Large Scale Residential Development, Arklow Co. Wicklow
Reference number IE01T24A28

16/05/2025

TRAFFIC & TRANSPORT ASSESSMENT & OUTLINE MOBILITY MANAGEMENT PLAN

SYSTRA

LARGE SCALE RESIDENTIAL DEVELOPMENT, ARKLOW CO. WICKLOW

TRAFFIC & TRANSPORT ASSESSMENT & OUTLINE MOBILITY MANAGEMENT PLAN

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1.1 Background

1.1.1 SYSTRA Ltd has been commissioned by Certain Assets of Dawnhill and Windhill Ltd (CADW) to prepare a Traffic & Transport Assessment (TTA) and Outline Mobility Management Plan (OMMP) in relation to a proposed Large Scale Residential Development (LRD) in Kilbride, Arklow, Co. Wicklow. An Environmental Impact Assessment Report (EIAR) accompanies the application, to which this TTA report has been appended.

1.1.2 The site location is shown in **Figure 1**.

Figure 1. Site Location and Site Boundary

1.1.3 The development site is located on the northern side of the Avoca River in Arklow, Co. Wicklow, within the development boundary of Arklow Town, in the townland of Kilbride.

1.1.4 The site is currently greenfield and used for agricultural purposes. It is bounded to the north by the L6179 Kilbride Road, to the west by the M11 motorway and other undeveloped lands, to the south by the Avoca River marsh and to the east by residential developments and additional undeveloped lands. The site does not currently have a formal access point.

1.2 Site Designation

1.2.1 The site forms part of a wider landholding which is designated within the Arklow and Environs Local Area Plan (LAP) 2018-2024 as Action Area Plan 3 (AAP3). The LAP notes that, "*Kilbride (AAP3) is identified as the location of major development in Arklow; the growth of the settlement in accordance with regional plan targets is contingent on the delivery of the major residential, employment and community services development at this location*"

1.3 Development Overview

1.3.1 A planning application was submitted by CADW in October 2023 for 86 no. residential units as part of an initial phase of development (Ref. 23/745) on the Masterplan site. The application was consented by Wicklow County Council in April 2024, with a slight reduction to 84 units in total.

1.3.2 The planning application to which this TTA relates is for development proposals comprising a total of 666 residential units with accompanying commercial/community/medical centre and crèche facilities. The 84-unit development has been included within the analysis as a committed scheme – collectively a total of 750 units will be developed at the site as part of both schemes.

1.3.3 It is envisaged that the wider AAP3 site will be progressed in two distinct phases, each with standalone planning applications; the proposed development therefore represents Phase 1 of the proposals, comprising 666 residential units and ancillary commercial/community/medical centre and crèche facilities, with supporting infrastructure including the construction of a new internal access road to serve the site.

1.3.4 Forthcoming Phase 2 proposals developed as part of a wider masterplan for the lands are expected to include the development of the wider AAP site to provide further residential units, ancillary services and continuation of the new access road within the site boundary.

1.4 Relevant Planning History

1.4.1 The following consented developments within the AAP3 site are of relevance:

Education Campus

1.4.2 A new school campus for Gaelcholáiste na Mara and Gaelscoil an Inbhir Mhóir within the AAP3 site was granted planning permission in August 2022 (Ref: 22/213). SYSTRA understands that the education campus is still in the design process, and a date for construction has yet to be set. The Campus layout is shown in **Figure 2**.

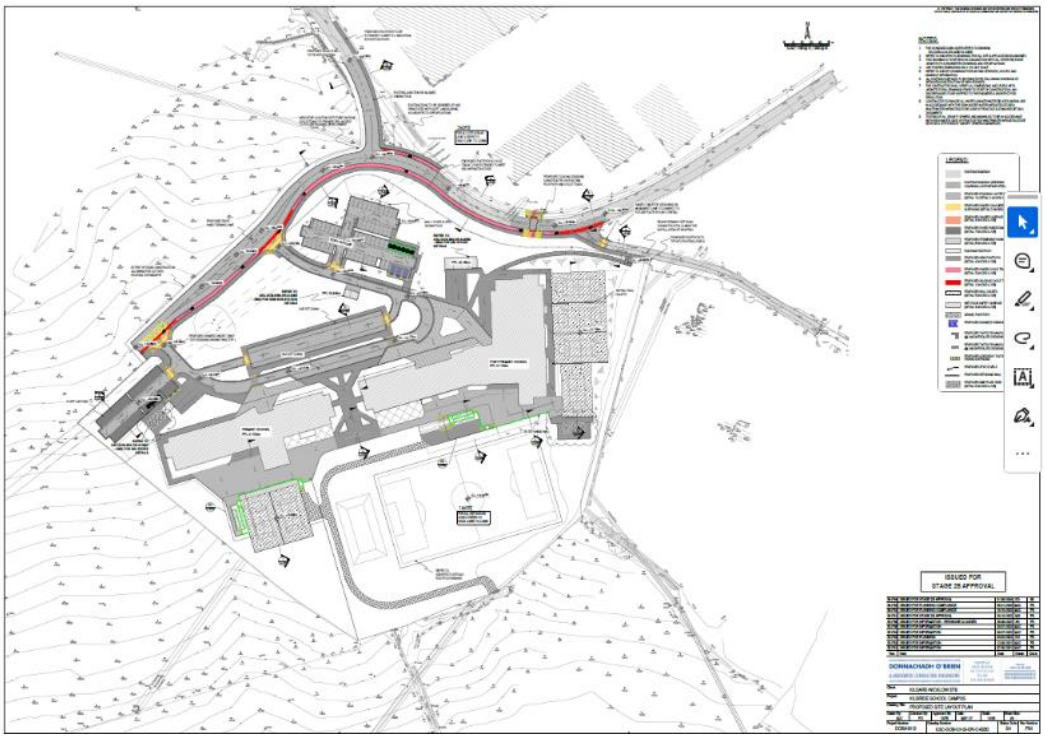


Figure 2. Proposed Education Campus within Kilbride lands

1.4.3 Access to the school will be taken from a new access road from the existing Kilbride Road, which is intended to form part of the future IT5 Western Distributor Route alignment. The proposed Phase 1 LRD development will itself be accessed from this new access road that will pass along the school site boundary (i.e. both sites will share a common access route).

84-Unit Residential Development

1.4.4 A planning application was submitted by CADW in October 2023 for 86 no. residential units as part of an initial phase of development (Ref. 23/745). The application was consented by Wicklow County Council in April 2024, with a slight reduction to 84 units in total.

1.4.5 The residential site is located to the south of the educational campus site and has been developed to complement the campus, with both developments taking access from the internal spine road.

1.4.6 This residential development will also provide a pedestrian and cyclist connection through to the R772, Dublin Road via Avondale Crescent.

1.4.7 The 84 units granted as part of Application 23/745 will be delivered in tandem with the Phase 1 site development that is the subject of this LRD application (specifically, forming Character Area 1A of the Phase 1 lands as detailed below).

1.4.8 These 84 units and accompanying supporting infrastructure are additional to the 666 residential units proposed, resulting in an overall total of 750 residential units. The 84-unit development has been included within the analysis as a committed scheme.

1.5 Summary

1.5.1 **Figure 2** shows the Phase 1 proposed development (666 units), the consented Phase 1a application (84-units), and the consented education campus.

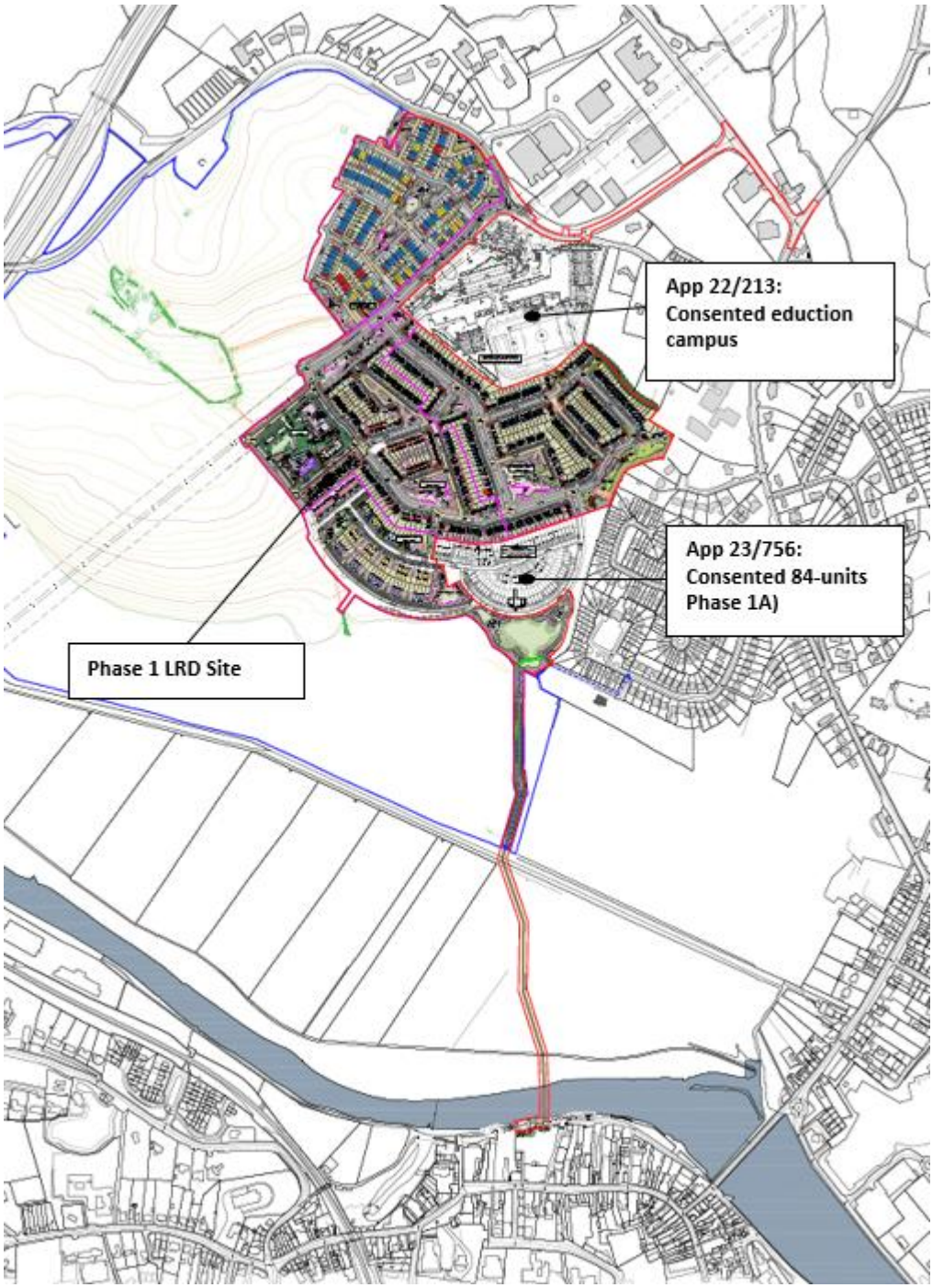


Figure 3. Phase 1 Site and adjacent Committed Developments

1.6 Purpose of the TA

1.6.1 The purpose of this report is to set out the likely transport impacts of the proposals, and to identify measures to ensure that the development can be successfully integrated into the local transport network.

1.6.2 The report describes and evaluates the baseline transport environment, forecasts multi-modal travel demand from the proposed development, and assesses the potential impact of this demand on the surrounding network.

1.6.3 The report also considers the impact of the consented school campus, and the effects of future transport proposals in Arklow such as the Western Distributor Route and a proposed boardwalk connection across the Avoca River between Kilbride lands and the town centre.

1.7 Consultation

1.7.1 The following Pre-Application consultation has been undertaken with Wicklow County Council:

- A Section 247 (S247) was held with Wicklow County Council on the 15th May 2024 under Reg. Ref. LRDPP24/31. During this meeting the principle of the development was discussed, along with the connections to Uisce Éireann Network, links into the town centre, tree retention and the future LAP.
- A Stage 2 LRD meeting was held with Wicklow County Council on the 18th December, 2024 under the same reference. At this meeting, a formal opinion response was received from WCC regarding the Stage 2 documentation submitted.

1.7.2 The specific items raised as part of this opinion document as they pertain to this TTA have been considered in this assessment, as follows:

1. **Potential Impact of not achieving the 'Target' mode split proposed:** For the proposed opening year of the development, in 2027, the vehicle mode share has been retained at the prevailing value of 70%, to reflect the phased delivery of the Local Centre and Boardwalk connection within the overall site build-out. In addition, a sensitivity test has been undertaken for the Dublin Road/Beech Road junction for a scenario where the prevailing mode share of 70% is retained, as opposed to the target mode share of 55% (for private vehicles). The results of this assessment are contained in Appendix E; and
2. **Beech Road/Dublin Road Junction:** Lane widths have been reviewed and confirmed, and additional commentary has been added regarding the potential impact of queuing lengths at the junction.

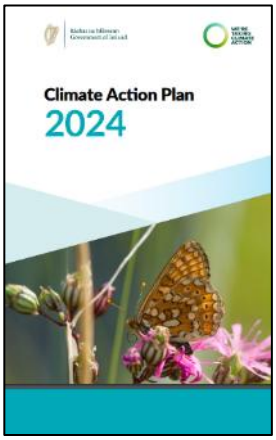
2. PLANNING AND POLICY REVIEW

2.1 Overview

2.1.1 This chapter provides a summary of the transport plans, policies, and objectives that are most relevant to the development. They have been considered at the National, Regional and Local levels.

2.2 National Level

Climate Action Plan 2024



2.2.1 The Climate Action Plan 2024 (CAP24) is the third annual update to Ireland's Climate Action 2019. This plan is the first to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021, and following the introduction, in 2022, of economy-wide carbon budgets and sectoral emissions ceilings.

2.2.2 The plan implements the carbon budgets and sectoral emissions ceilings and sets out a roadmap for taking decisive action to halve our emissions by 2030, and reach net zero no later than 2050, as committed to in the Programme for Government. CAP24 sets out how Ireland can accelerate the actions that are required to respond to the climate crisis, putting climate solutions at the centre of Ireland's social and economic development.

2.2.3 In terms of transport, CAP24 pledges to adopt the 'Avoid – Shift – Improve' approach, and targets a 50% reduction in emissions by 2030. It also aims to:

- Reduce the total distance driven across all journeys by **20%.**
- Ensure there is a significant behavioural shift towards walking, cycling and public transport.

2.2.4 With particular relevance to this residential development, CAP24 seeks to:

- TR/24/8: Support and promote a modal shift towards healthy active and sustainable mobility in the design and delivery of LDA development.
- TR/24/11 (TF): Advance roll-out of walking/cycling infrastructure in line with National Cycle Network and CycleConnects plans.
- TR/24/16 (TF): Prioritise and accelerate delivery of NTA Connecting Ireland and new town services, via demand responsive transport pilot initiatives, conventional and non-conventional modes of public transport services.

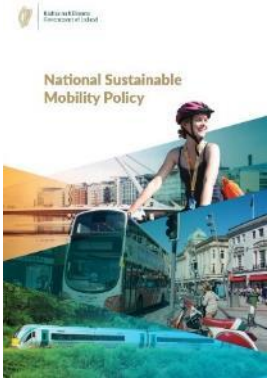
Ireland 2040 Our Plan: National Planning Framework

2.2.5 The National Policy Framework (NPF) outlines the new strategic planning and development strategy for the whole of Ireland and all its regions for the next 20 years. The document co-

ordinates National, Regional and Local Authority policies and activities through one central strategy, providing a reference point to adhere to.

National Sustainable Mobility Policy (2022)

2.2.6 The National Sustainable Mobility Policy sets out a strategic framework to 2030 for active travel (walking and cycling) and public transport journeys to help Ireland meet its climate obligations.



2.2.7 The policy aims to deliver at least 500,000 additional daily active travel and public transport journeys by 2030 and a 10% reduction in the number of kilometres driven by fossil fuelled cars. It will make it easier for people to choose walking, cycling and use public transport daily instead of having to use a petrol or diesel car.

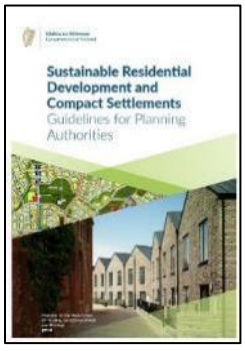
The policy aims to make it easier for people to choose walking, cycling and use public transport daily instead of having to use a petrol or diesel car under the following key themes:

- Safe and Green mobility.
- People focused mobility.
- Better integrated mobility.

2.2.8 With particular relevance to the development, the sustainable mobility policy seeks to expand walking, cycling and public transport infrastructure across the country, and improve the safety of walking, cycling and public transport networks.

Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities

2.2.9 Published in 2024, the Guidelines expand on higher-level policies of the National Planning Framework, setting policy and guidance in relation to the growth priorities for settlements, residential density, urban design and placemaking and introduce development standards for housing.



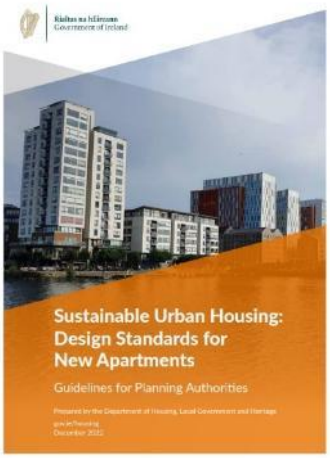
2.2.10 The density ranges support the application of densities that respond to settlement size and to different place contexts, recognising in particular the differences between cities, large and medium sized towns and smaller towns and villages.

2.2.11 The key indications of Quality Design and Placemaking set out in Guidelines are:

- **Sustainable and Efficient Movement** - Ensuring places are well connected and accessible by sustainable modes. Also acknowledging that quality of journey is equally important and that places are perceived as safe and are not dominated cars.
- **Mix and Distribution of Uses** - Promoting the integration of land uses and transportation and a diverse and innovative mix of housing that can facilitate compact housing and provide greater housing choice.

- **Green and Blue Infrastructure** - Placing and emphasis on the protection of natural assets and biodiversity, whilst also taking a more strategic view as to how open space networks are formed to balance the needs of communities.
- **Responsive Built Form** - Placing an emphasis on the creation of a coherent urban structure and design approach that responds to local character and is attractive.

Sustainable Urban Housing: Design Standards for New Apartments 2022 (DSFNA) Guidelines for Planning Authorities



2.2.12 The 'Sustainable Urban Housing: Design Standards for New Apartments (DSFNA) – Guidelines for Planning Authorities' was published by the Department of Housing, Planning and Local Government in March 2018, and updated most recently in 2022.

2.2.13 Based on the NPF projections there is a need to build 550,000 new households nationally by 2040 to accommodate a 1 million person increase in population. The objective is for these new households to be located in as sustainable a location as possible within our towns and cities to address increasing pollution and commuting times and enable the state to feasibly provide and justify supporting infrastructure.

2.2.14 For large scale, higher density residential developments located within an accessible urban location the guidelines state that "the default policy is for car parking provision to be minimised, substantially reduced or wholly eliminated in certain circumstances." This policy is particularly applicable in highly accessible areas at a confluence of public transport systems such rail and bus stations located in close proximity.

2.2.15 The criteria for these locations is to be within a 15-minute walk of the city centre, 10-minute walk to rail or tram or 5-minute walk to high frequency (10min peak hour frequency) bus services. The Holy Cross College Lands delivers on the latter two and is just a 20-minute walk from the city centre.

2.2.16 In suburban/urban locations served by public transport or close to town centres or employment areas and particularly for high density housing schemes, the guidance states that planning authorities must consider a reduced overall car parking standard and apply an appropriate maximum car parking standard.

2.2.17 With respect to Mobility Management, the guidance goes on to state:

2.2.18 "*As well as showing that a site is sufficiently well located in relation to employment, amenities and services, it is important that access to a car sharing club or other non-car based modes of transport are available and/or can be provided to meet the needs of residents, whether as part of the proposed development, or otherwise*".

Design Manual for Urban Roads & Streets (Updated 2019)

2.2.19 The primary objective of the Design Manual for Urban Roads & Streets (DMURS), published by the Department of Transport, is to set out an integrated design approach for streets in urban areas which balances the needs of all users, and is influenced by the surrounding context of the street. The manual aims to promote a sustainable approach to design which promotes real alternatives to the car. To achieve this the needs of sustainable modes must be considered before that of the private car. This is outlined in the user shown in **Figure 4.**

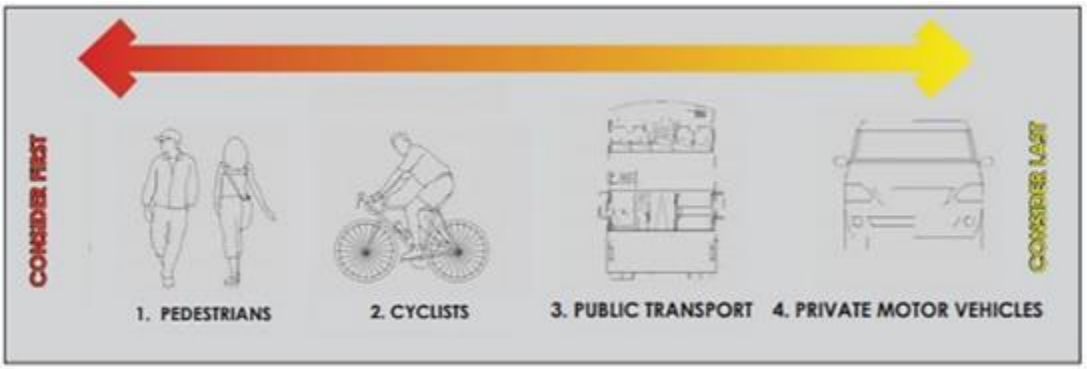


Figure 4. DMURS User Hierarchy

Cycle Design Manual (2023)

2.2.20 The Cycle Design Manual (a comprehensive update to the National Cycle Manual) was published by the National Transport Authority (NTA) in 2023 and overseen by the Department of Transport.

2.2.21 It is guided by the need to deliver safe cycle facilities for people of all ages and abilities. The new manual places more emphasis on the range of cycles that cycle infrastructure will have to accommodate and the recommendations focus on segregating cyclists from traffic where speeds and volumes make roads unsuitable for sharing. There is also a general presumption towards segregating pedestrians and cyclists where possible.

2.3 Regional Context

Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019 - 2031

2.3.1 This Transport Strategy defines the objective of transport investment as, “to contribute to economic, social and cultural progress of the Region, and the protection and enhancement of the environment, in line with Government priorities in other sectors. The success of transport planning in meeting society’s needs requires close integration of transport investment and land use planning, to guide the direction of future development within the Region.”

2.4 Local Context

Wicklow County Development Plan 2022-2028

2.4.1 The current Wicklow County Development Plan (CDP) (2022-2028) outlines ten Strategic County Outcomes (SCOs) which are "informed by the National Planning Framework, the Regional, Spatial and Economic Strategy and the key issues arising in submissions from members of the public." The following are those that relate to sustainable transport and mobility objectives for the county.

2.4.2 **SC01; Sustainable Settlement Patterns & Compact Growth:** The delivery of compact growth in all towns and villages by capitalising on the potential for infill and brownfield development, moving away from a reliance on greenfield development and creating places that encourage active lifestyles is essential for the successful delivery of the development plan strategy.

2.4.3 **SC05; Sustainable Mobility:** The County Development Plan plays an important role in influencing a reduction in GHG emissions by guiding the sustainable growth of the County. The integration of land use and transportation planning, in order to support sustainable mobility and encourage a shift away from the private car to active travel (walking and cycling) and public transport, will deliver improvements in terms of quality of life and climate change.

2.4.4 **SC07; Climate Resilience & the Transition to a Low Carbon Economy** Support the transition to low carbon clean energy by facilitating renewable energy use and generation at appropriate locations and supporting the development of off-shore renewable energy enabling infrastructure especially at ports and harbours. Facilitate the sustainable management of waste including the circular economy. Restrict development in areas that are at risk of flooding and protect the natural landscape and biodiversity.

Arklow Local Area Plan (2018-2024)

2.4.5 Wicklow County Council have commenced preparation of the new Arklow Local Area Plan, and issued a pre-draft paper inviting submissions in March-April 2024. A draft LAP is expected to supersede the current LAP in late 2025.

2.4.6 The site is therefore part of the prevailing Arklow and Environs Local Area Plan (LAP) 2018-2024 and is designated within the LAP as part of Action Area Plan 3 (AAP3).

2.4.7 The subject site is zoned '*Mixed Use'*. **Figure 5** below, extracted from the LAP illustrates the zoning for AAP3, identifying Kilbride as a location for major development in Arklow and as one of the most suitable lands in the environs of Arklow for large scale development.

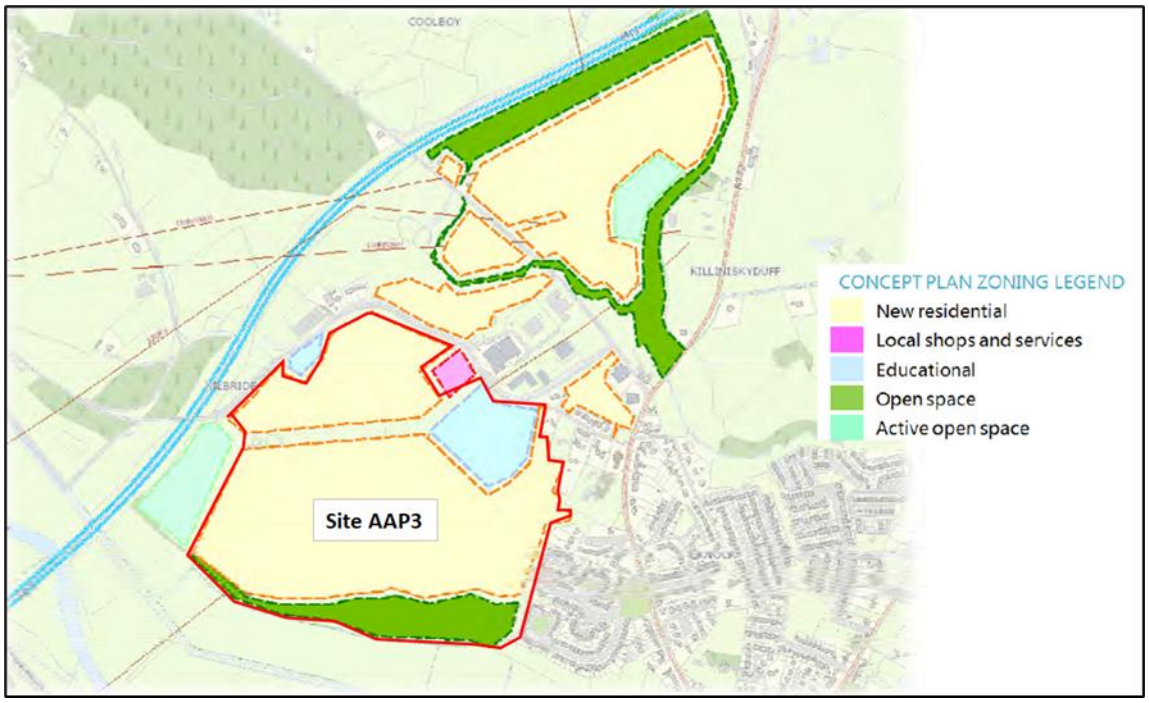


Figure 5. Arklow LAP 2018-2024 - Zoning Designation for AAP3 & AAP4 lands at Kilbride

2.4.8 Site AAP3 is identified in the current LAP as suitable for the implementation of a maximum of 1,500 residential units, with accompanying community, local shops/services and open space areas and an objective to implement a school campus.

2.4.9 Infrastructure, transportation and movement objectives outlined in the LAP are as follows:

- **IT2**; To improve, as funding allows, the principal access routes into the town centre from surrounding tourism locations, particular the Coast Road north of the town, the Clogga Road, the Vale Road and access to potential north quay developments.
- **IT3**; To promote and encourage the "Safer Routes to School" and the Green Schools Programme within Arklow and to liaise with all relevant Departments/agencies involved in the operation of the programme.
- **IT5**; To facilitate the provision of a western distributor route in order to provide alternative movement routes through the town. The route, which will be subject to route option assessment, will incorporate a new river crossing, linking Kilbride to the Vale Road, Lamberton Avenue and on to the Coolgreaney Road.
- **IT8**; To facilitate the operation and free flow of traffic in a safe manner in particular in the town centre and in locations proximate to schools, health and community facilities, by appropriately controlling car parking at such locations.
- **IT15**; To facilitate the implementation of the GDA Cycle Network Plan.

