

St. Modwen Developments

Coed Darcy

SLR Project No.: 432.001784.00001

25 September 2025

Revision: 03

RE: TRANSPORT RESPONSE

Introduction

- 1.1 An outline planning application for Coed Darcy was granted in 2008 for 4,000 dwellings and associated land uses (education, retail, commercial and employment). The site relied on Phase III junction capacity mitigation improvements at M4 Junction 43.
- 1.2 A revised planning application was submitted in 2021 comprising 2000 dwellings and associated land uses (including education, extra care provision, neighbourhood centre, community, assembly and leisure uses, public open space, retail, commercial and employment uses). The lower trip generation of the revised scheme resulted in a reduced Phase II junction mitigation scheme at M4 Junction 43 with fewer entry and circulatory lanes.
- 1.3 Further to comments received from Neath Port Talbot Council (NPTC), Transport for Wales and the Welsh Government, a highways meeting was held on 17 November 2023 where it was agreed by all parties that additional mitigation should be provided for active travel measures with reduced junction capacity mitigation to reflect recent policy changes. In order to reduce highway mitigation and invest the savings in active travel, it was agreed the Vision & Validate approach should be used.
- 1.4 A workshop was held with Neath Port Talbot County Borough Council officers on 9 September 2024 to identify any outstanding matters relating to Transport. The following items were identified:
 - Formal response to NPTC Vision & Validate comments dated 9 February 2024;
 - Formal response to Swansea Council comments, not dated;
 - Active Travel improvements between the site and Crymlyn Road via Pen-Y-Heol/B4290 and the existing footway/cycleway adjacent to the M4.
 - Access arrangements to the Northern North site.
- 1.5 NPTC, Swansea Council and Welsh Government comments are provided in full in **Appendix A** and are shown below in blue text, with SLR's responses provided in black text.

Neath Port Talbot County Borough Council V&V Observations

1.6 Coed Darcy - V & V response – SLR Project No 432.001784.00001 – no revision, dated 9th of February 2024

1.7 Highway Response:-

1. **TRICS** data did not cater for this use or size of development, therefore the applicant states *“the forecast of higher number of peak hour vehicular trips leaving the site than would occur in reality”* there is no proof to this statement – awaiting results.

1.8 TRICS contains multi-modal surveys from 56 unique sites in the 03-Residential, A-Houses Privately Owned category (excluding high street and edge of town centre locations) for the 5 year period prior to Covid restrictions (Jan 2015 to Jan 2020).

1.9 Breaking this down into 3 categories of site size, this comprises of 36 surveys at sites with between 20 and 100 dwellings; 17 surveys at sites with between 100 and 500 dwellings; and 3 surveys at sites with over 500 dwellings.

1.10 Figures 1 to 3 shows the average car trip rate per dwelling derived from TRICS for 03-Residential, A-Houses Privately Owned sites in each of the three categories of site size. Figure 4 presents the TRICS peak hours car trip rates per dwelling for each size category of site.

Figure 1 : TRICS trip rates for 03-Residential, A-Houses Privately Owned sites with 20-100 Dwellings

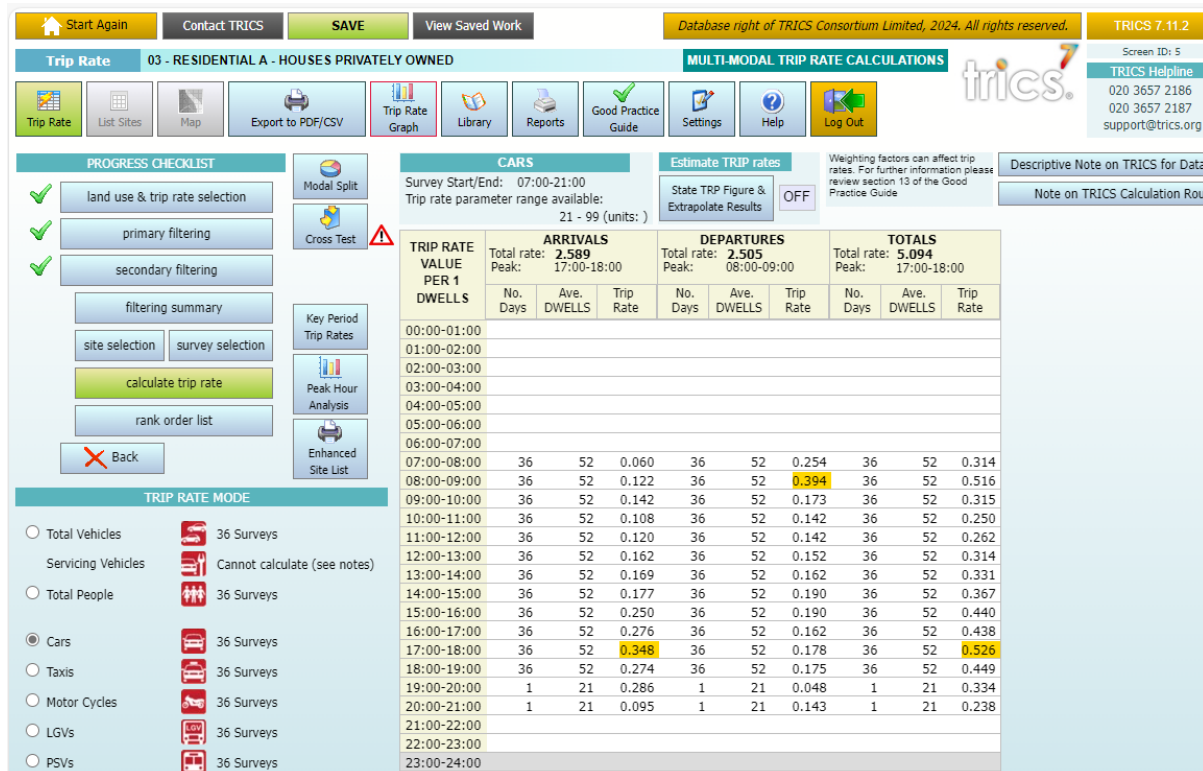


Figure 2 : TRICS trip rates for 03-Residential, A-Houses Privately Owned sites with 100-500 Dwellings

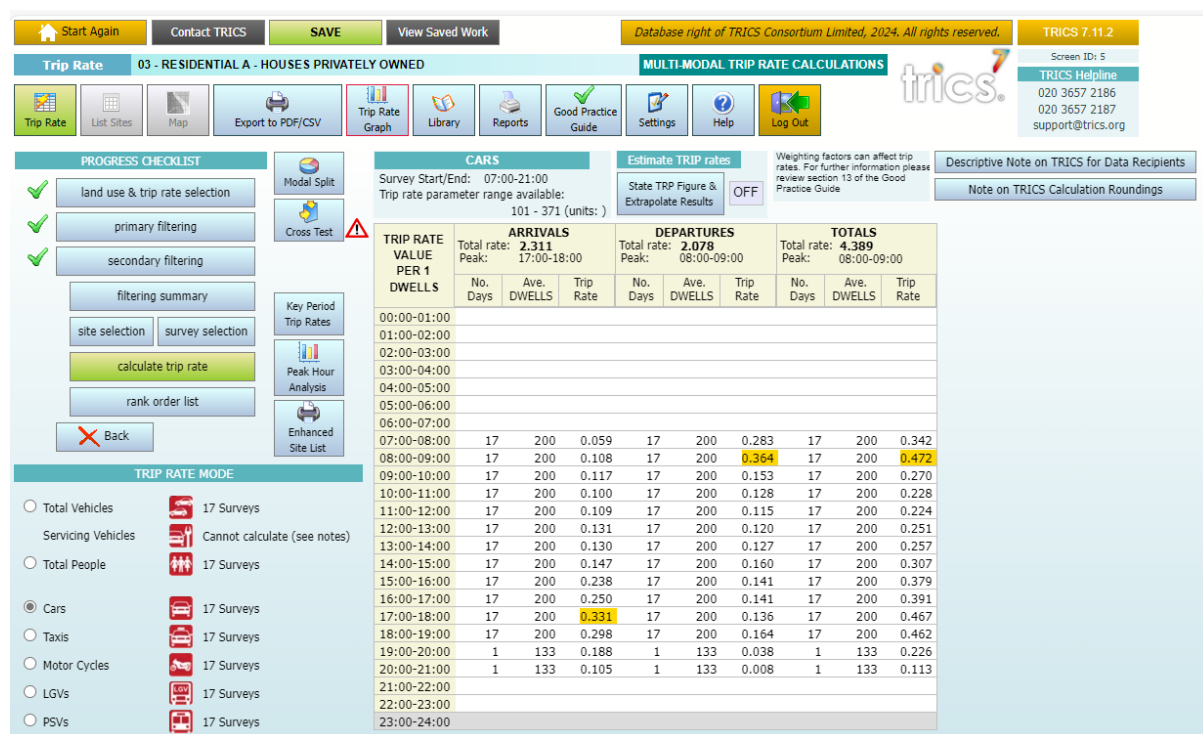


Figure 3 : TRICS trip rates for 03-Residential, A-Houses Privately Owned sites with 500-1817 Dwellings

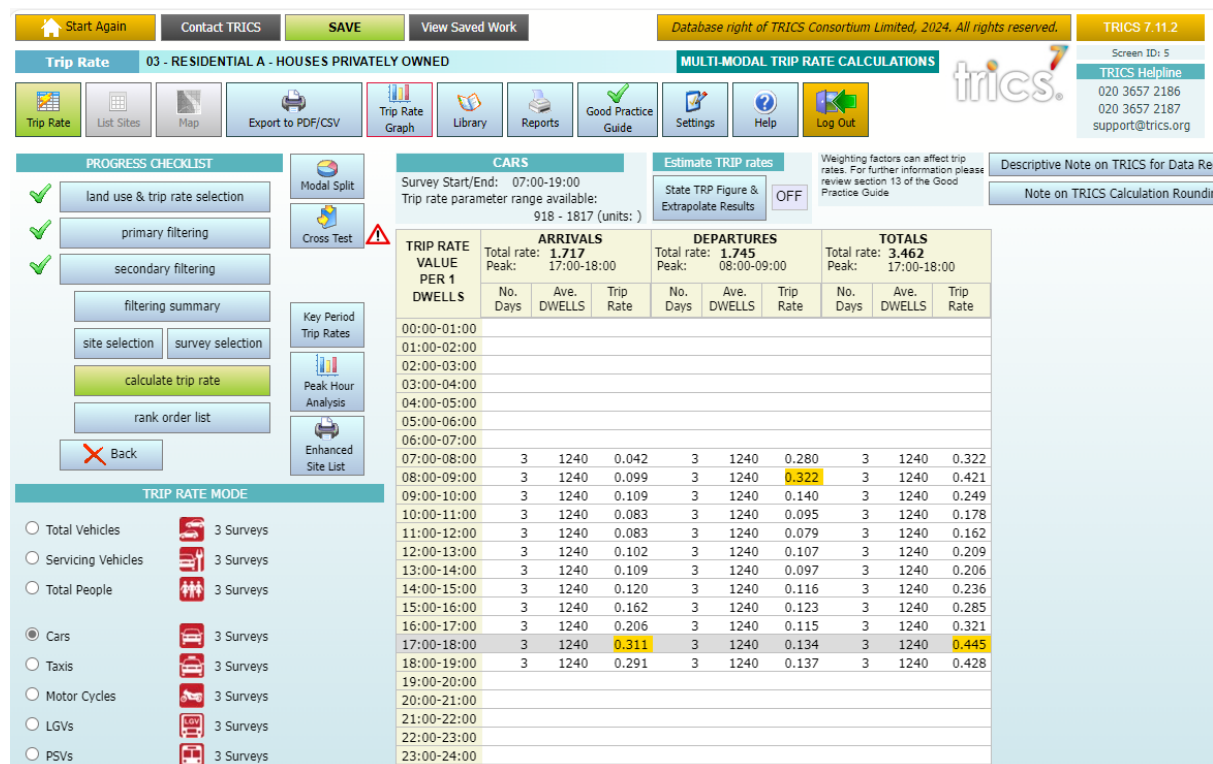
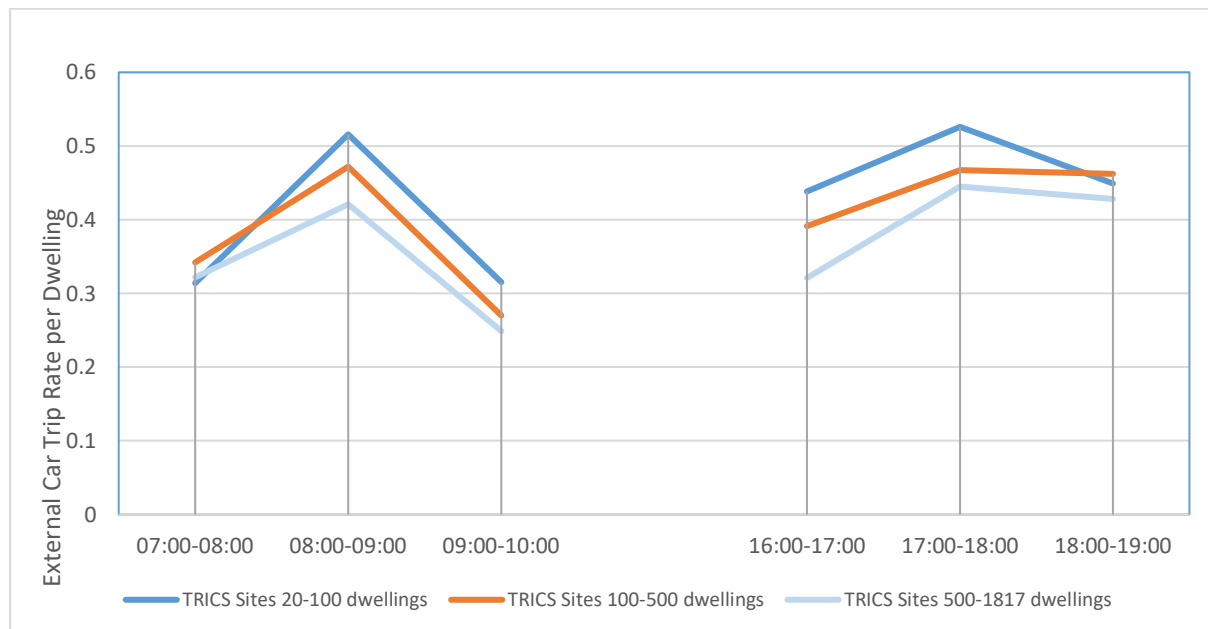
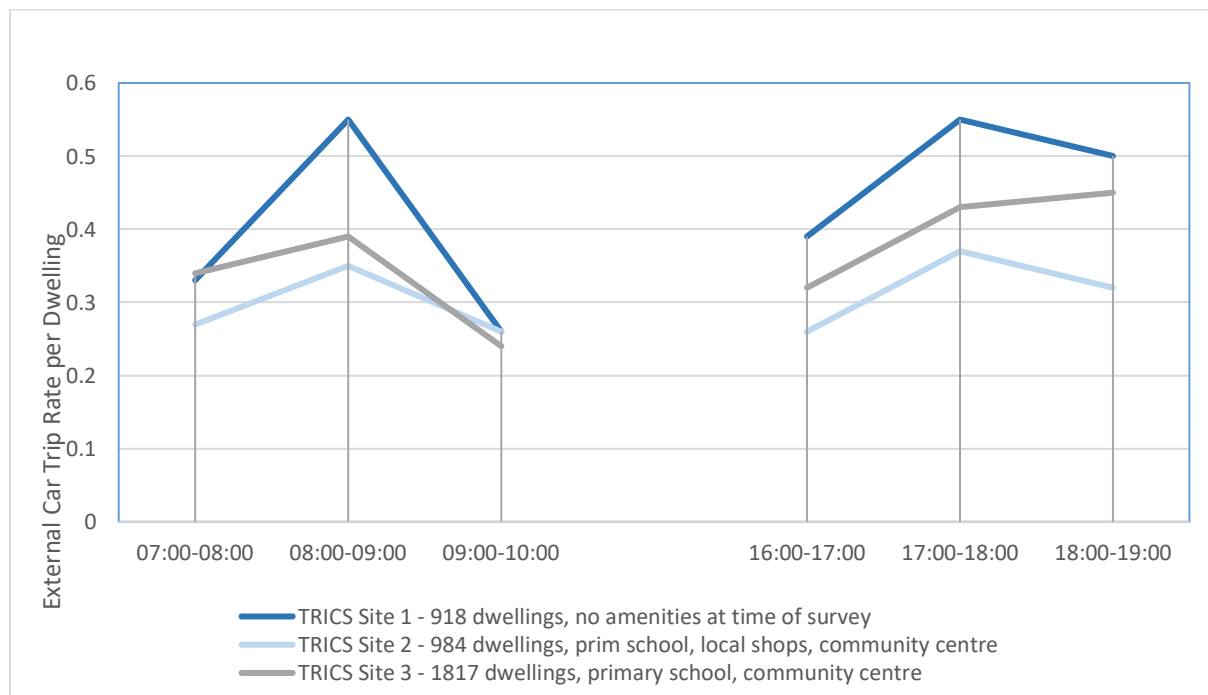


