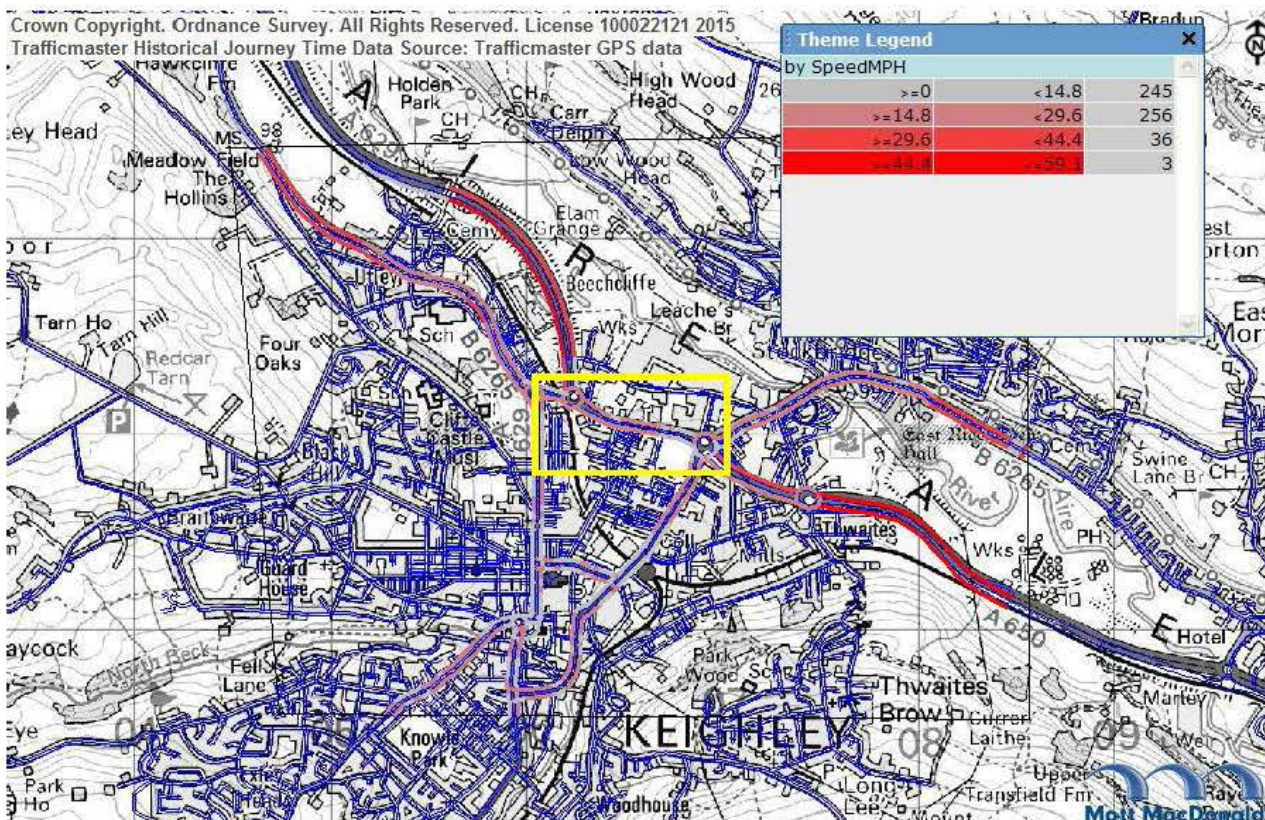


Figure 2 - AM Peak average speeds (2014)

Whilst there is only one bus service which operates along Hard Ings Road (the 727), congestion at Bradford Road roundabout causes significant delays at peak times for a number of bus services. The routes impacted are detailed below

Service	Route	Frequency in each direction	Operator
727	Keighley – Cullingworth	Every 120 minutes	TLC
662	Keighley – Bradford	Every 10 minutes	Keighley & District
708	Keighley – Riddlesden	Every 60 minutes	TLC
760	Keighley – Leeds	Every 30 minutes	Keighley & District

Bus service delays as a result of congestion reduce journey time reliability and impact passengers along the entire length of the bus route.

Despite the number of retail units, a leisure centre and Keighley Cougars rugby league ground which contribute to footfall in the area, there are no dedicated pedestrian facilities on Hard Ings Road, which poses a significant safety risk for pedestrians. Between 2009 and 2014 there have been 52 accidents recorded along this stretch of road, with 22 on Hard Ings Road, 17 on / or approaching Beechcliffe roundabout and 13 on / or approaching Bradford Road roundabout. These resulted in 5 serious and 83 slight injuries. Table 2a and 2b show details the accidents by casualty and vehicle type.

Casualties	Hard Ings Rd	Beechcliffe Roundabout	Bradford Road Roundabout	Total
Slight	29	34	20	83
Serious	1	3	1	5
Fatal	0	0	0	0

Table 2 – Accidents by casualty (2009-2014)

Casualties	Hard Ings Rd	Beechcliffe Roundabout	Bradford Road Roundabout	Total
Car	22	12	20	54
Cyclist	4	2	0	6
Motorcyclist	3	3	1	7
Pedestrian	1	2	0	3
Coach	0	18	0	18

Table 2 – Accidents by vehicle type (2009-2014)

Congestion along the Hard Ings corridor results in increased vehicle emissions, worsening air quality and high levels of pollution. Kerbside monitoring on Hard Ings recorded an annual mean of $33 \mu\text{g}/\text{m}^3$ (concentration of air pollutant per cubic metre) which although below the national standard ($40 \mu\text{g}/\text{m}^3$) is a cause for concern if congestion levels increase along the corridor.

1.3. Scheme Objectives

The key scheme objectives are:-

- Reduced congestion on Hard Ings Road including the surrounding roundabout approaches leading to anticipated reductions in vehicle delays of up to 183 seconds by 2026 in the peak periods.
- Increased safety provision for cyclists and pedestrians through provision of dedicated pedestrian / cycle crossing facilities on Hard Ings Road, and shared footway facilities for cyclists and pedestrians.
- Improved air quality for local residents.
- Supports the delivery of new housing and economic developments in the short term as well as opening up long term development opportunities in the area through releasing transport constraints.
- Improves access between the Pendle, Craven and Bradford.

- Improved Added Value in line with the Green Infrastructure Task Group recommendations where appropriate.
- Project should be complete by December 2017.
- The project should be designed to meet the requirements of the Design Manual for Roads and Bridges, any applicable locally determined standards and any relevant legislation (e.g. Highways Act 1980, Traffic Signs Regulations & General Directions).

The scheme also supports the West Yorkshire Local Transport Plan 3 (LTP3) objectives i.e:-

- Economy – improving connectivity to support economic activity and growth in West Yorkshire.
- Low Carbon – to make sustainable progress towards a low carbon sustainable transport system for West Yorkshire.
- Quality of Life – to enhance the quality of life of people living, working in and visiting West Yorkshire.

Improving the junction will also support LTP3 indicators in relation to improving journey time reliability, reducing CO2 emissions, reducing the number people killed or seriously injured in road accidents and improving satisfaction with transport.

1.4. Measures for success

The key measures for success are:-

- Improved journey times along Hard Ings Road resulting in a reduction in travel time along the A650.
- Based on 2017 traffic levels a reduction in travel time of 42% in the morning and 51% evening peak periods respectively.
- Reduction in number of collisions through introduction of toucan crossing and segregated cycle route.
- Increased cycling and walking in the area.
- Reduced greenhouse gas emissions leading to improved air quality.
- Facilitating delivery of economic and residential developments in Keighley.
- Supporting and facilitating local job creation.
- Improvements in bus journey time reliability encouraging increased levels of service and encouraging modal transfer.

1.5. Scope

Achievement of the scheme objectives and measures for success will require consideration of the following:-

- Improvements to the highway network capacity/operation by upgrading Hard Ings Road and improving associated junctions.

- Controlled and uncontrolled pedestrian facilities to improve pedestrian safety and reduce severance.
- Cycle facilities including toucan crossings to improve cycle safety, encourage increased usage and provide improved connections to the existing cycle network.