3. TRANSPORT BASELINE

3.1 Pedestrian & Cycle Infrastructure

Current Facilities

3.1.1 As a greenfield site, existing footpaths and cycle facilities are currently limited to those on or alongside the roads around the site. These include:

- A continuous shared footway/cycleway along a portion of the northern side of Kilbride Road, commencing in the vicinity of the proposed site access road junction and continuing east and terminating approximately 80m from the junction with the Beech Road.
- Footways of varying quality and width on both sides of the Beech Road between the junctions with Kilbride Road and the Dublin Road.
- A pedestrian and cycle facility on the R772 Dublin Road, commencing approximately 100m north of the junction with Beech Road and continuing to the M11 Junction 11 to the north (the Arklow North Pedestrian & Cycle scheme).
- Footways of varying widths on both sides of R772 Dublin Road and Ferrybank Road between the junction with Beech Road and the Bridgewater Roundabout to the south. A signalised pedestrian crossing is provided outside St. Joseph's National school on the R772 Dublin Road.

3.2 Bus Services

3.2.1 The closest bus services to the site run along the R772 Dublin Road. These are:

- Bus Eireann Service 2, which operates between Dublin Airport, Arklow and Wexford at an hourly frequency throughout the week.
- Wexford Bus Service 740A, which operates between Arklow, Wicklow Town and Dublin Airport, also on an hourly basis throughout the week.

3.2.2 The Connecting Ireland Rural Mobility Plan is a major national public transport initiative developed by the National Transport Authority (NTA), with the aim of increasing connectivity, particularly for people living outside our major cities and towns. The proposals for Arklow include:

- Better integration of routes between Wicklow and Dublin, with a minimum service frequency of 30 minutes.
- A new local route from Sallins to Arklow via Naas, Blessington, Glendalough, Wicklow and Rathdrum.

3.2.3 It is also understood that the NTA is considering the introduction of a town bus service, that would serve Arklow, as part of the development of the Arklow Local Transport Plan to accompany the upcoming update to the Arklow Local Area Plan.

3.3 Rail Services

3.3.1 Arklow Train Station is located in the centre of the town, approximately 3.2km from the site access on Kilbride Road, but approximately 650m from the proposed landing point of the

Avoca River crossing on River Walk (approximately a 10-minute walk or a 4-minute cycle from this location).

Figure 6. Arklow Train Station location – site context

3.3.2 The station is served by the Dublin Connolly-Rosslare service and the DART Commuter service. The following services operate during the working week:

- 6 trains per day to Dublin Connolly (one continuing to Dundalk Clarke).
- 4 trains per day to Rosslare Europort.
- 1 train per day to Wexford O'Hanrahan.
- 1 train per day to Gorey.

3.4 Road Infrastructure

Current Network

3.4.1 **Figure 7** shows the local road network, and key junctions in the vicinity of the site. The wider road network is shown in **Figure 11** later in this section.

Figure 7. Local Road Network

3.4.2 **Figure 8** shows the R772 Dublin Road / Beech Road priority junction.

Figure 8. R772 Dublin Road / Beech Road junction

3.4.3 Beech Road is a single-carriageway road that runs in a north-westerly direction from R772 Dublin Road, passing over the M11, and linking Ticknock with Avoca. Between the R772 Dublin Road and Kilbride Road it has a speed limit of 50km/h, but beyond this a speed limit of 80km/h applies. **Figure 9** shows the Beech Road / Kilbride Road priority junction, where Kilbride Road forms the minor arm.

Figure 9. Beech Road / Kilbride Road Junction

3.4.4 Kilbride Road is a single carriageway road, with a speed limit of 50km/h. It runs east-west between Beech Road and the Avoca River Business Park, at which point the public road ends.

Figure 10. View of Kilbride Road, travelling west

3.1 Traffic Flows

3.1.1 As part of a suite of data collection, Junction Turning Counts (JTC's) were collected at the following junctions (as shown in **Figure 10**), on Tuesday, September 3rd, 2024:

- M11 / R772 roundabouts (north and south roundabouts and slips).
- R772 Dublin Rd / L2180 Beech Rd priority junction.
- R772 Dublin Rd / De Wadden Drive priority junction.
- R772 Dublin Rd / R750 Sea Rd priority junction.
- R772 / North Quay roundabout junction.
- R772 Bridge St / Main St / Lower Main St priority junction.

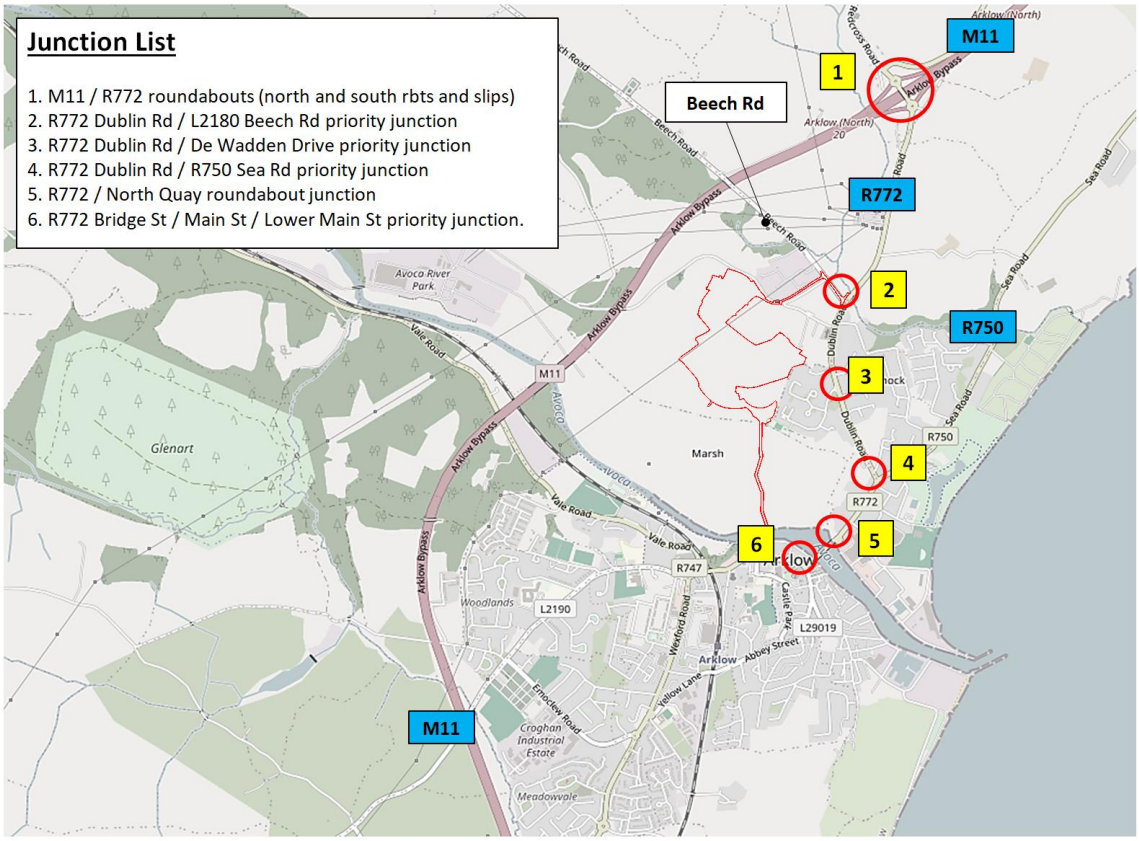


Figure 11. JTC Survey Locations

3.1.2 The identified network peak hours were;

- AM Peak: 08:15 – 09:15.
- PM Peak: 16:45 – 17:45.

3.1.3 Recorded traffic flows for the AM and PM peak hours are shown in **Figure 12** and **Figure 13**. Turn Count diagrams for every surveyed and modelled scenario are provided in **Appendix A**.

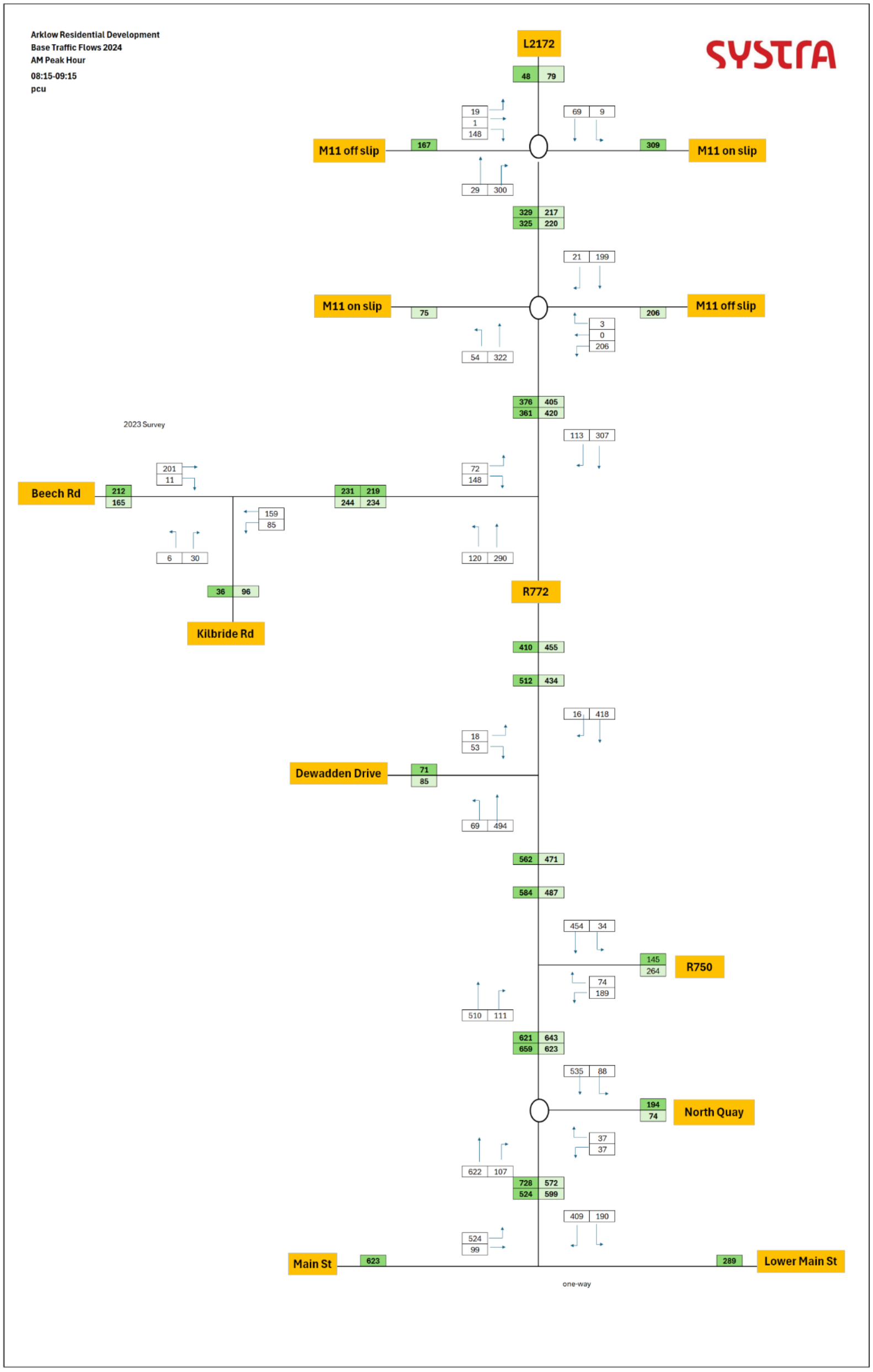


Figure 12. Base 2024 AM Peak Hour traffic flows (08:15 – 09:15, pcu)

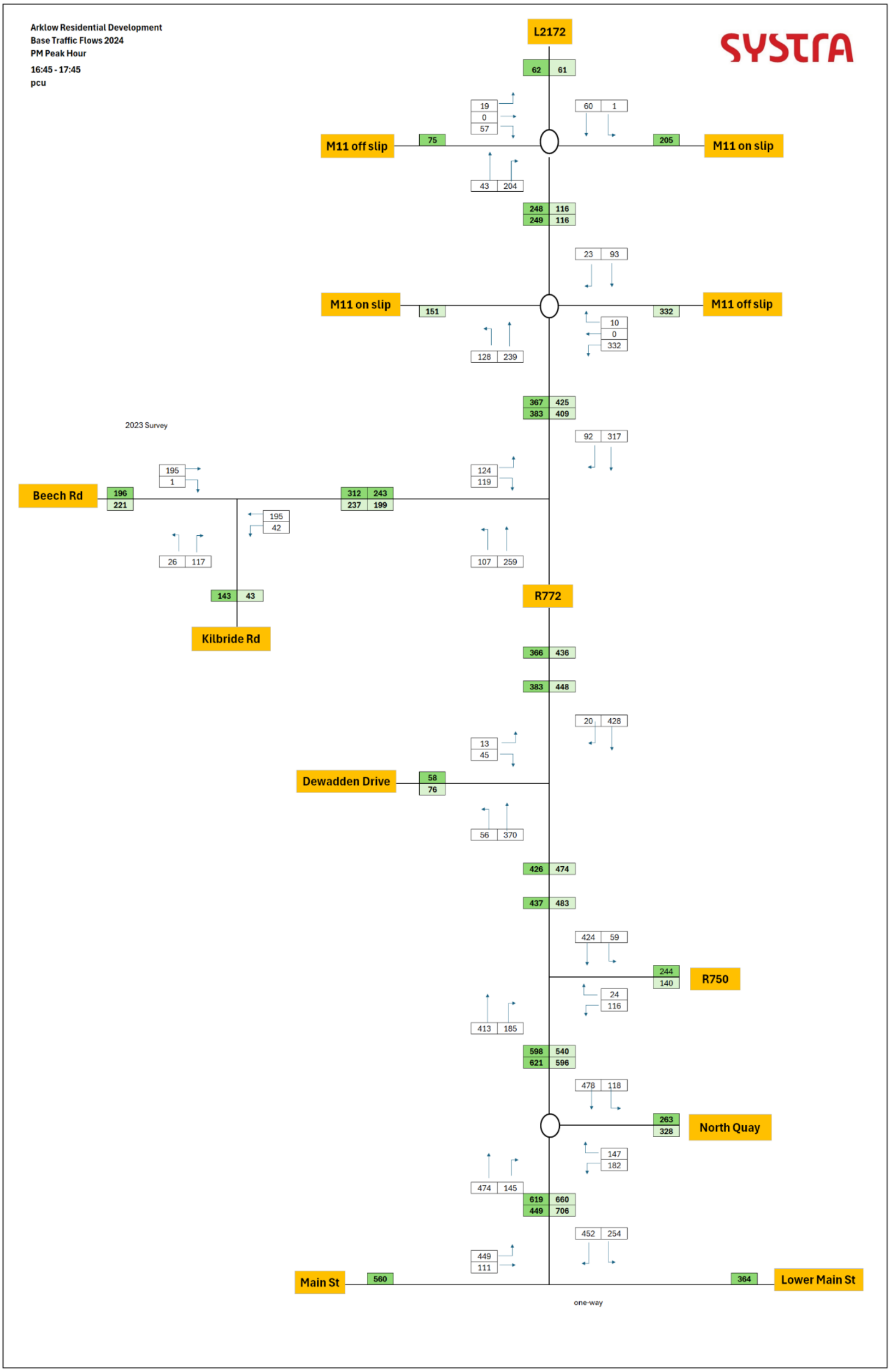


Figure 13. Base 2024 PM Peak Hour traffic flows (16:45 – 17:45, pcu)

Automatic Traffic Counts

3.1.4 An Automatic Traffic Counter (ATC) was placed on R772 Dublin Road, to the south of Beech Road. It recorded hourly traffic flow, composition and speeds for a 7-day period, commencing on 2nd September 2024.

3.1.5 The recorded two-way average weekday flow was 10,846 vehicles per day. **Figure 14** shows the 24-hour weekday flow profiles.

Figure 14. R772 Dublin Road ATC – Average Weekday Flow Profile

3.1.6 **Figure 14** shows that northbound flows peaked around 3pm, at just over 450 vehicles per hour. Southbound flows peaked slightly later, around 5pm at just under 450 vehicles per hour. Overall the observed traffic flows are slightly unusual, in that the flows are not particularly tidal (one-way in the morning, and the other direction in the afternoon). The southbound flow follows a similar patterns to the northbound flow, but is offset by around two hours.

3.1.7 **Table 1** shows the total number of vehicles recorded on each day of the survey.

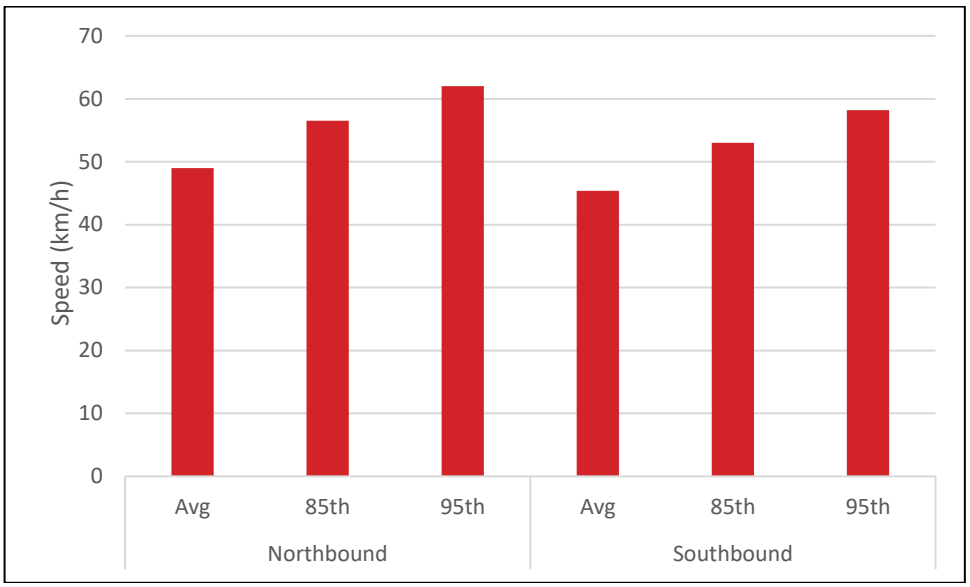
Table 1. R772 Dublin Road ATC – Daily Totals

Day	NB	SB	Total
Mon	5,167	4,883	10,050
Tue	5,515	5,355	10,870
Wed	5,513	5,274	10,787
Thur	5,619	5,293	10,912
Fri	6,066	5,547	11,613
Sat	4,845	4,689	9,534
Sun	4,497	4,386	8,883
5 day ave	5,576	5,270	10,846
7 day ave	5,317	5,061	10,378

3.1.8 The JTC surveys were undertaken on Tuesday 3rd September. **Table 1** shows that recorded flows on this day were typical of those recorded over the course of the week, being slightly higher than Monday and Wednesday, and slightly lower than Thursday and Friday. Traffic flows over the weekend were noticeably lower than during the week.

3.1.9 **Figure 15** indicates the observed speed profile on R772 Dublin Road, which has a posted speed limit of 50km/h at this location.

Figure 15. R772 Dublin Road ATC – Speed Profile



3.1.10 The 85th percentile recorded speeds were:

- Northbound - 56.5km/h.
- Southbound – 53.0km/h.

3.1.11 In total, just under 35% of drivers were observed breaking the posted speed limit of 50km/h.

3.2 Future Network Proposals

3.2.1 As part of the proposals for the consented school campus (Ref: 22/213), a new access road will be constructed, which will run south from Kilbride Road into the proposed development site. Kilbride Road would be realigned, so that the new school access will have priority over Kilbride Road, which will form the minor arm of a priority junction, as shown in **Figure 16.**

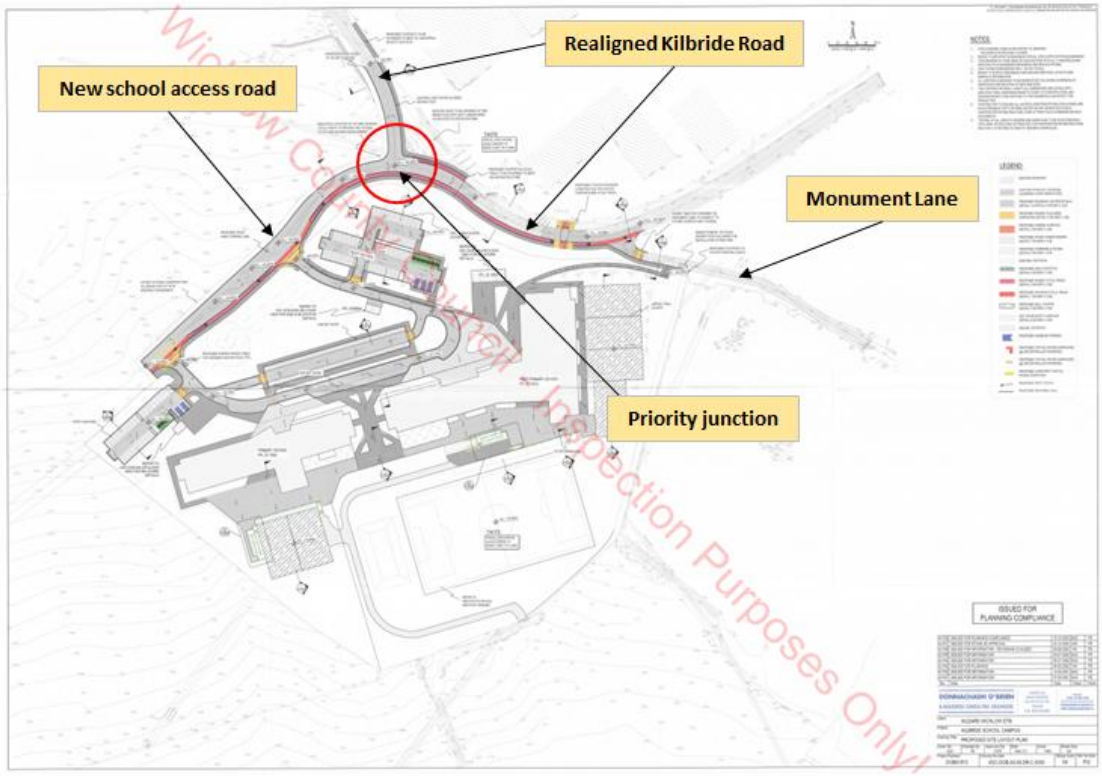


Figure 16. School Access Proposal

This new school access road is intended to form the first part of the future IT5 'Western Distributor Route' alignment, as envisaged in the Arklow LAP.

3.3 Future Transport Initiatives

3.3.1 The Arklow Local Area Plan (LAP) states that *'Traffic flows on a number of the main routes within the town centre are constrained due to the restricted capacity of the junctions.'* Within the town there is currently a single crossing of the Avoca River, via the R672, that links the northern and southern sides of the town. The alternative is to travel between M11 Junctions 20 and 21 which are located to the north and south of Arklow town, but this is a much longer route.

3.3.2 **Objective IT5** of the current LAP identifies a requirement for a 'Western Distributor Route' (WDR) to be constructed through the Kilbride lands, to incorporate a new river crossing and to link Kilbride to the Vale Road, Lamberton Avenue and the Coolgreaney Road. This is intended to alleviate traffic congestion on the existing R672 Nineteen Arches Bridge, which is the single river crossing within Arklow town.

3.3.3 The WDR also allows for a potential future additional interchange on the M11 as identified as **Objective IT6** in the current LAP and as a Strategic Roads Objective in the Wicklow County Development Plan (2022-2028). Both IT5 and IT6 are shown on **Figure 17**.

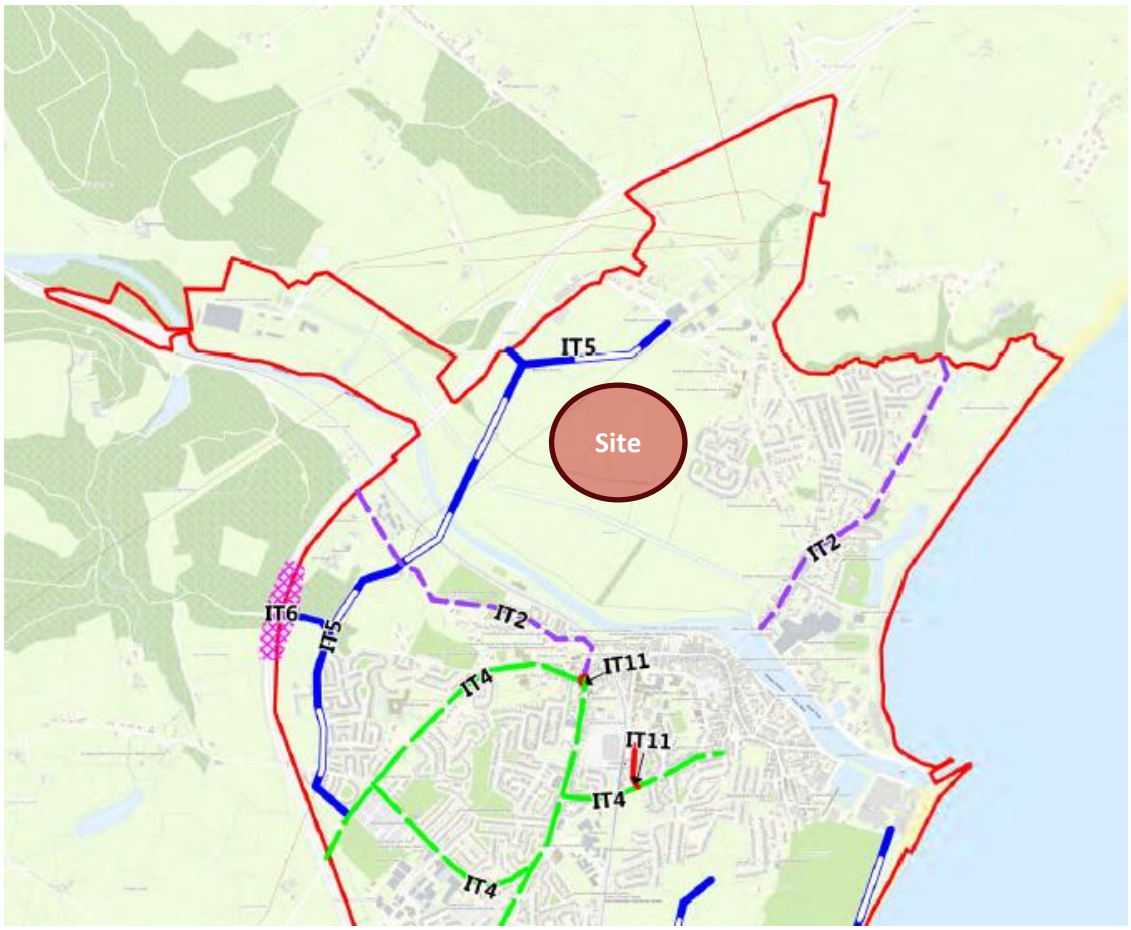


Figure 17. Transport Infrastructure Objectives IT5 & IT6 (Arklow LAP)

3.3.4 The WDR fulfils a wide range of local and strategic requirements

- It forms part of initial access to the Educational Campus and the Kilbride lands, from the L6179 Kilbride Road to the north.
- It will connect to a potential new bridge crossing of the Avoca River when implemented, and onwards to connect to existing roads to the south-west of Arklow Town.
- It will provide additional resilience and capacity on the transport network (for all modes) within Arklow and support opportunities to reallocate road space within the town centre core.
- It will be suitable to accommodate local bus services within Arklow Town, which may be provided in line with future growth of the town.

3.4 Greater Dublin Area Cycle Network Plan (2022)

3.4.1 The NTA's Greater Dublin Area (GDA) Cycle Network Plan (2022) includes proposals for cycle facilities within Arklow town, and specifically in the area of the development site, as shown in **Figure 18**.

Figure 18. GDA Cycle Network Plan (2022) – Site Context (indicative AAP3 area shown in red)

3.4.2 The GDA cycle network plan envisages Kilbride Road and Beech Road as Secondary cycle routes, along with R772 Dublin Road.

3.4.3 It envisages that the Avoca Marsh Trail, which runs along the site's southern boundary, will become a Greenway that will extend to meet R772 Dublin Road between Seaview Avenue and North Quay.

3.4.4 The boardwalk and bridge connection, which will be provided as part of the development, is not included within GDA Cycle Network, but it will form an important part of the Arklow cycle network, providing a high-quality segregated pedestrian and cycle connection through to the Avoca Marsh trail, and across the Avoca River to connect to Main Street within the town centre.

3.4.5 Similarly, the IT5 Western Distributor Route is not included within the GDA Cycle Network but will also further improve walking and cycling connections in the area.