Figure 4: TRICS average external car trip rate per dwelling for different sized sites



- 1.11 Figure 4 shows the clear trend, from surveyed TRICS sites, that external car trip rates decrease as site size increases. This is due to more trips remaining internal to the site as site size increases, linked in large part to the increases in on-site amenity provision as sites become larger. Trips to these internal amenities replacing trips that would otherwise be external.
- 1.12 To illustrate this further, Figure 5 presents the external car trip rate per dwelling for each of the three 03-Residential, A-Houses Privately Owned sites in the TRICS database with over 500 dwellings.

Figure 5: TRICS average external car trip rate per dwelling for TRICS sites over 500 dwellings



- 1.13 Figure 5 shows that it is not simply the size of the site, but the extent of on-site amenity provision that is the main factor in reducing external car trip rates. TRICS Site 1 has 918 dwellings and no on-site amenities – the external car trip rates are comparable to the average car trip rates for sites with between 20 and 100 dwellings – i.e. sites without any on-site amenities. TRICS Site 3 has 1817 dwellings and includes an on-site primary school and community centre. The external car trip rate is markedly lower than TRICS Site 1 with 918 dwellings and no amenities. However, the site with the lowest external car trip rate is TRICS Site 2 with 984 dwellings and the largest range of on-site amenities including primary school, community centre and local shops.
- 1.14 Figures 4 and 5 highlight that there is a relationship between extent of on-site amenities and external car trip rate. In general, as sites become larger, there is a need and justification for more on-site amenities. It is at sites with above 500 dwellings that some on-site amenity provision begins to become tenable. The larger the site, the wider the range of viable on-site amenities.
- 1.15 The above analysis highlights that the largest 03-Residential, A-Houses Privately Owned site in the TRICS database contains 1817 dwellings but had limited on-site amenity provision at the time of the survey. The only other sites with over 500 dwellings had around 900 dwellings with one having no amenities and the other having primary school, community centre and local shops.
- 1.16 The Coed Darcy development is proposed to have up to 2000 dwellings and a much wider range of amenities than any site contained within the TRICS database (including primary and secondary schools, nursery, community centre, bar, restaurant, café, convenience store and other local shops). This scale of site and level of on-site amenity provision is not represented in the TRICS database.
- 1.17 What the above analysis of the TRICS data does show us is that a site such as Coed Darcy would be expected to result in a lower level of peak hour vehicular trips leaving the site than the forecasts provided by TRICS.
2. **Point 1.8** states the “*national travel survey data was adjusted to refer the mix of household types and local condition*” – How did the applicant ‘adjust’ the data and could they provide raw data so that we may see why consultants had arrived to this conclusion and question the validity of this comment/data.
- 1.18 The base data for the SLR Vision Validation Tool is 2019 average NTS data by area classification (urban conurbation, urban city and town, rural town and fringe, rural village and isolated) broken down by 14 trip purposes, 13 modes of travel, and 8 distance bands. Urban City and Town classification is applied for the Coed Darcy site.
- 1.19 In order to better reflect local circumstances, this data is adjusted according to a number of factors including:
- Adjustments to reflect the mix of household type and hence type of resident likely to settle in the new development, this influences trip generation rates and mode shares for these trips;



- Adjustments to reflect proximity of the new site to existing amenities and employment. E.g., if no amenities exist within 2 miles of the site, then average NTS data that suggests a share of trips will be 0-1 mile and 1-2 miles is clearly incorrect and so requires adjustment to reflect the local conditions; and
- Adjustments to better reflect existing transport provision/connections to and around the new site. E.g., if average NTS data suggests a % train mode share but no train services exist near the local site.

1.20 The result is base data that reasonably represents the trip making demands of the people likely to live in the new development and reflects the local character of the site and its location.

1.21 A sample of the NTS data is shown in Figure 6 for shopping trips of residents in Urban City and Town areas. Equivalent data is available for the other 13 trip purposes. This data is available for each different area classification.

Figure 6 NTS base data on shopping trips for urban city and town area classification

Shopping											
Trip distance - including short walk - miles - banded distance - 12 categories											
	Under 1 mile	1 to under 2 miles	2 to under 5 miles	5 to under 10 miles	10 to under 25 miles	25 to under 50 miles	50 to under 100 miles	100 miles +	TOTAL		
Walk	44	9	1	[low]	0	0	0	0	54	27.2%	
Bicycle	1	1	[low]	[low]	[low]	0	0	0	2	1.0%	
Car/van driver	10	24	36	12	8	1	[low]	[low]	91	45.9%	
Car/van passenger	3	8	15	6	5	1	[low]	[low]	38	19.5%	
Motorcycle	[low]	[low]	[low]	[low]	[low]	[low]	0	0	[low]	0.1%	
Other private transport	[low]	[low]	[low]	[low]	[low]	[low]	[low]	0	1	0.5%	
Bus in London	0	[low]	[low]	[low]	0	0	0	0	[low]	0.0%	
Other local bus	[low]	2	5	2	1	[low]	0	0	9	4.6%	
Non-local bus	0	0	0	0	0	0	0	0	0	0.0%	
London Underground	0	[low]	[low]	[low]	[low]	0	0	0	[low]	0.0%	
Surface Rail	0	[low]	[low]	[low]	[low]	[low]	[low]	[low]	1	0.3%	
Taxi / minicab	[low]	1	1	[low]	[low]	0	[low]	0	2	0.8%	
Other public transport	0	[low]	[low]	[low]	[low]	0	0	0	[low]	0.1%	
	58	44	58	20	14	3	1	[low]	198		
	29.5%	22.2%	29.4%	10.1%	7.1%	1.3%	0.4%	0.1%			

Proportion of all shopping trips											
	Under 1 mile	1 to under 2 miles	2 to under 5 miles	5 to under 10 miles	10 to under 25 miles	25 to under 50 miles	50 to under 100 miles	100 miles +			
Walk	22.3%	4.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	27%		
Bicycle	0.3%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	1%		
Car/van driver	5.0%	12.0%	18.2%	6.0%	3.9%	0.6%	0.2%	0.0%	46%		
Car/van passenger	1.4%	4.1%	7.7%	3.0%	2.6%	0.5%	0.2%	0.0%	19%		
Motorcycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%		
Other private transport	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1%		
Bus in London	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%		
Other local bus	0.2%	0.8%	2.3%	0.8%	0.4%	0.0%	0.0%	0.0%	5%		
Non-local bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%		
London Underground	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%		
Surface Rail	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0%		
Taxi / minicab	0.1%	0.3%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1%		
Other public transport	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%		
	29%	22%	29%	10%	7%	1%	0%	0%		% all trips	19.5%



- 1.22 This provides the base data explaining average trip making behaviour of Urban City and Town residents giving the proportions of all trips made for each of the 14 trip purposes and the percentage of trips by each mode within each distance range for each purpose.
- 1.23 It is then necessary to apply adjustments to this base data in order to better reflect the character and location of the Coed Darcy site.
- 1.24 Firstly, account is made for the variation in composition of residents within the Coed Darcy development compared to the average composition for 'Urban City and Town' areas. It is often the case that new developments have a larger proportion of 3 and 4 bedroom homes than the average for an area type and hence have relatively more families with children. This results in relatively higher numbers of trips than dwellings with only adults.
- 1.25 The household composition for Coed Darcy is shown in Table 1.

Table 1 Composition of household type for Coed Darcy site

Household Type	% Dwellings
Single adult	12%
2 adults	24%
3 or more adults	7%
Single parent family	7%
2 adults, 1 or more children	37%
3 or more adults, 1 or more children	14%

- 1.26 NTS0706 data¹ provides the variation in total numbers of trips per year for different household types as well as the variation in mode share by household type. This is then applied to the household composition for the Coed Darcy site (Table 1) to obtain an average number of trips per person and mode share for these trips based on the household composition. This provides an adjustment factor that is applied to the NTS base data to better reflect the trip making of residents in the Coed Darcy development. An example of the adjusted base data is presented in Figure 6 for shopping trips.
- 1.27 A second adjustment is made to correct for (un)availability of certain modes of travel from the Coed Darcy site. On average, for 'Urban City and Town' areas the base NTS data indicates that there are 1% of trips made by surface rail. This is currently not possible from the Coed Darcy site due to a lack of rail connection but TfW are progressing due diligence on a new station proposed at Coed Darcy. A manual adjustment is therefore made to reallocate this 1% mode share from surface rail to car driver.
- 1.28 The third adjustment to the NTS base data is made to reflect the proximity of existing amenities in the local area surrounding the Coed Darcy development. The NTS base data indicates that mode share to an amenity changes markedly with distance - especially for shorter distances. This is illustrated in Figure 7 below plotting NTS data on mode share

¹ Table NTS0706 Travel by household type and main mode / stage mode: England, from 2019



against distance for shopping trips and illustrating the significant shift in mode share, primarily from car driver to walk, as distances are reduced from 1-2 miles to under 1 mile.

- 1.29 This highlights the importance of taking into account the distances from the proposed Coed Darcy site to existing amenities external to the site in order to reflect the locally relevant mode share for each trip purpose. The road or footpath distance from the centre of the Coed Darcy site to the closest existing amenities are shown in Table 2.

