



**CYNGOR SIR DDINBYCH
DENBIGHSHIRE COUNTY COUNCIL**

LÔN CLWYD CYCLE TRACK

FEASIBILITY STUDY

**August 1999
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OFFICES AT:

27 Prince's Drive, Colwyn Bay LL29 8HT

Tel: (01492) 533117 Fax: (01492) 530895

E-Mail: Broun.rba@btinternet.com

**RICHARD BROUN
ASSOCIATES**
Chartered Engineers & Architects

Executive Summary

The development of a network of cycle tracks throughout the country forms part of Government Policy to promote cycling as a sustainable alternative means of transport, to improve the health of the nation and to reduce the emission of “greenhouse gases”.

In conjunction with the construction of the National Cycle Network Route along the North Wales Coast, Denbighshire County Council wishes to provide a cycle friendly infrastructure throughout the county which, wherever possible, will make use of off road routes such as disused railway lines (as set out in the new Unitary Development Plan).

As part of this strategy the Council’s Highways and Transportation Department (with assistance from the Welsh Development Agency, the Wales Tourist Board and the European Regional Development Fund), have commissioned a study to investigate the feasibility of creating a path for cyclists, walkers and (where possible) horse riders through the Vale of Clwyd, between Rhyl and Ruthin.

The study, which is the subject of this report, includes a detailed evaluation of a number of alternative routes for the proposed path, including the existing public road/footpath/bridle way network; the flood banks on either side of the Rivers Clwyd and Elwy; and the former Rhyl to Corwen railway.

Although this facility was closed in 1962 and much of the land is now in private ownership, the track bed still exists over a significant proportion of the route between Rhyl and Ruthin, and therefore provides the potential to establish an off road corridor for the benefit of local communities, the development of sustainable tourism and leisure activities, as well as providing a safe route for commuting to work and school.

As part of the Study consultations have taken place with interested public organisations (such as the Environment Agency, Welsh Development Agency (Land Division), Conwy County Borough Council, the North Wales Police, Community Councils etc), associations/unions representing landowners and farmers, and local cycling and equestrian groups.

Following an assessment of the comments received and the alternative routes available, the Study has identified a “preferred route” for the proposed path. This route, which is shown on the plans included in the appendices to the Feasibility Study report, provides the most suitable and cost effective solution, taking into account such issues as land usage and ownership, economic benefits to the local communities, construction and maintenance costs, and ecological issues necessary to conserve/enhance the value of the route and its role as a wildlife corridor.

During the study there has been a significant public interest both from those supporting the proposed path and from landowners on or adjacent to the former railway who have contacted the County and/or Community Councils expressing concern about the effect that the preferred route will have on their businesses/environment

Executive Summary (continued)

Where possible individual meetings/discussions have been held with those who have specific objections to the preferred route of the path to explain the proposals and, in a number of instances to agree localised diversions to avoid potential problems.

The report concludes that the creation of an off road path for cyclists and walkers between Rhyl and Ruthin is feasible, although only certain sections are likely to be suitable for horse riders.

Inevitably there are a number of landowners who will object to the proposed path crossing their property and it is therefore important, if the proposals are approved, that their views are taken into account and that detailed consultations take place with all affected landowners as part of the design development stage.

In view of the extensive public interest in the proposed cycle track it is recommended that, following consideration of the Feasibility Study by Denbighshire County Council, there should be a series of exhibitions throughout the Vale of Clwyd to explain the proposed route (and the various alternatives that have been considered) and gauge the level of public support for the construction of the path.

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1.0 INTRODUCTION

1.1 Appointment

Richard Broun Associates (RBA) were appointed by the Highways and Transportation Department of **Denbighshire County Council** (DCC) in January 1999 to investigate the feasibility of creating a path for cyclists, walkers and (where possible) horse riders, to serve the Vale of Clwyd, linking the National Cycle Network route in Rhyl with the towns of Rhuddlan, St Asaph, Denbigh and Ruthin, and other neighbouring smaller communities.

The Study Brief, which is included for reference in **Appendix A**, requires the route of the proposed path (wherever possible) to follow the track bed of the former Vale of Clwyd Railway. On sections where this is not possible the study is to identify alternative routes, preferably off the highway network.

The commission also includes the preparation of material and questionnaires for a public consultation exercise, which it is anticipated will follow consideration of the Study Report by Denbighshire County Councillors.

1.2 Background

The development of a network of cycle routes throughout the country forms part of Government Policy to promote cycling as a sustainable alternative means of transport.

Apart from the obvious benefits of improving the nations health and reducing the emission of "greenhouse gases", cycling creates a means of improving the local economy by developing sustainable tourism and leisure activities. The cycle network also provides safe routes for commuting to work and school.

In conjunction with the construction of the National Cycle Route along the North Wales Coast, Denbighshire County Council wishes to provide a cycle friendly infrastructure throughout the County.

The purpose of this study is therefore to evaluate a number of alternative routes to determine whether it is technically feasible to create a path, through the Vale of Clwyd, between Rhyl and Ruthin. The study also provides cost estimates for the construction and annual maintenance works and predicts the economic benefits of the proposed path (based on the experience of similar paths/cycle tracks throughout the country).

1.0 INTRODUCTION (continued)

1.3 Objectives

The objectives of the Feasibility Study include:

- identification of the most suitable and economic route for the proposed path, taking into account such factors as landownership, future developments, access arrangements, conservation interests, and links to other routes/ points of interest.
- evaluation of the suitability of the proposed route for different users, *ie* cyclists, walkers and horse riders, including consideration of the needs of the disabled.
- assessment of ecological issues involved in the construction of the proposed path, and any requirements to conserve or enhance the value of the route, and its role as a wildlife corridor.
- identification of any important archaeological or historical features along the proposed route together with recommendations for their preservation.
- evaluation of the affect of the proposed path on the privacy and security of adjoining landowners, together with recommendations on minimising any disturbance.
- identification of land to be acquired, or access arrangements to be negotiated with all relevant parties, together with the associated costs.
- preparation of budget estimates for the construction and maintenance works.
- appraisal of the economic benefits which would result from the proposed path.
- recommendation on the most appropriate sequence for the implementation of the proposed path.

The study also includes the preparation of design guidelines for the route and advice regarding aspects such as surfacing, signing, fencing and any structures and a Cycle Audit (Stage 1) in accordance with the Institute of Highways and Transportation Guidelines.

1.4 Study Area

The Vale of Clwyd runs generally south from the North Wales coastline at Rhyl inland to Ruthin and beyond. The Vale is an attractive rural corridor with a strong farming tradition and has retained a great many of the original mature field boundaries providing a rich tapestry of fields. This has led to parts of the Vale of Clwyd being identified and scheduled as Areas of Outstanding Natural Beauty.

The A525 principal road runs along the foothills of the west side of the Vale linking the communities, towns and villages with the A55 trunk road, providing transport links to the main motorway infrastructure.

Until the early 1960s the Vale was served by a railway line which ran between Rhyl and Corwen. The route (which is shown on the plan in **Appendix A**) was closed in 1962 following which much of the track bed was sold to local landowners/farmers.

1.0 INTRODUCTION (continued)

1.5 Methodology

The following methodology has been used to undertake the feasibility study:

- desk study to identify alternative routes
- site survey to identify constraints etc (where possible permission was sought to enter private land. Where this was not available inspections were made from public roads, footpaths and other rights-of-way).
- consultations with interested organisations/individuals
- identification of “preferred” route
- habitat survey (restricted as Site Survey above)
- preparation of construction and maintenance costings and study report

2.0 GOVERNMENT POLICIES RELATING TO CYCLING

2.1 Lôn Clwyd - Policy Context

The development of the Lôn Clwyd cycle track should be seen within the wider context of increasing environmental awareness and the promotion of non-polluting modes of transport and sustainable economic development.

Such issues have become increasingly important in recent years at both a global and local level. “*Think globally, act locally*” has become a general principle that has been adopted at various levels of government throughout the world as a way of ensuring that economic development is not allowed to continue without due regard to the global environment.

This section of the report shows how the Lôn Clwyd project has grown from this process and how it is fully consistent with the aims of government at all levels.

2.2 Global and European Policy

In response to increasing concern with regard to global warming caused by ever increasing amounts of polluting gases being released into the atmosphere, world leaders, at the Rio Earth Summit in 1992, committed their governments to cutting the emission of so called “greenhouse gases”.

A major proportion of these gases are produced by fuel being burnt to provide energy for transport. A framework for future action on sustainable development throughout the globe was set out in Agenda 21, a comprehensive action plan for the 21st Century aimed largely at encouraging environmentally sustainable economic activity at a local level.

The European Union’s 1992 Maastricht Treaty contained a similar commitment such that: “*Sustainable and non-inflationary growth respecting the environment should be one of the European Community’s principal objectives.*”

2.0 GOVERNMENT POLICIES RELATING TO CYCLING (continued)

2.3 Central Government Policy

The 1996 National Cycling Strategy aimed to encourage a shift from car-borne transportation to the bicycle. It aimed to double the number of cycle trips by 2002 and then to double it again by the end of 2012. The Strategy also recognised that leisure cycling is a high quality way of enjoying the countryside, it can be a stimulus to tourism and has a great potential for growth. Among the objectives of the Strategy are:

- to achieve convenient cycle access to key destinations
- to improve cycle safety, raise the status and awareness of cycling amongst potential cyclists and other road users
- encourage and enable cycling among school children
- to make the best use of existing infrastructure and resources and to integrate cycling and other transport and development programmes

The Strategy also identified a number of mechanisms for implementing the objectives at a local level. These included suggested policies to be adopted by local government, such as:

- SP1 High quality cycle route networks will be developed, and existing ones enhanced.*
SP9 Disused railway lines will be protected as transport corridors where possible.

The 1996, Planning Guidance for Wales published by the Welsh Office, highlighted a Wales wide interpretation of the general direction of environmental policies. This included a statement that:

“The Government’s aims are to promote the efficient and safe movement of people and goods and to protect the environment by:-

- *reducing growth in the length and number of motorised journeys*
- *encouraging alternative means of travel which have less environmental impact*
- *reducing reliance on the motor car*
- *seeking to ensure the most effective use of the transport network and targeting resources to best effect.”*

These objectives were further clarified within the Road Traffic Reduction Act 1997 which directed local authorities to specify targets for a reduction in the levels of local road traffic.

This was followed by the Transport White Paper of 1998 A New Deal for Transport : Better for Everyone which set out the Government’s policies intended to create an integrated transport system less dependent upon the private motor car.

In Wales this policy direction was reflected in the Welsh Office Policy Document “Transporting Wales into the Future” (1998).

2.0 GOVERNMENT POLICIES RELATING TO CYCLING (continued)

2.4 Local Government Policy

The Denbighshire Unitary Development Plan (UDP) is currently on public deposit awaiting adoption, which is likely to follow a Public Inquiry in May 2000. The proposed policies within it that relate to Lôn Clwyd are set out in **Appendix B**.

In the meantime, however, the local authority is reliant upon the policies adopted by its predecessor authorities to guide the planning of developments in the county. The local planning documents that remain relevant are listed below and discussed in detail in **Appendix B**.

- The Clwyd Structure Plan (CSP) - First Alteration (Operative February 1991)
- The Clwyd Structure Plan (CSP) - Second Alteration (Draft for consultation March 1994)
- Rhuddlan Borough Local Plan (Adopted September 1993)
- Glyndwr District Local Plan (Adopted February 1994)
- Recreation in the Countryside - A Strategy for Clwyd (1990)
- Caring for our Countryside - A Countryside Strategy for Denbighshire (Adopted 1998)

2.5 Countryside Council for Wales (CCW)

CCW is the government's statutory advisor on countryside matters and, in 1996, they published two documents entitled "Access to the Welsh Countryside" and "Transport and Rural Wales" which give details of its policies in relation to walking and cycling. CCW is committed to encouraging people in Wales to make fewer journeys by car, and to walk or use a bicycle for shorter journeys. They have also stated that they will :-

"Encourage its partners to promote recreational cycling in the countryside, in place of the car. In particular, it will seek to ensure an integrated approach that:

- *links the development of traffic-free cycle ways*
- *develops appropriate countryside interpretation facilities.....including provision for visiting nature reserves by bike"*

2.6 Wales Tourist Board (WTB)

In 1994 the WTB published its "Tourism 2000 Strategy" which aimed to promote sustainable growth in tourism. Following on from this the board developed a "Cycling Wales" campaign aimed at substantially increasing the benefits from cycle tourism to the Welsh economy.

It was also instrumental in the completion of the Lôn Las Cymru, the Wales National Cycle Trail project and in "Freewheeling" cycling holidays campaign.

2.0 GOVERNMENT POLICIES RELATING TO CYCLING (continued)

2.7 Welsh Development Agency (WDA)

The WDA strongly supports sustainable economic development and in particular the development of cycling and walking routes as a means of encouraging green tourism in rural parts of Wales.

Projects for paths along disused railways have attracted support from the Agency's Derelict Land Reclamation and Environmental Improvement Programmes. The Agency is also committed to the development of new routes which enable workers to cycle to its own sites.

3.0 ALTERNATIVE ROUTES CONSIDERED

3.1 General

The study brief requires the route of the proposed path to follow (where possible) the track bed of the former Vale of Clwyd Railway.

In order to identify the most viable route a number of alternatives have also been considered including private land; the existing road network; public footpaths and bridleways; and the flood defence banks on either side of Afon Clwyd and Afon Elwy.

The Former Rhyl to Corwen Railway/Private Land

Although this facility closed in 1962 and much of the land is now in private ownership the track bed still exists over a significant proportion of the route between Rhyl and Ruthin.

The former railway line offers an attractive route through the countryside providing gentle gradients, a quiet environment and excellent and varied views which will be appreciated by all users.

However, there are some sections where it will not be possible to use the track bed. These include areas where the former railway has been incorporated into private gardens or housing developments or where the track bed has been removed to increase field sizes.

In some locations the track bed is now used as access to properties or for the storage of agricultural material and/or the feeding of stock during winter months. Use of the former railway line for the proposed path in these instances will require careful consideration during the design development stage. In some cases it may be possible to agree localised diversions across private land to avoid these "problem" areas.

3.0 ALTERNATIVE ROUTES CONSIDERED (continued)

3.1 General (continued)

Road Network

Whilst cyclists are allowed on and currently use the public road network, one alternative considered by this study involves the construction of a dedicated cycle track/path within the verge of the A525 between Rhuddlan and Ruthin.

In some locations, this provides a technically viable alternative, however there are places where the existing verges are too narrow and land acquisition or road improvements would be required. This option would provide a utility route which would be less attractive to tourist and leisure users and should therefore only be considered if no other viable route exists.

There is also a network of minor roads throughout the Vale of Clwyd (some of which are already signed for cyclists) which have been considered as part of this study.

In general terms these minor roads are too narrow to allow the creation of a dedicated cycle track/path and have high banks or hedges which reduce forward visibility for motorised vehicles. The use of this network is therefore considered less desirable than off road alternatives.

Public Footpaths and Bridleways

Details of the public footpaths and bridleways within the Study Area have been abstracted from the definitive maps (held by the County Council) and are shown on the drawings in **Appendix F**.

Shared use of these paths/bridleways by cyclists is considered a viable alternative provided there is sufficient width to allow segregation of the different types of user (if required). However in most cases (except between Rhyl and Rhuddlan) these paths do not provide a direct link between communities.

Flood Defence Banks

The existing flood defence banks on either side of the Afon Clwyd and Afon Elwy are maintained on a regular basis by the Environment Agency. In a number of locations (principally between Rhyl and Rhuddlan and approaching St Asaph) these flood banks have been designated as public footpaths.

The primary function of the flood banks is to protect low lying land (and housing/businesses) during periods of exceptionally high tides combined with heavy rainfall over the upland catchments. Any use of the flood banks to create cycle tracks must not reduce the level of protection provided and should therefore only be considered following the approval of the Environment Agency.

3.0 ALTERNATIVE ROUTES CONSIDERED (continued)

3.1 General (continued)

Flood Defence Banks (continued)

Whilst there are areas where the top of the floodbank can be widened (by acquiring additional land on the side furthest from the river) there are other lengths where such work is physically impossible. In such cases any cycle track provision would be less than the recommended standards.

Specific Routes Considered as Part of the Study

For ease of reference the route between Rhyl and Ruthin has been divided into four sections between centres of population (*ie* Rhyl, Rhuddlan, St Asaph, Denbigh and Ruthin).

The specific routes considered for the creation of the proposed path are discussed in detail below.

3.2 Rhyl to Rhuddlan (to be read in conjunction with Drawing 01 in Appendix F)

Route	Advantages	Disadvantages
Former Rhyl to Corwen Railway	<ul style="list-style-type: none"> • track bed exists over most of the length • provides safe, off road route • direct link between communities • provides easy gradients, quiet environment and excellent views 	<ul style="list-style-type: none"> • generally in private ownership • bridges over main watercourses removed • section of track bed removed to increase field size. • section of track bed used for industrial/agricultural development
Existing flood defence bank on the west of the Afon Clwyd	<ul style="list-style-type: none"> • existing public footpath • maintained by Environment Agency (including crossings of main watercourses) • provides safe, off road route • direct link between communities • provides easy gradients, quiet environment and excellent views • use supported by landowners 	<ul style="list-style-type: none"> • exposed location • difficult to exclude stock from grazing the footpath
Existing flood defence bank on the east of the Afon Clwyd	<ul style="list-style-type: none"> • existing public footpath • maintained by Environment Agency (including crossings of main watercourses) • provides safe, off road route • direct link between communities • provides easy gradients, quiet environment and excellent views • use supported by landowners 	<ul style="list-style-type: none"> • exposed location • difficult to exclude stock from grazing the footpath

3.0 ALTERNATIVE ROUTES CONSIDERED (continued)

3.3 Rhuddlan to St Asaph (to be read in conjunction with Drawing 02 in Appendix F)

Route	Advantages	Disadvantages
Former Rhyl to Corwen Railway	<ul style="list-style-type: none"> • track bed exists over most of the length • section adjacent to the Afon Clwyd used as a flood defence bank and maintained by Environment Agency • provides safe, off road route • direct link between communities • provides easy gradients, quiet environment and excellent views 	<ul style="list-style-type: none"> • generally in private ownership • bridge over Afon Elwy removed • section of track bed incorporated into private garden(s) • track bed removed by construction of A55 trunk road
Existing flood defence bank on the west of the Afon Clwyd	<ul style="list-style-type: none"> • maintained by Environment Agency • provides safe, off road route • provides easy gradients, quiet environment and excellent views (particularly of Rhuddlan Castle) 	<ul style="list-style-type: none"> • exposed location • difficult access from former A525 (<i>ie</i> by bridge over Afon Clwyd)
Existing flood defence bank on the west of the Afon Elwy	<ul style="list-style-type: none"> • existing public footpath (over majority of length) • maintained by Environment Agency • provides safe, off road route • direct link between communities • provides easy gradients, quiet environment and excellent views 	<ul style="list-style-type: none"> • short section(s) of narrow path particularly opposite sewage treatment works
Verge to the A525 (including section of former carriageway adjacent to the Morfa Lodge roundabout)	<ul style="list-style-type: none"> • land in public ownership • sufficient width exists to separate cycle track from vehicular carriageway • provides good utilitarian route 	<ul style="list-style-type: none"> • unattractive route to tourists and leisure users • busy junction at A55 roundabout
Minor road from Afon Elwy, over A55, to upper St Asaph	<ul style="list-style-type: none"> • majority of land in public ownership • provides quiet environment with good views 	<ul style="list-style-type: none"> • part of road in private ownership • narrow road with high banks and hedges which restricts visibility for motorists • short section of steep gradient

3.0 ALTERNATIVE ROUTES CONSIDERED (continued)

3.4 St Asaph to Denbigh (to be read in conjunction with Drawings 03, 04 & 05 in Appendix F)

Route	Advantages	Disadvantages
Former Rhyl to Corwen Railway	<ul style="list-style-type: none"> • track bed exists over most of the length • provides safe, off road route • direct link between communities • provides easy gradients, quiet environment and excellent views 	<ul style="list-style-type: none"> • generally in private ownership • section(s) of track bed incorporated into private garden(s) and residential developments (particularly at Trefnant) • track bed no longer exists through parts of Denbigh
Verge to the A525	<ul style="list-style-type: none"> • land in public ownership • direct link between communities 	<ul style="list-style-type: none"> • unattractive route to tourists and leisure users • insufficient width (in places) to create dedicated cycle track without land acquisition and/or road improvements
Minor public road network	<ul style="list-style-type: none"> • land in public ownership • provides quiet environment with good views 	<ul style="list-style-type: none"> • narrow roads with high banks and hedges which restricts visibility for motorists • sections of steep gradients (particularly between St Asaph and Trefnant)
Public footpath and bridleway network	<ul style="list-style-type: none"> • existing public right-of-way • provides safe, off road route • provides quiet environment and excellent views 	<ul style="list-style-type: none"> • only exists over part of the route • does not provide a continuous link between communities • often narrow paths with insufficient width to segregate different types of users

3.0 ALTERNATIVE ROUTES CONSIDERED (continued)

3.5 Denbigh to Ruthin (to be read in conjunction with Drawings 05, 06 & 07 in Appendix F)

Route	Advantages	Disadvantages
Former Rhyl to Corwen Railway	<ul style="list-style-type: none"> • track bed exists over most of the length • provides safe, off road route • direct link between Denbigh and Ruthin • provides easy gradients, quiet environment and excellent views 	<ul style="list-style-type: none"> • generally in private ownership • sections of track bed removed to increase field size • sections of track beds used by farm vehicles (particularly during harvest)
Verge to the A525	<ul style="list-style-type: none"> • land in public ownership • direct link between communities 	<ul style="list-style-type: none"> • unattractive route to tourists and leisure users • insufficient width (in places) to create dedicated cycle track without land acquisition and/or road improvements
Minor public road network	<ul style="list-style-type: none"> • land in public ownership • provides quiet environment with good views 	<ul style="list-style-type: none"> • narrow roads with high banks and hedges which restricts visibility for motorists
Public footpath and bridleway network	<ul style="list-style-type: none"> • existing public right-of-way • provides safe, off road route • provides quiet environment and excellent views 	<ul style="list-style-type: none"> • only exists over part of the route • often narrow paths with insufficient width to segregate different types of users

4.0 FACTORS AFFECTING ROUTE SELECTION

There are a number of technical factors which need to be taken into account when deciding on the preferred route for the proposed path. These include suitability for route users (*ie* cyclists, walkers and (where possible) horse riders), links between communities and to other routes/points of interest, future development sites, archaeological/historical features and land ownership/usage issues. These factors are discussed in detail below.

4.1 Suitability for Route Users

The track is expected to be used by all types of cyclists (including commuters, local recreational riders, touring visitors, day visitors and family groups), walkers and (where possible) horse riders.

Whilst the requirements for cyclists and walkers are relatively straightforward, the safe dual use of the track by horse riders must be considered carefully.

The Guidelines and Practical Details that are published by Sustrans recommend '*... that where a bridleway runs immediately next to the cycle track/footpath the latter should be provided with a bituminous surface to discourage horses straying onto it and causing damage*'. The Guidelines further state '*... it is preferable to separate the bridleway and cycle track/footpath by several metres and if possible by planting*'.

There are difficulties in designing entrances to the proposed path for use by horses whilst preventing access for motor vehicles (particularly off road motor bikes). This problem can be overcome by careful design or in some cases by the use of locked gates with keys only available to horse riders. However, experience has shown that these arrangements are expensive and difficult to enforce, and usually also involve larger land take at entrances.

With the above points in mind it is considered that there will be some sections of the alternative routes considered where it will be expensive and/or difficult to provide facilities for horse riders. The existing flood defence banks on either side of the Afon Clwyd and Afon Elwy are especially awkward due to their narrow tops and steep banks.

Sections of the routes considered that *may* be suitable for horse riding are as follows:

- on the former railway track from St Asaph to the roundabout on the A525 at Denbigh Green.
- on the former railway track from Brookhouse, Denbigh to the centre of Rhewl.

4.0 FACTORS AFFECTING ROUTE SELECTION (continued)

4.2 Access/Links

One of the objectives of creating the proposed path is to link the towns and villages between Rhyl and Ruthin to provide a safe route for commuters (to work and school), leisure activities and tourism. It is therefore important that the proposed route passes as close to the centre of these communities as possible, or that (where appropriate) a separate link is provided so that route users can easily detour to use local facilities.

There are also opportunities to link the proposed route to places of interest not directly on the track by building connecting sections of cycle track or waymarking existing roads. Popular walks, such as the North Wales Path, Offa's Dyke can also be reached easily from the route and should therefore be publicised accordingly.

4.3 Points of interest

Along the route between Rhyl and Ruthin there are many places that are of interest to local people and tourists alike. Typical of these are cafes and pubs offering refreshment, shops, tourist attractions such as craft centres and castles, caravan/camp sites and bed and breakfast establishments. There are also commercial places of interest which are likely to benefit from increased visitor numbers. The points of interest that are considered to have an effect on the preferred route are shown on the plans in **Appendix F**.

4.4 Development Sites

The County Council's Unitary Development Plan (UDP) details a number of sites within the Vale of Clwyd which have been identified for development or which are to be protected because of their particular importance (*ie* Sites of Special Scientific Interest, Areas of Outstanding Natural Beauty etc).

