

CVL Network

**A G5 Notice of Intended Scope for the
Transformation Programme
(CVLNCCP03-G5)**

25 June 2025

1 Contents

1	Contents	2
2	Acronyms and Abbreviations.....	3
3	Terms and Definitions.....	4
4	Governance	5
5	Infrastructure Changes	6
6	Operating Procedures.....	10
7	Timetable Change	11
	Appendix A – Scope Diagram and Commissioning Dates Diagram	12
	Appendix B – Station Changes	13
	Appendix C – Signalling Scheme Plans	14
	Appendix D – OLE Sectioning Diagrams.....	15

2 Acronyms and Abbreviations

Acronym / Abbreviation	Meaning
ABD	The Transformation works on the section of route from Pontypridd (excluded) to Aberdare via Abercynon
AC	Alternating Current
AFC	Approved for Construction
AIW	Seilwaith Amey Cymru / Amey Infrastructure Wales Ltd
APCO	Auto-Power Change Over system
ASDO	Automatic Selective Door Operation
ATFS	Auto-transformer Feeder Station
CCTV	Closed-Circuit Television
CFS	Catenary Free Section
CIS	Customer Information System
CTL	The Transformation works on the section of route from Ninian Park to Radyr Junction
CVL	The Cardiff Core Valley Lines is the geographic extent of the rail infrastructure network from Cardiff Bay, through Queen Street to Treherbert, Hirwaun, Aberdare, Merthyr Tydfil, Cwmbargoed, Rhymney, Coryton and Ninian Park (exclusive)
CVLICCC	The Core Valley Lines Integrated Control Centre, located at Taff's Well, containing signalling and electrification control equipment and personnel
CVLOI	Core Valley Lines Operating Instructions
DRS	Dynamic Route Setting
ECR	Electrical Control Room
ECRO	Electrical Control Room Operator
FLIRT	Fast, Light, Intercity and Regional Train (a Stadler product) – class 756s will be used on the Rhymney Valley of the CVL Network
GSM-R	Global System for Mobile communications – Railways
IDP	Infrastructure Delivery Partner ("IDP") means the partners selected to deliver specific works as part of the Transformation Programme
IM	Infrastructure Manager – the body accountable for safe operation and maintenance of a railway network
IRT	Indicative Running Times
MER	The Transformation works on the section of route from Abercynon (excluded) to Merthyr Tydfil
MPLS	Multi-Protocol Label Switching - A network of connected routers allowing connections to Signalling, Telecoms and SCADA to the CVLICCC and the WROC
MV	Metro Vehicle - a Stadler tram/train vehicle - class 398s will be used on the TAM side of the CVL Network
NCN	Network Change Notice
OLE	Overhead Line Electrification System
ORS	Operational Requirements Specification
PAN	Project Advice Note
PES	Permanently Earthed Section of the OLE
PZT	Points Zone Telephone

Acronym / Abbreviation	Meaning
QSS	The Transformation works on the section of route from Queen Street South Junction to Llandaff
R2P	The Transformation works on the section of route from Radyr to Pontypridd
RA	Route Availability
SCADA	Supervisory Control and Data Acquisition
SFO	Station Facility Owner
SPT	Signal Post Telephone
SRT	Sectional Running Time
SSP	Signalling Scheme Plan
TAM	Treherbert, Aberdare and Merthyr - the western part of the CVL Network from Treherbert, Aberdare and Merthyr Tydfil down through Pontypridd, Radyr, Cathays and Queen Street to Cardiff Bay. Also used as the overarching name for the first major phase of the works (Stage Events 1 to 4).
TfW	Transport for Wales
TfWRL	Transport for Wales Rail Ltd
THT	The Transformation works on the section of route from Pontypridd (excluded) to Treherbert
TMS	Traffic Management System
TPR	Timetable Planning Rules
TVM	Ticket Vending Machine
TW	Signals within the depot will be controlled from a separate Taff's Well depot workstation within the CVLICC and will have the prefix "TW"
VC	All signals within the former Radyr and Abercynon control areas will be controlled from the CVLICC and will have the prefix "VC"
WROC	Network Rail's Wales Route Operating Centre located at Cardiff

