

Bridgend Replacement Local Development Plan 2018-2033



**Background Paper 16:
Development West of the Railway
Line, Pencoed**

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BRIDGEND REPLACEMENT LOCAL DEVELOPMENT PLAN (LDP) 2018-2033

BACKGROUND PAPER 16: DEVELOPMENT WEST OF THE RAILWAY LINE, PENCOED

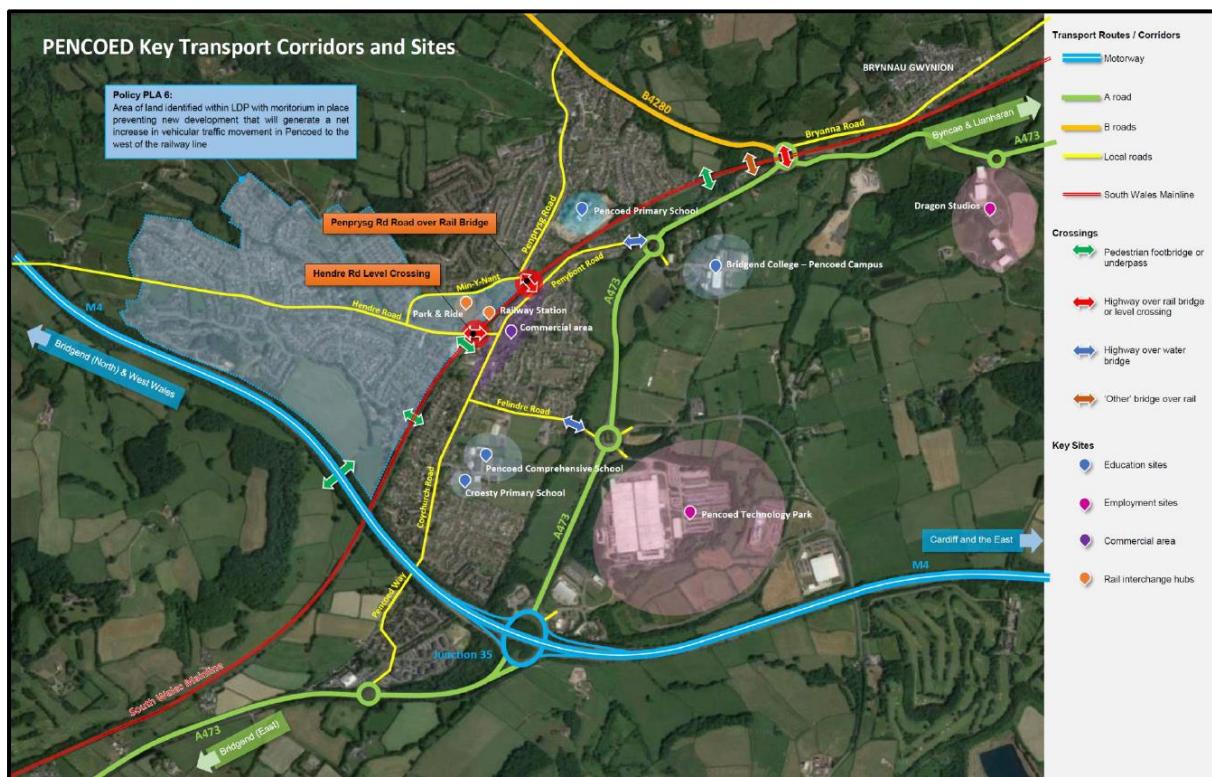
1. Introduction

- 1.1 This background paper has been produced in connection with the Bridgend Replacement Local Development Plan 2018 to 2033 to evaluate the existing and future highway capacity issues in Pencoed.
- 1.2 As established by the Bridgend Local Development Plan 2006-2021 Policy PLA6 – Development west of the railway line, Pencoed states:

Development that will generate a net increase in vehicular traffic movement in Pencoed to the west of the railway line, in the area shown on the proposals map, will not be permitted.

- 1.3 For clarity, the area to which Policy PLA6 applies is shown in Figure 1.

Figure 1: Pencoed Key Transport Infrastructure and Locations



- 1.4 The reason for Policy PLA6 is stated as follows:

...it is considered that the existing highway network in Pencoed, which forms part of the Pencoed-Pyle Transport Corridor, is severely constrained by the mainline railway with no prospect of mitigation

within the Plan period. In recognition of this constraint Policy PLA6 introduces a moratorium on further development which generates a net increase in vehicular movement to the west of the railway line.'

1.5 *Further justification is provided whereby it is stated that:*

'It is considered that any new development which generates a net increase in vehicular movement will exacerbate congestion either side of the level-crossing and at the complex over-bridge junction between the eastern end of the relief road and Penybont Road. It is recognised that development capacity to the west of the railway line would not be of sufficient scale to generate the required level of developer-funded infrastructure required to resolve the problem within the Plan period.'