3.5 Arklow to Shillelagh Greenway route

3.5.1 The Arklow to Shillelagh Greenway is proposed to route along the southern side of the Avoca River, along the waterfront. The emerging preferred route of the Greenway in the context of the site is shown below. This is expected to progress to detailed design in 2024/2025.

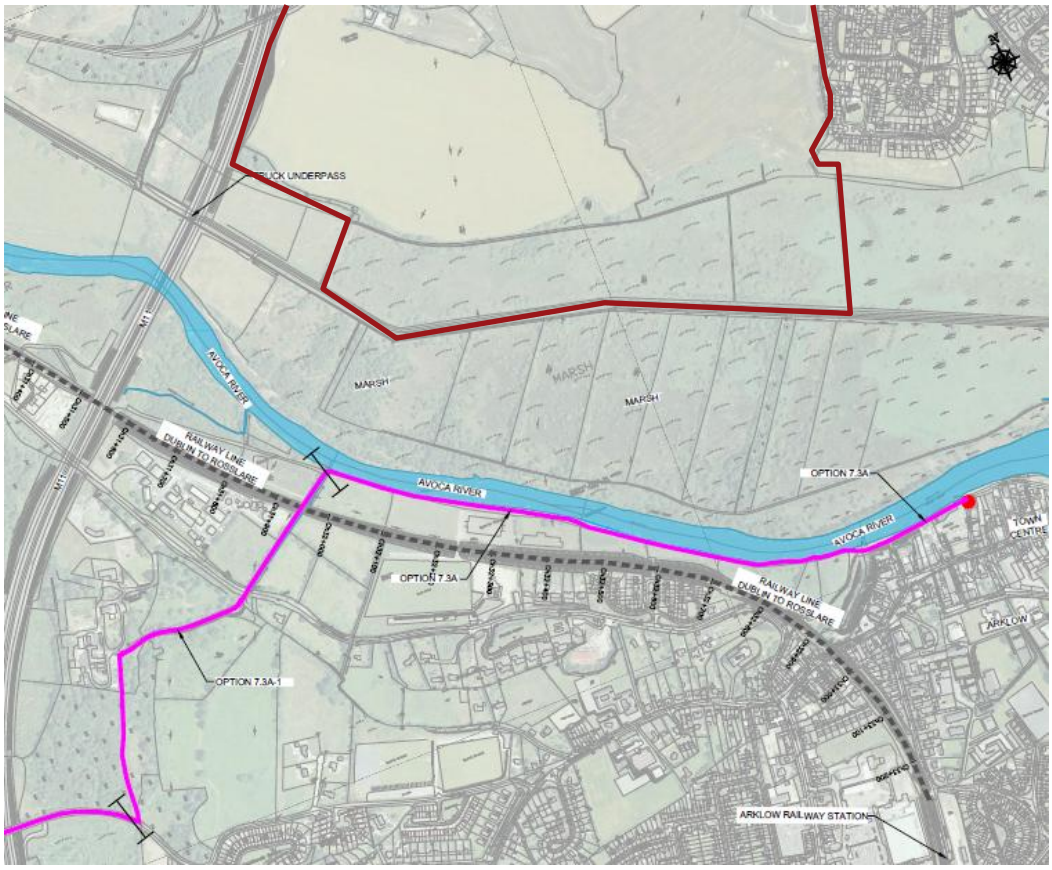


Figure 19. Arklow to Shillelagh Greenway – Emerging Preferred Route (AAP3 boundary shown in red)

4. PROPOSED DEVELOPMENT

4.1 Phase 1 Development

Overview

4.1.1 The Phase 1 developments would provide a total of 666 residential units (this excludes the consented 84no. units covered by application Ref. 23/745, labelled as Phase 1A), comprising a mixture of detached, semi-detached and terraced properties. The proposed layout is shown in **Figure 20.** A full-size Site Plan is provided in **Appendix B.**

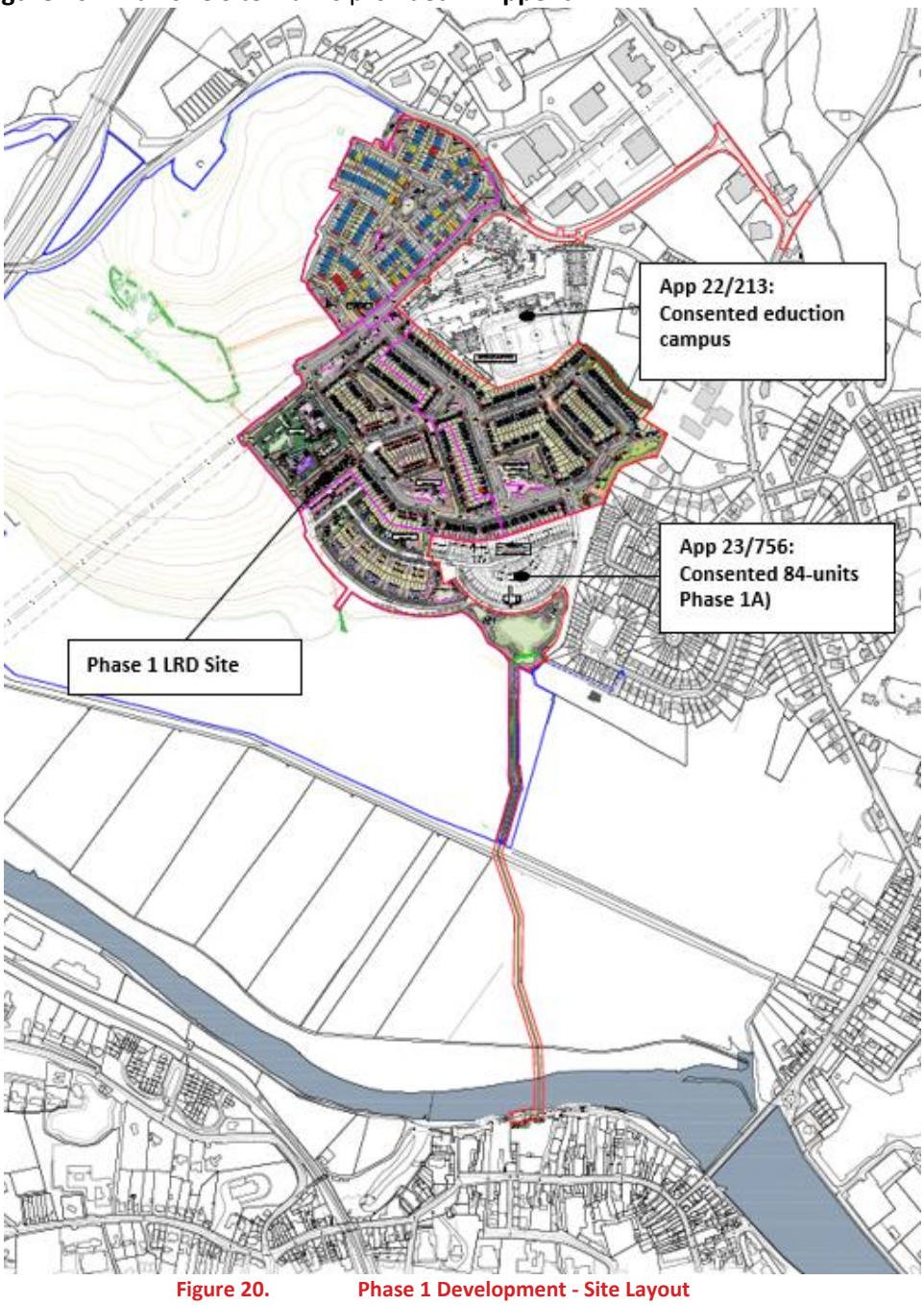


Figure 20. Phase 1 Development - Site Layout

4.1.2 The following breakdown of residential unit types (666 in total) is proposed:

- 100 two-bedroom houses;
- 317 three-bedroom houses;
- 161 four-bedroom houses;
- 24 one-bedroom apartments;
- 51 two-bedroom apartments; and
- 13 three-bedroom apartments;

4.1.3 In addition to the residential properties, the development will contain a Local Centre (located in the west of the site), which will include:

- Six commercial / medical / community use units, with a combined GFA of 1,240m^2; and
- A 1,095m^2 crèche.

4.1.4 The main features of the site design from a transport perspective are:

- Vehicle access will be taken from Kilbride Road, which will be realigned and have the existing priority changed, so that the link into the Kilbride Education Campus and Phase 1 access road becomes the priority route.
- The majority of traffic to and from the site will travel via the R772 Dublin Road / Beech Road priority junction. The priority junction will support the first 113 units on site, but will be upgraded to a signalised junction as part of later phases of development.
- The new link that will run through the site, and the sections of Kilbride Road and Beech Road will be constructed to Regional Road standard and will form the first part of the IT5 Western Distributor Route proposed in the Arklow LAP. Upgrades to the L6179 to provide pedestrian facilities are also included.
- Two new pedestrian/cyclist links connecting into Arklow Town Centre are proposed:
  - Via the Marshland sports club and through into Avondale Crescent; and
  - Via a new boardwalk and pedestrian/cycle bridge across the marsh, and over the Avoca River to meet the south bank, and then continuing south on to Main Street.
- The new Link Road has been designed to accommodate a future bus route, if implemented.
- The site layout will allow for the future extension of the IT5 Link Road, ultimately ensuring that in the longer-term the full implementation of the Western Distributor Road can be facilitated, including a crossing of the Avoca River.
- The internal site layout has been designed in accordance with the Design Manual for Roads and Streets (DMURS), and the Cycle Design Manual (2023).

4.2 Travel by Foot and Cycle

4.2.1 There will be three pedestrian/cycle access points into the development:

- Via the main site access point at the realigned Kilbride Link Road/main access junction;

- Via a new shared facility in the south of the site which will connect into Avondale Crescent; and
- Via a new boardwalk and bridge across the marsh, and over the Avoca River to meet the south bank, and then on to Main Street.

4.2.2 It is envisaged that the majority of walking and cycling trips from the site will be to Arklow town centre to the south. **Figure 21** shows that the proposed Boardwalk will provide an extremely quick and convenient route for residents to access the town centre and railway station, as well as providing a direct route for pupils who live south of the Avoca River to access the Kilbridge Education Campus, without needing to walk along the R772 Dublin Road.

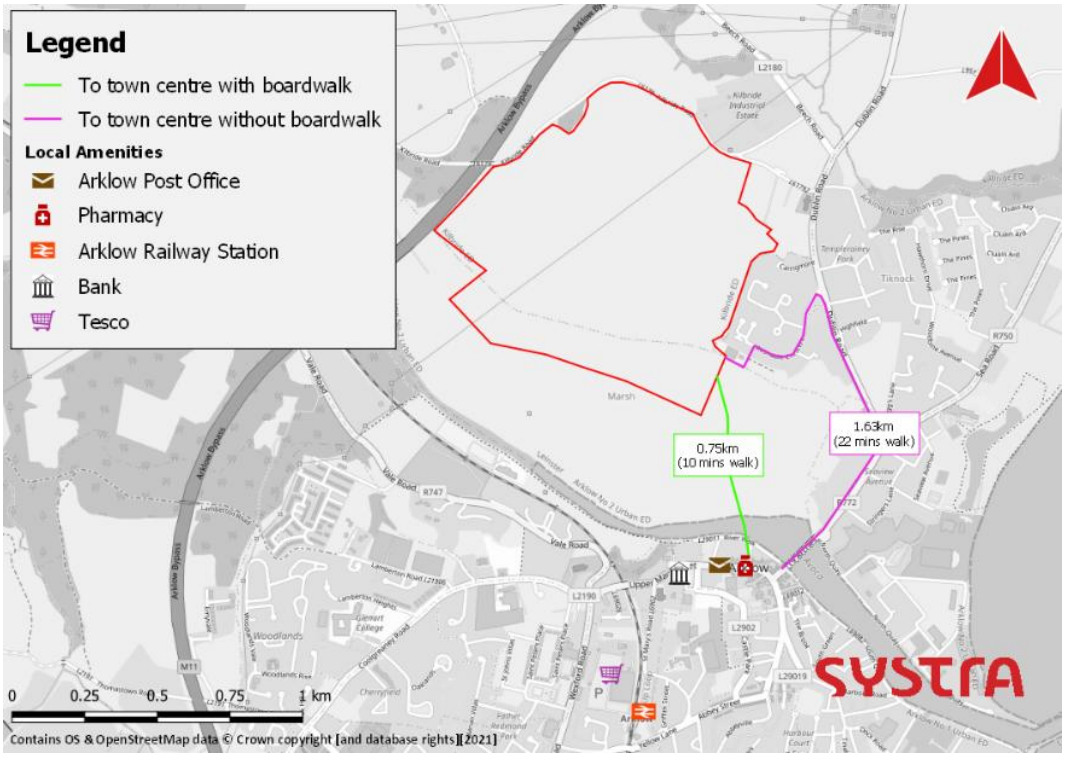


Figure 21. Future walk times between AAP3 lands and town centre

4.2.3 The **internal site design** promotes the travel hierarchy set out in DMURS, where non-motorised modes are prioritised over vehicles.

4.2.4 Segregated, uni-directional cycle tracks will run in both directions for the full length of the Link Road, between Kilbride Road and the western boundary of the site. When the Western Distributor Road progresses, these cycle lanes will be extended along the WDR. These are shown in **Figure 22.**

Figure 22. Segregated cycle lanes on the Link Road

4.2.5 Segregated cycle lanes will also be provided on both sides of the internal access road that runs south-east from the Link Road to meet both the Avondale Crescent and Boardwalk walking / cycling access points. These are shown in **Figure 23.**

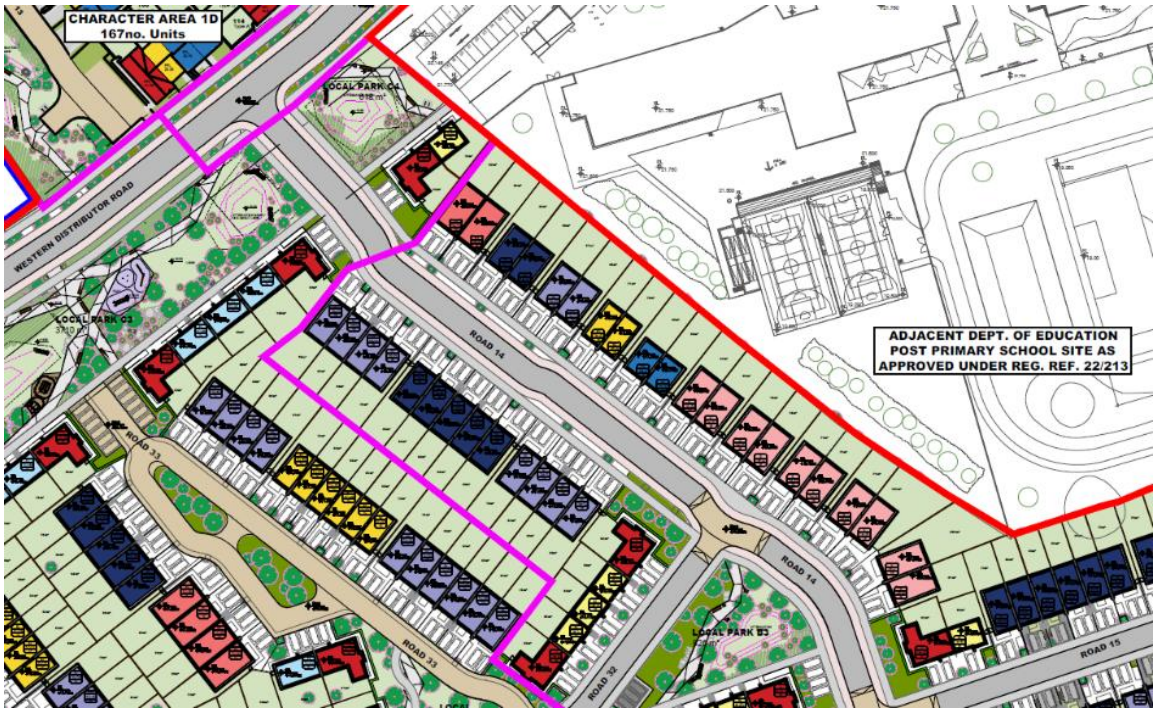


Figure 23. Continuation of cycle lanes south-east from Link Road

4.2.6 A comprehensive network of footways will be provided within the site. Away from the Link Road, raised entry treatments will be provided at all internal junctions, to provide traffic calming and safe places for pedestrians to cross. These are shown in **Figure 24.**

Figure 24. Typical footway network, raised junctions and shared spaces

4.2.7 As also shown in **Figure 24**, these internal quieter streets will function as 'shared spaces' between pedestrians, cyclists and vehicles.

4.2.8 The overall effect of these measures will be to provide a safe and attractive network of pathways that are convenient for pedestrians and cyclists to travel to, from and within the development.

4.1 Cycle Parking

4.1.1 WCC cycle parking standards are set out in **Table 2** below.

Table 2. WCC Cycle Parking Standards

USE CLASS	CYCLE PARKING STANDARD
Residential Units	1 space per bedroom + 1 visitor space per 5 units
Shops	1 space for every 10 car spaces

4.1.2 A total of 266 cycle parking spaces will be provided, in excess of the 244 spaces required by WCC standards. A breakdown of provision is shown in **Table 3**.

Table 3. Cycle Parking Provision

BIKE PARKING SPACES		
Location	**Required**	**Provided**
1A DUPLEX RESIDENTS' SPACES (ENCLOSED TWO-TIER BIKE RACKS) 1 bike per 1 bed unit (12 x 1 = 12no.); 2 bikes per 2 bed unit (12 x 2 = 24no.)	36	36
1A DUPLEX VISITORS SPACES (ENCLOSED TWO-TIER BIKE RACKS) 1no. visitor bike parking space per 2 duplex units (24no./2 = 12)	12	12
1C DUPLEX RESIDENTS' SPACES (ENCLOSED TWO-TIER BIKE RACKS) 2 bikes per 2 bed unit (13 x 2 = 26no.); 3 bikes per 3 bed unit (13 x 3 = 39no.)	65	70
1C DUPLEX VISITORS SPACES (EXTERNAL SHEFFIELD STANDS) 1no. visitor bike parking space per 2 duplex units (26no./2 = 13)	13	14
LOCAL CENTRE RESIDENTS' SPACES (ENCLOSED TWO-TIER RACKS) 1no. bike per bedroom. (1-bed unit x 12 = 12no.) (2-bed unit x 26 =52no.)	64	72
LOCAL CENTRE VISITORS' SPACES (EXTERNAL SHEFFIELD STANDS) - Residential: 1no. space per 5 units (38/5 = 7.6) - Retail: 1no. space per 10 car spaces (63/10 = 6.3) - Créche: 0.5no. per staff member (39/2=19.5) +1no. per 10 children (200/10=20) Total required: 7.6 + 6.3 + 19.5 + 20 = 53.4	54	62
TOTAL NO. OF BIKE SPACES	**244**	**266**
Bike parking includes:	**Provided**	**%**
No. of spaces with electric bike charging facilities	53	20.0%
Bike parking includes:	**Provided**	**%**
Universal access bicycle spaces - Duplex residents	10	9.4%
Universal access bicycle spaces - Local Centre residents	4	5.6%
Universal access bicycle spaces - Local Centre visitors	8	12.9%
Universal Access bicycle parking - TOTAL	**22**	**8.3%**

4.1.3 **Table 3** shows that a mixture of cycle parking will be provided for residents, visitors and staff across the different land-uses within the site. Electric bike charging facilities will be provided at 53 spaces, and 22 cycle parking spaces will be designed as Universal Access spaces.

4.2 Vehicle Access

Access junctions

4.2.1 Vehicle access will be taken from Kilbride Road, which will be realigned and have the existing priority changed, so that the link into the Kilbride Education Campus and Phase 1 site becomes the priority route.

4.2.2 The majority of traffic to and from the site will travel via the R772 Dublin Road / Beech Road priority junction. For the initial phase of the development (113 units), this will be retained as a priority junction. To support further phases of development beyond this, the priority junction will be upgraded to a signalised junction, as shown in **Figure 25**. The full drawing is provided as DWG 2432-DOB-XX-SI-DR-C-0600 that accompanies the application.

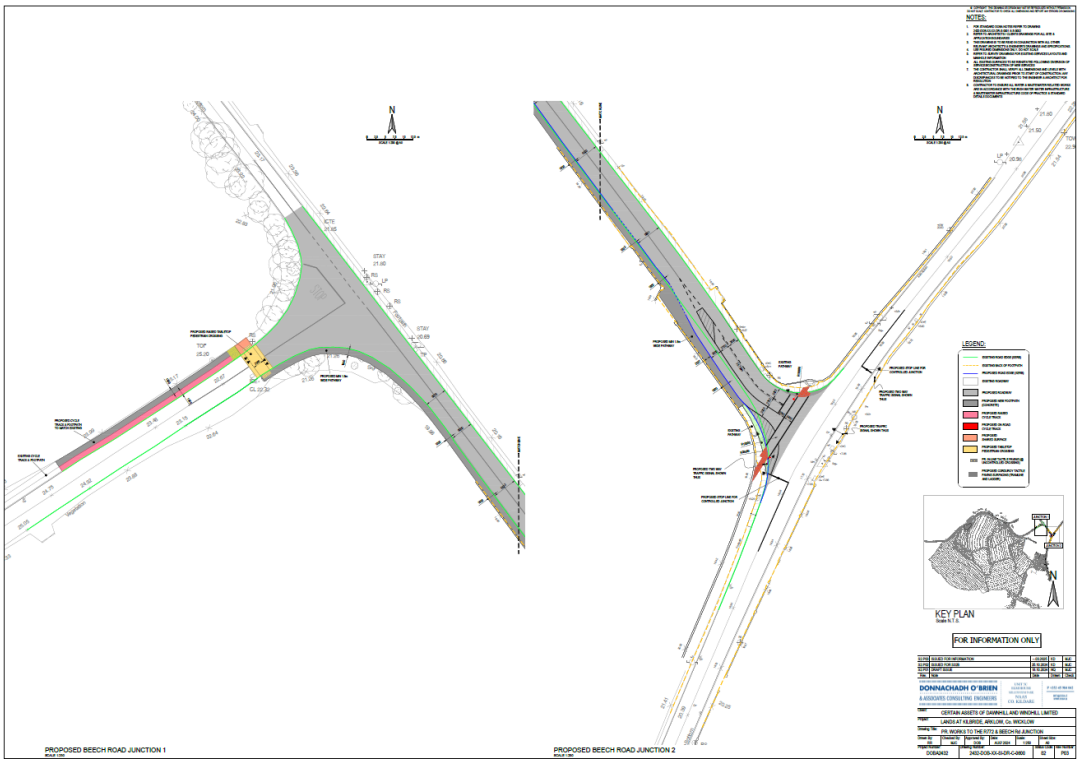


Figure 25. Proposed R772 Dublin Road / Beech Road signalised layout

4.2.3 The proposed signalised layout will provide:

- Single lane approaches on both arms of the R772, with space within the junction for 1-2 vehicles turning right into Beech Road to wait without blocking southbound traffic on the R772;
- A single lane plus 25m flare approach on Beech Road; and
- A pedestrian crossing across the Beech Road arm of the junction. It has been assumed that this would be called very infrequently throughout the day, as there is predicted to be little pedestrian demand to cross Beech Road, even with the School and Development in place. Pedestrian access to both the school and residential development will be taken through the south and south-east of the development site.

4.2.4 Junction capacity modelling is presented in **Section 6** of this TTA.

Road Hierarchy

4.2.5 **Figure 24** shows the proposed road hierarchy within the site. This comprises:

- The minimum 6.5m-wide Link Road, which will ultimately become a Regional Road, and bus route, linking R772 Dublin Road with the town centre;
- 6m-wide arterial streets;
- 5.5m-wide Local Streets, with minimum raised 2m footpaths, and on-street parking; and
- Home Zones with Shared Surfaces, to promote more liveable streets.

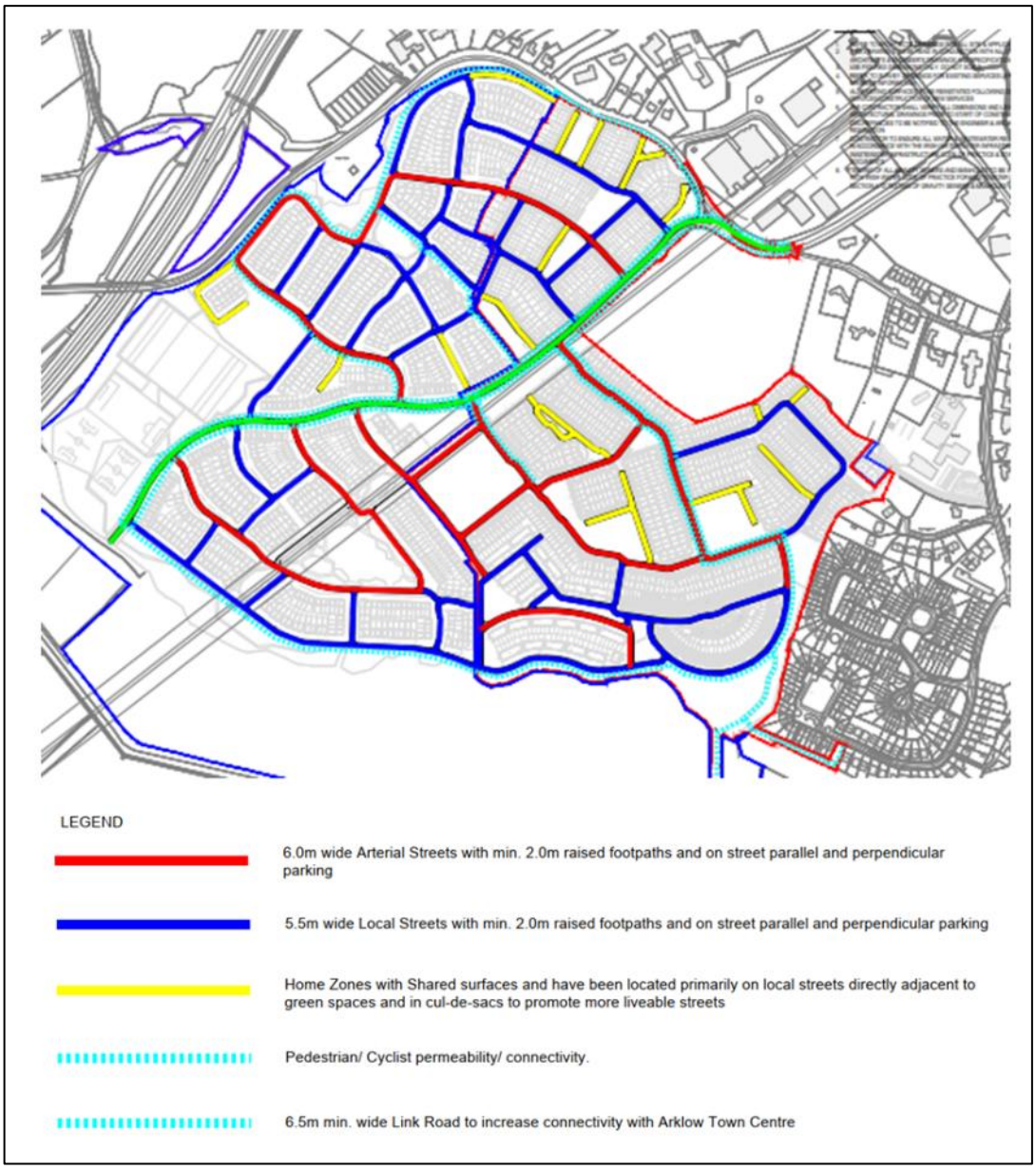


Figure 26. Road Hierarchy (full masterplan lands)

4.3 Car Parking

4.3.1 The development will provide 1,185 parking spaces, of which:

- 948 will be in-curtilage residential spaces;
- 178 will be off-curtilage residential spaces; and
- 59 will be public/shared spaces around the Local Centre.

4.3.2 Residential car parking will be provided at a ratio of:

- 1.8 spaces for the 578 2, 3 and 4-bedroomed houses on sites; and
- 1 space per unit for the 88 apartments / duplexes.

4.3.3 36 spaces (20% of the total of off-curtilage residential spaces) will have EV charging, and 12 spaces (20%) of public parking spaces will have EV charging.

4.3.4 Across the off-curtilage spaces proposed as part of the development, a total of 10 Universal parking spaces will be provided (5.6% of total provision), with a further 3 spaces provided as part of the public/shared parking spaces (5.1% of total provision).