3 Terms and Definitions

Access Beneficiary	A train operator who is party to a Track Access Contract with AIW
Complex Projects Procedure	The procedure set out in Condition G5 of the CVL Network Code
Consultation Period	A period for consultation with industry, as set out in the CVL Network Code, Part G, for AIW and Access Beneficiaries to consider the content of, and respond to, a Network Change Proposal
CVL Network	The CVL Network covers the railway network from: Treherbert, Aberdare, Merthyr, Cwmbargoed, Coryton and Rhymney to the CVL West Boundary and the CVL East Boundary with Network Rail
CVL Network Code	The code setting out the rules applying to all regulated access agreements for a railway Network. The CVL Network Code is available here: Core Valley Lines infrastructure manager TfW
Network Rail	Network Rail is the owner and infrastructure manager of most of the railway network in Great Britain
Rhymney Valley	The eastern part of the CVL from Cardiff Central, through Queen Street to Coryton and Rhymney
Stage Event	Also known as commissioning. This is when a new asset(s), proposed during the Network Change are bought into operation. Often, other asset(s) are removed in parallel

Station Working Group	The Station Working Group will agree the scope and plan the delivery of station facilities upgrade that are part of the overall Transformation Programme
Station Facility Owner	The meaning of Facility Owner applied to the station has the meaning defined in section 17 (6) of the Railways Act 1993
South Wales Metro Programme	The programme that the Welsh Government is investing to improve cost effective travel options on Southeast Wales
Transformation Programme	The Transformation Programme of the South Wales Metro Programme is the scope of works to upgrade the networks
Transformation Programme Team	The Transformation Programme Team is the collaboration of AIW and the IDPs to deliver the specified works of the Transformation Programme
Timetable Working Group	The Timetable Working Group is developing the new Timetable Planning Rules ("TPRs") associated with changes to the CVL Network on behalf of AIW. The key personnel for the Timetable Working Group includes Network Rail, AIW, and Access Beneficiaries, which also applies to Network Rail network
Track Access Contract	An access agreement between an IM of a Network and a Railway Undertaking, which permits the operation of train service

4 Governance

- 4.1 This document is a Notice of Intended Scope for the Transformation Programme 2025.
- 4.2 As defined by Condition G7 of the CVL Network Code, AIW will follow Condition G1 in order to consult with Access Beneficiaries and to establish changes to the CVL Network.
- 4.3 Consultation Periods for all Network Change Notices will be in accordance with requirements defined by the CVL Network Code.
- 4.4 In accordance with Conditions 5.7 and 5.12 of Part G of the CVL Network Code, any variation to the G5 Complex Projects Procedure scope of the Transformation Programme. Any variation will be consulted with Access Beneficiaries.
- 4.5 AIW will continue to maintain close communication with Access Beneficiaries via the already established Timetable Working Group and other communication channels, so that all parties remain informed and able to influence the Transformation Programme.
- 4.6 Other related workstreams or forums with Access Beneficiaries are:
 - Timetable Working Group (to define the effects of the line speed and other infrastructure alterations);
 - Network Change consultations;
 - Station Change consultations;
 - Vehicle Change consultations;
 - Access Rights reviews;

- Driveability reviews; and
- Signal Sighting Committee workshops.

5 Infrastructure Changes

- 5.1 This Notice of Intended Scope covers the remainder of the currently proposed scope of the Transformation Programme on the CVL Network for the year 2025.
- 5.2 It should be noted that not all of the works included within the previous G5 notice (issued January 2024 and including all works originally planned for implementation during 2024) have been completed at this time. The final G1 proposal document associated with that G5 notice was issued in March 2025.
- 5.3 A high-level summary of the proposed changes to the Sectional Appendix are presented below for the attention of the Access Beneficiaries:
- 5.4 The following Western Route Sectional Appendix changes are required for the Transformation Programme to be implemented during 2025 (see dates below), as presented in Table 1.