1.6 The policy implication of PLA6 is a land-use moratorium on land west of the railway bridge. In the context of the above, this background paper provides a comprehensive review of the current situation, with due consideration of various technical studies that have taken place since the existing LDP was adopted. The most pertinent studies are summarised below.

Penprysg Road Bridge Feasibility Report (Capita, 2015).

1.7 This study explores the potential closure of Hendre Road railway level crossing and the impact this would have on the adjacent highway infrastructure (namely Penprysg Road railway bridge).

WelTAG Stage 1 (Redstart, June 2019) and WelTAG Stage 2 (Redstart, August 2020)

1.8 The WelTAG reports provide a comprehensive approach to improving community connectivity in Pencoed.

1.9 The reports identify that the existing highway constraints lead to the following key problems:

- Congestion which creates significant delay, particularly during peak periods on Coychurch Road, Hendre Road and at Penprysg Bridge.
- Severance due to the railway line and associated highway capacity issues dividing the town into two which has an adverse impact on journey times, external costs associated with congestion, community well-being and visitor perceptions.
- Poor active travel links due to limited highway land. Provision for those with mobility impairment is particularly substandard.

- Economic disadvantages due to the requirement for the existing moratorium locking in and constraining the economic potential of developable land.
- Public transport efficiency is hampered due to unreliable journey times for bus services resulting from congestion and difficulty accessing the railway station due to inadequate infrastructure for active travel users and congestion for park and ride or bus users. The scope for rail frequencies to be increased is also reduced due to the negative impact this will have on level crossing closures.

1.10 The WelTAG Stage 1 report reviews a long list of options which were identified as having scope to improve capacity in the area. The outcome was to identify which options should be taken forward to the WelTAG Stage 2. The WelTAG Stage 2 report further refined the short listing interventions to arrive at preferred solutions, which are to be investigated in further detail to determine feasibility.

Pencoed Level Crossing – Traffic Capacity Study (Redstart, February 2021)

1.11 This study provides a junction capacity assessment of the level crossing on Hendre Road, Pencoed along with assessment of key junctions in the vicinity.

Bridgend Strategic Transport Assessment (Mott MacDonald, April 2021)

1.12 Mott MacDonald were commissioned by BCBC to produce a strategic assessment of key junctions throughout the county borough to establish the impact of LDP candidate sites and the level of mitigation required to accommodate these sites over the plan period.

Policy

1.13 The following resources have been considered in the production of this report:

National Policy

- Future Wales: The National Plan 2040 (2021);
- Planning Policy Wales (Edition 11, 2021);
- Llwybr Newydd: the Wales Transport Strategy (2021);
- Prosperity for All: Economic Action Plan (updated 2019);
- National Transport Finance Plan (updated 2018);
- Prosperity for All: The National Strategy (2017);
- Well-being of Future Generations (Wales) Act 2015; and

- Active Travel (Wales) Act (2013).

Regional / Local Policy

- Cardiff Capital Region City Deal (CCRCD) Regeneration Plan;
- Bridgend Local Development Plan (2006-2021);
- Emerging Bridgend Local Development Plan (2018-2033);
- Bridgend Local Transport Plan (2015-2030);
- The South East Wales Transport Commission Final Recommendations (November 2020); and
- Bridgend Public Services Board Well-being Plan (2018–2023).

2. Major Influences

- 2.1 Pencoed benefits from a favourable strategic location being just 5.6km from Bridgend town centre and 23km from Cardiff city centre. It benefits from close proximity to Junction 35 of the M4 and good connections into Bridgend and Rhondda Cynon Taf via the A473.
- 2.2 Pencoed is identified as a main settlement in the county borough in recognition of the associated employment function associated with a concentration of businesses, variety of retailing and community services which serve not just the town itself but the surrounding area.
- 2.3 To the west of Pencoed, Hendre Road provides a link over the M4 and into Bridgend via Coity. However, this route is restricted in many parts to a single-track lane with passing places so capacity is restricted.
- 2.4 To the northwest, the B4280 provides a semi-rural, single-lane carriageway link to Bryncethin, via Heol-y-Cyw.
- 2.5 Due to the limitations of the above links, along with the natural desire lines, the vast majority of vehicular traffic on land to the west of the railway line is required to the pass over to the eastern side of the track to complete a journey.
- 2.6 To the east of Pencoed, the A473 links with Llanilid in Rhondda Cynon Taf, which is a major strategic development site. At the time of writing, there is extant outline consent for 1850 new houses, a new school and a village centre. Construction is underway for Phase 1, which comprises 216 houses (approved in April 2019).
- 2.7 In addition to the above consents, there are further aspirations to develop a wider site in Llanilid, all of which have scope to increase traffic passing through Pencoed.
- 2.8 At the core of Pencoed are two junctions which suffer from significant congestion as a result of capacity issues stemming from the interaction between the railway line and the highway network.
- 2.9 The first of these 'pinch points' is located to the southwest of Pencoed railway station where Hendre Road forms a priority junction arrangement with Cychurch Road. Approximately 63 metres west of this junction is a barrier controlled level crossing.
- 2.10 The frequency and length of road closures on Hendre Road which is necessary to accommodate passing trains is a significant source of congestion and delay in the town. Survey results within the Pencoed Level Crossing – Traffic Capacity Study (Redstart, February 2021) recorded barrier closures totalling 31% of the

weekday AM and PM peak hours and 46% of the inter peak hour. On a Saturday, barrier closures accounted for up to 45% of the assessed peak hours.