The scope of activities in delivery of the Hard Ings Road Improvement project comprises:-

- Completion of a Feasibility Assessment to identify a preferred option, and identify the extents of land acquisition.
- Progression of acquisition of land required for the scheme through private treaty or where this is not possible through the application of CPO powers having previously obtained approval from the Secretary of State for their use.
- Procurement of specialist advice and support to facilitate the CPO process and further modelling works from specialist third-party providers.
- Preparation of appropriate planning application documentation and securing planning permission for the improvements to the highway network beyond those permitted under 'permitted development' rights where necessary.
- Detailed Design of the preferred option and associated highway improvements including provision of pedestrian and cycling facilities.
- Initial noise level surveys required for consideration of any Part 1 Land Compensation Act claims will be procured from specialist contractors together with indicative extents of properties eligible to claim for compensation.
- Procurement and Construction including contract administration, supervision and compliance with CDM Regulations.
- Scheme Evaluation and Monitoring following completion of the works.
- Promotion and implementation of appropriate Traffic Regulation Orders and resolution of issues arising from the statutory consultation.

Other ancillary activities which are currently considered to be within scope for this project include:

- Working with Metro and local bus operators to improve bus journey time reliability by introducing traffic light priority if appropriate at the Bradford Road roundabout.
- Engaging with the local community in relation to the design and construction programme for the scheme.

The following activities are currently considered as being 'out of scope' of the project and consequently will not form part of the final project design:

- Complementary measures (traffic management and/or other improvement works) in Keighley Town Centre. These are outside the scope of this brief and will be delivered separately by City of Bradford Metropolitan Council. The project will consider the impact of the town centre scheme on the Hard Ings Road Improvements scheme, and vice versa.
- The Hard Ings mandate included consideration of works in Keighley Town Centre. That element has been superseded by CBMDC's traffic management scheme as above. However traffic modelling work on that scheme has identified the possibility for

a further phase to the Hard Ings project along the Bradford Road corridor linking the two projects potentially providing further congestion relief and extended benefits. Notionally identified as Hard Ings Road Improvement Phase 2 early funding for the development of a project could be made through the mandated £10.3m Hard Ings budget allocation. It is recognised that a further mandate may be required along with additional funding and approvals and that this phase may not form part of this or any future Transport Fund. An indicative Phase 2 funding profile for early development work is included in Financial Case - Table 8.

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1.6 Constraints and Interdependencies

The following constraints have been identified in relation to the project:

- The project should be complete by December 2017.
- Cost: the net call on the WY+TF should not exceed the mandated £10.3million allocation.
- The preferred scheme is dependent upon the acquisition of sections of land from 7 land owners. Approaches to affected land owners to acquire the land necessary for the highway improvement via private treaty will run concurrently with the promotion of a formal Compulsory Purchase Order.
- Benefit: the project should deliver GVA/£ of whole life cost of 1.3 units +/- 0.1 unit (see tolerances for full details) as defined in the WY+TF Portfolio Baseline.

The following interdependencies have been identified in relation to the project:

- The project will consider the impact of the Keighley Town Centre scheme on the Hard Ings Road Improvements scheme and vice versa. To investigate this impact, Transport Planning used the Keighley Aimsun Traffic model, which includes Keighley Town Centre and Hard Ings Road. The modelling results show that there is no significant impact on Hard Ings Road in terms of traffic flows, turning movements and redistribution of local traffic. It was also observed that Bradford Road and Skipton Road are running over capacity. Because of this constraint, the model does not allow traffic to reassign route choice in busy periods.
- Confirmation of approval to seek CPO powers and begin informal negotiations will be sought from the Council's Executive in July 2015 following approval of Gateway 1 together with approval or delegated powers to undertake all other necessary statutory approval processes.
- Procurement of specialist legal, asset valuation and property acquisition advice and support in relation to both the CPO and private treaty acquisition will be secured prior to Gateway 2 approval.
- Agreement to the use of Council capital funding for a programme of land/property assembly required to facilitate the delivery of the scheme will be obtained from the Council's Project Appraisal Group.
- To comply with the Council's Contract Standing Orders (CSOs) it will be necessary to seek approval of the Council's Environment & Waste Overview and Scrutiny committee to the procurement strategy and scheme principles prior to Gateway 3.

- Any necessary planning permission associated with the highway alignment will also be sought during the period between Gateway 1 and Gateway 2 along with confirmation of any associated Traffic Regulation Orders.
- Construction permits under the Yorkshire Common Permit Scheme will need to be acquired in advance of Gateway 3 and the works will need to be factored into the programme of road and street works council jurisdictions.
- The scheme supports existing housing delivery as well as long term growth in the emerging Local Plan Core Strategy which seeks to support the delivery of 41,100 dwellings across the district by 2030 and approximately 4,500 dwellings within the Keighley area.

1.7 Stakeholders

The current Stakeholder Management plan as contained within the Communications Management Strategy (attached as Appendix 11) identifies the following key stakeholders and their contribution characteristics to the project as follows:

Stakeholder	Contribution
City of Bradford Metropolitan District Council	<p>As Highway Authority</p> <ul style="list-style-type: none"> • Responsible for the promotion and implementation of any associated Traffic Regulation Orders required for the scheme. • Responsible for co-ordination of road and street works within the District of Bradford. • Responsible for extinguishment / creation of new highway associated with the project. • Responsible for ensuring that any project complies with appropriate national and local design standards and all appropriate legislation. • Responsible for arranging post completion monitoring. • Coordination of development activities associated with adjacent residential site developments. <p>As Planning Authority</p> <ul style="list-style-type: none"> • Responsible for advice relating to Permitted Development, Conservation Areas and other areas of special consideration. • Responsible for the preparation and implementation of the Local Plan which sets out the development strategy to 2030. <p>As Leisure & Culture Department</p> <ul style="list-style-type: none"> • Responsible for the operation and maintenance of Victoria Hall, Victoria Park and The Leisure Centre.
Keighley Town Council	As Allotments & Landscape Committee

Stakeholder	Contribution
	<ul style="list-style-type: none"> • Responsible for the administration of Hard Ings Road allotments. • Interface with the community in relation to scheme specifics/issues and concerns.
North Yorkshire County Council	<p>As Highway Authority</p> <ul style="list-style-type: none"> • Responsible for co-ordination of road and street works within the North Yorkshire County Council boundary.
Craven District Council	<ul style="list-style-type: none"> • Cross boundary impacts. • Consultation.
Department for Transport	<ul style="list-style-type: none"> • Conferring of statutory powers in relation to Compulsory Purchase Orders.
WYCA	<ul style="list-style-type: none"> • Gateway Approvals and WY+TF Administration • Promotion of bus service improvements through the junction.
Bus Operators (Keighley & District, TLC)	<ul style="list-style-type: none"> • Provision of advice / comments about issues on routes in proximity to the Hard Ings Road scheme affecting bus journey time reliability.
Local Ward Members	<ul style="list-style-type: none"> • Interface with local community in relation to scheme specific/issues and concerns.
MPs (to be determined following the election)	<ul style="list-style-type: none"> • Support and lobbying for statutory powers required for the delivery of the project. • Local interface with the community in relation to scheme specifics/issues and concerns.
Yorkshire Ambulance Service	<ul style="list-style-type: none"> • Purchase by private treaty of property required for the delivery of the scheme. • Development of detailed scheme proposals through direct consultation, public consultation exercises and local Neighbourhood Forums. • Liaison over impact on access and operations during construction.
Allotment Association and Tenants	<ul style="list-style-type: none"> • Purchase by private treaty of property required for the delivery of the scheme. • Development of detailed scheme proposals through direct consultation, public consultation exercises and local Neighbourhood Forums. • Liaison over impact on access and operations

Stakeholder	Contribution
	during construction.
Users of the road	<ul style="list-style-type: none"> • Journey times during construction and upon completion of scheme, changes to bus stop locations, and pedestrian / cycle facilities.
Local Residents	<ul style="list-style-type: none"> • Purchase by private treaty of property required for the delivery of the scheme. • Liaison over the construction programme including potential unsocial hours working. • Development of detailed scheme proposals through a series of public consultation exercises and local Neighbourhood Forums.
National and Local Businesses (including Keighley Retail Park, Texaco petrol stations, McDonalds, Keighley Cougars Rugby Club, Keighley Cricket Club, United Carpets, Coronation Business Park, Fibreline, Leisure Centre	<ul style="list-style-type: none"> • Purchase by private treaty of property required for the delivery of the scheme. • Development of detailed scheme proposals through direct consultation, public consultation exercises and local Neighbourhood Forums. • Liaison over the construction programme including potential unsocial hours working. • Liaison over impact on business trading conditions and associated off-site highway works during construction.
Emergency Services Fire Ambulance Police	<ul style="list-style-type: none"> • Development of detailed scheme proposals through direct consultation, public consultation exercises and local Neighbourhood Forums. • Consult on alterations to junction layout and make aware of diversionary routes during the construction period.
Statutory Undertakers	<ul style="list-style-type: none"> • Coordination, planning and delivery of associated statutory service supplies affected by the project.
B-SPOKE cyclists forum	<ul style="list-style-type: none"> • Consultation on proposed cycle friendly infrastructure to be incorporated into the project. • Design review of proposals.
Planning and Highways Access Forum	<ul style="list-style-type: none"> • Consultation on scheme proposals in relation to disability groups. • Contribution to the EIA assessment of the project design.

