

# Tyne and Wear Rail Freight Partner Group (March 2015) Report on Proposals for a Rail-connected facility at Harworth Estates' Butterwell Disposal Point

## Outline

The Tyne and Wear Rail Freight Partner Group operates as a sub-group of the Tyne and Wear Freight Partnership. It aims to contribute to the delivery of Local Transport Plan goals by promoting rail freight movement within and beyond the region, including cross-boundary links, through constructive partnership working between public and private bodies with an interest in the promotion of rail freight.

The Group have prepared a document of notes expressing support in principle for future rail-associated uses for Butterwell Disposal Point. Comments included are for general consideration only and do not constitute endorsement by the Group of any specific planning proposal.

The author has included for information a wide range of possible future uses for the rail-served site and associated route. This has been done in order to illustrate the considerable potential opportunities that the Harworth Estates' rail proposals offer.

Please refer to Ordnance Survey (OS) Landranger Map 81 'Alnwick and Morpeth' when reading through the document as this map sheet covers most of the locations listed, and shows how the proposals integrate with the local road and rail networks.

*NB: Please note that Network Rail, being the Government-funded infrastructure provider, has to abstain from supporting this document. In addition please note that the Port of Blyth, which already operates a fully established bulk freight handling terminal in South East Northumberland, also has to abstain from supporting this document.*

## Introduction

### *Butterwell Disposal Point (Butterwell DP)*

Butterwell D.P. (Figure 1) is owned by Harworth Estates and is situated approximately 8.1km north east of Morpeth and 4.8km North West of Ashington in the county of Northumberland. It is located just north of the C125 Longhirst to Potland road and 800 metres west of Linton Lane. The site lies 400 metres to the east of the East Coast Main Line railway. (Grid Ref. & [Google Maps link](#) on Page 2)



Figure 1: Butterwell Disposal Point viewed from the C125 road. The site sits unobtrusively in the countryside. The spoil heaps of the currently operational Butterwell surface mine feature in the background. Taken on 6<sup>th</sup> May 2014.

(Photos taken by author)

The OS Grid Ref. for Butterwell DP is NZ 248910. [Google](#) [Maps](#) [link](#)

<http://tinyurl.com/12fkxli>

Butterwell DP (the site) was established in 1977 for the purpose of loading coal onto trains from local opencast sites.

The land around the site itself is now being mined as part of UK Coal's 'Butterwell' surface mine, which has been operational since 2011 and is due for completion in 2016.

The site also handles trains serving UK Coal's 'Potland Burn' surface mine (Figure 2) situated near Ashington which is also due for completion in 2016.



Figure 2: DB Schenker 66185 rounds the curve near Linton heading westbound for Butterwell DP and the ECML with a load of coal from Potland Burn surface mine near Ashington. Taken on 6<sup>th</sup> May 2014.

## Proposals

Harworth Estates, the owners of Butterwell Disposal Point, intend to put forward the following major rail-associated proposals as part of the 'Butterwell' surface mine restoration scheme:

1. Butterwell Disposal Point to remain in place as a long term strategic commercial rail-connected facility.

The facility to be further enhanced with the introduction of additional land for future rail-associated use. This additional land would be created during the restoration of Butterwell surface mine and would offer a rail-connected facility with a total site area of 20 hectares.

2. The full reinstatement of Harworth Estates' privately-owned 'Ashington to Butterwell' railway line which runs via New Moor, Potland, and Linton Lane. This line runs through Butterwell Disposal Point.

NB: Please note this second proposal is a very significant longer term aspiration, which will be dependent on the availability of future funding. Discussion of the proposal with infrastructure provider Network Rail is currently at a very early stage.

The proposals highlight important issues for consideration such as:

- Future uses of the site and route
- Future route enhancements, upgrades and aspirations
- Funding for infrastructure works and future route enhancements and upgrades
- Track access charges

The following notes discuss the proposals in more detail:

## 1. A long term rail-connected facility at Butterwell Disposal Point (the site)

*The site benefits from the following features:*

- The rail-connected site is located 400 metres to the east of the East Coast Main Line (ECML) railway.
- The associated 'Butterwell Junction' (Figure 3) is a modern south-facing mainline connection with two crossovers, and is situated just north of Ulgham Lane level crossing on the ECML.



Figure 3: Viewed from the south west along Ulgham Lane, DB Schenker 66143 awaits its signal in the Harworth Estates' rail siding next to Butterwell Junction, ready to join the ECML southbound with a 23 wagon load of coal from Butterwell surface mine. The spoil heaps of Butterwell surface mine are clearly visible in the background. Taken on 9<sup>th</sup> May 2014.