4.4 Local Centre

4.4.1 The Local Centre is shown in **Figure 25**.

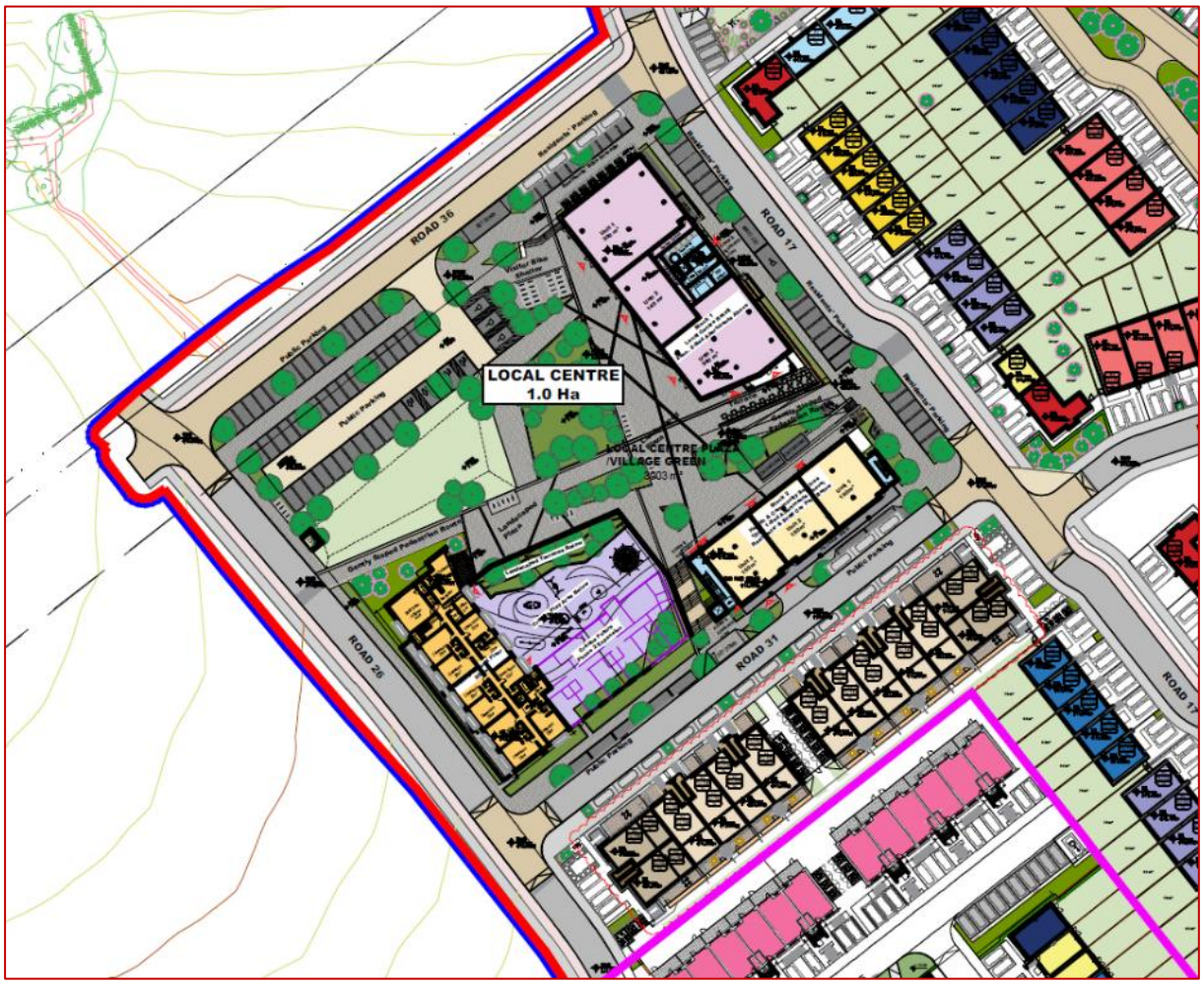


Figure 27. Local Centre

4.4.2 The Centre will be focused around a landscaped central area, which will incorporate two Mobility Hubs. It is envisaged that the Mobility Hubs will provide standard and EV cycle hire, bike washing and maintenance stations and parcel lockers.

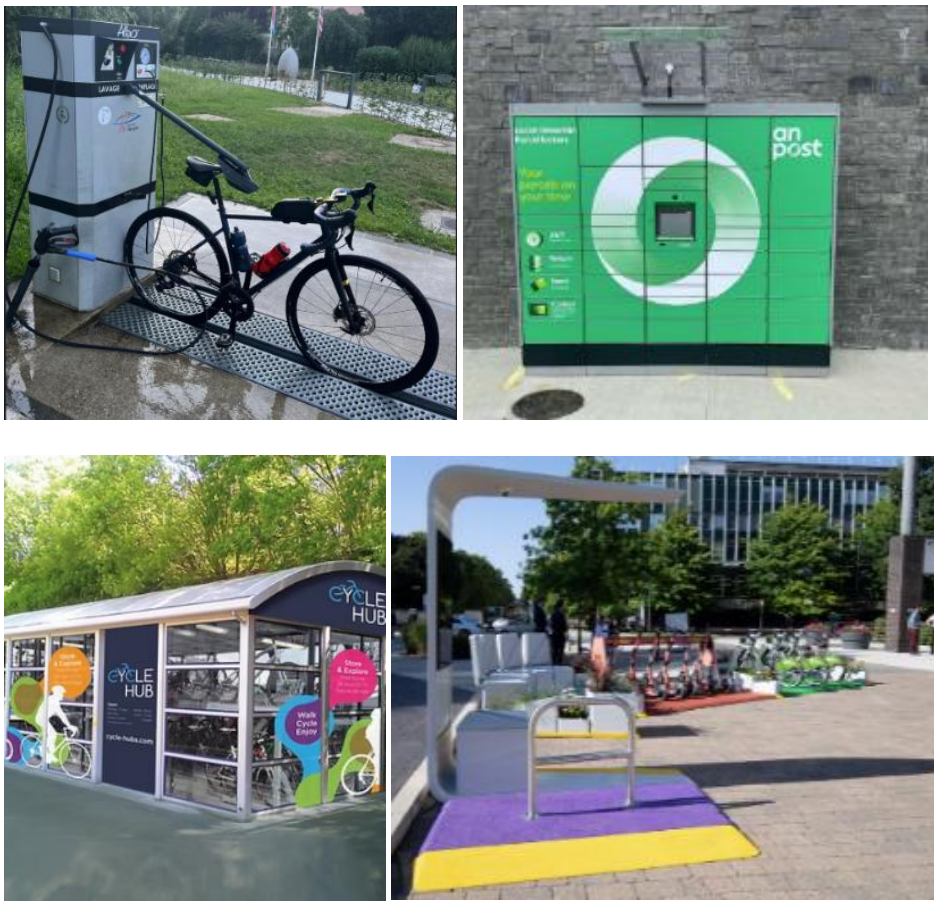


Figure 28. Potential/Indicative Mobility Hub Facilities

4.4.3 Visitor cycle parking will be provided at Sheffield style stands at several locations within the Local Centre:

- Outside the entrance to the crèche;
- To the east of the Health / Community units;
- On the western periphery of the Local Centre;
- Within the central landscaped area; and
- Cycle parking for Centre staff will be provided within an internal cycle store contained within the central Retail Unit.

4.4.4 The overall aim is to make cycling to and from the Local Centre the easiest and most convenient means of travel for residents within the overall site.

4.4.5 Car parking will be provided as follows:

- Within a small car park in the north-west of the Local Centre site;
- Parallel, kerbside spaces will be provided on the road to the north of the Centre, along with a set-down area for the Retail Units; and
- There will be a further 6 parking spaces servicing the crèche, which will be provided along the north kerb of the adjoining road.

4.4.6 The Retail Units will be serviced from their rear (from the road which runs to the east of the Centre).

4.5 Outline Mobility Management Plan

4.5.1 An Outline Mobility Management Plan (OMMP) has been prepared by SYSTRA and is presented later within this report, which sets out how active travel and sustainable travel will be encourage and promoted within the site.

5. TRIP GENERATION & DISTRIBUTION

5.1 Introduction

5.1.1 This section of the Traffic & Transport Assessment sets out the proposed approach towards trip generation and distribution within the assessment.

5.2 Development Phasing

5.2.1 The following indicative phasing is proposed within the overall Phase 1 development:

- **Phase 1A (2027)** – 113 units (including the consented 84 units);
- **Phase 1B (2032)** – an additional 387 units, bringing the total to 500 units. The Local Centre would be constructed in this Phase, along with the Avoca Boardwalk link and town centre bridge; and
- **Phase 1C (2042)** – the remaining 250 units, bringing the total to 750 units.

5.3 Trip Generation

5.3.1 Within the modelling exercise, travel demands have been assumed to come wholly from the residential element of the development.

5.3.2 Although the Local Centre will generate a small amount of external trips, the vast majority of travel demand to / from the centre is expected to come from within the site, and therefore these trips have been assumed to be either pass-by trips (people travelling to or from the centre as part of another journey), or walking and cycling trips retained within the site.

5.3.3 The TRICS database has been used (v7.11.1) to establish trip rates for the site. Person trips rates for the following Land Uses have been extracted, and are presented in **Table 4**:

- 03A: Residential: Houses Privately Owned; and
- 03C: Residential: Flats Privately Owned.

5.3.4 In order to generate as big a sample size as possible, all regions across the UK and Ireland have been considered, with the exception of Greater London. The full TRICS report is provided in **Appendix C.**

Table 4. Person Trip Rates (per unit)

Time	House People Trip Rates			Flats People Trip Rates		
	Inbound	Outbound	Total	Inbound	Outbound	Total
07:00-08:00	0.106	0.482	0.588	0.061	0.315	0.376
08:00-09:00	**0.217**	**0.747**	**0.964**	**0.093**	**0.462**	**0.555**
09:00-10:00	0.196	0.248	0.444	0.166	0.259	0.425
10:00-11:00	0.162	0.201	0.363	0.155	0.203	0.358
11:00-12:00	0.175	0.197	0.372	0.119	0.195	0.314
12:00-13:00	0.210	0.206	0.416	0.177	0.174	0.351
13:00-14:00	0.215	0.189	0.404	0.146	0.172	0.318
14:00-15:00	0.230	0.243	0.473	0.180	0.176	0.356
15:00-16:00	0.498	0.254	0.752	0.259	0.139	0.398
16:00-17:00	0.487	0.246	0.733	0.271	0.131	0.402
17:00-18:00	**0.570**	**0.267**	**0.837**	**0.360**	**0.160**	**0.520**
18:00-19:00	0.463	0.260	0.723	0.292	0.166	0.458
TOTAL	**3.529**	**3.540**	**7.069**	**2.279**	**2.552**	**4.831**

5.3.5 **Table 4** suggests that the peak travel hours for the development will be 08:00-09:00 and 17:00 – 18:00. **Table 5** presents the resultant number of person trips, based upon the full quantum of development of 750 units.

Table 5. Resultant Person Trips

Time	House Person Trip			Flats Person Trip			Total Person Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
07:00-08:00	70	319	389	5	28	33	76	347	422
08:00-09:00	**144**	**495**	**638**	**8**	**41**	**49**	**152**	**535**	**687**
09:00-10:00	130	164	294	15	23	37	144	187	331
10:00-11:00	107	133	240	14	18	32	121	151	272
11:00-12:00	116	130	246	10	17	28	126	148	274
12:00-13:00	139	136	275	16	15	31	155	152	306
13:00-14:00	142	125	267	13	15	28	155	140	295
14:00-15:00	152	161	313	16	15	31	168	176	344
15:00-16:00	330	168	498	23	12	35	352	180	533
16:00-17:00	322	163	485	24	12	35	346	174	521
17:00-18:00	**377**	**177**	**554**	**32**	**14**	**46**	**409**	**191**	**600**
18:00-19:00	307	172	479	26	15	40	332	187	519
TOTAL	**2,336**	**2,343**	**4,680**	**201**	**225**	**425**	**2,537**	**2,568**	**5,105**

5.3.6 **Table 5** shows that the development is expected to generate over 5,100 two-way trips over the course of a typical 12-hour day, with 687 two-way person trips in the AM peak hour, and 600 two-way person trips in the PM peak hour.

5.4 Modal Split

Overview

5.4.1 Within the TA, two different modal splits have been considered. These are set out in the following section.

1. Modal Split based upon Census 2022 data

5.4.2 This approach was used to calculate the baseline modal split from the site, based upon existing car use in areas in the vicinity, existing walking and cycling infrastructure, and public

transport services. **It therefore directly relates to recorded travel patterns from the local area and presents a pessimistic view of future sustainable to and from the site, assuming no modal shift in the future.**

5.4.3 The recorded 2022 modal split for the Census 'Small Area' which the site sits within (Ref. 257079010) is presented in **Table 6**. This is based on a total of 1,564 responses to the Census.

Table 6. Small Area Statistics – Journeys to Work + Education Modal Split

Mode	Mode Split		
	Work	School	Work + School Combined
Walking	10%	29%	18%
Cycling	2%	3%	2%
Car Driver	70%	2%	41%
Car Passenger	7%	58%	28%
Bus, minibus or coach	3%	8%	5%
Other	8%	1%	5%
TOTAL	**100%**	**100%**	**100%**

5.4.4 **Table 7** shows that for work-based trips, 70% of journeys are made as a car driver. This falls to 41% when trips to both work and school are considered.

5.4.5 Current levels of cycling and bus use are very low, even when travel to school is considered.

5.4.6 SYSTRA would note that TRICS trip rates capture **all** journeys to and from developments, which includes both work and school trips, so the 'Work and School' combined trip rate is considered to be the most applicable. However, to provide a robust assessment, the 'Work' mode split has been used in the traffic impact assessment.

5.4.7 **The Census 2022 mode split has been used in the traffic impact assessment for Phase 1,** and reflects the situation prior to the Avoca Boardwalk, crèche or Local Centre being built. A sensitivity test at the R772 / Beech Road junction has also been undertaken which shows the effects if the current mode split (70%) was to be retained in Phases 1B and 1C of the development. This is included in **Appendix E**.

2._ Target Modal Split based upon future transport connections

5.4.8 As set out in **Section 4** as part of the development a Boardwalk and shared pedestrian/cycle bridge connection will be provided between the development and the town centre (assumed to be in Phase 2, 2032), greatly improving active travel connections to the site. The practical effects of this will be to:

- Reduce walking time between the site and town centre to around 10 minutes; and
- Reduce cycling time between the site and town centre to less than 5 minutes.

5.4.9 In addition, the Western Distributor Road (WDR), proposed as part of the Arklow LAP, when constructed, will produce a step-change in connectivity between the site and the town centre, and will enable bus services to route directly through the site.

5.4.10 Both the Boardwalk and WDR initiatives will mean that walking, cycling and public transport between the site and the town centre will be faster, and more attractive than at present.

5.4.11 Based on this, SYSTRA has developed a future 'target' modal split which takes account of this increase in non car-based trips. For a robust approach, the starting point of this has been based on the Census 2022 'Work' mode split. This is set out in **Table 7**.

Table 7. Target Mode Split and trips by mode

Mode	Census JTW mode	Target mode split	AM Peak hour		PM Peak hour	
			Inbound	Outbound	Inbound	Outbound
Walking	10%	15%	23	81	62	29
Cycling	2%	6%	9	32	25	12
Car Driver	70%	55%	84	296	226	106
Car Passenger	7%	12%	18	65	49	23
Bus	3%	10%	15	54	41	19
Other	8%	2%	3	11	8	4
TOTAL	**100%**	**100%**	**153**	**539**	**412**	**192**

5.4.12 SYSTRA would note that in terms of 'Car Driver' (which in effect is the number of vehicle trips generated by the development), the target mode share of 55% sits between the Census 'Work' and 'Work and School Combined' calculated car mode share (41% and 70%, respectively).

5.4.13 SYSTRA would also note that the Government's Climate Action Plan (CAP) 2024 targets a 50% reduction in emissions by 2030. It also aims to:

- Reduce the total distance driven across all journeys by **20%.**
- Ensure that walking, cycling and public transport account for **50%** of all journeys.

5.4.14 Given the ambitious nature of the CAP reductions, the increased target mode shares for walking and cycling (+5% and +4% respectively) proposed as part of the target mode split seem modest and achievable, given the site's location and future infrastructure improvements. Bus travel has been assumed to increase from 3% to 10%.

5.4.15 **The 'target' mode split has been used in the traffic impact assessment for Phases 2 and 3**. This reflects construction of the Boardwalk, and the higher proportion of shorter distance trips (more likely to be undertaken on foot or by bike) as a result of the construction of the school, crèche and neighbourhood Centre.

5.5 Committed Developments

5.5.1 A number of other developments were identified as part of a planning history search that may have the potential to cumulatively interact with the proposed development. The majority of these developments are either outside of the area of influence, or sufficiently low-generating in terms of traffic. The principal developments of note as they pertain to the site are outlined below.

5.5.2 This TA specifically considers the additional traffic that will be generated by:

- The consented 84-unit residential development on the site (Phase 1A); and
- Traffic from the consented School campus.

5.5.3 Traffic from the 84-unit residential development has been included in the 750-unit total assessed above.

5.5.4 The predicted volume of School Campus traffic is as set out in the Transport Assessment submitted to accompany that application.

5.5.5 This states that, when fully occupied, the school campus is expected to generate:

- 214 inbound and 154 outbound vehicle trips in the AM network peak hour (08:15 – 09:15); and
- 18 inbound and 28 outbound vehicle trips in the PM network peak hour (17:15 – 18:15).

5.5.6 The school AM peak hour coincides with peak hour on the wider road network in the AM peak, but in the PM peak, school traffic peaks between 15:00 and 16:00, as pupils depart. This is prior to the overall network peak hour between 16:45 and 17:45.

5.5.7 A proportion of demand generated by the residential development and the school will be 'shared demand', comprising of children who live within the site and who go to the school.

5.5.8 To estimate this, SYSTRA has assumed that:

- The 480-space Primary School, and 400 space Secondary School will open in 2030, prior to the completion and opening of Phases 1B and 1C;
- That an average of 2.89 people will live in each residential unit on site. This has been taken from the CSO Census of Population;
- That 12% of the population of the residential development will comprise Primary age children and 8% by secondary age. This has been based on previous projects that SYSTRA has worked on; and
- That 70% of children who live in the residential development will attend the local school campus.

5.5.9 **Table 8** presents the resultant calculations for Phase 1B and Phase 1C of the development, which will be constructed after the schools are open.

Table 8. School Pupils living with the development

Phase	Units	Population	Cumulative Population	No. in primary	No. in secondary	No at local school	
						Primary	Secondary
2032	500	1445	1445	173	116	121	81
2042	750	2168	2168	260	173	182	121

5.5.10 **Table 8** shows that in Phase 1B of the development (2032), it is predicted that 121 primary-age and 81 secondary-age pupils who live within the development will attend the local school. By Phase 1C (2042), it is predicted that this will grow to 182 primary-age pupils, and 121-secondary age pupils.

5.5.11 SYSTRA has used the vehicle trip rates included within the School Campus TA to calculate how many vehicle trips are assumed to be generated by this number of people (which were included in the overall traffic expected to be generated by the school). These have then been subtracted from the overall number of generated vehicles, to reflect the fact that these pupils will either walk or cycle to school, given that they will live close by.

5.5.12 The calculated reduction in vehicle trips is presented in **Table 9.**

Table 9. Residential / School shared trips

2027 (113 units)				2032 (500 units)				2042 (750 units)			
AM		PM		AM		PM		AM		PM	
Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
10	7	1	1	45	32	4	6	67	48	6	9

5.5.13 **Table 9** shows that in 2042, 115 vehicle trips (two-way) in the AM peak hour can be removed from the overall total, representing travel demand that is now contained within the site.

5.5.14 The numbers of vehicle trips removed from each turning movement is shown in the traffic flow diagrams in **Appendix A.**

5.6 Trip Distribution

5.6.1 Trips have been distributed throughout the road network based upon the turning proportions recorded during the 2024 survey. This results in the traffic distributions shown in **Table 10**. This distributed traffic is shown in diagram form in **Appendix A.** To ensure a robust assessment, it has been assumed that all vehicular traffic will access/exit the site via the Dublin Road/Beech Road junction to the north-east (with no traffic assumed to use the Beech Road travelling west towards Avoca).

Table 10. Traffic Distribution

Origin / Destination	AM Peak Hour		PM Peak Hour	
	From	To	From	To
L2712 North of M11	4%	2%	3%	3%
M11 east	14%	20%	22%	14%
M11 west	9%	4%	3%	9%
R750 Sea Road	9%	5%	4%	9%
North Quay	4%	10%	16%	13%
Main Street	59%	41%	52%	34%
Lower Main Street		19%		19%
TOTAL	**100%**	**100%**	**100%**	**100%**

5.6.2 Resultant traffic flows for the residential development and School Campus are also presented in **Appendix A.**

6. TRAFFIC IMPACTS

6.1 Introduction

6.1.1 This section of the TA reports on the results of a threshold assessment, and subsequent junction capacity modelling exercise, which has assessed the impact of the development on the local road network. This considers:

- The percentage increase on road links as a result of the development;
- Existing junction performance;
- The number of vehicle trips generated by the development, and where these trips are likely to arrive from / travel to;
- Traffic from committed developments; and
- An allowance for background traffic growth.

6.2 Assessed Time Periods

6.2.1 The following peak hours have been assessed, as identified in the 2024 surveys:

- AM Peak: 08:15 – 09:15; and
- PM Peak: 16:45 – 17:45.

6.3 Traffic Scenarios

6.3.1 Traffic flows have been calculated for the following scenarios:

- Base 2027 (Year of Opening/YoO).
- Base 2027 + Phase 1A Development (113 units).
- Base 2032 + School (YoO + 5).
- Base 2032 + School + Phase 1B Development (500 units).
- Base 2042 + School (YoO + 15).
- Base 2042 + School + Phase 1C Development (750 units).

6.3.2 The following assumptions have been made in Phase 1A:

- The R772 Dublin Road / Beech Road junction remains as a priority junction;
- Pedestrian access towards the town centre will be possible via Avondale Cresent or via Beech Road/Dublin Road, i.e. the proposed Boardwalk is not constructed in this Phase;
- Phase 1a (The consented 84 residential units) forms part of the 113 units; and
- The Education Campus has not been constructed.

6.3.3 The following assumptions have been made in Phase 1B:

- The R772 Dublin Road / Beech Road junction will be converted to a signalised junction;
- The proposed Boardwalk and Bridge across the Avoca have been constructed, forming a more direct pedestrian / cycle route to the town centre;
- The Local Centre has been constructed;

- An additional 387 residential units are constructed, bringing the overall total to 500 units; and
- The Education Campus has been constructed and is in use.

6.3.4 The following assumptions have been made in Phase 1C:

- An additional 250 residential units are constructed, bringing the overall total to 750 units.

6.3.5 Traffic flow diagrams for each scenario are included in **Appendix A**.

Traffic Growth

6.3.6 Base 2024 traffic flows have been factored to future year flows using guidance set out in the 'Project Appraisal Guidelines for National Roads Unit 5.3', specifically Table 6.2 'Link Based Growth Rates' for County Wicklow. The following combined factors have been calculated, based upon Low Growth Rates (Low Growth has been applied in this instance as the proposed development and adjacent school campus site will account for a substantial portion of envisaged growth in the area):

- 2024 – 2027 (Year of Opening) – 1.05.
- 2024 – 2032 (YoO + 5) – 1.10.
- 2024 – 2042 (YoO + 15) – 1.15.

School Traffic

6.3.7 Traffic generated by the school is as set out in the Transport Assessment accompanying the planning application for that site, and as discussed in **Section 6.4**.

Development Traffic

Development traffic has been added to each Base scenario and is as calculated in **Section 5.** Shared trips, representing pupils who live in the development and attend the school(s), have been removed.

6.4 Threshold Assessment

6.4.1 A threshold assessment has been undertaken at the junctions surveyed by SYSTRA, which compares Base traffic flows (plus school traffic beyond 2032) with and without the different phases of the development.

6.4.2 The results of the AM and PM Threshold Assessments are presented in **Table 12** and **Table 13** respectively.

Table 11. AM Threshold Assessment

Junction	Approach Arm	Base 2032 + School	Base 2042 + School	2027 Dev Traffic	2032 Dev Traffic	2042 Dev Traffic	2027 Dev impact %		2032 Dev impact %		2042 Dev impact %	
R772 / M11 EB slips roundabout	M11 EB off	205	212	2	5	8	1%	2%	3%	7%	4%	10%
	L2172	96	100	1	2	4	1%		3%		4%	
	R772	397	412	12	43	64	4%		11%		16%	
R772 / M11 WB slips roundabout	R772 north	272	282	2	8	12	1%	2%	3%	7%	4%	10%
	M11 WB off	258	267	2	8	12	1%		3%		5%	
	R772 south	454	471	14	50	75	4%		11%		16%	
R772 / Beech Rd priority	R772 Dublin Rd north	524	543	5	16	24	1%	7%	3%	17%	4%	24%
	R772 Dublin Rd south	606	624	11	40	60	3%		7%		10%	
	Beech Rd	396	406	57	196	294	25%		50%		73%	
R772 / R750 priority	R772 Dublin Rd north	652	674	42	146	220	8%	4%	22%	10%	33%	15%
	R750 Sea Rd	310	322	1	5	8	1%		2%		2%	
	R772 Dublin Rd south	818	846	10	35	52	2%		4%		6%	
R772 / A750 North Quay roundabout	R772 Ferrybank	794	822	39	136	204	6%	3%	17%	9%	25%	14%
	North Quay	90	93	1	2	3	1%		2%		3%	
	R772 south	930	962	9	33	49	1%		4%		5%	
Main St / R772 priority	Main Street	813	841	9	33	49	1%	3%	4%	10%	6%	16%
	R772	753	780	34	117	176	5%		16%		23%	

Table 12. PM Threshold Assessment

Junction	Approach Arm	Base 2032 + School	Base 2042 + School	2027 Dev Traffic	2032 Dev Traffic	2042 Dev Traffic	2027 Dev impact %		2032 Dev impact %		2042 Dev impact %	
R772 / M11 EB slips roundabout	M11 EB off	85	88	1	5	7	2%	1%	5%	5%	8%	7%
	L2172	68	70	1	5	7	2%		7%		10%	
	R772	279	290	3	12	17	1%		4%		6%	
R772 / M11 WB slips roundabout	R772 north	131	136	3	9	14	2%	2%	7%	7%	10%	10%
	M11 WB off	369	384	10	33	50	3%		9%		13%	
	R772 south	412	429	5	18	27	1%		4%		6%	
R772 / Beech Rd priority	R772 Dublin Rd north	456	474	12	43	64	3%	6%	9%	19%	13%	27%
	R772 Dublin Rd south	417	433	31	107	161	8%		26%		37%	
	Beech Rd	296	307	20	70	105	8%		24%		34%	
R772 / R750 priority	R772 Dublin Rd north	554	576	15	52	78	3%	4%	9%	12%	14%	17%
	R750 Sea Rd	156	162	2	6	9	1%		4%		5%	
	R772 Dublin Rd south	671	698	29	101	152	5%		15%		22%	
R772 / A750 North Quay roundabout	R772 Ferrybank	677	703	13	46	69	2%	3%	7%	8%	10%	12%
	North Quay	363	377	7	24	36	2%		7%		10%	
	R772 south	694	722	22	78	116	3%		11%		16%	
Main St / R772 priority	Main Street	628	653	22	78	116	4%	2%	12%	8%	18%	12%
	R772	796	827	11	37	55	1%		5%		7%	

6.5 Modelled Junctions

6.5.1 Based upon the 10% threshold at which junction capacity testing is typically required, capacity testing has been undertaken at the following junctions:

- R772 / Beech Road priority junction;
- R772 / R750 Sea Road priority junction;
- R772 / North Quay roundabout; and
- R772 / Main Street / Lower Main Street priority junction.

6.6 Junction Assessment Software

Junctions 11 Modelling

6.6.1 Junctions 11, an industry-standard software package, has been used to test priority junctions and roundabouts.

6.6.2 The modelling reports on the Ratio of Flow Capacity (RFC) and the maximum forecast queue for each give-way movement within the junctions, specifically:

- Minor arm right-left turning movements;
- Major arm right-turning movements into the minor arm; and
- Roundabout approaches.

6.6.3 The RFC of an arm of a junction is one of the principal factors in influencing queues and delays. General engineering design principles, as set out in the DMRB, suggest that when assessing a priority junction or roundabout, RFC levels on a given arm of a junction should not exceed 0.85 in order for that arm to operate within its 'practical' capacity. Should the RFC level exceed 1.0 then the junction is considered to be operating above its 'theoretical' capacity.