Table 3 – Summary of currently identified stakeholders

Additional stakeholders will be identified as the scheme progresses from GW1 through subsequent stages of delivery and the Communications Management Strategy (see Appendix 11) will be updated accordingly.

Consultation with parties both internal and external to the project will be undertaken after Gateway 1 and receipt of CBMDC Executive Approval, in accordance with the Communications Management Strategy. As the project progresses from GW1 to GW2 an external communications schedule will be created to address notices, letters to occupiers/stakeholders and public consultation events. No potential conflicts have been identified.

1.8 Options

Four options have been identified which could provide the predicted demand:—

- Link Option 2 - single 4 lane 14.6m wide carriageway,
- Link Option 3 - dual 6.75m wide carriageway (with sub options as the scheme was developed),
- Link Option 4 - dual 7.3m wide carriageway,
- Link Option 5 - composite part dual 6.75m wide carriageway, part single 6.75m wide carriageway,
- One-way system incorporating outbound only on Hard Ings Road and inbound only along Royd Ings Avenue,
- (note Option 1 is the Do Nothing for comparison purposes).

One of the project's key challenges is the constraint placed on the site by existing properties and therefore the potential for unpopular property acquisitions. In order to protect residential properties adjacent to the south-western kerbline, avoid legal issues with respect to the restrictive covenant in place at Victoria Park, and the re-location of the gas governor, the options restrict road widening to the north eastern side of the carriageway only.

Aimsun modelling techniques provide the predicted 2026 demand (to align with the Combined Authority's Urban Dynamic Model). Using these predicted capacities, in accordance with the DMRB, the type of road and carriageway width can be determined. This approach was chosen to quickly identify a footprint and hence the extent of the land and property issues.

Link Option 5 which is a composite design has benefits with respect to minimum land take (particularly adjacent to Fibreline where there is a significant level difference between the carriageway and the existing car park), and associated cost implications, as well as showing an overall reduction of journey times. The composite option (link option 5) is therefore recommended as the preferred option.

A plan for Link Option 5 is included in Appendix 7. The Link Options Report, included as Appendix 12, as approved at CBMDC WY+TF Programme Board, January 2015, details all link options considered and scheme progression to the preferred option (note that modelling data provided for 2017 and 2026 has now been updated as indicated in the Model Validation Report, included as Appendix 2).

A number of options have been considered at the Beechcliffe roundabout, and modelled using Aimsun. The existing roundabout with signal control and minor alterations to kerb lines to the central island (to increase lane widths on the circulatory carriageway and aid the passage of Heavy Goods Vehicles), gives the most benefits in the opening year (2017) and the design year (2026) when compared with the Do Nothing option. An additional lane is required on the approach to Beechcliffe roundabout from the A629 dual section, with associated embankment works. A plan for the preferred junction option is included in Appendix 8. The Junction Options Report, included as Appendix 13 as approved at CBMDC WY+TF Programme Board, February 2015, details all junction options considered (note that modelling data provided for 2017 and 2026 has now been updated as indicated in the Model Valuation Report, included as Appendix 2).

Early Aimsun modelling suggested the need to provide additional capacity on the link between Beechcliffe and Skipton Road roundabouts at some point in the future. However, further modelling and the ongoing development of options for the Beechcliffe junction indicate the junction operates satisfactorily for the preferred option at the design year (2026) and therefore additional works are not required.

The capacity of the existing signal controlled roundabout at the Bradford Road roundabout has been modelled for the design year, 2026. Any potential demand for increased storage can be controlled by adjusting signal timings. This is assuming that vehicles can undertake a right turn from Hard Ings Road into Lawkholme Lane rather than undertaking a U-turn at Bradford Road roundabout. The scheme has therefore been developed with a signalised junction at Lawkholme Lane incorporating a Toucan crossing (to replace an existing pedestrian refuge). Therefore dualling of the full length of this section of Hard Ings Road (no right turns) is discounted.

This also allows the 727 bus service to undertake a right turn from Hard Ings Road into Lawkholme Lane (this is the existing bus route). There are also a significant number of right turning movements into McDonalds and the adjacent petrol filling station from Hard Ings Road. Therefore, a right turn priority facility incorporating a turning lane (to allow through traffic to proceed unobstructed) has been included within the scheme at this location.

Traffic Light Priority (TLP) to assist bus journey times and other improvements in timetable reliability will be included within the adjustment to signal timings at Bradford Road roundabout. The 727 bus service operates every 2 hours via Beechcliffe roundabout on route between Royd Way and Lawkholme Lane. Therefore, no consideration will be given to assist bus journey times at this junction. Enhancements to bus stop facilities will be developed during the detailed design phase.

A two way shared facility for cyclists and pedestrians on the outbound side of Hard Ings Road, a Toucan crossing (as part of the Lawkholme Lane signalised junction), and a two way shared facility will also be provided on the inbound side of Hard Ings Road between Lawkholme Lane and Royd Way. This will provide a cycle route to join Hard Ings Road and the existing cycle route along Royd Ings Avenue through the tunnel under the A629 dual carriageway, leading to the Skipton Road residential area. Enhancements to the existing local cycle network could also be considered as measures through this project.

Consideration is being given to the provision of a pedestrian crossing facility on the section of Hard Ings Road between Beechcliffe roundabout and Skipton Road to provide a route avoiding crossing the A629 at the Beechcliffe roundabout (this is the current arrangement). However, further Aimsun modelling is required to determine the type and location of a proposed pedestrian facility. This will be confirmed at Gateway 2.

Although Link Option 2 has the least land take of all options, it is discounted due to road safety implications. All turning movements for vehicles would be permitted unless banned turn orders are introduced with associated enforcement issues. Only signing rather than physical measures could be implemented, leading to potential for more turning conflicts, particularly at entrances / exits to the numerous business premises. In addition to this, land take is greater compared with link option L5 on the section adjacent to Fibreline and the Bradford Road roundabout. There is a significant level difference between the carriageway and the existing car park adjacent to the frontage to Fibreline.

A Stage 1 Road Safety Audit has been carried out and included in Appendix 6 along with the designers' response.

A summary comparison of the options is shown in Table 4 on the following pages.

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Options	Route Description	Pros	Cons	Cost
Do Nothing	No change.	No change.	No change.	No change.
Option L2 Do Minimum	Single 4 lane 14.6m wide carriageway.	Lowest cost. Reduction in delays and travel times in opening and design year. Least land take. Does not affect existing bus route. Improved pedestrian and cycle facilities. Could allow un-restricted turning movements for many businesses (including the ambulance station) if banned turns not introduced.	More turning movements for vehicles compared with other options leading to potential for more conflicts. Banned turns could be introduced, but with enforcement issues, due to implementation of signing only rather than physical measures. Land take issue adjacent to frontage to Fibreline where there is significant ground level differences. Statutory undertaker diversions will be necessary, particularly the presence of High Voltage Cable & Gas supply in existing inbound footway.	Not tested since scheme has significant implications with regards to road safety (turning movements) and land take adjacent to Fibreline frontage.
Option L3A	Dual 6.75m (no right turns).	Improved pedestrian facilities. Allows un-restricted turning movements for existing ambulance station.	No cycle facility provision. Increased travel times / delays since no right turns permitted at Lawkholme Lane or Service Station / McDonalds, leading to U-turns being undertaken at Bradford Road roundabout. Junction remodelling at the Bradford Road roundabout would be necessary to cope with the predicted demand due to increase in number of U-turns. Restricted access to many businesses. Affects existing bus route. Statutory undertaker diversions will be necessary, particularly the presence of High Voltage Cable & Gas supply in existing inbound footway.	Not tested since scheme has significant cost implications with regards to junction remodelling at Bradford Road roundabout.