Figure 7 Plot of NTS data on mode share against distance for shopping trips

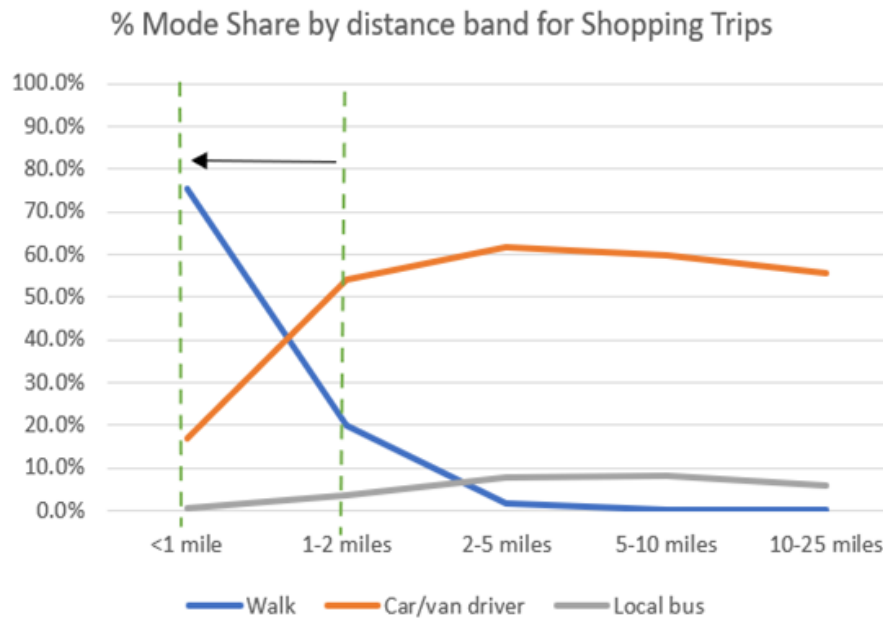


Table 2 Distance from the centre of the Coed Darcy site to the closest existing amenities

	Road network distance from central point of new site to nearest existing amenity (km)
Primary School	2.25
Secondary School	4.5
Convenience store	2.1
Café / Coffee Shop	0.8
Bars / Pubs	0.65
Restaurants	0.8
GP	2.4
Gym	1
Community Hall / Hub	1.25
Chemist	2.55
Hairdresser + other beauty	2.4
Hardware store	0.8
Clothes shop	5.15
Nearest Large Scale Employment (e.g. Town Centre / Business Park)	7

- 1.30 This distance information (Table 2) is used to adjust the base case modal share to reflect the local site geography and proximity of the new site to existing amenities and employment. The adjustment procedure determines if the closest amenity for a particular trip purpose is within the shortest distance band (i.e. <1 mile). If so, then no adjustment is made to the base case NTS data for that trip purpose. If not, then it allocates the proportion of trips in that distance band to the trip proportion in the next distance band (i.e. 1-2 miles) and applies the NTS mode shares for that (1-2 miles) distance band to the summed proportion of trips. This is repeated until the distance band in which the closest amenity sits is reached.
- 1.31 This builds in local realities to the base NTS data and avoids the risk of mis-representing mode choices for trip generation from the new development. A failure to reflect local conditions is often cited as a weakness that is inherent in using NTS data that is based on data averaged across a wider area to determine trip generation from a specific site. This calibration and adjustment methodology implemented by the Validation Tool overcomes this weakness.
- 1.32 The final adjusted base mode share is presented in Table 3. This indicates the likely mode share for residents of the new development if no on-site amenities are included in the development.



Table 3 Base NTS data and adjustments for Coed Darcy household type, local infrastructure and existing amenity proximity

NTS data on average modal share for Urban City and Town area classification		Base modal share adjusted to account for mix of household type	Updated base modal share to account for local infrastructure	Final base modal share based on household types, local conditions and existing amenity provision
Walk	28%	28%	28%	17%
Bicycle	3%	3%	3%	3%
Car/van driver	41%	40%	41%	47%
Car/van passenger	21%	22%	22%	26%
Motorcycle	0%	0%	0%	0%
Other private transport	1%	1%	1%	1%
Bus in London	0%	0%	0%	0%
Other local bus	3%	3%	3%	5%
Non-local bus	0%	0%	0%	0%
London Underground	0%	0%	0%	0%
Surface Rail	2%	1%	0%	0%
Taxi / minicab	1%	1%	1%	1%
Other public transport	0%	0%	0%	0%

3. **Point 1.9 V & V Parameters: Model share for existing conditions,**

- We query whether 17% of people walking is true reflection of existing use? This seems very high based upon the topography and distance away from amenities?
- Furthermore the 47% for car drivers also seem a little low given the existing transport circumstances – would thought this would have been much higher given the population of car users and on street parking issues?
- 5% for other local buses – there are only school buses facilitating the site at the moment.

1.33 The average NTS data for the urban city and town area classification suggests 28% (this is already adjusted to reflect household composition). We then consider the walk distances to each type of amenities from the new site location to existing amenities out with the site. These distances are longer than the average for the urban city and town area class and so, based on the actual distances to existing amenities we assign the mode share NTS tells us is applicable for those distance of trips in urban city and town areas. The result is walking is reduced (to 17%) and car mode share increases.



- 1.34 According to NTS data, just under 10% of all trips are in the 'Other inc. Just Walk' category. Therefore, 9.9% of this 17% are walking trips for pleasure / exercise / walking the dog.
- 1.35 The walk distance to many external amenities is less than 1km (see Table 2) and hence should be easily walkable.
- 1.36 In addition to school bus services, services (38, 155, T6, X7) are available on Pen-Y-Heol.
4. **Point 1.11** *"change in travel behaviour such as working from home and internet shopping"* where did this data for home working come from? In real-time officers perceive the traffic volume has reached pre COVID levels and beyond, we believe traffic movements/volume has not decreased.
- 1.37 The changes in travel behaviour related to working from home and internet shopping are forecasts based on trends up to the planned build out year of 2035 and not the current situation. A full explanation of the approach and reference sources is provided below.
- 1.38 It is also worth highlighting that the recently published NTS data for 2023 confirms a decrease in both commuting trips (-16%) and shopping trips (-7%) since 2019.

<https://natcen.ac.uk/publications/national-travel-survey#:~:text=The%20most%20common%20trip%20purpose,with%2017%20trips%20per%20person>.

Why people travel

The most common trip purpose in 2023 was shopping with 169 trips per person. This was an increase of 12% compared to 2022 (151 trips per person), but is a 7% decrease compared to pre-pandemic levels in 2019 (181 trips per person). Commuting was the second most common trip purpose in 2023 with 117 trips per person. This remained similar to 2022 (119 trips per person), and a decrease of 16% compared to 2019 (140 trips per person). Average trips for business, personal business and day trips increased during 2023 compared to 2022.

Working from Home

- 1.39 On average, 14.3% of employment related trips were worked at or from home in the UK in 2019. Due to Covid this increased significantly, with up to 60% of the workforce experiencing working from home, many for the first time. Post Covid the working from home rate has settled down to an average of around 26%, but with some areas exhibiting much higher rates where sectors of employment, more suited to home working, dominate. WfH rates have been shown to vary dramatically by industry sector through Covid, contributing to significant geographic variation in WfH rates.



- 1.40 The NTS base data relates to 2019 trip making before any impacts from Covid had taken effect. The Working from Home (WfH) rates for 2019 are published by ONS at local authority district level from the 2019 January to December Annual Population Survey (APS) datasets.
- 1.41 The current estimates of WfH rates are derived from ONS BICS WfH data by industry sector at the national level² (updated every 4 weeks) and combines this with data on employment by industry sector by area classification within Districts to give estimates of current WfH rates at the local level.
- 1.42 For any LA District, this provides estimates of the increase in WfH rate since 2019. This % increase in WfH is applied to the remaining external commuting trips, allowing estimates of the proportion of external commuting trips that are likely to be avoided compared to the base-year, these are effectively trips that remain internal to the development and can be added to the internalisation rate.
- 1.43 The 2019 average WfH rates for Neath Port Talbot are 9.1%. The current estimated WfH rates for Neath Port Talbot District are 21.1%. This equates to an 12% point increase in WfH since 2019.
- 1.44 Applying this to the external employment trips generated from the Coed Darcy site (employment trips comprising of 13.5% of all trips), results in $12\% \times 13.5\% = 1.62\%$ of all trips that are avoided (internalised) due to increased WfH.
- 1.45 Job growth in future is expected to occur in higher skilled / professional sectors that are more office based, and therefore offer more potential for home based working. It is therefore expected that this continued growth in professional jobs in the future will result in continued increases in home working an assumed 0.25% point increase per annum is assumed up to the planned year of site build completion (2035) results in $(12.1\% + 2.75\%) \times 13.5\% = 2\%$ of all trips that are avoided due to WfH increases by 2035.

More Virtual Business Meetings

- 1.46 Although business trips account for only around 3% of total trips, 91% of these are over 1 mile in length and so would likely be external to the site.
- 1.47 Due to the increased use and acceptance of virtual meetings replacing some physical meetings during and post Covid, it can be expected that this trend will continue and indeed

2

<https://www.ons.gov.uk/economy/economicoutputandproductivity/output/datasets/businessinsightsandimpactontheukeconomy>



increase as technology advances and office based working accounts for larger proportions of the workforce³.

- 1.48 For Coed Darcy it is assumed that there will be a 20% point increase in business trips avoided by the planned year of build completion due to increased virtual meetings relative to 2019 base year. NTS data informs us that business trips account for 2.6% of all trips, and 10.7% of these are internalised, there are 89.3% of business trips remaining external. If 20% of these trips are avoided, this results in 0.46% ($=2.6\% \times 89.3\% \times 20\%$) of all external trips avoided due to increased virtual meetings and hence a 0.46% point increase to the internalisation rate.

Home Delivery of Shopping

- 1.49 Shopping trips to supermarkets and the majority of non-food shopping trips will remain external to the development site. These make up a substantial proportion of all trips. An increasing number of these trips are being avoided through on-line ordering combined with home delivery.
- 1.50 Post Covid, the extent of Supermarket shopping that is now home delivery has increased from 7.7% in 2019 to 15.7% in 2023⁴.
- 1.51 It is expected that these levels will continue to increase as more retailers make more home delivery slots available. Around 80% of UK consumers say they would do more food shopping online if the experience was improved, and 28% plan to shop mostly online within the next two years⁵.
- 1.52 Based on these trends it is assumed for Coed Darcy that a 20% point increase in supermarket trips will be avoided by the planned year of build completion due to increased home delivery relative to 2019 base year. NTS data informs us that supermarket food shopping trips account for 3.2% of all trips, and 0% of these are internalised. If 20% of these trips are avoided, this results in 0.64% ($=3.2\% \times 20\%$) of all external trips avoided due to increased home delivery of food shopping and hence a 0.64% point increase to the internalisation rate.
- 1.53 For non-food shopping the levels of on-line shopping with home delivery have also risen since 2019 from 30% to 42% in 2023 with the expectation that it will rise to 50% by 2025⁶. It can be expected that this trend will continue and indeed increase as technology advances

³ <https://summix.com/the-future-of-work-report#:~:text=The%20Future%20of%20Work%20report%20provides%20a%20comprehensive%20data%2Dled,delliver%20a%20positive%20human%20impact.>

⁴ <https://pdf.euro.savills.co.uk/uk/commercial-retail-uk/spotlight-uk-grocery---january-2022.pdf>

⁵ <https://www.chargedetail.co.uk/2022/06/09/over-half-of-uk-consumers-now-purchase-groceries-online/>

⁶ <https://www.retailgazette.co.uk/blog/2022/02/half-of-non-food-sales-will-be-made-online-by-2025/>



and on-line shopping channels become more widespread as more retailers provide this option and more of the population are daily internet users.

1.54 Based on these trends it is assumed for Coed Darcy that a 20% point increase in non-food shopping trips will be avoided by the planned year of build completion due to increased home delivery relative to 2019 base year. NTS data informs us that non-food shopping trips account for 8.7% of all trips and 8% of these (0.7% of all trips) are internalised. There are therefore 92% of non-food shopping trips remaining external. If 20% of these trips are avoided, this results in 1.6% ($=8.7\% \times 92\% \times 20\%$) of all external trips avoided due to increased home delivery of non-food shopping and hence a 1.6% point increase to the internalisation rate.

1.55 Overall the total % of all trips that are estimated to be avoided (relative to the 2019 base year) by the planned build completion year (2035) is 4.72%:

- 2% (WfH)
- + 0.46% (Virtual Business Trips)
- + 0.64% (Home delivery of food shopping)
- + 1.6% (Home delivery of non-food shopping)]

5. **Point 1.12** Table 2 trip rate am and Table 3 trip rate pm.

Based upon the existing use for Coed Darcy it provides data showing “*just walking*” at 0.014 trip rate for 301 dwellings (excluding Heritage Gate site) estimated to be 4 trips (am) and 0.019 trip rate for 301 dwellings 6 trips (pm) = 10 trips per dwellings per day?

1.56 The ‘just walking’ trip purpose only includes walks purely for pleasure or exercise including taking the dog for a walk or jogging (see NTS definitions⁷). Walking associated with all other trip purposes (going to school, going to the shops, going to work etc....) is included in the trip rates associated with these purposes. Hence the low trip rate applied to ‘just walking’ in Tables 2 and 3.

6. **The TRANSYT data:**

(a) **Baseline figures show**

- The A465 on the approach to the roundabout to have Degree of Saturation (DOS) to 106, and
- And both arms from B4290 have DOS of 107 each.

However post, construction of 2000 dwellings (plus the 301 already existing), and roundabout mitigations (plus placemaking) shows the DOS of both the A465 and B4290 to be below 90. Is this due to upgrade of the Junction?

1.57 The improved performance is a result of the proposed Phase 1C mitigation scheme.

(b) Page 79 of the data modelling shows the performance Index post baseline plus development at AM plus development 2026 to be estimated at 1303.70 the is

⁷ <https://www.gov.uk/government/statistics/national-travel-survey-2022/national-travel-survey-2022-notes-and-definitions#appendix-nts-definitions>



significantly more (more than double) and yet it still works comfortably, we require the TRAQNSYT files to scrutinise.

- 1.58 The TRANSYT files were provided to Justin Griffiths by email on 20 March 2024.