- 2.11 The second major capacity constraint in Pencoed is located to the northeast of Pencoed railway station where Penprysg Road railway bridge (also known as Grants Bridge) forms a controlled traffic signal arrangement between Min-Y-Nant, Penybont Road south/north and Penprysg Road.
- 2.12 The junction is restricted to single-lane approaches on all arms and requires four separate stages for each approach and an additional fifth all red stage for pedestrians. The delay associated with this configuration is further compounded by the size of the junction, which requires significant inter green times to prevent collisions between stage changes.
- 2.13 Due to these capacity constraints, coupled with relatively high demand, the Penprysg Road railway bridge junction results in significant queues and delay at peak times which is apparent through on-site observation and traffic modelling, discussed further in the following chapter.

3. Technical Literature Review

3.1 This chapter summarises a number of recent technical studies to highlight the extent of the current situation.

Penprysg Road Bridge Feasibility Report – Capita 2015

3.2 This study explores the potential closure of Hendre Road railway level crossing and the impact this would have on the adjacent highway infrastructure (namely Penprysg Road railway bridge).

3.3 In review of the base highway network operation, the Penprysg Road Bridge Feasibility Report (Capita, 2015) modelled a 2014 weekday AM (08:15-09:15) and PM (16:30-17:30) peak period.

3.4 The results demonstrated that the junction was marginally within operational capacity in the AM peak, with a maximum degree of saturation of 80.2% and queue of 11.2 PCUs both occurring on Min-Y-Nant. The practical reserve capacity was shown to be 12.2%.

3.5 In the PM peak, the junction was at capacity, with a maximum degree of saturation of 89.3% occurring on Min-Y-Nant and maximum queue of 12.6 PCUs on Penybont Road (south). The practical reserve capacity was shown to be 0.7%.

3.6 In review of the ‘do nothing’ scenario, which represents the ‘status quo’ of background traffic growth and no mitigation, the Penprysg Road Bridge Feasibility Report (Capita, 2015) modelled a future year of 2033 and weekday AM (08:15-09:15) and PM (16:30-17:30) peak period.

3.7 The results demonstrated that the junction was significantly above operational capacity in the AM peak, with a maximum degree of saturation of 125.9% on Penybont Road (north) and queue of 45.5 PCUs on Penybont Road (south) and Penprysg Road. The practical reserve capacity was shown to be -39.9%.

3.8 In the PM peak, the junction was also significantly above operational capacity, with a maximum degree of saturation of 218.5% on Penybont Road (north) and queue of 98.3 PCUs on Penybont Road (north). The practical reserve capacity was shown to be -142.8%.

Pencoed Level Crossing – Traffic Capacity Study (Redstart, February 2021)

3.9 This report provides a detailed capacity assessment of the existing operation at the following junctions:

1. Hendre Road / Min y Nant Three Arm Signalised Junction;

2. Hendre Road / Heol y Geifr Three Arm priority Junction;
3. Hendre Road Level Crossing Signalised Junction;
4. Penybont Road / Hendre Road / Heol-y-Groes Road Staggered Priority Junction;
5. Cychurch Road/Felindre Road Three Arm Priority Junction;
6. Penybont Road / Penprysg Road / Min y Nant Road Signalised Junction (Penprysg Road Bridge).

3.10 The capacity assessment identified that on a typical weekday, the Hendre Road Level Crossing (Junction 3) and the Penybont Road/Penprysg Road/Min-y-Nant junction (Junction 6) currently operate near capacity in both the AM and PM peak periods. Junction 3 was also shown to be at capacity in the inter-peak hour.

3.11 It was identified that during barrier closures, queues form quickly and impede the operation of adjacent junctions. This creates further queuing and delay on Hendre Road and Cychurch Road during all peak periods.

3.12 The Penprysg Road railway bridge junction was also shown to be approaching operational capacity on a typical weekday, with a PRC of 7% and queue of 10 PCUs in the AM peak hour and PRC of 11% and queue of 11 PCUs in the PM peak hour.

3.13 Also of note is the operation of the Penybont Road/Hendre Road/Heol-y-Groes staggered priority junction. Whilst capacity analysis demonstrates that in isolation the junction operates with minimal queuing and delay, the platoon effect generated by the level crossing creates short term queues on Hendre Road.