6.6.4 When the performance of an arm exceeds 1.0 RFC, the subsequent queue and delay information increases exponentially. In these instances, queue and delay values should not be compared between scenarios, it is enough to identify that the junction is operating significantly over capacity.

LinSig Modelling

6.6.5 LinSig has been used to model signalised junctions.

6.6.6 Geometric parameters have been taken from OS data and proposed layout drawings, and suitable signal phasing and staging has been developed by SYSTRA. Minimum greens and intergreens have been calculated using appropriate standards.

6.6.7 A minimum green time of 7s has been assumed for standard signalised traffic phases, with a minimum green time of 5s for traffic filters and indicative arrows. The minimum green time for pedestrian crossings has been set at 6s. A cycle time of 120s has been assumed for a single cycle junction staging.

6.6.8 The signalised junctions modelled are likely to be MOVA controlled (or similar), which means that phase and cycle times can vary per cycle and are automatically optimised according to

traffic flow and pedestrian demands. To model this effect, cycle times were fixed within LinSig, and signal timings optimised for each scenario.

6.6.9 LinSig results refer to the Degree of Saturation (DoS) and Mean Maximum Queue (MMQ) predicted for each lane at the junction. A DoS of 100% indicates that the lane in question is operating at its theoretical capacity (point of saturation), whilst a DoS of 90% or less indicates that the lane is operating within its practical capacity.

6.6.10 The MMQ represents the maximum queue (in PCUs) within a typical cycle averaged over all the cycles within the modelled time period.

6.6.11 Full model inputs and outputs for both LinSig and Junctions 11 modelling can be provided electronically upon request.

6.7 Construction Phase

6.7.1 Subject to planning, construction is expected to commence prior to the end of 2025 and continue during the phased implementation of the overall development.

6.7.2 The level of construction traffic has been calculated based on the following assumptions:

- During the period of peak construction there will be a maximum of 150 workers on site daily;
- Assuming a robust vehicle occupancy of 1.5 persons per vehicle, this results in 100 inbound vehicle trips and 100 outbound vehicle trips over the course of the day. It is assumed that these will be car / van trips;
- All workers will arrive on site before 07:30, therefore all arrivals are assumed to be between 07:00 and 08:00;
- Departing vehicles are assumed to be distributed across the afternoon and evening as follows:
  - 50% departing before 16:00;
  - 30% departing between 16:00 and 17:00; and
  - 20% departing between 17:00 and 18:00.
- For robustness, it has also been assumed that there will be a nominal inbound and outbound flow of car / van traffic throughout the day associated with unscheduled site visits or small deliveries, etc.;
- General construction traffic is assumed to travel to and from the site in line with prevailing traffic flow distributions on the wider road network, with HGV and delivery vehicles assumed to access the site via the M11 to the north and the R772 Dublin Road only; and
- There will be an average of 3 HGV arrivals and 3 departures per hour between 07:00 and 16:00.

6.7.3 **Table 13** presents the calculated number of construction trips throughout the day.

Table 13. Estimated Construction Traffic

Hour Starting	Cars / vans		HGV		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
07:00	100	10	3	3	**103**	**13**
08:00	10	10	3	3	**13**	**13**
09:00	10	10	3	3	**13**	**13**
10:00	5	10	3	3	**8**	**13**
11:00	5	10	3	3	**8**	**13**
12:00	5	10	3	3	**8**	**13**
13:00	5	10	3	3	**8**	**13**
14:00	10	10	3	3	**13**	**13**
15:00	10	10	3	3	**13**	**13**
16:00	10	50	3	3	**13**	**53**
17:00	10	30	0	0	**10**	**30**
18:00	10	20	0	0	**10**	**20**
TOTAL	**190**	**190**	**30**	**30**	**220**	**220**

6.7.4 **Table 13** shows that there are expected to be a total of around 440 two-way vehicle trips to and from the site across a typical day during the construction period.

6.7.5 The traffic impact at the R772 Dublin Road / Beech Road priority junction has been assessed for the **peak construction hours,** namely 07:00 – 08:00 and 16:00 – 17:00. The results of this assessment are presented in **Table 14**.

Table 14. Dublin Road / Beech Road Peak Construction Trips Junctions 11 Results

Arm	Pre AM peak hour (0700-0800)			Pre PM peak hour (1600-1700)		
	Queue (pcu)	Delay (s)	RFC	Queue (pcu)	Delay (s)	RFC
Base 2027 + Peak Construction Traffic						
Beech Road LT	0.2	8.0	0.13	0.6	12.3	0.35
Beech Road RT	0.2	12.6	0.17	1.0	19.8	0.49
Dublin Road	0.7	10.2	0.33	0.4	6.7	0.20

6.7.6 **Table 14** indicates that during the AM and PM peak hours of construction trips the junction will operate well within capacity. Scheduling of construction working hours to avoid the morning network peak is seen to minimise the potential impact of construction traffic.

6.8 Development Phases 1A, 1B and 1C

6.8.1 This section of the report presents the results of the junction capacity assessments. Results are presented for each modelled scenario.

6.8.2 The impact of construction traffic has also been considered in this assessment, as construction will be ongoing on subsequent phases of the development as each phase is completed. The estimated levels of construction traffic shown in **Table 13** for the AM and PM **network peak** hours (08:00 – 09:00 and 17:00 – 18:00) has been added to the overall traffic flows used in the junction models, as construction will remain ongoing in the Opening Year and Opening Year +5 scenarios as the site continues to develop.

R772 Dublin Road / Beech Road priority junction

6.8.3 The R772 Dublin Road / Beech Road junction is currently a priority-controlled junction. It is anticipated that the junction would remain priority controlled until at least 2027, which includes the opening of Phase 1A of the development.

6.8.4 **Table 15** presents the modelling results for this junction.

Table 15. R772 Dublin Road / Beech Road Junctions 11 Results

Arm	AM peak hour (0815-0915)			PM peak hour (1645-1745)		
	Queue (pcu)	Delay (s)	RFC	Queue (pcu)	Delay (s)	RFC
Base 2024						
Beech Road LT	0.2	10.0	0.17	0.3	9.2	0.25
Beech Road RT	0.8	17.4	0.43	0.6	15.8	0.36
Dublin Road	0.7	7.4	0.29	0.5	6.7	0.24
Base 2027						
Beech Road LT	0.3	10.6	0.20	0.5	11.4	0.32
Beech Road RT	0.9	19.4	0.47	0.9	19.6	0.45
Dublin Road	0.9	7.8	0.34	0.7	7.2	0.30
Base 2027 + Dev (113 units)						
Beech Road LT	0.4	13.0	0.27	0.5	11.7	0.35
Beech Road RT	1.5	25.7	0.60	1.1	22.0	0.51
Dublin Road	0.9	8.0	0.35	0.9	7.7	0.34

6.8.5 **Table 15** indicates that with traffic growth and Phase 1A of the development in place the priority junction arrangement will continue to operate within capacity.

R772 Dublin Road / Beech Road signalised junction

6.8.6 The existing priority junction will need to be upgraded to signal control to accommodate future traffic growth, the school and the Phase 1B development at the site. The upgrade is anticipated to occur between 2027 and 2032. The upgraded junction would provide:

- Single lane approaches on both arms of the R772. There would be space within the junction for 1-2 vehicles turning right into Beech Road to wait without blocking southbound traffic on the R772.
- A two-lane approach on Beech Road. The outside lane would be a short flare to accommodate approximately 6 right-turning vehicles.
- A signalised pedestrian crossing across the Beech Road arm of the junction. For the purpose of this assessment, it has been assumed that this would be called very infrequently throughout the day, as there is predicted to be little pedestrian demand to cross Beech Road, and pedestrian access to both the school and residential development will be taken through the south and south-east of the development site due to the connectivity provided through to Arklow Town Centre.

6.8.7 **Table 16** presents the modelled results for the signalised R772 / Beech Road junction. The model assumes a 120s cycle time, and that the pedestrian stage will be called infrequently.

Table 16. R772 Dublin Road / Beech Road LINSIG results

Arm	AM peak hour (0800-0900)			PM peak hour (1700-1800)		
	Queue (pcu)	Delay (s)	RFC	Queue (pcu)	Delay (s)	RFC
Base 2032 + School						
R772 Dublin Rd (S)	12.5	17.8	52.50%	7.7	16.3	36.80%
Beech Road	9.7	40.7	62.1 : 62.1%	4.6	34.5	44.9 : 44.9%
R772 Dublin Rd (N)	14.0	27.9	60.80%	9.9	19.3	45.20%
Base 2032 + School + Dev (500 units)						
R772 Dublin Rd (S)	14.5	23.3	59.10%	10.4	17.8	46.50%
Beech Road	15.5	40.6	75.2 : 75.2%	6.8	36.2	54.8 : 54.8%
R772 Dublin Rd (N)	17.3	41.9	76.50%	12.8	24.8	55.90%
Base 2042 + School						
R772 Dublin Rd (S)	13.1	18.1	54.20%	7.8	15.3	37.30%
Beech Road	9.8	40.9	62.5 : 62.5%	4.3	35.7	42.6 : 42.6%
R772 Dublin Rd (N)	14.5	28.4	62.20%	9.3	17.4	42.70%
Base 2042 + School + Dev (750 units)						
R772 Dublin Rd (S)	16.0	25.7	63.20%	12.0	17.6	51.30%
Beech Road	19.6	44.6	83.0 : 83.0%	7.5	38.7	58.2 : 58.2%
R772 Dublin Rd (N)	19.5	51.6	84.60%	13.5	25.3	58.00%

6.8.8 **Table 16** shows that the junction is expected to operate within capacity in all of the assessed scenarios. The AM peak hour is the busiest period, as this is the time when school traffic is arriving and departing, and also when trips out of the development are highest.

6.8.9 The analysis shows that the junction is expected to be approaching capacity in 2042, when 750 units are built on site and the school is constructed and operational. In particular in the AM peak hour, the Dublin Road southbound approach to the junction is expected to have an RFC of 84.6%.

6.8.10 A sensitivity test has been undertaken for the junction in the 2032 and 2042 scenarios, with the mode share for cars retained at the current value of 70% (as opposed to the 55% adopted in this assessment). The results are presented in **Appendix E**.

6.8.11 The proposed junction upgrade to signal-control will result in a greater degree of priority offered to the Beech Road approach arm when implemented. It is noted that in the AM peak period in particular, the signalisation allows for better optimisation of green time to accommodate the increased flows on the Beech Road. Both the Beech Road and Dublin Road southbound approaches to the junction are seen to remain within their theoretical capacities due to the proposed signal control and intelligent operation.

6.8.12 The proposed signal-controlled layout represents an interim upgrade to the junction which is sufficient to accommodate the proposed development. In the longer-term, in the event of further development within the AAP3 lands and/or the implementation of the Western Distributor Road, the additional traffic flows and potentially displaced traffic from Arklow Town Centre will ultimately require additional upgrades to be implemented at this junction.

6.8.13 The proposed layout also includes for a limited amount of space to accommodate right-turning vehicles from the Dublin Road to the Beech Road, for 1-2 waiting vehicles. It is not envisaged that the number of right-turning vehicles associated with the proposed development at this junction will be significant in the AM peak period – the proposed school development is the main generator of additional right-turning traffic at this junction in this period.

R772 / R750 Sea Road priority junction

6.8.14 The R772 / R750 junction is a simple priority junction, where the R772 forms the major arms, and the R750 Sea Road, which forms the eastern arm, must give way. Sea Road has a single-lane approach, and traffic on the R772 south waiting to turn right into Sea Road can block northbound traffic following behind.

6.8.15 **Table 17** presents the modelled results for the junction.

Table 17. R772 / R750 Junctions 11 Results

Arm	AM peak hour (0815-0915)			PM peak hour (1645-1745)		
	Queue (pcu)	Delay (s)	RFC	Queue (pcu)	Delay (s)	RFC
Base 2024						
Sea Road LT	0.7	11.5	0.40	0.3	8.1	0.22
Sea Road RT	0.4	16.5	0.27	0.1	13.3	0.09
R772	1.2	6.7	0.37	2.2	10.6	0.57
Base 2027						
Sea Road LT	0.7	12.4	0.43	0.3	8.5	0.24
Sea Road RT	0.4	18.0	0.30	0.1	14.2	0.10
R772	1.3	6.9	0.40	2.7	12.0	0.62
Base 2027 + Dev (113 units)						
Sea Road LT	0.8	13.0	0.44	0.3	8.6	0.24
Sea Road RT	0.5	19.3	0.32	0.1	14.7	0.11
R772	1.4	7.0	0.41	3.0	12.4	0.64
Base 2032 + School						
Sea Road LT	1.2	19.4	0.55	0.3	9.0	0.26
Sea Road RT	1.0	33.9	0.51	0.1	15.6	0.12
R772	2.6	7.9	0.53	3.7	14.4	0.69
Base 2032 + School + Dev (500 units)						
Sea Road LT	1.7	27.9	0.64	0.4	9.4	0.27
Sea Road RT	1.5	51.5	0.62	0.2	18.0	0.16
R772	3.1	8.8	0.57	5.9	18.7	0.77
Base 2042 + School						
Sea Road LT	1.5	23.6	0.61	0.4	9.3	0.27
Sea Road RT	1.3	42.2	0.58	0.1	16.5	0.13
R772	3.1	8.6	0.57	4.7	17.1	0.74
Base 2042 + School + Dev (750 units)						
Sea Road LT	4.3	69.1	0.85	0.4	9.9	0.29
Sea Road RT	3.4	114.8	0.83	0.2	20.5	0.19
R772	4.2	10.5	0.64	11.4	34.0	0.88

6.8.16 **Table 17** shows that the junction is currently operating within capacity, and this is forecast to be the case when Phases 1A and 1B of the development are added in 2027 and 2032, respectively.

6.8.17 In the Base 2042 + School + Phase 1C development scenario (AM and PM peak hours) the R750 Sea Road arm is predicted to operate marginally over practical capacity. This is deemed by SYSTRA to be an acceptable level of performance, given that this is some distance in the future, and would be limited to peak hours only. This is also based on the existing junction configuration.

6.8.18 SYSTRA would also note that the introduction of the Western Distributor Road is likely to reduce traffic flows on the R772 as it passes Sea Road meaning that the future mitigation measures may not be required.

R772 / North Quay Roundabout

6.8.19 The R772 / North Quay roundabout is a three-arm roundabout. The R772 approaches are both single-lane, and the North Quay approach is a single lane plus short 15m flare.

6.8.20 **Table 18** presents the modelled results for the junction.

Table 18. R772 / North Quay Junctions 11 Results

Arm	AM peak hour (0800-0900)			PM peak hour (1700-1800)		
	Queue (pcu)	Delay (s)	RFC	Queue (pcu)	Delay (s)	RFC
Base 2024						
North Quay	0.1	3.6	0.07	0.5	4.8	0.32
R772 south	2.7	12.6	0.73	2.0	10.6	0.66
R772 north	0.8	4.4	0.45	0.8	4.4	0.44
Base 2027						
North Quay	0.1	3.7	0.08	0.5	5.0	0.34
R772 south	3.2	14.3	0.76	2.3	11.7	0.69
R772 north	0.9	4.6	0.48	0.9	4.7	0.48
Base 2027 + Dev (113 units)						
North Quay	0.1	3.7	0.08	0.5	5.1	0.35
R772 south	3.4	14.9	0.77	2.6	12.9	0.72
R772 north	1.0	4.8	0.50	1.0	4.8	0.49
Base 2032 + School						
North Quay	0.1	4.0	0.10	0.6	5.4	0.37
R772 south	11.2	42.3	0.93	2.9	14.2	0.74
R772 north	1.4	5.7	0.58	1.1	5.1	0.52
Base 2032 + School + Dev (500 units)						
North Quay	0.1	4.3	0.10	0.7	5.8	0.40
R772 south	12.1	45.1	0.94	4.9	22.0	0.84
R772 north	2.0	7.2	0.66	1.2	5.5	0.55
Base 2042 + School						
North Quay	0.1	4.1	0.10	0.6	5.6	0.39
R772 south	16.4	58.5	0.97	3.5	16.3	0.78
R772 north	1.5	6.0	0.60	1.2	5.4	0.54
Base 2042 + School + Dev (750 units)						
North Quay	0.1	4.5	0.11	0.8	6.2	0.44
R772 south	18.5	64.5	0.98	9.2	38.5	0.92
R772 north	2.6	8.8	0.73	1.3	5.8	0.57

6.8.21 **Table 18** shows that the junction is currently operating within capacity, and this is forecast to be the case when Phase 1A of the development is added in 2027.

6.8.22 In the Base 2032 + School scenario (AM peak hour) the R772 south arm is predicted to operate over capacity when school traffic is added to the R772 mainline movements. Additional traffic from the Phase 1B of the development slightly increases this.

6.8.23 This situation is expected to worsen in 2042, when the R772 south arm is predicted to be over capacity both with the school, and then with the school and development, in place. The analysis shows that school traffic has a large impact on junction performance, with the proposed development traffic increasing this impact to a lesser extent. For example, the RFC of the R772 south arm increases from 0.77 to 0.93 when school traffic is added between 2027 and 2032, but only by a further 0.01 when Phase 1B development traffic is added on top of this.

6.8.24 The junction modelling suggests that mitigation measures may be required at the R772 / North Quay roundabout in 2032. SYSTRA's initial assessment is that the R772 south arm could be slightly widened to allow ahead and right-turning traffic to queue side-by-side. The circulating carriageway on the east side of the roundabout could be widened slightly, to allow ahead and right-turning traffic to proceed at the same time (potentially by using the over-run area on the edge of the central island as a running lane). This would provide a small amount of capacity that would be sufficient to bring the R772 south arm under capacity.

6.8.25 SYSTRA would also note that the introduction of the Western Distributor Road is likely to reduce traffic flows on the R772 as it passes North Quay meaning that the future mitigation measures identified above may not be required.

6.8.26 **R772 / Main Street / Lower Main Street priority junction**

6.8.27 The R772 / Main Street / Lower Main Street priority junction is non-standard junction configuration. Lower Main Street, which forms the eastern arm, is a one-way away street that routes away from the junction. The R772 north, and R772 Main Street (the west arm), form the major arms of the junction. Traffic turning right from the R772 onto Main Street has priority over traffic continuing straight ahead from Main Street onto Lower Main Street, which must give way.

6.8.28 **Table 19** presents the modelled results for the junction.

Table 19. R772 / Lower Main Street Junctions 11 Results

Arm	AM peak hour (0800-0900)			PM peak hour (1700-1800)		
	Queue (pcu)	Delay (s)	RFC	Queue (pcu)	Delay (s)	RFC
Base 2024						
Main Street Lower	0.0	0.0	0.00	0.0	0.0	0.00
R772 Main Street	1.3	6.9	0.38	1.4	8.2	0.42
Base 2027						
Main Street Lower	0.0	0.0	0.00	0.0	0.0	0.00
R772 Main Street	1.5	7.1	0.41	1.8	8.8	0.47
Base 2027 + Dev (113 units)						
Main Street Lower	0.0	0.0	0.00	0.0	0.0	0.00
R772 Main Street	1.6	7.2	0.42	1.9	8.8	0.48
Base 2032 + School						
Main Street Lower	0.0	0.0	0.00	0.0	0.0	0.00
R772 Main Street	3.0	8.4	0.55	2.3	9.7	0.53
Base 2032 + School + Dev (500 units)						
Main Street Lower	0.0	0.0	0.00	0.0	0.0	0.00
R772 Main Street	3.6	9.3	0.59	3.0	10.2	0.58
Base 2042 + School						
Main Street Lower	0.0	0.0	0.00	0.0	0.0	0.00
R772 Main Street	3.6	9.3	0.60	2.8	10.6	0.57
Base 2042 + School + Dev (750 units)						
Main Street Lower	0.0	0.0	0.00	0.0	0.0	0.00
R772 Main Street	5.1	11.8	0.67	4.2	11.9	0.65

6.8.29 **Table 19** shows that the junction is predicted to operate under capacity in each of the modelled scenarios, and no mitigation measures will be required.

6.9 Junction Modelling Conclusion

6.9.1 The key findings from the junction modelling exercise are:

- That the proposed signalisation of the R772 / Beech Road junction will provide sufficient capacity to accommodate the predicted traffic demand from the School Campus, and for 750 residential units on the development site;
- That the R772 / R750 Sea Road junction is expected to operate marginally over capacity in 2042, but this is deemed to be acceptable by SYSTRA given that this is some distance in the future and would be limited to peak hours only;
- That the R772 south arm of the R772 / North Quay roundabout will require mitigation as a result of the School Campus, and to a lesser extent as a result from traffic from the proposed development. SYSTRA's initial assessment is that the R772 south arm could be slightly widened to allow ahead and right-turning traffic to queue side-by-side. The circulating carriageway on the east side of the roundabout could be widened slightly, to allow ahead and right-turning traffic to proceed at the same time (potentially by using the over-run area on the edge of the central island as a running lane); and
- The introduction of the Western Distributor Road is likely to reduce traffic flows on the R772 as it passed Sea Road and North Quay, meaning that the future mitigation measures identified may not be required.

6.10 Mitigation of Impact of Construction Traffic

6.10.1 Prior to commencement of construction, the appointed contractor will be required to prepare a comprehensive and detailed Construction Stage Traffic Management Plan (CTMP), to indicate how it is proposed to manage the traffic impacts during the construction stage and minimise the impact on local residents and businesses.

6.10.2 The CTMP will provide information on the potential location of contractor compounds, likely construction routes used for HGV's and general staff, indicative construction working hours and information regarding the potential sub-phases and associated estimated movements. The CTMP shall be submitted to Wicklow County Council for approval prior to commencement of works.

7. OUTLINE MOBILITY MANAGEMENT PLAN

7.1 Introduction

7.1.1 To support and enable residents to travel to and from the development by sustainable modes, a supporting Outline Mobility Management Plan (OMMP) is set out in this section.

7.1.2 The overall aim of the MMP is to reduce the level of private car use by encouraging people to walk, cycle, use public transport or car share.

7.2 Site Accessibility

7.2.1 As demonstrated in **Chapter 3**, the site is well-located to support walking and cycling trips between the site and the town centre. This will improve significantly when the proposed Boardwalk link and new river crossing is constructed as part of the development.

7.3 Targets

7.3.1 Targets are the specific quantitative goals based on the objective described above. Since the overall aim of the MMP is to reduce reliance upon the private car, it is appropriate to set a target which relates to this objective. The primary outcome indicator used will be the mode share of the residents of the proposed development.

7.3.2 It will therefore be necessary to collect data to identify and understand the post-occupation baseline and ongoing travel habits, against which the MMP's progress can be measured. It is recommended that residents' travel surveys are undertaken within six months of the site reaching occupancy. These travel surveys will establish the post-occupation baseline travel data for the site and inform the final MMP's targets.

7.3.3 Initial pre-occupation and estimated post-occupation targets have been developed, based on the Census 2022 commuting mode share as presented in **Section 5**. These are shown in **Table 20**.

Table 20. Proposed MMP targets

	SINGLE-OCCUPANCY CAR USE	SUSTAINABLE TRAVEL MODES	OTHER
Estimated Pre-Occupation Baseline Mode Share	70%	15%	15%
Longer-term Mode Share Target	55%	31%	5%

7.3.4 The targets are based upon the following primary factors:

- **The location of the development**, within walking and cycling distance of the town centre, and with the co-location on-site of the Kilbride Education Campus;
- **The incorporation of the Local Centre** within the site, which is conveniently located and provides local shop, medical and crèche facilities, ensuring that incidental trips to these local services can be made locally within the site by walking and cycling;
- **The proposed Boardwalk** connection from the south of the site across the Avoca River and into Arklow Town, significalty reducing walking and cycling travel times from the site to the town centre and encouraging greater levels of trips to be made via these modes; and
- **Future initiatives** such as the Western Distributor Road, which will likely see public transport services run through the site.

7.3.5 The longer-term Mode Share target is therefore considered appropriate based on the measures outlined above.

7.3.6 The final mode share targets over a three and five-year period will be set once the post-occupation baseline mode share is known, which will be obtained through the baseline residential travel surveys described above.

7.4 Proposed MMP Action Plan Measures

7.4.1 To achieve the MMP targets set out above, a number of measures have been identified. These are:

- Appointment a Mobility Manager;
- Provision of a Welcome Travel Pack for residents;
- The provision of clear pedestrian and cycle signage and maps throughout the site, showing travel times to key destinations;
- The provision of space for two bike hire hubs on the site; and
- Measures to encourage Public Transport use, including liaising with local bus operators regarding bus scheduling, routes and school travel.

7.5 Mobility Manager

7.5.1 A Mobility Manager will be appointed to deliver the MMP. The role involves being the main point of contact for travel information, promotion and improvements, and the coordination and monitoring of the agreed measures.

Welcome Travel Pack

7.5.2 A 'Welcome Travel Pack' will be provided to all new residents when they first move in, so that each household is made fully aware of the travel choices available to them. This will also give the best possible opportunity to the new residents to consider more sustainable modes of travel at a key moment of life change (i.e. moving home) – where new travel habits are more easily encouraged.

7.5.3 The Welcome Travel Pack will include a variety of sustainable travel information and incentives about the development and the wider local area. It can include measures such as:

- Information on the site's available sustainable travel links and on-site facilities;
- Incentives to trial sustainable travel, for example such as:
  - Public transport 'taster tickets' for each resident;
  - Discounts at a local bike shop to subsidise a bike purchase; free branded cycling accessories (e.g. high vis reflectors, seat covers, water bottles); free or subsidised cycle skills training or cycle maintenance training;
- This can be offered to residents on a 'pick-and-mix' basis up to a certain value (e.g. €100), with residents selecting the incentive package that best meets their own individual travel needs;
- Information on services and amenities provided locally (both on-site and nearby), particularly those within walking and cycling distance at the Local Centre;
- Maps showing the pedestrian and cycle routes in proximity to the site, including site cycle parking; advised routes (with journey times) to accessible destinations;
- Information about local public transport services and tickets, including a plan showing the location of bus stops, and bus routes to rail stations;
- Information on the health benefits of walking and cycling;
- Details of online car-sharing services (e.g. Liftshare[1] and Faxi[2]) along with the benefits of car sharing, such as reduced congestion, better air quality, reduction in traffic noise and cost savings to the individuals taking part; and
- Provide information on the financial and environmental costs associated with driving and support regarding tips for green driving techniques.

Information Board and Signage

7.5.4 The developer will investigate the provision of a central high-quality travel information board within the site, likely to be within the Local Centre, which will comprise a map showing walking, cycling and public transport routes in the local, and wider area, along with key destinations. For walking and cycling routes, this would show approximate travel times and distances.

7.5.5 Suitable signposts will be located within the site, to guide pedestrians and cyclists through the site.

Public Transport

[1] Not currently operating in Ireland but are planning to enter the market.
[2] Private groups are set up and not open to the general public. FAXI offers closed company groups with member access controlled by the group administrator which could be operated by the Mobility Manager.

7.5.6 Depending on the outcome of the post-occupation travel survey, the following measures can be implemented to promote public transport to residents:

- The provision of timetables and maps of local bus routes and the nearest bus stops on the proposed central information board; and
- The board can also promote the National Public Transport Journey Planner (www.journeyplanner.transportforireland.ie) for travel by bus and rail.

7.5.7 The Mobility Manager will liaise with the NTA and local bus operators regarding current bus services, and future new services, and provide two-way feedback between these organisations and residents (via the site notice board).

7.6 MMP Monitoring and Review

7.6.1 This section sets out the monitoring strategy for the Mobility Management Plan. The monitoring strategy is important for assessing how effectively the MMP has been in achieving its aim, objectives and targets. It can help identify measures that are not meeting objectives and reallocate resources accordingly.

7.6.2 An MMP is a continuous and evolving document requiring monitoring, review and revision to ensure that it remains relevant.

Travel Survey

7.6.3 As already stated, it is recommended that a travel survey of residents is undertaken within six months following occupation of the proposed development. The results of the survey will identify baseline travel patterns in terms of modes used and the sustainable transport modes which require encouragement through the MMP measures.

7.6.4 The results of the survey will be used to inform the development of the finalised MMP targets and measures. The survey is designed to identify the distribution and mode share of trips from the development. The survey will also identify people's willingness and ability to try new modes, and what barriers they may face in making Smarter Travel choices.