Swansea Council

- 1.59 It is noted that a Vison & Validate (V&V) exercise was agreed between SLR and the Neath & Port Talbot highway authority in relation to the St Modwen Coed Darcy development. The V&V approach has been adopted as a direct replacement of the industry recognised method of using TEMPRO & TRICS database dataset for determining growth and trip rate generation. Presumably this approach has been agreed upon to determine the impacts of traffic generation to and from the site whilst allowing consideration for the local amenities and facilities proposed as part of the Strategic development site.
- 1.60 The V&V approach was agreed on to reflect the internalisation and mode shift of trips due to placemaking and mobility interventions.
- 1.61 The V&V exercise has been complied and conducted using SLR's internally developed validation tool from which a "comprehensive exercise to derive total trip generation has been undertaken". Unfortunately, the figures provided within the V&V results report are not supported with background data or information in the form of an appropriate appendices.
- 1.62 The Validation Tool utilises a range of data from publicly available information from the Census, Office for National Statistics (ONS) and the National Travel Survey (NTS). Details were provided in the V&V Results report dated 9 February 2024 and further information is provided in this response.
- 1.63 The approach to trip generation set out in the report is a major shift away from the recognised approach based on TEMPRO & TRICS growth and trip rate generation. Based on the information provided I am unable to determine the accuracy and suitability of this approach. Should the associated development be subject to scrutiny from any future planning review then SRL would be required to defend, and the suitability of the trip generation used.
- 1.64 The Validation Tool utilises publicly available information from the Census, Office for National Statistics (ONS) and the National Travel Survey (NTS) which has been applied specifically to reflect the local characterises of Coed Darcy and can be fully justified.
- 1.65 Taking the above into consideration the V&V results report has provided trip generation numbers, in table 6, for the AM and PM peak periods following the placemaking and mobility interventions. The report has not however provided any explanation for how these arrivals and departures have been distributed across the network in relation to existing network flows for the M4 jct 43 intersection. Without having access to this information, I am unable to determine the accuracy of the flow matrices attached within the relevant Transty modelling outputs provided.



- 1.66 The trip distribution and assignment of traffic is provided in Section 5.3 of the Transport Assessment dated November 2021. Extracts of Tables 5.7 and 5.8 from the TA are provide below.

Extract of Table 5.7

Table 5-7 – Residential Trip Distribution Summary (Car - Neath Port Talbot 010)

Route	Distribution	AM Peak Vehicle Trips (Two-Way)	PM Peak Vehicle Trips (Two-Way)
A - M4 (North)	31%	307	304
B - B4290 (North)	8%	79	79
C - A465 (East)	12%	119	118
D - M4 (South)	35%	347	344
E - B4290 (South)	14%	139	137

Values in table rounded

Extract of Table 5.8

Table 5-8 –Commercial Trip Distribution Summary (Car - Neath Port Talbot 010)

Route	Distribution	AM Peak Vehicle Trips (Two-Way)	PM Peak Vehicle Trips (Two-Way)
A - M4 (North)	33%	15	11
B - B4290 (North)	5%	3	2
C - A465 (East)	22%	10	7
D - M4 (South)	27%	13	9
E - B4290 (South)	12%	6	4

Values in table rounded

- 1.67 To validate the accuracy of the modelling results provided for all scenarios in Appendix B the Transyt Link structure and modelling parameters used have been checked against existing highway measurements taken from Google Earth, with the following observations.
- 1.68 The M4 jct 43 interchange has been divided into four independent signal controlled nodes. Each node consisting of entry links and internal gyratory links. Most if not all the internal gyratory links for the roundabout have been inputted at a longer queue length capacity than compared to actual lane length measurements on street.
- 1.69 The queue length is automatically calculated by TRANSYT from the lane length entered. The lane length entered for the circulatory links is from the back of the downstream stop line on links as is standard modelling practice to calculate the cruise time in correct manner from one stop line to the next.
- 1.70 Saturation flows have been allocated based on geometric parameter RR67 calculations. The site is an existing strategic road network interchange and designed to DMRB specification. Taking into considering the characteristics of the road network the selected saturation flows are regarded as acceptable for use within the modelling assessment. It should be noted however that RR67 has the potential to underestimate saturation flows on over saturated road links. It would be beneficial for the proposed saturation flows on links that are oversaturated to be compared against on site measurements for robustness of the modelling assessment.



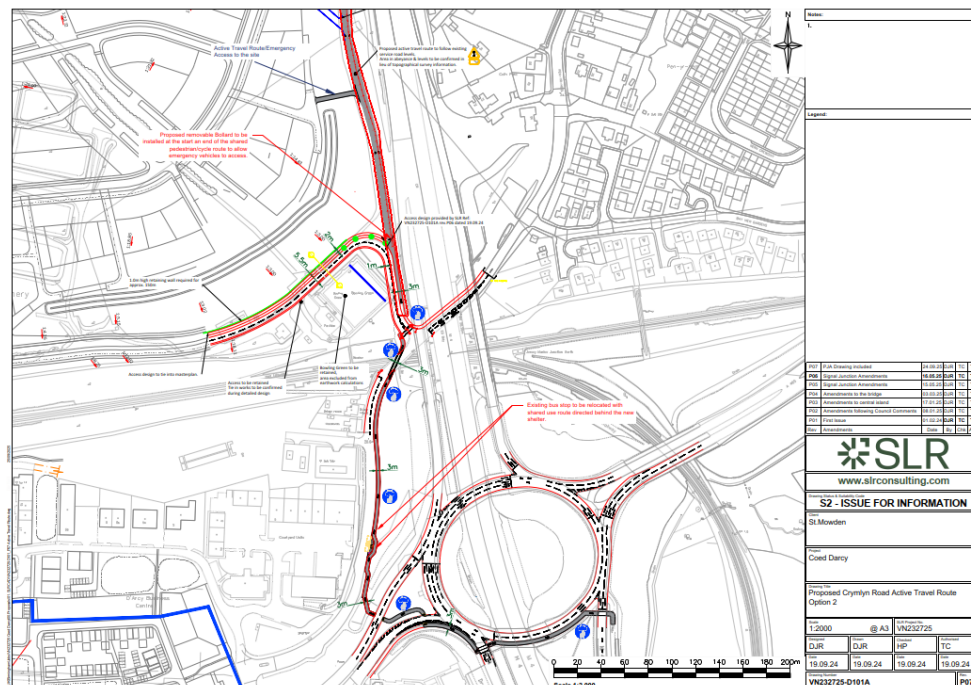
- 1.71 The Phase 1C mitigation scheme doesn't contain any oversaturated links in any of the scenarios and therefore on site measurements aren't considered necessary.
- 1.72 The majority of links associated with the internal gyratory have been allocated increased stop weighting parameters, the outcome of such an adjustment will be that Transyt will seek to minimise delays on these links over all other links within the network.
- 1.73 This is standard modelling practice for signalised roundabouts to avoid blocking back from circulatory arms. The blocking back from circulatory can affect the capacity on other approaches which cannot be replicated by stand alone junction modelling capabilities.
- 1.74 All the shorter (Restricted queue capacity) internal gyratory links are heavily weighted with queue limits and queue limit penalty parameters. The result of such a user change being the signal optimiser within Transyt will attempt to find settings which make it less likely that the mean maximum queues will exceed the limit values populated. The use of the above queue-reduction facility, and indeed the use of large weighting factors on link delays may result in the optimiser being unable to find satisfactory signal settings. The number of changes and the scale of each change could suggest that the applicant is attempting to create a specific set of modelling results. For transparency and to offer a better understanding of the reasoning for any such changes best practice will be for justification to be provided as part of the TA provided to the Highway Authority by the applicant.
- 1.75 The model has been used to predict the worst case scenario for the approaches without any blocking back on the circulatory. The queue limit applied on the circulatory will in return try and provide maximum green time to circulatory arms to avoid queues blocking back. Hence, the approach arms get reduced green in some instances. Even with this arrangement, none of the approach arms in the Phase 1C model exceed a DOS of 90%. The modelling can therefore be considered robust.
- 1.76 Reviewing the results for Phase 1A modelling assessment: Base 2026 + Coed Darcy development show links 1000 & 1001 have a DOS of 133% and a mean max queue of 82 PCU's, this equates to a theoretical queue of 470m. Despite this the signal optimiser is only allocating 12's of green time to the approach. The allocation of green time on this approach as well as all links that approach the roundabout that are not internal gyratory links will be because of the weighting factors and limit penalties discussed above. It should also be noted that the existing traffic control equipment on site will likely be operating under VA or MOVA control with phase timings that are unlikely to reflect the once provided within the modelling assessment. It is recommended that the applicant engages with South Wales Truck Road Agency (SWTRA) to confirm the correct method of control and existing stage timings during the AM & PM peak periods and attempt to recreate these as far as reasonably practicable with the Transyt model, or to offer optimised alternative to these.
- 1.77 TRANSYT analysis is based on fixed time operation whereas MOVA controls signal timings to suit prevailing conditions. Both systems prevent internal queues exceeding the queue length storage area by restricting green times on approach arms and maximising green times on circulating arms. TRANSYT therefore replicates the existing conditions under MOVA control.



Active Travel Proposals

- 1.78 At the Coed Darcy workshop on 9th September 2024 NPTC requested that an active travel route be shown from M4 Junction 43 to Crymlyn Road via the B4290 Pen-Y-Heol and the existing footway cycleway which runs parallel to the M4.
- 1.79 It was requested that the existing route to Pen-Y-Heol from the B4290 link with M4 Junction 43 was widened and the alignment straightened. It is then proposed that a shared footway/cycleway is provided along the eastern verge of Pen-Y-Heol to the railway bridge. The available width between the railway parapets is less than 7.0m and therefore not sufficient to accommodate a two way carriageway and shared footway/cycleway. The existing shared footway/cycleway running parallel to the M4 was requested to be widened where required.
- 1.80 The proposed route therefore consists of:
- Existing footway/cycleway widened to 3.0m at M4 Junction 43 and straightened to Pen-Y-Heol;
 - Shared footway/cycleway of 3.0m width provided along the eastern verge of Pen-Y-Heol;
 - A diagonal shared footway/cycleway crossing of Pen-Y-Heol between the railway parapets with set back stop line for northbound traffic;
 - The existing shared footway/cycleway is shown to be 5.0m wide on OS mapping and therefore no additional widening was proposed.
- 1.81 The scheme drawing is provided in Drawing No. VN232725-D101A P07 which is replicated below in Figure 10 and provided in **Appendix B**.

Figure 10 Active Travel Scheme



- 1.82 The junction capacity analysis has been updated to take account of the revised geometry and the increased crossing times required.
- 1.83 The LINSIG results are provided in Table 4 and the LINSIG output files are provided in **Appendix C**. The results are for the future assessment year of 2026 and are based on the November 2021 Transport Assessment trip generation and distribution. It does not take into account the reduced traffic flows to reflect the Vision & Validate approach and is therefore robust.

Table 4 Pen-Y-Heol/Site Access Junction Capacity Results with Active Travel Crossing

ARM	AM PEAK		PM PEAK	
	DOS (%)	MMQ (PCU)	DOS (%)	MMQ (PCU)
Bowling Green	58.6	5.0	49.2	2.3
B4290 East	59.3	10.1	38.3	5.8
B4290 West	46.3	6.5	70.3	13.2
Overall PRC	51.7%		27.9%	

- 1.84 The junction capacity results show that the junction works well within capacity with a maximum degree of saturation of 70.3% in the PM peak hour. This assumes the shared pedestrian/cycle crossing and the crossing across the site access are called every cycle on a 90 second cycle time but this would revert to a 60 second cycle time if there was no pedestrian or cycle demand.
- 1.85 It is therefore concluded that an appropriate active travel link can be provided to Crymlyn Road, prioritising active travel movements whilst still maintaining acceptable junction capacity.

Access to the Northern North Site

- 1.86 NPTC raised concerns regarding a single point of access to the Northern North site from the signalised junction with Pen-Y-Heol at the Coed Darcy workshop on 9th September 2024.
- 1.87 Following the meeting Justin Griffiths provided the All Wales Common Standards for Technical Design Guide for Residential, Commercial & Industrial Developments which in 3.3.2 states that Residential Streets may serve up to 300 residential units with two points of access, or a loop with the spine road being increased in width.
- 1.88 The Neath Port Talbot County Borough Highway Technical Design Guide for Residential, Commercial & Industrial Developments is provided on the Neath Port Talbot Council website at the following address:
<https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.npt.gov.uk%2Fmedia%2F17868%2F2-section-a-residential-nptcbc.docx%3Fv%3D20220729104155&wdOrigin=BROWSELINK>



- 1.89 The text relating to Residential Streets in 3.3.1 states 'These streets will give direct access to dwellings and cater for access by emergency services as well as service and delivery vehicles. These streets will not need to cater for a bus service.' There does not appear to be any guide on the number of house a residential street can serve.
- 1.90 The Northern North site is proposed to accommodate up to 530 dwellings served from a series of loop roads providing a range of access option in the event of an emergency. It is also proposed that the initial section of the existing shared footway/cycleway running from Pen-Y-Heol provides emergency vehicle access connecting to the internal loop roads. This access is shown in Drawing No. VN232725-D101 P01 which is provided in **Appendix B**.
- 1.91 It is therefore concluded that suitable access is provided to the Northern North site which is compliant with Neath Port Talbot County Borough Highway Technical Design Guide for Residential, Commercial & Industrial Developments and the All Wales Common Standards for Technical Design Guide for Residential, Commercial & Industrial Developments.

Welsh Government

- 1.92 The proposed Vision and Validate methodology sets out a logical approach for which the Welsh Government is supportive in principle. This is subject to addressing the concerns / comments raised by your SAB & HDC teams that relate to trip rates, modelling and wider aspects. In particular background supportive data to evidence reduced trip rates, validate results and justification for parameters used for the modelling of junction 43 and the wider network, provided as part of an updated and comprehensive Transport Assessment. This TA should also detail phasing/identification of when key services and infrastructure would be provided so that these could be locked down by condition.
- 1.93 The Neath Port Talbot County Borough Council V&V Observations have been responded to in this Transport Response. It is therefore considered that a revised Transport Assessment is not necessary. It is proposed that the delivery of key services and infrastructure would be conditioned following planning consent.
- 1.94 We have previously discussed proposals in the context of the Transport for Wales (TfWs) Regional Transport Planning approach and would further request the developer liaises with TfW (Ben George Regional Ben George Ben.George@tfw.wales) for access to the South Wales Transport Model (SWTM). This should be used to contextualise and validate the Designer's modelling for the most robust assessment possible and provide outputs that have the appropriate level of assurance that Junction 43 will operate effectively post development. Details of the model are provided here [Wales Regional Transport Models | TfW](#).
- 1.95 The South Wales Transport Model is strategic and therefore the TRANSYT model will provide a more detailed assessment and a greater level of assurance for the performance of M4 Junction 43. The benefit of using the South Wales Transport Model would be a greater consideration of changes to traffic flows at a regional level. However, given that the proposed mitigation schemes (Phase II and Phase 1C) both more than mitigate the proposed development impact, Junction 43 will always work better with the proposed development and mitigation scheme than without it, whatever base traffic flows are used. It is therefore considered that the use of the strategic model is not necessary.