Figure 2: Queueing on Cychurch Road Impeding Hendre Road Junction



3.14 Furthermore, queues on Coychurch Road, which likely result from the pedestrian crossing and retail land uses to the south of the Hendre Road junction, block back to an extent which prevents egress from Hendre Road (see Figure 2 and Figure 3). This adverse interaction also increases the likelihood of queues extending to the level crossing.

Figure 3: Queueing on Coychurch Road Impeding Hendre Road Junction



3.15 It was also noted in the study that right turning vehicle queues from Penybont Road to Hendre Road also prevented egress from Hendre Road which in turn created occasional queues back to the level crossing.

3.16 The Saturday assessment reveals a similar pattern to the weekday, whereby the level crossing on Hendre Road created queues that impede adjacent junctions to the east and west. This was noted to occur at various times throughout the day and not just the highway network peak.

3.17 The Penprysg Road railway bridge junction was again shown to be approaching operational capacity on a Saturday, with a PRC of 12% and queue of 8 PCUs in the AM peak hour.

3.18 It should be noted that the Penprysg Road railway bridge assessment seeks to replicate existing pedestrian demand calls. As such, due to observed low pedestrian demand at some of the crossings, the pedestrian phases do not run every cycle, which results in additional vehicular capacity. Therefore, with increased investment in the active travel network throughout the county borough, increased pedestrian demand in Pencoed will lower the available junction capacity further as pedestrian demand calls replace vehicular green time.

3.19 The study provides an assessment of blocking back at the Hendre Road level crossing which was undertaken in line with Network Rail guidelines using the following categorisation:

- Amber 1: Rear of queue extends to between 11 metres and 50 metres downstream of the crossing;
- Amber 2: Rear of queue extends to between the crossing barrier and 11 metres downstream;
- Red 1: Vehicle fouls the barrier but not within 1.25 metres of the running line;

- Red 2: Vehicle fouls the crossing line, or within 1.25 metres either side of the running line and are stationary for three or more seconds; and
- Red 3: Similar to Red 2, but where no escape route is available, either forwards or backwards.

3.20 The results of this assessment identified that all blocking back categories were recorded. On a typical weekday, the three assessed hourly periods recorded 143 'Amber 1' queues, 26 'Amber 2', seven 'Red 1', one 'Red 2' and one 'Red 3'.

3.21 A non-motorised user audit was also undertaken at the Penybont Road/Penprysg Road signals.

3.22 In the weekday survey between 06:00-20:00, the results showed 924 pedestrian movements at the southern crossing point and 1268 at the northern crossing.

3.23 In the Saturday survey between 06:00-20:00, the results showed 654 pedestrian movements at the southern crossing point and 645 at the northern crossing point.

3.24 The non-motorised user audit demonstrates that the area has a steady pedestrian demand throughout the day and that non-motorised vehicle transport is a key consideration in the existing and future layout and configuration of junctions in Pencoed.

Bridgend Strategic Transport Assessment (Mott MacDonald, April 2021)

3.25 This report has a strategic function and therefore the scope of capacity assessment within Pencoed is limited to the Penybont Road/Hendre Road/Heol-y-Groes staggered priority junction.

3.26 The assessment therefore has limitations in the Pencoed area and so makes use of available studies, including the Pencoed Level Crossing – Traffic Capacity Study (Redstart, February 2021), which remains the most applicable to this background paper.

3.27 However, work on the Strategic Transport Assessment is ongoing and will be incorporated into future revisions of this background paper, if appropriate.

Literature Summary

3.28 It is evident from the studies undertaken since publication of the Bridgend Local Development Plan 2006-2021 that the highway capacity issues in Pencoed are

still present and will be exacerbated significantly by traffic growth, some of which will manifest regardless of further development in Pencoed due to secondary impacts in other parts of the county borough or in adjacent local authorities.