Table 1: Western Route Sectional Appendix Changes

Section	Sub-section	Changes
General Instructions	Rule Book Module P2 – Working of single and bi-directional lines by pilotman	Not applicable
General Instructions	Rule Book Module SP – Speeds	Not applicable
General Instructions	Rule Book Module TW1 – Preparation and movement of trains	Not applicable
General Instructions	GSM-R – Cab radio registration at main signals / block markers & position light signals – location codes	Not applicable
General Instructions	Lines equipped with axle counters	No changes anticipated – all affected lines are already equipped with axle counters

Section	Sub-section	Changes
General Instructions	Line clear verification (LCV)	No changes anticipated – all affected lines are already equipped with axle counters
General Instructions	Other General Instructions	Other General Instructions have been consulted for implementation of OLE, APCO beacons and the introduction of new rolling stock.
Table A	Applicable	Supplementary notice of signalling and permanent way alterations to be issued for commissioning – Table A to be amended to reflect
Route Clearance tables	Applicable	Route clearance tables to be amended in conjunction with the introduction of new rolling stock (756 up the Rhymney and 398's Queen Street to Bay)
Local Instructions	GW810 (Rhymney Line)	No change to current instructions.
Local Instructions	GW820 (Cwmbargoed)	No change to current instructions
Local Instructions	GW830 (Central / Queens Street to Merthyr)	None Identified
Local Instructions	GW839 (Bay)	None Identified

5.5 The high-level proposed major states of the Transformation Programme to be implemented during 2025 are presented below:

Transformation Programme works to be implemented during 2025.

- April 2025 Energisation of new Overhead Line Electrification (OLE) from Heath Junction to Coryton and Lisvane & Thornhill (EE3B)

- Energisation of QS TSS & BAY Line HV May 2025 Bay platform 2 (EE3A) and single track (NWC change completed)
 - September Energisation of the OLE (Bay Platform 2)
- October 2025 – Ynyswen station upgrade entry into service.
- October 2025 Taffs Well station additional facilities entry into service
- December 2025: Energisation of the new OLE from Caerphilly to Rhymney (EE4)
- December 2025 Ty-Glas Station platform extensions entry into service
- December 2025 Energisation of Lisvane to Caerphilly Bay Platform (EE3B-2)

5.6 Please refer to Appendix A for a diagram illustrating the Transformation Programme works that are being implemented during 2025.

5.7 For completeness, Appendix B outlines the changes that will be made outside of this Network Change in accordance with industry practice i.e., Station Change process.

5.8 The operational requirements to which the above changes will be delivered are set out below:

Structure Gauge: The existing structure gauge of each line will be preserved. The existing “route clearance of freight containers/swap bodies” is given in table D5B of the Sectional Appendix. These clearances will be maintained. The Transformation Programme is not remitted to correct any existing non-conformances covered by the star note. However, where physical alterations are required for any other reason, all works will be carried out to current gauging standards. Current gauge for each line of route are as follows:

- GW810 (Rhymney – Cardiff Queen Street North Junction) W6A*
- GW820 (Cwmbargoed – Ystrad Mynach South) W6A
- GW830 (Merthyr Tydfil – Cardiff East Jn via Cathays) W6A*

Level Boarding: Continuation of the CVL- wide programme to correct platform heights and offsets to ensure level boarding compliance for future Class 398 and Class 756 rolling stock. The requirement is under review and currently planned to recommence in 2026.

Global System for Mobile communications–Railways (“GSM-R”): None planned for 2025.

Migration of Operations Control to CVLICC: Not applicable

Signalling Enhancements: Various stage works

Telecommunications System: Not Applicable

Telephony Arrangements: Not applicable

New Fleet Depot: Not Applicable

Passing Loops: Not applicable

Line Speed Alterations: Not applicable.

Provision of Level Boarding without Reducing the Existing Structure Gauge: Deferred to 2026..

Level Crossing Alterations: A comprehensive programme of level crossing risk assessments have been undertaken. The following level crossings are due to be closed and replaced with alternative means (where required) Wernddu (wk20) Ty-lsha (wk20), Gibbons (wk30), Graig Rhymney(wk30) and Cwmbach (TBC).

Electrical Control Room (“ECR”): Transfer of isolation management from Didcot ECO to CVLICC ECO is intended to take place during Canton stage 2 commissioning event planned for July 2025. This change was established in Network Change CVLNCCP01-G1-04, in April 2023.

