DAVID BLAINEY BSc MCILT
07419 346722
dab.busman@gmail.com

The 2020 North Wales Regional Bus Strategy

The Background
A written statement from the Welsh Government Transport Minister, dated 24th July 2019, confirmed an agreement with the North Wales Economic Ambition Board (NWEAB) for them to develop a Strategic Bus Network for North Wales and associated projects.

The BusMan Transport Consultancy, supported by Transport Cymru Consultancy, were appointed by Gwynedd Council on behalf of the NWEAB to produce a North Wales Regional Bus Strategy, in response to a tender advertised through Sell4Wales.

The Brief
- **Review the Bus and Community Transport Network Strategy 2015** in the light of changes since 2015 and revise the Action Plan to take account of current issues
- **Develop proposals for a Regional Strategic Bus Network**, including identification of:
  - strategic corridors
  - local networks
  - key hubs and modal change points
- **Produce an Action Plan for the roll-out of Quality Partnerships**, negotiating potential solutions with operators and other partners
- Consider potential solutions to the lack of operators in **rural areas** and propose **alternative solutions**
- Provide technical support for a programme to deliver **low/zero carbon** public transport networks and solutions as part of the NWEAB smart energy programme

The Work Plan

Review Strategy	Regional Strategic Bus Network	Quality Partnerships	Rural Solutions	Low Carbon Solutions
Read 2015 Strategy	Meet stakeholders: Bus Operators Local Authorities Transport for Wales NWEAB Welsh Govt		Assess extent of problem	Identify options
		Create Priority List from Operator/L A feedback	Report on possible solutions	Liaise with operators
Produce 2020 Strategy	Develop stakeholder involvement	Produce Quality Partnership template	Workshop: Local Authorities Community reps Taxi/CT Operators	Link introduction to Quality Partnership development
Produce revised Work Programme for consultation	Develop Strategic Network based on hierarchy of services	Select pilot schemes		
		Implement	Pilot each solution to assess impact	

CONTENTS page

Review and Analysis
1. Documents

A number of policy documents for public transport in North Wales have been produced over the past ten years:

> The **Taith Regional Transport Plan**
> was produced by the Taith Regional Transport Consortium for the period 2010-2015.
> It was replaced by North Wales Local Transport Plan 2015:
>
> The **North Wales Local Transport Plan 2015**
> was produced by the six North Wales Local Authorities for the period 2015-2020.
> It drew on the work in the Taith Regional Transport Plan 2010–2015, but superseded it.
>
> The **Bus and Community Transport Network Strategy 2015**
> was produced by the six North Wales Local Authorities for the period 2015-2020.
> It was a sub-document of the North Wales Local Transport Plan 2015.
> *(It is sometimes referred to as the 2013 Regional Bus Strategy)*
>
> The **Bus Services (Wales) Bill 2020**
> was produced by the Welsh Government for 2020 onward.
> It sets out new arrangements for overseeing the Welsh bus network but its enactment has been delayed by the Covid-19 pandemic.
>
> The **National Transport Plan (Wales)**
> is currently being produced by the Welsh Government.
> It will deal with all transport issues in Wales, including rail and trunk road network matters.

The new 2020 North Wales Regional Bus Strategy will:
- replace the Bus and Community Transport Network Strategy 2015
- form a complimentary document to the new National Transport Plan (Wales)
- draw on the relevant work of the three existing policy documents

a) The North Wales Local Transport Plan 2015
This policy document was originally intended to be relevant until March 2020, but will remain valid for a further year, until 2021 and needs to be reflected in the 2020 North Wales Regional Bus Strategy. The North Wales Local Transport Plan 2015 aimed to identify issues and opportunities for all modes of transport (including buses) but focused on issues within the remit of local authorities. Its vision was:

> *The North Wales Local Authorities aim to remove barriers to economic growth, prosperity and well-being by delivering safe, sustainable, affordable and effective transport networks.*

The following issues identified by the Plan have particular relevance to the development of the new 2020 North Wales Regional Bus Strategy:
- The lack of viable and affordable alternatives to the car to access key employment sites and other services
- Benefits and minimised impacts on the environment, encouraging sustainable travel
- Integration with strategic public transport services

Schemes designed to deliver these interventions were specified in a five year programme of work, 2015-2020, as well as medium and longer term schemes for the period 2020 – 2030.

Full details of all the schemes can be found in the North Wales Local Transport Plan 2015, but those five year programmes relevant to the new 2020 North Wales Regional Bus Strategy are listed in the following table, which summarises the varying levels of progress made with these schemes.

Progress of North Wales Local Transport Plan 2015 Schemes (2015-2020)

Scheme	Local Authority	Progress Made
Integrated Ticketing	All areas	Little progress. Bus/rail scheme halted when Arriva withdrew from rail franchise renewal
Abergele Park and Ride	Conwy	Not implemented
Abergele Town Centre Network Resilience improvements	Conwy	Not implemented
Colwyn Bay Station Interchange improvements	Conwy	Not implemented
Connections to Borderlands Railway Line	Flintshire & Wrexham	Some limited progress in relation to Deeside
Wrexham North – new strategic transport hub	Wrexham	Not implemented
Improved access to Ruabon Station	Wrexham	Some infrastructure work carried out but issues with lack of parking control
Improved access to Gwersyllt Station	Wrexham	Not implemented
Public transport infrastructure improvements	All areas	Some basic work on shelters but few major schemes
Quality Bus Corridors	All areas	Work on-going on Chester – Rhyl corridor.
Bus priority enhancements Penrhynside	Conwy	Not implemented
Sustainable access to Wrexham Industrial Estate	Wrexham	
Vale of Clwyd Sustainable Transport Package	Denbighshire	No bus related work

The medium and longer term bus related schemes (2020–2030) in the North Wales Local Transport Plan 2015 were:

- Bus priority improvements in Kinmel Bay
- Llandudno Junction Station
- Vale of Clwyd Sustainable Transport Package (continuation)

Junction layout modifications and traffic light phasing changes implemented in 2019/20 as part of an active travel package has resulted in a significant improvement to the flow of bus services along the Kimnel Bay corridor

The 2020 North Wales Regional Bus Strategy needs to evaluate the schemes in these lists and consider the inclusion of those that are still relevant.

b) Bus and Community Transport Network Strategy 2015
The six North Wales Local Authorities produced this document in 2013. It is a sub document of the North Wales Local Transport Plan 2015. Below are the Objectives, Key Issues and elements of the Strategy and Action Plan from the document.

i) Objectives
The objectives were based on the aspirations of the Welsh Government and of the North Wales Local Authorities:

- Supporting economic growth
- Improving access to employment health, education and other services
- Supporting rural communities
- Improving the quality of life
- Improving connectivity and increasing transport accessibility

Seven years on, in 2020, awareness of the implications of not responding to the climate emergency has grown. The objectives of the new 2020 North Wales Regional Bus Strategy must take account of the recognition that carbon reduction has become the primary, overarching aim, with a number of challenging targets to be met.

The objectives of the Bus and Community Transport Network Strategy 2015 must now be delivered within a framework that significantly reduces carbon emissions. This means that, within overall transport policy, the 2020 North Wales Regional Bus Strategy must take on a much greater importance, given the role that the bus can play in the new carbon reduction agenda.

ii) Key Issues
The Key Issues for buses include gaps in provision, as well as opportunities for buses, such as Demand Responsive Transport and Community Transport.

Over the last seven years, there have been changes to the bus network and to the demography of the region, so this analysis needs to be reviewed and revised. For example, the section on ticketing needs to be re-written in the light of the technological advances that have been made in this field and the new opportunities now available.

iii) Strategy and Action Plan
This includes:
- Bus network coverage
- Vehicles
- Infrastructure
- Bus network performance
- Stakeholder engagement

These elements are still relevant, and form the basis of the 2020 North Wales Regional Bus Strategy:

- A thorough analysis of the current **bus network** has been undertaken.

- The **vehicle specification** in 2020, while still including the need for *"good quality vehicles…..with modern and comfortable interiors"*, also has to reflect the commitment made by Welsh Government to move to a zero carbon bus fleet very quickly. The 2020 North Wales Regional Bus Strategy sets out a programme of investment to meet this target in conjunction with operators.

- The cuts to expenditure experienced through the period of austerity in the UK since 2008, means that much of the **bus infrastructure** installed, using government grants available from 1996, is now in poor repair and needs to be replaced. The 2020 North Wales Regional Bus Strategy sets out an infrastructure standard for the bus network in North Wales and a proposed mechanism for ensuring it is provided and then maintained in good condition.

- If public funds are to be invested in the bus network, it is essential that the bus services delivered are reliable, punctual and meet agreed quality standards. **Performance monitoring** needs to be introduced with Key Performance Indicators, targets and publicly available results. This performance monitoring should be applied to service operation, and infrastructure and information provision. The 2020 North Wales Regional Bus Strategy sets out in detail how this monitoring should operate and how **stakeholders** will be involved.

c) Bus Services (Wales) Bill 2020

The Bus Services (Wales) Bill 2020 sets out new arrangements for overseeing the Welsh bus network. The purpose of the Bill is to:

> *provide Local Authorities with an improved range of tools to use in the planning and delivery of local bus services in their areas*

The new tools are:
- Welsh Partnership Schemes:
  Local Authorities and bus companies will be able to agree:
  - routes, times and frequencies
  - what facilities should be provided in buses (*eg. Wi-fi*)
  - ticket prices and types
  - how to provide information
  - investment in infrastructure
  - traffic management measures

- Welsh Franchising Schemes:
  Local Authorities will be allowed to set up franchising schemes where bus companies get exclusive rights to run designated bus services on set routes

- Local Authority Bus Services
  Local Authorities will be able to operate their own buses on scheduled local bus services

The implications of these potential changes on the governance of bus services constitute a material change to the background of the Bus and Community Transport Network Strategy 2015 and are considered in the 2020 North Wales Regional Bus Strategy.

2. Consultation
In order to understand the views and aspirations of stakeholders a series of consultation meetings were held with key individuals and organisations.

Local Authorities
Meetings have been held with local authority public transport officers collectively and individually. This has enabled an understanding of the bus related work that is being carried out currently and has assisted in the categorisation of bus services (see below).

Bus Operators: Arriva
Meetings have been held with the Managing Director of Arriva in North Wales and his senior operational team. He is very keen to work with the public sector to develop bus services and has been open in sharing commercial information. As an outcome of the meetings, Arriva identified their key services, with optimum frequencies and potential infrastructure improvements to improve reliability and patronage, outlined. This work is summarised in the blue table on the next page.

General improvements identified by Arriva for implementation on all services were:
- control of parking at bus stops
- improved information provision

Arriva also identified some potential new initiatives:
>   Potential for growth: 41A Wrexham – Pentre Gwyn – Marchwiel

>   Potential new service: X3 Mold – Chester Express
>   *(The TrawsCymru Review 2019 identified this service as part of a potential new Corwen – Ruthin – Mold – Chester service, connecting at Corwen with TrawsCymru services to Machynlleth, Aberystwyth and Barmouth, and largely provided out of existing resources. This is discussed below in more detail)*

The information obtained from Arriva has been of significant value in developing an Infrastructure Investment Programme and a Quality Partnership Implementation Plan.

Consultation with other operators
Similar discussions with the other commercial operators in the region were planned, but the Covid-19 lock-down was implemented before these meetings could take place.

Meetings with other Organisations
Regular meetings have taken place with Officers from Transport for Wales and the North Wales Economic Ambition Board, with the purpose of understanding how bus policy was developing in Wales and avoiding duplication of work.

Detailed work on developing the 2020 North Wales Regional Bus Strategy has followed these meetings.