- 1.96 Relating to the correct method of control for signals on the motorway junction, the designer is advised that these are MOVA. For any further queries regarding the systems here the developer is advised to discuss with SWTRA / Welsh Government and contact details can be provided as appropriate.
- 1.97 The MOVA control of the signals is noted and it is assessed appropriately in the TRANSYT modelling.
- 1.98 The Welsh Government looks forward to an updated TA that covers all of the above and makes the case for an outlined vision for further comment.
- 1.99 This Transport Response addresses all of the comments made and it is therefore not considered that an updated Transport Assessment is required.

Summary and Conclusion

- 1.100 This response has addressed comments from NPTC, Swansea Council and Welsh Government. Further explanation of the Validation Tool has been provided to respond to queries regarding the appropriateness of TRICS, adjustments made to the base data to reflect the local characteristics, travel mode shares and changes in travel behaviour.
- 1.101 Further details have been provided regarding the TRANSYT model to confirm the distribution and assignment of vehicular trips, justification of input data and the use of queue limits.
- 1.102 An Active Travel scheme has been proposed which improves existing infrastructure and provides new infrastructure where required between M4 Junction 43 and Crymlyn Road.
- 1.103 Junction capacity analysis has been updated for the access to the Northern North site from Pen-Y-Heol which shows the junction working within capacity with the proposed shared footway/cycleway crossing.
- 1.104 An emergency access has been proposed along the shared footway/cycleway adjacent the M4 providing an alternative means of accessing the site in an emergency.
- 1.105 It is considered that all the queries raised have been addressed. It is the position of SLR and St. Modwen Developments that the V&V approach would adequately mitigate the development impact and results in a lesser impact on M4 Junction 43 than the Predict and Provide approach used in the planning application. The V&V approach is policy compliant and would result in a cost saving of approximately £1,000,000 (this cost being calculated as at March 2024) which could be used by NPTC to fund the proposed active travel scheme.
- 1.106 On the basis that the Phase 1C scheme is deemed capable of mitigating the peak hour vehicular impact of the proposed development, a sequential approach is proposed to the Section 106 Agreement. This would allow delivery of the Phase 1C option and then for a transport review to take place, the review being linked with housing occupations. If it is deemed that the full Phase II works are still required, these will form part of a second stage



of works. If following the transport review, the full Phase II works are not required, this would trigger a payment towards active travel, index linked from the saving to be defined between Phase 1C and Phase II works.



Appendix A NPTC, Swansea and Welsh Government Council Comments



Coed Darcy - V & V response – SLR Project No 432.001784.00001 – no revision, dated 9th of February 2024

Highway Response:-

1. **TRICS** data did not cater for this use or size of development, therefore the applicant states *“the forecast of higher number of peak hour vehicular trips leaving the site than would occur in reality”* there is no proof to this statement – awaiting results.
2. **Point 1.8** states the *“national travel survey data was adjusted to refer the mix of household types and local condition”* – How did the applicant ‘adjust’ the data and could they provide raw data so that we may see why consultants had arrived to this conclusion and question the validity of this comment/data.
3. **Point 1.9** V & V Parameters: Model share for existing conditions,
 - We query whether 17% of people walking is true reflection of existing use? This seems very high based upon the topography and distance away from amenities?
 - Furthermore the 47% for car drivers also seem a little low given the existing transport circumstances – would thought this would have been much higher given the population of car users and on street parking issues?
 - 5% for other local buses – there are only school buses facilitating the site at the moment.
4. **Point 1.11** *“change in travel behaviour such as working from home and internet shopping”* where did this data for home working come from? In real-time officers perceive the traffic volume has reached pre COVID levels and beyond, we believe traffic movements/volume has not decreased.
5. **Point 1.12** Table 2 trip rate am and Table 3 trip rate pm.

Based upon the existing use for Coed Darcy it provides data showing *“just walking”* at 0.014 trip rate for 301 dwellings (excluding Heritage Gate site) estimated to be 4 trips (am) and 0.019 trip rate for 301 dwellings 6 trips (pm) = 10 trips per dwellings per day?

6. The TRANSYT data:
 - (a) Baseline figures show
 - The A465 on the approached to the roundabout to have Degree of Saturation (DOS) to 106, and
 - And both arms from B4290 have DOS of 107 each.

However post, construction of 2000 dwellings (plus the 301 already existing), and roundabout mitigations (plus placemaking) shows the DOS of both the A465 and B4290 to be below 90. Is this due to upgrade of the Junction?

- (b) Page 79 of the data modelling shows the performance Index post baseline plus development at AM plus development 2026 to be estimated at 1303.70 the is significantly more (more than double) and yet it still works comfortably, we require the TRAQNSYT files to scrutinise.

Conclusion

Subject to the mitigation works on J43, and placemaking added at interim stages of the development programme we would offer no Highway Objection.

St. Modwen Developments – Coed Darcy

Contents

1. Vision & Validate approach methodology.	1
2. Transyt modelling data	2
3. Summary.....	3

1. Vision & Validate approach methodology.

It is noted that a Vision & Validate (V&V) exercise was agreed between SLR and the Neath & Port Talbot highway authority in relation to the St Modwen Coed Darcy development. The V&V approach has been adopted as a direct replacement of the industry recognised method of using TEMPRO & TRICS database dataset for determining growth and trip rate generation. Presumably this approach has been agreed upon to determine the impacts of traffic generation to and from the site whilst allowing consideration for the local amenities and facilities proposed as part of the Strategic development site.

The V&V exercise has been complied and conducted using SLR's internally developed validation tool from which a "comprehensive exercise to derive total trip generation has been undertaken". Unfortunately, the figures provided within the V&V results report are not supported with background data or information in the form of an appropriate appendices.

The approach to trip generation set out in the report is a major shift away from the recognised approach based on TEMPRO & TRICS growth and trip rate generation. Based on the information provided I am unable to determine the accuracy and suitability of this approach. Should the associated development be subject to scrutiny from any future planning review then SRL would be required to defend, and the suitability of the trip generation used.

Taking the above into consideration the V&V results report has provided trip generation numbers, in table 6, for the AM and PM peak periods following the placemaking and mobility interventions. The report has not however provided any explanation for how these arrivals and departures have been distributed across the network in relation to existing network flows for the M4 jct 43 intersection. Without having access to this information, I am unable to determine the accuracy of the flow matrices attached within the relevant Transty modelling outputs provided.

2. Transyt modelling data

To validate the accuracy of the modelling results provided for all scenarios in Appendix B the Transyt Link structure and modelling parameters used have been checked against existing highway measurements taken from Google Earth, with the following observations.

The M4 jct 43 interchange has been divided into four independent signal controlled nodes. Each node consisting of entry links and internal gyratory links. Most if not all the internal gyratory links for the roundabout have been inputted at a longer queue length capacity than compared to actual lane length measurements on street.

Saturation flows have been allocated based on geometric parameter RR67 calculations. The site is an existing strategic road network interchange and designed to DMRB specification. Taking into considering the characteristics of the road network the selected saturation flows are regarded as acceptable for use within the modelling assessment. It should be noted however that RR67 has the potential to underestimate saturation flows on over saturated road links. It would be beneficial for the proposed saturation flows on links that are oversaturated to be compared against on site measurements for robustness of the modelling assessment.

The majority of links associated with the internal gyratory have been allocate increased stop weighting parameters, the outcome of such an adjustment will be that Transyt will seek to minimis delays on these links over all other links within the network.

All the shorter (Restricted queue capacity) internal gyratory links are heavily weighted with queue limits and queue limit penalty parameters. The result of such a user changes being the signal optimiser within Transyt will attempt to find settings which make it less likely that the mean maximum queues will exceed the limit values populated. The use of the above queue-reduction facility, and indeed the use of large weighting factors on link delays may result in the optimiser being unable to find satisfactory signal settings. The number of changes and the scale of each change could suggest that the applicant is attempting to create a specific set of modelling results. For transparency and to offer a better understanding of the reasoning for any such changes best practice will be for justification to be provided as part of the TA provided to the Highway Authority by the applicant.

Reviewing the results for Phase 1A modelling assessment: Base 2026 + Coed Darcy development show links 1000 & 1001 have a DOS of 133% and a mean max queue of 82 PCU's, this equates to a theoretical queue of 470m. Despite this the signal optimiser is only allocating 12's of green time to the approach. The allocation of green time on this approach as well as all links that approach the roundabout that are not internal gyratory links will be because of the weighting factors and limit penalties discussed above. It should also be noted that the existing traffic control equipment on site will likely be operating under VA or MOVA control with phase timings that are unlikely to reflect the once provided within the modelling assessment. It is recommended that the applicant engages with South Wales Truck Road Agency (SWTRA) to confirm the correct method of control and existing stage timings during the AM & PM peak periods and attempt to recreate these as far as reasonably practicable with the Transyt model, or to offer optimised alternative to these.

3. Summary

The trip generation associated with the Coed Darcy development to determine the impact on the adjacent M4 jct 43 interchange have been developed using a Vision and Validation exercise. This exercise deviates away from conventional TEMPRO & TRICS datasets which would ordinarily be used to determine the Departures and Arrivals related to a development of similar characteristics. The resulting report has not provided any supporting information to validate the allocated trip generation numbers. It is conceivably possible that the V&V exercise will have underestimated the trip generation associated with the Strategic Development site.

Traffic modelling assessments have been produced using Transyt modelling software for a variety of scenarios. The link structure for each have been maintained uniform throughout, apart from the allocation of additional traffic links to reflect the allocation of additional road lanes as proposed within the highway mitigation measures drawing attached in the supporting appendix.

The saturation flows allocated are deemed acceptable for an impact assessment.

Link lengths for the internal gyratory links are longer than measurements taken from street.

A wide range of weighting factors and penalties have been implemented to all the internal gyratory links, without background reasoning for these parameter changes being offered.

The user defined parameters applied to the model are likely having a negative impact on the modelling software ability to optimise signal times used within the assessment. The resultant outcome being exaggerated queues on all the approaching traffic links.

The signal times provided within the modelling results likely do not reflect timings used as part of the existing traffic signal control equipment currently operating across the site.

Tim Colles

From: Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Sent: 03 October 2024 15:26
To: NMatthews
Cc: Elise Coalter; Amanda J. Phillips; Laura Pack; Tim Colles; Ceri Morris; Chris Davies; Delyth A. Thomas
Subject: FW: Coed Darcy Vison & Validate Scope

Follow Up Flag: Follow up
Flag Status: Flagged

Afternoon Nick

Please see below observation made by Welsh Government in regards to the V & V submission.

Regards

Cofion cynnes / Kind regards

Justin W. Griffiths

MSc | BSc (Hons) | HND | C.Build E | FCABE | FIHE |

**SAB & Highway Development Control Manager/ SAB a Rheolwr Rheoli Datblygu Priffyrdd
Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot**



Tel/Ffôn: 01639 686397

Email / E-bost: j.griffiths4@npt.gov.uk

**The Quays, Brunel Way, Neath SA11 2GG
Y Ceiau, Ffordd Brunel, Castell-nedd, SA11 2GG**

**We welcome correspondence in Welsh and will deal with Welsh and English
correspondence to the same standards and timescales.**

**Croesewir gohebiaeth yn y Gymraeg a byddwn yn ymdrin â gohebiaeth Gymraeg a
Saesneg i'r un safonau ac amserlenni**



DARPARU GWELL GWASANAETHAU AR-LEIN | DELIVERING BETTER SERVICES ONLINE



Digidol drwy Ddewis
gwell profiad cwsomeriaid,
perchudd defnydd gwell o arian cyhoeddus



Digital by Choice
improving customer experiences,
making better use of public money



This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error, please notify the sender immediately. Please note also that there is no guarantee that this email or any attachment is virus free or has not been intercepted or amended.

Mae'r e-bost hwn ac unrhyw ffeiliau a drosglwyddir gydag ef yn gyfrinachol ac at ddefnydd yr unigolyn neu'r corff y cyfeiriwyd hwy atynt yn unig. Os ydych wedi derbyn yr e-bost hwn mewn camgymeriad, dylech hysbysu'r person a anfonodd yr e-bost ar unwaith. Hefyd, sylwer nad oes unrhyw sicrwydd nad yw'r e-bost hwn neu unrhyw ymgysylltiad yn rhydd o firws ac nad yw chwaith wedi'i ryng-gipio na'i newid.

From: Thomas, Rhodri <Rhodri.Thomas@wsp.com>

Sent: 03 October 2024 15:01

To: Justin W. Griffiths <j.griffiths4@npt.gov.uk>

Cc: LGC_Development_Control-South@gov.wales; Jones, Richard (EST - Transport) <richard.jones7@gov.wales>; jason.ingram2@gov.wales; Niall.McBride <Niall.McBride@gov.wales>; Ben George <ben.george@tfw.wales>

Subject: Coed Darcy Vison & Validate Scope

Caution: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe. If in doubt, contact the IT Service Desk

Afternoon Justin,

On behalf of Welsh Government Transport,

Thank you for your patience while we have reviewed all the detail. The following comments are provided on behalf of Welsh Government Transport.