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Options	Route Description	Pros	Cons	Cost
Option L3B	Dual 6.75m (right turn at Lawkholme Lane & Service Station / McDonalds).	Reduction in delays and travel times in opening and design year. Improved pedestrian facilities. Does not affect existing bus route. Allows un-restricted turning movements for existing ambulance station.	Restricted access to many businesses. Statutory undertaker diversions will be necessary, particularly the presence of High Voltage Cable & Gas supply in existing inbound footway.	Not tested since does not provide any additional benefits compared with L5.
Option L3C	As L3B with cycling facility.	Reduction in delays and travel times in opening and design year. Improved pedestrian and cycle facilities. Does not affect existing bus route. Allows un-restricted turning movements for existing ambulance station.	More third party land required. Restricted access to many businesses. Statutory undertaker diversions will be necessary, particularly the presence of High Voltage Cable & Gas supply in existing inbound footway.	Not tested since does not provide any additional benefits compared with L5.
Option L4	Dual 7.3m wide carriageway (including right turn at Lawkholme Lane & Service Station / McDonalds).	Reduction in delays and travel times in opening and design year (however, no benefit compared with other options). Improved pedestrian and cycle facilities. Does not affect existing bus route. Allows un-restricted turning movements for existing ambulance station.	Highest cost. More third party land required compared with all options. Restricted access to many businesses. Statutory undertaker diversions will be necessary, particularly the presence of High Voltage Cable & Gas supply in existing inbound footway.	Not tested since scheme has significant implications with regards land take costs / risks with no benefits on delays / travel times compared with L5.

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Options	Route Description	Pros	Cons	Cost
Option L5 Preferred Option	Composite – part dual carriageway.	Lower cost. Reduction in delays and travel times in opening and design year. Least land required compared with other options (except L2-single carriageway), particularly adjacent to Fibreline where there is a significant level difference between the carriageway and the existing car park. Improved pedestrian and cycle facilities. Does not affect existing bus route. Allows un-restricted turning movements for existing ambulance station.	Restricted access to many businesses. Statutory undertaker diversions will be necessary, particularly the presence of High Voltage Cable & Gas supply in existing inbound footway.	£7.144 million @ Q4 14/15.
One-way system	Outbound only on Hard Ings Road and inbound only on Royd Ings Avenue.	Reduction in delays and travel times in opening and design year, however, not as beneficial as all other options (except L3A).	Significant higher costs due to the replacement of existing gyratory at Bradford Road roundabout with a full signalised junction, as well as junction re-modelling necessary at all other existing road junctions within the system, and full reconstruction of carriageway at Royd Way, Royd Ings Avenue and Alston Road. Significant affect on access to many more businesses compared with all other options. Access to ambulance station would be restricted to left turn in / right turn out only. Affects existing bus route. Statutory undertaker diversions will be necessary, particularly the presence of High Voltage Cable & Gas supply.	Not tested since scheme has significant cost and disruption implications with regards to junction re-modelling at Bradford Road roundabout and all other junctions within the network, extent of necessary carriageway reconstruction, and access issues to more businesses, including ambulance station, without providing benefits on delays / travel times compared with L5.

Table 4 – Scheme Option Comparison

Economic Case

2.1 Introduction

This section sets out the economic, environmental, social and distributional impacts of the Hard Ings Road proposals. This case has been developed in full compliance with WebTAG.

2.2 Options Appraised

A number of options have been considered as set out in Table 4.

The options detailed above have been tested utilising an Aimsun microsimulation transport model to compare the impacts the proposed schemes will have on the operation of the link. Microsimulation was used as the preferred modelling tool rather than the Bradford Saturn transport model as the Saturn model does not replicate traffic movements in this area correctly and it was felt that the outputs would not be realistic. Aimsun has been used successfully to test the impacts of changes to the road network elsewhere in Bradford including Tong Street, Manchester Road and Saltaire roundabout. One of the main advantages is that the modelled outputs are easy to understand by stakeholders which is key to gaining support for the proposed changes.

The microsimulation was developed in-house and the model validation report is available in Appendix 3. Each option was tested under 3 scenarios as follows;

- **Scenario 1** – 2014 traffic flows (base).
- **Scenario 2** – 2017 traffic flows (factored from 2014).
- **Scenario 3** – 2026 traffic flows (factored up from 2014).

The 'do-nothing' and 'preferred option' have been further tested with both low growth and high growth scenarios as per WebTAG guidance.

2.3 Assumptions

First full year opening:	2017 (modelled)
Appraisal period:	9 years
Capital costs:	£7.144m
Optimism bias:	44%
Whole Life Maintenance & Renewal Cost;	£3.729m

Traffic forecast :-

Tempro growth factors:-

	2014 to 2017	2014 to 2026
AM Peak	1.04545	1.1550
PM peak	1.0454	1.1552
Saturday	1.0457	1.1568

Table 5 - Tempro Growth Factors (Based on expected growth in Keighley only)

Tempro growth factors have been used rather than the WebTAG guidance of NTEM growth factored by Tempro. The justification for this approach being that historically there has been very little change in traffic growth across the road network in the Bradford district as illustrated in figure 3 below.

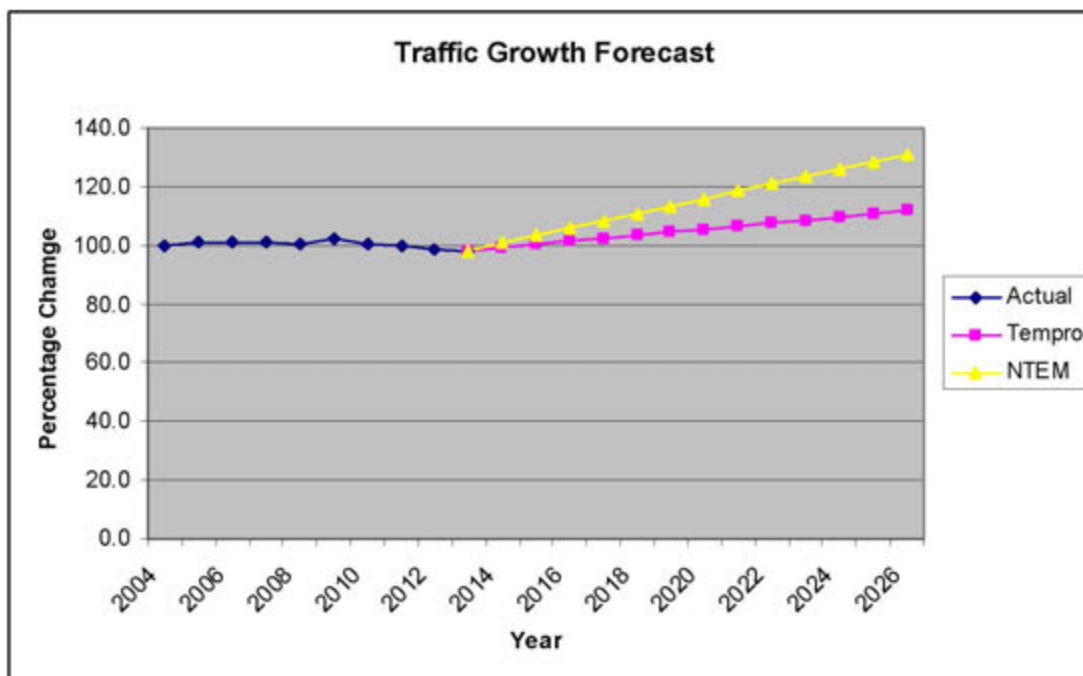


Figure 3 - Traffic Growth Forecast

Over the past 10 years traffic levels across the Bradford district have fallen slightly. However, Tempro forecasts traffic growth of 15.5% in Keighley by 2026 as opposed to 31% if Tempro growth is factored with data from the NTEM model. Future year traffic growth of 15.5% has therefore been used to test the various options as this is deemed to be the most appropriate locally.

Background Assumptions:-

- It is acknowledged that increasing capacity on Hard Ings Road may attract additional traffic flows from elsewhere on the highway network. It has not been possible to assess the impacts on the wider network due to a lack of coverage in this area within Bradford's Saturn model.
- The broad quantum of housing and employment development that are contained in the Publication Draft of Bradford' Local Plan Core Strategy were included in the Urban Dynamic Model as it was developed. The quantum in each sector of the District as identified in the Local Plan were allocated across the zones in that sector except in the case of major employment sites where specific locations and scales of development were identified.