The sites which are considered to have an affect upon the preferred route are shown on the drawings in **Appendix F** and, where appropriate, described individually in the route tables in **Appendices C and E**.

4.5 Archaeological/Historical Features

Discussions with the County Archaeologist have identified a number of sites of archaeological/historical interest close to the route of the former railway. These include listed buildings, scheduled ancient monuments, areas of outstanding historic interest and scheduled archaeological sites.

Whilst none of the sites affect the alternative routes considered, it should be remembered that the former railway is itself an industrial archaeological monument and its use as part of Lôn Clwyd will help to preserve the original corridor and many of the surviving features.

4.0 FACTORS AFFECTING ROUTE SELECTION (continued)

4.6 Land Ownership/Usage

The majority of the former railway line is in private ownership and any proposals to use this route to create an off road cycle track/path will require detailed negotiations to obtain public access.

However these negotiations cannot commence until such time as a technically feasible route has been identified; the public have had the opportunity to comment on the proposals (during a consultation exercise); and the County Council have decided whether they intend to proceed with the creation of Lôn Clwyd.

At that stage detailed discussions will be required with each affected landowner to agree the exact route of the path, the method to be adopted to achieve public access and the extent of the accommodation works required.

The preliminary appraisal of the former railway line, carried out as part of the feasibility study, has identified a number of areas where it will not be possible to use the track bed for the new path. It has therefore been necessary to formulate a policy on how to deal with each situation. The principles of this policy are set out below:

- the proposed path should not seek to use the former railway line where it has been incorporated into the gardens of individual properties or where the track bed has been used for development purposes (*ie* housing and/or industrial usage)
- where the proposed path passes immediately adjacent to residential or industrial buildings, boundary treatment should be provided to protect the privacy and the security of the affected properties
- where the track bed of the former railway line has been removed to increase the size of fields etc, the route of the path should detour around the boundary of the field (or along some other convenient route) to minimise the disruption to the agricultural activities.

5.0 CONSULTATION

5.1 General

As part of the feasibility study consultation has taken place with a number of public organisations with responsibility for, or interest in parts of the alternative routes considered. Discussions have also taken place with landowners on or adjacent to the preferred route who have contacted the community or county council (either individually or through organisations such as the Country Landowners Association, Farming Union of Wales and the National Farmers Union) to express concern about the proposed route of the path.

Details of these consultations/discussions are set out below:

5.2 Environment Agency

The Environment Agency is responsible for the maintenance of the flood defence banks on either side of the Afon Clwyd and Afon Elwy. The primary function of these banks is to protect the areas of low lying land during periods of exceptionally high tides combined with adverse weather conditions over the upland catchment.

The Agency have no objection in principle to the upgrading of the flood banks to create the proposed cycle track/path. It is important however that the proposed use of the flood defences should in no way reduce their effectiveness or compromise the Agency's responsibility for maintenance. It has therefore been suggested that any cycle track/path should be constructed and maintained by the Agency (on behalf of the County Council).

5.3 Welsh Development Agency (Land Division)

The Welsh Development Agency have a considerable land holding in the Towyn/Kinmel Bay area. Discussions have therefore been held with the Agency as part of the evaluation of alternative routes to establish the effect (if any) of their proposed development on the creation of Lôn Clwyd.

5.4 Conwy County Borough Council

The county boundary between Conwy and Denbighshire is delineated by the Afon Gele which flows into the Afon Clwyd between Rhyl and Rhuddlan. The alternative routes on the west of the Afon Clwyd (between Rhyl and Rhuddlan) therefore pass through Conwy before crossing the river into Rhyl.

Discussions have therefore been held with Officers of the County Council to confirm that the preferred route does not conflict with Conwy County Borough Council's policies and intentions.

5.0 CONSULTATION (continued)

5.5 North Wales Police

Preliminary discussions have been held with the Architectural Liaison Officer of North Wales Police who is responsible for advising on safety and security aspects of new developments.

From a traffic safety point of view the Police have expressed support for the off road routes (in preference to the use of the A525). They have also highlighted the need to consider the safety and security aspects of the proposed development as part of the detailed design stage.

5.6 Community Councils

At the request of Llanrhaeadr Community Council a short presentation was made to Councillors explaining the background to the feasibility study and outlining the requirements of the brief and the methodology that would be used to identify a preferred route.

Consultation has also taken place with a number of other Community Councils who have relayed concerns expressed by individuals with land interests on or adjacent to the preferred route regarding the creation of the proposed path.

5.7 Landowners/Farmers Organisations

The study brief does not include detailed consultation with landowners. However at the beginning of the feasibility study Denbighshire County Council placed advertisements in the local press advising that a commission for the study had been awarded and asking members of the public who owned land on or adjacent to the former railway line, or who had an interest in the proposed path to contact the Consultants.

Whilst these advertisements resulted in a number of responses, it was not until the site appraisal of the alternative routes that there was an appreciable interest in the proposals.

A number of landowners have contacted the Community and/or County Councils and/or the Consultants, either individually or through their agents; organisations such as the Country Landowners Association, the Farming Union of Wales or the National Union of Farmers.

As a result of these enquiries several meetings have been held to explain the purpose of the study and the methodology employed to establish a preferred route.

In a number of instances individual meetings/discussions have been held with those who have specific objections to the preferred route of the path to explain the proposals and, in a number of instances, to agree localised diversions to avoid potential problems.

5.0 CONSULTATION (continued)

5.7 Landowners/Farmers Organisations (continued)

Objections to the use of the former railway line expressed by those writing to the Community and County Councils have included the following:

- crossing land owned by correspondent
- bordering land occupied by correspondent
- livestock theft
- country code violations - gates left open, litter etc
- security - increased theft/vandalism
- security - undesirable characters
- danger at junctions etc
- danger to users from agricultural vehicles
- unlimited access
- presence of pedestrians and horses
- motorised vehicles using track
- damage to ecology/wildlife
- SSSIs disturbed
- waste of council money when already in debt
- increased policing costs
- already enough public rights of way/bridleways
- existing facilities under used
- loss of privacy
- trespass onto land
- maintenance costs
- disruption of reclaimed land
- control of weeds
- bypassing of villages
- lowering of property values
- car parking for those joining the cycle way
- unsuitable terrain of little interest
- encroachment onto playing fields
- danger from vehicles
- loss of employment
- regular flooding of land

5.8 Local Cycling/Equestrian Groups

As part of the feasibility study discussions have been held with representatives of the Cyclists Touring Club, Community Roots and the British Horse Society regarding use of the proposed path.

6.0 PREFERRED ROUTE

6.1 General

Following an assessment of the alternative routes available for the proposed path and consultation with interested organisations and individuals, a “preferred route” has been selected for more detailed consideration.

Wherever possible this route avoids the use of the public road network in favour of off road alternatives. Apart from fulfilling the objectives of the study brief, it is considered that this option will provide a more attractive environment for the path which will encourage its use and therefore provide the greatest benefit to the local economy.

The Preferred Route is shown on the drawings in **Appendix F** and described briefly below. A detailed description is contained in **Appendix C**.

6.2 Rhyl to Rhuddlan

Although the former railway line provides an excellent opportunity to create a cycle track from Rhyl to Kinnel Bay and Towyn, the removal of the bridges and sections of the track bed towards Rhuddlan make its use for Lôn Clwyd less feasible.

The two remaining alternatives (*ie* on the flood defence banks on either side of the Afon Clwyd) are both considered to be viable and offer the opportunity to create a circular route between Rhyl and Rhuddlan.

The preferred route which is shown on **Drawing 01 in Appendix F**, and described in detail in **Appendix C**, is therefore as follows:

- On the **eastern side of the river** the route follows an existing public footpath, from Marsh Road through the development site for a country park, around a former landfill site (now open grassland) and continues along the public footpath on the flood embankment to Rhuddlan.
- At Rhuddlan, the route runs along Tan-yr- Eglwys Road to join the former A525 and then across the Afon Clwyd via the existing footbridge.
- The **western route** follows the former railway track along the development site boundary and across the Afon Clwyd using an existing bridge.
- After crossing the river the route follows a public footpath on the flood embankment to Rhuddlan. The route runs along Marsh Road to the former A525 where it joins the eastern route.

6.0 PREFERRED ROUTE (continued)

6.3 Rhuddlan to St Asaph

The verge of the A525 offers the opportunity to create a utility cycle track for commuters etc but would not be attractive to tourists and leisure users. This option is therefore not considered desirable for the creation of Lôn Clwyd.

The removal of the railway bridge over the Afon Elwy; the incorporation of part of the track bed into private gardens; and the removal of the track across the A55 makes the former railway line, on the east of the river, less feasible than other alternatives.

Whilst most of the minor road from the Afon Elwy to St Asaph is a public right-of-way, the last section adjacent to the river is private. This road is narrow with a steep hill and high banks/hedges to both boundaries. It therefore provides a less safe route than other alternatives. The footbridge crossing the river would also need reconstruction and this option has therefore been rejected on cost grounds.

The section of flood embankment to the Afon Clwyd opposite Rhuddlan Castle has been discounted because of the difficulties of access from the former A525.

The preferred route which is shown on **Drawing 02 in Appendix F**, and described in detail in **Appendix C**, is therefore as follows:

- From the former A525 at Rhuddlan the route follows the former railway line as far as the Afon Elwy where it joins the flood defence bank and continues, on the west bank of the river, to St Asaph. Part of this latter section is on a public footpath.
- In order to avoid the narrow A525 bridge at St Asaph it is proposed that Lôn Clwyd should cross the Afon Elwy via a new footbridge which the City Council wish to provide in the future.
- The route continues on the east side of the river on the flood defence bank/public footpath and crosses the A525 at the bottom of the High Street. In summer months, or when the river is not in flood, it may be possible to avoid the busy road crossing by passing under the arched road bridge.

6.0 PREFERRED ROUTE (continued)

6.4 St Asaph to Denbigh

The width of the A525 verge between St Asaph and Denbigh is generally insufficient to create a dedicated cycle track without land acquisition and/or road improvements. Whilst this option would create a utility route for commuters etc, it would be unattractive to tourists and leisure users.

The minor roads are too narrow to create a dedicated cycle track and the high banks/hedges reduce vehicle visibility. The use of this network as part of Lôn Clwyd has therefore been rejected.

Although the verges of the Denbigh bypass are sufficiently wide to allow the construction of a dedicated cycle track, this alternative has been discounted as it does not provide a direct link to the town centre. Whilst the alternative routes in this area are more complex (particularly between the Colomendy Industrial Estate and Vale Street) it is considered that they offer greater benefits to the local economy.

The preferred route, which is shown on **Drawing 03, 04 & 05 in Appendix F** and described in detail in **Appendix C**, is a combination of the other alternatives considered as follows:

- From St Asaph High Street the route follows a public footpath through a recreational area and open fields to cross the A525 Upper Denbigh Road, opposite Ysgol Glan Clwyd.
- The route continues around the boundary of the school's playing fields before following the former railway line, wherever possible, to Trefnant. Localised diversions have been necessary where the track bed has been incorporated into the gardens of individual properties; to pass through the Tweed Mill retail outlet; and to avoid the Clwydian Park and Pen Y Maes housing estates.
- There are no available off-road routes through Trefnant as most of the former railway line has been developed. The route therefore follows the existing public roads to the village centre where it runs around the boundary of the playing fields and adjacent woodland, before rejoining the former railway.
- From Trefnant the route continues along the former railway to the A525 Denbigh Green Roundabout. Localised diversions have also been necessary on this section to avoid gardens which have been extended over the track bed.
- After crossing the A525, the route passes through the Colomendy Industrial Estate and onto a public footpath by the side of Kwik Save's car park, before crossing the main road at the bottom of Vale Street.

6.0 PREFERRED ROUTE (continued)

6.5 Denbigh to Ruthin

The width of the A525 verge between Denbigh and Ruthin is generally insufficient to create a dedicated cycle track without land acquisition and/or road improvements. Whilst this option would create a utility route for commuters etc, it would be unattractive to tourists and leisure users.

The minor roads are too narrow to create a dedicated cycle track and the high banks/hedges reduce vehicle visibility. The use of this network as part of Lôn Clwyd has therefore been rejected.

The preferred route, which is shown on **Drawing 05, 06 & 07 in Appendix F** and described in detail in **Appendix C**, is therefore as follows:

- From the centre of Denbigh (*ie* the bottom of Vale Street) the route follows the former railway line, along the boundary of the High School's playing fields, past the rear gardens of a housing estate, and through agricultural land before crossing the A525 near Llwyn Banc.
- Between the main road and Rhewl the route continues to follow the former railway line which is clearly defined and used, over large sections, as farm access tracks. Localised diversions have been necessary around a field boundary (near the A525), where the track bed has been removed to merge two fields, and (approaching Rhewl) where a garden has been extended over the former railway.
- At Rhewl, where the former railway has been developed, the route follows a public footpath into the centre of the village and follows public roads before rejoining the route of the former railway line adjacent to the playing fields.
- From Rhewl, the route generally follows the former railway line, with localised diversions around field boundaries where the track bed has been removed, before crossing the Afon Clwyd (using the remains of a former railway bridge).
- The route finally passes through the Council's depot on the Maes Parcwr Industrial Estate to follow the estate road before terminating at the Ruthin craft centre.

7.0 ENVIRONMENTAL CONSIDERATIONS

Utilising the former railway line for the proposed path is likely to disturb some wildlife due to increased public numbers using the track, but other sections could benefit by the exclusion of farm stock and the re-establishment of boundary fences and hedges.

The preferred route has therefore been surveyed for conservation value and sites of wild life interest and the results recorded in **Appendix E**. The survey method used has been based on the Joint Nature Conservation Committee's '*Handbook for Phase 1 Habitat Survey*'. The habitats encountered are referred to by the letters and numbers used by the survey handbook and these are listed and explained in **Appendix D**.

The habitats recorded are mostly on the route itself particularly when the track follows the former railway line, however there are some sections where the line is not defined and in these areas reference has been made to habitats through which the route passes.

It must be emphasised however that a habitat survey to the full requirements of the handbook is beyond the scope of the feasibility study. Whilst the detail recorded is sufficient for this study, a more comprehensive survey would be needed as part of the next stage of development involving a detailed route assessment and an environmental impact statement.

Furthermore the early months of the year (when the survey was undertaken) are not suitable for the detailed study of plants and animals which simply are not in evidence at that time of the year. However the various habitat categories used by the handbook have been identified with some confidence along the route. This is due to the fact that the types of land use, such as intensive grazing and arable farming, give rise to easily recognisable habitat types even in the winter months.

A large proportion of the route passes through improved grassland, semi-improved grassland, cultivated ground and built-up areas, all of which have low habitat value for conservation purposes.

The role of the former railway as a wildlife corridor has been assessed, and in some places where boundary hedges and ditches survive this has considerable conservation significance. These sections are however separated by lengths of track now used intensively for farming and this fragmentation has reduced the value of the corridor effect. The re-establishment of boundary hedges and informal grass verges and the exclusion of stock in such sections would be a significant advantage to wild life conservation.

The corridor is most effective where it links other wildlife habitats such as woodlands, scrub and wet areas which would otherwise be isolated by pasture or cultivated land. Where the former railway line has been colonised by scrub and trees or is fenced and has a ditch or stream alongside it, it then offers the greatest opportunity for wildlife movement. In some sections the boundaries are the only part serving as a line allowing small animals to travel. These boundaries have been noted in the table in **Appendix E**.

8.0 ENGINEERING ISSUES

8.1 General

The construction of any cycle track should be based on good design principals, notably those set out in the following documents:

- Cycle Friendly Infrastructure: Guidelines for Planning and Design (IHT et al, 1996)
- Transport in the Urban Environment Chapter 23 (IHT, 1997)
- The National Cycle Network; Guidelines and Practical Details, Issue 2 (Sustrans and Ove Arup, 1997)
- The London Cycle Network Design Manual (London Cycle Network Steering Group, 1998)
- Sign Up for the Bike (CROW, 1993)

The specific engineering issues associated with the construction of Lôn Clwyd have been identified following an inspection of the preferred route (where access has been possible) and have been broadly categorised and described below.

The location of each element has been included in the “Detailed Description of the Preferred Route” in **Appendix C**.

8.2 Construction

It is important to ensure that the track is constructed to the highest possible standards to minimise the requirements for future maintenance. The type of construction used in each location depends on the site conditions and the intended route users. The principal options available are as follows:

Unbound Surfacing

An unbound surface is generally suitable for rural locations; where the formation drains well and where vehicle use is occasional.

The construction should comprise a granular sub-base, laid on a suitable foundation with a compacted granite dust surface. The use of a geotextile membrane can be advantageous in certain conditions, particularly where the ground is soft or where ground water levels fluctuate. The thickness of construction will depend on the strength the underlying soils and type of anticipated users, allowing for vehicular use in certain locations. All of these matters need to be considered as part of the detailed design stage.

Where segregated use by horse riders is permitted, a suitable width grass verge (constructed on a hardcore base) should be provided adjacent to the proposed path.

8.0 ENGINEERING ISSUES (continued)

8.2 Construction (continued)

Bound Surfacing

A bound surface will be required in urban areas where the route runs adjacent to a road, or in locations where unbound surfacing is inappropriate *ie* where the path is used regularly by vehicles; where equestrian segregation is not possible or on steep gradients where erosion is anticipated.

Generally a bituminous surfaced path or footway should be designed in accordance with the Highway Authority's specifications and constructed of granular material under bituminous surfacing, or a concrete slab.

The construction thicknesses will vary depending on the strength of the underlying soils and the type of users anticipated, and will need to be determined as part of the detailed design stage.

Existing Surfacing

Where the route follows an existing highway or footway, it will be necessary to assess the suitability of the existing surfacing and introduce additional road marking and signing to delineate the route and inform all road users of its existence and purpose.

8.3 Fencing

Fencing of the route for security of adjacent properties, containment of livestock and the safety of the anticipated users will be required in the appropriate locations throughout the route.

The responsibility for construction and maintenance of the proposed fencing will be subject to agreement with each affected landowner.

Security Fence

The type of security fencing required will be dependent upon the property it is intended to protect (*ie* housing, industrial etc) and will need to be agreed with the affected landowners during the detailed design stage.

The overall requirement should be to deter users of the route from entering into adjacent private property. This can be achieved in a number of ways other than by erecting security type fence. The use of deterrent planting screen (hawthorn, brambles etc) can prove equally effective.

8.0 ENGINEERING ISSUES (continued)

8.3 Fencing (continued)

Stock Proof Fencing

Fencing of the route in rural locations will be required to segregate livestock and route users.

Wherever possible the path should be continuous and avoid gates across the path at each field boundary. This matter should be agreed with affected landowners during the detailed design stage.

Safety Fencing

Fencing will be required to safeguard the route users where the path passes over structures (*ie* bridges etc) or where other potential hazards exist.

For cyclists a wooden post and rail fence 1.4m high is considered adequate. Where horse riders are permitted the fencing should be 1.8m high

The requirement for fencing at each location will need to be determined as part of the detailed design stage.

8.4 Lighting

Lighting of the route should be considered in urban areas to improve the safety and security of the route users and adjacent properties.

The locations where lighting may be required have been identified in the detailed description of Preferred Route in **Appendix C**, however these will need to be confirmed during the detailed design stage.

8.5 Structures

Wherever possible the proposed route utilises existing structures to cross watercourses and roads in order to reduce construction and future maintenance costs.

However where the route follows the former railway a number of bridges have been removed, although in some cases the abutments and (occasionally) the bridge beams still exist. These structures will require reconstruction to accommodate the proposed path.

All structures will need to be examined as part of the detailed design stage to determine the exact requirements.

8.0 ENGINEERING ISSUES (continued)

8.6 Crossings

Where the proposed path crosses existing roads and frequently used tracks, a “road priority” crossing will be required to prevent route users from crossing the road without first stopping. There are a number of ways that this can be achieved, some of which are shown in the **Photographs in Appendix G**. These crossing points also provide suitable locations for access for maintenance vehicles.

A “route priority” crossing will be required where the path crosses tracks and field accesses which are only used occasionally. In these locations gates are provided in the boundary on each side of the route which can be locked, if necessary, across the access point. When access across the path is required the gates can be reorientated to close the route, thereby preventing herded livestock straying down the route and segregating users from the vehicles or livestock.

The locations, type and variations on each crossing, dependent upon the category of user/road, will require careful consideration during the detailed design stage.

8.7 Safety Audit

A Stage 1 Safety Audit has been undertaken in accordance with the *Guidelines for Cycle Audit and Cycle Review* published by the Institution of Highways and Transportation and the results recorded in **Appendix H**. These Guidelines give instruction on conducting both cycle audits and cycle reviews which are defined as:

“Cycle Audit is a systematic process, applied to planned changes to the transport network, which is designed to ensure that opportunities to encourage cycling are considered comprehensively and cycling conditions are not inadvertently made worse.”

“Cycle Review is a systematic process, applied to existing transport networks, which is designed to identify their positive and negative attributes for cycling, and to assess ways in which those networks could be changed in order to encourage cycling.”

The audit guidelines relate to schemes or proposals to the road network. They do not give clear guidance for specific off road cycle routes, although they do recognise their importance within the transport network. The audit procedures are however relevant in evaluating the cycle facilities proposed for Lôn Clwyd.

This Feasibility Study has been undertaken prior to issuing a design brief to the Designer it is therefore considered a Stage 1 Cycle Audit is applicable.

The standard forms, CAP 1-2, have been used to undertake the audit. A form has been completed for each of the four sections of the preferred route and are enclosed in **Appendix H** together with a Management Control Record form CAP (MCR).

9.0 COSTINGS

9.1 Construction Costs

For the purposes of this report it has been assumed that the cycle track will be built to the best standards that funds will allow. This will not only ensure good use of the track but reduced maintenance costs in the future.

The capital cost of building the track may be grant supported, but of course these funds are only available once. A poorly constructed track will soon involve high maintenance and repair costs for which grants are unlikely to be available.

The costs given in the following table are indicative and do not allow for variations in landowners requirements for boundary treatments, new access arrangements and other details. This report cannot accurately assess these costs without detailed negotiations which is beyond the scope of this study.

The costs for the track take into account the following factors:-

- **Detailed Survey** - A comprehensive, field by field survey which would take account of landowners rights and requirements, condition of boundaries, access and crossing arrangements, existing rights of way, underground and overhead services, flood defence requirements and construction access and working areas.
- **Negotiation Fees** - Land agent acting on behalf of the Client producing detailed agreement with each landowner.
- **Agents Fees** - Incurred by landowners employing independent agents to agree detailed arrangements of agreements, licences and possibly, compensation.
- **Legal Costs** - Clients own legal expenses for drawing up documents of purchase, licences and permissive path arrangements, this work may be done in house but experience has shown it is best dealt with by the Land Agent at the same time as negotiations on agreements.
- **Legal Expenses** - Most landowners will employ their own solicitors to advise and process sales or agreements.

9.0 COSTINGS (continued)

9.1 Construction Costs (continued)

- **Planning Applications** - Clients expenses for change of use and new access arrangements on to public roads, this may be done in house but workloads and timing for grant money may mean employing outside help. The costs for each option are similar.
- **Design and Contract Drafting** - Drawing up a detailed design and specification for the construction of the cycle track section by section including all accommodation works and waymarking. This would take account of any sections where the track is to be shared with other users such as horse riders or landowners private vehicular access.
- **Contract Letting and Supervision** - Selection of suitable contractors, tender invitation process, tender report, and supervision of construction contracts including Health and Safety requirements.
- **Construction** - Contract costs for clearing line, fencing, excavation, drainage, surfacing, accommodation works and signs.
- **Items not Included** - Costs of public meetings and exhibitions.
Promotional leaflets or other publicity.
Land costs.
Maintenance (other than any arising from contractual obligation).
An environmental assessment.