Annual Monitoring

7.6.5 The Mobility Manager will carry out annual follow-up travel surveys with future residents and staff. These surveys should take place in the same month and be of the same format as the original baseline survey to ensure compatibility of results. This monitoring is an opportunity to measure MMP achievements on an annual basis. This will then inform the ongoing development of the MMP, ensuring its targets and measures remain relevant to the needs of the residents, is site-specific and fit for purpose. Results will be analysed to enable the following:

- Measurement of the success of the MMP, enabling focused improvement on areas that have not achieved the desired modal shift via appropriate revisions to the MMP measures.
- Identification of early success stories of the MMP, which can help to encourage further participation and build momentum for sustainable travel.
- Ensures that changing travel patterns are considered, ensuring that the MMP measures can be updated to reflect the needs of development users.

- Allows targets which have been set too low or unrealistically high to be readjusted.

Reporting

7.6.6 Reporting of the results of the Post-Occupation Baseline Travel Survey, and findings from the ongoing monitoring activities and progress with implementation of the MMP will be agreed with WCC.

8. SUMMARY & CONCLUSIONS

8.1 Summary

8.1.1 Introduction

8.1.2 SYSTRA Ltd has been commissioned by Certain Assets of Dawnhill and Windhill Ltd (CADW) to prepare a Traffic & Transport Assessment (TTA) and Outline Mobility Management Plan (OMMP) in relation to a proposed Large Scale Residential Development (LRD) in Kilbride, Arklow, Co. Wicklow.

8.1.3 The purpose of this report is to set out the likely transport impacts of the proposals, and to identify measures to ensure that the development can be successfully integrated into the local transport network.

8.1.4 The development site is located on the northern side of the Avoca River in Arklow, Co. Wicklow, within the development boundary of Arklow Town, in the townland of Kilbride.

8.1.5 The site is designated within the prevailing Arklow and Environs Local Area Plan (LAP) 2018-2024 as part of Action Area Plan 3 (AAP3).

8.1.6 It is envisaged that the proposals for the wider AAP3 site will be progressed in two distinct phases, each with standalone planning applications; the proposed development therefore represents Phase 1 of the overall masterplan for the lands, comprising 666 residential units and ancillary commercial/community/medical centre and crèche facilities, and supporting infrastructure including the construction of a new internal access road to serve the site.

Transport Baseline

8.1.7 As a greenfield site, existing footpaths and cycle facilities are currently limited to those on or alongside the roads around the site.

8.1.8 The closest bus services to the site run along the R772 Dublin Road. These typically operate on an hourly basis throughout the week.

8.1.9 Arklow Train Station is located in the centre of the town, approximately 3.2km from the site access on Kilbride Road, but access to the station will be greatly improved with the addition of the proposed Boardwalk link and pedestrian/cycle bridge across the Avoca River into the town centre.

8.1.10 In terms of road access, the development will be accessed from Kilbride Road, which is itself reached via the R772 Dublin Road / Beech Road priority junction. This would be upgraded to a signalised junction as part of the proposals.

8.1.11 There are a number of planned initiatives which will greatly enhance sustainable and active travel for residents of the site. These include:

- The IT5 Western Distributor Road, to be constructed through the Kilbride lands, to incorporate a new river crossing and to link Kilbride to the Vale Road, Lamberton Avenue and the Coolgreaney Road. This is intended to alleviate traffic congestion on the existing R672 Nineteen Arches Bridge, and would also feature segregated

cycle provision, and allow a bus route to pass directly through the development site.

- The NTA's Greater Dublin Area (GDA) Cycle Network Plan (2022), which includes comprehensive proposals for cycle facilities within Arklow town, and specifically in the area of the development.
- The boardwalk and bridge connection, which will be provided as part of the development, will form an important part of the Arklow cycle network, providing a high-quality segregated pedestrian and cycle connection through to the town centre. It will also allow pupils at the Kilbride Education Campus who live south of the river to directly access the site without travelling along R772 Dublin Road.

Proposed Development

8.1.12 The Phase 1 development would provide circa 750 residential units (this includes the 84no. units covered by application Ref. 23/745, labelled as Phase 1A), comprising a mixture of houses and apartments.

8.1.13 In addition to the residential properties, the development will contain a Local Centre (located in the west of the site), which will include retail, community and medical units, and a crèche.

8.1.14 The main features of the site design from a transport perspective are:

- Vehicle access will be taken from Kilbride Road, which will be realigned and have the existing priority changed, so that the link into the Kilbride Education Campus and Phase 1 access road becomes the priority route;
- All vehicle traffic to and from the site will travel via the R772 Dublin Road / Beech Road priority junction, which will be upgraded to a signalised junction as part of the proposals;
- The new link that will run through the site, and the sections of Kilbride Road and Beech Road will be constructed to Regional Road standard and will form the first part of the IT5 Western Distributor Route proposed in the Arklow LAP. Upgrades to the L6179 to provide pedestrian facilities are also included;
- Two new pedestrian/cyclist links connecting into Arklow Town Centre are proposed:
  - Via the Marshland sports club and through into Avondale Crescent.
  - Via a new boardwalk and pedestrian/cycle bridge across the marsh, and over the Avoca River to meet the south bank.
- The new Link Road has been designed to accommodate a future bus route, if implemented;
- The site layout will allow for the future extension of the IT5 Link Road across the Avoca River; and
- The internal site layout has been designed in accordance with the Design Manual for Roads and Streets (DMURS), and the Cycle Design Manual (2023).

Site Phasing

8.1.15 The following indicative phasing is proposed within the overall Phase 1 development:

- **Phase 1A (2027)** – 113 units (including the consented 84 units);

- **Phase 1B (2032)** – an additional 387 units, bringing the total to 500 units. The Local Centre would be constructed in this Phase, along with the Avoca Boardwalk link and pedestrian/cycle bridge; and
- **Phase 1C (2042)** – an additional 250 units, bringing the total to 750 units.

Trip Generation

8.1.16 Prior to construction of the Avoca Boardwalk, Local Centre and school, the mode split from the site is likely to reflect Census 2022 data, which shows that around 70% of residents currently living in the area travel to work by car.

8.1.17 SYSTRA has used the TRICS database, and a 'target' mode share (based on future transport initiatives and the aspirations of the Government's 'Climate Action Plan', to estimate future travel demands from the development.

8.1.18 It is estimated that, when complete, the development will generate around 700 person trips in the AM peak hour, and around 600 in the PM peak hour. Of these trips, 55% are likely to be as car driver, 15% by walking, 10% by bus, and 6% by cycle.

8.1.19 The co-location of the Kilbride Educational Campus and Local Centre on site will mean that many of these trips will be retained within the site itself.

Traffic Impacts

8.1.20 SYSTRA has undertaken junction capacity modelling at four junctions:

- R772 / Beech Road existing priority / new signalised junction;
- R772 / R750 Sea Road priority junction;
- R772 / North Quay roundabout; and
- R772 / Main Street / Lower Main Street priority junction

8.1.21 This modelling was informed by traffic surveys undertaken in 2024, and takes into account traffic generated by the Kilbride Education Campus. The key findings from the junction modelling exercise are:

- That the proposed signalisation of the R772 / Beech Road junction will provide sufficient capacity to accommodate the predicted traffic demand from the School Campus, and for 750 residential units on the development site;
- That the R772 / R750 Sea Road junction is expected to operate marginally over capacity in 2042, but this is deemed to be acceptable by SYSTRA given that this is some distance in the future, and would be limited to peak hours only.
- That the R772 south arm of the R772 / North Quay roundabout will require mitigation by 2032 as a result of the School Campus, and to a lesser extent as a result from traffic from the proposed development. SYSTRA's initial assessment is that the R772 south arm could be slightly widened to accommodate this.
- The introduction of the Western Distributor Road is likely to reduce traffic flows on the R772 as it passed Sea Road and North Quay, meaning that the future mitigation measures identified may not be required. No allowance has been made for any reduction of traffic associated with the proposed Western Distributor Road.

Mobility Management Plan

8.1.22 An Outline Mobility Management Plan (OMMP) has been prepared by SYSTRA. This sets out how active travel and sustainable travel will be encouraged and promoted within the site. This will be further developed and will evolve over time in line with the site occupation.

8.2 Conclusion

8.2.1 The proposed Phase 1 development represents the next major step in the development of the wider AAP3 site, which represents a major, long-term development in Arklow.

8.2.2 The proposed residential development will complement the consented Education Campus, meaning that many pupils will live close to their school. The proposed Local Centre will provide many of the day-to-day needs of residents, meaning that travel outside the site will be reduced.

8.2.3 The proposed boardwalk connection into the town centre is a key feature of the development, which will greatly support walking and cycling trips due to the short distance to Arklow Town Centre and will reduce traffic pressure on the R772 in particular.

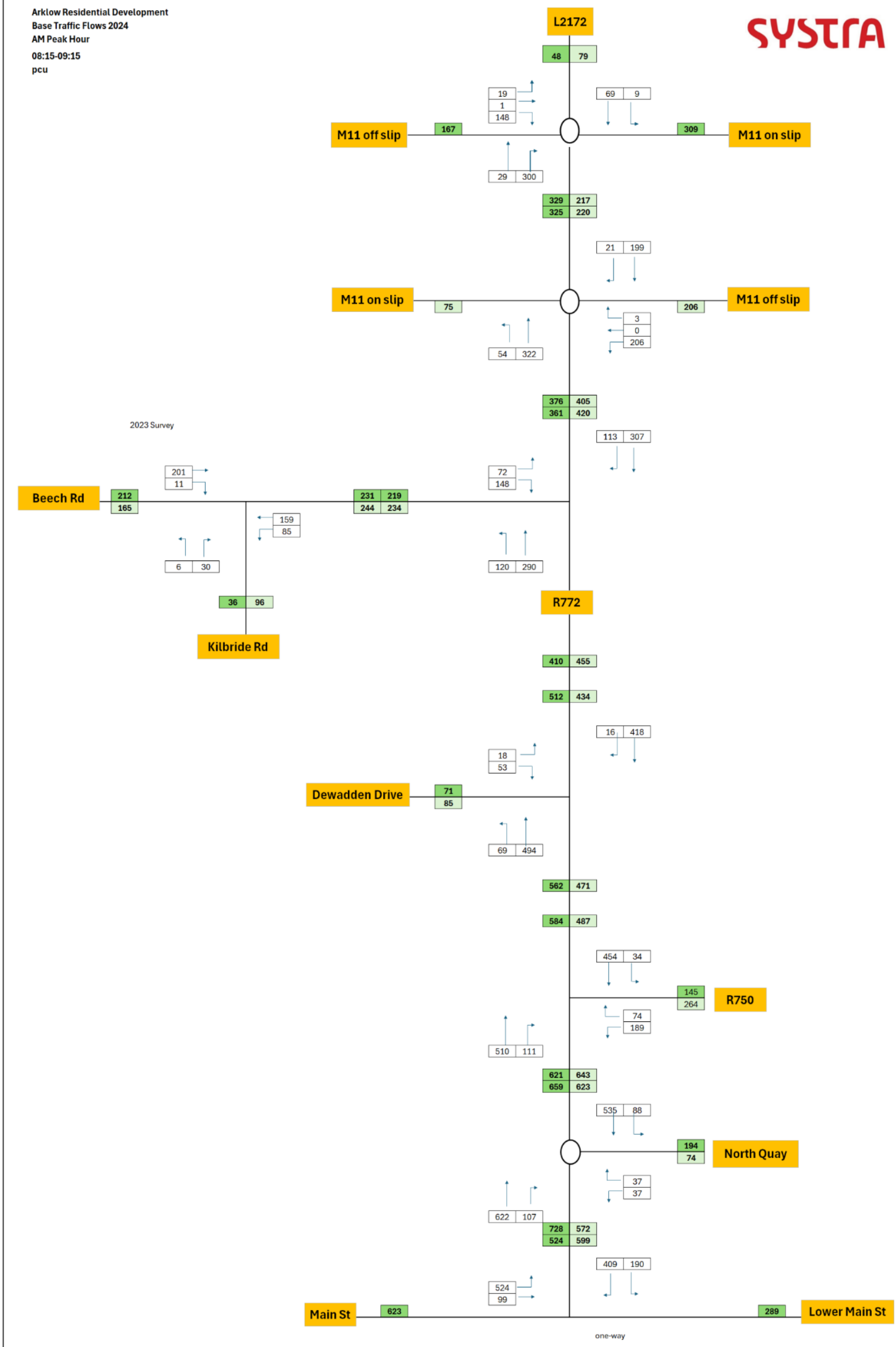
8.2.4 The Transport Assessment has found that the Phase 1 development can be successfully integrated into the local area, with the proposed access strategy and identified mitigation measures in place.

8.2.5 Looking beyond Phase 1, the development of the Western Distributor Route will greatly change travel patterns within Arklow, reducing traffic pressure on the sole bridge crossing, and opening up a key new corridor for vehicles, buses and cycles. It is likely that Phase 2 of the development will be enabled by this scheme.

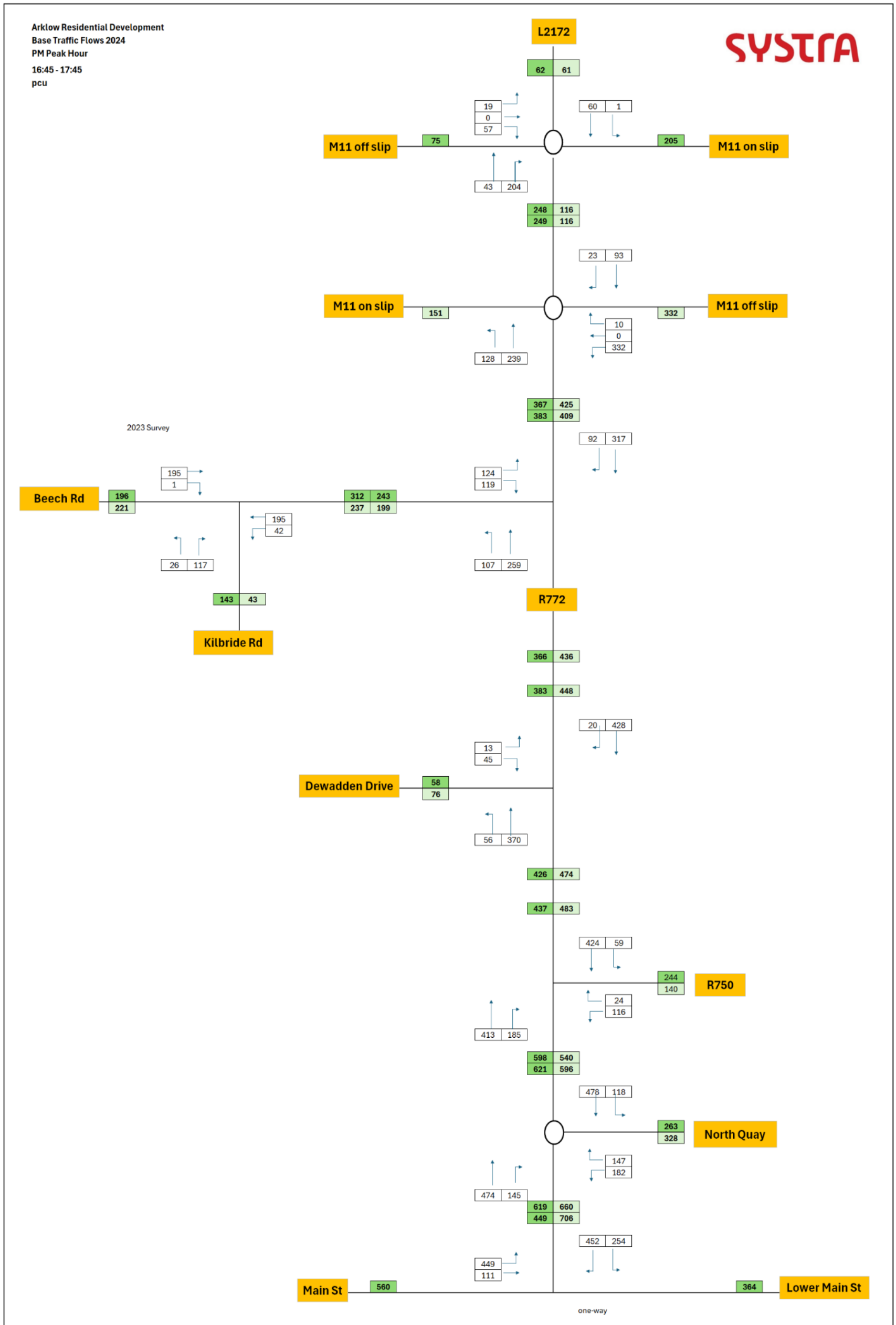
APPENDICES

Appendix A – Turn Count Diagrams

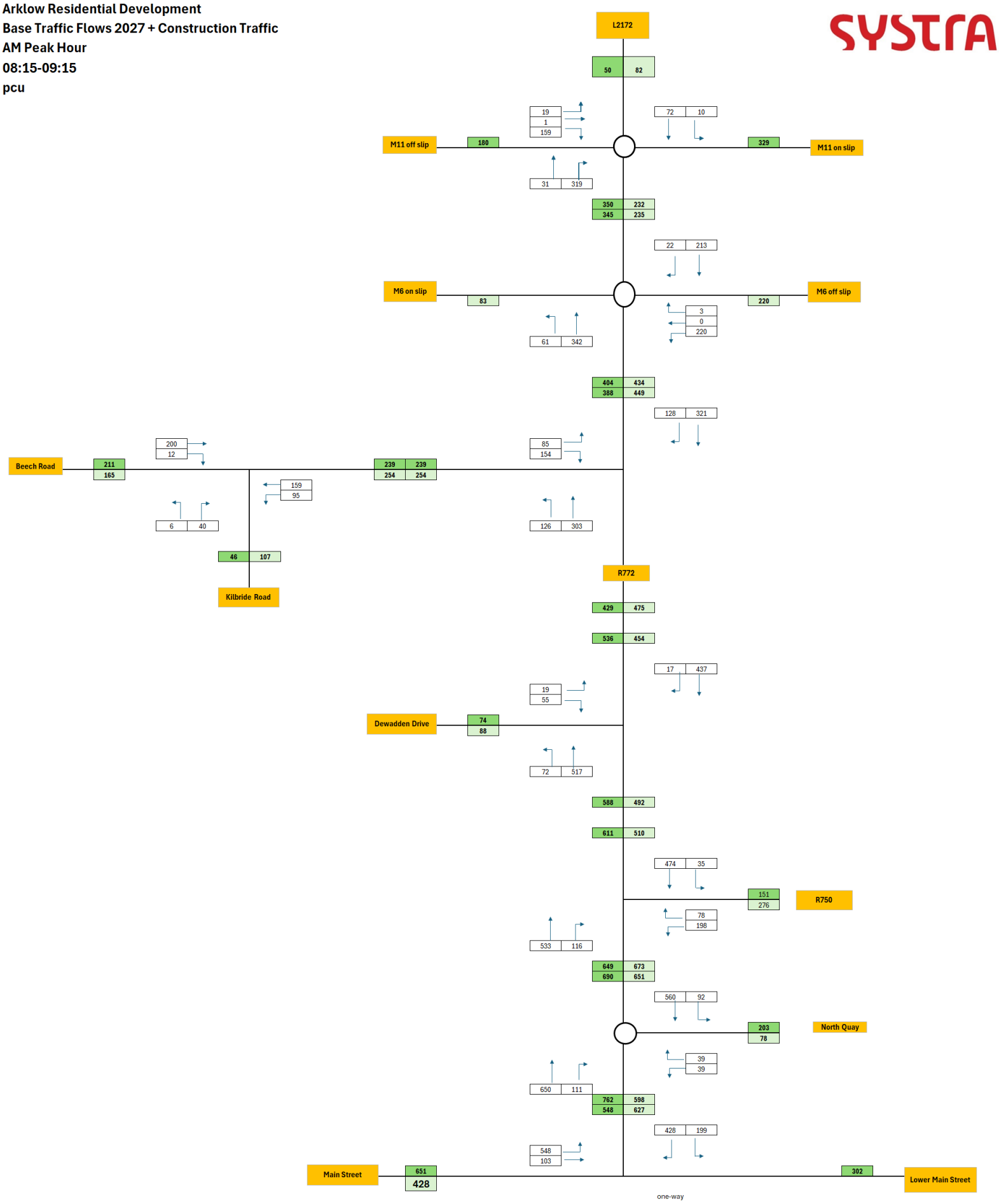
Arklow Residential Development
Base Traffic Flows 2024
AM Peak Hour
08:15-09:15
pcu



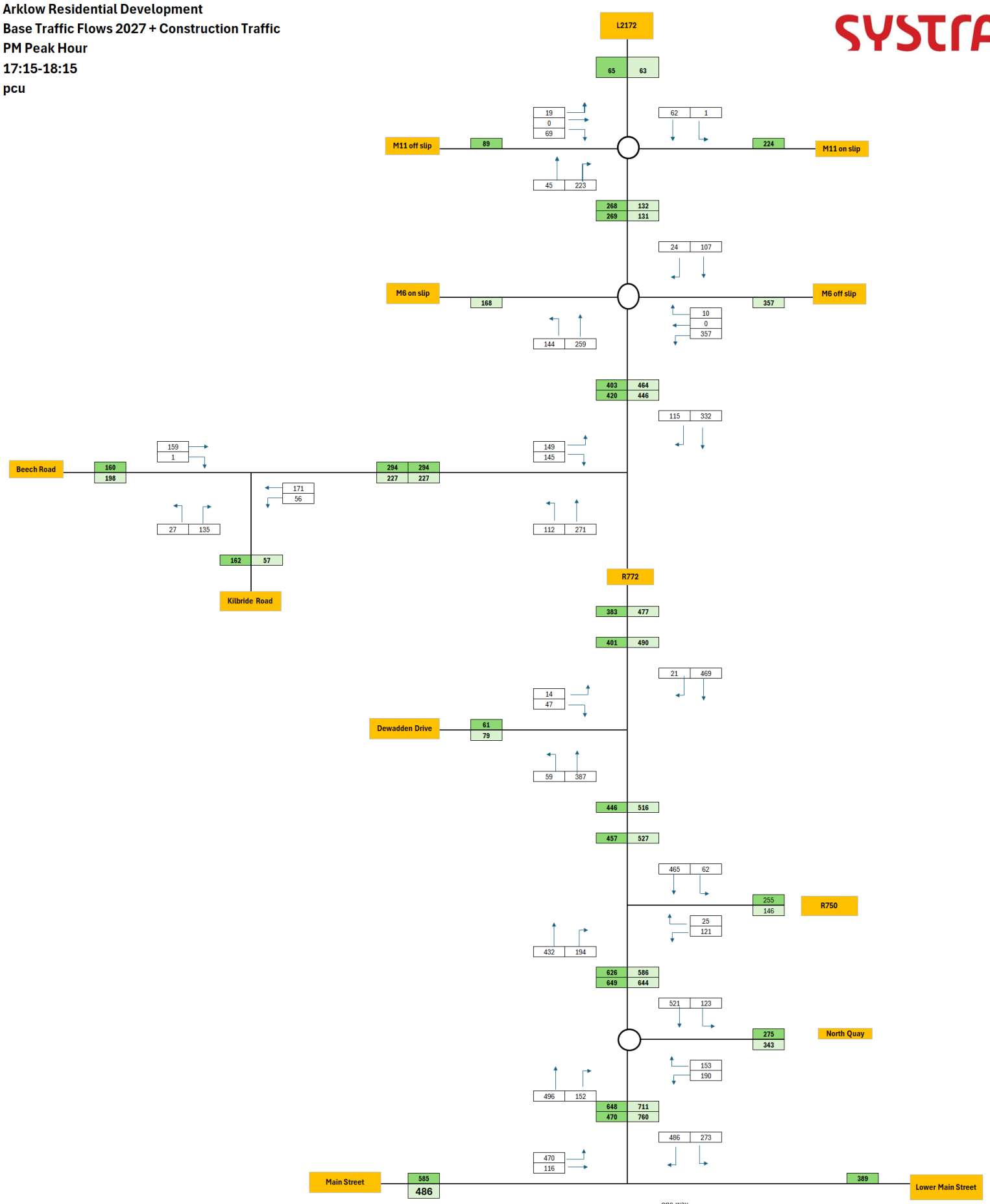
Arklow Residential Development
Base Traffic Flows 2024
PM Peak Hour
16:45 - 17:45
pcu



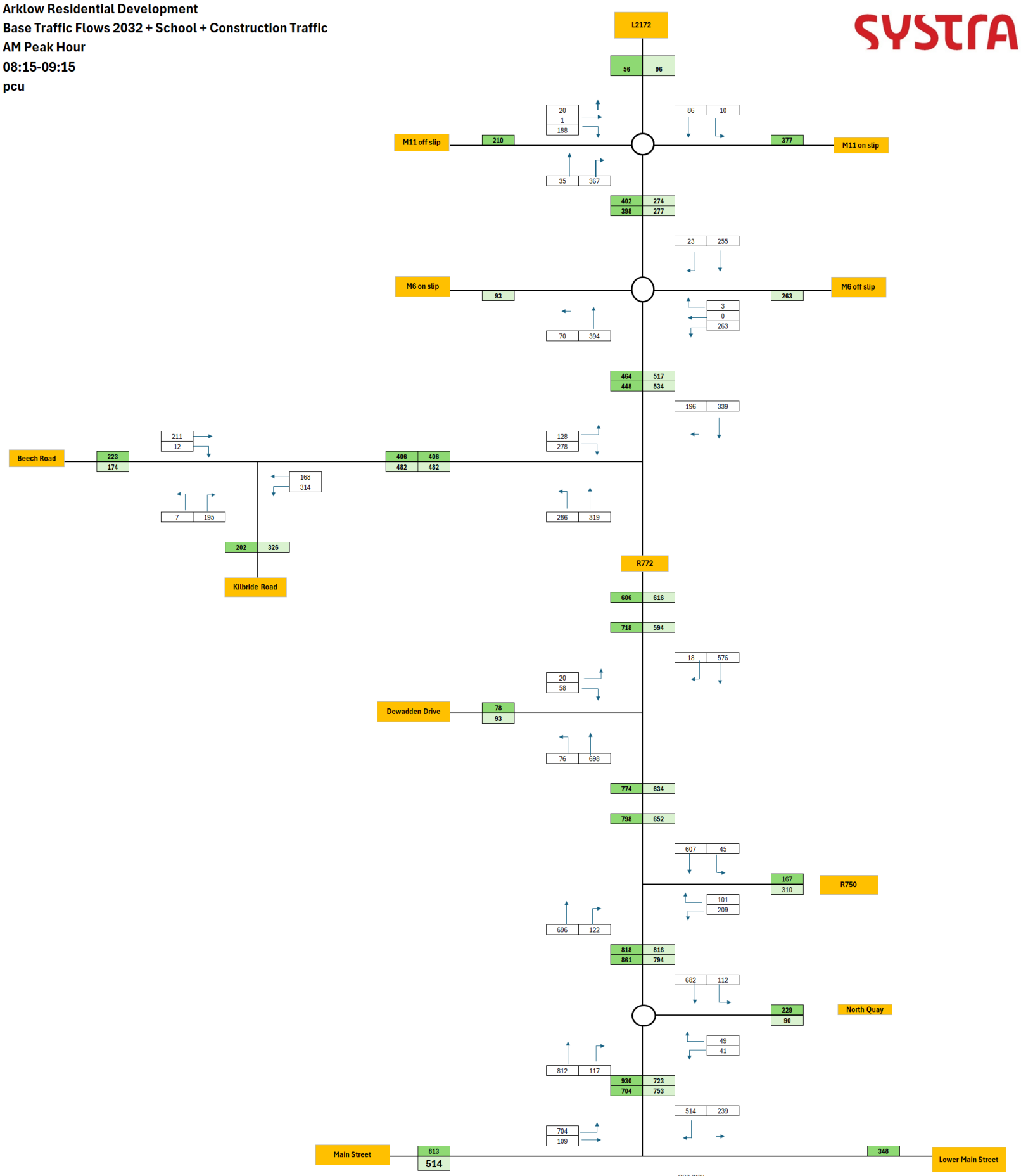
Arklow Residential Development
Base Traffic Flows 2027 + Construction Traffic
AM Peak Hour
08:15-09:15
pcu