- The Harworth Estates' privately-owned railway line runs through the site and potentially connects the ECML at Butterwell DP with the Ashington, Blyth & Tyne line (ABT) at Ashington.
- The railway line within the site features a long run-round loop 500 metres plus in length.
- The site features a modern concrete rail loading pad suitable for the bulk handling of materials. A weighbridge is built into the loading line.
- Coal is currently loaded onto trains typically consisting of Class 66 Locomotives hauling 23 wagons (Bogie coal hopper type) of 102 tonne Gross Laden Weight (GLW). Class 56 Locomotives hauling box wagons are also used occasionally. Freight operators include DB Schenker, Freightliner, GB Railfreight and occasionally Devon & Cornwall Railways.
- The site has good road access onto the C125 public road, and a good internal service road.
- The site is located within 3.2km of the A1068 and the A189 (Spine) road. Both these roads are designated freight routes.
- Butterwell Disposal Point is situated in a visually unobtrusive location and is away from areas of major population, yet remains easy to locate and access.

Future uses of the rail-connected site could include:

- An Intermodal rail terminal for Container trains serving Northumberland, The Borders and Scotland using the ECML and ABT rail networks.
- A Manufacturing site.
- Rail maintenance depot for e.g. Network Rail.
- Train maintenance/operating depot.
- A Distribution depot for e.g. Supermarkets.
- A Bulk handling facility.
- Continuation as a Coal loading point for surface mines operating within the very local area.
- A possible combination of the above uses.

## 2. Full reinstatement of the Ashington to Butterwell railway line (the route)

The Harworth Estates' privately-owned route connects the ABT line at Ashington Junction with the East Coast Main Line at Butterwell Junction running via New Moor, Potland, and Linton Lane.

At present, the route operates as a Freight-only line, transporting coal from surface mines at Potland Burn and Butterwell via the ECML to power stations and other destinations around the UK.

### *Brief History*

The route started life as the 'Linton Colliery' branch line which was established in 1896 and ran from Ashington Junction on the ABT line to the deep mine at Linton Colliery. The route was originally set up as a double track mineral line (currently reduced to single track) to transport coal from Linton Colliery. Passenger trains also operated on the route, carrying Miners and paying members of the Public.

An additional branch (single track) was added in the 1950s, diverging west off the Linton Colliery branch at the former Potland Junction to serve Longhirst Drift Mine. The final section of the route (single track) was added in 1977 to serve Butterwell Disposal Point and provide a connection with the ECML.

### *Today's route from Ashington to Butterwell*

The route is approximately 6.0km in length, and was last in regular use over to Ashington during the 1990s, transporting coal from Butterwell DP to the former Blyth Power Station and the Port of Blyth.

The route is currently fully disconnected at Ashington Junction, and the (now) single track run up to New Moor level crossing (A1068) from Ashington is out of use with track lifted in places. New Moor level crossing is out of use and fenced off with the track still in the road.

North West of the A1068 the track comes back into use to serve Potland Burn surface mine. Potland Burn has its own rail-loading pad, and also has a 520 metre long run-round loop. Heading further north towards Linton, Potland level crossing (C125) has been upgraded as a modern 'open' level crossing with flashing warning lights and warbler sirens. Heading west, Linton Lane is crossed on the final run into Butterwell DP. Linton Lane is now a foot crossing only. (Figure 4)



Figure 4: Looking east along the Harworth Estates' route from Linton Lane foot crossing. A good width is available between the railway land boundary fences for future double tracking. Taken on 6<sup>th</sup> May 2014.

The route finally connects with the ECML at Butterwell Junction just west of Butterwell DP.

At present, other than the run-round loops at the two loading points, the route is single track throughout.

Network Rail own and maintain Ashington Junction (currently disconnected and removed) and Butterwell Junction at either end of the route.

## Reinstatement of the route

The route would be fully reinstated to reconnect up with Ashington.

Full vegetation clearance (carried out at the appropriate time of year) would be required along the route in order to provide a clear unobstructed rail corridor for operational use and to maximise safety, security and visibility.

It is expected that the route would be used primarily for Freight initially, though this would naturally depend on the future chosen uses of Butterwell DP. Future regular Passenger train use would require additional infrastructure works along the route.