The following table gives the costs of the above items for each of the four sections

Section 1	Rhyl to Rhuddlan
Section 2	Rhuddlan to St. Asaph
Section 3	St. Asaph to Denbigh
Section 4	Denbigh to Ruthin

9.0 COSTINGS (continued)

Description	Costs for construction of the route			
	Section 1	Section 2	Section 3	Section 4
Detailed Survey: Field by field survey to enable detailed planning of route. Based on 2 hours on site and 2 hours in office per kilometre. 4 hours @ £18 <i>ie</i> £72 per kilometre	8.0 km @ £72 £576	4.5 km @ £72 £324	10.5 km @ £72 £756	11.0 km @ £72 £792
Negotiation Fees: Agent to visit, write report, agree with client, draw up draft agreement and agree it with landowners agents. Allow 4 to 12 hours per owner. Average time 8 hours @ £37 <i>ie</i> £296 per property	7 properties @ £296 £2,072	10 properties @ £296 £2,960	30 properties @ £296 £8,880	32 properties @ £296 £9,472
Agents Fees: Landowners usually employ their own agents, who are familiar with these proceedings. Typical charges are £200 for straightforward sites and an estimated maximum of £600 for larger estates and farms. Average taken as £350 per property	7 properties @ £350 £2,450	10 properties @ £350 £3,500	30 properties @ £350 £10,500	32 properties @ £350 £11,200
Legal Costs: Clients agreements can be drawn up by the land agent following the negotiation process. As many of the agreements will be similar the costs should be modest. Estimated at £50 per agreement.	7 properties @ £50 £350	10 properties @ £50 £500	30 properties @ £50 £1,500	32 properties @ £50 £1,600
Legal Expenses: Landowners can employ any solicitor they choose and they have no incentive to moderate fees. It is reasonable therefore to offer a maximum sum of £165 'towards' legal expenses for each landowner.	7 properties @ £165 £1,155	10 properties @ £165 £1,650	30 properties @ £165 £4,950	32 properties @ £165 £5,280
Planning Applications: It is assumed that all development needing planning permission would be dealt with as one application. The client may wish to deal with this 'in house' but for grant calculation purposes a consultant would charge approximately £200 per site.	2 @ £200 £400	2 @ £200 £400	4 @ £200 £800	3 @ £200 £600
Design and Contract Preparation: Design, specify and quantify tasks for each property. Estimate costs, agree with client and landowner or agent. Most tasks will be repeated from property to property. Prepare working drawings, draft suitable contract and produce pre contract estimate. Fees based on 7.5 % of contract cost	£24,150	£13,500	£32,630	£32,700
Contract Letting and Supervision: Obtain and compare tenders. Prepare report for client, let and supervise contracts. Fees based on 10 % of estimated contract cost	£32,200	£18,000	£43,500	£43,600
Construction of Track by Contractors: Work will include fencing, drainage, surfacing, new access arrangements, alterations to footbridges and placing of signs. Three cost categories have been chosen based on preliminary survey work. They are; 1 <i>Straightforward</i> at £38,000 per kilometre (open ground, minimum drainage needed, no earth moving, no problems with structures). 2. <i>Moderate</i> at £56,000 per kilometre (some new ground formation, awkward accesses, drainage problems, some rebuilding or modification of bridge structures).	7.0km @ £38,000 plus 1.0km @ £56,000 (This assumes both sections are built) £322,000	4.0km @ £38,000 plus 0.5km @ £56,000 £180,000	8.5km @ £38,000 plus 2.0km @ £56,000 £435,000	10km @ £38,000 plus 1.0km @ £56,000 £436,000
Total indicative capital costs for each section say	£385,400	£220,800	£538,500	£541,200
Total capital cost for whole cycle track say	£1,700,000			

9.0 COSTINGS (continued)

9.2 Maintenance Costs

The estimated maintenance costs are based on the assumption that the cycle track will be constructed to the highest standards. A good track of crushed rock built to proper specifications should last 10 years before needing resurfacing, given the level of use expected on this route. (This assumption has proved accurate on similar tracks elsewhere.)

Those sections that are well used, particularly on slopes and access points, may need more frequent attention, and it would pay to surface these difficult areas with blacktop.

The figures given below do not allow for horse riding which would require much more frequent attention to the surfacing if separate arrangements cannot be made. The exclusion of motor bikes and all motor vehicles, except for maintenance, will be necessary both for public safety reasons and for maintaining a reasonable track surface.

The maintenance tasks involved are explained and priced below and the costs are then summarised in the table that follows.

Grass, scrub and tree maintenance.

The main annual maintenance task needed is to prevent encroachment of vegetation (such as grass, docks, brambles and gorse) growing in a strip about one metre wide along each side on some lengths of the track. It is recommended that this work be undertaken twice a year, in early June and late August, by an experienced contractor. This would ensure that the track is kept in acceptable condition all the year round.

Where possible this should be done by a tractor mounted flail for cost purposes, however some sections will need strimming back by motor manual methods. Costs of mechanical flailing are £17 per hour covering about six kilometres per hour for one side of the track giving an average cost of £5.67 per km. Allowance must be made for two visits a year and some manual work resulting in a figure of £12.50 per km per year. Costs of motor manual strimming are £17 per hour. At expected rate of cutting one side should take about one hour per km.

There are some sections of the route that are at present maintained by others, for example the flood defence banks. Until detailed negotiations have taken place it is not possible to say who would undertake this work when these sections are used as a cycle track.

Occasionally collection of litter and attention to way marking will be necessary but these are covered in the overall figures given in the table below.

9.0 COSTINGS (continued)

9.2 Maintenance Costs (continued)

Grass, scrub and tree maintenance (continued)

Trees and scrub would have to be attended to by trained qualified staff using appropriate machinery. This would include chainsaws, brush cutters and mechanical flails. Hedges should be allowed to develop into hedgerows where suitable, these need very little maintenance with one cutting back operation every five years being sufficient. One visit a year would be needed for more regular hedges, but in some sections, such as public roads, no extra work would be needed.

Where a tractor mounted flail or hedge trimmer can be used the cost of hedge cutting is very reasonable. One visit a year at between £15 to £25 per kilometre for the cutting where access is practical, plus manual labour to tidy up trimmings at £22 per kilometre gives an estimated cost of £45 per kilometre per year for sections where there are hedges.

All hedge and scrub cutting and any tree work should be restricted to the winter months preferably between late October and mid February to avoid disturbing nesting species and destroying wildlife food supplies.

There are some sections of track where limited room would restrict the use of machines to small hand operated flails and brush cutters. This labour intensive work would cost between £225 and £400 per kilometre per year.

Where sections of track pass through woods, and where there are isolated trees along the route, tree inspections will have to be arranged, and from time to time some treatment may be needed. A period of five years between treatments is appropriate provided that all potential problems are dealt with at the time the track is built. Storm damage may occasionally occur but if regular maintenance work has been undertaken the allowance made should cover this eventuality.

Every five or six years it would be necessary to inspect the entire length of the track to identify any major tree work needed. The number of trees to be maintained should be recorded after construction is finished and a detailed schedule should then be used for their routine inspection. The cost of the work would depend on many factors but ten days work are likely to be sufficient for the route. This would cost about £550 per day, so over a five year period the cost for the 10km of wooded sections is estimated at £110 per kilometre.

9.0 COSTINGS (continued)

9.2 Maintenance Costs (continued)

Upkeep and repair of track surface

The initial construction of the track should be to the highest standards with special attention to drainage and including the use of geotextiles where necessary. The track, if properly constructed with a good depth of well consolidated sub base and a finish of granite dust, would wear well. However some potholes may be expected to appear in sections where there is heavy use or poor drainage, and the surface may disappear on steep slopes, stock crossing points and at entrances.

This damage must be dealt with as soon as it is noticed or more expensive works will be needed. The work is expected to be undertaken by Council staff as it is usually small scale and occurs at various times and locations all along the track. It is best done by staff at the same time as routine inspections. A reasonable estimate is for three working days for a ten kilometre length per year. The material used is MOT type 1 sub base, and the machinery needed is a pickup truck and compaction plate, which should be available to the department doing the work. The cost is estimated at £200 per day. This gives a figure of £600 per annum for 10 kilometres or £60 per kilometre per annum for the granite surfaced sections.

After about ten years it would be prudent to resurface the granite surfaced sections of track by scraping the top 50 mm and replacing a layer of sub base and granite dust to build up the wearing surface. This scraping and resurfacing operation can only be done if the track is properly built in the first place. The time before this work becomes necessary will vary due to usage, stock damage and invasion by plants. To delay the work could mean a more extensive rebuilding operation becoming necessary. A well used track will become worn in the centre causing puddles and subsequently potholes, but an underused track will be invaded by grasses and weeds. The use of weedkillers has been presumed to be unacceptable, although correctly used they have been an effective and cheap way of keeping tracks free of weeds.

The cost of the operation is estimated at £6250 per kilometre every ten years giving a figure of £625 per kilometre per annum for the granite surfaced sections.

Those lengths using existing tarmacadam and concrete surfaces have not been included in the maintenance calculations as their upkeep is covered by present arrangements and their use by cyclists will not cause any further burden.

9.0 COSTINGS (continued)

9.2 Maintenance Costs (continued)

Repair and renewal of fencing.

Fences should be built to the best standards and can then be expected to last between 14 and 18 years. The replacement of an existing fence usually costs more than erecting a new one on open ground. This is due to the work involved in removing the old fence and any associated vegetation that has established at it's base.

In some cases it is possible to replace the wire as properly treated posts should last 20 to 25 years, however the savings are minimal due to the increased labour costs. The practice of overlaying new wire on top of the old is not recommended as it encourages rust, and if placed on the other side of the posts looks unsightly. Running a new fence close alongside the old one, leaving it standing, is not thought appropriate for a cycle track. For these reasons the price given for fence replacement, after say 16 years, is higher, at £3.80 per metre, than the cost of a straight forward new fence.

Assuming both sides need to be re-fenced a kilometre of track would cost £7600 every 16 years. This gives a figure of £475 per kilometre per annum for two sides and £238 for one side. Until the route has been accepted and negotiations with landowners are completed the exact length of fence will not be known. Therefore for the purpose of this report the length has been estimated based on the assumption that most landowners would require stock fencing.

Repair of damaged fencing would be needed from time to time. Falling trees, damage by vehicles and, unfortunately, vandalism may occur. The incidence of such damage is impossible to predict but experience in this area has shown that very little repairs are needed since landowners are present and have an interest in sound fences. A figure of £10 per kilometre per annum has been taken based on work needed on other tracks in similar areas.

9.0 COSTINGS (continued)

9.2 Maintenance Costs (continued)

Inspection and upkeep of bridges

On the preferred route there are structures crossing over and under public roads and there are several places where the route crosses rivers and streams. Those bridges originally built to carry the railway would have to be modified by the addition of surfacing. New or modified footbridges will also be required at some locations.

All bridges should be inspected at regular intervals and any defects found should be repaired as part of the county's bridge maintenance programme. Minor structures up to say 2m span should be subject to a general inspection every 5 years, larger structures every 2 years. Average general inspection costs would be approximately £30 per inspection.

Larger structures such as those spanning the Afon Clwyd would, in addition, be subjected to a principal inspection every 10 years. The cost of such a comprehensive inspection, which would include under-water examination, would cost in the region of £5000.

A reasonable estimate of the maintenance costs relating to bridges would be a figure of 0.5% of capital value per annum.

Replacement and repair of signs, crossing points and gates

These structures and fittings should be well built and therefore not require any regular maintenance.

The eventual replacement of gates and post and rail safety fencing associated with footbridges and access points, is difficult to determine but the presumption is that these will last for at least 20 years on average, some will last longer, others may need attention sooner. The long life of these items is especially dependent on good design, the use of first class materials and close supervision of building work in the initial construction phase.

Allowing for vandalism there is a chance that some signs would have to be replaced from time to time. Based on experience an allowance of one sign in twenty being replaced each year has been taken to calculate the costs.

Crossing points and gates should last between 25 and 30 years as should access points to the track. The figure for the replacement of these structures has therefore been based on this life expectancy but expenditure would probably not be needed during the first 12 to 15 years.

9.0 COSTINGS (continued)

9.2 Maintenance Costs (continued)

Summary: Maintenance tasks to be carried out and indicative costs

Item	Description & cost of work	Length or	Frequency	Annual cost
Flailing ground vegetation on verges	Mechanical flailing of grass strip beside track £12.50 per km	20km	Twice per year	£500
Strimming	Motor manual strimming of verges £34 per km	10km	Twice per year	£680
Hedge cutting	Machine flail some sections of hedge £45 per km	12km	Every year	£540
Tree surgery	Inspect trees on 10km of track and cut back larger overhanging branches at £550 per day	10 days	Every 5 years	£1,100
Repair small patches of track	Fill potholes and resurface worn sections at entrances. £60 per km	28km	Every year	£1,680
Track resurfacing	Scrape top layer of crushed rock track sections and renew £6,250 per km	28km	Every 10 years	£17,500
Fence renewal	Replace stock fencing at £3.80 per metre	45km	Every 16 years	£10,688
Fence repairs	Repair damaged fencing from year to year £10 per km	30km	Every year	£300
Renew post and rail fences and gates	Replace gates and associated post and rail fences at £450 each	40 N°	Every 25 years	£720
Bridge inspections	Structures < 2m span at £30 per inspection	20 N°	Every 5 years	£120
	Structures > 2m span at £30 per inspection	9 N°	Every 2 years	£135
	Afon Clwyd Bridge £5000 per inspection	1 N°	Every 10 years	£500
Bridge Maintenance Works				Say £500
Total cost per annum				say £35 000

10.0 ECONOMIC PREDICTIONS

10.1 Introduction

There are an increasing number of studies which suggest that cycle routes can stimulate local rural economies without bringing significant negative environmental impact. This section therefore discusses the economic benefits that may result if a segregated cycle route is developed between Rhyl and Ruthin.

Predictions have been based on the detailed analysis of other cycle routes elsewhere in the country and details of previous studies referred to in the text are given in **Section 10.9** below. Where possible cycle routes in the UK have been used to illustrate the benefits that may develop in the Vale of Clwyd. However the cycle tourism market in the USA and on the continent (particularly in Germany) is more developed than in this country and some examples from other countries have therefore been used to demonstrate specific issues.

10.2 Tourist Appeal

Lôn Clwyd will have substantial appeal to tourists and it is essential to consider how it might be designed to be attractive to both local communities, for recreational amenity, and the visitor. For example, the route could be developed to attract short breaks in the Vale of Clwyd based primarily on the main route between Rhyl and Ruthin, but also by extending to a network in the Ruthin area by creating circuits from the southern end to the surrounding countryside.

Such developments will bring localised spending in very rural locations, and therefore divert revenue to village businesses, many of which currently trade on the margin. An increase in revenue in such circumstances will firstly sustain existing jobs but in due time will generate additional employment.

In the future it may be appropriate to give detailed consideration to an extension of the track to Corwen as this would be very appealing to the short break market. It would provide an opportunity to stimulate a new tourism demand in a very attractive part of the county.

The main attraction for the cyclist will be the route itself, the relaxation, fresh air and prospect of fine views. However, previous studies of recreational cyclists in the Peak District found that recreational cyclists like to call into villages and towns (for refreshment) and to a lesser extent to visitor attractions. In this respect, the castles of Rhuddlan and Denbigh, the cathedral at St Asaph and the craft centre at Ruthin are ideal attractions for recreational cyclists.

10.0 ECONOMIC PREDICTIONS (continued)

10.3 Cycle Tourism: The Trends

There are a number of market indicators which favour cycle tourism in general. These are discussed below but an initial appraisal suggests that Lôn Clwyd will be very appealing to casual day cyclists and also has the potential to attract short break visitors if packaged accordingly.

There are three fundamental consumer trends underpinning the growth of activity based holidays, including cycling. The first is a sustained and increasing interest in healthy living. For example, in the most developed cycle tourism market, Germany, surveys indicate that healthy living is a key motivating factor (Datzer, 1998). In the UK the survey results of the Countryside Commission (1994) point to a similar trend and others suggest a similar picture. A major motivation for cycling is to keep fit and to relax.

The second trend relates to changing attitudes towards packaged holidays. There is less interest in heavily packaged “sun, sea and sand” type holidays throughout Europe, and a move towards lightly packaged or independent holidays (Brady, Shipman, Martin, 1993). This is beneficial for inland rural destinations such the southern half of Denbighshire, but more of a threat to the traditionally based seaside tourism of North Wales.

The third trend relates to consumer expectations both in terms of a quality environment, and the provision of tourism services. The current interest in accreditation schemes such as the Blue Flag beach categorisation, is a prime example. Thus, north European visitors are becoming increasingly conscious of the tourism environment and seek enjoyment of destinations which are not polluted or despoiled. The Vale of Clwyd, and particularly Ruthin, has such strong appeal, especially in relation to culture and history. It is ideally suited to attract overseas visitors.

It is also important to take account of two core market indicators which illustrate the potential of cycle tourism. The first is the *ownership* of bicycles, which provides a benchmark of potential use for all purposes. There are now approximately 200 million bicycles in use in the European Union (DGVII E-1, 1997) and the trend in increased cycle ownership is a sustained one. It is now recognised that people purchase a bicycle mainly for leisure purposes (Davies, et al, 1998).

The second key indicator relates to the *use* of cycles for recreational or tourism purposes. Evidence from North America and Europe points to a continued growth in recreational cycling. Fegan (1992), for example, reports that 55% of all cycling trips in the USA are for social or recreational purposes in contrast to 43% in the UK. In the USA there are now 750 recreational Rails to Trails schemes which re-use old railway track beds as multi user recreational areas and demand for the trails ranges from 5,000 trips to over 2 million trips per annum. It illustrates the very strong appeal of segregated rail trail concepts in an economy which is dominated by the car.

10.0 ECONOMIC PREDICTIONS (continued)

10.3 Cycle Tourism: The Trends (continued)

In the UK a similar pattern of demand has been witnessed. For example, the Bristol to Bath path, which is approximately 16 miles in length, generates between 1 and 1.5 million trips per annum. This is an all purpose trail with a large commuting base as well as leisure trips. The Taff Trail between Cardiff and Brecon, some 60 miles in length, generates nearly 200,000 trips per annum, most of which are recreational day trips.

A growth of recreational cycling has been experienced in the UK during the early 1990s. Adult participation (recorded as cycling during the previous month) grew from 8% in 1987 to 11% in 1996 at a time when other pursuits have remained static or are in decline (General Household Survey, 1996). So, while cycling for utility purposes has been static, there is real growth in cycling for recreation and tourism.

The nature and pattern of recreational cycling activity is less easy to determine. One approach has been to evaluate the level of interest in cycling as a recreational pursuit by analysing day visitor activity. The UK Day Visitors survey records that 4% cycle as the main activity on a same day visit. The UK Tourism Survey also records that 2% of holiday trips are by cycle, i.e. cycle touring holidays where cycling is the main form of transport as well as the main pastime of the holiday.

This is an underestimate of cycle tourism as the most important segment is not the specialist or dedicated touring cyclist, but the occasional, casual cyclist who perhaps cycles for one or two days while on holiday. This is important in the context of Lôn Clwyd as it will have great appeal for the visitor staying along the coastal strip between Abergele and Prestatyn.

A study of cycle tourism in the Irish Republic suggests that while 2% of all overseas visitors are dedicated cycle tourists, between 6-7% of visitors are occasional cyclists (Bord Fáilte, 1998). The appeal lies in combining cycling with other activities such as walking, fishing and sightseeing. A visitor to the area might spend a day on the beach, a day sightseeing and a day cycling, for example.

10.0 ECONOMIC PREDICTIONS (continued)

10.4 Market Segmentation

There are likely to be four market segments for Lôn Clwyd. There is real potential to develop the short break market if a suitable network is designed and to stimulate the cycle touring market by way of enhancing the appeal of the Vale of Clwyd. A linear route, such as Lôn Clwyd, will appeal especially to residents and same day visitors. The segments are as follows:

The Resident Market

There will be local demand for the proposed route mainly from nearby residents in the towns and villages between Rhyl and Ruthin. This is, however, not likely to exceed more than 200 recreational trips per day during the summer months and would be less in the winter months, although experience with the Camel Trail in Cornwall suggests that the trail enjoys moderately heavy demand during school holidays in winter. A broad estimate might be approximately 6,000 trips per annum.

Same Day Visitor

There is no firm data on the number of same day visitors to Denbighshire at present. However, data from elsewhere suggests that Lôn Clwyd would be very attractive to the day visitor market. This segment comprises the longer staying visitor from North Wales who decide to cycle for day trips when on holiday, as well as those who will travel principally from the North West and Wrexham areas for a day visit.

Previous studies in the Peak District and Forest of Dean indicate that the majority of day visitors will not travel more than 50 mile radius to the route, a similar pattern experienced by most visitor attractions.

It is important to take into account potential competitor locations, for example the development of a cycle route along the North Wirral coast, and the proposals being considered for a cycle route network in northern Snowdonia. It is also likely that demand will grow for the existing off-road mountain bike destinations such as Betws-y-Coed and Coed-y-Brenin.

The market will not remain static. It is therefore not a matter of an increasing number of disparate cycling destinations fighting for a share of the existing market. As North Wales gains a reputation as a casual recreational cycling destination it will attract a larger share of a growing market. Thus, it is likely that an improved cycle tourism offering in North Wales will increase the market size.

Within this context Denbighshire stands to gain an increasing share given that it has a number of core appeals which particularly attract cycle tourists, namely, an off road route (*ie* Lôn Clwyd), attractive scenery and plenty of places to visit or take refreshment within short distances. The main advantage over other destinations is the ease of access both by train at Rhyl and also by car from the A55 at St Asaph.

10.0 ECONOMIC PREDICTIONS (continued)

10.4 Market Segmentation (continued)

Same Day Visitor (continued)

Same day visitors tend to cycle between 4-6 hours at the most. While 70% will bring their own cycles, a significant minority, say 30% will hire cycles and this offers a good source of employment. It is difficult to assess with any degree of precision how many same day visits will be generated but, if a comparison is made to other similar destinations, it is probable that this will fall within the range of 80,000 trips per annum in the early years of development. This could rise to approximately 150,000 day visits per annum in the medium term.

Short Break Visitor

This segment would be small in volume but is the most appealing to Denbighshire in terms of maximising economic impact. Short break cycle tourists would be entirely new to Denbighshire and would, therefore, require a marketing campaign and product packaging by tourism suppliers to promote it. For example, this market finds day or two day circuits very appealing. This could be easily accommodated by designating a network of “quiet roads” and by building on the existing scenic routes in the Ruthin area. It is possible that an additional 1,000 short breaks could be generated per annum and many of these in Spring and Autumn.

Cycle Tourer

The level of use by cycle tourers would be minimal in the early years. They will probably continue along the coast or select their own routes. However, if Lôn Clwyd is extended to Corwen the potential to encourage cycle tourers becomes far more important. In the early years the proposed route might encourage an additional 500 trips per annum.

Utility Cycling

It is not possible at this stage to estimate the level of demand for utilitarian cycle trips with any degree of accuracy. It might be possible to provide an indicative guideline by analogy. One possible comparison is Marriotts Way which runs for approximately 20 miles through rural Norfolk into Norwich which generates approximately 70,000 cycle trips per annum. In a recent Sustrans survey undertaken in Norwich, it was found that 33,600 of these were journeys to work (48%), 700 school trips (1%), 16,100 other utility trips (23%), and 18,200 leisure/tourism trips (26%).

There is a potential to generate commuter trips between St Asaph, Rhuddlan and Rhyl and, taking the example above, this could have the potential to switch approximately 50,000 trips per annum. This estimate is indicative only and must therefore be treated with caution. However, the level of utility trips generated will depend on how the route network is designed in relation to access to employers, and in terms of green commuter plans and safe routes to schools projects. If these factors are built into the initial design there is a potential to attract a far greater number of cycle trips per annum, probably exceeding 100,000 trips per annum, hence saving costs in provision of additional car parking, congestion and pollution.

10.0 ECONOMIC PREDICTIONS (continued)

10.5 Potential Demand

In the discussion of market segmentation a number of estimates were presented with regard to the level of users that might be attracted to Lôn Clwyd for recreational purposes. It is assumed that the provision of a major cycle tourism facility in the Vale of Clwyd would increase visitor numbers over and above any current trend. This is based on an analysis of cycle tourism in the UK and Europe (Lumsdon, 1996)

It is necessary to explain how these estimates have been derived. The projected estimate of 80,000 day trips per annum is based on an evaluation of other linear cycle routes which have been developed at tourism destinations and where some data is available. One route is the Camel Trail in Cornwall, which after 10 years of development, generates over 250,000 day cycle trips per annum. The level of economic impact is considered to be significant in Padstow and Wadebridge.

A route, however, which offers a possible model of demand is the Manifold Track in the Staffordshire Moorlands in the southern section of the Peak National Park. This linear trail is situated in a holiday area, offering approximately 9 miles of off road cycling and has been promoted within the Cycle and See campaign launched five years ago by Staffordshire Moorlands. There are also several competing cycle trails throughout the Peak District which offer alternative day excursions. While there are no firm counts of demand surveys in recent years suggest that the Manifold Track attracts approximately 60-70,000 cycle trips per annum of which 90-95% are day visitors.

It is more difficult to estimate how many short breaks could be attributed to cycle tourism as there is little or no research available in this context. The Vale of Clwyd is very attractive to the ABC1 socio economic grouping, seeking countryside breaks where culture and activities are equally important. Thus, the route has the potential to attract such a market segment, especially if there is a degree of light packaging possibly associated with a cultural theme.

10.6 Economic Impact

It is perhaps instructive here to indicate the type of economic benefit cycle tourism can bring to a local tourism economy. For example, in Münsterland, Germany, the cycle tourism is now well developed, especially the flagship One Hundred Castles Route. Between 1980 and 1990, for example, the number of cycles available for hire increased from 431 to 4200. Steiner (1995) estimates that the entire 10,000 kilometre network in Münsterland attracts between 10-15 million cyclist trips, and over 1 million overnight stays per annum, about one third of the total overnight generated in the area. Münsterland is not a major holiday destination; it has always been a place for short breaks. This is not meant to be a strict comparison, but the example indicates that cycle tourism can bring considerable reward if developed to a sufficient level.

10.0 ECONOMIC PREDICTIONS (continued)

10.6 Economic Impact (continued)

The estimate of demand for each market segment is summarised below. They are attributable to cycle tourism and would be in addition to existing levels of tourism. While this study does not measure the retention of current business in the form of repeat visitation, it is also likely to be an outcome.

In summary it is expected that Lôn Clwyd would attract approximately 81,500 new cycle tourists with a consequent spend in the local economy of over £724,000 per annum. It might take 2-3 years to reach this level but growth patterns witnessed elsewhere indicate that this is achievable.