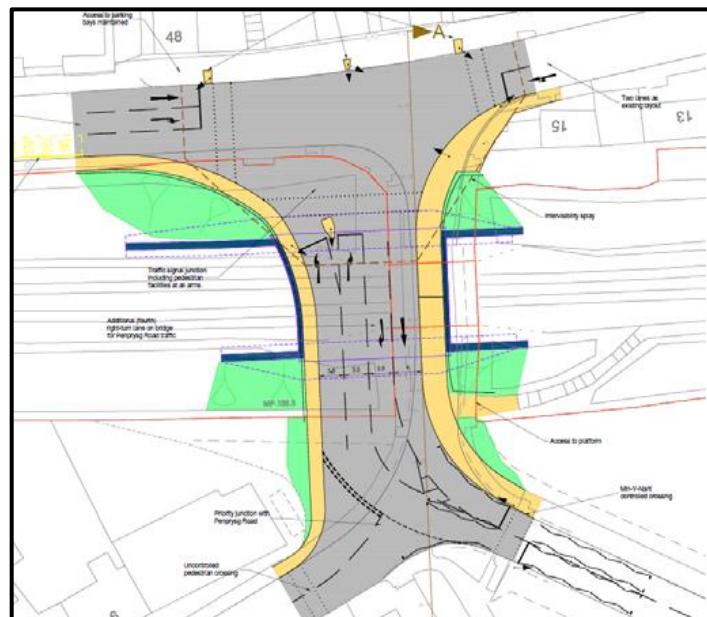
4. Mitigation Potential

- 4.1 Whilst it is clear that there are both existing and forecast future capacity issues on the highway network in Pencoed, there are a wide range of measures which can be implemented to increase capacity or reduce demand.
- 4.2 The cost and benefit of these measures varies significantly and will likely require a package of improvements to provide a tangible impact in the longer term.
- 4.3 This section provides a review of the numerous mitigation proposals that have been considered in recent technical studies as a means of intervention for the movement issues in Pencoed.

Penprysg Road Bridge Feasibility Report (Capita, 2015)

- 4.4 The Penprysg Road Bridge Feasibility Report (Capita, 2015) identified several design options at the junction comprising various layouts of traffic signals, priority junctions and mini roundabouts. Highway capacity limitations resulted in the majority of the options being discounted, with two of the strategies being deemed feasible.
- 4.5 One option (referenced Option 5B) consists of a signal arrangement at Penybont Road and a priority arrangement at the Min-Y-Nant/Penprysg Road junction, with a 4-lane bridge and enhanced active travel provision.
- 4.6 This option was shown to operate with acceptable levels of queueing and delay, with queues of 10 PCUs on Penybont Road.
- 4.7 Whilst feasible, the report confirms that detailed design is required and that further improvements could be made to active travel provision.

Figure 4: Penprysg Road Bridge Feasibility Report Option 5B



4.8 The second option (Option 11A) involves a reversed priority junction arrangements with a 3-lane bridge. This layout was shown to offer the greatest junction capacity, which resulted in minimal queues of four PCUs on Penybont Road.

Figure 5: Penprysg Road Bridge Feasibility report Option 11A

4.9 However, the increased capacity is at the expense of pedestrian convenience as desire lines cannot be catered for in the same manner at the signal arrangement in Option 5B.

4.10 The report also confirmed high level support for an alternative, but similar footprint, arrangement to Option 11A whereby traffic priority north of the bridge is switched.



WelTAG (Redstart)

4.11 The WelTAG process provides a comprehensive framework to delivering a transportation intervention from identification of the problems through to the implementation and monitoring of a chosen solution.

4.12 Given the existing moratorium in Pencoed and the well-known highway capacity issues, Redstart, on behalf of Bridgend County Borough Council, were commissioned to undertake a WelTAG Stage 1 (June 2019) and WelTAG Stage 2 (August 2020) report into improving community connectivity.

4.13 At the first stage, a number of options were recommended to be continued for further analysis into WelTAG Stage 2. Following a 'review group' exercise at WelTAG Stage 2, a revised short-list of options were progressed, as follows:

'Option 6 / 6a / 6b: New Penprysg Road Bridge – Two-way, 2 / 3 / 4 lane provision and retention of the level crossing carriageway and retention of the level crossing'

The replacement of the road over rail bridge at the current location has been appraised and the results demonstrate it to be one of the highest overall performers of all the options that have been sifted. It meets the scheme objectives generally well with the better results generated by the three and four lane options (6a and 6b). The

improvements to capacity by enhancement of this crossing is expected to improve the environmental quality of the surrounding network, introduce benefits to active travel at the bridge and at other crossings and have a significant positive contribution to new development going ahead in Pencoed.'

'Option 7: New bridge with skewed alignment and retention of the level crossing'

The results of this option are similar to those to be experienced through Option 6. The scheme is rated as being one of the top performers from the long-list of options with the same benefits to be realised through this approach as the perpendicular aligned bridge'.

'Option 8: Combination of new bridge provision and closure of the level crossing'

This option returned a generally neutral performance against the elements of the appraisal process. The option seeks to reduce congestion from the very centre of the town, remove a significant risk to safety and negate issues of journey time reliability (for all travel modes) at the level crossing location. The reduction in highway crossings of the rail line from two to one could also lead to a reduction in the capacity of the network and the option would hinge its success on the appropriate selection of replacement bridge design which could cope with the combined traffic flow in the town and accommodate future development traffic. A permanent closure of the crossing would also mean that a DDA compliant crossing facility will be needed to provide a suitable alternative and as such options which seek to improve the access at the existing footbridge or provide a replacement of that structure should be considered as part of this option's design. The option has therefore been selected to go to Stage 2 of the WelTAG process where confirmation can be given as to its feasibility.'

'Option 14: Route under railway line at Level Crossing'

Similar to Option 13, this proposal would require significant engineering to achieve and based upon the level of intervention against the impacts that will be incurred, there is not considered to be a high likelihood of success. However, it is proposed that the potential of this option is given further consideration in order to confirm the feasibility of an under rail link compared with a bridge structure (Option 13).'