2.4 Sensitivity and Risk Profile

WebTAG unit M4 provides guidance on alternative scenarios that should be modelled as sensitivity tests to reflect uncertainty in economic growth and fuel prices. This may be represented by $\pm 2.5\%$ for forecasts one year ahead, rising with the square root of the number of years to $\pm 15\%$ for forecasts 36 years ahead. In this scheme the design year is 2026 (total nine years ahead), therefore a sensitivity test was conducted by applying growth factors $\pm 7.5\%$ (Low/High Growth Factors: $\pm 2.5 \times \sqrt{9} = \pm 7.5\%$) on the design year model (2026). BCR is calculated and reported in Table 8 - BCR.

Weekend, midday vehicular flows are similar to weekday peak flows, due to traffic movements generated by the Keighley retail park. The retail park can only be accessed from an eastbound direction and exited in a westbound direction onto Hard Ings Road which results in an increased number of vehicles undertaking U-turns at Bradford Road and Beechcliffe roundabouts on a weekend. The proposed changes to Hard Ings Road have been tested using Saturday traffic flows and turning movements both in the opening year and 2027 to ensure there is sufficient capacity.

2.5 Value for Money Statement

The headline economic results from the West Yorkshire Urban Dynamic Model (UDM) are presented below for Hard Ings Road. The preferred option has been tested. The values relate to the forecast year of 2026.

The model inputs for the initial Bradford – Keighley A650 Hard Ings Road test considered the following components:

- Link-based highway (car) journey time savings
 - Eastbound 120s.
 - Westbound 60s.

- Origin-destination highway (car) journey time savings (infill for additional zone pairs)
 - Zones Bradford 29 & 32 to 30 & 31 (Eastbound).
 - Zones Bradford 30 & 31 to 29 & 32 (Westbound).
- Origin-destination bus journey time savings
 - Standard practice in UDM assessments takes bus journey time savings to be 90% of the equivalent for car journeys.
 - 2,440 zone pairs based on the two highway links in scope (plus the additional infill as outlined above for car journeys, plus Bradford 25 to/from 29 & 32).
- Origin-destination walk & cycle journey time savings
 - Time saving of 5 minutes around Keighley Town centre between zones Bradford 28, 29, 30 & 31 (excluding between 28 & 31).

The town centre works are being progressed outside of the Transport Fund scheme and consequently a revised UDM test has been carried out to assess performance of the scheme with these elements excluded, i.e.the Hard Ings Road Improvement scheme stands on its own.

A revised test has now been carried out based on updated inputs with regards to highway journey time savings for Hard Ings Road. The revised test reflects scheme opening in 2017, with highway modelling demonstrating the following journey time savings:

Time period	Eastbound	Westbound
07:30-09:30	15 secs	68 secs
16.30-18:30	77 secs	115 secs

Travel Time Saving (Opening Year 2017)

The scheme specification remains as outlined for the initial test, but with the revised time savings in place. The revised test also excludes the Keighley Town Centre elements.

Model Outputs

The headline economic results from the UDM are presented below for Bradford – Keighley A650 Hard Ings Road. The values relate to the forecast year of 2026.

Test	WY Jobs	GVA p.a. 2009 Prices	Employed Residents	Households
Initial test (open 2014)	+170	+£11.6m	+83	+24
Initial excl. town centre	+158	+£10.9m	+74	+20
Revised test (open 2017)	+164	+£11.2m	+103	+33

The headline results reflect the change in opening year from 2014 – used for all Transport Fund schemes during initial prioritisation – to 2017 which is specific to the scheme. The effect of this change will be a slight reduction in the headline economic benefits.

The whole life costs associated with the scheme have been updated at this stage to reflect the current position, and have been combined with the revised UDM testing to recalculate the headline GVA/£ figures used to rank schemes within the Transport Fund.

Test	Capital Cost*	GVA p.a. 2009 Prices	Whole Life Cost	GVA/£
Initial test	£7.6m	+£11.6m	£9.2m	1.26
Initial excl. town centre	£7.6m	+£10.9m	£9.2m	1.18
Revised test	£5.0m	+£11.2m	£6.3m	1.78

* Capital costs exclude optimism bias (currently at 44%)

In the scheme opening year the potential costs savings are equivalent to £844,000 per year based on reduction in delays in comparison with no improvements on Hard Ings Road. The scheme delivers a very high VFM with an initial BCR of 5.96.

The BCR is based on time savings generated in both morning and evening peaks on a typical weekday and also Saturdays.

The present value of benefits is £40.7m and the present value of costs = £6.8m (including a 44% optimism bias)

Forecast	BCR
Standard	5.96
Low Forecast	3.53
High Forecast	5.1*

Note: * This is lower than the standard forecast as the do-nothing model indicates the junction and surrounding links all exceed capacity and the model cannot process all the additional traffic.

Table 8 – BCR

The BCR was calculated using an Excel spreadsheet. The benefits were derived as follows:

- The average total journey times for vehicles was calculated.
- The difference in total journey times was then monetised using values of time from WebTAG (values determined by journey purpose).
- The benefits were discounted over a 60 year period to determine a present value.
- The scheme costs for both construction and ongoing maintenance were similarly discounted to a present day value.
- These were then used to calculate the BCR.

The Appraisal Summary table is attached in Appendix 4, and refers to additional unquantified benefits such as junction safety, improved pedestrian and cycle facilities.

Financial Case

3.1 Introduction

The estimated costs of the schemes are preliminary estimates based on feasibility stage drawings and therefore an optimism bias of 44% has been applied for the purpose of the appraisal process. This case has been developed in full compliance with WebTAG.

3.2 Costs

The overall cost of the preferred option is currently estimated to be £4.961m, which includes land costs of £1.1m. Application of 44% optimism bias to this figure results in a total overall cost of £7.144m. Appendix 2 contains the cost breakdown estimate for the preferred option.

An assessment has been made of a 60 year whole life cost for the preferred option. High value costs associated with resurfacing the additional paved areas on a 20 year cycle have been included within the costing. The year on year expenditures involved in maintaining traffic signalling, lighting and landscaping, together with 'as required' sign maintenance, have also been factored in.

Maintenance and renewal whole life cost not discounted. = £3.729m (60 years)

Maintenance and renewal will be funded through the highway revenue budget allocation which is administered by Bradford Council.

3.3 Budgets / Funding Cover

Indicative scheme development costs from GW 1 approval up to Gateway 2 are £292k (£420k inclusive of 44% optimism bias) to cover:

Activity	Estimated Cost (£000s)	Estimated Cost (£000s) including 44% OB
Surveys, detailed design and estimates	220	316
Stage 2 Road Safety Audit	3	4
CDM	3	4
Contract preparation	9	13
Political/Business/Public Engagement	30	43
C3/4 Statutory Undertakers Notices	10	14
TROs	7	10
GW2 business case	10	14

development		
Totals	292	418

Based on initial high level valuations an allowance of £1.100M has been made for land assembly inclusive of the CPO process. Overall anticipated total project expenditure up to GW2 submission (Q2 2016/17) is around £495,000 (£713,000 including 44% OB) including costs for gathering early land information. It is understood that the cost of this element is borne by the Council up until GW3 approval though clarification is awaited from WYCA.

A fully detailed and justified business case will be developed at the Gateway 2 level submission.

Funding from the Transport Fund has been allocated up to a maximum level of £10.3m. There are no third party contributions to this scheme.

Indicative budget profiles for the preferred scheme and a potential Phase 2 are shown below:

Preferred Scheme

	2013/14 (£'000s)	2014/15 (£'000s)	2015/16 (£'000s)	2016/17 (£'000s)	2017/18/19... (£'000s)	TOTALS
WY+TF	0	77	385	614	6068	7144
Third Party Contributions	0	0	0	0	0	0
Total	0	77	385	614	6068	7144

Potential Phase 2

	2013/14 (£'000s)	2014/15 (£'000s)	2015/16 (£'000s)	2016/17 (£'000s)	2017/18/19... (£'000s)	TOTALS
Phase 2				50	3106	3156

Table 8 - Total Project Allocation – Showing an Indicative Funding Profile (including 44% optimism bias) Costs are at Q4 14/15.

Commercial Case

4.1 Introduction

The procurement for this project is in four distinct parts

- Land acquisition;
- Public utility works;
- Specialist advice and support services; and
- Site Construction.

This case has been developed in full compliance with WebTAG.