Arriva Key Services

	Service	Frequency (Mon-Fri)	Infrastructure Work/Issue
1	Wrexham - Chester	12 minutes	Bus lanes Chester Business Park
2/2A	Wrexham - Oswestry	15 minutes	
4	Bangor - Holyhead	30 minutes	Traffic issues between Anglesey & the mainland (also relevant to services 53 – 58 and 62)
4	Mold – Chester	30 minutes	Bus lanes/priority Saltney Parking control Buckley Cross
X4	Mold - Chester	30 minutes	Bus lanes Chester Business Park Parking control Buckley Cross
5	Caernarfon-Bangor-Llandudno	15 minutes	Traffic congestion Ysbyty Gwynedd & Penrhos Schools Traffic light priority Llandudno Delays at A55 roundabouts.
5	Wrexham - Llangollen	30 minutes	Parking control Ruabon Interchange Terminal arrangements Llangollen
10	Chester – Connahs Quay/Flint	15 minutes	Bus priority/bus lanes Deeside & Flint
11	Chester-Flint-Holywell-Rhyl	30 minutes	Bus priority/bus lanes Deeside & Flint Improvements Holywell Bus station Parking control Ffynnongroew Traffic light priority Prestatyn Bus Station
12	Rhyl-Colwyn Bay-Llandudno	12 minutes	Bus priority Colwyn Bay, including improved access to Station for interchange Traffic light priority Abergele-Llandudno
13	Prestatyn - Llandudno	40 minutes	Traffic light priority Abergele-Llandudno
14/15	Conwy-Llandudno-Colwyn Bay-Llysfaen	30 minutes	Bus priority Colwyn Bay, including improved access to Station for interchange Traffic light priority Colwyn Bay-Llandudno
27	Mold-Wrexham	60 minutes	Parking control & enforcement Caergwrle & Leeswood
35/36	Rhyl-Dyserth-Prestatyn	30 minutes	Traffic light priority Prestatyn Bus Station
51	Rhyl–Denbigh	20 minutes	Traffic light priority St. Asaph–Trefnant Parking control St. Asaph
53-58	Bangor – Beaumaris	40 minutes	Bus stop arrangements in Menai Bridge Parking control & enforcement Menai Bridge & Beaumaris
62	Bangor–Amlwch	30 minutes	Bus stop arrangements Menai Bridge & Amlwch

3. The Current Regional Bus Network
a) Categorisation of Services
All existing local bus services in Wales have been categorised using the service types defined below*:*

	Function is to connect:	**Linked with/connecting to:**
Strategic	**Regionally important centres:** Longer distance services	Core and Local Services at high quality hubs
Core	**Significant local centres** A key element of the regional bus network	Strategic and Local Services at high quality hubs
Local	**Communities to their local centre** With sufficient demand to justify use of conventional vehicles	Strategic and Core Services at high quality hubs for longer journeys
Town/City	**Residential, educational and employment areas with the town/city centre**	Strategic, Local and Core Services at high quality hubs for longer journeys
Other	Services with low demand but meeting basic accessibility needs Operated by DRT, taxis, community transport or other unconventional modes Includes a sub-group of services predominantly aimed at the tourist market	

These categories define the function of the service and do not reflect it's importance. For example, Strategic Services are not more important than Local Services and should not be given any priority in funding allocation.

The categories allocated have been reviewed with local authority officers and information added relating to days of operation, frequency and funding mechanism.
The blue tables which follow *(pages 11-17)* contain the key information about the categorisation of services in North Wales.
(Further information about each service is attached as a separate document)

A North Wales standard of vehicle could be agreed appropriate to each category of service.

This analysis highlights gaps in service provision and the requirement for revenue support, and further analysis of each issue follows the tables below.

b) Key information about the categorisation of services in North Wales: Strategic, Core, Local, Town, Other

NB.
- *These tables are not complete. It is difficult to obtain details of pre-Covid timetables*
- Codes: C=Commercial service T=Tendered service D=Service receiving de-minimis payment

Strategic Services

Service Number	Description	C/T/D	Evenings Frequency/ No. of trips	Sundays Frequency/ No. of trips
X1	Ruthin – Mold - Chester	T	-	-
11	Rhyl – Holywell – Shotton - Chester	C/D	2 journeys	Every 2 hrs
12	Rhyl – Colwyn Bay - Llandudno	C	40 minutes	20 minutes
13	Prestatyn - Llandudno	C/D	4 journeys	Hourly
51	Rhyl – St. Asaph - Denbigh	C/D/T	7 journeys	Hourly
T3	Wrexham – Llangollen – Dolgellau - Barmouth	D/T	1 journey	5 journeys
4	Mold - Chester	C/D	Hourly	30 minutes
X4	Mold - Chester	C	-	-
27	Mold - Wrexham	C	-	-
1	Wrexham - Chester	C	30 minutes	30 minutes
T12	Wrexham – Oswestry – Newtown - Machynlleth	T	-	-
4	Holyhead – Llangefni - Bangor	C/D	Hourly	Every 2 hrs
62	Amlwch - Bangor	C/D	Every 2 hrs	Every 2 hrs
1	Caernarfon - Porthmadoc	C/T	-	✓
1A/B/R	Caernarfon – Porthmadoc - Blaenau	C/D	-	✓
1S	Caernarfon – Blaenau (Sundays)	T	-	✓
5	Llandudno - Bangor	C/D	Hourly	Every 30
12	Pwllheli - Caernarfon	C/T	-	✓
T2	Aberystwyth - Bangor	C/T	2 journeys	4 journeys
X19	Blaenau - Llandudno	C/D	-	4 journeys

Core Services

Service Number	Description	C/T/D	Evenings Frequency/ No. of trips	Sundays Frequency/ No. of trips
53 - 58	Bangor - Beaumaris	C/D	4 journeys	Every 2 hrs
X43	Bangor - Talwrn	D	-	-
32	Amlwch - Llangefni	T	-	-
45	Llangefni - Aberffraw	T	-	-
25	Holyhead - Aberffraw	T	-	-
42/42A	Bangor - Llangefni	T	-	2 journeys
61	Holyhead - Amlwch	C/D	-	-
1F	Caernarfon - Groeslon	D	-	-
1N	Caernarfon - Nantlle	D/T	-	-
2/2G	Caernarfon - Barmouth	T	-	✓
3	Pwllheli - Porthmadog	C	-	-
3B	Pwllheli - Blaenau	T	3 journeys	-
6B	Bangor - Llanrwst	T	-	-
8	Nefyn - Pwllheli	T	-	✓
17/17B	Pwllheli - Aberaeron	T	-	-
18	Pwllheli - Abersoch	T	-	✓
28	Towyn - Dolgellau	D	-	-
28/X29	Machynlleth - Dolgellau	D/T	-	✓
30	Tywyn - Dolgellau	T	-	-
35	Dolgellau - Blaenau	C/T	-	-
38	Dolgellau – Oakley Arms	C	-	-
39	Porthmadog - Barmouth	C	-	-
67	Bangor - Gerlan	C/T	1 journey	✓
76	Bangor - Bethesda	T	-	-
83	Caernarfon - Dinorwig	D	-	✓
85/86	Bangor - Llanberis	D	-	✓
88	Llanberis - Caernarfon	D/T	-	✓
91	Caernarfon – Dinas Dinlle	T	-	-
X28/29	Tywyn - Aberystwyth	C	-	-
14/15	Llysfaen – Llandudno/Conwy	C	-	-
19	Llanrwst - Llandudno	C/D/T	2 journeys	6 journeys
1/2	Ruthin - Mold	T	-	-

Core Services continued					
5	Wrexham - Llangollen	C/D	3 journeys	Every 2 hrs
14	Denbigh - Mold	T	-	-
55/X5	Ruthin – Corwen – Llangollen – Wrexham	T	-	-
X51	Rhyl – Denbigh – Ruthin - Wrexham	C/D/T	2 journeys	4 journeys
5	Mold – Ellesmere Port	T	-	-
10	Connah's Quay - Chester	C	Hourly	30 minutes
28	Mold - Flint	C	-	-
D1	Flint – Deeside Industrial Park	T	Hourly	Hourly
D2	Connah's Quay – Deeside Industrial Park	T	-	-
D3	Flint – Deeside Industrial Park	T	-	-
2/2A	Wrexham - Oswestry	C	Hourly	Hourly
2C	Wrexham – Cefn Mawr	C	-	-
3	Wrexham - Penycae	C	-	-
4	Wrexham - Rhosllanerchrugog	C	-	-
5	Wrexham - Chester	C	-	-
11	Wrexham - Minera	C	-	Hourly
12	Wrexham - Brymbo	C	-	Hourly
14	Wrexham - Brymbo	C	-	-
21	Wrexham - Summerhill	C	-	-
33	Wrexham - Llay	C	-	Hourly
41A	Wrexham – Wrexham Industrial Estate	C	-	-
41B	Wrexham – HMP Berwyn	T	-	Hourly
146	Wrexham - Whitchurch	T	-	-

Local Services

Service Number	Description	C/T/D	Evenings Frequency/ No. of trips	Sundays Frequency/ No. of trips
31	Amlwch – Capel Parc	T	-	-
23	Holyhead - Rhoscolyn	T	-	-
50	Llangefni - Beaumaris	T	-	-
51	Llangefni - Moelfre	T	-	-
54	Llangefni - Llangaffo	T	-	-
55	Llangefni - Llanbedrgoch	T	-	-
63	Bangor – Llanerch-y-Medd	T	1 journey	-
60	Amlwch - Carreglefn	C/D	-	-
8/8B	Pwllheli - Tudweiliog	C/T	-	-
14	Pwllheli - Trefor	T	-	-
27	Pwllheli – Llithfaen - Nefyn	T	-	-
33/36/533	Machynlleth - Dolgellau	T	-	-
34	Machynlleth - Aberllefenni	C/T	-	-
T36	Machynlleth – Dinas Mawddwy	T	-	-
21	Abergele – Colwyn Bay	T	-	-
24	Llandudno – Colwyn Bay	T	-	-
25/X25	Llandudno - Eglwysbach	T	-	-
27	Conwy – Tan Lan	C	-	-
42	Llanrwst - Llangernyw	T	-	-
43	Abergele - Llangernyw	T	-	-
68	Llanrwst – Local Villages	T	-	-
70	Llanrwst - Corwen	T	-	-
71	Corwen - Denbigh	T	-	-
71A	Denbigh - Llansannan	T	-	-
75	Llandudno - Llanfairfechan	T	-	-
18	Rhyl - Flint	D	-	-
19	Rhyl - Flint	D	-	-
35/36	Rhyl – Dyserth - Prestatyn	C/D	2 journeys	Every 2 hrs
45/46	Rhyl – Ysbyty Glan Clwyd	T	-	-
54	Trefnant – St. Asaph Business Park	T	-	-
64	Llanarmon D.C. - Llangollen	T	-	-
Local Services continued				

66	Denbigh – Henllan	T	-	-
172	Ruthin - Derwen	T	-	-
76	Ruthin - Denbigh	T	1 journey	4 journeys
176	Ruthin - Bryneglwys	T	-	-
191	Llangollen – Melin-y-Wig	T	-	-
95	Bryneglwys - Llandegla	T	-	-
6	Mold - Pantymwyn	T	-	-
8	Mold – Sealand Manor	T	-	-
9	Connah's Quay – Broughton Retail Park	T	-	-
14A	Caerwys - Holywell	T	-	-
23	Holywell - Greenfield	D	-	-
61/2	Higher Kinnerton - Chester	T	-	-
126	Mold - Holywell	D	-	-
DB4	Deeside Industrial Park - Chester	C	-	-
17	Wrexham - Moss	C	-	-
34	Wrexham - Trevallyn	T	-	-
42F	Wrexham – Rhos-y-Madoc	T	-	-
45F	Wrexham - Bettisfield	T	-	-
T22	Wrexham – Pentre Bach	T	-	-
T23	Wrexham - Adenbury	T	-	-

Town Services

Service Number	Description	C/T/D	Evenings Frequency/ No. of trips	Sundays Frequency/ No. of trips
36	Llangefni local	T	-	-
48	Llangefni local	T	-	-
24/24A	Holyhead local	C/D	3 journeys	-
21/22	Holyhead local	T	-	-
9C	Bangor - Tesco	C	-	✓
23/23A	Pwllheli local	T	-	-
29	Towyn local	T	-	-
33A	Dolgellau local	T	-	-
37	Blaenau local	T	-	✓
75	Maesgeirchen – Bangor – Plas Menai	C	-	-
78/78A	Maesgeirchen - Bangor	C/T	-	-
79	Bangor – Ysbyty Glan Clwyd – Parc Menai	C	-	-
92/93	Caernarfon local	D	-	-
99	Porthmadoc – Borth-y-Guest	T	-	-
23	Tan Lan – Colwyn Bay – Colwyn Heights	T	-	-
26	Llandudno local	T	-	-
47	Rhyl – Highfield Park	T	-	-
173	Ruthin local	T	-	-
83/84/85	Rhyl locals	C/D/T	-	30 minutes
16	Saltney - Chester	C	2 journeys	30 minutes
22	Pen-y-Maes – Holywell - Holway	T	-	-
7	Wrexham – Caia Park	C	-	-
8	Wrexham – Caia Park	C	-	-
35	Wrexham – Plas Goulbourne	C	-	-
TL1	Wrexham - Borras	T	-	-