'Option 15: Lift or ramp introduced in combination with the footbridge adjacent to Hendre Road level crossing'

The performance of this option is assumed to be distinctly average with little evidence to provide an indication that positives could be brought about. The option will allow for improved crossing opportunities for the mobility impaired, but this is highly dependent upon maintaining the measures that are put in and there is not thought to be any wider benefit that will occur. Option 8 will need to mitigate a closure of the level crossing for active travel modes and for this reason it is considered appropriate to include this proposal as part of the short-listed schemes that require more investigation and scrutiny.'

'Option 17: Improve existing footbridges

The treatment of existing footbridges over the rail line to allow for active travel capability will encourage modal shift, particularly for short journeys within the town and reduce the dependency on motor vehicles for these types of trips. The appraisal process has demonstrated that there is little to suggest any negative aspects associated with this option although the significance of the benefits is not assumed to be high. It is deemed to be of importance to give further consideration to this option and to provide a comparison with the alternative active travel crossings that are proposed through other options in the short-list.'

'Option 18: Active Travel route across rail line direct to new school (new bridge)

Active travel improvements at this location would likely bring about safer, healthier journeys to and from school and remove some of the road traffic associated with these journeys. The facility would also be of benefit to all NMU traffic in the town making active travel an attractive and advantageous choice for short trips between homes and services.'

'Option 29: Improve B4280 / Penprysg Rd junction for easier access / egress avoiding Town Centre

There is a slight benefit that is expected against some of the scoring criteria when this scheme was appraised, although the overall result does not demonstrate a significant positive return against the appraisal process. Due to the potential of this option to be a low-cost intervention which could be relatively simple to implement, it is therefore to be included as part of the progressed options and will be considered for inclusion as part of a package of measures that form the final preferred scheme.'

'Option 34: Do Minimum

Although this option does not constitute any beneficial impact for improving connectivity between the community in Pencoed it will be

required to form an appropriate baseline to which the short-list of options and the subsequent final preferred option can be compared against.

In addition to the above options, a series of ‘quick-win’ interventions are also recommended for shortlisting. These include:

‘Option 1: Real Time Crossing Information’

This option does perform positively across much of the scoring criteria used for the appraisal without demonstrating any particularly high scores. The effect that this proposal could have on reducing circulating traffic flows within the town is seen as an opportunity that should be subjected to further investigation and as the measures required to implement it are relatively uncomplicated a decision has been made to progress the option to the next stage of assessment.’

‘Option 3: Static Strategic Signing’

‘The optimal routing of traffic via the most efficient network paths is beneficial to the free-flow of this traffic. Discouraging traffic from entering areas where roads are likely to become congested, such as town centres, can help to alleviate associated negative impacts on the environment and benefit journey time reliability. This option explores the potential for revisiting the current highway signage around Pencoed with the intention of implementing changes that would encourage traffic to avoid travelling through the centre of the community if the vehicle.’

‘Option 19: Safe routes to school’

The proposal does not generate a great deal of positives against the appraisal criteria and does not therefore warrant progression to the short-list of options based upon that, however it is assumed that improvements to support this option could be delivered as part of the options which will be progressed.’

‘Option 21: School start time stagger’

No physical measures are needed to implement the option but is instead based upon the logistics of gaining acceptance of all the parties involved in making such a decision and then putting the plan in practice. There would be benefits seen if traffic can be removed from the network, particularly in the morning peak period. The option will receive further consideration at the next stage of the WelTAG process to determine whether it can form of a package of measures within the scheme delivery or could be delivered through another Bridgend CBC initiative outside of this scheme.’

4.14 The WelTAG Stage 2 report provides a more detailed review of the 'five cases model' and provides recommendations for options that merit further progression to WelTAG Stage 3. It is at WelTAG Stage 3 whereby it would be determined whether the preferred option is achievable.