Discontinuous Electrification: The same discontinuous 25kV OLE system introduced in 2023 will be used throughout the CVL. This system includes numerous Permanently Earthed Sections (PES) and Catenary Free Sections (CFS). OLE section diagrams are included in Appendix D. In areas that are not being electrified, electric trains passing through these areas will be required to use another form of energy for propulsion. Trains transitioning between electrified and non-electrified areas and vice-versa are required to read a track-mounted beacon to enable their auto pantograph-up or pantograph-down facility and trigger a switch to the other form of energy. This is collectively referred to as the Auto-Power Change Over system (APCO). The CVL OLE system is under the control of the CVLICC Electrical Control Room Operator (ECRO).

Enabling Track and Civils Works: Track and civils works to enable the construction of the OLE will be undertaken across the CVL Network. The existing structure gauge will be preserved throughout

Revised Signalling Control Interface: Not applicable

6 Operating Procedures

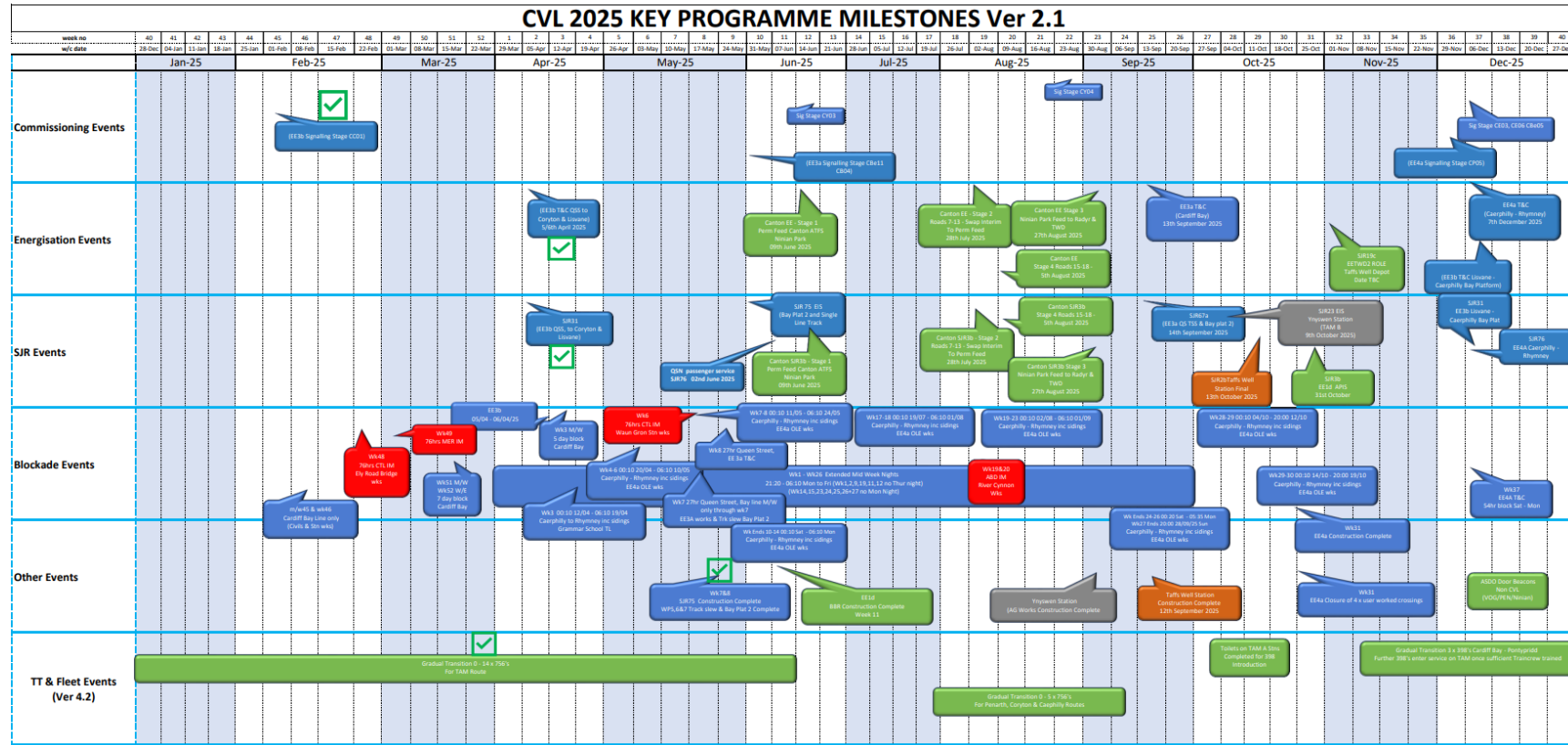
- 6.1 The scope of Operational Changes described herein are limited to the novel, complex and/or unique features of the operation of the CVL Network not covered by GERM8000 Master Rule Book or by existing instructions: this includes the CVLICC, Taff's Well Depot, Canton Depot and any interface with Network Rail at WROC.
- 6.2 As part of the Transformation Programme, the existing Rule Book, Regulations and Instructions will be supplemented to encompass the novel, complex and/or unique features that are being introduced.
- 6.3 The Core Valley Lines Operating Instructions ("CVLOI") will describe some additional bespoke Operating Instructions along with (mainly terminological) deviations from the GERM8000, Master Module Issue 7 of the Rule Book. The CVLOI will be consulted as a G1 Network Change in due course.
- 6.4 The Operating Procedures will conform to the Network Rail Standards and replicate their operations. Degraded mode will be based on the Rule Book.
- 6.5 There are two unique systems – the APCO system and the OLE. This is because whilst the beacons are Network Rail approved for several functions; they have not been used for auto-power change over previously.