Passive provision for a future mixed-traffic route could be usefully considered and incorporated during the initial reinstatement of the route.

When reconnecting Ashington Junction (Figure 5), the opportunity should be taken to reinstate the junction plus associated crossover and signalling to a specification suitable for both Freight and Passenger train use. Butterwell Junction is already thus equipped.

Ashington Junction would preferably be reinstated as a double track junction (as original layout) to maximise future capacity and capability.



Figure 5: Site of the currently disconnected Ashington Junction leading to the fenced-off Butterwell branch. Viewed looking north from Station Road Bridge in Ashington. Taken on 6<sup>th</sup> May 2014.

The Harworth Estates' single track route would ideally be re-signalled to allow full use of the route and loops in both directions.

It would be preferable for New Moor level crossing (A1068) to be reinstated as a 'full-barrier' crossing due to the busier nature of the road. Provision for double tracking should also be included. This specification would cover for future passenger train operation and double tracking of the route.

If the A1068 road were to be upgraded and straightened out in future years in the vicinity of New Moor level crossing (a previous Highways aspiration) then the opportunity should be taken to bridge the road over the railway line. This would eliminate one level crossing and remove two right angle bends from the road, thereby providing better routes for both road and rail purposes.

Potland level crossing (C125) near Linton would remain as a modern 'open' crossing. If rail traffic on the route were to increase significantly or future regular passenger train use was anticipated, then the crossing would have to be upgraded to 'full-barrier'.

## Future route enhancements, upgrades and aspirations

### *Mixed-Traffic route*

The line would ideally be reinstated as a modern mixed-traffic route from the outset so that it can be utilised by both Freight and Passenger trains in future years.

South East Northumberland Rail User Group (SENUG) would be very much in favour of this enhancement as it would provide a valuable additional alternative route. This would keep options open in the longer term for regular passenger train services along the route, and also allow greater use of trains as opposed to buses during line closures and engineering works etc.

### *Run-round loops modified for dual-purpose use as Run-round/Passing Loops*

Run-round loops at both Butterwell and Potland Burn coal loading points are due to remain in place after surface mining operations cease, and could be made available for use as future Passing Loops. This would significantly increase the potential for a regular two-way traffic capability along the single track route.

The generous 500 metre plus length of the loops would cater for the majority of modern freight train movements. For example the loops could easily accommodate a 23 wagon (102 tonne GLW) coal train when being looped by a 775 metre Intermodal container train operating on the local network. The loops would accommodate the longest of UK passenger trains.

### *Line speed increases*

Line speed increases along straighter sections of the route could be considered when reinstatement work is being carried out. For example, the run between Ashington Junction and New Moor level crossing consists of 1.6km of very straight track on a very solid track bed. (Figure 6)



Figure 6: A 1.6km run of very straight track (good line speed potential) and generous room for future re-doubling are features of this section of Harworth Estates' currently 'out of use' railway line as viewed from the New Moor (A1068) level crossing end looking towards Ashington. Taken on 6<sup>th</sup> May 2014.

### *Route clearance to W12 loading gauge for future Intermodal container trains to the Port of Blyth*

Clearance of the route to W12 loading gauge would allow for the future transportation of 9'6" (2.89m) Hi-Cube shipping containers utilising standard height platform wagons on Intermodal trains to and from the Port of Blyth (North Blyth).

The ECML is due to be cleared as a W12 route between Temple Hirst (Selby) and Millerhill (Edinburgh) by September 2014, which will include the run through Butterwell Junction. Therefore providing a W12 route to the Port of Blyth would provide maximum utilisation of the latest ECML infrastructure upgrades.

The full route from Butterwell Junction to North Blyth has only four major overhead structures, two of which have very good clearance (A197 and A189 road bridges), and two of which may require some clearance work (Butterwell's short rail tunnel, and Station Road Ashington original road bridge)

section) to achieve W12 clearance (Figure 7). North Seaton footbridge has good clearance. Major structures benefit from modern horizontal beam type construction as opposed to the potentially more restrictive arch bridge and smaller dimension round tunnel type structures of earlier years.



Figure 7: Viewed from the footpath just south of Ashington Junction, the foundations of the former Ashington Signal Box can be seen in the foreground when looking over towards the original (and lower) section of the road bridge on Station Road. Taken on 6<sup>th</sup> May 2014.

Any overhead clearance work required (track-lowering etc.) could usefully include provision for future electrification of the route from Butterwell Junction to North Blyth. This would offer the shortest and most direct port route between North Blyth and the ECML for electrically-hauled freight trains.