The proposed Vision and Validate methodology sets out a logical approach for which the Welsh Government is supportive in principle. This is subject to addressing the concerns / comments raised by your SAB & HDC teams that relate to trip rates, modelling and wider aspects. In particular background supportive data to evidence reduced trip rates, validate results and justification for parameters used for the modelling of junction 43 and the wider network, provided as part of an updated and comprehensive Transport Assessment. This TA should also detail phasing/identification of when key services and infrastructure would be provided so that these could be locked down by condition.

We have previously discussed proposals in the context of the Transport for Wales (TfWs) Regional Transport Planning approach and would further request the developer liaises with TfW (Ben George Regional Ben George Ben.George@tfw.wales) for access to the South Wales Transport Model (SWTM). This should be used to contextualise and validate the Designer's modelling for the most robust assessment possible and provide outputs that have the appropriate level of assurance that Junction 43 will operate effectively post development. Details of the model are provided here [Wales Regional Transport Models | TfW](#).

Relating to the correct method of control for signals on the motorway junction, the designer is advised that these are MOVA. For any further queries regarding the systems here the developer is advised to discuss with SWTRA / Welsh Government and contact details can be provided as appropriate.

The Welsh Government looks forward to an updated TA that covers all of the above and makes the case for an outlined vision for further comment.

Regards

Rhodri

Rhodri Thomas BSc. (Hons) GMICE

Senior Engineer

I am now on secondment, and will have intermittent access to emails.



T+44 (0) 29 20 769 275

1 Capital Quarter, Tyndall Street
Cardiff
CF10 4BZ

wsp.com

Confidential

This message, including any document or file attached, is intended only for the addressee and may contain privileged and/or confidential information. Any other person is strictly prohibited from reading, using, disclosing or copying this message. If you have received this message in error, please notify the sender and delete the message. Thank you.

WSP UK Limited, a limited company registered in England & Wales with registered number 01383511. Registered office: WSP House, 70 Chancery Lane, London, WC2A 1AF.

From: Justin W. Griffiths <j.griffiths4@npt.gov.uk>

Sent: Monday, September 9, 2024 3:07 PM

To: Ingram, Jason (EET - Transport and Digital Connectivity - Network Management Division)
<jason.ingram2@gov.wales>

Cc: Jones, Richard (EET - Transport and Digital Connectivity - Network Management Division)
<richard.jones7@gov.wales>; Chris Davies <c.j.davies@npt.gov.uk>; Ceri Morris <c.morris1@npt.gov.uk>; Delyth A. Thomas <d.a.thomas@npt.gov.uk>; McBride, Niall (EET - Transport and Digital Connectivity - Network Management Division) <niall.mcbride@gov.wales>; Amanda J. Phillips <a.phillips2@npt.gov.uk>; Laura Pack <l.pack@npt.gov.uk>

Subject: FW: Coed Darcy Vison & Validate Scope

Hi Jason

It's been some time since we had a meeting and discussed the above, do you have a feed back from the vison and validate submission please?

Many thanks

Cofion cynnes / Kind regards

Justin W. Griffiths

MSc | BSc (Hons) | HND | C.Build E | FCABE | FIHE |

SAB & Highway Development Control Manager/ SAB a Rheolwr Rheoli Datblygu Priffyrdd
Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot

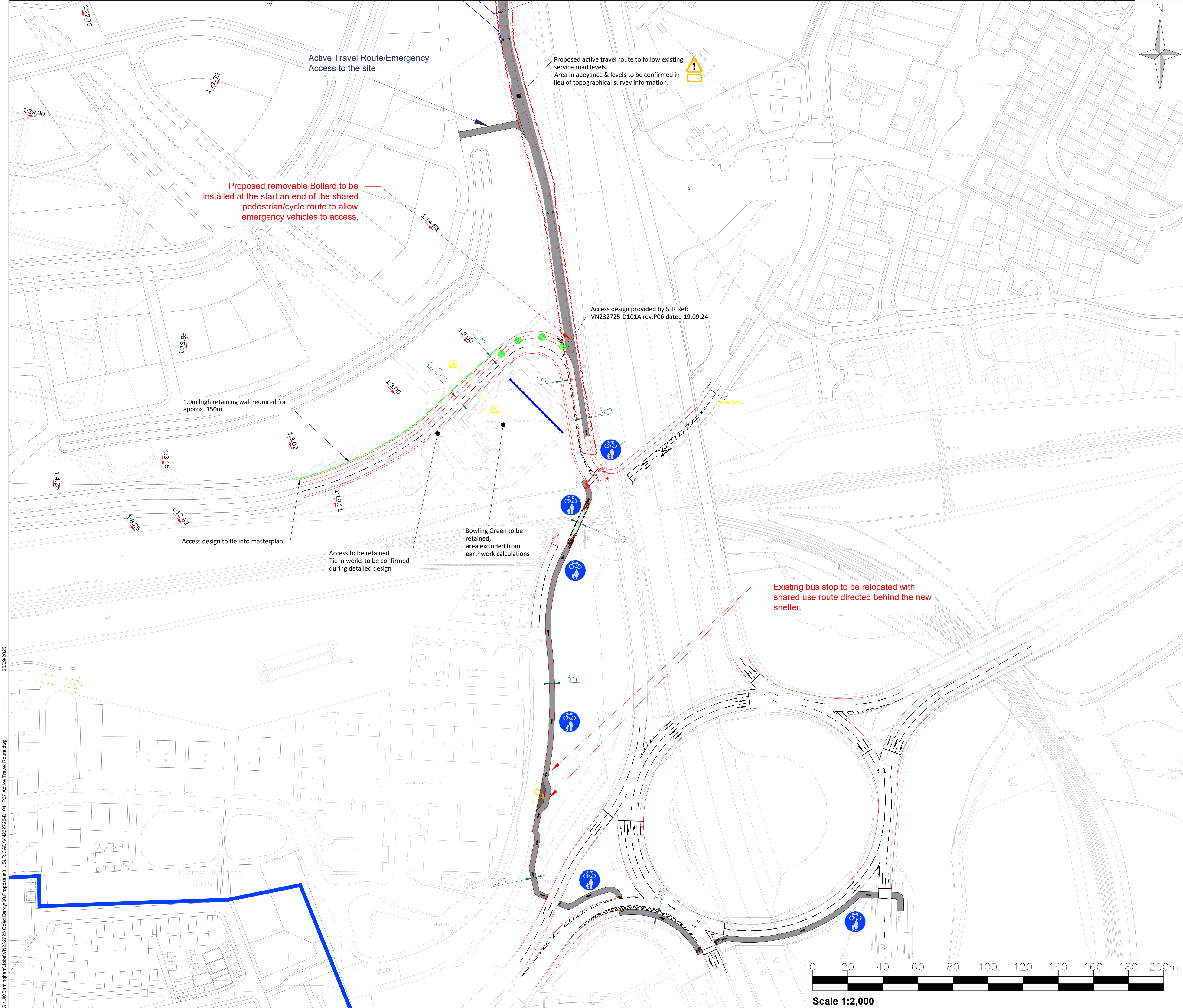


Tel/Ffôn: 01639 686397

Email / E-bost: j.griffiths4@npt.gov.uk

Appendix B Active Travel Scheme Drawing





Notes:
1.

Legend:

P07	PJA Drawing included	24.09.25	DJR	TC	TC
P06	Signal Junction Amendments	16.05.25	DJR	TC	TC
P05	Signal Junction Amendments	15.05.25	DJR	TC	TC
P04	Amendments to the bridge	03.03.25	DJR	TC	TC
P03	Amendments to central island	17.01.25	DJR	TC	TC
P02	Amendments following Council Comments	08.01.25	DJR	TC	TC
P01	First Issue	01.02.24	DJR	TC	TC
Rev	Amendments	Date	By	Chk	Auth


www.slrconsulting.com

Drawing Status & Suitability Code
S2 - ISSUE FOR INFORMATION

Client
St.Mowden

Project
Coed Darcy

Drawing Title
Proposed Crymlyn Road Active Travel Route Option 2

Scale 1:2000 @ A3		SLR Project No. VN232725	
Designed DJR	Drawn DJR	Checked HP	Authorised TC
Date 19.09.24	Date 19.09.24	Date 19.09.24	Date 19.09.24
Drawing Number VN232725-D101A			Rev. P07

G:\UK\Birmingham\Jobs\VN232725 Coed Darcy\03 Proposals\01 SLR CAD\VN232725-D101_P07 Active Travel Route.dwg 25/09/2025