7 Timetable Change

- 7.1 Alterations to the CVL Network described herein, will mean that the Train Planning System will have to be altered to reflect the new configuration of the Network, at each state of Transformation Programme works. New Timetable Planning Rules (“TPRs”) associated with changes to the CVL Network will be developed by the Timetable Working Group and then consulted/implemented, in accordance with the CVL Network Code Part D, in future.
- 7.2 Calculations for new Sectional Running Times (“SRTs”) and the other TPRs will be delivered by Network Rail’s Capacity Analysis Team and the TPR Specialists, on AIW’s behalf. Network Rail have been procured to deliver the TPR calculations. Activities include the following:
- Quality assurance of the Signalling Scheme Plans (“SSPs”);
 - Indicative Running Times (“IRT”) and SRTs;
 - SRTs to produce headways; and
 - Production of the Wales and Western TPR document.
- 7.3 Performance modelling will be undertaken and will be used to inform Network Change Notices.
- 7.4 New TPRs and SRTs proposed for the CVL Network will be incorporated into Network Rail’s normal timetable change, TPR consultation process, unless otherwise agreed for minor changes with Access Beneficiaries.

Appendix A – Scope Diagram and Commissioning Dates Diagram

The scope diagram and commissioning dates diagram for the Transformation Programme to be implemented during 2025



Appendix B – Station Changes

Appendix B outlines the industry practice i.e.; Station Changes that are outside of this Network Change. Station changes in 2025 include:

1. The programme of new and refurbished toilets, waiting rooms, shelters and the installation or upgrade of help points, CCTV cameras, Ticket Vending Machines (“TVMs”), smart ticket validators, Wi-Fi, and Customer Information System (“CIS”) screens will continue through 2024. These will be separately consulted through the Station Change process.
2. Tir Phil station – Signal move
3. Ty Glas – Station enhancements
4. Ynyswen - Station enhancements

Appendix C – Signalling Scheme Plans

The Signalling Scheme Plans for the Transformation Programme works to be implemented during 2025 are listed below and are attached to the emails relating to this proposal:

1. Cardiff Bay (20-CVL-01-07vA07)
2. Cardiff Central (20 CVL-01-05vA07)
3. Caerphilly (24-CVL-EE4-03v0.2)
4. Rhymney (24-CVL-EE4-01v0.2)
5. Ystrad Mynach (24-CVL-EE4-02v02)

Appendix D – OLE Sectioning Diagrams

The OLE sectioning diagrams for the Transformation Programme to be implemented during 2025 are listed below and are attached to the emails relating to this proposal:

1. TRAN01-PSP-ZZ-CVL-DDR-Y-EP-000003-S1-P04