Summary Table: Predicted levels of Recreational Demand Lôn Clwyd:

Market Segment	Estimated demand	Average number of nights	Spend per day/night per person	Total Spend
Day Visitors (1)	80,000	Nil	£7.50	£600,000
Short Breaks (2)	1000	2 persons x2 nights	£27.60	£110,400
Tourers: Domestic (3)	400	1	£27.60	£11,040
Tourers: Overseas (3)	100	1	£35.00	£3,500
All Cycle Tourists	81,500	-	-	£724,940

Assumptions

The demand schedule assumes that existing low level of demand for cycling in the Vale is retained. A large proportion of these recreational trips will transfer to the new facilities. This would simply lead to a transfer of spend from one area to another and hence is not included here.

Day Visitor spend by residents is not always recorded by surveys. The work undertaken by Lumsdon and Smith in the Peak National Park suggests a very low spend by residents, mainly involving refreshments at cafes. This figure has been excluded in these calculations. Day visitor spend by visitors from elsewhere is calculated at £7.50(1).

The short break estimate assumes an average of 2 people travelling together which is typical of this segment and an average overnight spend of £27.60 per head, a figure calculated from data provided in *Tourism in North Wales, 1997*.(2)

Domestic and overseas tourers are shown separately because they tend to spend differential sums. The spend for the domestic market is the same as above, but the spend for the overseas market is £35, a figure provided in *Tourism in North Wales, 1997* (3).

10.0 ECONOMIC PREDICTIONS (continued)

10.7 Employment Potential

The major question is what *additional benefits* to the local economy would the introduction of Lôn Clwyd bring? In theory, an increase in visitor numbers in the area adjoining the route or through direct investment (such as someone building a new cycle centre or through construction of the route, for example) will directly generate additional income and employment.

In terms of the estimated additional number of 81,500 visitors the level of direct expenditure is £724,940 per annum. This excludes local recreational demand generated by residents which in terms of quality of life also has an economic value. A recent report published by the Rural Development Commission (RDC, 1997) suggests that in local rural economies approximately £25,000 of visitor spend leads to the creation of one additional job.

In the case of Lôn Clwyd this would mean the creation of 29 jobs. This excludes any potential multiplier effects in terms of indirect and induced jobs created. If a multiplier of 1.05 were adopted (as recommended by the RDC report) then a further 1 job would be generated giving a total of 30 jobs in total.

How might these jobs be created? Evidence from both the Camel and Manifold trails point to employment generation by cycle hire operators. For example, Bridge Bike Hire in Wadebridge, which competes with several other smaller hire companies, supports 26 full time employees in the summer months and a core staff of approximately 6 in Winter. On the Manifold Track, there are two cycle hire centres in Waterhouses and at least one café has been established by the track. The estimated number of full time employees in these businesses amounts to 6. The main impetus, however, is increased employment opportunities through existing businesses.

The C2C route illustrates the point about changing levels of business confidence. A study by Brown (1997) investigated the perceptions of managers and proprietors of 72 bed and breakfast and hotel providers, 5 camp site managers, 15 visitor attractions and 15 cycle shops offering visitor facilities on or near to the route. The respondents were asked to what extent their business had benefited from the introduction of the route. Their replies showed that camping facilities and cycle shops have benefited the most, as well as accommodation providers in the very rural, Pennine section of the route.

It seems unlikely therefore that the spend and employment creation by Lôn Clwyd will be evenly spread along the route. There is potential to create a cycle hire centre in Rhyl, preferably at the railway station, and possibly at St Asaph and Ruthin. Cafes and public houses near to the route will gain trade within the first summer and business confidence will rise. Accommodation providers are only likely to benefit if an independent short breaks package is developed.

10.0 ECONOMIC PREDICTIONS (continued)

10.8 Summary

There is, it seems, potential to generate a level of visitor demand to help sustain existing businesses and hence job retention.

The level of demand is forecast to rise to over 81,500 cycle trips per annum bringing a level of spend over £724,000 per annum into the local economy. In particular, cafes and public houses will gain. This size of project will also encourage new or extended cycle repair and hire businesses. Current visitor attractions near the proposed route are not likely to lose trade, but a gain in visitation will be marginal, *ie* from passing trade as a small percentage of cyclists will make visits, while others will stop for refreshment and to browse in the shops.

The result would be an increase in business confidence, increased profits for some businesses and the creation of approximately 30 new jobs in the tourism sector.

10.9 References

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11.0 IMPLEMENTATION

11.1 Implementation order

The predictions in Section 10 suggest that the creation of Lôn Clwyd will result in significant advantages to the local economy. Whilst there are benefits connected to individual sections they are significantly diluted and the full effects would not materialise until the entire route is established between Rhyl and Ruthin.

Provided there is the political will to establish the whole of Lôn Clwyd, the preferable method of implementation would be to construct the route as one rolling contract, beginning at one end and producing a useable track as each section is completed.

However in the current financial climate this may not be possible and the route will therefore need to be built in sections, as funding becomes available.

In this case the first section of Lôn Clwyd to be constructed should be a “flagship” to the wider route, which gives users and affected parties an appreciation of the benefits which could be obtained from the path as a whole.

Points to be considered when determining the implementation sequence include the following:

- sections should link centres of population and points of interest, such as schools, places of work, leisure centres, castles, caravan/camping sites etc; this generates a beneficial use of the route by the local communities.
- recreational users prefer circular routes, which start at locations offering suitable facilities (*eg* car park, WC, cafes, parks) rather than returning along the same route as the outward journey.
- sections should be constructed in sequence to provide an increasing economic benefit.
- the size of individual sections needs to take account of the complexity of construction, the land issues and be matched to the availability of funding.

The recommended implementation sequence, taking the above factors into account, is set out below:

- i) Rhyl to Rhuddlan - circular route on east and west side of the Afon Clwyd (flagship section)
- ii) Rhuddlan to St Asaph
- iii) St Asaph to Denbigh
- iv) Denbigh to Ruthin

11.0 IMPLEMENTATION (continued)

11.2 Options for Obtaining Public Access to Private Land

A large proportion of the proposed route for Lôn Clwyd is currently in private ownership and ways need to be sought to allow public access to the land in the future. Different ways of achieving this are examined below.

a) *Public ownership*

There are two options available for achieving public ownership of the private land.

i) Purchase by negotiation

Advantages:

- transfers management of the land to the local authority
- secures long term access for the public

Disadvantages:

- long negotiation periods
- cost of purchase

ii) Compulsory purchase

Advantages:

- transfers management of the land to the local authority
- secures long term access for the public

Disadvantages:

- long legal process
- confrontational
- cost of purchase

b) *Binding legal agreement*

This could take many forms including :-

- dedication Order (procedure under Section 25 of the Highways Act 1980) - voluntary agreement with the landowner to dedicate a right-of-way across the land.
- access Agreement - agreement with the landowner to allow for public access onto the land under agreed conditions.
- lease of the land by local authority.
- easement over the land - allowing the landowner to specify conditions.
- license - allows access for a specified period.

11.0 IMPLEMENTATION (continued)

11.2 Options for Obtaining Public Access to Private Land (continued)

b) *Binding legal agreement* (continued)

- Advantages:
- simpler negotiations as the land would remain in the same ownership.
 - full negotiation of conditions with the landowner can lead to better long term relationships.
 - lower costs.
- Disadvantages:
- difficult to secure the long term commitment from landowners needed to justify the expenditure on creating the route (Sustrans recommend that any agreement should remain in force for at least 21 years and preferably longer)
 - legal agreements usually involve a compensatory payment to the landowner, which may be a one-off payment or as an annual payment, which would involve a long term financial commitment.
 - licenses are unsatisfactory as they can be cancelled at short notice and require renewal, often annually.

c) *Right of Way Creation Order*

The local authority has the power to serve an order creating a new right of way across private land. There are three possibilities within this context:

i) Cycle Track Creation Order

The legislation associated with this option was designed primarily to create cycle tracks within urban highways and is therefore not necessarily appropriate to new off road cycle tracks in rural areas. Sustrans have attempted to use this mechanism in other parts of the country and have found it complex to use compared with other alternatives

ii) Bridleway Creation Order (Procedure under Section 26 Highways Act 1980)

There is a well established mechanism for creating new bridleways across private land, however the procedure can be prolonged and costly, usually involving a public inquiry.

Any route created by this procedure would also have to be open to horse riders which may in itself create problems on sections of track where use by horses may not be desirable for management reasons. Compensation to the landowner would also be payable if a bridleway was created by compulsory order.

11.0 IMPLEMENTATION (continued)

11.2 Options for Obtaining Public Access to Private Land (continued)

c) *Right of Way Creation Order* (continued)

- iii) Road Creation Order (Procedure under Section 24 Highways Act 1980) - Subsequent downgrading to bridleway or cycle track

Although this alternative is attractive in that it includes both compulsory purchase and highway creation powers, the procedure is likely to prove both controversial and costly and will involve a public inquiry

d) *Preferred options*

From a management viewpoint it is preferable to have a cycle track in public ownership. However, practically, some form of binding legal agreement between the landowner and the local authority is usually the easiest, cheapest and quickest to achieve.

The compulsory purchase of the route should always be the last resort as it can often prove to be both expensive and time consuming and may also damage the important relationship between the route managers and the adjoining landowners.

12.0 CONCLUSIONS

The creation of an off road path for cyclists and walkers between Rhyl and Ruthin is consistent with both Central and Local Government Policy and technically feasible, although only certain sections are likely to be suitable for horse riders.

The preferred route for Lôn Clwyd utilises the existing flood defence embankments between Rhyl and St Asaph and the former railway line between St Asaph and Ruthin, with localised diversions necessary to avoid private gardens and sections where the track bed has either been removed or incorporated into other developments.

It is important that the path is constructed to the highest possible standards in order to minimise future maintenance works. Estimates of the anticipated construction and maintenance costs included in this report are indicative and do not allow for variations in the requirements for the boundaries or access arrangements.

Economic predictions, based on detailed analysis of other cycle routes elsewhere in the country, suggest that the creation of a segregated cycle route would result in significant benefits to the local economy. In the case of Lôn Clwyd it is estimated that 81,500 tourists could bring in an additional spend of over £724,000, which in turn would create 30 new jobs. However the full effects will not materialise until the entire route is constructed between Rhyl and Ruthin.

Inevitably there are a number of landowners who will object to the proposed path crossing their property and it is therefore important, if the proposals are approved, that their views are taken into account and that detailed consultations take place with all affected landowners as part of the design development stage.

In view of the extensive public interest in the proposed cycle track it is recommended that, following consideration of the Feasibility Study by Denbighshire County Council, there should be a series of exhibitions throughout the Vale of Clwyd to explain the proposed route (and the various alternatives that have been considered) and gauge the level of public support for the construction of the path.

for RICHARD BROUN ASSOCIATES
August 1999

APPENDIX A:

Study Brief

CONSULTANTS BRIEF

LÔN CLWYD

1. Summary

This consultants brief is for **Stages 1 & 2** of a project which has been separated into three stages:

Stage 1. The Feasibility and Preliminary Design

The objective of this stage of the study is to investigate the feasibility of creating a cycle path/walkway and where possible a bridleway, to serve the Vale of Clwyd, linking the coastal National Cycle Network Route in Rhyl, with the towns of Rhuddlan, St Asaph, Denbigh, and Ruthin, and other neighbouring smaller communities. Intended users are walkers, cyclists, and possibly horse riders, but all classes of motorised vehicles are to be excluded. The route is wherever possible to follow the track bed of the former Vale of Clwyd Railway Line, on sections where this is not possible alternative routes preferably off the highway network will be sort. A feasibility study report suitable for consultation work and to source future funding will be required to be produced at the end of this stage.

Stage 2. Consultation of the Feasibility Study

The objective of this stage is the preparation of materials and questionnaires for public consultation exercise. Following which the information gathered is to be processed and analysed to form a report, which along with the feasibility study report will provide the basis for the detailed design work in Stage 3.

Stage 3. Detailed Design and Preparation of Contract Documents

Using the materials produced from Stages 1 & 2, the consultant will be required to prepare the detailed design and preparation of contract documents for construction of the project. This stage is subject to a separate tender.

2.0 Background

The County Council wishes to provide a cycle friendly infrastructure throughout the county, which wherever possible will make use of off road routes such as disused railway lines, as these offer a safer and more pleasant cycling environment.

This study is to assess the feasibility of the former Vale of Clwyd Railway Line as indicated on the attached plan. The route is approximately 17 miles long linking the holiday resort of Rhyl with several historic towns, and villages along the Vale of Clwyd (See attached map).

When the rail line closed in 1968 the track was removed together with some bridges, however the track bed for the most part remains intact. The former route of the line is

now mainly in private ownership, however the County Council has retained ownership of sections of the line, mainly at the locations of road crossings.

3.0 Study Requirements

The principal aims of Stage 1 & 2. of the study is to determine whether the creation of a cycle path is feasible, as far as possible following the route of the old railway line along the Vale of Clwyd, and to seek the views of all interested parties on the proposals.

Stage 1.

This part of the study is to include:

- The identification of the most suitable and economic route, taking into account such factors as land ownership, future developments, road crossings etc. The route must be easily accessible, with good links to the existing highway network. Along some sections alternative route options may be put forward which will be progressed at the public consultation stage.
- The suitability of the route for different users, i.e. cyclists, horse riders, and walkers, including consideration of the needs of the disabled. the Consultant is to also advise on the most appropriate solutions to minimise any potential conflict.
- The most appropriate order for implementing sections of the route.
- The identification of any land to be acquired, or access arrangements to be negotiated with all relevant parties, together with the associated costs.
- The consideration ecological issues, and any requirements to conserve or enhance the ecological value of the route, and its role as a wildlife corridor.
- The identification economic benefits arising from the proposed routes.
- The conservation of any important archaeological or historic features of interest along the route.
- How the proposed route will effect the privacy and security of adjoining landowners, and how any disturbance to them can be minimised.
- A safety audit is to be carried out on all sections of the route using the current IHT Guidelines
- Financial estimates for all options considered in the study should be produced, these should include the likely annual maintenance, and management costs.
- Preliminary designs should be produced for the route, and were applicable all design parameters should conform with the latest issue of the "National Cycle Network, Guidelines and Practical Details", or be agreed with the County Council. Special

advise regarding such aspects as surfacing, signing, fencing and any structures required, ensuring that the scheme is attractive and well integrated into its surroundings.

Stage 2.

This part of the study is to include:

- The production of all materials suitable for public consultation along with the necessary analysis of all information collected to produce a consultation report.

4.0 Administration

The client is the Head of Highways and transportation, and the client contact is Mr Ian Bradfield, (01824 706960).

Base drawings of the study area (on paper/and/or Autocad file) can be supplied by the client, as will any other background material in the Council's possession.

It is anticipated that the consultant will attend a preliminary meeting prior to tendering to discuss in greater detail the scope of the report. There will also be interim meetings as required will be arranged to discuss the draft options and final presentations of each stage.

For Stage 1, the consultant will be expected to submit a draft final report, of which 4 copies will be required. The final report and summary should be submitted no later than **19 March 1999**, of which **40** copies will be required. The same number of reports will be required for Stage 2, at a date to be determined following Stage 1.

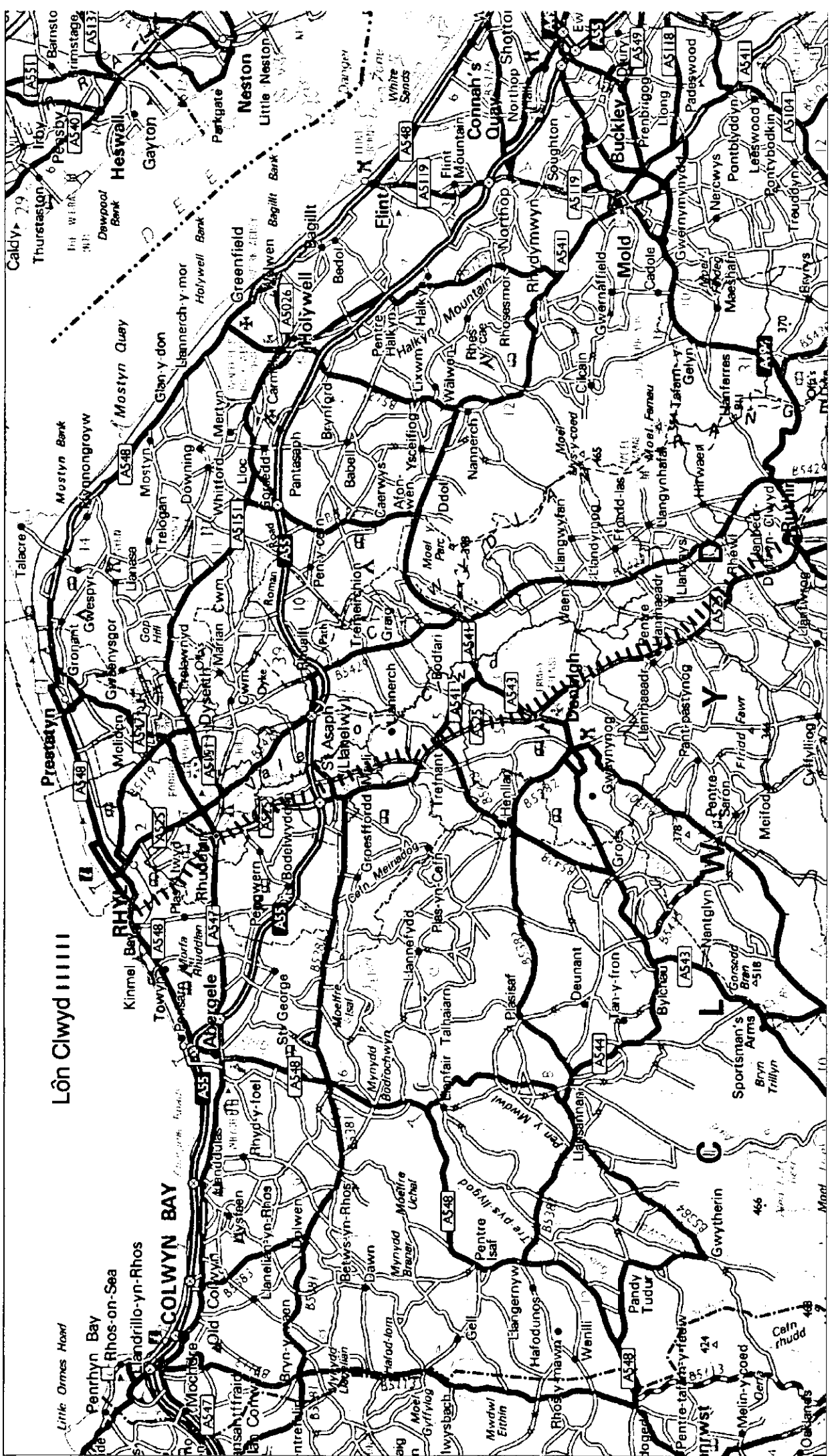
5.0 Fee Proposals

The consultant is invited to submit a fixed fee proposal for the above work described in this brief, together with a concise method statement and proposed time scale for the study. There are limited funds available for this project and the criterion for judgement will be as that of "*Best Value*" for a fixed fee, the details for which will be given at the initial briefing meeting.

The consultant should also provide details of the staff that will be assigned to the project, along with any relevant previous experience. Finally the consultant is invited to comment on any area of the brief that could improve the quality of the completed study.

Proposals should be submitted to:

Mr Philip Brelsford, BSc, MEng, CEng, MICE, MIHT
Head of Highways and Transportation
Denbighshire County Council
Caledfryn
Smithfield Road, Denbigh LL16 3RJ
(Using the tender envelope provided.)



Lôn Clwyd IIIIIII

Little Ormes Head

COLWYN BAY

RHYL

Prestatyn

Penryn Bay

Rhos-on-Sea

Colwyn Bay

Mysfaen

Llanellwlad-y-n-Rhos

Llanfair Talhaiarn

Pentre Isaf

Gell

Llangernyw

Hafodunos

Rhos y Mawr

Wenili

Pandy Tudur

Gwytherin

Cain Rhudd

Kinmel Bay

Rhosogreif

St George

St Asaph

Llanellwlad-y-n-Rhos

Treanant

Llanllan

Plas Hafod

Deunant

Jany-ffron

Bylchau

Nantglyn

Gronant

Gwynnysgor

Melin

Whitford

Pentre Isaf

Llanelli

Godfari

Llanelli

Llanelli

Llanelli

Llanelli

Llanelli

Llanelli

Llanelli

Llanelli

Mostyn Quay

Mostyn

Whitford

Pantassaph

Baynigro

Bedol

Molywell

Mountain

Rhydymwyn

Mold

Gwynnysgor

Merwys

Pontblydyrn

Leeswood

Pen-y-bont

Heswall

Gayton

Greenfield

Molywell

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APPENDIX B:
Policies Relating to Cycling

The Denbighshire Unitary Development Plan(UDP) (Deposit Version 1999)

The deposit version of the UDP further develops Denbighshire County Council policy in relation to cycle routes. Policy TRA 12 states that:

“In developing a county wide network of cycling/walking routes throughout the county, the Council will:

- i. safeguard land comprising or adjoining the existing Prestatyn - Dyserth railway route.*
- ii. promote the re-use of other former railway routes as and when opportunities and resources allow.”*

There are further, more general policies within the plan aimed at both promoting walking and cycling and also at protecting the line of existing or potential railway routes. These include:

POLICY REC 8 *“Development which would harm existing and proposed recreational routes.... will only be permitted where :-*

- i. a satisfactory access corridor along the original route is retained;*
- ii. a suitable direct alternative corridor is provided”*

POLICY TRA 2 *“The following proposals will be permitted provided they are consistent with other plan policies:*

- i. measures to reduce pedestrian / vehicle / cycle conflict*
- ii. provision for cyclists in terms of priority routes and parking facilities*

POLICY TRA 11 *“In respect of public rights of way the Council will:*

- i. retain and where possible extend and enhance the existing public rights of way and other legitimate access rights;*
- ii.*
- iii. resist development which would prevent future opportunities for the extension of public footpaths, cycle ways and bridleways.*

Until such time as the UDP is adopted the local authority is reliant upon the policies adopted by its predecessor authorities. The planning documents which are relevant to Lôn Clwyd are detailed below:-

The Clwyd Structure Plan (CSP) - First Alteration (Operative February 1991)

Within the plan Clwyd County Council (CCC) recognised the importance of recreation facilities in rural areas both in terms of the economy and as having a valuable social role. Policy C2 of the plan states that:

“The provision of appropriate Tourism/Recreation facilities in the countryside will be permitted.....subject to Structure Plan Policies which protect the environment.”

Lôn Clwyd clearly falls within the scope of this policy in that it is aimed at both local people and visitors alike and that it is a development which is likely to have minimal adverse impacts upon the environment but which would have positive effects through encouraging a reduction in car use.

The CSP also outlined the authority’s commitment to seeking a network of Public Rights of Way that meets the modern recreation requirements. To this end Policy C7 states that:

“Public Rights of Way will be developed as a recreation resource by:-

- a*
- b*
- c* *Identifying and developing a system of recreation paths encompassing existing resources, utilising public transport links and taking into account the needs of car users.*

The policy goes on to state that:

- iii. The need to preserve/develop and incorporate sections of disused railway lines will be taken into account, where appropriate, under this policy, and utilisation as rights of way will be investigated.*

The linear nature of Lôn Clwyd, and the fact that it links the major settlements within the Vale offers opportunities for integration with other modes of transport. It also serves to integrate a disused railway line within the wider network of Public Rights of Way and as such would be a direct realisation of this policy.

The Clwyd Structure Plan (CSP) - Second Alteration (Draft for consultation March 1994)

Whilst this second alteration of the CSP was not formally adopted by CCC (because of local government reorganisation) or subsequently by Denbighshire County Council (because they decided to proceed with the UDP) it remains in use as planning guidance for the area (although without the full authority of a Statutory Local Plan).

This document showed that CCC were seeking to adopt a clearer commitment to environmentally friendly modes of transport. This included policies such as GEN 3 which seeks to “...*minimise travel demand and environmental impact...*” relating to new developments by “*Ensuring that the layout...is designed for...safe use by cyclists and pedestrians*”. With particular reference to cycling Policy TLR 12 states that:

“Public rights of way will be developed as a recreation leisure and tourism resource for walkers, horse riders and cyclists”

A further sign of the increasing commitment to cycling can be seen from Policy TRANS 3 which states that:

“There will be a presumption in favour of development proposals which allow:-

- a Measures to reduce pedestrian / vehicle conflict*
- b Provision for cyclists*

Lôn Clwyd can again be seen as a realisation of this more focused policy direction in that it offers a readily available alternative to car use which would, in addition to being a recreational resource, offer itself as a practical option for day to day transport requirements.

Rhuddlan Borough Local Plan (Adopted September 1993)

Whilst this plan makes no specific reference to Lôn Clwyd it does reflect the growing awareness of the importance of outdoor recreation opportunities particularly in the rural parts of the district. Notably, the use of the former Dyserth branch line as a route for walkers and cyclists is supported. In relation to the general provision of recreational routes Policy CF10 states:

“Support will be given to the retention and improvement of existing rights of way and to additions to the network.”