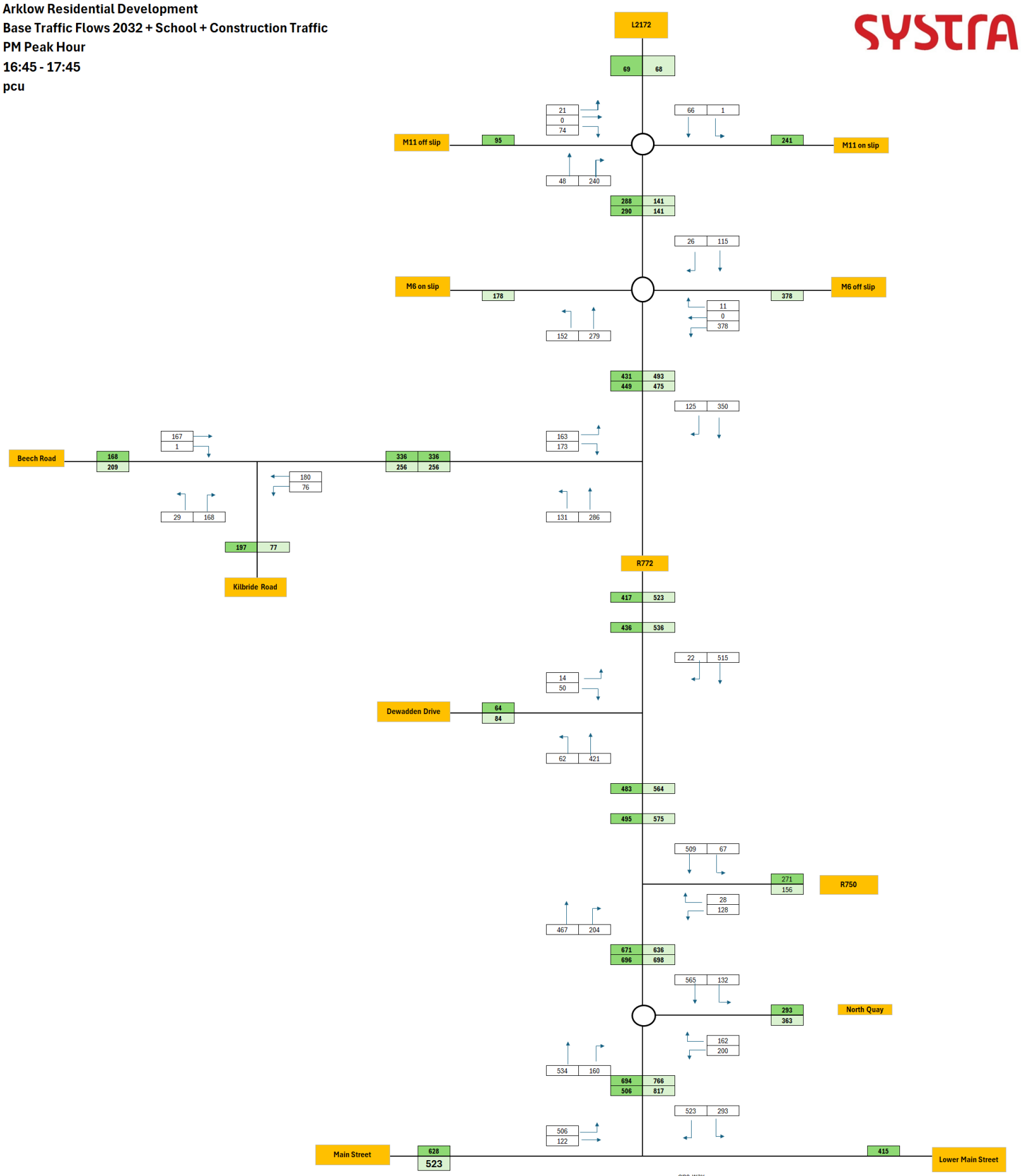
Arklow Residential Development
Base Traffic Flows 2027 + Construction Traffic
PM Peak Hour
17:15-18:15
pcu



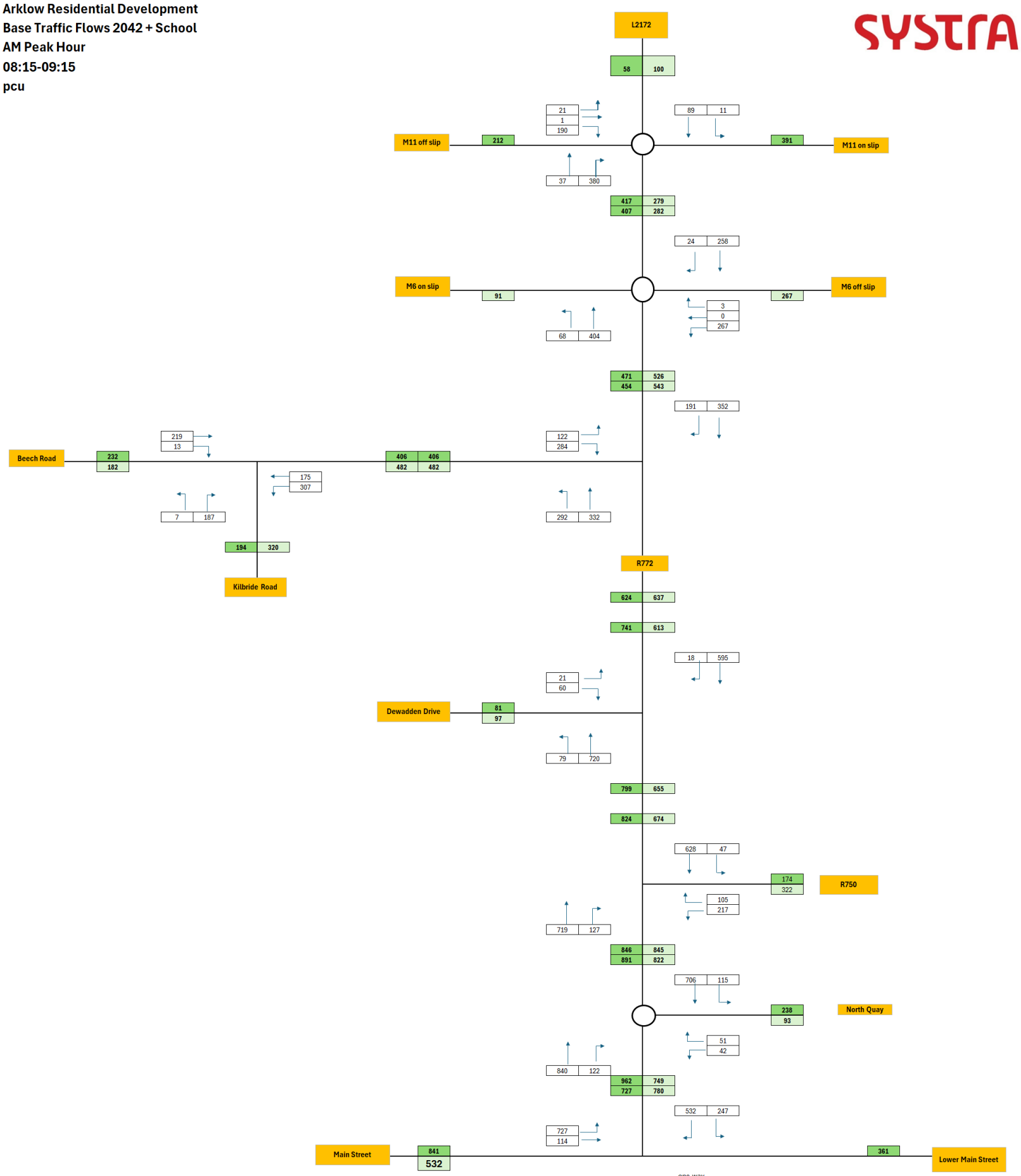
Arklow Residential Development
Base Traffic Flows 2032 + School + Construction Traffic
AM Peak Hour
08:15-09:15
pcu



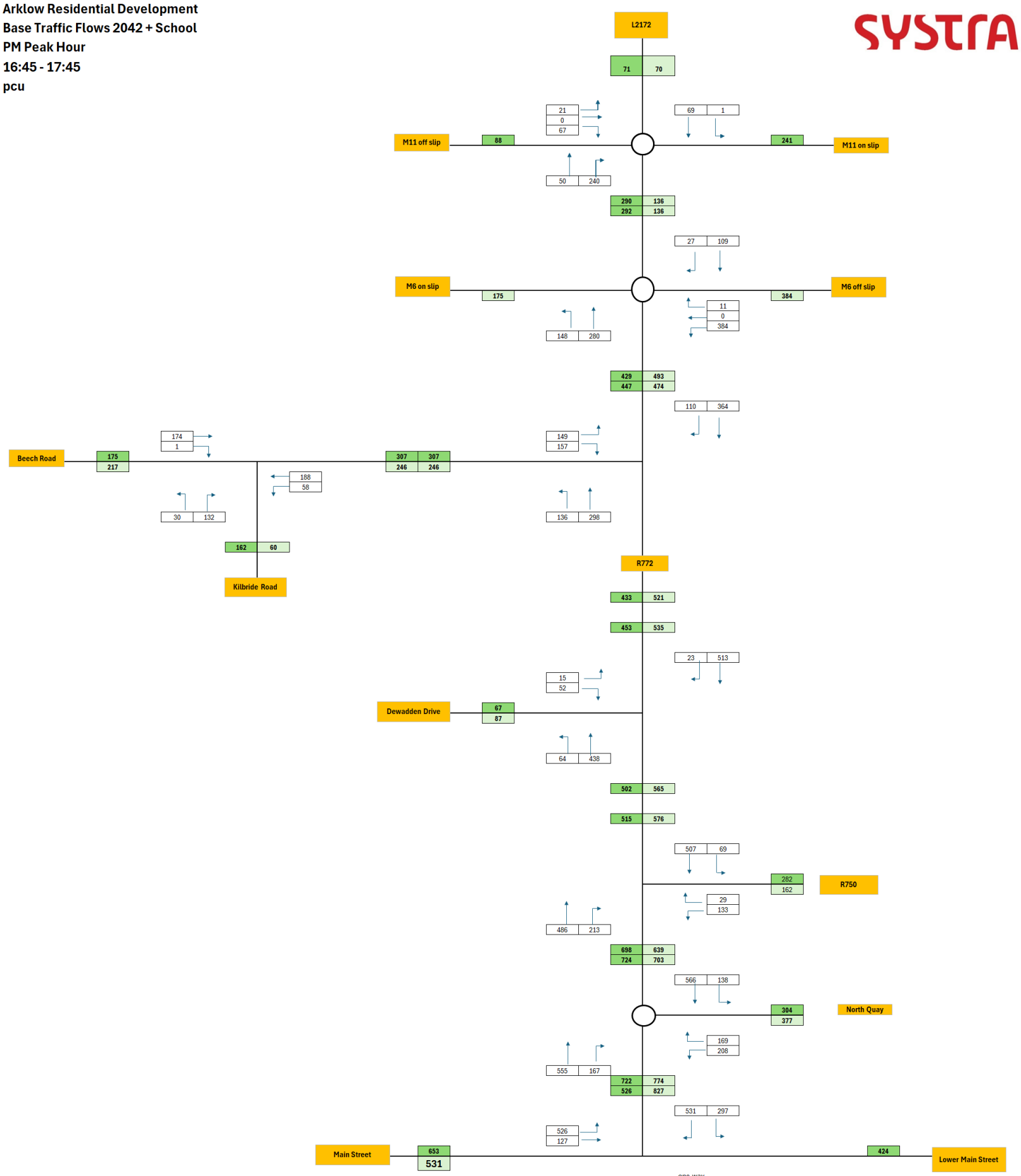
Arklow Residential Development
Base Traffic Flows 2032 + School + Construction Traffic
PM Peak Hour
16:45 - 17:45
pcu



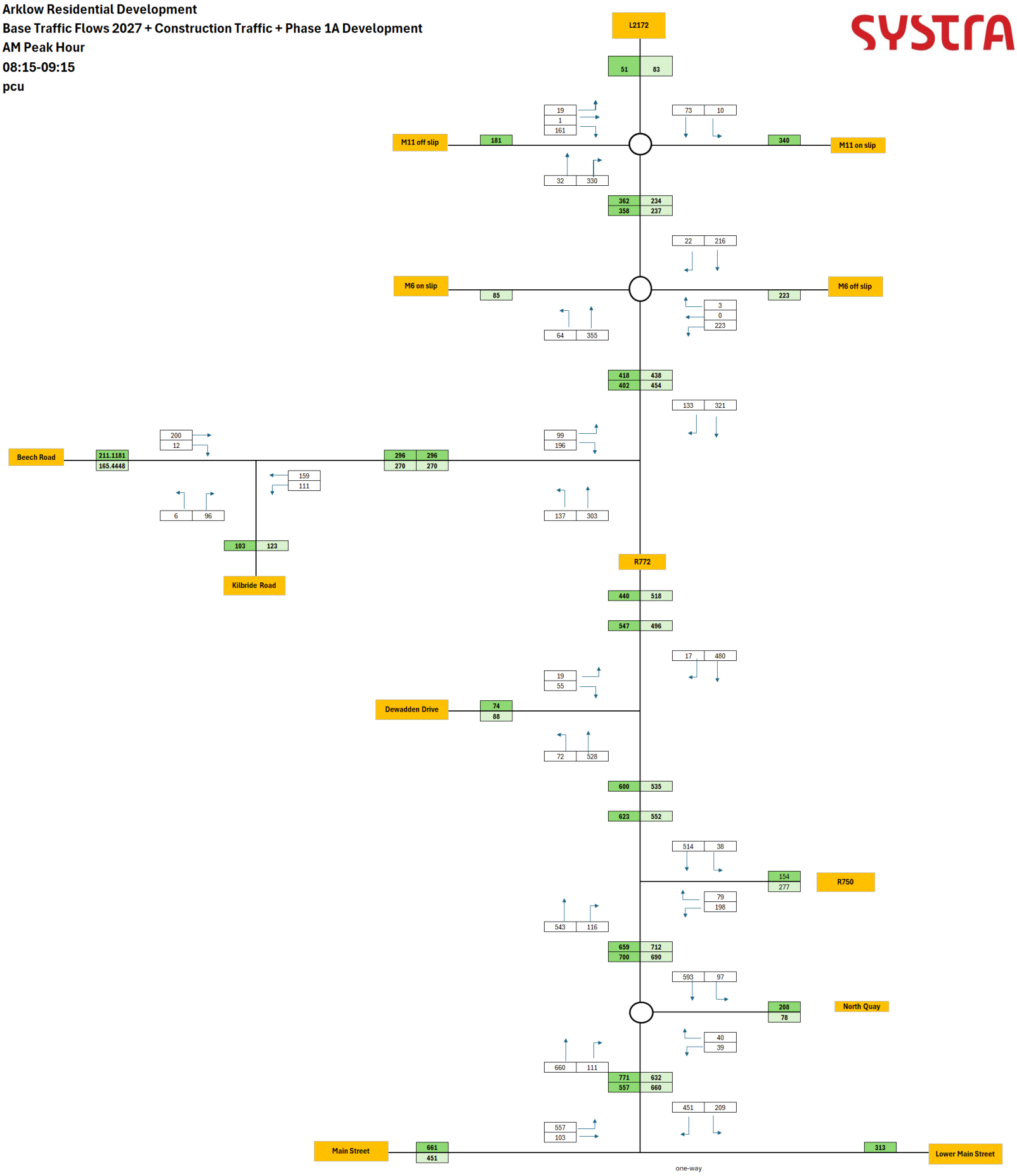
Arklow Residential Development
Base Traffic Flows 2042 + School
AM Peak Hour
08:15-09:15
pcu



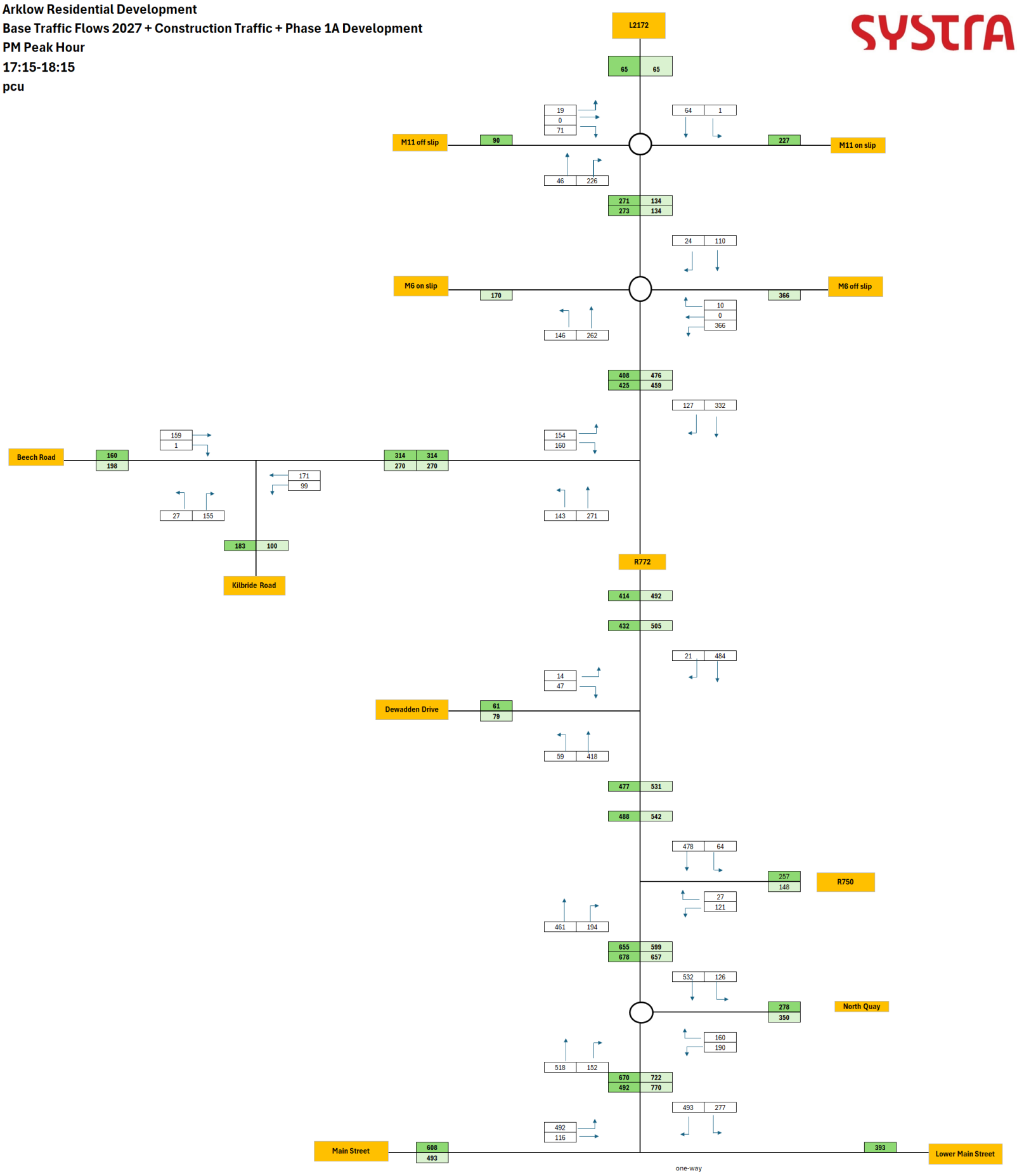
Arklow Residential Development
Base Traffic Flows 2042 + School
PM Peak Hour
16:45 - 17:45
pcu



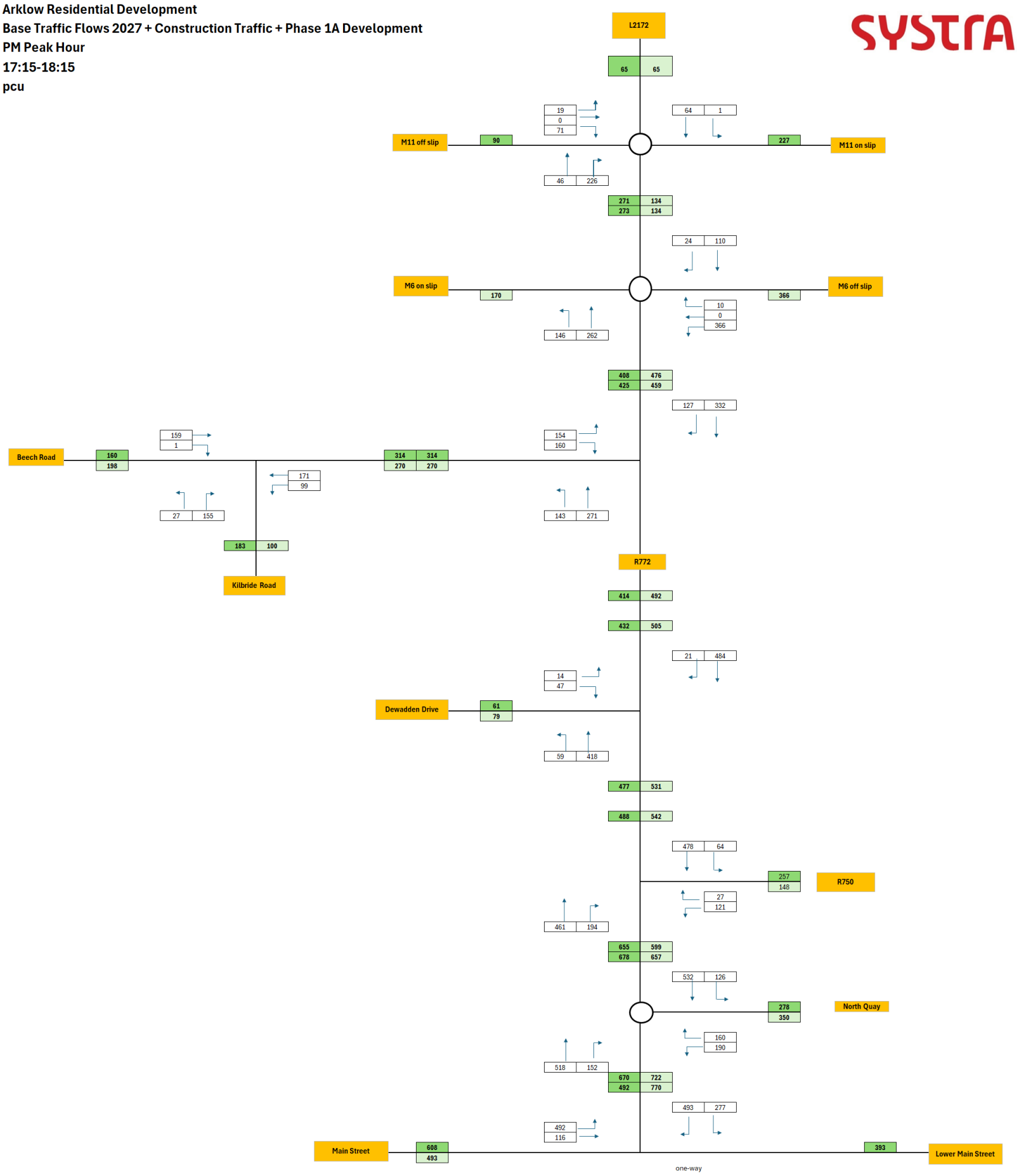
Arklow Residential Development
Base Traffic Flows 2027 + Construction Traffic + Phase 1A Development
AM Peak Hour
08:15-09:15
pcu



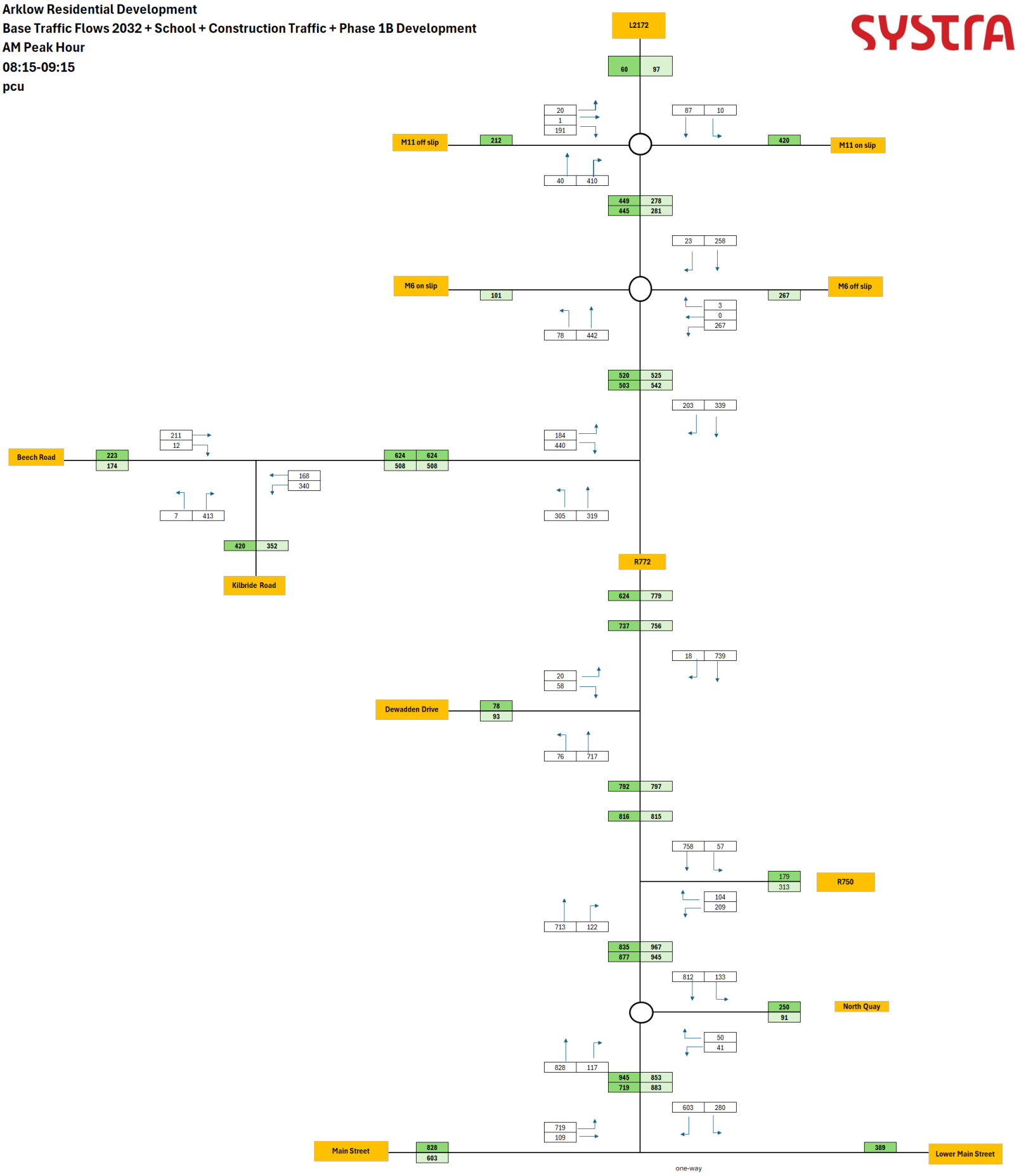
Arklow Residential Development
Base Traffic Flows 2027 + Construction Traffic + Phase 1A Development
PM Peak Hour
17:15-18:15
pcu



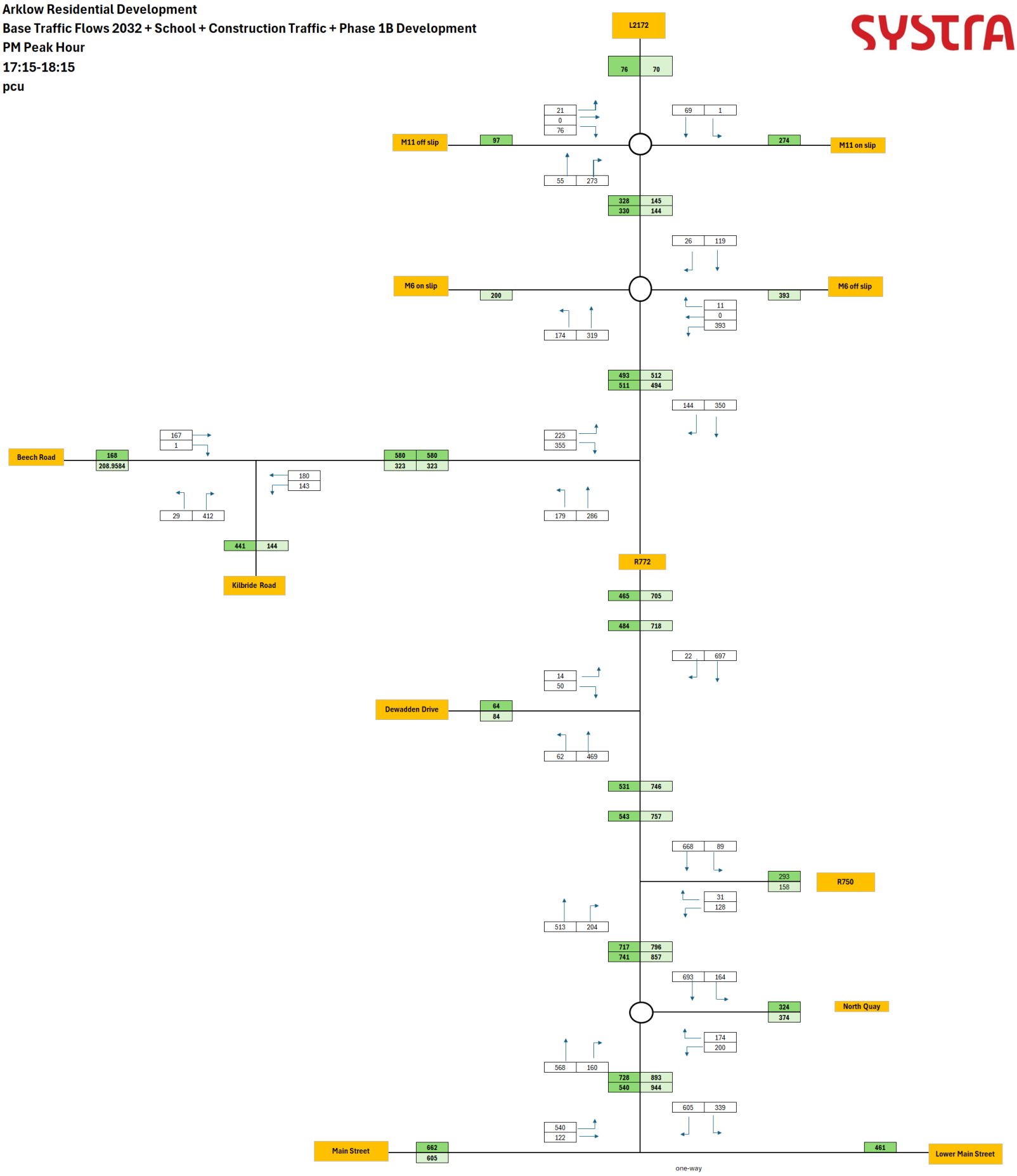
Arklow Residential Development
Base Traffic Flows 2027 + Construction Traffic + Phase 1A Development
PM Peak Hour
17:15-18:15
pcu