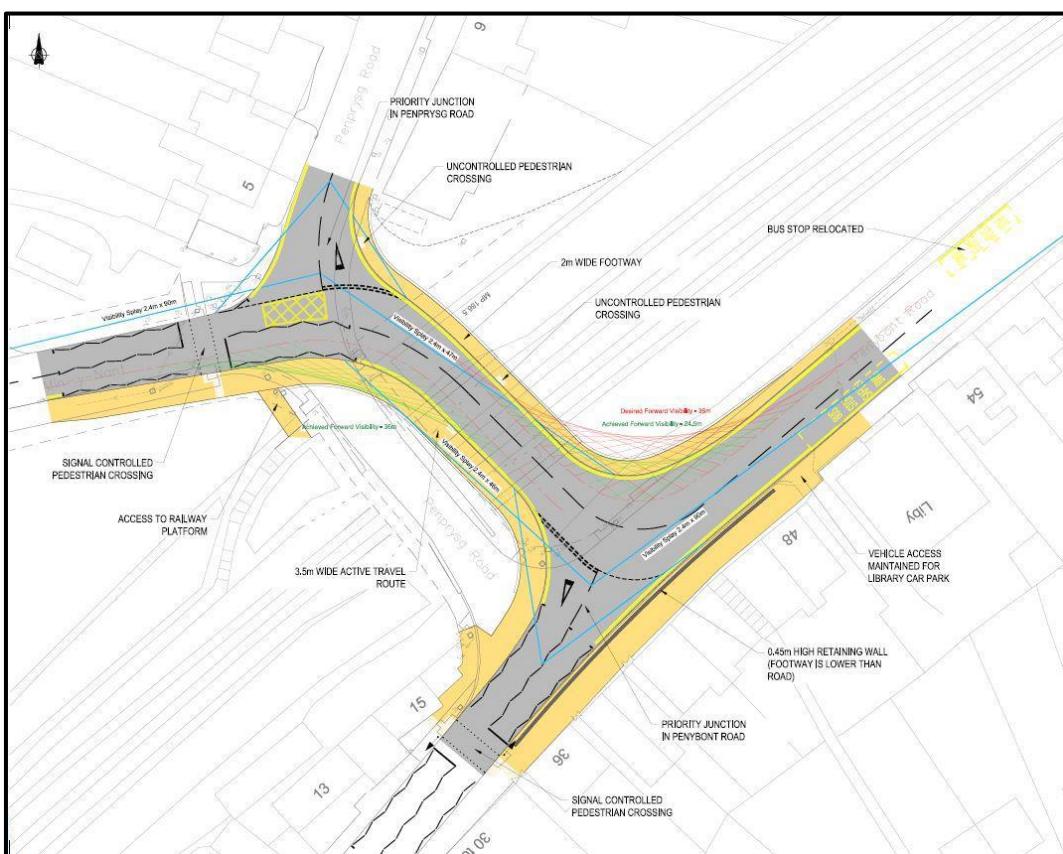
4.15 The preferred major intervention at this stage of the WelTAG process is referenced Option 8. This option identifies the combination of new bridge provision to replace Penprysg Road railway bridge (Options 6/6a/6b) and closure of the level crossing on Hendre Road.

4.16 Option 8 obtained the highest rank in WelTAG Stage 2 and was noted to score well against scheme objectives, policy and legislation.

4.17 However, it performed poorly in the benefit to cost ratio assessment, but this was attributed to issues with the scope of work undertaken which are deemed to be resolvable with a further incremental report update.

4.18 A number of designs have evolved from the concepts discussed in the aforementioned Penprysg Road Bridge Feasibility Report (Capita, 2015) to provide three potential arrangements (Options 6/6a/6b). The WelTAG Stage 2 report identifies Option 6a as the preferred arrangement which involves a 3-lane road bridge with priority afforded to Min-Y-Nant to the west and Penybont

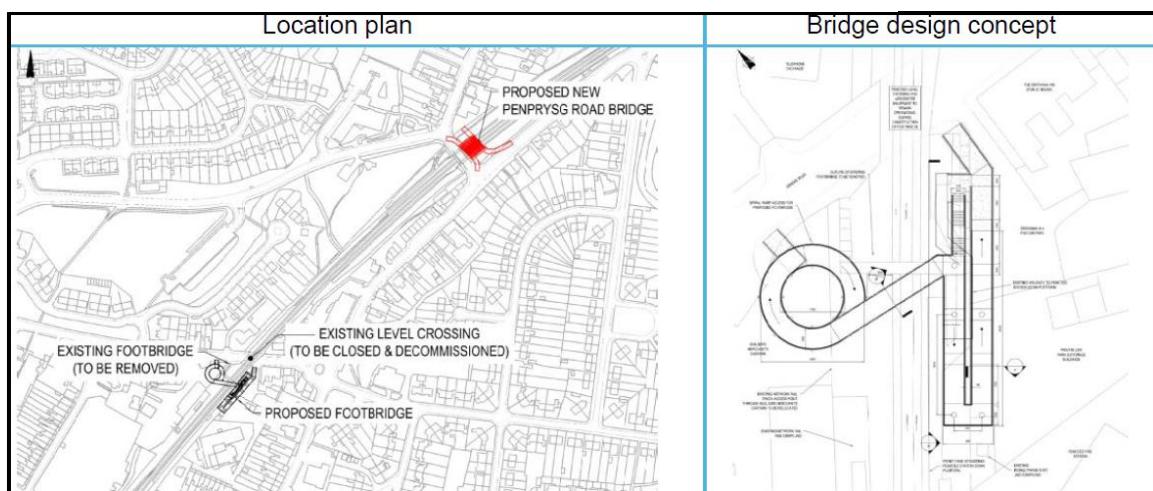
Figure 4: Option 6a (3-lane road bridge)



Road (north) to the east. Active travel improvements are given high priority in the design. This option is shown in Figure 4.