Other Services

Service Number	Description	C/T/D	Evenings Frequency/ No. of trips	Sundays Frequency/ No. of trips
52	Llanrhuddlad - Llangefni	T	-	-
1M	Maestryfan – Rhos Isa	T	-	-
5A	Bangor – Caernarfon - Nazareth	T	-	-
68	Bala - Glanrafon	T	-	-
69/70	Bala local	T	-	-
99A	Porthmadog - Croesor	T	-	-
99B	Porthmadog - Rhyd	T	-	-
40	Dyserth - Rhyl	T	-	-
66	Denbigh - Llanefydd	T	-	-
140	Bodfari - Rhyl	T	-	-
198	Llangollen - Pedol	T	-	-
811	Leasowe – Deeside Industrial Park - Broughton	T	-	-
CT1	Caergwrle - Broughton	T	-	-
CT3	Northop Hall – Connahs Quay	T	-	-
LT1	Holywell – Rhes-y-Cae	T	-	-
LT2	Holywell - Caerwys	T	-	-
LT3	Holywell - Greenfield	T	-	-
LT4	Buckley Town Service	T	-	-
LT5	Buckley - Penyffordd	T	-	-
LT6	Penyffordd – Broughton Retail Park	T	-	-
LT7	Mold – Treuddyn - Hope	T	-	-
PC1	Southsea – Llay Industrial Estate	C	-	-
PC2	Gatewen – Llay Industrial Estate	C	-	-

Snowdon Sherpa

Service Number	Description	C/T/D	Evenings Frequency/ No. of trips	Sundays Frequency/ No. of trips
S1	Llanberis – Pen y Pass	T	-	Irreg(min hrly)
S2	Llanberis - Llanrwst	T	-	Hourly
S4	Caernarfon - Beddgelert	T	-	2 journeys
S97	Porthmadog - Beddgelert	T	-	2 journeys

TrawsCymru Services

Included in the Strategic services are a number of TrawsCymru services.

TrawsCymru is a network of long distance bus services covering the whole of Wales. It is a combination of tendered and commercial services, provided by a number of operators but with a common branding. The origin of TrawsCymru is the Traws Cambria Bangor – Cardiff service which was introduced in 1979. This was partly an attempt to improve connectivity between north and south Wales. As devolution gave greater powers to Wales and the strategic focus on the needs of Wales developed, the potential for an expanded network of long distance bus services was highlighted. In 2008, the Welsh Government's Transport Strategy 'Connecting Wales' promised expansion of the Traws Cambria network. Subsequent developments and investment, together with a re-branding in 2011 as TrawsCymru, have led to the current operation of 10 main services and 4 TrawsCymru Connect services. The TrawsCymru services operating in North Wales are:

T2	Bangor – Aberystwyth	These two services connect in Dolgellau
T3	Wrexham – Barmouth	
T12	Wrexham – Newtown – Machynlleth	Connects with T2 at Machynlleth

One of the main criteria applied to potential TrawsCymru services is that they should supplement, rather than duplicate, the rail network, so that they form part of a single long distance network. In the North Wales region, there are significant areas which are not part of this long distance public transport network.

As part of the TrawsCymru Review 2019, carried out for Welsh Government by The BusMan Transport Consultancy, the University of Southampton produced a Demand Prediction Model for analysing the potential demand for new TrawsCymru services. This suggested there was a case for converting some existing bus services into TrawsCymru routes. Those proposed were:

T15   Rhyl – St. Asaph – Denbigh – Ruthin – Wrexham.
This is currently the Arriva X51 service which has been suspended east of Denbigh due to the Lockdown. Its future post-pandemic is uncertain giving an opportunity for the proposal to be implemented. Connections would be made with the rail network at Rhyl and Wrexham.

T16   Corwen – Ruthin – Mold – Chester
This service would combine 2 existing tendered routes using the same resources but connecting with the T3 at Corwen and linking parts of Denbighshire and Flintshire to Chester and the rail network.

The introduction of these services needs to be considered in implementing the North Wales Bus Strategy.

c) Gaps in Service Provision

Whilst the current pattern of services (pre-Covid-19) provides a reasonably comprehensive network, linking most towns and villages, there are undoubtedly unmet needs, particularly in the Deeside area, along the northern coastal strip and in deep rural areas.

These unmet needs are difficult to quantify, due to the lack of information from non-bus users, who either do not travel or who currently undertake journeys by other means, for a variety of reasons which could include:
- no suitable bus service being available at all
- no suitable bus service at the specific times required
- much slower journey times by bus
- bus service cancellations and delays, especially with no information available
- quality of bus provision seen as a poor alternative to the private car
  (eg.vehicles, waiting facilities, journey time)
- unwillingness to use public transport

Many bus services in North Wales only operate in the daytime, Monday – Saturday. From analysing the current network, one of the main issues that stands out relates to the complete lack of evening and Sunday services on many routes, and very infrequent services on other routes. Even some routes classed in this report as strategic are devoid of any evening and/or Sunday services, and others have a very infrequent service. The evening and Sunday services which do exist are mainly funded through Local Authority contracts or de-minimis arrangements with the operator of the day-time service.
(The services operating evenings and/or Sundays are specified in the Tables pages 11-17)

The lack of early morning, evening and Sunday services causes problems for those who work or need to travel outside core hours. Links to employment sites, at times to suit shift patterns (particularly early morning and evenings) are a barrier to increasing the number of travel to work bus journeys, especially where facilities are not on a frequently served bus corridor or are outside the central area of a town.

It is hoped that the North Wales Transport Model, currently being developed for TfW, will provide valuable data that will not only assist in testing the effects of service enhancements on current routes and infrastructure improvements, but also identify opportunities for new services to facilitate a modal shift from car to bus for commuting.

d) Revenue Support Requirement

The bus network is dependent on funding from local and national government. A small minority of services are entirely commercial and even these receive public funding through Bus Services Support Grant (BSSG) and concessionary fares reimbursement. The maintenance of a comprehensive bus network in North Wales is therefore dependent on significant levels of subsidy.

As quantified in the Table below, out of 178 bus services operating in the region, 144 require some degree of revenue support (excluding Bus Services Support Grant or concessionary fares reimbursement which are provided for every bus service). To maintain a bus network at the current level will therefore require a significant amount of public sector funding.

Service Category	Wholly Commercial	De-Minimis/Tendered (part or whole)
Strategic	4	16
Core	18**	37
Local	3	48
Town	7	18
Other	2	21
Sherpa	0	4
Total	34	144

***many of these services are in Wrexham and are commercial because the evening tendered service has been withdrawn due to local authority cuts*

From information received from local authority officers, the current expenditure (pre-pandemic) is shown in the table below. (Figures for local authority contract payments include their BSSG allocation). To continue to operate a similar network of services will require a significant uplift in budgets, not only to bring about improvements in quality and frequency, but to offset the significant drop in passenger numbers due to the Covid-19 pandemic. The medium and long term effect of this crisis is currently difficult to calculate but it is likely to reduce further the number of commercial services.

Particularly in rural areas, tendered local bus services carry school and college students who are entitled to free transport. A financial re-charge is made from the Education Department budget, which helps to fund the local bus service. Without this support, the cost of the service could not be maintained. In some cases, commercial services are also supported in this way. Separation of the planning of local bus services from the provision of home to school transport would make this joint funding harder to coordinate.

	Rev support inc Ed re-charge	Com BSSG	Concess Fares	Total
Anglesey	£998,238		£920,435	£1,918,673
Gwynedd	£2,674,335		£1,688,992	£4,363,327
Conwy	£780,640		£2,890,303	£3,670,943
Denbigh	£877,000		£1,837,758	£2,714,758
Flintshire	£		£	£
Wrecsam	£		£	£
Sub total	£		£	£
North Wales		£		£
			Total Public Support	£

(Awaiting data from Flintshire & Wrecsam)

In addition to these figures, payments have been made to allow free travel on weekends on TrawsCymru services.

The question about whether public sector funding at this level justifies greater public sector involvement in the planning, management and operation of the network needs to be addressed. This is thought to be one of the primary reasons why The Buses (Wales) Bill 2020 was introduced.

e) Challenges in Rural Areas
The provision of bus services in deep rural areas is a particular challenge which requires detailed analysis.

Local authorities are currently responsible under section 63 of the 1986 Transport Act for funding and organising the provision of socially necessary, but non-commercial, bus services. In carrying out this role in rural areas, local authorities are currently faced with a number of challenges.

i) Lack of Operators
In North Wales, authorities have become concerned that the number of operators tendering for these services is steadily reducing, to a point where some operators are in a near monopoly position and are able to obtain very high prices for contracts.

> *For example, in Denbighshire it is becoming increasingly difficult to obtain sufficient vehicles from commercial operators for tenders at a price that enables operation within the budget that is available. The main reason for this is an on-going reduction in the number of operators in the County, particularly in the south.*
>
> *Recent experience is that less than two bids on average are received for every tender in South Denbighshire. The 18 'big bus' contracts are currently carried out by only two operators. The growth of GHA Coaches led to them taking over a number of small companies. The subsequent demise of GHA has led to a gap in the market which has not been filled, allowing the few remaining operators to increase their prices.*
>
> *The additional loss of Padarn Bus and Express Motors who provided a large number of services in North West Wales has also had a significant effect on operator capacity to provide services, particularly in Gwynedd and Anglesey.*

The consequences of the Covid-19 lock-down could make this problem worse if operators do not survive the resulting loss of income and commercial services are de-registered because of the impact of social distancing.

ii) Price
There is concern that the lack of competition allows operators to increase their prices and make monopoly profits. Academic research has found that contract prices for tendered bus services do fall as the number of operators bidding goes up.

> *('Tendered bus services in London', Toner (2001); Paper in 'Research in Transport Economics', J. Aarhaug and others (2018))*

Contract prices in North Wales have increased by more than the rate of inflation, as the number of operators tendering has reduced. The lack of competition also means that the prices received cannot be tested for value for money.

iii) Quality
Quality issues have been experienced, with regular examples of vehicles breaking down, running late or not meeting contract conditions. The lack of alternative operators makes it difficult to enforce quality standards.

iv) **Falling Demand**
Many local bus services in deep rural areas have experienced falling demand in recent years, leading to a reduction in services in response to the lack of funding available. The continued operation of services carrying very few passengers is difficult for local authorities to justify but, for the people who do rely on them, they are a lifeline, especially in enhancing quality of life for older people.

Growing awareness of the climate emergency and the need to reduce private car use could act as a stimulus to demand, if ways of providing a sustainable service could be found. On the other hand, increased working from home, which could continue beyond the Covid-19 pandemic restrictions, could further reduce demand.

v) **Reducing Budgets**
The years of austerity since 2008 have resulted in significant cuts in local authority budgets. This has led to the reduction or withdrawal of non-statutory services. Local authorities have a legal obligation to consider the social needs of communities in relation to the provision of bus services, but there is no quantified requirement for services to be provided. Bus service support has therefore been reduced or terminated in almost every County in North Wales.

> *Wrexham, for example, provide no revenue funding for bus services, but rely solely on their allocation of BSSG for supporting a small number of bus services.*

2020 Strategy

The above review and analysis of services across the North Wales region indicates the following actions as both desirable and urgent:

- A programme for the introduction of Quality Bus Partnerships, including optimum frequencies, infrastructure investment and key interchanges with other modes and other levels of bus service
- Estimate the amount of revenue support required across North Wales to maintain the current network
- Identify gaps in service and propose interventions
- A programme of infrastructure work to maximise the potential of the network
- Identify where unconventional services have been introduced and analyse their effectiveness
- A programme, linked to the introduction of Quality Partnerships, to move to a zero carbon bus fleet

1. Management and Funding/ Quality Partnerships

Although the Buses (Wales) Bill 2020 proposes providing local authorities with an improved range of tools to use in the planning and delivery of local bus services *(page 7)*, its progress beyond publication into Law has been stalled by the Covid-19 restrictions. It seems unlikely now that it will become Law before the Welsh Government elections planned for 2021, which means it will be dependent on a new elected body for its enactment.