Appendix C North Northern Site Access LINSIG Results



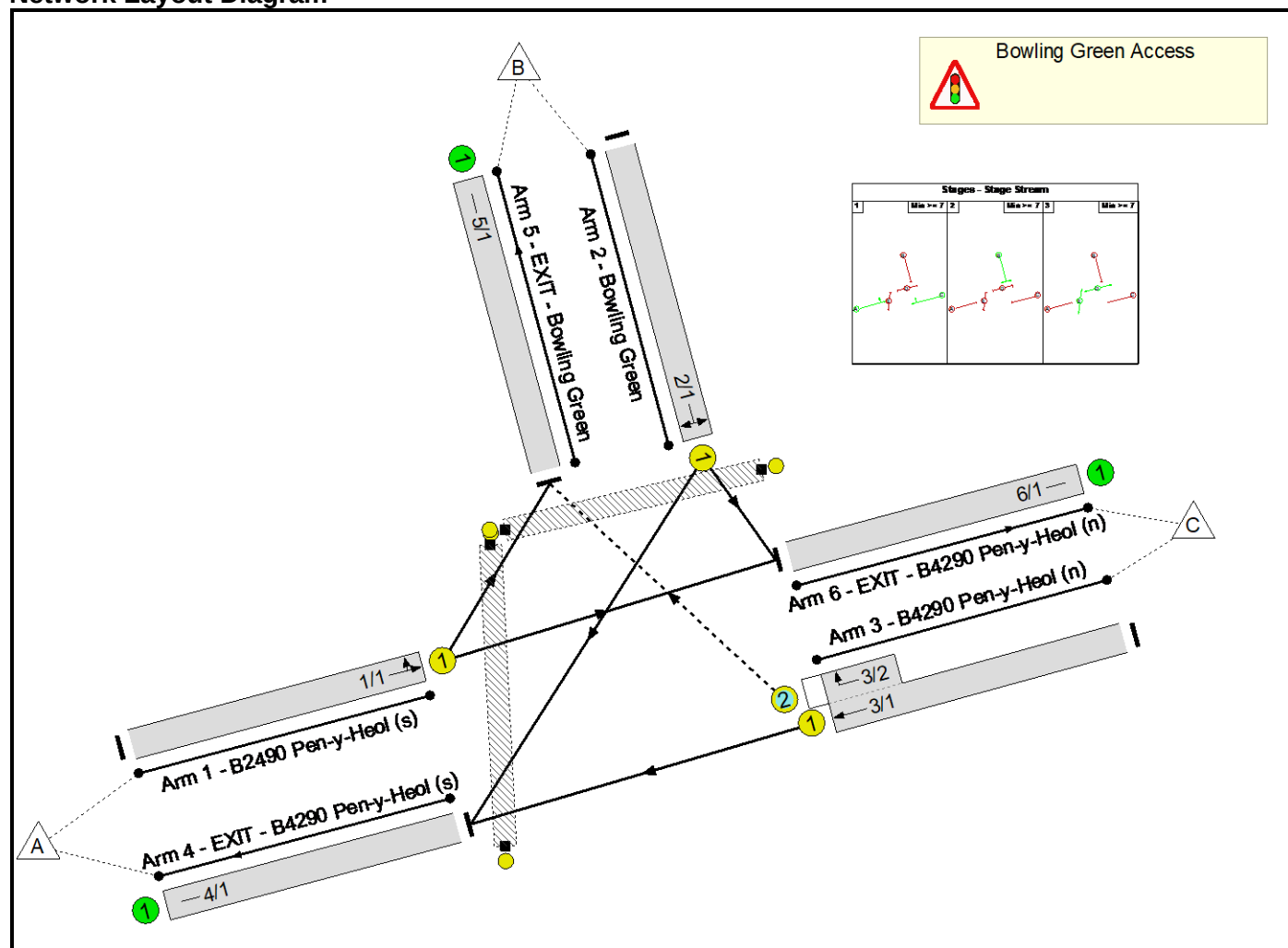
Full Input Data And Results

Full Input Data And Results

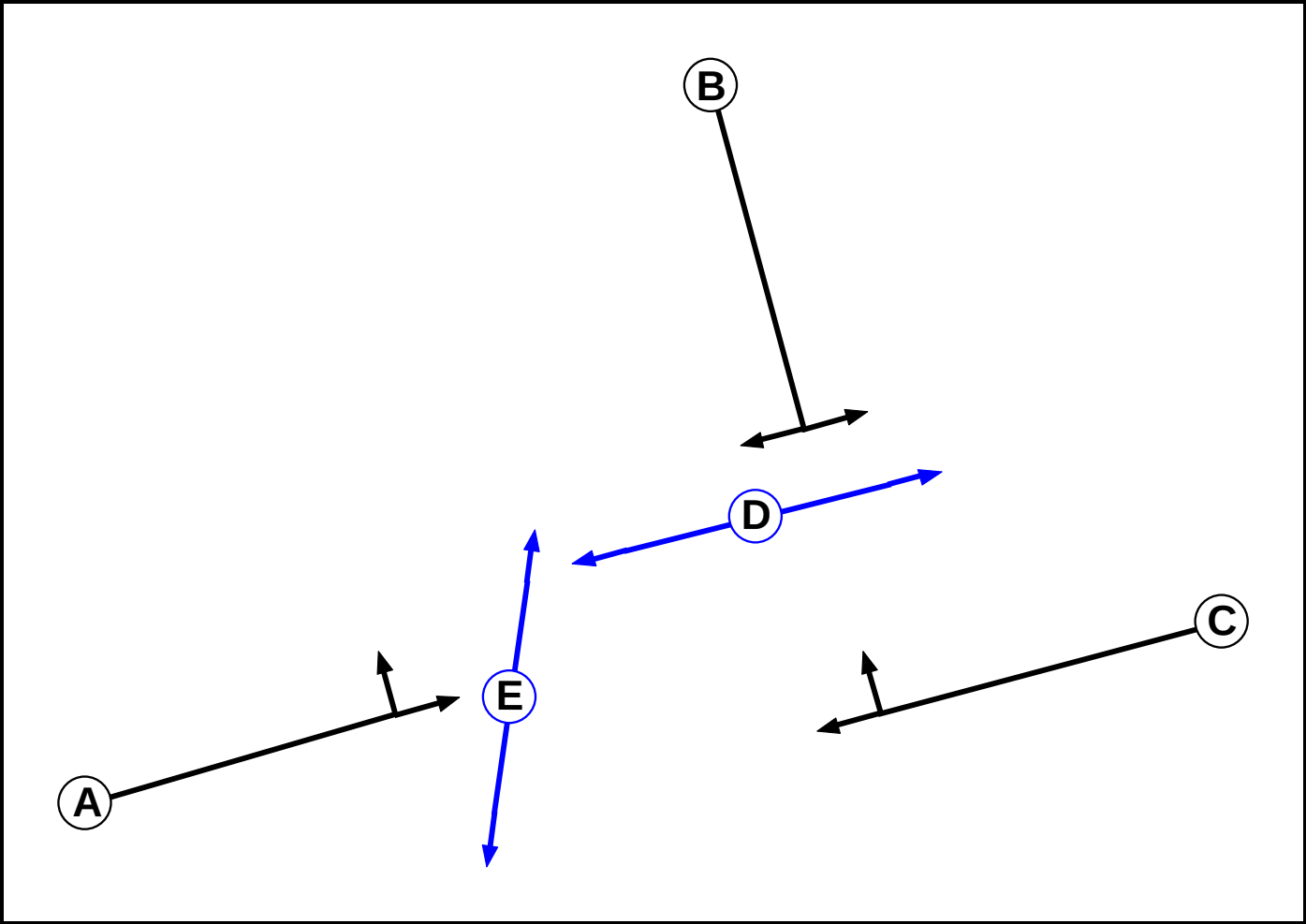
User and Project Details

Project:	Coed Darcy
Title:	Bowling Green Access (Norther Site Access)
Location:	
Date Completed:	16/01/2025
Checked By:	TC
Additional detail:	Updated model for the latest site access drawing
File name:	Coed Darcy - Northern Site Access_v1.1.lsg3x
Author:	HP
Company:	SLR
Address:	Birmingham office

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	1		7	7
D	Pedestrian	1		7	7
E	Pedestrian	1		7	7

Full Input Data And Results

Phase Intergreens Matrix

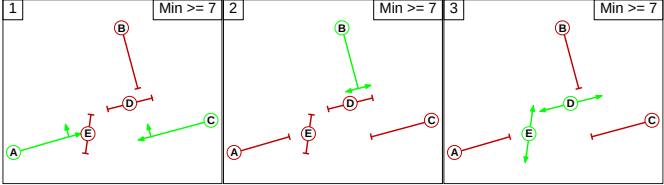
Terminating Phase	Starting Phase					
		A	B	C	D	E
	A		10	-	10	6
	B	5		5	5	10
	C	-	5		8	10
	D	11	11	11		-
	E	15	15	15	-	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A C
1	2	B
1	3	D E

Stage Diagram

Stage Stream: 1



Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	C	Losing	5	5
3	1	D	Losing	4	4

Prohibited Stage Change

Stage Stream: 1

From Stage	To Stage			
		1	2	3
	1		10	10
	2	5		10
	3	15	15	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Bowling Green Access											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
3/2 (B4290 Pen-y-Heol (n))	5/1 (Right)	1439	0	1/1	1.09	All	1.00	-	0.50	1	2.00

Full Input Data And Results

Lane Input Data

Junction: Bowling Green Access												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (B2490 Pen-y-Heol (s))	U	A	2	3	34.8	Geom	-	3.50	0.00	Y	Arm 5 Left	11.00
											Arm 6 Ahead	45.00
2/1 (Bowling Green)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Right	16.00
											Arm 6 Left	12.00
3/1 (B4290 Pen-y-Heol (n))	U	C	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Ahead	Inf
3/2 (B4290 Pen-y-Heol (n))	O	C	2	3	3.8	Geom	-	2.50	0.00	Y	Arm 5 Right	11.50
4/1 (EXIT - B4290 Pen-y-Heol (s))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (EXIT - Bowling Green)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (EXIT - B4290 Pen-y-Heol (n))	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2026 Base + HG(140) + Coed Darcy AM'	07:45	08:45	01:00	
2: '2026 Base + HG(140) + Coed Darcy PM'	16:30	17:30	01:00	

Scenario 1: '2026 Base + HG(140) + Coed Darcy AM' (FG1: '2026 Base + HG(140) + Coed Darcy AM', Plan 1: 'Proposed')

Traffic Flows, Desired

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	66	260	326
	B	173	0	15	188
	C	491	6	0	497
	Tot.	664	72	275	1011

Traffic Lane Flows

Lane	Scenario 1: 2026 Base + HG(140) + Coed Darcy AM
Junction: Bowling Green Access	
1/1	326
2/1	188
3/1 (with short)	497(In) 491(Out)
3/2 (short)	6
4/1	664
5/1	72
6/1	275

Lane Saturation Flows

Junction: Bowling Green Access								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B2490 Pen-y-Heol (s))	3.50	0.00	Y	Arm 5 Left	11.00	20.2 %	1864	1864
				Arm 6 Ahead	45.00	79.8 %		
2/1 (Bowling Green)	3.65	0.00	Y	Arm 4 Right	16.00	92.0 %	1806	1806
				Arm 6 Left	12.00	8.0 %		
3/1 (B4290 Pen-y-Heol (n))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
3/2 (B4290 Pen-y-Heol (n))	2.50	0.00	Y	Arm 5 Right	11.50	100.0 %	1650	1650
4/1 (EXIT - B4290 Pen-y-Heol (s) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (EXIT - Bowling Green Lane 1)							Inf	Inf
6/1 (EXIT - B4290 Pen-y-Heol (n) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2026 Base + HG(140) + Coed Darcy PM' (FG2: '2026 Base + HG(140) + Coed Darcy PM', Plan 1: 'Proposed')

Traffic Flows, Desired

Desired Flow :

Origin	Destination				
		A	B	C	Tot.
	A	0	165	443	608
	B	73	0	6	79
	C	372	14	0	386
	Tot.	445	179	449	1073

Traffic Lane Flows

Lane	Scenario 2: 2026 Base + HG(140) + Coed Darcy PM
Junction: Bowling Green Access	
1/1	608
2/1	79
3/1 (with short)	386(In) 372(Out)
3/2 (short)	14
4/1	445
5/1	179
6/1	449

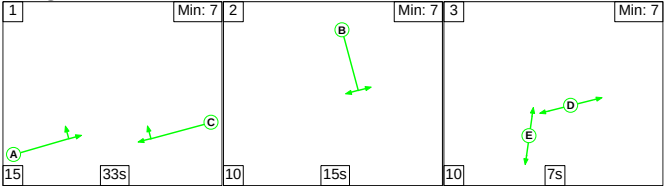
Lane Saturation Flows

Junction: Bowling Green Access								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B2490 Pen-y-Heol (s))	3.50	0.00	Y	Arm 5 Left	11.00	27.1 %	1852	1852
				Arm 6 Ahead	45.00	72.9 %		
2/1 (Bowling Green)	3.65	0.00	Y	Arm 4 Right	16.00	92.4 %	1806	1806
				Arm 6 Left	12.00	7.6 %		
3/1 (B4290 Pen-y-Heol (n))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
3/2 (B4290 Pen-y-Heol (n))	2.50	0.00	Y	Arm 5 Right	11.50	100.0 %	1650	1650
4/1 (EXIT - B4290 Pen-y-Heol (s) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (EXIT - Bowling Green Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (EXIT - B4290 Pen-y-Heol (n) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2026 Base + HG(140) + Coed Darcy AM' (FG1: '2026 Base + HG(140) + Coed Darcy AM', Plan 1: 'Proposed')

Stage Sequence Diagram

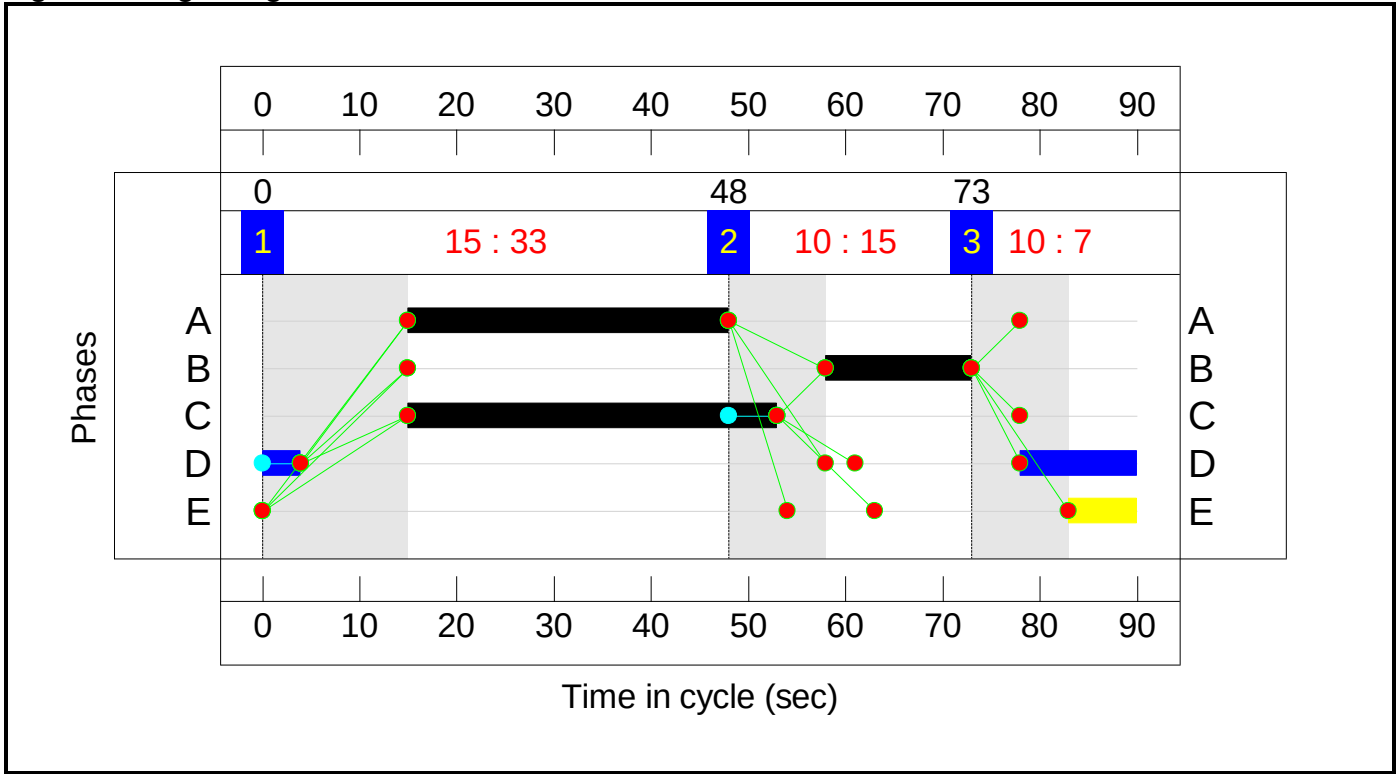
Stage Stream: 1



Stage Timings
Stage Stream: 1

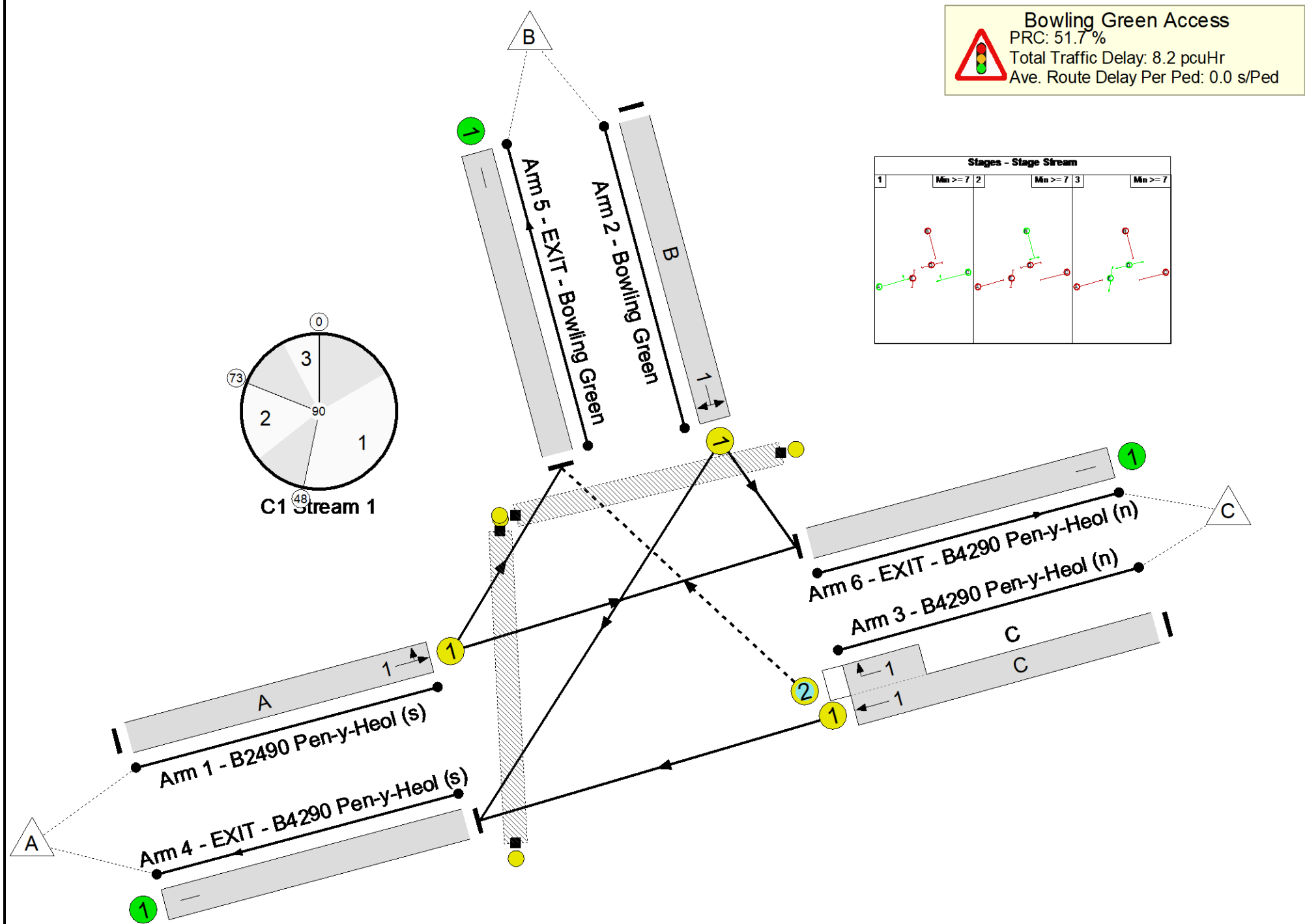
Stage	1	2	3
Duration	33	15	7
Change Point	0	48	73