- 4.19 The estimated cost of this design to completion is £5,624,789.
- 4.20 In addition to the preferred replacement Penprysg Road Bridge arrangement, Option 8 requires the permanent closure of the level crossing on Hendre Road and a replacement active travel bridge.
- 4.21 The preferred solution at this stage is Option 15a

Figure 5: Option 15a - Proposed footbridge



- 4.22 The cost of Option 15a is estimated as £4,233,039.
- 4.23 In combination with the above, Option 19 (safe routes to school) is recommended to be incorporated into the development of Option 8 and would include further highway safety and active travel improvements in the area. No cost estimates have been provided at this stage.
- 4.24 The total cost of the current preferred transport intervention is therefore in excess of £9,857,828.

Further work

- 4.25 To compete WelTAG Stage 2, further modelling and assessment of non-highway benefits (e.g. rail) is needed to enable justified progression to WelTAG Stage 3. The Stage 3 study will commence this financial year and on-going discussions are scheduled between Network Rail, Transport for Wales and Bridgend County Borough Council.
- 4.26 One of the objectives of the WelTAG scheme assessment is to encourage economic growth in the area by facilitating new development in west Pencoed through the provision of conditions that allow for the current moratorium to be lifted.

- 4.27 Further traffic modelling exercises in the supplementary Stage 2 report will establish whether the preferred transport intervention will enable the moratorium to be lifted, either indefinitely, or for a specified quantum of development.
- 4.28 However, this background paper seeks to collate the various studies undertaken thus far to assist with the LDP process in advance of this further assessment.

5. Moratorium Review

- 5.1 This section seeks to bring together the various assessments to arrive at a definitive position on whether there remains a need for the existing LDP moratorium to be retained in the revised LDP from a highway safety and operation perspective.
- 5.2 The assessments undertaken in recent years and reviewed as part of this document clearly demonstrate that the highway network is operating at maximum capacity.
- 5.3 When a junction reaches operational capacity, any subsequent additional traffic creates an exponential increase in queuing and delay.
- 5.4 Whilst queuing and delay is seen as an acceptable component of some transport planning strategies, this can only be applied where there are genuine, attractive alternatives to motor vehicle travel in the form of high quality active travel and public transport infrastructure.
- 5.5 In areas where sustainable infrastructure is of a high standard, motor vehicle delay will encourage modal shift to alternative, cleaner modes of travel or will lead to phenomena such as 'peak spreading' whereby essential car users seek to avoid peak hour congestion by commencing a trip earlier or later.
- 5.6 Another common outcome of highway congestion is alternative route choice, whereby existing and future motor vehicle users avoid problem areas altogether. In a balanced highway network, this results in journey time equilibrium as each individual seeks the fastest available route.
- 5.7 However, it is considered that the issues in Pencoed prevent the above mitigating measures from materialising, as the physical highway constraints prevent suitable active travel and public transport improvements from materialising to such an extent that new development traffic can be accommodated. Furthermore, the restricted highway network prevents alternative route choice so the impact of additional development traffic in the vicinity would be magnified.
- 5.8 This background paper has also collated a number of studies which have identified solutions to the current capacity issues. However, the available solutions are subject to many constraints which would need to be overcome through further assessment and design and will require collaboration of several statutory undertakers.

- 5.9 The preferred transport intervention solution identified in WeLTAG Stage 2 has a total cost estimate in excess of £9,857,828 and no committed funding through to delivery at this stage.
- 5.10 The size of the candidate sites in the emerging LDP are considered insufficient to take forward a suitable mitigation scheme as a developer-led intervention or through combined S106 contributions.
- 5.11 Other potential funding streams for progression include Welsh Government (e.g. Local Transport Fund/Local Transport Network Fund), Cardiff Capital Region City Deal, Bridgend County Borough Council internal budget and Network Rail (which has also indicated a desire for improvements as a mechanism for increasing future rail services).
- 5.12 With consideration of the above, it is therefore concluded that the existing development moratorium in Pencoed is retained within the revised LDP until a suitable transport intervention materialises.

6. Conclusion

- 6.1 This paper makes use of several recent studies focussed on the highway network in Pencoed to determine the requirement for the existing moratorium on development, as prescribed by Policy PLA6 in the Bridgend Local Development Plan, to be retained in the emerging replacement Local Development Plan 2018 to 2033.
- 6.2 It has been identified that significant assessment has been undertaken into developing a solution which is likely to require major interventions to include the closure of the Hendre Road level crossing as well as a replacement Penprysg Road bridge with significantly improved capacity and active travel infrastructure.
- 6.3 However, the available solutions are subject to many constraints which would need to be overcome through further assessment and design and will require collaboration of several statutory undertakers.
- 6.4 There are also restrictions in terms of funding, with no existing guarantees that the required costs for major intervention can be met over the replacement plan period.
- 6.5 It is therefore concluded that the existing development moratorium in Pencoed should be retained within the revised Local Development Plan 2018 - 2033 until a suitable transport intervention materialises.