4.2 Output based specification

The project objectives and key measures for success which will be used to generate the output based specification are described in Section 1.3 and 1.4 of this submission respectively. These criteria will be regularly reviewed and the contribution of the design solution assessed as part of formal design review procedures at appropriate stages of the scheme's development. The findings of these reviews will be documented accordingly and captured in the Benefits Realisation Plan.

Baseline data will be assembled and a formal post implementation review of the scheme will be undertaken after 1 year and 5 years of operation.

Wherever possible the project will meet the requirements of the Design Manual for Roads and Bridges together with local determined standards. The project will comply with relevant legislation including local revisions.

4.3 Procurement Strategy

The potential delivery of the procurement and construction of the improvement to Hard Ings currently forms part of the early pipeline schemes for the Alternative Delivery Vehicles strategy being developed by WYCA. Whilst the actual proposition from this strategy is still being developed, and is not expected to be finalised before July 2015, it is possible that a revised procurement process will be adopted. If this project is not part of the ultimate strategy the following process is proposed to be adopted.

In line with public sector requirements the procurement strategy options need to demonstrate Best Value for Money by ensuring delivery of the project outcomes within the allocated budget by achieving the optimum combination of whole life costs, quality and benefits including economic, environmental and social value. The estimated value of the project dictates that procurement does not exceed the EU threshold value (£4.322m (Jan 2014)) and hence will be outside the EU procurement rules.

Bradford Council has recent success in delivery of medium value schemes (up to £5m) including Saltaire roundabout signalisation (£3.3m) and Canal Road / Stanley Road pinch point scheme (£3.74 m) using the NEC form of Contract (Option B) both of which are similar in nature, size and complexity to the proposed Hard Ings Road Improvements project.

In compliance with the Council's Contract Standing Orders the final procurement strategy for this project must be reported to the Environment & Waste Overview and Scrutiny Committee for approval following pre-procurement engagement with the market (including talking to suppliers and stakeholders) to develop the requirements and the best value for money contractual approach. The preferred procurement route for this scheme is therefore via a restricted tender process. This will be offered through either the YORcivils framework or schedule of approved contractors. A minimum of 5 suppliers will be shortlisted to submit tenders following completing the pre-selection PQQ.

The Council's Contract Standing Orders require that where appropriate, and always subject to EU law, tenders are framed in such a way as to encourage local suppliers and SME's (see CSO clause 3.2).

The form of contract will be the NEC. It is expected that there will be reasonable accuracy of scope/specification and therefore, Option B where the risk of carrying out the works at agreed prices is borne by the Contractor, is currently believed to be the most appropriate procurement approach.

Land Acquisition

The initial approach of the Council towards securing any land required for the delivery of the project will be by negotiation between the Council via specialist third party agents (where the Council's own internal services are unable to provide the appropriate service) and the title holder.

A concurrent CPO procedure will be undertaken by the Council (with input from framework consultants) to ensure programme achievement.

Public Utility Works

Any diversions or alterations to public utility plant and equipment resulting from the highway improvement works are subject to orders direct to the affected undertaking under the provisions of the New Roads and Street Works Act (NRASWA), without exposure to competition.

Specialist Advice & Support Services

Specialist advice and support services in relation to both legal and estates management and land valuation activities will be in accordance with the Council's framework agreements for these activities.

It should also be noted that discussions are currently on-going in relation to the establishment of a central resource of specialist legal and land agent/valuation services within the Combined Authority for use on Transport Fund schemes. Subject to the establishment of such a service the Council will look to use this facility where it is unable to secure the advice either internally or via its existing framework arrangements.

4.4 Sourcing Options

See 4.3 above for the purpose of this Gateway 1 submission.

4.5 Payment Mechanisms

Project payments will be controlled through the formal contract standing orders and financial regulations of Bradford Council and those of the Combined Authority.

CBMDC project development charges will be reimbursed on a quarterly basis based on the Council's Professional Engineering Services charging scheme.

Payments relating to the works contract will be subject to monthly certified payments based on the agreed value of measured works and subject to minimum payment levels specified in the contract.

Statutory Undertakers costs will be paid in advance, taking advantage of discounts available through cost sharing arrangements under NRASWA. It should be noted that lead in periods for public utility works may dictate that potentially significant payments are required in advance of GW3 if the works programme is not to be affected. Under current arrangements these will be at the risk of Bradford Council.

4.6 Pricing Framework / Charging Mechanisms

Project development cost is controlled through a fee bid process in accordance with the Council's Professional Engineering Services charging schedule, with payment made on a quarterly basis.

Land costs will be verified by independent valuation or open market value (whichever is most appropriate).

Works will be subject to competitive tender with cost controlled through the NEC form of contract with monthly payments.

4.7 Risk Allocation and Transfer

Risks are routinely identified and measured throughout the course of the project development process. Identified risks have been allocated to the appropriate party best able to ensure appropriate mitigation is implemented. The Risk Management Strategy and current Risks, Issues & Lessons Log are attached at Appendix 9 and 10 respectively. A Quantified Risk Assessment will be developed as Gateway 2 preparation, as will the identification of construction related risks.

Current key risks (with are rating of >12) are:

- Costs increase above budget set out in WY+TF Portfolio Baseline. WY+TF will only release total funds approved at GW3. Any potential shortfall would have to be met by others - CBMDC/third party contributions.
- CPO required if land cannot be assembled by agreement - results in delays to programme, increase in time and cost especially if Public Inquiry required.
- CPO required but not granted.
- Lack of specialist legal/land assembly resource within CBMDC. Scarce resources working to capacity on schemes with competing priorities resulting in delays to programme.
- Land from the Filling Station (Spar), Hard Ings Road.
- Forecourt of Hard Ings Motor Company.
- Land from United Carpets (including Coronation Business Park).
- Land from Fibreline.
- Allotments access road, and possibly 1 or 2 allotments affected.
- Land from Keighley Cricket Club.
- Lack of dedicated, experienced design resources available to work on this project results in delay to programme. Resources working to capacity on other CBMDC projects with conflicting priorities.

A further risk that will be addressed at the next routine Risk Workshop is Bradford Council's current lack of exposure to the CPO process for similar difficult and potentially contentious land acquisitions required for highway improvements. To mitigate this risk a Land Acquisition Working Group has been established and will address opportune purchase, private treaty and the CPO process and produce a model land acquisition/CPO programme.

In accordance with the Council's Contract Standing Orders a fully documented Risk Log has been developed and will continue to evolve through the detailed design and procurement stages of delivery and will be shared with tenderers as part of the tender

documentation. The successful contractor will be expected to assist in maintaining the risk log through the construction stage and participate in any risk assessment activities.

The NEC form of Contract encourages parties to proactively and collaboratively identify problems and risks at the earliest stage and to work together to mitigate their impact. The Employer will identify and share with the Contractor risks they are aware of and the Contractor will add to the list within their tender return.

4.8 Contract Length

Currently construction of the works is expected to take approximately 40 weeks. This assessment will be refined within future gateway submissions.

4.9 Contract Management

The Contract will be managed by CBMDC using the NEC form of contract.

A contract management team structure will be developed and presented within a future Gateway submission.

Management Case

5.1 Introduction

The scheme will be managed by CBMDC using the Council's project management procedures in conjunction with WYCA.. This case has been developed in full compliance with WebTAG.