Given the urgent need to improve the performance of the regional bus network (and the potentially serious consequences of Covid-19 on the bus network), it makes sense to use existing legislation, rather than to wait for what might transpire in the future.

A programme of Quality Partnerships is therefore proposed.

The following programme is focused on services which are predominantly commercial and which are categorised as Strategic.

(How Quality Partnership principles can be applied to tendered services, to maintain quality levels and monitor performance, is covered on pages 36-37 below)

a) Quality Partnership for Strategic Services: Partner Responsibilities
For each Partnership, Partners will agree:
- Optimum frequency of services
- Infrastructure investment schemes, including bus priority measures
- Key interchange points where the strategic service connects with long distance (rail or TrawsCymru) services and other categories of bus service.

Discussions on a legal agreement for a Quality Partnership in Flintshire are at an advanced stage. It is envisaged that this would become a template agreement, which could cover all Quality Partnerships in the region. Within that legal agreement, the following principles should be applied in relation to the responsibilities of the Partners.

Quality Partnership for Strategic Services: Partner Responsibilities

Regional Transport Authority/Local Authority Responsibilities

- Sign Service Level Agreement for provision of bus stop information and infrastructure, to agreed North Wales Standard

- Develop and implement agreed bus priority schemes specific to each corridor partnership

- Develop and maintain interchanges and stops to agreed North Wales Standard

- Attend Quarterly Service Delivery Group meetings to deal with road works, bus priority, parking enforcement etc. *(meetings to include representatives of Local Authority Highways departments and The North & Mid Wales Trunk Road Agency)*

- Produce performance information on: Revenue, Patronage and Reliability

Bus Operator Responsibilities

- Agree the timetable to be operated

- Agree to make no timetable changes without discussion at Quarterly Service Delivery Group meeting

- Provide vehicles and operate services to a standard as specified in the Partnership Agreement

- Accept penalty/rewards scheme in connection with operational performance *(payment of an element of the Bus Services Support Grant could be linked to operational performance)*

- Attend Quarterly Service Delivery Group meetings

Welsh Government/Transport for Wales Responsibilities

- Provide funding for programme of infrastructure improvement

- Fund Service Level Agreements for maintenance of infrastructure, with a guarantee of funding for the 5 years of each QP Agreement

- Fund Service Level Agreement for provision of information with a guarantee of funding for the 5 years of each QP Agreement

b) Quality Partnership for Strategic Services: The Programme

It is recommended that Quality Partnerships are implemented over a four year programme. Partnerships would cover a five year period, so Year 1 partnerships would be re-negotiated in Year 5, and so on.

Year 1

Service Number	Route Description
1	Caernarfon – Porthmadog *(existing QP in place, needs to be renewed)*
5	Llandudno – Bangor – Caernarfon *(existing QP in place, needs to be renewed)*
11	Rhyl – Holywell – Deeside – Chester *(currently being negotiated)*
12	Rhyl – Colwyn Bay - Llandudno
T3	Wrexham - Barmouth

Year 2

Service Number	Route Description
1	Wrexham - Chester
4	Bangor - Holyhead
27	Mold - Wrexham
51	Rhyl – Denbigh (-Ruthin - Wrexham)
T2	Bangor - Aberystwyth

Year 3

Service Number	Route Description
3	Pwllheli - Porthmadoc
4/X4	Mold - Chester
12	Pwllheli - Caernarfon
62	Bangor - Amlwch

Year 4

Service Number	Route Description
19/X19	Llandudno - Blaenau
39	Porthmadoc - Barmouth
X1	Ruthin – Mold - Chester
13	Llandudno - Prestatyn

2. Infrastructure

The Welsh Government Transport White Paper states:
> *We need public transport to operate as one seamless service*
> *To deliver a truly integrated transport system in Wales, we need to ensure that bus services…...are integrated with rail and other transport services*

This vision of an integrated transport system needs to be applied to the North Wales regional bus network. Rather than thinking in terms of a local bus network + a long distance bus network + a rail network, these different elements need to be seen and thought of as a single integrated and co-ordinated public transport network.

In order to effect this vision in North Wales, three elements need to be implemented:
   a) Categorisation of interchanges and bus stops
   b) Timetabling to maximise connections at interchanges
   c) A high standard of infrastructure

a) Categorisation of Interchanges and Bus Stops

Category 1	**Principal Interchanges**
Category 2	**Key Interchanges**
Category 3	**Small Interchanges**
Category 4	**Village Centres** (one main stop to be identified in each community)**
Category 5	**Other Bus Stops** (between Interchanges &/or Centres)

**Category 4 served by only one bus service

These categories have been applied to *e*very settlement in North Wales, with details of services available locally and existing bus links *(see separate document)*. This process has enabled Interchange points (Categories 1-3) to be identified, as set out on the following page.

The Principal Interchanges

Interchange Location	Services at Interchange						
	Train	**Traws Cymru**	**Strategic**	**Core**	**Town**	**Local**	**Other**
Bangor	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wrexham	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Caernarfon		Yes	Yes	Yes	Yes		Yes
Rhyl	Yes		Yes	Yes	Yes	Yes	Yes
Llandudno	Yes		Yes	Yes	Yes	Yes	
Dolgellau		Yes	Yes	Yes	Yes	Yes	

The Key Interchanges

Interchange Location	Services at Interchange						
	Train	**Traws Cymru**	**Strategic**	**Core**	**Town**	**Local**	**Other**
Mold			Yes	Yes		Yes	Yes
Ruabon	Yes	Yes		Yes			
Colwyn Bay	Yes		Yes			Yes	
Holyhead	Yes		Yes	Yes	Yes	Yes	
Llangefni			Yes	Yes	Yes	Yes	Yes

The Small Interchanges

Interchange Location	Services at Interchange						
	Train	**Traws Cymru**	**Strategic**	**Core**	**Town**	**Local**	**Other**
Blaenau Ffestiniog	Yes		Yes		Yes		
Conwy	Yes	Yes	Yes		Yes	Yes	
Flint		Yes	Yes	Yes			
Porthmadog	Yes	Yes	Yes	Yes	Yes		Yes
Prestatyn			Yes	Yes		Yes	Yes
Shotton	Yes	Yes	Yes	Yes		Yes	
Amlwch			Yes	Yes		Yes	
Denbigh			Yes	Yes		Yes	Yes
Pwllheli	Yes		Yes	Yes	Yes	Yes	
Llangollen	Yes	Yes		Yes		Yes	Yes
Menai Bridge			Yes	Yes		Yes	
Ruthin			Yes	Yes	Yes	Yes	Yes

b) *Timetabling to maximise connections at interchanges*

Achievement of *'a truly integrated transport system in Wales'* requires the creation of timetables which enable realistic and attractive connections to take place at designated interchanges.

An integrated timetable needs to be created, beginning with train services (which are the least flexible) and moving through strategic bus services to local, core, town and other services.

The standard against which other networks are judged is that found in Switzerland, where the integration of public transport is given a high priority in government planning.

'Taktfahrplan' – the Swiss public transport operation

Switzerland is regarded as the standard setter for integrated high quality public transport systems. The hall marks of the Swiss public transport system are:

- co-ordination between modes and among operators
- a simple fare system
- common standards and good connectivity
- an ethos of public service

The foundation of the whole operation is the Swiss model of timetable planning, what is known as the 'Taktfahrplan' – the 'clock face', or 'standard hour' timetable. This is based on the following principles:
- optimisation of connectivity at key nodes
- 'mirror image' timings for two directions
- rigorous application of standard hour patterns
- overlaying additional peak services onto the basis pattern

The implementation of such a system on the North Wales regional bus and rail network would maximise connectional possibilities and enable a truly integrated public transport network to be built on this foundation.

To move to such a network in North Wales would require the creation of a regional timetable planning group of skilled practitioners working closely with commercial operators and Transport for Wales (Rail).

The use of 'clock face /standard hour' timetables would make it easy to feed local bus and demand responsive services into the strategic network. This would be of particular value in the evenings and on Sundays when frequencies are reduced even on strategic services.

Examples are given below of how a 'clock face/standard hour' timetable could work at a Principal Interchange (Rhyl) and at a Key Interchange (Mold) in North Wales.

**Example 1: Rhyl Interchange (*A Principal Interchange)*
Standard Hour Timetable for Train and Strategic Services

Minutes Past Hour		Service	Connections
Arrive	**Depart**		
..55		X51 from Wrexham	Trains to Bangor & Chester, 11, 12
	..55	12 to Llandudno	
..00		11 from Chester	Train to Bangor, X51
..00		12 from Llandudno	Train to Chester, X51
..05		Train from Chester	12, X51
..05		Train from Bangor	X51, 11
	..10	Train to Bangor	
	..10	Train to Chester	
	..15	X51	
	..15	11 to Chester	
	..15	12 to Llandudno	
..20		12 from Llandudno	Train to Chester, X51
..30		11 from Chester	Train to Bangor, X51
..35		Train from Chester	12, X51
..35		Train from Bangor	X51, 11
	..35	12 to Llandudno	
	..40	Train to Bangor	
	..40	Train to Chester	
..40		12 from Llandudno	
	..45	11 to Chester	
	..55	12 to Llandudno	

Such a standard timetable should be supported by comprehensive information, signage and through ticketing.

The principle also works at Key interchanges. This example illustrates how bus services can inter-connect, based on standard 30/60/120 minute frequencies.

Example 2: Mold Bus Station *(A Key Interchange)*
Standard Hour Timetable (some services may only operate every 2 hours)

Minutes Past Hour		Service	Connections
Arrive	**Depart**		
..00		4 from Chester	Denbigh, Ruthin, Pantymwyn, Holywell
..00		1 from Ruthin	Chester, Wrexham, Ellesmere Port
..00		14 from Denbigh	Chester, Wrexham, Ellesmere Port
..00		6 from Pantymwyn	Chester, Ruthin, Denbigh, Holywell, EP
..00		126 from Holywell	Chester, Ruthin, Denbigh, EP, Wrexham
..00		27 from Wrexham	Chester, Ruthin, Denbigh, Ellesmere Port
..00		5 from Ellesmere Pt	
	..10	4 to Chester	
	..10	1 to Ruthin	
	..10	14 to Denbigh	
	..10	6 to Pantymwyn	
	..10	126 to Holywell	
	..10	27 to Wrexham	
	,,10	5 to Ellesmere Pt	
..30		X4 from Chester	
	..40	X4 to Chester	

c) A high standard of infrastructure: *The North Wales Standard*

The Welsh Government Transport White Paper states:
> *Bus stop quality is a key influence of the perception of the level of service that can be expected*
> *Clear, high quality and up-to-date information is essential for members of the public*

In order for seamless interchange to take place between bus services (and train services where appropriate/applicable) a programme of work should be carried out to bring the infrastructure at each Interchange up to *The North Wales Standard* set out below.

The overall impression from a sample Bus Stop Audit, carried out in one direction on service X4 *(see Appendix 3)*, was that bus stop Infrastructure is in a poor condition, with timetable cases empty or vandalised, road markings faded and shelters uncleaned. It confirms the view given by the Managing Director of Arriva Buses Wales, in discussions with him about the regional network. However, there are exceptions to this, eg. Denbighshire maintain a high standard of Infrastructure

It is essential that *The North Wales Standard* set out below becomes 'the norm', if bus services are to be perceived as a high quality alternative to the private car.

The North Wales Standard should be seen as a minimum which can be exceeded, for example by the provision of additional bus shelters.

The *North Wales Standard* can be achieved in one of two ways:
    i)) Service Level Agreements
                signed by Local Authorities and funded regionally/nationally
    ii) Management on a regional basis
                by either a lead authority, or a regional transport authority.