Glyndwr District Local Plan (Adopted February 1994)

This plan recognises the importance of the countryside as a resource for recreation and tourism. Policy L14 states that:

“The District Council will seek to improve access to the countryside in an appropriate way and will assist in the development of the public rights of way network as a recreational resource.”

The plan continues to list a number of policies aimed at promoting tourism in the district in a way that is sympathetic to the environment of the area. Again, Lôn Clwyd is generally in accordance with the policy direction set out in the plan.

Recreation in the Countryside - A Strategy for Clwyd (1990)

This document was prepared jointly by the six local authorities that were located within the former county of Clwyd. It is a non-statutory plan which sought to reflect the policies contained within the structure and local plans and place them within the context of the Countryside Commission’s countryside recreation policies. It is referred to within the CSP and the Glyndwr Local Plan as a co-ordinating document for countryside access. The strategy identified the opportunities that were available in the area for increasing the provision of routes for cyclists. The document states that:

“4.8.15 *Cycle routes could be formed both on and off roads which would link to way marked local networks.....”*

and

“4.8.23 *The development of disused railways as recreational routes will be undertaken by various agencies throughout the county...There is a considerable potential to develop disused railways in Clwyd. These include:-*

(f) Vale of Clwyd line.

This document highlights the long standing commitment that there has been by all of the local authorities involved in managing the countryside in the area towards providing routes for cyclists and walkers and, specifically, towards looking at the area’s disused railway lines as potential resources for including within a wider countryside recreation network.

Caring for our Countryside - A Countryside Strategy for Denbighshire (Adopted 1998)

This Strategy was produced by Denbighshire County Council (DCC) following local government reorganisation to show the authority's commitment to its rural areas and to encourage an integrated approach towards conserving and enhancing the countryside for the benefit of the people living in the area.

The overall "vision" of the strategy includes a desire for a "... countryside where ...people will have easy access by walking, horseback or public transport in ways which are in harmony with the needs of local communities, farmers and other countryside interests...."

The strategy also includes the following specific policies related to cycling:

POLICY ENJ16 "A Cycling Strategy will be prepared to encourage the implementation of the National Cycling Strategy and to guide the future of cycling within the County. "

POLICY ENJ17 "To investigate the feasibility of developing strategic cycle path/bridleways based upon the former Vale of Clwyd and Corwen - Cynwyd railway lines."

POLICY ENJ18 "To encourage responsible cycling in the countryside by identifying, developing and promoting appropriate cycle routes on and off road and by providing information, guidance and improved facilities for cyclists."

The commitment was therefore clearly made within this document to actively look at implementing the Lôn Clwyd project.

APPENDIX C:

Detailed Description of Preferred Route

Chainage	Route Description	Construction Issues
Section 1: Rhyl to Rhuddlan East of Afon Clwyd		
CH0	<p>The route begins in the parking area at the end of Marsh Road, adjacent to the railway footbridge leading to Westbourne Avenue.</p> <p>Links between Lon Clwyd and the National Cycle Network (on the Promenade) will be along public roads until a dedicated cycle track can be provided.</p> <p>Links to Rhyl Railway Station can either be along the former railway track, following negotiation with Railtrack, or use the existing highway network.</p>	<p>Users: Pedestrians, cyclists (including those arriving by car etc) and disabled</p> <p>Access: New car park incorporating “gateway” feature to Lon Clwyd to be constructed as part of the public open space.</p>
CH0 to 220 East	<p>The route utilises the existing verge on the right hand side of the estate road and runs between an industrial area (on the right) and a residential development</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users.</p> <p>Construction: bound surface with grass margin adjacent to existing road</p> <p>Fencing: Security fencing to industrial area to be retained</p> <p>Lighting: Adequacy of existing street lighting to be reviewed as part of detailed design</p>
CH220 to 540 East	<p>The route runs on an existing narrow public path between a caravan park (on the left) and an area of derelict land.</p> <p>This land is to be developed as public open space and the final alignment of Lôn Clwyd may therefore be influenced by the detailed design of this area.</p> <p>Drainage is poor and needs consideration as part of the design.</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users</p> <p>Construction: unbound surface, provided drainage can be improved</p> <p>Fencing: Existing security fencing to caravan park to be retained. Boundary to public open space to be determined as part of detailed design</p> <p>Lighting: Required if path is adjacent to caravan park <i>ie</i> for safety and security</p>
CH540 East	<p>The route crosses a drainage ditch via a narrow embankment constructed for flood defence purposes.</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Maximise within available width</p> <p>Construction: unbound surface</p> <p>Fencing: Existing security fencing to caravan park to be retained. Safety fencing to the right.</p> <p>Lighting: To be considered for safety and security</p>
CH540 to 1330 East	<p>The route follows an existing footpath with open fields to the left with a steep grass bank down to a drainage ditch. To the right is a two metre high chainlink fence in poor repair to open grassland. There is sufficient room between the edge of the embankment and the fence to create a cycle track.</p> <p>The North Wales Coastal Footpath joins the route at CH720.</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users with grass margins on embankment for safety.</p> <p>Construction: unbound surface</p> <p>Fencing: Replace/repair existing chain-link fencing. Provide route priority gated crossing point to maintain access to grassland</p>

Chainage	Route Description	Construction Issues
Section 1: Rhyl to Rhuddlan East of Afon Clwyd (continued)		
CH1330 to 2870 East	<p>The route joins the flood embankment to the Afon Clwyd and runs along its crown. The embankment is used as access to adjacent fields by landowners and for maintenance thus providing sufficient width.</p> <p>The embankment is bounded by a deep drainage ditch with the livestock fencing on the left, and open to the estuary to the right.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m <i>ie</i> sufficient to segregate users with verge margin to each side for safety Construction: unbound surface sufficient to allow occasional use by agricultural vehicles and EA maintenance plant</p>
CH2870 to 3670 East	<p>The route follows Tan-yr-Eglwys Road which is a narrow adopted road past some houses and St Mary's Church on the left</p>	<p>Users: Pedestrians, cyclists and disabled Width: Existing carriageway Construction: Signing and marking of route on existing carriageway Lighting: Adequacy of existing lighting to be reviewed as part of detailed design</p>
CH3670 to 3940 East	<p>The route turns right onto the footway alongside the former A525 crossing the Afon Clwyd using the existing footbridge and joining the route to the west of the estuary at Marsh Road.</p> <p>The former A525 provides access to Rhuddlan village and castle.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Available footpath and footbridge width Construction: Signing and marking of existing surfacing Lighting: Adequacy of existing lighting to be reviewed as part of detailed design</p>
Section 1: Rhyl to Rhuddlan West of Afon Clwyd		
CH0 to 500 West	<p>The route follows the former railway line with loose ballast surface leading between the operational railway line and the proposed development site for public open/ recreational use</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m <i>ie</i> sufficient to segregate users Construction: unbound surfacing onto existing track ballast Fencing: Safety and security fencing of the operational railway to the right. Boundary to public open space to be determined as part of detailed design. Lighting: Required for safety and security adjacent to operational railway</p>
CH500 to 800 West	<p>The route crosses the Afon Clwyd on the old railway bridge, a separate structure to the adjacent operational railway bridge.</p> <p>The bridge is currently used informally by pedestrians.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Full available width of structure Construction: Following detailed assessment of structure utilise the existing concrete bridge deck as surface. Lighting: Required for safety and security adjacent to operational railway</p>

Chainage	Route Description	Construction Issues
Section 1: Rhyl to Rhuddlan West of Afon Clwyd (continued)		
CH800 to 1980 West	<p>The route turns left leaving the railway and runs along the flood defence embankment following an existing public footpath.</p> <p>The route has restricted width in part (<i>ie</i> CH850 to 1400)</p> <p>The unfenced flood plain is on the left and a drainage ditch and fence on the right. Beyond the fence are residential properties</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety</p> <p>Construction: unbound surfacing sufficient to accommodate EA maintenance plant</p>
CH1980 West	<p>The route crosses an EA flood defence structure at the Afon Gele.</p> <p>The existing footpath crosses the structure and has sufficient width for the proposed path. The structure is fenced.</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety</p> <p>Construction: unbound surfacing sufficient to accommodate EA maintenance plant</p> <p>Fencing: Adequacy of existing safety fencing is to be reviewed as part of detailed design.</p>
CH1980 to 3650 West	<p>Following the public footpath along the flood embankment the route becomes a metalled track providing access to adjacent fields and for vehicles to maintain the flood defence works.</p> <p>The unfenced flood plain is on the left and beyond the drainage ditch and fence is pasture land to the right.</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety</p> <p>Construction: unbound surface sufficient to allow occasional use by agricultural vehicles and EA maintenance plant</p>
CH 3650 to 4280 West	<p>The route uses Marsh Road, an adopted access road leading past caravan parks on both sides. It then passes under the A525 (Rhuddlan bypass) and through a proposed development site, Rhuddlan Triangle, to the former A525 at the Marsh Warden Public House.</p> <p>Cycle track to be provided as part of development.</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety</p> <p>Construction: Bound surface</p> <p>Lighting: Adequacy of existing lighting to be reviewed as part of the detailed design</p>

Chainage	Route Description	Construction Issues
Section 2: Rhuddlan to St Asaph		
CH4280 to 4400	From the end of Marsh Road where both the east and west routes of Section 1 converge, the route crosses the former A525 and follows a section of redundant road before joining the former railway line.	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Available redundant carriageway, minimum 3m strip</p> <p>Construction: Remedial work to existing bituminous surfacing</p> <p>Crossing: Road crossing of former A525, similar to detail shown in Photograph C in Appendix G</p> <p>Lighting: Adequacy of existing lighting to be reviewed as part of detailed design</p> <p>Access: From Marsh Road and A525. Existing car parks available in Rhuddlan</p>
CH4400 to 4650	The route follows the former railway line which is overgrown and bounded with a fence and ditch on the right. Adjacent to the former railway is pasture land on both sides.	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety</p> <p>Construction: unbound surfacing with grass margins</p> <p>Fencing: New livestock fencing to both boundaries</p>
CH4650 to 5180	The route follows the raised former railway line. This section has part of the original boundary mainly on the right. The route is used as a farm access track to adjacent fields.	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety</p> <p>Construction: unbound surface sufficient to allow occasional use by agricultural vehicles and EA maintenance plant</p> <p>Fencing: New livestock fencing to both boundaries</p>
CH5180 to 6280	<p>The route follows the former railway line which is used as part of the flood defence embankment. On both sides at the foot of the embankment the timber post and rail boundary fence to the former railway is largely intact.</p> <p>At CH 6000 the former railway passes adjacent to a residential dwelling where the railway is presently used as supplementary parking.</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety</p> <p>Construction: unbound surface sufficient to allow occasional use by agricultural vehicles and EA maintenance plant</p> <p>Fencing: Remedial works to existing timber post and rail fencing to contain livestock. Security fencing to the residential dwelling.</p>
CH6280 to 6650	<p>The route leaves the former railway and turns right to follow the raised flood embankment with the Afon Elwy on the left. The fields to the right are fenced on the top of the flood embankment. Width of embankment crown is restricted.</p> <p>A private path for an angling club runs between the foot of the embankment and the river.</p>	<p>Users: Pedestrians, cyclists and disabled</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety</p> <p>Construction: unbound surfacing width of flood embankment to evaluated in detailed design</p> <p>Fencing: Retain livestock fence to field on right</p>

Chainage	Route Description	Construction Issues
Section 2: Rhuddlan to St Asaph		
CH6650 to 7800	<p>The route crosses an access track to a small parking area. A public footpath crosses the river via a narrow footbridge and then runs along the top of the flood embankment to St Asaph.</p> <p>The route follows the public footpath along the top of the flood embankment.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety Construction: unbound surface sufficient to allow occasional use by agricultural vehicles and EA maintenance plant Fencing: Retain livestock fence to field on right. Crossings: Crossing of access road to car park similar to detail shown in Photograph D in Appendix G</p>
CH7800 to 8140	<p>The route crosses an access road which forms a discreet boundary between farm land and St Asaph's built environment.</p> <p>The route continues along the footpath on the flood embankment between the river and a housing estate. There is sufficient width between the heavily wooded boundary to gardens on the right and the embankment slope to the left.</p> <p>A flood wall adjacent to the access road is to be retained, this low area will flood from time to time.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety Construction: unbound surface sufficient to allow occasional use by agricultural vehicles and EA maintenance plant Fencing: Retain landscape screen to housing for security and privacy Crossing: Road crossing of route similar to detail shown in Photograph D in Appendix G</p>
CH8140 to 8450	<p>The route continues along the flood embankment with the Afon Elwy on the left. On the right the embankment runs past the cattle market and then opens out into an open grassed area.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m with margin each side for safety Construction: unbound surface sufficient to allow occasional use by agricultural vehicles and EA maintenance plant</p>
CH8450	<p>The route crosses the Afon Elwy on a new footbridge proposed by the City Council</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m <i>ie</i> sufficient to segregate users Structure: the structure will be designed and constructed by others and will cater for the route.</p>
CH8450 to 8810	<p>After crossing the river the route runs along the flood embankment on an existing public footpath through parkland and adjacent to a recreational area, bowling green, public convenience and existing car park.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m <i>ie</i> sufficient to segregate users with margin to each side for safety Construction: unbound surfacing Lighting: Provide lighting for security and safety</p>

Chainage	Route Description	Construction Issues
Section 3: St Asaph to Denbigh		
CH8810 to 9090	<p>The route crosses the A525 at the bottom of St Asaph High Street some 600m from the Cathedral using an existing pedestrian crossing. It then follows an existing access road and public footpath with public open space on the right and the Afon Elwy beyond.</p> <p>The access road suffers from inadequate drainage.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Use available access road Construction: Signing and marking to existing bituminous surfacing to draw attention of all users. Improve drainage provision. Lighting: Provide lighting for security and safety Crossing: Chicane approach to pedestrian crossing of carriageway similar to detail shown in Photograph H in Appendix G Access: Access from St Asaph High Street. parking available in existing car park to recreational area.</p>
CH9090 to 9510	<p>The route follows the public footpath which runs from the access road and into the adjacent field. The route traverses around the field boundary and the foot of the embankment adjacent to garden boundaries to Bishops Walk Housing Estate.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m <i>ie</i> sufficient to segregate users Construction: unbound surfacing Fencing: Livestock fencing to both sides of route</p>
CH9510 to 9770	<p>The route turns to traverse up the embankment through a grazed field which has been identified for housing development. The route passes through the centre of the field. However, when development of the site proceeds the route may alter to suit the development.</p> <p>The route exits the field through the existing access gate onto the footway of the A525 Upper Denbigh Road.</p>	<p>Users: Pedestrians and cyclists. Disabled users will be adversely affected by the gradient of the route up the embankment Width: Approximately 3m <i>ie</i> sufficient to segregate users Construction: unbound surfacing. Development of the site will affect type of construction. A chicane approach will be required to prevent direct access of the route onto the carriageway (CH9970) Fencing: Not applicable; dependent upon development Lighting: Will be required through development for safety and security</p>
CH9770 to 10150	<p>The route follows the A525 Upper Denbigh Road footway and crosses the A525 into Ysgol Glan Clwyd's playing fields. The route runs along the boundary of the playing fields, and adjacent housing estate before dropping down into the former railway cutting.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m <i>ie</i> sufficient to segregate users Construction: unbound surfacing Fencing: Security fencing to housing estate on right hand side Lighting: New lighting required for security and safety Crossing: Road crossing of A525; similar to detail shown in Photograph C in Appendix G</p>
CH10150 to 10630	<p>The route follows the railway cutting and an existing undesignated path along the former railway up to a minor road crossing.</p> <p>Drainage to the existing cutting requires improvement.</p> <p>The bridge abutments of the former railway over the minor access road have been reduced. A bridge crossing is not required as access to road level is available on both sides.</p>	<p>Users: Pedestrians, cyclists and disabled Width: Approximately 3m <i>ie</i> sufficient to segregate users Construction: unbound surfacing with an improved drainage provision Fencing: Existing landscape screening and livestock fencing is to be retained Crossing: Provide a gated route priority farm access crossing at CH10,320 and a road priority crossing similar to detail shown in Photograph D in Appendix G</p>

Chainage	Route Description	Construction Issues
Section 3: St Asaph to Denbigh (continued)		
CH10630 to 10830	The route continues to follow the former railway through the storage yard for a local civil engineering firm. Access to the storage yard will need to be amended to cater for route.	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 5m to segregate all users Construction: unbound surface to cycle track, grass verge for bridleway. Joint access for storage yard and route from access road will need to be designed. Fencing: Security fencing to storage yard, retain landscape screen to opposite boundary Access: For maintenance will be provided, but not for general public as no parking facilities available
CH10830 to 11235	For this short length the route is diverted away from the former railway to follow the field boundary around to the left and then back onto the former railway. This is to avoid the garden of Bryn Polyn Mawr.	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 5m to segregate all users Construction: unbound surfacing to cycle track, grass verge for bridleway. Fencing: New livestock fencing to field boundary, retain mature hedgerows and livestock fencing to opposite boundary
CH11235 to 12280	The route follows the former railway along the boundary of a number of fields, crosses an access track to the Llanerch Estate and along the boundary of a horse and trap training circuit.	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 5m to segregate all users Construction: unbound surfacing to cycle track, grass verge for bridleway. Fencing: New livestock fencing to field boundary, retain mature hedgerows and livestock fencing to opposite boundary Crossing: Access priority route crossing of access track, similar to detail shown in Photograph D in Appendix G
CH12280 to 12400	In this section the former railway has been developed as a car park for the Tweed Mill factory outlet retail shop. Planning permission for extending the car parking facilities has been applied for. The proposed route should be incorporated into the proposals.	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 5m to segregate all users Construction: bituminous surfacing to be agreed with developer Fencing: for security to be agreed with developer Lighting: for security to be agreed with developer
CH12400 to 12630	The route continues on the former railway along a field boundary and under a minor road using the existing road overbridge	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 5m to segregate all users Construction: unbound surfacing Fencing: Livestock fencing to both sides, new fence to left Structures: Utilise an existing road bridge maintained by Highway Authority to pass under minor road.

Chainage	Route Description	Construction Issues
Section 3: St Asaph to Denbigh (continued)		
CH12630 to 12720	The route runs adjacent to a narrow minor road through private land for a short length. The existing carriageway is not suitable for including in the route.	<p>Users: Pedestrians, cyclists and disabled. Equestrians would be required to use the existing carriageway</p> <p>Width: Approximately 3m <i>ie</i> sufficient to segregate users</p> <p>Construction: Provide bituminous footway and verge to carriageway for route and improvement to Highway alignment</p> <p>Fencing: New security fencing and landscape screen to private boundary.</p> <p>Lighting: Adequacy of existing lighting to be reviewed as part of detailed design</p>
CH12720 to 13110	The route enters a field to follow the mature hedge boundary adjacent to the former railway now developed as a housing estate.	<p>Users: Pedestrians, cyclists, disabled and equestrians</p> <p>Width: Approximately 5m to segregate all users</p> <p>Construction: unbound surfacing with grass verge for equestrians</p> <p>Fencing: Retain and improve mature hedgerows for security and privacy. Livestock fencing to new field boundary</p>
CH13110 to 13460	Here the route enters the woodland at the end of the housing estate and traverses the railway embankment to follow the former railway trackbed across the Nant Padrig cutting up to the end of the recently completed Pen y Maes housing estate.	<p>Users: Pedestrians, cyclists, disabled and equestrians</p> <p>Width: Approximately 5m to segregate all users</p> <p>Construction: unbound surfacing with grass verge for equestrian</p> <p>Fencing: Livestock and safety fencing to both boundaries</p>
CH13460 to 13740	The route turns left and leaves the former railway to enter a field set aside for housing development. The route then turns right to run along the Ffordd Pen y Maes estate road.	<p>Users: Pedestrians, cyclists and disabled. Equestrians would be required to use the existing carriageway</p> <p>Width: Approximately 3m or available footway width</p> <p>Construction: bituminous surfaced footway through proposed and existing development</p> <p>Lighting: Adequacy of existing and proposed street lighting to be reviewed at detailed design stage</p>
CH13740 to 14120	<p>In Trefnant the route follows adopted roads into the village and into the Maes Teg Estate. At the turning head at the end of Maes Teg estate road the route turns right and enters the village playing field.</p> <p>There is no opportunity to provide a route segregated from the highway in this location.</p>	<p>Users: All road users</p> <p>Width: Use existing road and footways</p> <p>Construction: Use existing bituminous surfaced roads and footways. Signing and marking to inform all road users</p> <p>Lighting: Adequacy of existing and proposed street lighting would need to be reviewed at detailed design</p> <p>Crossing: Road crossing similar to detail shown in Photograph C in Appendix G</p>

Chainage	Route Description	Construction Issues
Section 3: St Asaph to Denbigh (continued)		
CH14120 to 14390	The route follows the boundary of the playing field with Maes Teg estate on the left. Adjacent to the playing field is a woodland (and small fishing lake) which the route passes through before turning left to drop into a shallow cutting of the former railway.	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 5m to segregate all users Construction: unbound surfacing with grass verge for equestrians Fencing: Security fencing to supplement existing hedgerows to residential boundary Access: Possible from playing fields. Limited by parking opportunities in Trefnant Village
CH14390 to 16190	The route follows the former trackbed, in part it will be a shared route for an agricultural access track. The former railway is clearly visible in cutting and embankment with boundaries mainly intact. Poor drainage, also derelict and overgrown in areas.	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 5m to segregate all users Construction: unbound surfacing with grass verge for equestrians. Where surface shared with agricultural vehicles increase construction thickness. Crossing: Provide route priority crossings to fields and track priority crossings to access tracks similar to detail shown in Photograph F in Appendix G
CH16190 to 16400	The route passes under the Tremeirchion Road on the former railway. The trackbed has been taken back into agricultural use and only one railway boundary remains. The route follows this boundary along the route of the former railway. The existing road overbridge is maintained by the Highway Authority.	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 5m to segregate all users Construction: unbound surfacing with grass verge for equestrians Fencing: Livestock fencing to both existing and proposed boundaries
CH16400 to 16850	Gardens have been extended over the former trackbed here, therefore the route takes a minor diversion across to the former Mold branch line around the field boundary.	Users: Pedestrians, cyclists, disabled and equestrian Width: Approximately 5m to segregate all users Construction: unbound surfacing with grass verge for equestrians Fencing: Livestock fencing to both existing and proposed boundaries
CH16850 to 17310	The route remains on the former railway. In this section the trackbed is clearly visible with the rail ballast still evident in places leading up to a bridge over a minor road. The railway boundaries and hedgerows are generally intact.	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 5m to segregate all users Construction: unbound surfacing with grass verge for equestrians Fencing: Livestock fencing to both existing and proposed boundaries
CH17310	The route over the minor road will require a new bridge deck on the existing abutments. Type of bridge and remedial works to abutments will be determined at detailed design stage.	Users: Pedestrians, cyclists, disabled and equestrians Width: Approximately 3m; will be restricted by available abutment width Structure: Bridge deck and parapets to be suitable for all users, segregation of users will not be necessary, similar to detail shown in Photograph K in Appendix G

Chainage	Route Description	Construction Issues
Section 3: St Asaph to Denbigh (continued)		
CH17310 to 17660	The route turns left across a small cutting onto and along a siding of the former railway then drops down onto Denbigh Green roundabout.	<p>Users: Pedestrians, cyclists, disabled and equestrians</p> <p>Width: Approximately 5m with grass margin for equestrians</p> <p>Construction: To cross cutting, fill area up to track level with unbound surfacing with grass margin for equestrians</p> <p>Fencing: Safety fencing to both sides of the route</p> <p>Access: Café on roundabout provides access and egress point with limited parking facility</p>
CH17660 to 17850	The route turns right to cross the A525 at the roundabout splitter island and follows the road verge into the Colomendy Industrial Estate.	<p>Users: Pedestrians, cyclists and disabled.</p> <p>Width: Minimum 2m for unsegregated route, 3m for segregated route desirable if sufficient carriageway verge</p> <p>Construction: Bound surfacing to create footway provision</p> <p>Lighting: Adequacy of existing lighting to be reviewed at detailed design</p> <p>Crossing: Introduce formal crossing place to A525 at roundabout splitter island similar to detail shown in Photograph E in Appendix G</p>
CH17850 to 18760	In the industrial estate the route follows the estate roads and the existing public footpath to the rear of Kwik Save.	<p>Users: Pedestrians, cyclists and disabled.</p> <p>Width: Minimum 2m for unsegregated route, 3m for segregated route desirable if sufficient carriageway verge</p> <p>Construction: Bound surfacing to create footway provision</p> <p>Lighting: Adequacy of existing lighting to be reviewed at detailed design</p> <p>Crossing: Introduce formal crossing place in the Industrial Estate similar to the detail shown in Photograph E in Appendix G</p>
CH18760 to 19150	The route passes through the Kwik Save car park and into the housing development site. The route through the development site will need to be incorporated into any development. The route then follows the existing path beside the former bridge abutments to cross Vale Street.	<p>Users: Pedestrians, cyclists and disabled.</p> <p>Width: Minimum 2m for unsegregated route, 3m for segregated route desirable if sufficient carriageway verge</p> <p>Construction: Bound surfacing through car park to create route signing and marking required to inform all users. Construction through development site dependant upon developers.</p> <p>Lighting: Adequacy of existing lighting to be reviewed at detailed design. Provide new lighting through development site.</p>
CH19150 to 19260	The route crosses Vale Street and follows the footpath adjacent to the public convenience up and through a car park, across Park Street and onto a public footpath.	<p>Users: Pedestrians, cyclists and disabled.</p> <p>Width: Minimum 2m for unsegregated route</p> <p>Crossing: Cross Vale Street using existing footways and introduce a formal crossing point as part of existing signalised junction. To cross Park Street use crossing similar to detail shown in Photograph E in Appendix G</p> <p>Access: parking for access to route in Park Street and up Park Street for town centre</p>