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Bowling Green Access (Norther Site Access)	-	-	N/A	-	-		-	-	-	-	-	-	59.3%
Bowling Green Access	-	-	N/A	-	-		-	-	-	-	-	-	59.3%
1/1	B2490 Pen-y-Heol (s) Left Ahead	U	1	N/A	A		1	33	-	326	1864	704	46.3%
2/1	Bowling Green Right Left	U	1	N/A	B		1	15	-	188	1806	321	58.6%
3/1+3/2	B4290 Pen-y-Heol (n) Ahead Right	U+O	1	N/A	C		1	38	-	497	1915:1650	828+10	59.3 : 59.3%
4/1	EXIT - B4290 Pen-y-Heol (s)	U	N/A	N/A	-		-	-	-	664	Inf	Inf	0.0%
5/1	EXIT - Bowling Green	U	N/A	N/A	-		-	-	-	72	Inf	Inf	0.0%
6/1	EXIT - B4290 Pen-y-Heol (n)	U	N/A	N/A	-		-	-	-	275	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	1	-	D		1	16	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	1	-	E		1	7	-	0	-	0	0.0%

Full Input Data And Results

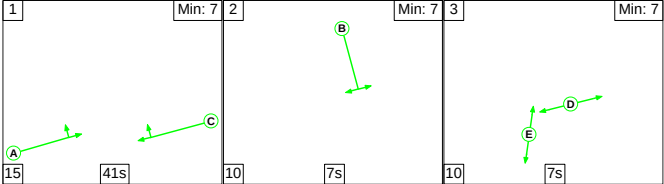
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Bowling Green Access (Norther Site Access)	-	-	6	0	0	6.4	1.9	0.0	8.2	-	-	-	-
Bowling Green Access	-	-	6	0	0	6.4	1.9	0.0	8.2	-	-	-	-
1/1	326	326	-	-	-	1.9	0.4	-	2.3	25.9	6.1	0.4	6.5
2/1	188	188	-	-	-	1.8	0.7	-	2.5	47.4	4.3	0.7	5.0
3/1+3/2	497	497	6	0	0	2.7	0.7	0.0	3.4	24.7	9.3	0.7	10.1
4/1	664	664	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	72	72	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	275	275	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
C1 Stream: 1 PRC for Signalled Lanes (%): 51.7 Total Delay for Signalled Lanes (pcuHr): 8.23 Cycle Time (s): 90 PRC Over All Lanes (%): 51.7 Total Delay Over All Lanes(pcuHr): 8.23													

Full Input Data And Results

Scenario 2: '2026 Base + HG(140) + Coed Darcy PM' (FG2: '2026 Base + HG(140) + Coed Darcy PM', Plan 1: 'Proposed')

Stage Sequence Diagram

Stage Stream: 1

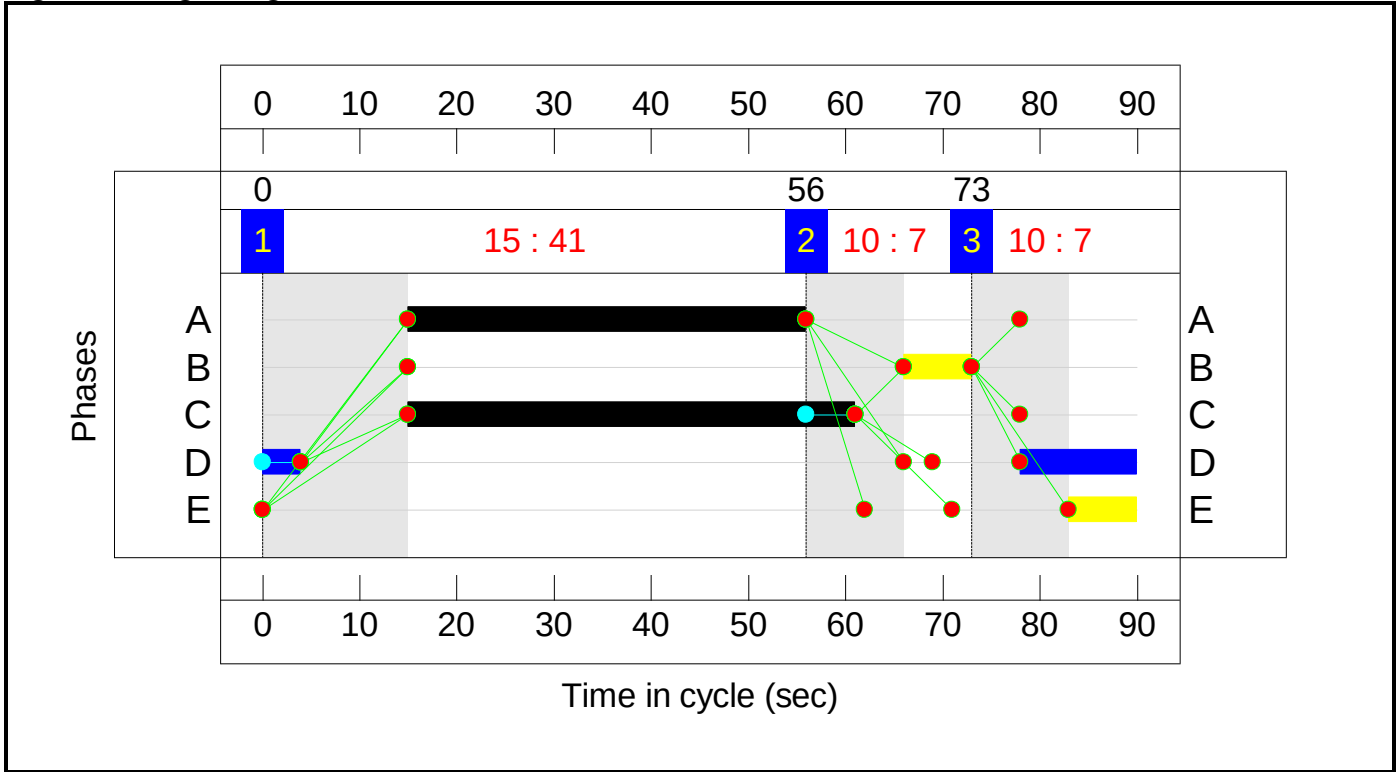


Stage Timings

Stage Stream: 1

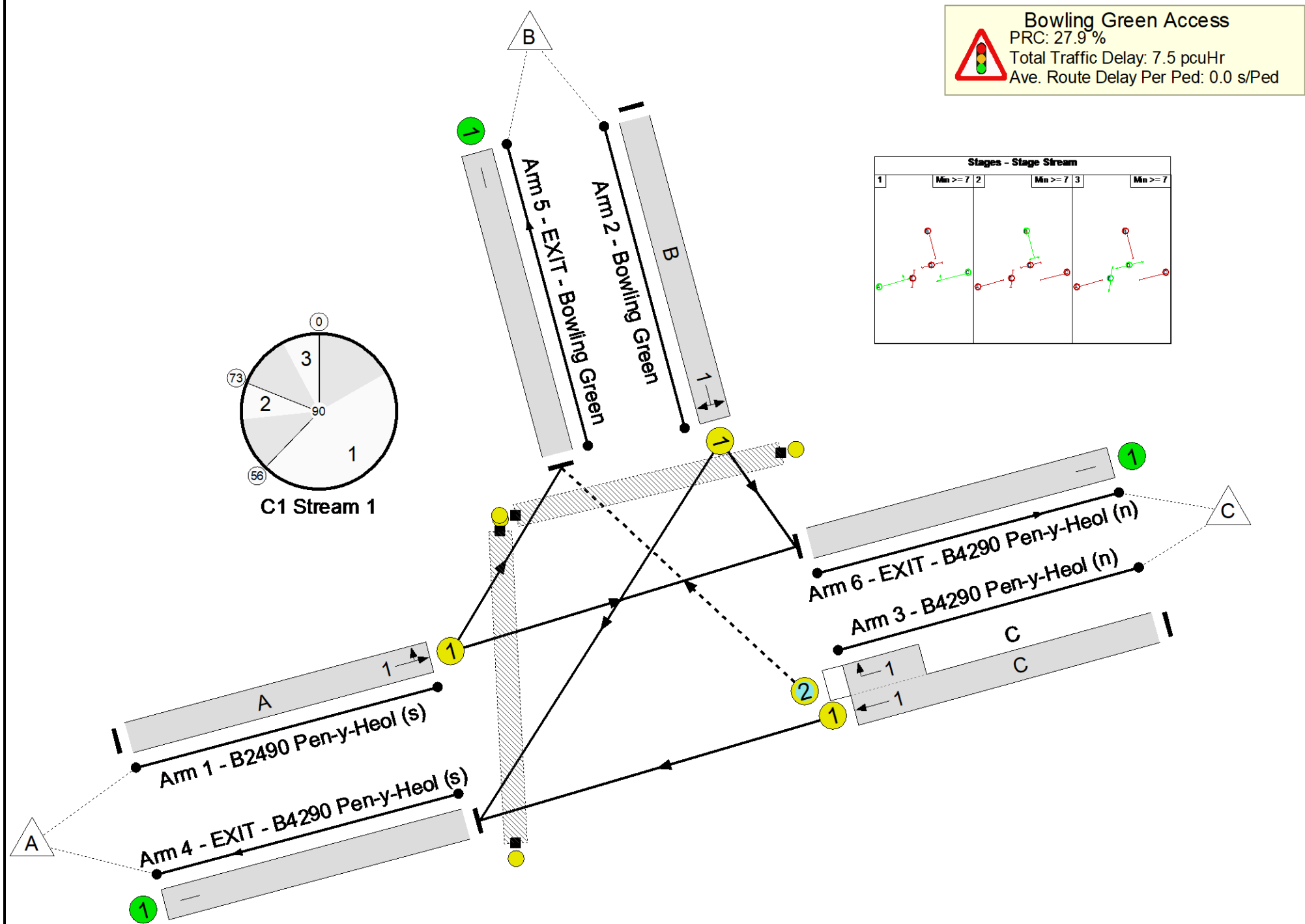
Stage	1	2	3
Duration	41	7	7
Change Point	0	56	73

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Bowling Green Access (Norther Site Access)	-	-	N/A	-	-		-	-	-	-	-	-	70.3%
Bowling Green Access	-	-	N/A	-	-		-	-	-	-	-	-	70.3%
1/1	B2490 Pen-y-Heol (s) Left Ahead	U	1	N/A	A		1	41	-	608	1852	864	70.3%
2/1	Bowling Green Right Left	U	1	N/A	B		1	7	-	79	1806	161	49.2%
3/1+3/2	B4290 Pen-y-Heol (n) Ahead Right	U+O	1	N/A	C		1	46	-	386	1915:1650	972+37	38.3 : 38.3%
4/1	EXIT - B4290 Pen-y-Heol (s)	U	N/A	N/A	-		-	-	-	445	Inf	Inf	0.0%
5/1	EXIT - Bowling Green	U	N/A	N/A	-		-	-	-	179	Inf	Inf	0.0%
6/1	EXIT - B4290 Pen-y-Heol (n)	U	N/A	N/A	-		-	-	-	449	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	1	-	D		1	16	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	1	-	E		1	7	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Bowling Green Access (Norther Site Access)	-	-	13	0	0	5.4	2.0	0.1	7.5	-	-	-	-
Bowling Green Access	-	-	13	0	0	5.4	2.0	0.1	7.5	-	-	-	-
1/1	608	608	-	-	-	3.2	1.2	-	4.4	26.0	12.0	1.2	13.2
2/1	79	79	-	-	-	0.9	0.5	-	1.3	60.9	1.9	0.5	2.3
3/1+3/2	386	386	13	0	0	1.4	0.3	0.1	1.7	16.1	5.5	0.3	5.8
4/1	445	445	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	179	179	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	449	449	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
C1 Stream: 1 PRC for Signalled Lanes (%): 27.9 Total Delay for Signalled Lanes (pcuHr): 7.46 Cycle Time (s): 90 PRC Over All Lanes (%): 27.9 Total Delay Over All Lanes(pcuHr): 7.46													



Making Sustainability Happen