The North Wales Standard

1. Standards for Bus Stops and Shelters	Bus Stop Category				
	1	2	3	4	5
High quality enclosed waiting shelters	/				
Enclosed waiting shelter		/	/	/	?
Bus Stop with branding	/	/	/	/	/
Clear signing from key locations	/				
Bus stop signage integrated into railway station infrastructure	/				
Covered cycle stands	/	/	/		
Bus stop box markings on highway		/	/	/	/
Raised Kerbs for improved accessibility	/	/	/	/	/
Programme for regular cleaning and inspection	/	/	/	/	/
Contract for repair and maintenance	/	/	/	/	/
Damage will be repaired with 48 hours of being reported	/	/	/	/	/

The North Wales Standard

2. Standards for Information Provision	Bus Stop Category				
	1	2	3	4	5
Real time passenger information screen	/	/	/	/	?
Information about connecting services	/	/	/		
Directions to connection stops *(if not the same shelter)*	/	/	/		
Paper timetable information clearly displayed	/	/	/	/	/
Bus information provided at railway stations	/				
Details about strategic bus services included in railway timetables	/				
Display infrastructure maintained in excellent condition	/	/	/	/	/
All information provision must be: • accurate • kept up-to-date • clear and well presented • highly informative • easy to understand (especially to people unfamiliar with using public transport) • accessible	/	/	/	/	/
Timetable information will be updated not more than 48 hours before a change and not more than 24 hours after a change	/	/	/	/	/

Individual proposals need to be produced specifically related to each of the Interchanges specified above. As an example, a proposal for Bangor is produced below:

Bangor Bus Station
The Bus Station is a major bus hub for the area.
The bus shelters are not in good condition.
Timetable information is patchy.
There is no working real time passenger information.

Action needed to maximise the potential of the Bus Station:
- Implement the North Wales standard for infrastructure and information at major interchanges

Bangor Railway Station
The station is the busiest stop on the North Wales Coast Railway line.
Departures to Birmingham, Cardiff, Chester, Holyhead (for Ireland), London and Manchester.
It is situated about 800 metres from the Bus Station but connected by frequent services which stop on the main road outside the station.
There is no signage from the station platforms and no bus information in the station.
Some years ago, a bus stop was created within the station curtilage, with an easy pedestrian route from the train platforms. However, it is no longer used.
Bus services passing the station include frequent buses to Caernarfon. There is an aspiration to reopen the railway line from Bangor to Caernarfon.
There is also a direct TrawsCymru service to Aberystwyth offering a faster journey than the train (which is an indirect route via Shrewsbury, involving at least one change of trains).

Action needed to maximise the potential of the Railway Station:
- Implement the North Wales standard for infrastructure and information at major interchanges
- Bring the railway station bus stop back into use and designate as 'Platform 3' with appropriate signage
- Provide signage from other station platforms to/from platform 3

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3. Potential Solutions to the Challenges of Rural Areas

It is proposed that a menu of options is produced for local communities to consider, with Local Authority staff trained to offer advice and support on what is involved in being a pilot community.

The Region should employ a dedicated Community/Rural Transport Officer to support and develop community transport schemes and other innovative solutions to rural accessibility.

The following options need to be assessed and then tested in appropriate areas of the region, with the results monitored:
> a) Local Authority Operation of Bus Services
> b) Tendered Service Quality Partnerships
> c) Innovative Solutions for Rural Areas

a) Local Authority Operation of Bus Services

Local authorities elsewhere in the United Kingdom have faced the same problem of a lack of operators, rising prices and poor quality. This has led to some local authorities setting up their own operating units. These include:

Dumfries and Galloway Council	Home-to-school transport and local bus services under section 46 of the 1981 Public Passenger Vehicles Act
Monmouthshire County Council	Hold an "O" licence + section 19 & section 22 permits
Nottinghamshire County Council	Hold an "O" Licence
Lincolnshire County Council	An "arm's length" trading company with an "O" licence
Lancashire County Council	Operate 'Travelcare' as part of the Lancashire County Commercial Group to provide: i) specialised transport services for adults and children with special needs ii) Dial a Ride service in Fylde and Wyre - mainly for people with mobility restrictions but services run to a broad route and timetable iii) vehicles with a driver also available for hire to public sector organisations and charitable bodies

In North Wales, Denbighshire County Council set up an operating unit in 2018, to provide home to school transport services to one rural primary school in the County (and linked secondary schools), using minibuses operating under section 22 permits. These buses are then used to operate section 63 local bus services, using the section 22 permits.

Therefore one solution to the lack of operators in the rural parts of the North Wales Region would be for a Regional Transport Authority, or individual local authorities, to set up local bus companies to operate rural bus services as Passenger Transport Operating Units. Under current legislation, there are a three possible ways this can be done:

Options for LA operation of Passenger Transport Operating Unit

i) PSV Operator's Licence

This is the option followed by the majority of providers of local bus services and home to school transport buses. At the moment, the operation of home to school transport has to be the primary purpose of a local authority owned bus company. Section 46 of the Public Passenger Vehicles Act 1981 allows local authorities to use Passenger Carrying Vehicles that are primarily provided for education transport to be used to provide registered local bus services.

This option provides the greatest flexibility in the types of work that vehicles can perform and puts the operation on an equal footing with commercial operators, avoiding claims of unfair competition.

To obtain an Operators Licence, an application has to be submitted to the Traffic Commissioner. An applicant has to demonstrate that they:
- Are of good repute
- Are of appropriate financial standing (ie. have enough money to run the business)
- Have good enough facilities (or arrangements) for maintaining vehicles
- Have a Transport Manager with a current Manager CPC qualification

It should not be a problem for a local authority to satisfy these conditions.

ii) Section 19 Permit operation

Permits were introduced to enable voluntary and non-profit making groups to undertake PSV work without the need for an Operator's Licence. Section 19 Permits may be granted by designated bodies, including local authorities, for the operation of small vehicles (up to and including 16 seats). Permits for large vehicles are issued by the Traffic Commissioner (rather than other designated bodies). Vehicles operated under a Section 19 Permit may be used to carry passengers for hire and reward, provided that:
- The organisation holding the permit operates the vehicles
- They are not available to the public at large
- They are being used non-commercially

The use of Section 19 Permits for local authority transport services has been criticised by commercial operators, and the Department for Transport is expected to issue revised guidelines in the near future which could change how they can be used.
It would therefore be unwise to base a new operation on an interpretation of the existing guidelines for these permits.

iii) Section 22 Permit operation

Section 22 permits are issued by the Traffic Commissioner to a group of persons concerned with the social and welfare needs of a community.
They allow the operation of a local bus service on a non-commercial basis.
The regulations allow buses operating under a Section 22 Permit to be used for other purposes for hire and reward, where this directly assists the provision of a community bus service by providing financial support for it.
Revised guidelines for Section 22 Permit operation are also expected shortly.

This is the current legislative position. However, in recognition of the problems outlined above, and for other reasons, the Welsh Government is proposing to change the legal position of local authorities in connection with the operation of bus services.
A written statement published on 16/03/20 in connection with the Bus Services (Wales) Bill 2020 states:

>*The Bill will remove the restriction which currently prevents a local authority from running bus services*

The reasons given for making this change, outlined in the Welsh Government leaflet "Working together to improve bus services across Wales" are very much related to this problem of a shortage of operators.

If the provisions of this Bill do become an Act, this would enable rural bus services in North Wales which are not 'commercial' to be operated by a public sector authority, solving the problem of a lack of operators.

b) Tendered Service Quality Partnerships
Although Quality Bus Partnerships are usually applied to commercial bus services, it would be possible to extend tendered local bus service contract conditions to become Quality Partnerships, with legal obligations placed on all partners.

This would have the effect of making quality standards clear and enforceable, set out standards for infrastructure and information provision and provide greater certainty over the duration of the contract. Hopefully these standards would encourage more operators into the market and increase quality.

Regional Transport Authority/Local Authority Partner Responsibilities

- Commitment to fund agreed timetable for 5 years
- All services tendered using standard contract template with quality specification
- Sign Service Level Agreement for provision of infrastructure & information provision to agreed *North Wales Standard*
- Develop and implement agreed bus priority schemes specific to each corridor partnership
- Develop and maintain interchanges and stops to agreed *North Wales Standard*
- Analyse performance information for:
  - revenue
  - patronage
  - reliability
- Calculate trends over the operation of the contract, to justify continued operation and show benefits of actions taken
- Calculate penalties and rewards for service operator
- Arrange quarterly Contract Review Meetings

Bus Operator Partner Responsibilities

- Agree timetables to be operated
- Provide vehicles and operate services to the standard specified in Contract Conditions
- Provide the Local Authority monthly with:
  - patronage figures (boarding and alighting details for all passengers)
  - details of all revenue received in connection with the operation of the service
  - reliability and punctuality information
- Accept penalty/rewards scheme in connection with operational performance *(payment of an element of the contract price linked to operational performance)*
- Attend quarterly Contract Review Meetings

The introduction of Tendered Service Quality Partnerships would increase the quality of service provision hopefully leading to increased patronage and could encourage more operators into the market.

c) Innovative Solutions for Rural Areas

Although Covid-19 restrictions mean that current demand for rural bus services is limited, the benefits to those who normally use them are significant. In many cases they provide a lifeline to residents who have no access to a private car.

The traditional model of providing rural bus services (ie a fixed route, served by buses at specific times) is not stimulating demand and is not cost effective. Innovative solutions need to be trialled and a number of pilot schemes are already in place in Wales, or are shortly to be introduced:

  i. Demand Responsive Transport (DRT/IRT)
  ii. Community Transport
  iii. Car Clubs
  iv. Community Car Scheme
  v. Co-ordination of home-school, social services and hospital transport
  vi. Community Use of Commercial Transport

Each of these schemes is described below, together with examples of their application in North Wales.

i) Demand Responsive Transport (DRT / IRT)

Demand Responsive Transport is defined as:

> a form of public transport which provides a 'door to door' or 'near door to door' service for dispersed origins and/or destinations of trips
> (Companion to Road Passenger Transport History)

A number of DRT services already operate or are in the process of being introduced in Wales:

Bwcabus

Outside of North Wales, Demand Responsive Transport has operated for over ten years in the south west of the country. The Bwcabus network was introduced in 2009, funded by European Regional Development Fund, Welsh Government and local authorities. It operates in North Carmarthenshire, South Ceredigion and Pembrokeshire and comprises a combination of fixed routes, usually only operating on certain days, and demand responsive services which users can pre-book.

Bwcabus is supported by a website, which provides passengers with detailed information on the service, including the location of bus stops, fares and how to book. Passengers have to register and are then able to pre-book their trips using a dedicated telephone booking service. Services operate between 07:00 and 19:00 Monday to Saturday and trips must be booked before 19:00 hrs for travel the following morning or before 11:30 hrs for travel the same afternoon.

Passengers are able to travel between local towns and villages in the Bwcabus zone, or connect with strategic bus or train services for longer journeys. Fares are based on the length of the journey and through tickets onto connecting services are available.

The network has generated *'an overall increase in passenger journeys'*.
In 2014 an average of 63 passengers a day were carried.

However the service is expensive to operate and, in 2019/20, there was concern about its continued viability. On 27/02/20, the Minister for Economy and Transport announced that Carmarthenshire County Council would be provided with financial support to maintain the existing network until the end of September 2020, subject to match funding from Carmarthenshire, Ceredigion and Pembrokeshire.

Denbighshire County Council 'Fflecsi' services

Denbighshire County Council operate a number of 'Fflecsi' services, using 8 seat vehicles owned and operated by the County Council.

When introduced in July 2018, they supplemented existing conventional local bus services, operating on days when the ordinary bus service did not run.

> *For example, the service based on Corwen ran on Monday, Wednesday and Friday when the service 91 conventional bus service ran on Tuesday, Thursday and Saturday. These conventional services have now been withdrawn and completely replaced with DRT.*

Journeys can be made anywhere within the specified villages or local centre including to an interchange point for other services. Trips can be made for example to shops, the library, the doctors or the leisure centre. However trips cannot be made to hospital appointments, for education, to public houses, for personal care or to a day centre.

The minibuses are used primarily on home to school transport so travel is only available between 09:00 and 14:45.

Intending passengers need to be registered with the scheme and then book trips up to 15:00hrs on the day before travel. A fare of £2 is charged for a single or return journey. Originally concessionary passes were not accepted but this has now changed.

These services use vehicle and staff resources dedicated to home to school transport which means a shared cost but it also means that local bus journeys cannot be provided at peak times.

Patronage on the DRT service is broadly similar to the previous fixed route services

Welsh Government Integrated Responsive Transport (IRT) Pilot Schemes

On 13th April 2019, the Wales Transport Minister announced funding for pilot projects to test innovative forms of demand responsive bus travel. He stated that this was intended to:

> *test key aspects of demand responsive bus travel services including the integration of patient and education transport as well as the use of new mobile technology*

Three pilots are currently being progressed, each based on different scenarios where IRT could potentially be used effectively. The trials involve:
- Expanding a Community Transport scheme (Pembrokeshire)
- Filling in gaps in the bus service network (Blaenau Gwent)
- Replacing lightly used local bus services (Conwy County Borough Council)

Of the three pilots, the Conwy scheme is the project that will demonstrate conclusively whether DRT can provide an efficient, affordable alternative to conventional tendered local bus services where costs are constantly rising, especially in areas where little or no competition exist. Analysis of the three Welsh Government IRT Pilot Schemes will provide valuable information and data to assist in the planning of the future rural bus network in North Wales.