Chainage	Route Description	Construction Issues
Section 4: Denbigh to Ruthin		
CH19260 to 19860	The route follows the public footpath along the line of the former railway and then into Denbigh High School playing fields, following the boundary around and up to Ystrad Road.	Users: Pedestrians, cyclists and disabled. Width: Approximately 3m <i>ie</i> sufficient to segregate users with verge margin to each side for safety Construction: Unbound surfacing Fencing: security fencing to school field with access point for school
CH19860	The route passes under the existing road overbridge which has been filled to create an embankment. Provide underpass through embankment.	Users: Pedestrians, cyclists and disabled. Width: Approximately 3m minimum for underpass; minimum headroom 2.4m Construction: Armco structure through embankment and original bridge opening. Bound surfacing.
CH19860 to 20290	The route follows the clearly defined and bounded former railway corridor with a cemetery on the right and rear gardens of a housing estate on the left.	Users: Pedestrians, cyclists and disabled. Width: Approximate 3m to segregated route Construction: Unbound surfacing Fencing: Landscape screen and security fencing to housing estate; existing security fencing to cemetery to be retained Lighting: Provide lighting for safety and security crossing
CH20290 to 20450	The route leaves urban Denbigh and passes through a field with the former railway boundary on the right. The railway cutting has been filled and the route descends steeply down to the boundary.	Users: Pedestrians, cyclists, disabled and equestrian. Width: Approximately 5m to segregate all users Construction: Unbound surfacing with grassed margin for equestrians. The gradient will need to be eased by cutting into the slope. Fencing: Livestock fencing will be required.
CH20450 to 21760	The route follows the former railway now on embankment, across a stone arched bridge over the Afon Ystrad continuing along the embankment and then into the cutting and up to the A525. This length is used as a farm access track for the majority of its length and has a gate access at the A525.	Users: Pedestrians, cyclists, disabled and equestrians. Width: Approximately 5m to segregate all users Construction: Unbound surfacing of sufficient integrity to allow frequent use by agricultural vehicles. Fencing: Renew/replace existing livestock fencing. Structures: Provide bound surface deck to existing stone arched bridge following a detailed structural survey. Undertake remedial/ repair work to structure Crossing: Route priority gated crossing for access to fields
CH21760	The route crosses the A525. Provide a formal crossing location with sufficient advance warning to vehicles. A pedestrian fatality occurred at this location during the study.	Users: Pedestrians, cyclists, disabled and equestrian. Crossing: Road priority crossing point with central refuge for route users. Provide advance warning to motorists. Crossing similar to detail shown in Photograph C in Appendix G Fencing: Safety fencing to prevent user access directly from route onto carriageway Lighting: Provide lighting for safety Access: Access from A525 layby adjacent to crossing

Chainage	Route Description	Construction Issues
Section 4: Denbigh to Ruthin (continued)		
CH21760 to 22050	The route follows the route of the former railway now not distinguishable from fields. One former railway boundary remains.	Users: Pedestrians, cyclists, disabled and equestrian. Width: Approximately 5m to allow segregation of all users Construction: Unbound surfacing with grassed margin for equestrians. Fencing: Livestock fencing to both boundaries of route
CH22050 to 22400	The route follows the field boundary around to the left until it joins the clearly defined former railway embankment. The former railway has been taken into a large grazing field with the boundaries removed. This area passes adjacent to a SSSI.	Users: Pedestrians, cyclists, disabled and equestrian. Width: Approximately 5m to allow segregation of all users Construction: Unbound surfacing with grassed margin for equestrians. Fencing: Livestock fencing to both boundaries of route
CH22400 to 24400	The route follows the well used access track on the railway embankment. Either side of the embankment is a drainage ditch and beyond that a boundary to open fields. The trackbed is used for access by a number of local farms.	Users: Pedestrians, cyclists, disabled and equestrian. Width: Minimum 3m for unsegregated route Construction: Bound surfacing to allow agricultural use. Provide layby to allow agricultural traffic to pass. Crossing: Route priority gated access at present into adjacent fields.
CH24400 to 24450	The route passes through the former Llanrhaeadr Station, now demolished, along the former railway crossing the minor road.	Users: Pedestrians, cyclists, disabled and equestrian. Width: Approximately 5m to segregate all users Construction: Bound surfacing to cycle track for use by agricultural vehicles and a grass margin for equestrians. Fencing: Safety fencing to station area Crossing: Road priority crossing similar to detailed shown in Photograph C in Appendix G Access: Access from minor road with sufficient parking provision on demolished station site.
CH24450 to 24820	The route follows the route of the former railway along field boundaries and a bridge over a watercourse.	Users: Pedestrians, cyclists, disabled and equestrian. Width: Approximately 5m to segregate all users Construction: Unbound surfacing with grassed margin for equestrians. Fencing: Livestock fencing to field boundary. Repair/replace existing boundary where necessary. Crossing: Route priority gated crossing to access fields similar to detail shown in Photograph F in Appendix G Structures: Existing bridge crossing over watercourse requires decking and remedial/repair work. Structure will require detailed assessment at design stage.

Chainage	Route Description	Construction Issues
Section 4: Denbigh to Ruthin (continued)		
CH24820 to 25730	The route follows the former railway through mature wood and then along field boundaries on an embankment. The embankment is clearly visible up to the minor road bridge crossing. There are mature hedgerows and fencing to the left and open pasture to the right.	<p>Users: Pedestrians, cyclists, disabled and equestrian.</p> <p>Width: Approximately 5m to segregate all users</p> <p>Construction: Unbound surfacing with grassed margin for equestrians.</p> <p>Fencing: Livestock fencing to field boundary. Repair/replace existing boundary where necessary.</p> <p>Crossing: Route priority gated crossing to access fields similar to detail shown in Photograph F in Appendix G</p> <p>Structures: Existing bridge crossing over watercourse requires decking and remedial/repair work. Structure will require detailed assessment at design stage.</p>
CH25730 to 25940	The route passes under the minor road and follows the former railway along the boundary of the field beyond. One boundary remains, on the right with the railway being taken into the field.	<p>Users: Pedestrians, cyclists, disabled and equestrian.</p> <p>Width: Approximately 5m for route but reduced to 3m for underpass</p> <p>Construction: Unbound surfacing with grassed margin for equestrians.</p> <p>Fencing: Livestock fencing to field boundary. Repair/replace existing boundary where necessary.</p> <p>Structures: The road overbridge has been filled to make an embankment. Provide an Armco structure to pass through the embankment and buried bridge.</p>
CH25940 to 26750	The route follows the line of the former railway. The railway is not clearly visible and has been taken into adjacent fields, however one railway boundary remains and the route will run along the field boundaries.	<p>Users: Pedestrians, cyclists, disabled and equestrian.</p> <p>Width: Approximately 5m to segregate all users</p> <p>Construction: Unbound surfacing with grassed margin for equestrians.</p> <p>Fencing: Livestock fencing to field boundary. Repair/replace existing livestock fencing.</p> <p>Crossing: Route priority gated crossing for farm crossing to fields similar to detail shown on Photograph F in Appendix G</p>
CH26750 to 27370	The route joins a minor road here and follows an access track around the boundary of a garden which originally formed part of the railway. At the end of the garden the route turns right into the adjacent field to continue following the remaining boundary fence of the former railway.	<p>Users: Pedestrians, cyclists, disabled, equestrian and vehicles.</p> <p>Width: Use available width of carriageway and track.</p> <p>Construction: Bound surfacing for unsegregated route. Signing and marking of route to inform all users.</p> <p>Fencing: Existing livestock fencing retained, provide improved security fencing to property.</p> <p>Crossing: Route priority crossing similar to detail shown on Photograph F in Appendix G</p>
CH27370 to 27660	The route leaves the railway to follow a public footpath into the village of Rhewl following the field boundary around and out onto the minor road in Rhewl. Diversion of the footpath around the field boundary will be required.	<p>Users: Pedestrians, cyclists, disabled and equestrian.</p> <p>Width: Approximately 5m to segregate all users</p> <p>Construction: Unbound surfacing with grassed margin for equestrians.</p> <p>Fencing: Livestock fencing to field boundary.</p>

Chainage	Route Description	Construction Issues
Section 4: Denbigh to Ruthin (continued)		
CH27660 to 28020	Through the village of Rhewl the route follows minor roads before turning right beside a pumping station onto the former railway.	Users: Pedestrians, cyclists, disabled and vehicles Width: Existing carriageway. Construction: Signing and marking of existing carriageways to inform all users including advance signing for vehicles.
CH28020 to 28850	The route follows a field boundary, once a railway boundary, under a minor road bridge up to a public footpath.	Users: Pedestrians, cyclists and disabled Width: Approximately 3m to segregate all users Construction: Unbound surfacing Fencing: Livestock fencing to field boundary. Repair/replace existing livestock fencing. Crossing: Route priority gated crossing for farm access to fields similar to detail shown on Photograph F in Appendix G
CH28850 to 29060	The route follows the path around the field boundary. The former railway is no longer visible. Drainage is poor.	Users: Pedestrians, cyclists and disabled Width: Approximately 3m to segregate all users Construction: Unbound surfacing with improved drainage. Fencing: Livestock fencing to field boundary. Repair/replace existing livestock fencing.
CH29060 to 29680	The route follows the railway trackbed which is clearly visible on an embankment. The route follows the former railway past the sewage farm on the left up to the river crossing	Users: Pedestrians, cyclists and disabled Width: Approximately 3m to segregate all users Construction: Unbound surfacing Fencing: Livestock fencing to both boundaries. Crossing: Route priority gated crossing for farm access to fields similar to detail shown on Photograph F in Appendix G
CH29680	The route crosses the Afon Clwyd on a former railway bridge. The bridge will require a new deck.	Users: Pedestrians, cyclists and disabled Width: Approximately 3m to segregate all users Fencing: Safety parapet fencing to bridge. Structure: Existing steel bridge requires a new deck. Detailed investigation of the structure will be required at design stage.
CH29680 to 30333 End	The route passes through Denbighshire County Council's Highways Department Depot along the northern boundary on the former railway embankment before joining the estate road to the terminus at the Ruthin Craft Centre.	Users: Pedestrians, cyclists and disabled Width: Approximately 3m to segregate all users or minimum 2m for unsegregated use Construction: Unbound surfacing through the depot. Provide bound surfaced footway to estate road. Fencing: Safety and security fencing to depot. Lighting: Adequacy of existing lighting will be reviewed at detailed design. Crossing: Road priority crossing similar to detail shown on Photograph E in Appendix G

APPENDIX D:

Habitat Categories

Habitats found on, or adjacent to, the route.

The full definitions of these are contained in the '*Handbook for Phase 1 habitat survey*' produced by the Joint Nature Conservation Committee

A	Woodland and scrub	H	Coastland
A1	Woodland and semi-natural woodland	H1	Intertidal
A2	Scrub	H2	Saltmarsh
A3	Parkland	H5	Strandline vegetation
B	Grassland and marsh	I	Rock exposure and waste
B2.1	Neutral grassland	I2.4	Refuse tip
B2.2	Neutral grassland-semi-improved	J1	Cultivated / disturbed land
B4	Improved grassland	J1.1	Arable
B5	Marshy grassland	J1.2	Amenity grassland
B6.1	Good semi-improved grassland	J1.3	Ephemeral
B6.2	Poor semi-improved grassland	J1.4	Introduced shrub
F	Swamp, marginal and inundation	J2	Boundaries
F1	Swamp	J2.1	Intact hedge
F2.1	Marginal vegetation	J2.2	Defunct hedge
F2.2	Inundation vegetation	J2.3	Hedgerow with trees
G	Openwater	J2.4	Species-rich hedge
G1.1	Standing water, eutrophic	J2.5	Wall
G1.3	Standing water, mesotrophic	J2.6	Ditch
G1.6	Standing water, brackish	J2.7	Boundary removed
G2	Running water	J2.8	Earth bank
		J3	Built up areas
		J3.4	Caravan site
		J3.6	Buildings

APPENDIX E:
Environmental Considerations

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 1 Rhyl to Rhuddlan East of Afon Clwyd				
CH0 to 220 East	Urban street leading past industrial buildings on the right and back of housing development on the left, to an awkward crossing over a wooden wall arrangement.	Some car parking opportunities for those cyclists who arrive at the start of the route in vehicles.	There is no special interest on this section or much opportunity to create any.	J3.6 J3.4 B4 G1.1
CH220 to 740 East	The route runs through neglected grassland on a public footpath past blackthorn scrub and a caravan site on the left and overgrown pollarded willows on the right. The path is in a poor state in places due to bad drainage, and rubbish dumping has taken place all around.	The caravan site could offer low cost accommodation for touring cyclists. The public footpath is well used all the way through to Rhuddlan.	Wildlife interest is limited by the public use of this area. The removal of rubbish from the willows bordering the caravan site and the cutting back of the overgrown willows on the right of the footpath would help conservation value as well as improving the visual setting of the route.	B4 B2.2 F2.2 G1.3 J1.2 J2.1 J2.6 J3.4
CH741 to 1330 East	There are open fields to the left and a steep grass bank down to the drainage ditch to the right with a fence and low hedge bordering intensively managed pasture beyond. The two metre high chain link fence to the right is unattractive and in poor repair, vegetation on the bank to the right is cut regularly for flood defence purposes.	There are uninterrupted views of farmland and the estuary with hills beyond, but little of interest close to the route.	Very little opportunity for wildlife. The rough grass bank has many coarse weed species in it but the regular cutting precludes it's use by most wildlife by removing shelter. Some small mammals such as voles and shrews will be present and some birds will feed here if plants seed before being cut. The flooding margins of the drainage ditch provides a good habitat which would normally encourage a diverse mixture of plants and invertebrates, regular cleaning of the ditch has however reduced this interest.	B2.2 B4 J2.2 J2.6

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 1 Rhyl to Rhuddlan East of Afon Clwyd (continued)				
CH1330 to 2870 East	<p>This section of the route uses a popular footpath on a pleasant open bank with the tidal river on the right and pasture land on the left.</p> <p>The boundary of ditch and trimmed hedge separating the grassed bank is typical of most of this riverside route.</p> <p>The rubbish on the high water line spoils the enjoyment of the river views.</p>	<p>The estuary is an interesting place for birdwatching particularly at low water. This is a year round activity which often draws considerable numbers of people out of the usual tourist season.</p> <p>Detailed advice should be sought concerning the requirements of birdwatchers and other visitors to minimise disturbance to wildlife.</p>	<p>The comments on the bank and ditch are the same here as for CH741 to 1330 above.</p> <p>The tidal margins of the river here offer feeding opportunities for birds at low water, but the accumulation of rubbish at the high water mark is detrimental and unsightly.</p> <p>There may be some disturbance to birds by increased visitor numbers but there has not been a problem in other estuaries such as the Mawddach which has a popular cycle track.</p>	B2.2 B5 F2.2 G2 H1 H2 H5 J2.2
CH2870 to 3500 East	The route continues along a pleasant open bank with the tidal river on the right and past a sewage treatment works to the left. It then passes beneath the A525 (Rhuddlan Bypass).	Informal use of the area by the public many of whom arrive by car.	Wild life interest here is very limited due to public use of the area and vegetation restricted to species poor improved grassland.	B4 G2 J3.6
CH3500 to 3940 East	The route follows a minor road past houses and St Mary's church on the left before turning right on to the footbridge to cross the estuary beside the former A525. Here it connects with the route to the West of the estuary.	<p>There are shops, cafes, pubs and restaurants in the town and accommodation for visiting cyclists.</p> <p>There are good views of the castle from the bridge and Bodrhyddan Hall, the 17th century Manor house, is a short ride away.</p>	There is no conservation interest in this section.	J3.6
Section 1 Rhyl to Rhuddlan West of Afon Clwyd				
CH0 to 550 West	The route follows the former railway line with loose ballast surface leading between the existing railway line and reclaimed open land which is to be developed into a country park.	Views of the dock on the right and glimpses of hills beyond the reclaimed land to the left.	Very little interest at present due to lack of cover and use of the area by the public for informal recreation.	J1.2 J1.3 J2.2 J4
CH550 to 800 West	The route crosses the Afon Clwyd on the old railway bridge, the track is still covered in stone aggregate.	<p>Good views of the estuary and the mountains beyond from this elevated position.</p> <p>The bridge offers good birdwatching opportunities looking up the river.</p>	There is no wildlife interest on the bridge except for roosting birds and possibly some nesting opportunities.	G2 J1.3

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 1 Rhyl to Rhuddlan West of Afon Clwyd (continued)				
CH800 to 1370 West	<p>The route here turns left to run on a grass covered flood defence bank following the estuary carrying a well used public footpath all the way to Rhuddlan.</p> <p>There is periodically flooding pasture on the left and an overgrown hedgerow and ditch backing on to gardens on the right.</p>	<p>Good views of the estuary with birdwatching interests on the river side but the gardens to the west offer a mixed assortment of fences, sheds and clutter at the start of this section.</p>	<p>The conservation interest here is limited by the proximity of the houses and gardens which do however attract a variety of wild birds due to feeding by residents.</p> <p>The overgrown blackthorn hedgerow and the drainage ditch which form the boundary offer some shelter and may function as a limited corridor for some species.</p>	<p>B2.2 B5 F2.2 G1.6 G2 H2 H5 J2.1 J2.3 J2.6</p>
CH1370 to 3030 West	<p>The route stays on the flood defence bank which forms a pleasant raised open way with the unfenced flooding riverside fields on the left and a ditch and fence separating it from the pasture land on the right.</p>	<p>The views up and down the river are pleasant but spoiled in places by the riverside rubbish.</p> <p>Good birdwatching opportunities most of the year especially at low water.</p>	<p>The raised flood bank and is intensively grazed and affords little shelter or interest for wildlife. The top of the bank is used as an access track by farm vehicles and walkers using the public footpath.</p> <p>The marshland on the rivers edge is used by wildfowl for feeding at low water.</p>	<p>B4 B5 B6.2 G2 H2 H5 J2.1 J2.2 J2.6</p>
CH3030 to 3650 West	<p>The route continues on the flood defence bank with a boundary ditch on the right which has a hedge on the field side for some part of this section. There are gaps and the condition of the hedge varies from neglected to regularly trimmed.</p> <p>Open estuary to the left.</p>	<p>As for 1371 to 3030 above.</p>	<p>The boundary on the right is formed by a ditch which is wet most of the year but has very little conservation interest as it is kept clear of vegetation by regular cleaning and intensive grazing.</p> <p>Beyond the ditch is a stock proof fence with an overgrown but fragmented hedge offering limited wildlife interest and no corridor effect. Bird feeding on the estuary to the right is mentioned above.</p>	<p>B4 B5 G2 H1 H2 J2.2</p>
CH3650 to 4030 West	<p>The route here uses a minor access road leading past the grazed fields on the right and a caravan park on the left. It then passes beneath the elevated A 525.</p>	<p>The caravan site offers low cost accommodation but at present no camping facilities.</p>	<p>There are some overgrown hedges and verges but the area is used too much by the public for it to have any real wildlife interest.</p>	<p>B4 G1.1 J1.2 J2.1 J3.4 J3.6</p>

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 1 Rhyl to Rhuddlan West of Afon Clwyd (continued)				
CH4030 to 4280 West	The route follows the Marsh Road past caravan sites and through the Rhuddlan Triangle development site until it reaches the A525 leading into Rhuddlan .	The Marsh Warden pub offers refreshment to users of the route and is conveniently placed half way round the east west circuit of the estuary from Rhyl to Rhuddlan. In the town there are opportunities for refreshment, shopping and accommodation	Development land with no conservation interest.	J3.6
Section 2 Rhuddlan to St Asaph				
CH4280 to 4400	The route runs through overgrown scrub and neglected grass areas along the closed former minor road.	There are few views at the moment due to establishing scrub and trees, but there is the potential to clean up the rubbish and open up a view of the castle.	This is a busy area used for dog walking and other informal activities. It has no wildlife value at present, but this could improve if it were cleaned up and some boundaries restored.	J1.3 J2.2
CH4400 to 4650	Former railway line completely overgrown with scrub and bordered with a fence and ditch on the right, but no boundary on the left. The embankment here gives good views of the castle on the left.	Views from this section are limited to distant hills and the castle.	There is good conservation value here at present due to the exclusion of the public and farm stock. The ditch and the banks have a rich mix of species and there is good shelter from the overgrown hedgerow.	A2 J1.3 J2.1 J2.6
CH4650 to 5180	Staying on the former railway line this section has some surviving hedges, particularly on the right, but no trees. This length is on a wide grazed embankment that is used as a farm access track.	There is open farmland on both sides with excellent views of the castle on the left.	The boundary ditches on both sides and patches of scrub together with the hedges give wildlife interest by providing limited shelter and food. The section also provides some benefit by enabling small species to move along the corridor of shelter that it offers.	B4 J2.1 J2.6
CH5180 to 5550	The route stays on the former railway line on an embankment that also serves as a flood defence bank. Passing through farmland on both sides the track has been incorporated into the field on the left.		There are some isolated willow on the left with a ditch and a wet wood on the right containing willow, sycamore and alder. Most of the hedges have gone and conservation interest here is very limited.	B4 J2.6

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 2 Rhuddlan to St Asaph (continued)				
CH5550 to 6280	<p>The route uses the former railway line passing through open parkland on a grassed embankment that is grazed or mowed.</p> <p>There are fragments of the former hawthorn hedge but the boundaries are otherwise marked by post and rail fences. Trees include alder, sycamore and ash with planted willow and cherry.</p>		This section is managed as an estate garden and the wildlife interest is consequently limited to visiting birds. The plant species is also of limited interest due to grazing and grass mowing.	A3 B4 B6.2 J1.2 J2.2
CH6280 to 6650	<p>The route leaves the former railway line here and runs on the raised flood protection bank following the Afon Elwy on the left.</p> <p>The river is lined with mature willow, alder and ash, and there is open pasture of improved grassland on the right.</p> <p>The bank itself is grassed and regularly cut, it is species rich, but the coarser plants are favoured by the maintenance regime which leaves the cuttings to smother smaller plants.</p>	The river bank here is used by fishermen.	<p>All vegetation on the flood protection bank is regularly cut and the river bank is kept clear of scrub, consequently this section is not of great conservation value.</p> <p>The bank and riverside are used by the public and this, together with the routine removal of scrub is a limiting factor in the value of any corridor effect the section may have.</p>	B6.1 G2
CH6650 to 6750	<p>This is a surfaced road used by the public forming part of a small but busy riverside car park. The river here is fast flowing with willows lining the banks.</p> <p>There is some rubbish dumping spoiling this otherwise pleasant area.</p>	<p>A footbridge gives access to a country lane on the east side of the river creating opportunities for pleasant walks.</p> <p>There is some fishing interest in this area.</p>	<p>The road and car park are very busy with fishermen and walkers which make this short section of little interest to wildlife.</p> <p>The hedges lining the minor road on the right form a limited link for small animals to move between the river area and the A525 roadside verge and hedge.</p>	A3 B6.2 G2 J2.1

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 2 Rhuddlan to St Asaph (continued)				
CH6750 to 7800	<p>The route runs along the top of the flood defence bank of managed grass raised above the pasture land on the right with the river and extensive tree cover to the left.</p> <p>The vegetation is regularly cut in places but elsewhere it is incorporated into the grazed fields.</p>		<p>The woodland effect of the riverside trees and the open pasture make this a quiet pleasant section.</p> <p>There are many trees between the river and the bank mostly mature willow with an understory of other species. The usual practice of not collecting cut herbage has removed most small plants and the result is a fast growing collection of rye grass, docks and other tough plants.</p> <p>There is a limited interest for some wildlife which could be improved by a more sympathetic cutting programme. The periodically inundated riverside strip is species rich and overgrown, it has good conservation value despite regular use of the area by the public.</p>	A1 A2 B4 B6.2 F2.2 G2
CH7800 to 8140	<p>The route continues on the flood defence bank which is heavily shaded by riverside trees. This section forms a popular walk passing along the backs of gardens to the right. The track is very damp with limited access to the river on the left, eventually leading beneath the A55 approaching St. Asaph.</p>		<p>Good tree cover with a species rich bank and riverside strip. The boggy ground protects much of the area from direct public access but wildlife interest is still limited by the proximity of large numbers of people.</p>	A1 F2.2 G2 J1.4 J3.6