With only Ashington Station platforms to pass through via this route, clearance of line-side structures would be kept to a minimum.

W12 clearance including any necessary increase in double track spacing requirements could be built into platforms and other line-side structures as part of the route modernisation process in readiness for the reintroduction of passenger train services.

Consideration should also be given to introducing the full route from Butterwell Junction to North Blyth as part of the Strategic Freight Network (SFN).

*Construction of a 'Butterwell North Junction' (approx. O.S. Grid Ref. NZ 244918)*

The addition of a north-facing junction onto the ECML at Butterwell would offer considerable benefits for the whole of the local rail network. Therefore land next to Butterwell Disposal Point should be safeguarded to facilitate the construction of a 'Butterwell North Junction' at a later date.

Preliminary design of the junction and associated chord could be undertaken by Network Rail at an early stage so that earth-moving equipment currently in use at the operational Butterwell surface mine could be used to carry out initial earthworks ready for full construction at a later date.

The required chord for the junction could be built as an additional track running in a north-westerly direction above, alongside and parallel to Butterwell DP's existing run-round loop, and then sweeping northwards to merge with the ECML south of the River Lyne valley.

The chord would ideally be built in double track formation so that the route between 'Butterwell North Junction' and Ashington Junction could be operated largely independently of ongoing train-loading operations at Butterwell DP. This would help to reduce conflicting rail movements around the DP, and maximise speed and capacity onto and off the ECML.

A variation of this upgrade would be to extend Butterwell Junction's existing long parallel siding northwards and merge it with the new 'Butterwell North Junction' chord to provide a long loop siding serving the ECML capable of handling 775 metre Intermodal container trains. This option would be more challenging due to differences in ground levels between the siding and the ECML.

#### *Double tracking of the route*

The Harworth Estates' route would have the ability to be further upgraded in future years if required, with sufficient railway land generally available for double tracking throughout. (Figure 8)



Figure 8: Looking along the 'out of use' Harworth Estates' route towards the A197 road bridge in Ashington. The photo shows the very generous track bed width available along this section of the route and also the good overhead clearance under the road bridge. Taken on 6<sup>th</sup> May 2014.

Widening of the formation and track bed between the railway land boundary fences would be required along some sections of the route in order to provide the additional width necessary to accommodate a modern double track railway built to e.g W12 loading gauge standards.

Likewise some existing single track sections would require repositioning and realignment in places ready to take a second track alongside them.

In the short term, additional track work around loading points on the existing single track line would enable a through-route to be generally available at most times including during e.g. 2 hour train-loading operations.

#### *Construction of an 'Ashington North Loop' (approx. O.S. Grid Ref. NZ 273883)*

At the Ashington end of the Harworth Estates' route, construction of a loop/chord north of Ashington Junction and running east to west connecting the Woodhorn/Lynemouth branch with the Butterwell branch would have considerable benefits for Lynemouth Power Station and the former Alcan Lynemouth Smelter site. This 'Ashington North Loop' would allow much more direct routeing of trains carrying power station fuel between the ECML and Lynemouth.

Such a loop would also allow for future passenger train services operating on the ABT line from Newcastle to call at a proposed new Park and Ride station at Woodhorn then reverse and head north via Linton and Butterwell onto the ECML.

### *Electrification*

Future Electrification of the Harworth Estates' route and rail-connected site would be aided considerably due to the local presence of a very good national grid power supply at the nearby Linton Electricity Substation (owned and operated by Northern Powergrid). Located 2.4km north of Butterwell DP, this substation currently supplies power for the ECML railway at Ulgham Grange.

### Future uses and benefits of the fully reinstated 'Ashington to Butterwell' railway line (the route)

Full reinstatement of the Harworth Estates' route would provide extra capacity and additional operational flexibility for the whole of the ABT rail network and for the ECML.

Future uses of the route could include:

#### *Continuation as a Coal route*

With millions of tonnes of Coal still remaining in the ground in Northumberland, it is likely that modern surface mines will continue to operate for the foreseeable future and require rail for transportation. The route would offer direct access to the Port of Blyth from existing coal loading points such as Butterwell DP. This could become more significant over the following years if the coal export market were to open up once again as more UK Power Stations convert to biomass.

#### *Biomass route*

It is very likely that Biomass will prove to be a major fuel for power stations over the coming years, so the route could well play a major role in the transportation and distribution of this product.