5.2 Evidence of similar projects

Similar recent projects successfully delivered by CBMDC include:

Scheme Name: Saltaire Roundabout
Contract Value: £3.3m
Procurement Strategy: Competitive Tender under NEC3 Option B
Duration: 26 weeks
<p>Scheme Description:</p> <p>This scheme involved the removal of an existing small ICD roundabout at the entry to the UNESCO World Heritage Site of Saltaire and the construction of a replacement traffic signal controlled junction together with a programme of complementary measures including:</p> <ul style="list-style-type: none"> • Extension of the existing in-bound (to Bradford) bus lanes on the A650 approach to Saltaire Roundabout. • Provision of bus gates/pre-signals on approaches to Saltaire Roundabout. • Linking Clarence Road / Albert Road to create public open space and facilitate installation of a gateway feature to the World Heritage Site. • Creation of 20mph zones in Nab Wood, Moorhead, Hirst Wood, Wycliffe and Saltaire Village. • Introduction of peak time signals on Bankfield Hotel Roundabout. <p>The site of the previous six leg Saltaire Roundabout is at the intersection of A650 Bingley Road and Saltaire Road and suffered from significant congestion and a significant accident problem, being the 12th most dangerous junction in Bradford in 2010.</p> <p>Development of the scheme proposals needed to be sympathetic to the World Heritage Site and required proposals being assessed by the Council's World Heritage Site Officers, English Heritage and UNESCO as the junction was within the World Heritage Site buffer zone.</p> <p>Some land required for the scheme was in third party ownership including the forecourt of the adjacent Shell Petrol Filling Station for which the specialist services of the District Valuer were secured.</p>

Scheme Name: Canal Road/Stanley Road Junction Improvement Scheme
Contract Value: £3.8m
Procurement Strategy: Competitive Tender under NEC3 Option B
Duration: 52 weeks
<p>Scheme Description:</p> <p>The scheme has the following objectives:</p> <ul style="list-style-type: none"> • To improve traffic flow along the A6037 Canal Road (and reduce ‘rat running’ through Bolton Woods and Windhill). • To support sustainable housing and employment growth in the New Bolton Woods masterplan. • To improve pedestrian and cycling facilities. • To improve access to opportunities and labour markets along the Airedale corridor. <p>The signalisation of the junction and part dualling of Canal Road was developed to substantially reduce peak period delays at the junction especially for inbound (to Bradford) movements on Canal Road benefiting the significant number of commuters who use this strategic corridor.</p> <p>The great majority of the land required for the scheme was either in Council ownership or the ownership of Arnold Laver (who are a partner involved in the Canal Road Urban Village Limited and have agreed to make the land available for the scheme). Some of the land is occupied by leaseholders and detailed surveys suggest that a small section is in private ownership. Early negotiations were therefore required to secure the use of the necessary land for the highway scheme in good time.</p>

Scheme Name: Connect 2, Element 2: Bridge and associated Roadwork's
Contract Value: £2.08m
Procurement Strategy: Competitive Tender under NEC3 Option B
Duration: 52 weeks
<p>Scheme Description:</p> <p>The Bradford Living Street Project was developed as a strategy to provide new and attractive walking and cycling routes connecting the major communities of Marshfields and West Bowling with their local schools and shops, St Luke’s Hospital, the Learning Quarter and the City Centre. The project is expected to benefit more than 85,000 people living within a mile of the route, providing economic, environmental and health benefits. Manchester Road dominates the area of Marshfields and West Bowling. The dual carriageway and associated bus guide-way is a significant barrier, separating people from amenities. Manchester Road is the third busiest radial route within Bradford with traffic flows in excess of 37,000 vehicles on a typical weekday. One of the key aspects of the Living Street Project is the establishment of a suitable, convenient and safe route</p>

across Manchester Road, which in addition to improving connectivity will have the potential to visually contribute to this important gateway into the City.

The Connect 2, Element 2 project involved construction of a new walking/cycling bridge over Manchester Road in the vicinity of St Stephens Road junction. The new bridge replaced an old footbridge in the same location with a high quality accessible structure. The proposed walking/ cycling bridge is a steel structure of unique design.

The existing footbridge was nearly 40 years old and was in need of some general routine maintenance to address time related deterioration. The footbridge had steep 1 in 10 gradient access ramps on the southern approach and steep steps to the north, and a overall width of 2.4m. The overall bridge design did not encourage popular use. During an average weekday 621 people use the surface crossing of Manchester Road, and only 340 the footbridge.

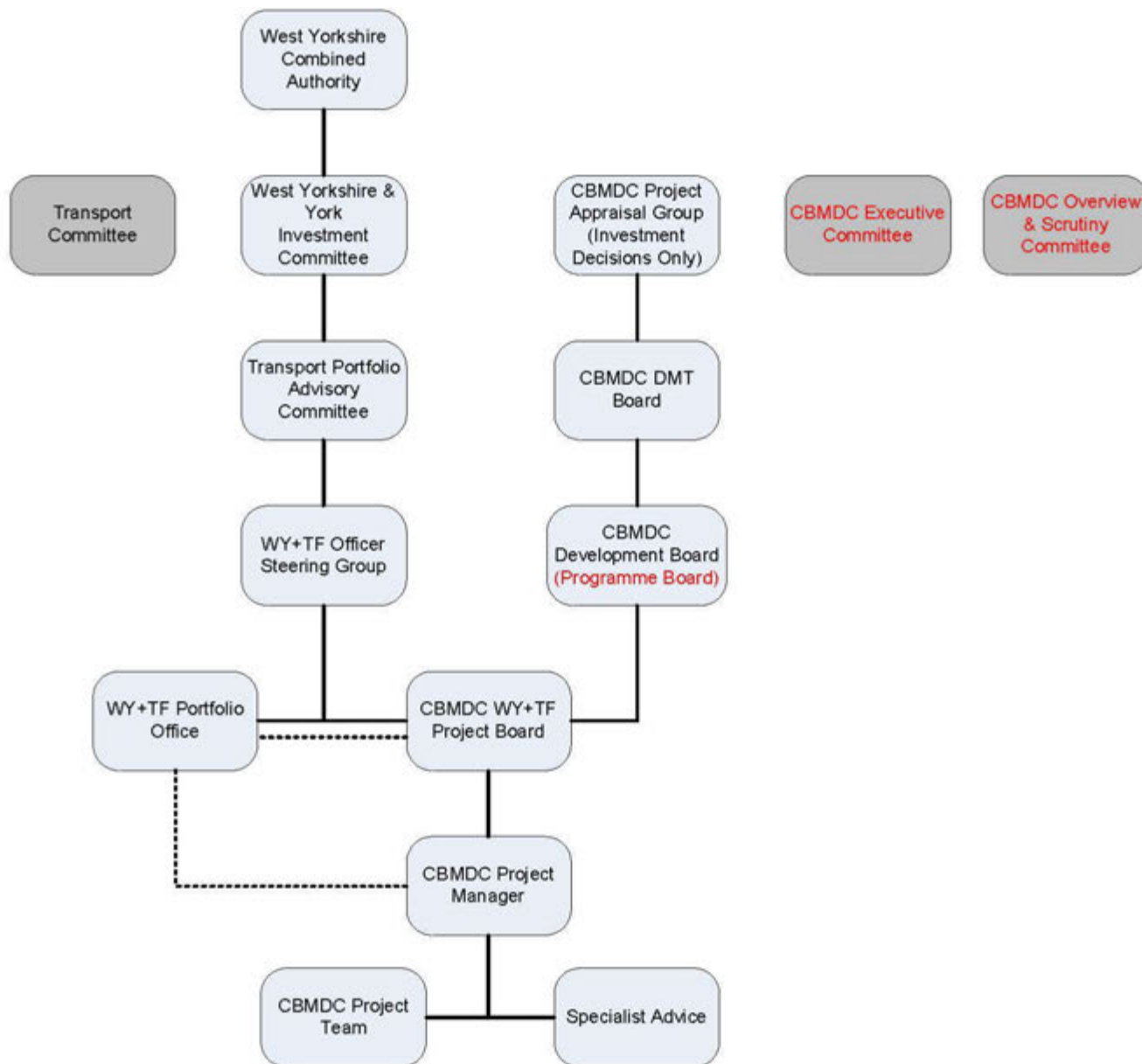
A key aspect to the success of this project was effective traffic management of a busy corridor to Bradford City Centre and engagement with the local community in relation to the construction activities, design and form of the finished bridge.

5.3 Programme & Project dependencies

A high level project plan is attached as a separate document in Appendix 5, and sets out key activities for the delivery of the project based on the current understanding of the project constraints and interdependencies.

5.4 Governance / Organisational Structure

The Governance structure is identified below.



Dashed line indicates additional advice channels and reporting to meet LTB Assurance Framework requirements

CBMDC Project Appraisal Group (PAG)

Responsible for the approval of investment decisions relating to CBMDC’s Capital Investment Programme (CIP) together with approval of financial matters of outline business cases and financial management of CBMDC.

CBMDC DMT Board

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Review of Regeneration Boards and progress of key service outputs and initiative associated with the Council's aspirations of regeneration within the Bradford District. Input to decisions on strategic issues in relation to scheme delivery and interface with key stakeholders and business interests.

CBMDC Development Board (Programme Board)

[REDACTED] Economic Delivery Manager - Executive
[REDACTED], Transportation Development Manager
[REDACTED]

To provide programme board oversight and co-ordination for all strategically significant development projects (public and private sector) within the Bradford District, review delivery progress and interface issues, facilitate planning approvals, land acquisition and legal agreements and ensure compliance with the development policies and attainment of benefit realisation through increased economic activity in relation to business rates.