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 2 Rhuddlan to St Asaph (continued)				
CH8140 to 8810	<p>The route stays on flood defence bank alongside Afon Elwy on the left and past the rear of an untidy industrial area on the right. There are some fenced sections but for the most part this length of the route has no effective boundary.</p> <p>The route crosses the river on a proposed footbridge and continues on the opposite flood defence bank past the playing field, bowling green and children's play area.</p>	St Asaph has many shops, cafes and public houses offering interest to all users of the route. Accommodation is available at a range of prices.	The surviving hedgerow has become overgrown with established sycamore, alder and willow, and may hold some limited interest for small mammals and offer shelter and food for birds, but the disturbance from the work area and extensive informal use by the public precludes any real conservation interest.	J2.1 J2.3
Section 3: St Asaph to Denbigh				
CH8810 to 8820	This short section of the route crosses the busy A525 St Asaph High Street	There is a small public car park and toilets on the left with The Gamekeeper public house offering food and refreshments.	Developed urban setting.	J3.6
CH8820 to 9120	A well used track through a public park forms the route here with managed amenity grassland and occasional mature sycamore, willow and poplar trees	The public park is used for recreation both formal and informal but offers no facilities to passing cyclists.	There is no conservation interest in this section.	A3 J1.2
CH9120 to 9770	<p>The route follows a public footpath through open pasture land with some mature trees, then rises through steepening mature woodland to reach open pasture and finally through a gate to the A525.</p> <p>There is no formal defined path but whole of the lower area is well used by the public</p>	Pleasant parkland with good views of the river to the right and woods to the left.	This area is too close to the town and too well used by the public to support much special conservation interest. There is however good species rich unimproved grass cover in the lower riverside fields and limited shelter and food opportunities provided by the mature oak and ash woodland.	A1 A3 B2.1 B4
CH9770 to 10630	The route uses the A525 for a short length before crossing the playing fields of Ysgol Glan Clwyd and dropping into the former railway cutting. The route follows the former railway with species rich embankments to the cutting to an access road with removed bridge.		The mature mixed hedges include hawthorn, hazel, elder and holly, are well maintained and will offer food and shelter for living and moving around to small mammals and birds.	J2.1 J2.3 J3.6

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 3: St Asaph to Denbigh (continued)				
CH10630 to 10830	<p>Turning right the route rejoins the former railway line which is now used as a contractors storage area.</p> <p>There are areas of overgrown scrub and hedgerows of hawthorn, oak, ash, willow with establishing bramble and dog rose on unused areas.</p>		<p>Despite the storage use of this section there is enough cover provided by the former hedges and establishing trees to give shelter and food to a variety of wildlife.</p> <p>The exclusion of the general public and the quiet areas that this section connects with will have helped to encourage wildlife here.</p>	A2 J1.3 J2.2
CH10830 to 11235	The route here runs around field edges to avoid part of the former railway line now incorporated into fields and a garden.		Grazed fields with hedges, no particular conservation interest.	B4 J2.1
CH11235 to 11895	The route follows the former railway with no public access and only occasional use by adjacent landowners.		<p>Establishing scrub of thorn and bramble with some ash and sycamore trees.</p> <p>Where the hedges and fences are intact there is a good conservation corridor with the track itself offering shelter and food to wildlife. However there are lengths where the boundaries have been removed and the land is now grazed.</p>	A2 B2.2 B6.2 J2.1 J2.2
CH11895 to 11910	The route follows the former railway track with all boundaries completely removed, land used for grazing.		Open pasture offering some feeding ground for birds.	B4 J2.7
CH11910 to 12280	Continuing on the former railway the route here is used as a storage area for farm materials. It passes through pasture with a fence on the left and a substantial overgrown hawthorn hedge on the right.		The retention of some of the hedge offers very limited shelter for wildlife but the use of the area for storage has destroyed any real corridor effect which in any case would have nothing to link up with.	B4 J2.1

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 3: St Asaph to Denbigh (continued)				
CH12280 to 12630	<p>The route stays on the line of the former railway line past the commercial woollen mill. The first part of this section is now used as a car park with amenity shrub planting.</p> <p>The route then crosses a small paddock and under a road bridge. The paddock appears to be maintained as amenity grounds similar to suburban park. To the left is a golf complex.</p>	The Tweed Mill is open to the public all year round and provides refreshments and toilets. There is a licensed restaurant and small caravan park on the right.	A very narrow strip along the edge of the car park has been recently planted with amenity shrubs. The area on the right by the entrance is maintained grass with large oak trees. None of this section offers any real conservation interest.	J1.2 J1.3 J3.6
CH12630 to 13110	For 70 metres the route follows the minor road and turns right into farmland to pass close alongside the former railway line that is now used as back gardens by the housing development on the right.		The pasture is improved grassland with no conservation interest.	J1.4 J3.6
CH13310 to 13460	The route rejoins the former railway line passing through a mature mixed deciduous woodland on a wide embankment and then as an overgrown strip through farmland to reach a new housing development.		<p>The mature woodland consists of a good mixture of Scots pine, sycamore, ash and birch which offers shelter and nesting opportunities for some species.</p> <p>The rest of this section is completely overgrown with scrub and hedgerow species including thorn, hazel, elder and ash. This has a considerable conservation value joining as it does with the woodland.</p>	A1 J2.2
CH13460 to 14120	The route here passes through the quiet estate roads of Trefnant.	In the village there is a shop, café and a pub which will be of interest to visiting cyclists.	No conservation interest.	J3.6
CH14120 to 14230	From the housing estate road the route turns right on to a playing field and follows the backs of the gardens on the left along the edge the field.		There is no special conservation interest in this public amenity area.	J1.2 J3.6

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 3: St Asaph to Denbigh (continued)				
CH14230 to 14390	The route here passes along the edge of a well managed woodland past a pond managed intensively for fishing on the right, with the backs of gardens on the left.		<p>The wood was planted about twenty years ago and is used freely by the public for informal recreation.</p> <p>The mixed deciduous species include sycamore, oak, lime beech and some hawthorn but it has limited conservation interest due to use by the public from the nearby houses and recreation field.</p>	A1 G1.3
CH14390 to 14910	<p>In the first half of this section the route is in a flooded overgrown railway cutting for the first 300 metres passing through farmland.</p> <p>The second half of this section becomes progressively drier with dense cover of blackthorn and hawthorn.</p>		<p>This section has considerable conservation value as it is a quiet well sheltered strip joined to woodland with a good mixture of boggy species.</p> <p>The dominant goat willow has colonised much of the cutting repressing other species. There is shelter, food and nesting opportunities here for a variety of animals, but this habitat should be regarded as one that is changing as the plant community develops.</p>	A1 A2 F1 G1.3 J2.3
CH14910 to 16150	The route stays with the former railway line first in a shallow cutting and then on a low embankment which is becoming overgrown with scrub and untidy hedges with occasional grazed areas.		<p>Good conservation value due to establishing scrub, oak, willow, ash and thorn with boundary hedges mostly intact but overgrown, some patches of bramble and dog rose give good shelter. Probably serves as a wildlife corridor but encroaching farm stock is changing this in places.</p> <p>Little public access, hedges have good wildlife value at present but they will not survive in their present state without some management.</p>	A2 B2.2 J1.3 J2.3

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 3: St Asaph to Denbigh (continued)				
CH16150 to 16230	<p>The route stays on the former railway line passing the back of gardens on the right and then under a bridge where there is a wet patch.</p> <p>There are some mature trees, sycamore and willow, on the former track and also the bridge embankments.</p>		Some interest in diverse plant species here due to the wet ground but it is too close to the houses to have any special wildlife interest.	A2 B2.2 J1.3 J1.4 J2.2 J2.5 J3.6
CH16230 to 16800	The route follows the former railway line over a field to the backs of gardens on the right, it keeps close to the edge of the field boundary away from the gardens and then rejoins the railway line of the former spur which ran through Bodfari to Mold.		There is no special conservation value in this section as it passes through improved grassland adjacent to gardens and built up land.	B4 J1.3 J2.7 J3.6
CH16800 to 17110	Following the former railway the route is mostly grazed with some remaining hedges and boundary fences.		The neglected hawthorn hedges and occasional oak and ash, as well as establishing bramble scrub offer some wildlife interest but the grazing farm stock limit this and any corridor effect is fragmented.	A2 B4 J1.3 J2.2
CH17110 to 17310	The route stays on the former railway track with mature trees and shrub undercover leading to a minor road crossing with the bridge now removed.		The mature Scots pine and Lombardy poplars must have been planted soon after the line closed. There is some understory of elder and hawthorn which together with the trees will have some attraction to wildlife.	A1 J2.2
CH17310 to 17380	This part of the former railway line is now used as a storage and working area for vehicle repair and car breaking operations.		There is no conservation interest in this section.	J1.3 J2.2
CH17380 to 17660	The route leaves the former railway track and runs on a sliding line on the left between the former line and the A543. It joins the roundabout and then crosses the A525 on the right.	<p>There is a café on the A525 by the roundabout offering rest and refreshment to cyclists.</p> <p>There is a camping and caravan site adjacent to the roundabout at which touring cyclists can stay.</p>	<p>The embankment here is covered in rough grass and weeds maintained by occasionally cutting.</p> <p>The area is too public to have any special wildlife interest.</p>	B6.2 J1.2 J3.4

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 3: St Asaph to Denbigh (continued)				
CH17660 to 19260	The route in this section uses a combination of verges and estate roads to pass through the industrial area to reach part of the old town centre of Denbigh. It then rejoins the former railway line.	There are shops, cafés, pubs and restaurants in Denbigh as well as accommodation. The leisure centre, town trail, castle, museum and Brookhouse pottery should provide some interest to visiting cyclists.	Built up urban landscape with no conservation interest.	J3.4
Section 4: Denbigh to Ruthin				
CH19260 to 20290	The route follows the former railway line past playing fields and Denbigh High School on the left to pass beneath a minor road and a cemetery on the right with backs of gardens directly on the left.		Managed amenity grassland with no special conservation interest.	J1.2 J3.4
CH20290 to 21640	The route moves out of Denbigh on to open farmland on the line of the former railway. The land is a mixture of pasture and cultivated fields with fragmented hedges and some mature trees.		The pasture consists of improved and semi-improved grassland. The hedges have been removed on some sections and the track left unfenced giving a minimal conservation interest and no corridor effect.	B4 B6.2 J1.1 J1.3 J2.2 J2.7
CH21640 to 21760	Still on the former railway line the route passes close by a small group of dwellings to cross the busy A525 near a lay bye.		There is no special conservation interest here. The houses adjoin the track and ornamental species of conifers and garden trees have been planted.	J1.3 J1.4 J3.6
CH21760 to 22400	The route continues on the former railway line for a short way before making a detour along a track to the left then round the edge of a field to rejoin the former line as it enters woods.		This section comprises heavily grazed land on the track and semi-improved grassland. There are some sections of boundary hedges remaining and occasional groups of ash. There is no continuity of cover and wildlife interest is limited.	B4 B6.2 J1.3 J2.2

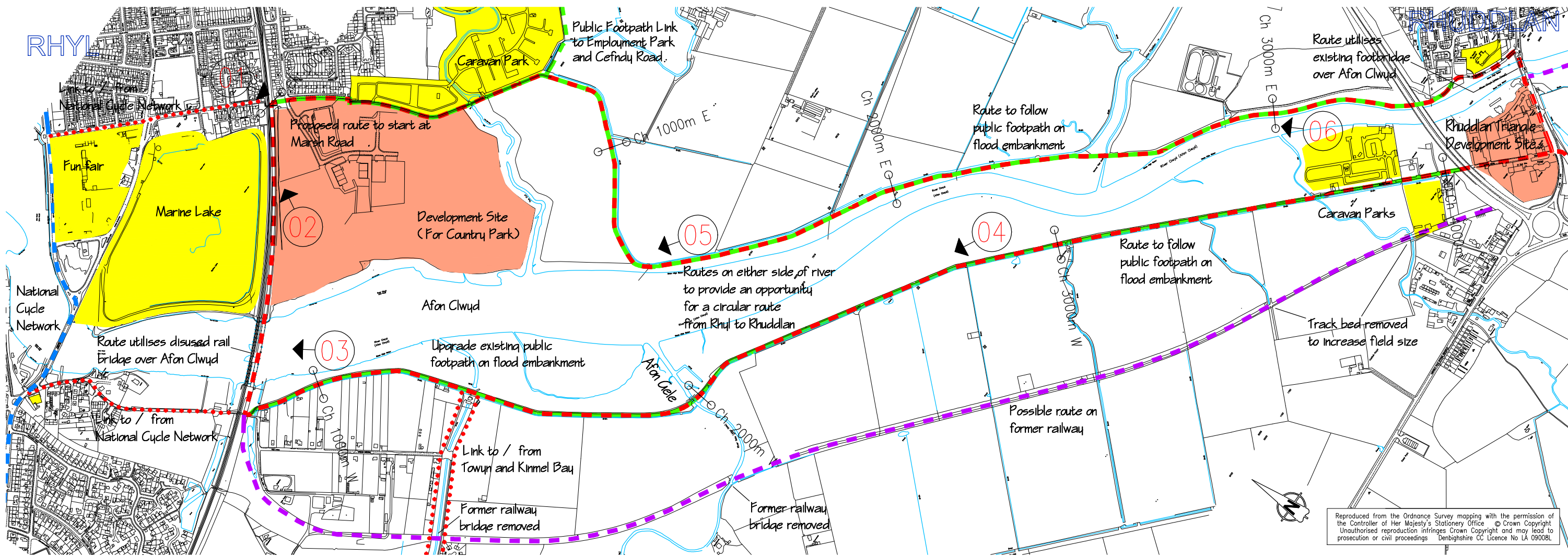
<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 4: Denbigh to Ruthin (continued)				
CH22400 to 22910	<p>The route here follows the former railway line through well established mixed deciduous woodland on both sides of the track for a short length then more open land on the left but continuing woodland cover on the right.</p> <p>There is a ditch on the right between the woods and the track. Farm vehicles use some of this section of the route for access to various fields on the left and at the end of this section there is an area on the left that has been used as a dump for farm refuse.</p>		<p>The mature woods contain alder, sycamore, oak and some ash. The wood is rather wet and has a good mix of understory species with hawthorn and elder on the edges. There are well established ash and alder on the left of the track.</p> <p>The wildlife opportunities offered by the woods are very good, there is evidence of considerable shooting activity all around, and there is a badger sett nearby.</p>	A1 A2 G2 J2.3 J2.6
CH22910 to 24450	<p>The route stays on the former railway line which becomes wider here. The track is well used as a farm access route with the sides covered by unmanaged grassland in which willow, gorse and bramble scrub are establishing.</p> <p>The boundary hedges are fragmented and the area seems to be used by the public for informal recreation. The route crosses a minor road near the Afon Clywedog bridge.</p>	There is a small area used for storage of road chippings and other highways materials next to the minor road to Llandyrnog. This is used by the public for car parking.	<p>The track here is wide enough to allow some conservation interest on the margins, and there is a limited value to this section as a wildlife corridor which would be improved by the reintroduction of boundary hedges.</p> <p>There is a wet section on the left with willows and associated plants.</p>	A2 B2.1 J1.3 J2.3
CH24450 to 24840	Staying on the former railway line the route passes farmland with patches of small woods. The boundaries are neglected here with scrub and trees established on the track.		<p>The overgrown hawthorn boundary hedges and establishing ash and sycamore give some conservation interest.</p> <p>The patches of bramble and gorse scrub with invasive willow on the track are providing some cover for wildlife movement through this section.</p>	A2 B6.2 J2.2

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 4: Denbigh to Ruthin (continued)				
CH24840 to 25730	Using the former railway track the route here is on a low embankment with good sections of boundary hedges and establishing sycamore, ash and oak. There are grassed areas which are grazed by farm stock.		This quiet section has some use as a corridor for wildlife movement but it's conservation value is otherwise limited.	A2 B2.2 J2.1 J2.3
CH25730 to 25940	The route here is still on the line of the former railway but there is no trace of this on site. The land is used for farming and all boundaries have been removed.		There are no boundary fences or hedges, the land is improved grassland over an open field. There is no special conservation interest.	B4 J2.2
CH25940 to 26750	The former railway track here has lost it's boundary fences and hedges on the left hand side and is used for grazing.		The removal of most of the boundary hedges and the incorporation of the track into adjacent fields has removed any corridor effect for wildlife and severely restricts other conservation interest.	B4 J2.1 J2.2
CH26750 to 27370	This short section of the route is now used as a garden by the house on the boundary.		There is no conservation interest.	J1.4 J3.6
CH27370 to 27750	The former railway track here has lost it's boundary fences and hedges on the left hand side and is used for grazing.		The removal of most of the boundary hedges and the incorporation of the track into adjacent fields has removed any corridor effect for wildlife and severely restricts other conservation interest.	B4 J2.1 J2.2
CH27750 to 28020	The route is taken along a public footpath and then through the village of Rhewl.		The route is bounded by playing fields on the left. There is no conservation interest.	J1.2 J1.4
CH28020 to 28500	The route here passes through a landfill site on the former railway track. Some traces of the boundary hedge remain on the right, with open fields to the left.		There is no conservation interest in this section.	B4 J2.2

<i>Chainage</i>	<i>Description</i>	<i>Points of interest</i>	<i>Conservation interests</i>	<i>Habitat types noted</i>
Section 4: Denbigh to Ruthin (continued)				
CH28500 to 29680	The route follows the former railway track but this is barely discernible on site as the boundary fences and hedges have been removed on one or both sides and the land incorporated into adjacent fields. There are some trees, mostly oak, on the former boundary line. The route diverts from the line for a short section to around a field boundary and finally passes the sewage treatment works on the left.		The lack of boundary hedges for most of this section together with the intensive use for grazing preclude any corridor effect or any special conservation interest.	B4 J2.2 J2.7
CH29680 to 30330 (ends)	The route crosses the Afon Clwyd on a steel bridge and enters Ruthin through the industrial estate to finish at the Craft Centre and information point	Ruthin provides shops, cafés pubs and restaurants as well as accommodation. The craft centre, leisure centre, town trail, the market and the castle may all be of interest to touring cyclists.	There is no conservation interest on this section.	J3.6

APPENDIX F:

Drawings



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KEY

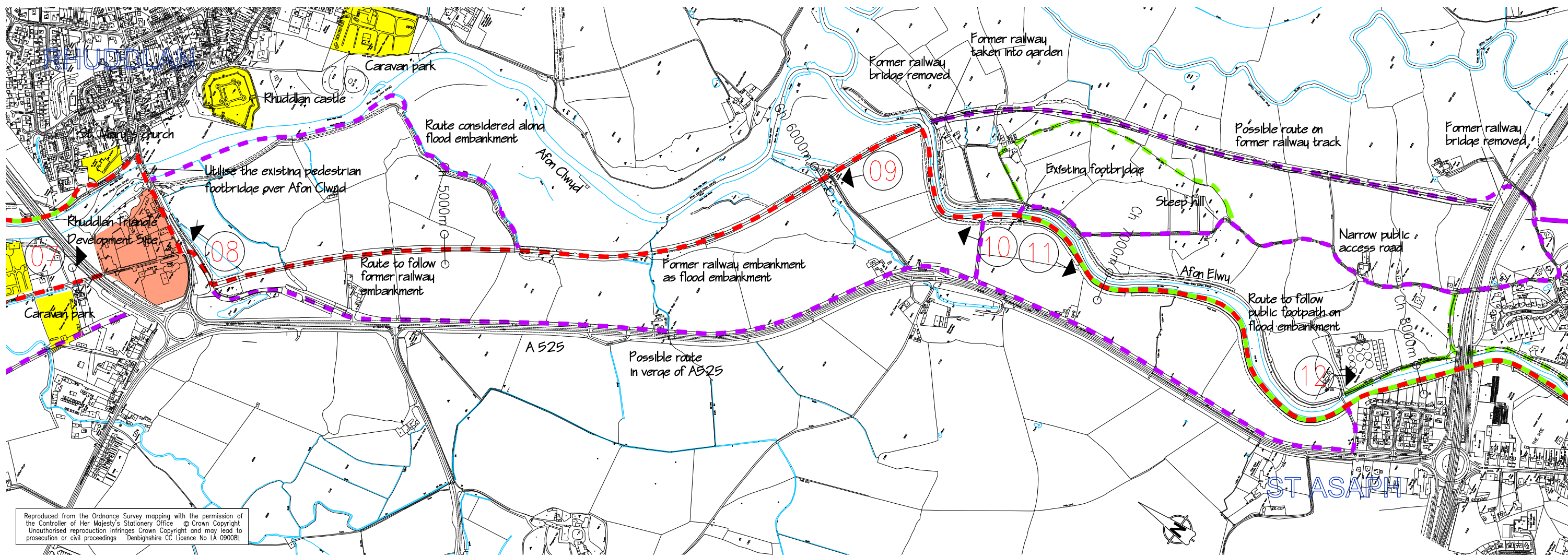
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- Preferred Route on Public Footpath
- Link to/ from Preferred Route
- - - - - Alternative Routes Considered
- - - - - Public Footpath
- - - - - National Cycle Network
- Point of Interest
- Development Site
- Chainage Marker
- 03 Photograph Location

0 100 200 300 400 500
Metres

RHYL to RHUDDLAN

AFON CLWYD

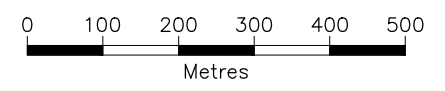




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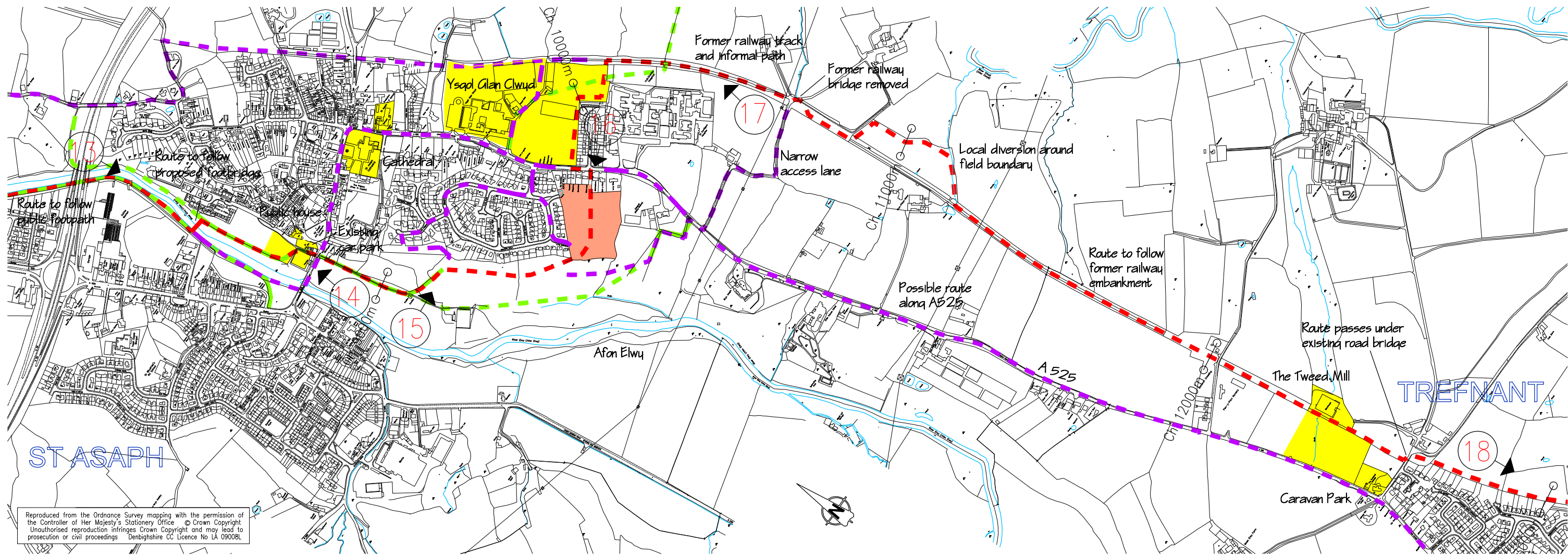
- KEY**
- - - Preferred Route
 - - - Preferred Route on Public Footpath
 - - - Alternative Routes Considered
 - - - Public Footpath
 - Point of Interest
 - Development Site
 - Chainage Marker
 - 09 Photograph Location