#### *Container route*

(See also previous W12 loading gauge notes.)

The Import and Export potential of goods and commodities throughout Northumberland could be further increased in future years with the availability of a W12 Container route to the Port of Blyth.

#### *Diversionsary route between Butterwell Junction and Benton Junction*

A Freight/Passenger train Diversionsary route:

- For the ECML via Butterwell, Linton, Ashington, Northumberland Park and Benton. This would require reversing at Butterwell Junction under the present layout.
- For the ABT line via Ashington, Linton, Butterwell, Pegswood, Morpeth, Cramlington, and Benton.

The 'Ashington to Butterwell' route would ideally be set-up during reinstatement to offer a Diversionary capability from the outset. This capability would be considerably enhanced with the addition of a 'Butterwell North Junction'.

#### *Future regular Passenger Train use of the route*

At this stage no Passenger train services are planned for the route. However, the route could be examined as part of the proposed reintroduction of passenger services on the ABT rail network to see if there are any viable services that the line could offer and provide in future years.

For example Passenger services operating between:

- Widdrington (for proposed Leisure Resort) and Newcastle via Butterwell (Butterwell North Junction required), Linton, Woodhorn (Ashington North Loop required), reverse, and the ABT line.
- Alnmouth (for Alnwick, and regular calling point for mainline services) and Newcastle via Butterwell (Butterwell North Junction required), Linton, Ashington and the ABT line.

N.B. Maximum utilisation of the route for passenger train services would only be fully realised with the introduction of a 'Butterwell North Junction'.

Such a junction would also allow long distance services operating from the North to run via the ABT line to Newcastle.

The addition of an 'Ashington North Loop' would further enhance passenger services to Woodhorn.

#### *Charter Train route*

It is likely that the route would prove very popular with Charter Train operators. A reinstated Ashington to Butterwell route would allow a circular run around the ABT rail network.

## Additional comments

#### *Funding mechanisms for future route enhancements and upgrades*

Whilst outside the scope of these notes, it is expected that funding for infrastructure works and future route enhancements and upgrades would come from a range of sources. This would be dependent on the future chosen uses of Butterwell DP, and the main purposes for which the associated rail line is used.

#### *Track access charges*

Track access charges for the currently privately-owned Ashington to Butterwell railway line would be set at a competitive commercial rate. These charges would be comparable to those set for similar routes within the national rail network.

NB: It is very likely that the fully reinstated Harworth Estates' route would be owned and operated by Network Rail as part of the national rail network.

## *Support*

The Tyne and Wear Rail Freight Partner Group support in principle future rail-associated uses for Butterwell Disposal Point. The comments included in this report are for general consideration only and do not constitute endorsement by the Group of any specific planning proposal.

Additional rail facilities in Northumberland and an additional reinstated route connecting the East Coast Main Line to the ABT rail network would provide many benefits for the region.

With rail freight and passenger train usage forecast to increase further over the following years, Harworth Estates' rail proposals present themselves at a very opportune time.

## Conclusion

Rail-connected and situated next to the East Coast Main Line, with a rail link to the ABT line, the 20 hectare Butterwell Disposal Point is in a prime location for future rail-served activities.

Full reinstatement of the Harworth Estates' 'Ashington to Butterwell' route would provide some real benefits for the local rail network. Both the ABT line and the ECML would benefit from the route which would provide additional rail capacity and extra operational flexibility:

- Extra freight trains operating on the local network and the imminent return of passenger trains on the ABT line will further increase the need for such a route over the following years.
- The addition of a north-facing junction at Butterwell would considerably enhance the usability of the route for both freight and passenger services. A 'Butterwell North Junction' would provide direct access to and from Scotland and the North without any reversing. This would be of particular value to the East Coast Main Line as an alternative diversionary route, and would also allow future passenger train services to head northwards from Ashington.
- Construction of a chord north of Ashington Junction and running east to west connecting the Woodhorn/Lynemouth branch directly with the Butterwell branch would have considerable benefits for Lynemouth Power Station and also the former Alcan Lynemouth Smelter site. This 'Ashington North Loop' would allow much more direct routing of trains carrying power station fuel between the ECML and Lynemouth.
- An 'Ashington North Loop' would also be of benefit to a proposed new 'Park and Ride' station at Woodhorn. When used in conjunction with a 'Butterwell North Junction,' this would allow local passenger train services to operate between e.g. Alnmouth and Newcastle via Linton, Woodhorn and the ABT line, with trains reversing at Woodhorn.

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