The Conwy IRT scheme

This scheme will be based on Llanrwst in the Conwy Valley, and involves replacing four lightly used local bus services (section 63 services) with a demand responsive service, operating initially between 07:00 and 19:00 on Mondays to Saturdays, but with the potential to expand hours and introduce a Sunday service.

Service users will need to register to use the service, and once registered can book a journey on-line or by phone. Whilst in theory users could request travel at any time within the operating period, in practice there will be a structure to the operation that gives priority to connecting with bus and rail services at Llanrwst, and fits with opening times of medical facilities and other essential services, as well as encouraging the use of the service for travel to and from work. One of the aims is to encourage use of the service by a wider age group, as the majority of the routes to be replaced have a significant proportion of passengers from older age groups, with very little use being made for work related purposes.

The Conwy IRT will be registered as a 'Flexibly routed local bus service' which allows the specifying of either a departure or arrival time for journeys. This will give some structure but with a large degree of flexibility to the operation of journeys.

The Conwy IRT is currently programmed to be introduced in September 2020. The costs of the service will be met from a combination of Conwy's current bus service budget (using the savings from not operating the 4 section 63 services the IRT will replace) and financial support from the Welsh Government. Given the current uncertainty regarding the period that social distancing measures will remain in force, due to the Covid-19 pandemic, there may be a need to revisit the timetable for converting the section 63 services to IRT.

ii) Community Transport
Community Transport has been defined as:

> *the provision of transport to those who are unable to transport themselves or access conventional public transport systems. Operations are not profit making and rely heavily on volunteer input, either for driving, management control or both. Many schemes have their roots in vehicle sharing to meet community need.*
>
> *(Companion to Road Passenger Transport History)*

Community Transport can be provided by minibuses driven by paid drivers or volunteers, or by volunteers using their own cars or scheme owned cars. The schemes tend to be for specific groups of people and their reliance on volunteer drivers makes it difficult to provide regular timetabled journeys for access to employment.

There are currently 15 Community Transport Schemes in North Wales which receive funding from the Bus Services Support Grant. In 2019/20 this amounted to approximately £750k. Examples are:

Centre for Independent Living

An organisation based in Porthmadog the purpose of which is:

> *to support and meet the needs of disabled adults in Gwynedd so that they can make independent and informed choices about their lives*

The scheme runs a minibus to help disabled people to get to medical appointments and shopping, and also runs regular services to Ysbyty Gwynedd and Ysbyty Wrecsam Maelor.

South Denbighshire Community Partnership

The partnership is a not-for-profit company and registered charity based in Corwen, whose purpose is:

> *promoting benefit to the inhabitants of South Denbighshire*

The Partnership owns its own vehicles and volunteer drivers provide transport for groups for outings. A dial-a-ride service is offered for trips to appointments, shopping and visits.

Medrwn Mon

Medrwn Mon provide a voluntary social community car scheme on Ynys Mon, available to people over the age of 50, who have no other means of making essential journeys.
It is mainly for people in rural areas where public transport services are scarce but also for those in urban areas not fit enough to use public transport.
Volunteer drivers use their own vehicles.

Data for Community Transport example schemes

Scheme	No. of Vehicles	Passengers per annum	Miles per annum
Centre for Independent Living	3	12,528	38,340
South Denbighshire Community Partnership	3	4,122	11,365
Medrwn Mon	0*	11,712	105,915

only uses volunteers' vehicles

iii) Car Clubs

Car clubs have been described as:

> *an attempt to give people better transport links in rural areas*
> *(BBC Report on Corwen CCS April 2019)*

They work by giving members access to use of a car on a short term basis and charging by the hour or by the day. The car can usually be booked on line or by phone and is then unlocked from a designated parking bay in the local community.

It offers the convenience of being able to use a car for those trips which cannot be done by using public transport, walking or cycling. It is of benefit to those able to drive but who cannot afford to own their own car or who do not wish to because their travel habits do not justify it.

There are some drawbacks, however:
- users need to be able to access a central point to pick up the car
- users must have a current driving license
- insurance can be prohibitively expensive especially for under 25's
- a fail safe booking system is needed

Corwen Car Scheme

A community car scheme was started in Corwen in 2018.
It now uses an electric car, making it a zero carbon option.
It is used to make it easier for people to get to job interviews, medical appointments or for shopping.
However, users have to be over 25, making it unavailable for young people who are one of the main groups in need of transport.

iv) Community Car Schemes

A community car scheme is a not for profit organisation, usually run by volunteers, that operates a form of car sharing. Volunteer drivers using their own car and being reimbursed expenses; provide prearranged journeys to members of their community who do not have access to suitable transport. Car schemes will offer travel to essential services such as health appointments, accessing work, shopping or even visiting friends. Some schemes even offer further services such as prescription pick-ups or non-transport related services such as befriending.

(travelsomerset.co.uk)

Car-sharing is when two or more people share a car and travel together. This often happens on an informal basis - 'I'm going to town tomorrow, do you want a lift?' - but many formal car-sharing schemes have been set up across UK, using nationally available planning software from organisations such as 'Liftshare.com'.

Based on the 'Liftshare.com' model, a local community-based car-share scheme in North Wales would be possible:
- Members details would be stored securely in a database
  - only members would have access to the database
  - only members travel information could be viewed by other members of the club
- Members would need to be cleared for relevant convictions
- Car sharers would agree how much to pay for a lift, but providing a lift should not be profit making
- Members could agree standard fares for specific trips

A community based car share scheme would need 'buy in' from members of the designated community, both car owners and non-car owners, via the car-share software:
- Car owners would enter trips they were making
- Non-car owners would enter trips they needed to make
- The software would match offers with needs

Car-share schemes could also be run by major employers or trip attractors such as hospitals.

v) Co-ordination of home-school, social services and hospital transport
Most rural communities are visited on a daily basis by a range of publicly funded vehicles. These might include:
- a home to school transport minibus (primary and secondary)
- a minibus collecting clients for social services day centres
- transport for medical appointments
- a tendered local bus service, carrying very few passengers
  (or in some cases the local bus service may already have been withdrawn)

In practice it is possible that the same contractor is providing all these trips but their operation is not coordinated.
Nationally, it has proved very difficult to bring the funders of services like these together and develop a co-ordinated service that could enable all parties to make financial savings while providing the community with a better service. This should not be impossible however, if there is 'buy in' from all partners.

If all transport arrangements were planned by a single body, and all stakeholders agreed to be flexible with start and finish times, it would be possible to provide for the majority of needs with a single fleet of vehicles

A minibus could be fully employed for a whole day:

- Feeder to secondary home-to-school contract
- Journey to primary school
- Trip to social services day centre
- Hospital/medical appointments
- Local bus service to shopping centre and return
- Return journey from primary school
- Feeder from secondary home-to-school contract
- Return trip from social services day centre

Such an operation could be linked to the creation of local authority owned bus companies.

vi) Community Use of Commercial Transport
Other vehicles also visit rural communities:
- post office delivery vehicle
- supermarket home food delivery vehicle
- parcel deliveries

The vehicles used on these operations could be adapted to enable the carriage of a small number of passengers.

Post buses have previously been a feature of rural passenger transport in the UK, but most only for a relatively short period of time.

Post Buses in UK

The report of the Jack Committee on Rural Transport in 1961recommended that the General Post Office should consider the possibility of allowing passengers to travel in Post Office vehicles on rural collection and delivery runs.

The first route did not begin operation until February 1967, when a route commenced between Llanidloes and Llangurig in Mid-Wales.

Development was slow until it became possible to claim fuel duty rebate, New Bus Grant and then Rural Bus Grant. In 2000 there were 211 routes in operation but reductions in funding led to the withdrawal of services, the last being withdrawn on 19th August 2017.

The operation of post buses in UK was largely an accounting exercise: funding available made the carriage of passengers economically advantageous, even if very few were carried. Mail delivery and collection was the priority and the operation was based around these fixed requirements, resulting in timetables which did not suit potential passengers.

Post buses are found in a number of European countries but the prime example is Switzerland.

Post Buses in Switzerland

Switzerland has:

> 869 post bus routes, carrying 140 million passengers, on a 7,375 mile network

Public transport is viewed very differently in Switzerland compared to UK - the Swiss believe that:

> *the only sensible way to organise public transport services is to achieve the maximum integration between modes*
>
> *('Switzerland without a car' A Lambert)*

The Swiss Post Bus network demonstrates that the collection and delivery of the post and the carriage of passengers can be integrated, if journeys take place at the optimum time for people rather than the historic expectation of the postal service. A North Wales community willing to trial a post bus might have to accept that letters will be collected and delivered at different times from that which they are used to.

Other deliveries take place in rural communities, such as by supermarkets and other delivery companies. Supermarkets promote home deliveries as an alternative to shopping in store. With community 'buy in', it would be possible for supermarket deliveries in an area to be focussed on particular days and a couple of seats provided in the delivery van for passengers. There would be marketing benefits for the participating supermarket, in encouraging people to shop with them rather than with a competitor, and a boost to the community support which supermarkets seek to demonstrate.

A system such as this would mark a return to the origins of rural bus services, when local carriers would take a few passengers alongside the produce they were taking to market.

4. Low/Zero Carbon Vehicle Programme

Environmental issues have become the main priority in all policy areas, including transport, although this has been overshadowed recently by the Covid-19 pandemic.

In March 2020, the UK government began the production of a Transport De-carbonisation Plan with a report titled 'De-carbonising Transport – Setting the Challenge'.
In the foreword to the Report, the Right Honourable Grant Shapps MP, Secretary of State for Transport, says:

> *Climate Change is the most pressing environmental challenge of our time. There is overwhelming scientific evidence that we need to take action. Transport has a huge role to play.*

One of the six strategic priorities in the Plan will be the de-carbonisation of road vehicles.

The Welsh Government's own policies support this action. In a press release dated 19th December 2019, Ken Skates AM, the Welsh Government Transport Secretary said:

> *Tackling the climate emergency requires a radical change in the way we travel.*

The same press release stated:

> *Transport de-carbonisation will be a key theme in the Welsh Government's new transport strategy to be published towards the end of 2020.*

In 2016, in the United Kingdom, transport became the largest emitting sector of greenhouse gas emissions in the economy. Other sectors, particularly energy, have been able to reduce emissions, whilst transport emissions have remained static.

It is therefore essential to accelerate modal shift to public and active transport, but also to de-carbonise road vehicles. This is why the Welsh Government Transport Secretary has made a commitment to have a zero carbon bus fleet in Wales by 2028.

a) Options Available for low/zero carbon buses
i) Clean diesel
Traditionally, since the 1930's, most buses have been powered by diesel engines. Since 1992, European Union emissions standards have specified the exhaust emissions for vehicles sold in the European Union.
The latest standard for a diesel engine, introduced in 2013/14, is Euro VI, which produces 1.5 g/kWh of CO_2, compared to 4.5 g/kWh from a Euro I engine.
It will be difficult to reduce this level of emissions further with diesel technology.

ii) Battery-Electric
A battery-electric bus uses an electric motor powered by (usually) a lithium ion battery which is charged using mains electricity. Battery-electric buses produce no tail-pipe emissions and are classified as 'zero emission capable'.

However the way the electricity is generated needs to be taken into account when calculating the 'Well to Wheel' (WtW) real emissions of electric buses. Electricity generated renewably, (eg. solar, wind, hydro) is close to carbon neutral; electricity generated from

fossil fuels has a high emissions footprint which possibly counters any benefits from its use in place of diesel in vehicles.

A restricting factor with battery-electric buses is the mileage range that can be obtained before battery charging is needed, although the technology is developing rapidly, extending range and reducing charging time. Manufacturers of battery electric buses include Optare, ByD, Wrightbus, Alexander Dennis and Irizar.

iii) Hydrogen Fuel Cell
Hydrogen buses are powered by an electric 'powertrain', where fuel cells convert the chemical energy of hydrogen into electrical energy. Hydrogen is stored in compressed tanks on the bus.