RHUDDLAN to ST ASAPH
LON CLWYD



02



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13



14



15



16

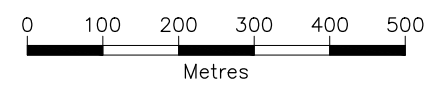


17



18

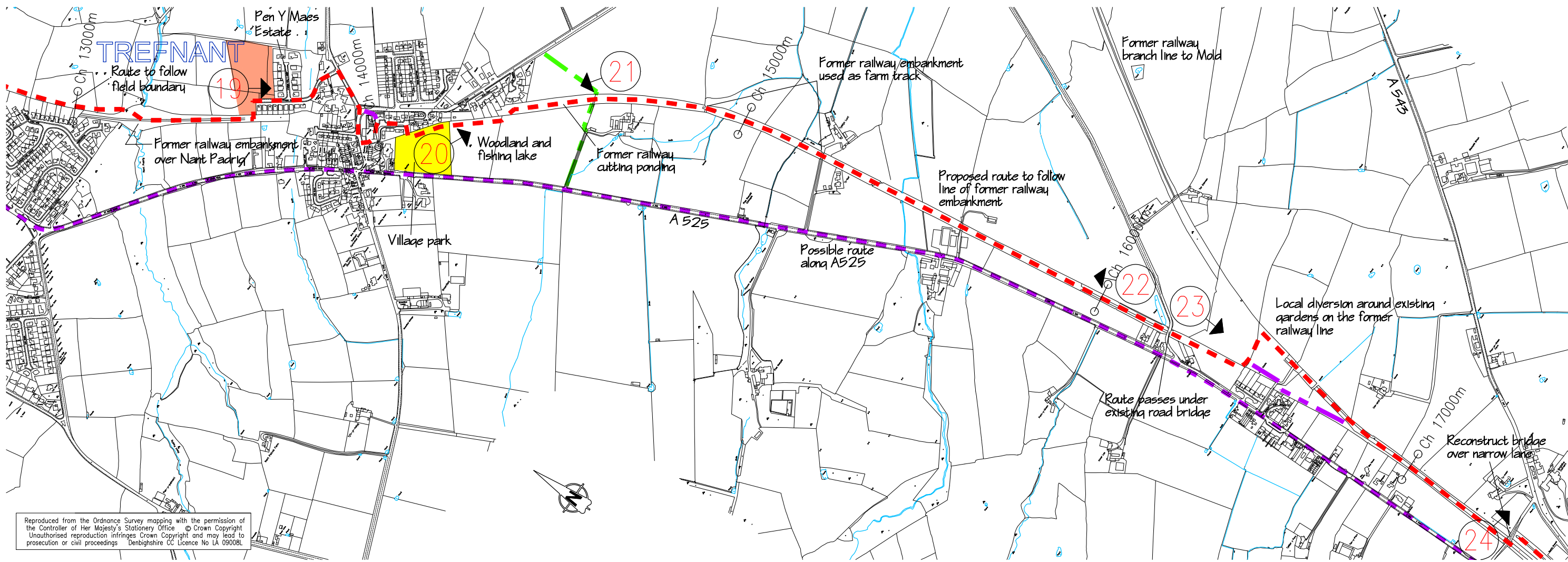
- KEY**
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 - - - Preferred Route on Public Footpath
 - - - Alternative Routes Considered
 - - - Public Footpath
 - Point of Interest
 - Development Site
 - Chainage Marker
 - 17 Photograph Location



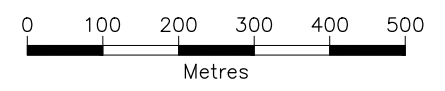
ST ASAPH TO TREFNANT
LON CLWYD



03



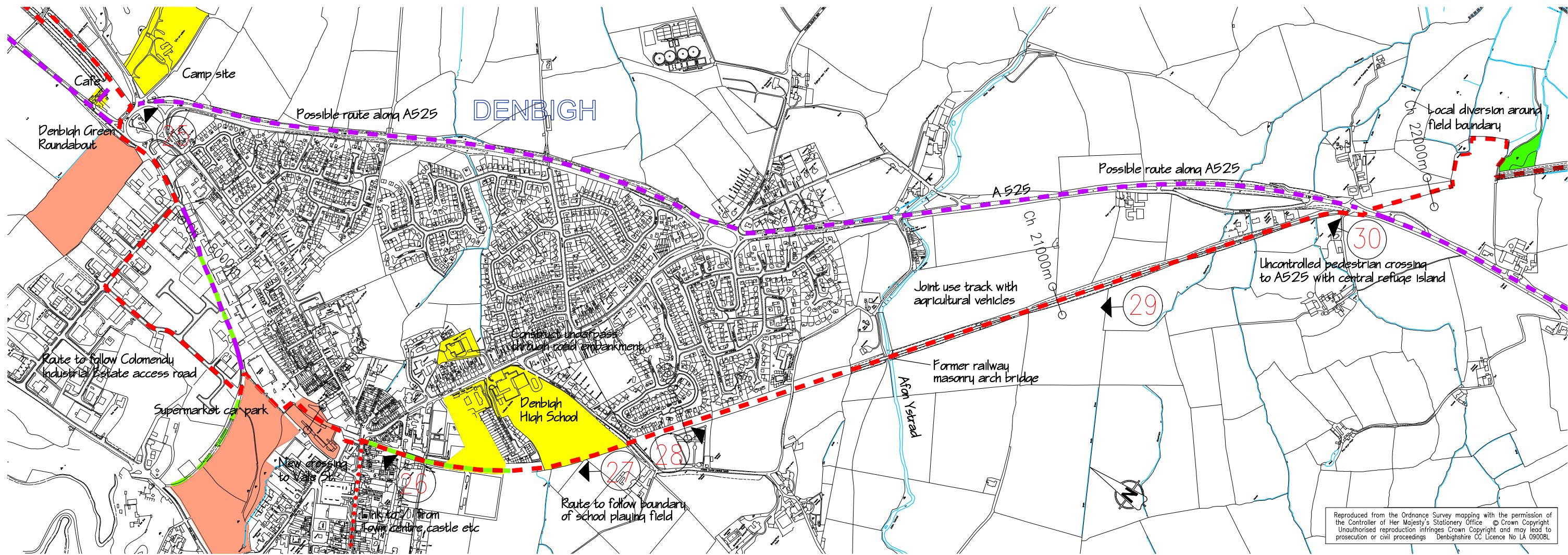
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 - - - Alternative Routes Considered
 - - - Public Footpath
 - Point of Interest
 - Development Site
 - Chainage Marker
 - 21 Photograph Location



TREFNANT to DENBIGH
LON CLWYD



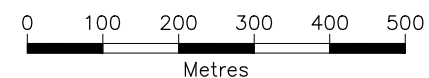
04



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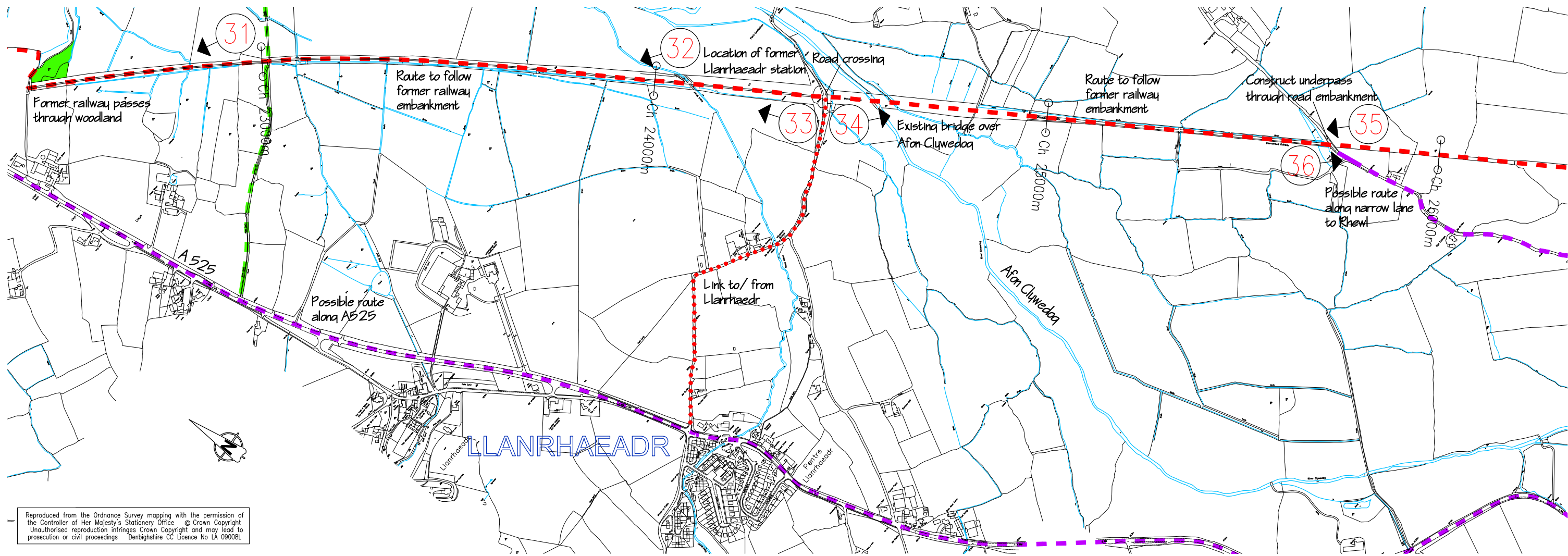
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 - - - - - Preferred Route on Public Footpath
 - Link to/ from Preferred Route
 - - - - - Alternative Routes Considered
 - - - - - Alternative Route on Public Footpath
 - - - - - Public Footpath
 - Point of Interest
 - Development Site
 - Chainage Marker
 - 29 ← Photograph Location



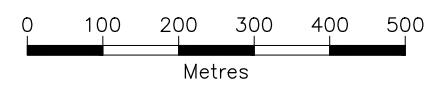
DENBIGH
CONVAL



05



- KEY
- - - - - Preferred Route
 - Link to/ from Preferred Route
 - - - - - Alternative Routes Considered
 - - - - - Public Footpath
 - ▭ Point of Interest
 - ▭ Development Site
 - Chainage Marker
 - ◀ (33) Photograph Location

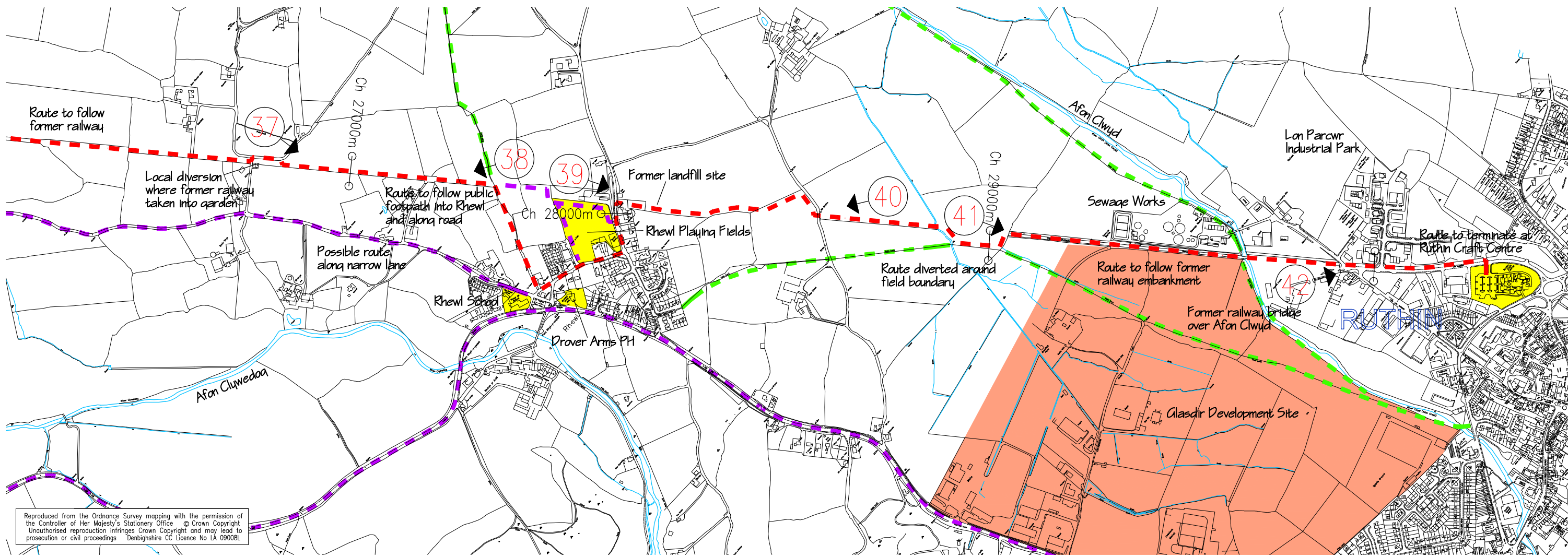


DENBIGH to LLANRHAEDR

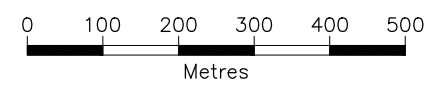
LON CLWYD



06



- KEY**
- Preferred Route
 - Alternative Routes Considered
 - Public Footpath
 - Point of Interest
 - Development Site
 - Chainage Marker
 - ⊙ Photograph Location



LLANRHAEDR to RUTHIN
LON CLWYD



07

APPENDIX G:
Construction Details



◀ **Photograph A**
Construction - 'Bound Surfacing'

An example of a segregated pedestrian/cyclist facility. The path has a bituminous surfacing with users segregated by road markings.

In this location lighting of the cycle track was considered necessary.

Photograph B
Construction - 'Unbound Surfacing' ▶

An example of a rural cycletrack along a former railway (hence the wide verges).

The path is constructed of granular sub-base finished with a compacted granite dust surface.



◀ **Photograph C**
Crossing - 'Road Priority'
(principal road)

An example of a cycle track crossing a rural road where the national speed limit applies.

Note the advance warning road markings for vehicles and the fencing preventing direct access to the road by users of the cycle track.





◀ **Photograph D**
Crossing - 'Road Priority'
(minor road)

An example of a cycle track crossing a minor road with traffic calming measures to reduce vehicle speeds.

Fencing prevents direct access to the road by users of the cycle track.

Photograph E
Crossing - 'Road Priority'
(urban road)

An example of a designated cycle track crossing in an urban environment.



▶ **Photograph F**
Crossing - 'Route Priority'

An example of a gated crossing to provide access to fields on either side of a cycle track.

Shown with the gates closed across the cycle track.





◀ **Photograph G**
Access - 'Maintenance Vehicles'

An example of a gated access point for maintenance vehicles alongside a restricted access point for cycle track users.

Photograph H
Access - 'Restrictions'

An example of a fenced 'chicane' which restricts access to the cycle track.

When constructed correctly the 'chicane' prevents motorcycle access to the cycle track and checks route users at road crossings.



◀ **Photograph I**
Access - 'Restrictions'

An alternative means of preventing motorcycle access to the cycle track.

The barrier is designed to allow cycles, pushchairs and wheelchairs to pass underneath the rail and pedestrians to walk around.

Motorcycles however, are too large/heavy to negotiate the restriction.



◀ **Photograph J**
Access - 'Restrictions'

An alternative means to prevent motorcycle access to the cycle track.

The arrangement shown can be modified to accommodate horses, by increasing the spacing of the fencing and reducing the height of the rail (so horses can step over).

Photograph K
Structures - 'Bridge'

An example of a former railway bridge abutments adapted to support a new cycle track bridge deck



◀ **Photograph L**
Structures - 'Gateway'

An example of a 'Gateway' feature.

APPENDIX H:

Safety Audit

CYCLE AUDIT PROCEDURES : STAGES 1 AND 2

FORM CAP 1-2

SECTION 1

Name of Scheme: LON CLWYD CYCLE TRACK - RHYL TO RHUDDLAN

Classification of Scheme: CYCLING SCHEME

(See paragraphs 50-51 for the descriptions of different classifications of schemes.)

Stage of Cycle Audit: 1 - DESIGN BRIEF

Q1: What is the predominant Cycle Category of Road(s) on which the scheme is located?

(See paragraphs 52-59 for the description of categories.)

- | | | |
|-----------------|--------|--|
| Cycle Proactive | ..... | (Answer Q2, 3, 4 and 5) |
| Cycle Friendly |✓ | (Answer Q2, 4, and 5) |
| Cycle Neutral | ..... | (Cease Cycle Audit, and rely on Safety Audit procedures to ensure that the safety of cyclists is considered systematically.) |

Q2: For schemes on Cycle Proactive and Cycle Friendly Roads,

- | | Yes | No |
|--|-------|--------------|
| a) Is there scope for reducing the volume of traffic? | N/A | ..... |
| b) Can existing traffic speeds be reduced? | N/A | ..... |
| c) Can junctions be improved for cyclists? | ✓ | ..... |
| d) Can the use of available carriageway be changed to give more space to cyclists? | ..... | ✓ (MARSH RD) |
| e) Can specific off-carriageway facilities be provided? | ✓ | ..... |

(Any tick in the Yes column should be reflected in the recommendations made in Q4)

Q3: For schemes on Cycle Proactive Roads,

- | | Yes | No |
|---|-------|-------|
| a) Does the scheme relate properly to its wider context, thus providing a coherent element of cycling infrastructure? | | |
| b) Is the route for cyclists reasonably direct? | | |
| c) Is the scheme sufficiently attractive to encourage cycle usage? | | |
| d) Is the scheme likely to be safe for cyclists? | | |

(Any tick in the No column should be reflected in the recommendations made in Q4)

Q4: Use a separate sheet to attach a reasoned list of recommendations which you wish to make as a result of this Audit and discuss them with: SEE FEASIBILITY REPORT

- 1) The Client for Stage 1.
- 2) The Designer and the Client for Stage 2

Q5: The next Stage of the Cycle Audit Process for this scheme is Stage 2

Name of Auditor(s): RICHARD BROWN ASSOCIATES

Date of Audit: MAY 1999

This report should be retained by the Client in the Scheme File, together with a summary of the action taken as a result of the Audit.

CYCLE AUDIT PROCEDURES

FORM CAP (MCR)

(To be completed and retained by Lead Cycle Auditor with copies to Client)

Name of Scheme..... LON CLWYD CYCLE TRACK.....

Type of Scheme..... CYCLING SCHEME.....

Cycle Category of Road..... CYCLE FRIENDLY.....

Client Officer..... MR I BRADFIELD
DCC HIGHWAYS..... Client File.....

Lead Auditor..... RICHARD BROUN
ASSOCIATES..... Audit File.....

Design Engineer..... T B A..... Design File.....

Appropriate Design Stages Subject to Cycle Audit:

Design Stage	Yes	No
1. Preparation of Client Design Brief	✓	
2. Preliminary Design		✓
3. Detailed Design		✓
4. Substantial Completion		✓

Cycle Audit Record

Stage of Cycle Audit	Date of Audit	Date Recommendations Made to Client	Date of Client Action
1. Design Brief	<u>MAY</u> <u>1999</u>	<u>AUGUST</u> <u>1999</u>	<u>T B A</u>
2. Preliminary Design	—		
3. Detailed Design	—		
4. Substantial Completion	—		

CYCLE AUDIT PROCEDURES : STAGES 1 AND 2
FORM CAP 1-2

SECTION 2

Name of Scheme: LON CLWYD CYCLE TRACK - RHUDDLAN TO ST ASAPH

Classification of Scheme: CYCLING SCHEME

(See paragraphs 50-51 for the descriptions of different classifications of schemes.)

Stage of Cycle Audit: 1 - DESIGN BRIEF

Q1: What is the predominant Cycle Category of Road(s) on which the scheme is located?

(See paragraphs 52-59 for the description of categories.)

- | | | |
|-----------------|-------------------------------------|--|
| Cycle Proactive | ..... | (Answer Q2, 3, 4 and 5) |
| Cycle Friendly | <input checked="" type="checkbox"/> | (Answer Q2, 4, and 5) |
| Cycle Neutral | ..... | (Cease Cycle Audit, and rely on Safety Audit procedures to ensure that the safety of cyclists is considered systematically.) |

Q2: For schemes on Cycle Proactive and Cycle Friendly Roads,

- | | Yes | No |
|--|-------------------------------------|-------|
| a) Is there scope for reducing the volume of traffic? | <i>N/A</i> | ..... |
| b) Can existing traffic speeds be reduced? | <i>N/A</i> | ..... |
| c) Can junctions be improved for cyclists? | <i>N/A</i> | ..... |
| d) Can the use of available carriageway be changed to give more space to cyclists? | <i>N/A</i> | ..... |
| e) Can specific off-carriageway facilities be provided? | <input checked="" type="checkbox"/> | |

(Any tick in the Yes column should be reflected in the recommendations made in Q4)

Q3: For schemes on Cycle Proactive Roads,

- | | Yes | No |
|---|-------|-------|
| a) Does the scheme relate properly to its wider context, thus providing a coherent element of cycling infrastructure? | | |
| b) Is the route for cyclists reasonably direct? | | |
| c) Is the scheme sufficiently attractive to encourage cycle usage? | | |
| d) Is the scheme likely to be safe for cyclists? | | |

(Any tick in the No column should be reflected in the recommendations made in Q4)

Q4: Use a separate sheet to attach a reasoned list of recommendations which you wish to make as a result of this Audit and discuss them with: *SEE FEASIBILITY REPORT*

- 1) The Client for Stage 1.
- 2) The Designer and the Client for Stage 2

Q5: The next Stage of the Cycle Audit Process for this scheme is Stage 2

Name of Auditor(s): RICHARD BROWN ASSOCIATES

Date of Audit: MAY 1999

This report should be retained by the Client in the Scheme File, together with a summary of the action taken as a result of the Audit.

CYCLE AUDIT PROCEDURES : STAGES 1 AND 2

FORM CAP 1-2

SECTION 3

Name of Scheme: LON CLWYD CYCLE TRACK - STASAPH TO DENBIGH

Classification of Scheme: CYCLING SCHEME

(See paragraphs 50-51 for the descriptions of different classifications of schemes.)

Stage of Cycle Audit: 1 - DESIGN BRIEF

Q1: What is the predominant Cycle Category of Road(s) on which the scheme is located?

(See paragraphs 52-59 for the description of categories.)

- | | | |
|-----------------|---------|--|
| Cycle Proactive | ..... | (Answer Q2, 3, 4 and 5) |
| Cycle Friendly | ✓ | (Answer Q2, 4, and 5) |
| Cycle Neutral | ..... | (Cease Cycle Audit, and rely on Safety Audit procedures to ensure that the safety of cyclists is considered systematically.) |

Q2: For schemes on Cycle Proactive and Cycle Friendly Roads,

- | | Yes | No |
|--|---------|-----------|
| a) Is there scope for reducing the volume of traffic? | | ✓ * |
| b) Can existing traffic speeds be reduced? | ✓ | * |
| c) Can junctions be improved for cyclists? | ✓ | * |
| d) Can the use of available carriageway be changed to give more space to cyclists? | ✓ | |
| e) Can specific off-carriageway facilities be provided? | ✓ | |

(Any tick in the Yes column should be reflected in the recommendations made in Q4)

* TREFNANT #
COLOMENDY
ESTATE

Q3: For schemes on Cycle Proactive Roads,

- | | Yes | No |
|---|-------|-------|
| a) Does the scheme relate properly to its wider context, thus providing a coherent element of cycling infrastructure? | | |
| b) Is the route for cyclists reasonably direct? | | |
| c) Is the scheme sufficiently attractive to encourage cycle usage? | | |
| d) Is the scheme likely to be safe for cyclists? | | |

(Any tick in the No column should be reflected in the recommendations made in Q4)

Q4: Use a separate sheet to attach a reasoned list of recommendations which you wish to make as a result of this Audit and discuss them with: SEE FEASIBILITY REPORT

- 1) The Client for Stage 1.
- 2) The Designer and the Client for Stage 2

Q5: The next Stage of the Cycle Audit Process for this scheme is Stage 2

Name of Auditor(s): RICHARD BROWN ASSOCIATES

Date of Audit: MAY 1999

This report should be retained by the Client in the Scheme File, together with a summary of the action taken as a result of the Audit.

CYCLE AUDIT PROCEDURES : STAGES 1 AND 2
FORM CAP 1-2

SECTION 4

Name of Scheme: LONCLWYD CYCLE TRACK - DENBIGH - RUTHIN

Classification of Scheme: CYCLING SCHEME

(See paragraphs 50-51 for the descriptions of different classifications of schemes.)

Stage of Cycle Audit: 1 - DESIGN BRIEF

Q1: What is the predominant Cycle Category of Road(s) on which the scheme is located?
 (See paragraphs 52-59 for the description of categories.)

- Cycle Proactive (Answer Q2, 3, 4 and 5)
- Cycle Friendly (Answer Q2, 4, and 5)
- Cycle Neutral (Cease Cycle Audit, and rely on Safety Audit procedures to ensure that the safety of cyclists is considered systematically.)

Q2: For schemes on Cycle Proactive and Cycle Friendly Roads,

- | | Yes | No |
|--|-------------------------------------|---------------------------------------|
| a) Is there scope for reducing the volume of traffic? | | <input checked="" type="checkbox"/> * |
| b) Can existing traffic speeds be reduced? | <input checked="" type="checkbox"/> | * |
| c) Can junctions be improved for cyclists? | N/A | ..... |
| d) Can the use of available carriageway be changed to give more space to cyclists? | <input checked="" type="checkbox"/> | * |
| e) Can specific off-carriageway facilities be provided? | <input checked="" type="checkbox"/> | |
- * LON PARCWR
 IND. EST.
 RUTHIN

(Any tick in the Yes column should be reflected in the recommendations made in Q4)

Q3: For schemes on Cycle Proactive Roads,

- | | Yes | No |
|---|-------|-------|
| a) Does the scheme relate properly to its wider context, thus providing a coherent element of cycling infrastructure? | | |
| b) Is the route for cyclists reasonably direct? | | |
| c) Is the scheme sufficiently attractive to encourage cycle usage? | | |
| d) Is the scheme likely to be safe for cyclists? | | |

(Any tick in the No column should be reflected in the recommendations made in Q4)

Q4: Use a separate sheet to attach a reasoned list of recommendations which you wish to make as a result of this Audit and discuss them with: SEE FEASIBILITY REPORT

- 1) The Client for Stage 1.
- 2) The Designer and the Client for Stage 2

Q5: The next Stage of the Cycle Audit Process for this scheme is Stage 2

Name of Auditor(s): RICHARD BROWN ASSOCIATES

Date of Audit: MAY 1999

This report should be retained by the Client in the Scheme File, together with a summary of the action taken as a result of the Audit.