CBMDC WY+TF Programme Board

Project Executive – [REDACTED]
Senior Supplier – [REDACTED]
Senior User – [REDACTED]
Project Assurance – [REDACTED]

Responsible for decisions on scheme development, overseeing business case development, progressing planning approvals, land acquisition, design, procurement, construction and monitoring. Control of resources, costs, programme and risks. Provide project assurance to all WY+TF projects including independent monitoring of projects on behalf of users, specifically that user needs and expectations are being met or managed, risks are being controlled, adherence to the Business Case, re-assessment of the value for money solution, confirmation of project viability, scope is being effectively managed and all applicable standards are being used.

CBMDC Project Manager

[REDACTED] - day to day running of the project, ensures resources are in place to deliver the project, reports to Programme Board/Executive, business case development, planning approvals, land acquisition, design, procurement, construction and monitoring.

CBMDC Project Team

CBMDC, Highway Design – reports to Project Manager, undertakes design, land acquisition, consultation processes, procurement and supervision of construction.

Specialist Advice

Specialists from legal, planning, estates management, communications etc. will be brought on board as required to support the Project Manager.

West Yorkshire Combined Authority

The Combined Authority is responsible for the £1 billion West Yorkshire Plus Transport Fund, and will work closely with business in the region through the Leeds City Region LEP to ensure that business and the regional economy is at the heart of the decisions taken.

Investment Committee

The Investment Committee is an advisory body whose role is to advise the Combined Authority in relation to funding submissions, local financial strategies and project management and delivery arrangements, review the impact of programmes funded by the Local Enterprise Partnership and to liaise with the Transport Committee to promote the strategic alignment of regional transport funding investment.

Transport Committee

The Transport Committee is a decision making body whose role is to monitor and manage deliver of the LTP across the area, formulate policies, to approve decisions relating to transport functions of the Combined Authority and to liaise with the Investment Committee to promote the strategic alignment of regional transport funding investment.

Transport Portfolio Advisory Group (formerly Interim Portfolio Board)

The Transport Portfolio Advisory Group will be responsible for advising the Investment Committee (or Combined Authority) on the development of the WY+TF portfolio of programmes and projects ensuring their coordinated and prioritised investment.

WY+TF Officers Steering Group

Formulates advice and develops recommendations to be submitted to the Combined Authority Investment Committee.

WY+TF Portfolio Office

Day to day administration and co-ordination of WY+TF

5.5 Programme / Project Reporting

Monthly Highlight reports will be prepared by the Project Manager for the CBMDC WY+TF Programme Board. The highlight reports will reflect updates to the risk register and issues log and request the decisions required by the board to progress the project.

The Project Manager and Project Executive will also be responsible for reporting progress, exceptions and any significant risks and issues to the WY+TF Portfolio Office via the monthly Portfolio Office Highlight Report, Portfolio Dashboard and Bi-monthly Programme Peer Reviews.

5.6 Risk Management

The project Risk Management Strategy and current qualitative risk register are attached at Appendix 9 and 10 respectively.

The Council's approach to risk management methodology will identify manage and cost project risks on the project in line with the Council's Standing Orders. The form of contract which is proposed (NEC) has the development and management of a risk strategy as a fundamental building block.

The Project Manager for the scheme will be responsible for ensuring risks are identified and quantified at the appropriate point and will manage the project risks and opportunities and report the identified impacts to the CBMDC WY+TF Programme Board monthly.

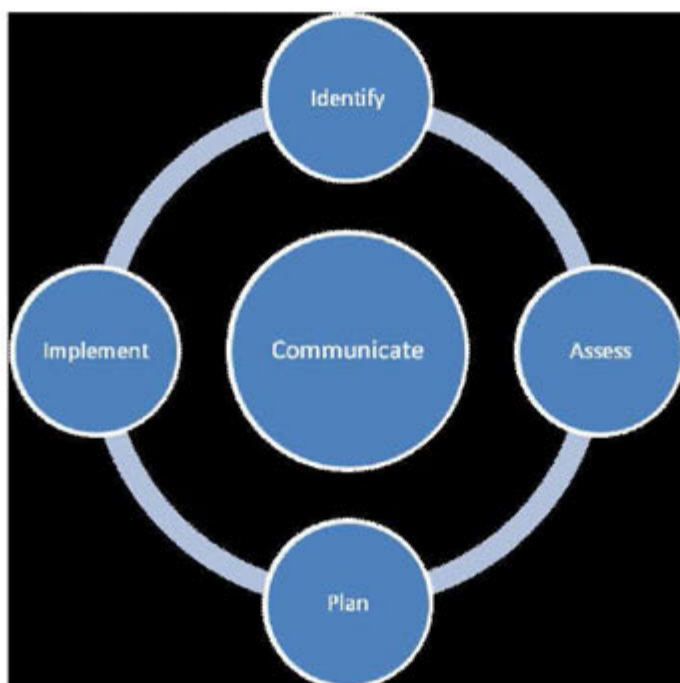
A qualitative risk register has been developed and will be maintained and regularly reviewed by the Project Manager in collaboration with other members of the CBMDC Project Team and key stakeholders. The consideration of risk is a standing CBMDC WY+TF Programme Board agenda item.

With the WY+TF, prior to Gateway 1, the retention of 44% optimism bias is used as a proxy for risk. However, the qualitative risk register will be developed into a quantitative risk register and optimism bias will be reduced prior to Gateway 2.

Each risk and opportunity will be allocated a named “owner” who will be responsible for undertaking regular reviews of the risk and recommending appropriate and timely mitigation / response measures.

Risk Management Process

Risk management on the scheme involves identification of risk, evaluation and development of strategies for controlling the potential outcomes. This process is subdivided into the following key steps:



Project risks have been identified for this project by the Project Team and will continue to be developed through a combination of discussions with the Project Team, dedicated risk workshops, discussions with the CBMDC WY+TF Programme Board and key stakeholders.

Measures to mitigate the risks are proposed in the Risk Log with the owner of each risk being identified and the associated costs of mitigation, where appropriate. The Risk Log identifies ways in which to respond to risk using predefined strategies.

- **Prevention** – terminate the risk, do something different, take counter measures to prevent it happening or to prevent the impact;

- **Reduction** – proactively treat the risk, take action to control it either through reducing its probability and/or impact;
- **Transference** – the risk is transferred to others (e.g. through contractual obligations or insurance);
- **Acceptance** – the risk has to be tolerated, the costs of mitigation might exceed the benefits but the risk should continue to be monitored;
- **Fallback** – putting in place a fallback plan for the actions that will be taken to reduce the impact should the risk occur. This is a reactive form of 'reduction' which has no impact on the probability of the risk occurring; and
- **Mitigation** – risk response plans are applied as and when the risk is seen to occur.

5.7 Benefits Realisation Plan

A detailed benefits realisation plan will be developed through to the Gateway 2 review based on increased understanding and modelling of the single option solution approved at Gateway 1.

5.8 Monitoring and Evaluation

A formal post implementation review of the scheme will be undertaken after 1 year and 5 years of operation.

Pre scheme data collected for the microsimulation model will provide information for the before study.

A monitoring plan will be provided as part of the gateway 2 submission.

Appendices

- Appendix 1** - Plan indicating Housing and Employment Spatial Vision Diagram - Airedale by 2030.
- Appendix 2** - Budget Estimate Summary. Hard Ings Road Improvements.
- Appendix 3** - Model Validation Report.
- Appendix 4** - Appraisal Summary Table (AST).
- Appendix 5** - High Level Project Plan.
- Appendix 6** - Road Safety Audit – Stage 1 (including Designer’s response).
- Appendix 7** - Link Option 5, Composite Design (Part Dual) - Dwg Ref: TDG/HDB/102582/OPT-L5C (A3 Drawing).
- Appendix 8** - Beechcliffe Roundabout, Junction Option- J1, Signal Controlled Roundabout - Dwg Ref: TDG/HDB/102582/OPT-J1B (A3 Drawing).
- Appendix 9** - Risks, Management Strategy.
- Appendix 10**- Risks, Issues & Lessons Learned Log.
- Appendix 11** - Communications Management Strategy.
- Appendix 12** - Link Options Report, approved at January 2015 CBMDC WY+TF Programme Board.
- Appendix 13** - Junction Options Report, approved at February 2015 CBMDC WY+TF Programme Board.