These buses produce no tail pipe emissions so the 'Well to Wheel' greenhouse gas emissions depend on how the hydrogen is produced. Production is possible from a variety of methods, including from fossil fuel based industrial processes to electrolysis of water using renewable electricity.

Significant research has been carried out by North Wales Economic Ambition Board on the potential for the use of hydrogen in North Wales *(see details below)*. Manufacturers of hydrogen buses include Optare, Wrightbus.

iv) Diesel Electric Hybrid
A hybrid bus combines two power sources in the vehicle drive train – a conventional diesel engine and an electric motor. The engine is designed to produce enough energy to maintain the average power that is needed to run the bus. When the bus needs more energy, as when pulling away from a stop, it draws the extra energy from the batteries and electric motor. The hybrid system enables energy to be recovered during braking and then released to accelerate the vehicle.

Diesel hybrids are currently the commonest form of low emission bus in the UK. Operators report that hybrid buses give a 30% reduction in diesel fuel consumption and a reduction in emissions *eg. 30% (Stagecoach); 39% (Oxford Bus Company), 40% (Transport for London)*. Manufacturers include Wrightbus, Alexander Dennis, Volvo and Optare.

v) 'Plug-in' Hybrid
These are similar to a diesel electric hybrid but are equipped with a large battery which can solely power the bus for a certain distance. The battery can be recharged (plugged in) using mains electricity. Manufacturers include Alexander Dennis and Volvo.

vi) Biomethane
Biomethane is a renewable form of natural gas derived from the anaerobic digestion of organic waste products such as farm slurry and food waste. Biomethane can be used to power buses with a spark ignition engine and storage for biomethane is provided in tanks on the roof of the vehicle.
Large fleets are operated by Reading and Nottingham who claim a 90% reduction in CO2 emissions. Vehicles are manufactured by Scania.

b) Application of Low/Zero Carbon Technology to North Wales

If the commitment made by the Welsh Government to have a zero carbon bus fleet by 2028 is to be achieved, then urgent action is needed.

The two practical options that are currently available for **zero carbon** are hydrogen and battery-electric.

Hydrogen Buses for North Wales

The North Wales Economic Ambition Board and Welsh Government commissioned a Report entitled 'Strategic Hydrogen Opportunities in North Wales' from Advision and Jacobs in February 2020. A progress report was produced in April 2020 which stated:

> *Low carbon/zero carbon hydrogen is seen by many groups and stakeholders as holding medium to long term potential on the transition to decarbonise...transport*

> *A number of public sector organisations, including Welsh Government and North Wales Economic Ambition Board, are keen to start to develop a hydrogen footprint*

The Report considers how a green hydrogen supply could be provided from a facility on Deeside. This would require significant investment but would enable the operation (alongside other users) of a fleet of buses in Flintshire/Wrexham/Denbighshire powered by green hydrogen.

Bus manufacturers are rapidly developing new hydrogen powered buses and in April 2020 major bus manufacturers announced details of new models:

> **Optare** *have developed a hydrogen fuel cell-electric double deck bus, with a range of 250 miles. They have partnered with a specialist company, Arcola, to produce the fuel pack.*

> **Wrightbus** *have unveiled fully costed plans to produce 3,000 hydrogen fuel cell-electric buses to be in service by 2024. The new owner of Wrightbus also owns a hydrogen producing company, Ryse.*

Vehicles from either of these companies would be suitable for the operation of the four Strategic Bus routes in North East Wales, using green hydrogen produced on Deeside:

1	Wrexham – Chester
4/X4	Mold – Chester
11	Rhyl – Chester
12	Rhyl – Llandudno

Electric *Buses* for North Wales

In 2017, Denbighshire County Council was offered an award of £500,000 by Department for Transport for the purchase of four electric buses, to be used on local bus services in the centre of the county.

A trial took place on the selected routes, with a single Optare Solo electric demonstrator, which established that none of the routes selected were suitable for electrification. As a result, the award of the grant was not taken up. The principal issues were:

- insufficient range from the batteries to cover a days work
- lack of local depots where charging could take place

Despite advances in the technology since 2017, the maximum range is still only 125-155 miles between charges. For intensive use on a Strategic route *(eg. Rhyl – Llandudno)*, it is unlikely this would be sufficient without the use of additional buses - which would not be cost effective. However, on more rural routes, where buses are used less intensively, the Denbighshire trial shows that electric buses such as the Optare Solo could be utilised.

As a result of the findings of the trial, Denbighshire County Council recently submitted a bid to Welsh Government Ultra Low Emission Vehicle Transformation Fund, for five electric powered 16 seat service buses. These were to be operated in the Denbighshire County Council fleet, on deep rural bus services in the Ruthin/Clawddnewydd area of the county. Unfortunately, this bid to Welsh Government was not successful. The operation would have provided valuable experience on the use of such technology across the rest of rural North Wales.

The key to delivering genuine 'Well to Wheel' zero emissions with electric buses is to identify a source of renewable electricity for charging. Rural North Wales has plentiful supplies of wind, solar and hydro electric generation, which could power a fleet of electric buses for use on local, town and rural bus services.

c) Funding of Zero Carbon Buses

Until demand for zero carbon buses increases, there will be a significant price penalty compared to the purchase of a conventional diesel powered bus. This means that the commercial case for operators to commit to new technology cannot and will not be made unless there is a funding contribution by the public sector. In recent years various Green Bus Grants have been given to facilitate the purchase of low emission buses. In the 1970's and 1980's, to enable a rapid move to one person operation, the government provided bus grants for new buses.

A cheaper option as a transition towards zero carbon could be the use of bio-methane powered buses as used for example by Reading and Nottingham (see above).

During the second world war, 'utility' vehicles of approved design were ordered by the Government and allocated to bus operators. This policy should be replicated today.
If the Welsh Government co-ordinated action across Wales, an order for 500 electric or hydrogen powered buses could be placed. This would give manufacturers certainty of numbers and the volume of production which would reduce the price. They could then be allocated or sold to operators/areas at a price comparable with a diesel bus.

Covid-19

The Covid-19 pandemic and the on-going response to it provides a challenge to the future operation of bus services. Social distancing has been described as:

> *'the death knell for public transport'*
> *(Chartered Institute of Logistics and Transport May 28th 2020)*

The general public are being urged to avoid buses and trains whilst at the same time, the government is persuading bus operators to restore pre-Covid levels of service.
The recommendations contained in this Strategy have to be considered in the light of the current position and the potential reaction of passengers to future social distancing, and fears of a second wave of the virus.

Issues to consider are:
- Reluctance to use bus services for fear of contracting the virus
- Need to reduce the capacity of buses to meet social distancing rules. This could mean 10 people on a double-deck bus; 4 people on a full size single-deck bus and 2 people on a minibus
- Economics of providing bus services on a commercial basis with carrying potential drastically reduced
- Requirement to prioritise travel to school/college at peak times to ensure students can get to their place of education
- Making all bus services 'demand responsive' with a requirement for all passengers to book in advance to control capacity
- Cost to the public purse of funding a supported network that is likely to be expanded if the current network is to be maintained
- Creation of a de-carbonised transport network in a scenario where public transport use is discouraged and car use is promoted

It is understood that proposals are being considered to revise the way bus services are governed and managed in Wales post Covid-19. This will not alter the need to progress the recommendations of this Strategy document to:
- Improve, install and maintain Infrastructure and Information Provision
- Provide bus priority
- Test innovative ways of providing bus services
- Incentivise the introduction of zero carbon buses.

Work Programme

1. Regional Bus Network: Work Programme
The recommendations for the North Wales Regional Bus Network can be implemented through a programme of work, which is described below.

Work Programme for Strategic, Core, Local & Town Services
(Work Programme for Other Services dealt with in '2. Rural Areas: c) Innovative Solutions' below)

a)Timetabling

Timetabling to be done in a holistic way, that considers the network as a whole

Strategic Services
- Agreement of connections at Principal and Key Interchanges, between trains and Strategic bus services, including TrawsCymru
- Timetables for commercial services to be agreed with operators
- Confirmation of de-minimis payments for additional journeys and tendered elements
- Commitment to maintain de-minimis funding for 5 years
- Agreement that timetables will be changed only after discussion with all stakeholders, and at agreed dates in the year

Core Services
- Agreement of locations where Core services connect with Strategic services
- Commercial services:
  - Local authority to work with operators to ensure Core services connect with Strategic services at designated interchanges
  - Confirmation of de-minimis payments for additional journeys and tendered elements
  - Commitment to maintain de-minimis funding for 5 years
- Tendered services:
  - Local authority to ensure timetables for Core services connect with Strategic services at designated interchanges
  - Tendered Service Quality Partnership to be signed
- Agreement that timetables will be changed only after discussion with all stakeholders, and at agreed dates in the year

Local & Town services
- Agreement of locations where Core services connect with Strategic services
- Tendered services (the majority of these services)
  - Local authority to produce timetables which connect with Core and Strategic services at designated interchanges (the majority of these services will be tendered)
  - Tendered service Quality Partnership to be signed
- Agreement that timetables will be changed only after discussion with all stakeholders, and at agreed dates in the year

b) Fares and Ticketing

All operators to commit to:
- Fare increases only after discussion and justification with local authority/regional transport authority
- Fares changes only on two agreed dates each year
- Provision of cashless fares using:
  - mobile phones
  - contactless cards
- Multi-modal and network ticketing

Fare levels:
- to be set by operators for commercial services
- to be set by tendering authorities for tendered services, to a standard scale based on mileage and agreed for the region

c) Infrastructure (Bus stops, Interchanges, Bus priority measures)

Audit all bus stops to identify:
- Which level each stop belongs to in the Categorisation of Interchanges and Bus Stops
- Work required to bring each stop up to the *North Wales Standard*
- Produce a programme of work to:
  - bring each stop up to the required standard
  - bring each Interchange up to the required standard (see Bangor example pxx)
- Identify bus priority measures and highway improvements which would improve the punctuality, reliability and image of the service

This will enable:
- a bid for funding to be quantified
- Service Level Agreements for each route to be produced

(An example Bus Stop Audit is included as Appendix 3)

d) Information Provision

Use the Audit of Stops to:
- Identify the work required to bring each stop up to *The North Wales Standard*
- Implement a programme of work to meet the *The North Wales Standard*

e) Service Level Agreements

To ensure a high standard of bus stop infrastructure is maintained, each Local Authority to sign a Service Level Agreement:
- backed by a committed funding agreement from Welsh Government
- with rewards and penalties informed by Key Performance Indicators
- with a regular independent audit

(An example Service Level Agreement is included as Appendix 1)

f) Quality Partnerships

Implement a programme of Quality Partnerships:
- linked to the improvement of Strategic services
- backed by a legal agreement between the operator and local authority/regional transport authority

(An example of how a Quality Partnership would be delivered is given in Appendix 2)

g) Funding Bids

- Produce a costed programme of work for each route, covering Infrastructure and Information Provision, for submission as a bid for funding

- Include the financial support of Service Level Agreements with local authorities for the inspection, maintenance and updating of infrastructure and information, should be included

2. Solutions to the Challenges of Rural Areas: Work Programme

The Strategy section suggests a number of solutions to the challenges for bus operation in the rural parts of North Wales. Where these solutions are already in place, they should be assessed and the results analysed. Where the proposed solution has not been tried, pilot schemes should be introduced.

a) Local Authority Operation of Bus Services

Denbighshire County Council has its own bus operating unit providing home to school contracts and local bus services.
- Carry out a full analysis of the costs and benefits of this operation, including the legislation which allows the operation to take place
- Subject to the results of this analysis, extend this 'in-house' operation to other parts of the region where there is a lack of competition for supported bus services
- Set quality standards for the operator and monitor adherence to these standards

b) Tendered Service Quality Partnerships

- Control costs and support operators, in order to maintain quality standards
- Agree and implement a Tendered Service Quality Partnership contract as services are re-tendered

c) Innovative Solutions

- Identify areas not served by Strategic, Core, Local or Town services.
  (The Categorisation of Services on pages 11-17 will assist in this process)

- Appoint a dedicated Community/Rural Transport Officer to:
  - Support and develop community transport schemes
  - Act as advocate for pilot schemes
  - Encourage communities to participate
  - Determine which option is appropriate and acceptable to each community

- Implement a series of pilot schemes *(see pages 37-44)*
  - Demand Responsive Transport
  - Community Transport
  - Social/Community Car
  - Formal Car Share Scheme
  - Co-ordination of school/social services/hospital transport
  - Community use of commercial transport
  These could be existing schemes or new initiatives, but a full evaluation and assessment will be carried out, to enable the effectiveness and cost/benefit of each option to be determined.

- Based on the results of the pilot schemes, there could be a roll out of appropriate schemes across the region

3. Low/Zero Carbon Vehicles: Work Programme

- Develop a programme for introducing hydrogen powered buses for Strategic services, linked to the Quality Partnership programme

- Identify services suitable for the economic operation of electric buses and develop a programme for rural services, linked to Tendered Service Quality Partnerships

- Operate bio-gas powered buses, as an interim measure towards zero carbon, using locally produced methane.
  This would reduce emissions significantly at a reduced capital cost compared to hydrogen or electric

- Explore ways of funding these programmes, until the cost of zero carbon buses becomes comparable with diesel powered buses
  eg. The Welsh Government could be approached to co-ordinate action across Wales to order 500 electric or hydrogen powered buses. This would give manufacturers certainty of numbers and the volume of production which would reduce the price. They could then be allocated or sold to operators/areas at a price comparable with a diesel bus.

Appendix 1: Example Service Level Agreement

DATE   Page 1

Service Level Agreement between *Conwy Council*
and the Welsh Government/Transport for Wales/Regional Transport Authority

This Agreement covers the installation and maintenance of Bus Stop Infrastructure and Information Provision, in connection with Strategic bus services, at the following locations:

1. The Principal Interchanges
> *Llandudno*

2. The Key Interchanges
> *Colwyn Bay*

3. The Small Interchanges
> *Conwy*

4. Village Centres
> *All villages in Conwy*

5. Other Bus Stops
> *All other bus stops in Conwy*

Service Level Agreement between *Conwy Council*
and the Welsh Government/Transport for Wales/Regional Transport Authority

This Agreement records the commitment by all parties that *The North Wales Standard* will be applied at all of the above locations, as follows:

The North Wales Standard 1. Standards for Bus Stops and Shelters	Bus Stop Category				
	1	2	3	4	5
High quality enclosed waiting shelters	/				
Enclosed waiting shelter		/	/	/	?
Bus Stop with branding	/	/	/	/	/
Clear signing from key locations	/				
Bus stop signage integrated into railway station infrastructure	/				
Covered cycle stands	/	/	/		
Bus stop box markings on highway		/	/	/	/
Raised Kerbs for improved accessibility	/	/	/	/	/
Programme for regular cleaning and inspection	/	/	/	/	/
Contract for repair and maintenance	/	/	/	/	/
Damage will be repaired with 48 hours of being reported	/	/	/	/	/

The North Wales Standard 2. Standards for Information Provision	Bus Stop Category				
	1	2	3	4	5
Real time passenger information screen	/	/	/	/	?
Information about connecting services	/	/	/		
Directions to connection stops *(if not the same shelter)*	/	/	/		
Paper timetable information clearly displayed	/	/	/	/	/
Bus information provided at railway stations	/				
Details about strategic bus services included in railway timetables	/				
Display infrastructure maintained in excellent condition	/	/	/	/	/
All information provision must be: • accurate • kept up-to-date • clear and well presented • highly informative • easy to understand • accessible	/	/	/	/	/
Timetable information will be updated not more than 48 hours before a change and not more than 24 hours after a change	/	/	/	/	/

Appendix 2: Example Action Plan for Quality Partnership

DATE   *Page 1*

Quality Partnership Action Plan for Service 11
   Rhyl – Prestatyn – Holywell – Flint – Shotton – Queensferry – Chester

Partners:
Arriva Buses Wales
Flintshire County Council (Officers for public transport, traffic, parking enforcement)
Denbighshire County Council (Officers for public transport, traffic, parking enforcement)
Transport for Wales

This Quality Partnership Agreement is for a period of 5 years
A Review will take place in year 5, with the intention of signing a new Agreement for a further 5 year period

The Partners agree to a Programme of Work based on the following:

1. Timetabling
- Agree optimum timetables for:
  - Monday – Friday peak-times
  - Monday – Friday daytimes
  - Saturday day-time
  - Sunday day-time
  - Evenings
- Negotiate and agree funding required to provide this timetable
- Prioritise connecting services and design timetables to optimise connections
- Provide current timetables on all web-sites and journey planners
- Make paper timetable leaflets in a standard North Wales style widely available
- No timetable changes to be made without agreement of all Partners
- Make timetable changes on only two specified dates each year (linked to train timetable change dates), unless all Partners agree in special cases

2. Fares and Ticketing
- Agree a standard suite of tickets, easy to understand and offering value for money
- Make available advance purchase tickets, via apps, mobile phones, etc
- Make contactless purchase available on all buses
- Commit to developing multi-modal tickets with TfW (Rail)
- Agree fares and change these only with agreement of all Partners

3. Interchanges and Bus Stops

- Audit all stops on the 11 route
- Produce costed proposal to reach *The North Wales Standard* for all stops
- Sign Service Level Agreements with local authorities to provide, inspect and maintain infrastructure
- Implement *The North Wales Standard* for all stops on 11 route
- Implement site specific improvements at the Key Interchanges:

Site specific improvements at Rhyl Interchange

Rename Rhyl Railway Station and Rhyl Bus Station as Rhyl Interchange
Create signed walking route between bus and train platforms & emphasise Interchange entrances
Add service 11 departure times to rail passenger information screens
Include service 11 times in paper rail timetable displays on train platforms
Include train departure times on 'next stop' announcement for Rhyl Interchange on service 11 buses
Produce information leaflet with train & route 11 timetables

Site specific improvements at Prestatyn Interchange

Provide signed walking route between Bus Station and Railway Station
Install new high quality bus shelters
Provide 'easy to understand' bus information at Railway Station
Produce information leaflet with train & route 11 timetables

Site specific improvements at Shotton Interchange

Improve signage from service 11 bus stops to station platforms, with clear information on where each train service departs
Add service 11 departure times to passenger information screens in Railway Station
Include service 11 departure times in paper timetable displays in Railway Station
Include train departure times on 'next stop' announcement for Flint Interchange on service 11 buses
Produce information leaflet with train & route 11 timetables

Site specific improvements at Flint Interchange

Utilise Evans Street, Y Farchnad and Market Square as a 'uni-directional' loop for all buses, with Y Farchnad being 'Buses Only'
Install high quality bus shelters and designate as 'Platform 3'
Create signed walking route between 'Platform 3' and train platforms
Add service 11 departure times to passenger information screens in Railway Station
Include service 11 departure times in paper timetable displays in Railway Station
Include train departure times on 'next stop' announcement for Flint Interchange on service 11 buses
Produce information leaflet with train & route 11 timetables

4. Vehicle Quality
- Agree vehicle specification, with the aim of providing a high standard of comfort and space, appropriate to the length of the route. Specification to include:

  - Display for service number, final destination & intermediate locations
    - in Welsh and English
    - front, side and rear of vehicle
  - Route branding for the service
  - Wi-fi and phone charging facilities
  - Audio and visual 'next stop' announcements
  - 2+1 seating *(to address social distancing concerns following Covid-19)*

- Agree date for introduction of zero carbon buses

5. Performance Indicators
Agree a series of

SMART (Specific, Measurable, Achievable, Relevant, Time limited)
Key Performance Indicators (KPIs) for each Quality Partnership

Presentation of these KPIs and discussion and action on the results should be a main agenda item at the quarterly Quality Partnership Delivery Group meeting.

The following tables give examples of Performance Standards and KPIs for Partners: Local Authorities, Train Operators and Bus Operators

Local Authority Standards and KPIs

Performance Standards: Infrastructure and Information	KPIs
Complete audit of all infrastructure to be carried out each quarter	*Number of infrastructure audits carried out in previous quarter*
100% of locations to meet *The North Wales Standard*	*% of locations meeting The North Wales Standard*

Train Operator Standards and KPIs (when appropriate)

Performance Standards: Information	KPIs
All Interchange stations to have bus service information and signage	% of Interchange stations with bus service information and signage
All Interchange stations to have stocks of bus timetables available for customers	% of Interchange stations with stocks of bus timetables

Quality Partnership Action Plan for Service 11   Page 4

Bus Operator Standards and KPIs

Performance Standards: a) Journeys	KPIs
99% of journeys to operate	*% of journeys operated*
90% of journeys to operate on time or no more than 5 minutes late at specified destinations	*% of journeys operated to within 5 minutes of scheduled time at specified destinations*
98% of journeys to be operated by correct vehicles	*% of journeys operated by correct vehicles*
99% of journeys to be operated by buses with working next stop audio/visual announcements	*% of journeys operated by buses with working next stop audio/visual announcements*
b) Bus Drivers	
100% of journeys operated by drivers in uniform	*% of journeys operated by drivers in uniform*
All drivers allocated to service to receive customer care training	*% of drivers with customer care training*
c) Complaints	
Maximum 5 complaints received per 1,000 miles operated	*Number of complaints received per 1,000 miles operated*
100% of complaints responded to in 5 working days	*% of complaints responded to within 5 working days*

Appendix 3: Example Bus Stop Audit

Bus Stop Audit: Service X4 Mold – Chester

Bus Stop	Category	Existing Infrastructure	Work Required
Mold Bus Station	1	High quality enclosed waiting shelters Bus stops with branding Covered cycle stands Paper timetable info	Clear signage Cleaning and Inspection Repair and Maintenance RTP Information Information on connections Directions to connecting stops
Wood Green	4	Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Bryn Offa	4	Bus stop plate	Paper t/t information Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Griffin Inn	4	Open shelter Bus stop plate Paper t/t information Raised kerbs	Bus stop box Cleaning and Inspection Repair and Maintenance RTP Information
Bod Offa Drive	4	Open shelter Raised kerbs	Paper t/t information Bus stop plate Bus stop box Cleaning and Inspection Repair and Maintenance RTP Information
Pren Hill	4	Open shelter Bus stop plate Bus stop box Paper t/t information Raised kerbs	Cleaning and Inspection Repair and Maintenance RTP Information
Bistre Close	4	Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
White Lion	4	Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information

Buckley Cross	2	Open shelter Bus stop plate Paper t/t information Bus stop box Raised kerbs	Connecting services Information Covered cycle stands Cleaning and Inspection Repair and Maintenance RTP Information
Mill Lane Surgery	4	Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Hawkesbury Road	4	Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Belmont Crescent	4		Cleaning and Inspection Repair and Maintenance RTP Information
Liverpool Road Post Office	4	Open shelter Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
St. Matthews Park	4	Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Red Lion Inn	4	Open shelter (old concrete) Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Smithy Lane	4	Bus stop plate	Paper t/t information Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Dovey Cottages	4	Open shelter Bus stop plate Paper t/t information	Paper t/t information Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information

Hawarden High School	4	Open shelter Bus stop plate Paper t/t in formation (stop in lay-by)	Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Boars Head	4	Bus stop plate (stop in lay-by)	Paper timetable information Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Carlines Park	4	Bus stop plate (stop in lay-by)	Paper timetable information Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Crown and Liver	4	Open shelter Bus stop plate Paper t/t information Bus stop box Raised kerbs	Cleaning and Inspection Repair and Maintenance RTP Information
Hawarden High School	4	Open shelter Bus stop plate (stop in lay-by)	Paper timetable information Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Hawarden Station	4	Open shelter Bus stop plate Paper t/t information Bus stop box	Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information Bus information in station Directions to/from station
Glynne Arms	3	Enclosed shelter (old) Bus stop plate Paper t/t information Bus stop box	Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Raikes Lane	4	Bus stop plate (stop in lay-by)	Paper timetable information Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Manor Lane/Main Road	4	Bus stop plate Paper t/t information Raised kerbs (lay-by stop)	Cleaning and Inspection Repair and Maintenance RTP Information

Manor Lane	4	Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Arriva Depot	4	Bus stop plate	Paper timetable information Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Wood Lane	4	Bus stop plate Paper t/t information	Bus stop box Raised kerbs Cleaning and Inspection Repair and Maintenance RTP Information
Airbus	4	Open shelter Bus stop plate Paper t/t information Raised kerbs	Bus stop box Cleaning and Inspection Repair and Maintenance RTP Information
Broughton Retail Park	2	Open shelters Bus stop plates Paper t/t information Bus stop box Raised kerbs	Covered cycle stands Connecting services Information Directions to connection stops Cleaning and Inspection Repair and Maintenance RTP Information