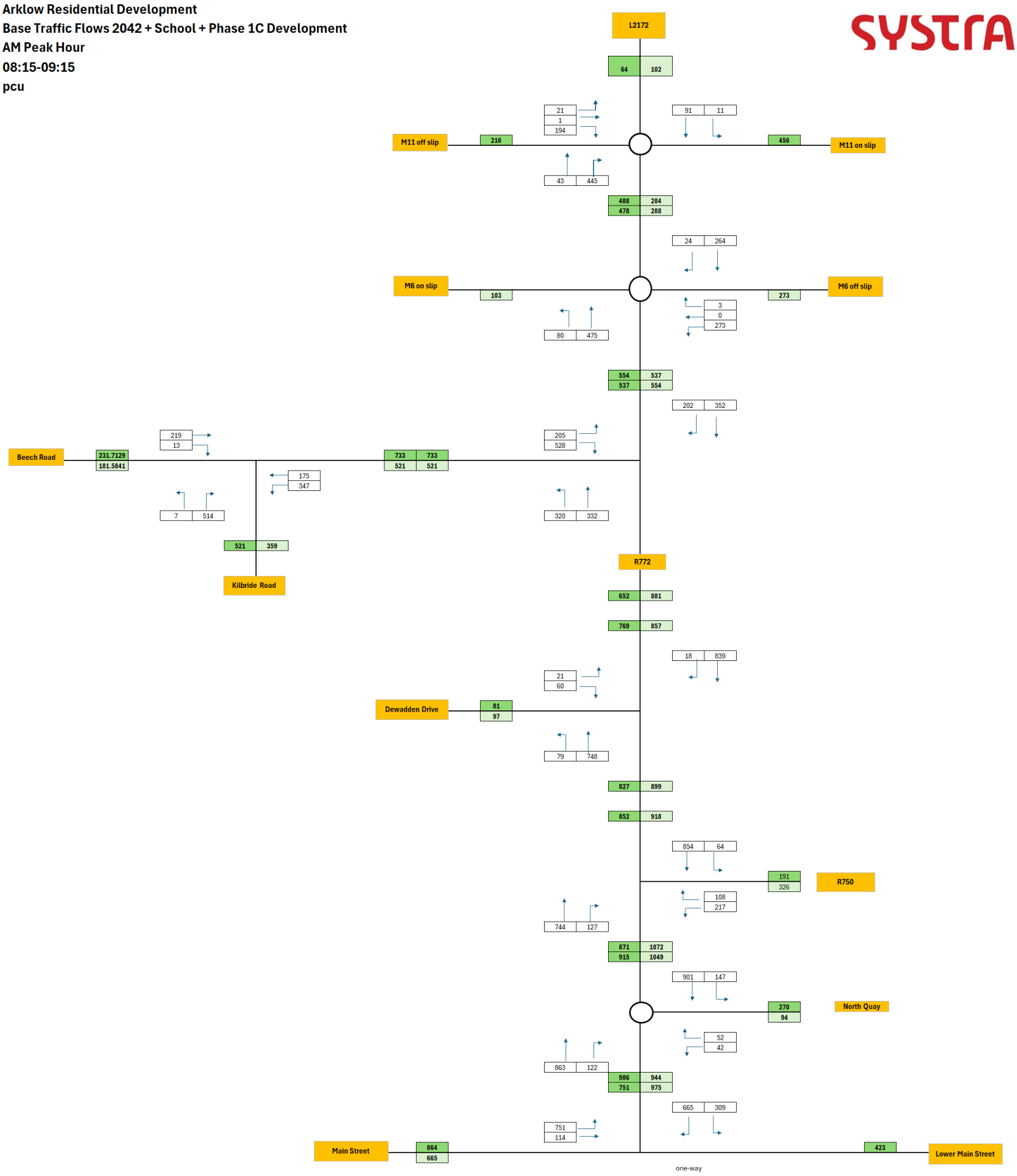
Arklow Residential Development
Base Traffic Flows 2032 + School + Construction Traffic + Phase 1B Development
AM Peak Hour
08:15-09:15
pcu



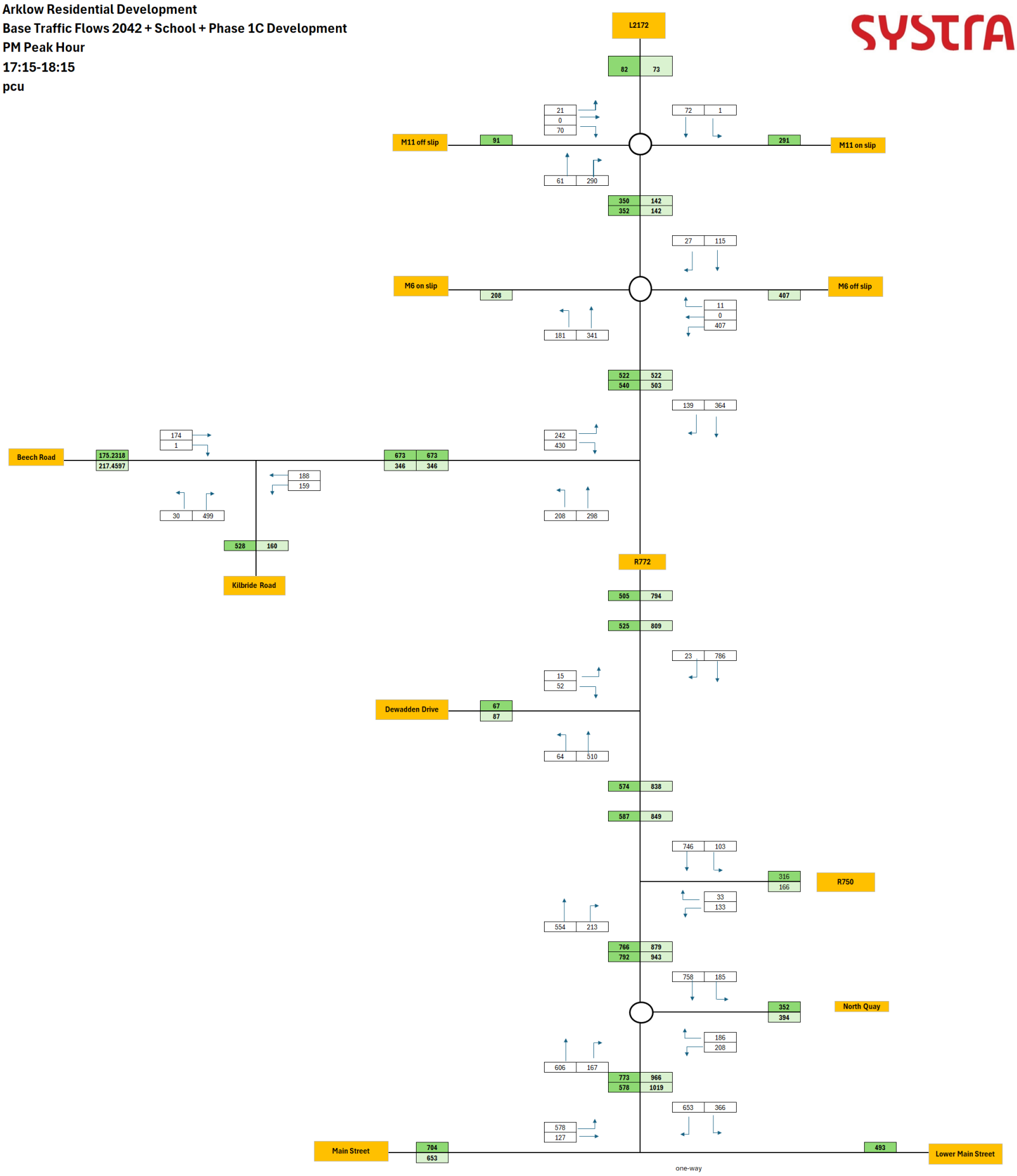
Arklow Residential Development
Base Traffic Flows 2032 + School + Construction Traffic + Phase 1B Development
PM Peak Hour
17:15-18:15
pcu



Arklow Residential Development
Base Traffic Flows 2042 + School + Phase 1C Development
AM Peak Hour
08:15-09:15
pcu



Arklow Residential Development
Base Traffic Flows 2042 + School + Phase 1C Development
PM Peak Hour
17:15-18:15
pcu



Appendix B – Site Plan

CHARACTER AREA 1D
167no. Units

ADJACENT DEPT. OF EDUCATION
POST PRIMARY SCHOOL SITE AS
APPROVED UNDER REG. REF. 22/213

LOCAL CENTRE
1.0 Ha

CHARACTER AREA 1C
201no. Units

CHARACTER AREA 1B
205no. Units

CHARACTER AREA 1A
83no. Units

ADJACENT SITE
PHASE 1 CHARACTER AREA 1A
84no. Units Previously Granted
Under Reg. Ref. 23/756

MARSH / FLOOD ZONE

Appendix C – TRICS Reports

SYSTRA Ltd 37 Manor Place Edinburgh Licence No: 700705

Calculation Reference: AUDIT-700705-240626-0642

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	1 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
	NG	NOTTINGHAM	2 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	2 days
08	NORTH WEST		
	MS	MERSEYSIDE	2 days
09	NORTH		
	TW	TYNE & WEAR	1 days
14	LEINSTER		
	LU	LOUTH	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 9 to 184 (units:)
Range Selected by User: 8 to 372 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 19/06/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Tuesday	3 days
Wednesday	4 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	10
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Development Zone	2
Residential Zone	7
No Sub Category	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	7 days - Selected
Servicing vehicles Excluded	5 days - Selected

Secondary Filtering selection:

Use Class:

C3	12 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	1 days
20,001 to 25,000	6 days
25,001 to 50,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

50,001 to 75,000	1 days
75,001 to 100,000	2 days
125,001 to 250,000	3 days
250,001 to 500,000	3 days
500,001 or More	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	5 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	12 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	12 days

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 CA-03-C-03 BLOCKS OF FLATS CAMBRIDGESHIRE
CROMWELL ROAD
CAMBRIDGE

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 82
Survey date: MONDAY *18/09/17* *Survey Type: MANUAL*

2 DL-03-C-18 BLOCKS OF FLATS DUBLIN
HAROLD'S CROSS ROAD
DUBLIN

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 102
Survey date: WEDNESDAY *19/05/21* *Survey Type: MANUAL*

3 DY-03-C-03 BLOCKS OF FLATS DERBY
CAESAR STREET
DERBY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 30
Survey date: WEDNESDAY *25/09/19* *Survey Type: MANUAL*

4 LU-03-C-04 BLOCKS OF FLATS LOUTH
RIVER COURT
DROGHEDA

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 42
Survey date: WEDNESDAY *22/09/21* *Survey Type: MANUAL*

5 MS-03-C-02 BLOCKS OF FLATS MERSEYSIDE
SOUTH FERRY QUAY
LIVERPOOL
BRUNSWICK DOCK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total No of Dwellings: 184
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

6 MS-03-C-03 BLOCK OF FLATS MERSEYSIDE
MARINERS WHARF
LIVERPOOL
QUEENS DOCK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total No of Dwellings: 9
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

7 NF-03-C-02 MIXED FLATS & HOUSES NORFOLK
HALL ROAD
NORWICH
LAKENHAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 82
Survey date: MONDAY *18/11/19* *Survey Type: MANUAL*

8 NG-03-C-01 HOUSES (SPLIT INTO FLATS) NOTTINGHAM
LAWRENCE WAY
NOTTINGHAM

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 56
Survey date: TUESDAY *08/11/16* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 NG-03-C-02 HOUSES (SPLIT INTO FLATS) NOTTINGHAM
CASTLE MARINA ROAD
NOTTINGHAM

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 135
Survey date: WEDNESDAY *09/11/16* *Survey Type: MANUAL*

10 SH-03-C-01 BLOCK OF FLATS SHROPSHIRE
ABBEY FOREGATE
SHREWSBURY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 47
Survey date: MONDAY *19/06/23* *Survey Type: MANUAL*

11 SH-03-C-02 BLOCK OF FLATS SHROPSHIRE
ABBEY FOREGATE
SHREWSBURY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 12
Survey date: FRIDAY *16/06/23* *Survey Type: MANUAL*

12 TW-03-C-01 BLOCKS OF FLATS TYNE & WEAR
CAULDWELL AVENUE
WHITLEY BAY
MONKESEATON
Edge of Town
Residential Zone
Total No of Dwellings: 45
Survey date: FRIDAY *15/10/21* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.32

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.045	12	69	0.145	12	69	0.190
08:00 - 09:00	12	69	0.052	12	69	0.165	12	69	0.217
09:00 - 10:00	12	69	0.084	12	69	0.102	12	69	0.186
10:00 - 11:00	12	69	0.075	12	69	0.093	12	69	0.168
11:00 - 12:00	12	69	0.058	12	69	0.074	12	69	0.132
12:00 - 13:00	12	69	0.070	12	69	0.077	12	69	0.147
13:00 - 14:00	12	69	0.056	12	69	0.079	12	69	0.135
14:00 - 15:00	12	69	0.069	12	69	0.073	12	69	0.142
15:00 - 16:00	12	69	0.105	12	69	0.063	12	69	0.168
16:00 - 17:00	12	69	0.114	12	69	0.069	12	69	0.183
17:00 - 18:00	12	69	0.153	12	69	0.070	12	69	0.223
18:00 - 19:00	12	69	0.119	12	69	0.073	12	69	0.192
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.000			1.083			2.083

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	9 - 184 (units:)
Survey date date range:	01/01/16 - 19/06/23
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

SYSTRA Ltd 37 Manor Place Edinburgh Licence No: 700705

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.006	12	69	0.006	12	69	0.012
08:00 - 09:00	12	69	0.002	12	69	0.002	12	69	0.004
09:00 - 10:00	12	69	0.008	12	69	0.006	12	69	0.014
10:00 - 11:00	12	69	0.002	12	69	0.005	12	69	0.007
11:00 - 12:00	12	69	0.005	12	69	0.004	12	69	0.009
12:00 - 13:00	12	69	0.004	12	69	0.002	12	69	0.006
13:00 - 14:00	12	69	0.002	12	69	0.004	12	69	0.006
14:00 - 15:00	12	69	0.004	12	69	0.004	12	69	0.008
15:00 - 16:00	12	69	0.004	12	69	0.004	12	69	0.008
16:00 - 17:00	12	69	0.006	12	69	0.006	12	69	0.012
17:00 - 18:00	12	69	0.001	12	69	0.001	12	69	0.002
18:00 - 19:00	12	69	0.008	12	69	0.008	12	69	0.016
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.052			0.052			0.104

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

SYSTRA Ltd 37 Manor Place Edinburgh Licence No: 700705

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.000	12	69	0.000	12	69	0.000
08:00 - 09:00	12	69	0.000	12	69	0.000	12	69	0.000
09:00 - 10:00	12	69	0.002	12	69	0.001	12	69	0.003
10:00 - 11:00	12	69	0.004	12	69	0.004	12	69	0.008
11:00 - 12:00	12	69	0.001	12	69	0.002	12	69	0.003
12:00 - 13:00	12	69	0.002	12	69	0.002	12	69	0.004
13:00 - 14:00	12	69	0.000	12	69	0.000	12	69	0.000
14:00 - 15:00	12	69	0.000	12	69	0.000	12	69	0.000
15:00 - 16:00	12	69	0.000	12	69	0.000	12	69	0.000
16:00 - 17:00	12	69	0.001	12	69	0.000	12	69	0.001
17:00 - 18:00	12	69	0.000	12	69	0.001	12	69	0.001
18:00 - 19:00	12	69	0.000	12	69	0.000	12	69	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.010			0.010			0.020

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.001	12	69	0.011	12	69	0.012
08:00 - 09:00	12	69	0.002	12	69	0.022	12	69	0.024
09:00 - 10:00	12	69	0.002	12	69	0.002	12	69	0.004
10:00 - 11:00	12	69	0.002	12	69	0.002	12	69	0.004
11:00 - 12:00	12	69	0.005	12	69	0.001	12	69	0.006
12:00 - 13:00	12	69	0.001	12	69	0.001	12	69	0.002
13:00 - 14:00	12	69	0.002	12	69	0.004	12	69	0.006
14:00 - 15:00	12	69	0.008	12	69	0.005	12	69	0.013
15:00 - 16:00	12	69	0.006	12	69	0.002	12	69	0.008
16:00 - 17:00	12	69	0.006	12	69	0.001	12	69	0.007
17:00 - 18:00	12	69	0.011	12	69	0.007	12	69	0.018
18:00 - 19:00	12	69	0.007	12	69	0.006	12	69	0.013
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.053			0.064			0.117

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.045	12	69	0.179	12	69	0.224
08:00 - 09:00	12	69	0.058	12	69	0.240	12	69	0.298
09:00 - 10:00	12	69	0.107	12	69	0.132	12	69	0.239
10:00 - 11:00	12	69	0.097	12	69	0.119	12	69	0.216
11:00 - 12:00	12	69	0.073	12	69	0.111	12	69	0.184
12:00 - 13:00	12	69	0.098	12	69	0.097	12	69	0.195
13:00 - 14:00	12	69	0.068	12	69	0.094	12	69	0.162
14:00 - 15:00	12	69	0.088	12	69	0.092	12	69	0.180
15:00 - 16:00	12	69	0.145	12	69	0.080	12	69	0.225
16:00 - 17:00	12	69	0.155	12	69	0.079	12	69	0.234
17:00 - 18:00	12	69	0.197	12	69	0.090	12	69	0.287
18:00 - 19:00	12	69	0.150	12	69	0.099	12	69	0.249
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.281			1.412			2.693

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.015	12	69	0.086	12	69	0.101
08:00 - 09:00	12	69	0.033	12	69	0.142	12	69	0.175
09:00 - 10:00	12	69	0.050	12	69	0.098	12	69	0.148
10:00 - 11:00	12	69	0.050	12	69	0.063	12	69	0.113
11:00 - 12:00	12	69	0.035	12	69	0.059	12	69	0.094
12:00 - 13:00	12	69	0.068	12	69	0.064	12	69	0.132
13:00 - 14:00	12	69	0.063	12	69	0.062	12	69	0.125
14:00 - 15:00	12	69	0.069	12	69	0.062	12	69	0.131
15:00 - 16:00	12	69	0.086	12	69	0.052	12	69	0.138
16:00 - 17:00	12	69	0.085	12	69	0.046	12	69	0.131
17:00 - 18:00	12	69	0.109	12	69	0.059	12	69	0.168
18:00 - 19:00	12	69	0.092	12	69	0.056	12	69	0.148
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.755			0.849			1.604

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.000	12	69	0.022	12	69	0.022
08:00 - 09:00	12	69	0.000	12	69	0.029	12	69	0.029
09:00 - 10:00	12	69	0.006	12	69	0.019	12	69	0.025
10:00 - 11:00	12	69	0.006	12	69	0.017	12	69	0.023
11:00 - 12:00	12	69	0.006	12	69	0.017	12	69	0.023
12:00 - 13:00	12	69	0.010	12	69	0.012	12	69	0.022
13:00 - 14:00	12	69	0.011	12	69	0.011	12	69	0.022
14:00 - 15:00	12	69	0.015	12	69	0.017	12	69	0.032
15:00 - 16:00	12	69	0.019	12	69	0.002	12	69	0.021
16:00 - 17:00	12	69	0.022	12	69	0.004	12	69	0.026
17:00 - 18:00	12	69	0.030	12	69	0.004	12	69	0.034
18:00 - 19:00	12	69	0.015	12	69	0.004	12	69	0.019
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.140			0.158			0.298

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.000	12	69	0.017	12	69	0.017
08:00 - 09:00	12	69	0.000	12	69	0.029	12	69	0.029
09:00 - 10:00	12	69	0.001	12	69	0.007	12	69	0.008
10:00 - 11:00	12	69	0.000	12	69	0.002	12	69	0.002
11:00 - 12:00	12	69	0.000	12	69	0.006	12	69	0.006
12:00 - 13:00	12	69	0.000	12	69	0.000	12	69	0.000
13:00 - 14:00	12	69	0.002	12	69	0.001	12	69	0.003
14:00 - 15:00	12	69	0.000	12	69	0.000	12	69	0.000
15:00 - 16:00	12	69	0.002	12	69	0.002	12	69	0.004
16:00 - 17:00	12	69	0.004	12	69	0.001	12	69	0.005
17:00 - 18:00	12	69	0.012	12	69	0.000	12	69	0.012
18:00 - 19:00	12	69	0.028	12	69	0.001	12	69	0.029
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.049			0.066			0.115

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL COACH PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.000	12	69	0.000	12	69	0.000
08:00 - 09:00	12	69	0.000	12	69	0.001	12	69	0.001
09:00 - 10:00	12	69	0.000	12	69	0.000	12	69	0.000
10:00 - 11:00	12	69	0.000	12	69	0.000	12	69	0.000
11:00 - 12:00	12	69	0.000	12	69	0.000	12	69	0.000
12:00 - 13:00	12	69	0.000	12	69	0.000	12	69	0.000
13:00 - 14:00	12	69	0.000	12	69	0.000	12	69	0.000
14:00 - 15:00	12	69	0.000	12	69	0.000	12	69	0.000
15:00 - 16:00	12	69	0.000	12	69	0.000	12	69	0.000
16:00 - 17:00	12	69	0.000	12	69	0.000	12	69	0.000
17:00 - 18:00	12	69	0.000	12	69	0.000	12	69	0.000
18:00 - 19:00	12	69	0.000	12	69	0.000	12	69	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.001			0.001

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.000	12	69	0.039	12	69	0.039
08:00 - 09:00	12	69	0.000	12	69	0.059	12	69	0.059
09:00 - 10:00	12	69	0.007	12	69	0.027	12	69	0.034
10:00 - 11:00	12	69	0.006	12	69	0.019	12	69	0.025
11:00 - 12:00	12	69	0.006	12	69	0.023	12	69	0.029
12:00 - 13:00	12	69	0.010	12	69	0.012	12	69	0.022
13:00 - 14:00	12	69	0.013	12	69	0.012	12	69	0.025
14:00 - 15:00	12	69	0.015	12	69	0.017	12	69	0.032
15:00 - 16:00	12	69	0.022	12	69	0.005	12	69	0.027
16:00 - 17:00	12	69	0.025	12	69	0.005	12	69	0.030
17:00 - 18:00	12	69	0.042	12	69	0.004	12	69	0.046
18:00 - 19:00	12	69	0.042	12	69	0.005	12	69	0.047
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.188			0.227			0.415

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.32

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.061	12	69	0.315	12	69	0.376
08:00 - 09:00	12	69	0.093	12	69	0.462	12	69	0.555
09:00 - 10:00	12	69	0.166	12	69	0.259	12	69	0.425
10:00 - 11:00	12	69	0.155	12	69	0.203	12	69	0.358
11:00 - 12:00	12	69	0.119	12	69	0.195	12	69	0.314
12:00 - 13:00	12	69	0.177	12	69	0.174	12	69	0.351
13:00 - 14:00	12	69	0.146	12	69	0.172	12	69	0.318
14:00 - 15:00	12	69	0.180	12	69	0.176	12	69	0.356
15:00 - 16:00	12	69	0.259	12	69	0.139	12	69	0.398
16:00 - 17:00	12	69	0.271	12	69	0.131	12	69	0.402
17:00 - 18:00	12	69	0.360	12	69	0.160	12	69	0.520
18:00 - 19:00	12	69	0.292	12	69	0.166	12	69	0.458
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.279			2.552			4.831

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.038	12	69	0.133	12	69	0.171
08:00 - 09:00	12	69	0.039	12	69	0.150	12	69	0.189
09:00 - 10:00	12	69	0.062	12	69	0.086	12	69	0.148
10:00 - 11:00	12	69	0.050	12	69	0.069	12	69	0.119
11:00 - 12:00	12	69	0.047	12	69	0.062	12	69	0.109
12:00 - 13:00	12	69	0.053	12	69	0.067	12	69	0.120
13:00 - 14:00	12	69	0.047	12	69	0.064	12	69	0.111
14:00 - 15:00	12	69	0.058	12	69	0.063	12	69	0.121
15:00 - 16:00	12	69	0.090	12	69	0.048	12	69	0.138
16:00 - 17:00	12	69	0.102	12	69	0.054	12	69	0.156
17:00 - 18:00	12	69	0.145	12	69	0.061	12	69	0.206
18:00 - 19:00	12	69	0.102	12	69	0.058	12	69	0.160
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.833			0.915			1.748

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL LGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.001	12	69	0.005	12	69	0.006
08:00 - 09:00	12	69	0.011	12	69	0.010	12	69	0.021
09:00 - 10:00	12	69	0.011	12	69	0.008	12	69	0.019
10:00 - 11:00	12	69	0.019	12	69	0.016	12	69	0.035
11:00 - 12:00	12	69	0.005	12	69	0.006	12	69	0.011
12:00 - 13:00	12	69	0.011	12	69	0.006	12	69	0.017
13:00 - 14:00	12	69	0.006	12	69	0.011	12	69	0.017
14:00 - 15:00	12	69	0.006	12	69	0.006	12	69	0.012
15:00 - 16:00	12	69	0.012	12	69	0.011	12	69	0.023
16:00 - 17:00	12	69	0.005	12	69	0.008	12	69	0.013
17:00 - 18:00	12	69	0.004	12	69	0.004	12	69	0.008
18:00 - 19:00	12	69	0.006	12	69	0.004	12	69	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.097			0.095			0.192

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL MOTOR CYCLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	69	0.000	12	69	0.001	12	69	0.001
08:00 - 09:00	12	69	0.000	12	69	0.002	12	69	0.002
09:00 - 10:00	12	69	0.000	12	69	0.000	12	69	0.000
10:00 - 11:00	12	69	0.000	12	69	0.000	12	69	0.000
11:00 - 12:00	12	69	0.000	12	69	0.000	12	69	0.000
12:00 - 13:00	12	69	0.000	12	69	0.000	12	69	0.000
13:00 - 14:00	12	69	0.000	12	69	0.000	12	69	0.000
14:00 - 15:00	12	69	0.001	12	69	0.000	12	69	0.001
15:00 - 16:00	12	69	0.000	12	69	0.000	12	69	0.000
16:00 - 17:00	12	69	0.000	12	69	0.000	12	69	0.000
17:00 - 18:00	12	69	0.002	12	69	0.004	12	69	0.006
18:00 - 19:00	12	69	0.002	12	69	0.002	12	69	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.005			0.009			0.014

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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SYSTRA Ltd 37 Manor Place Edinburgh Licence No: 700705

Calculation Reference: AUDIT-700705-240626-0616

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	HC	HAMPSHIRE	1 days
	KC	KENT	3 days
	SC	SURREY	1 days
	SP	SOUTHAMPTON	1 days
	WS	WEST SUSSEX	2 days
04	EAST ANGLIA		
	NF	NORFOLK	7 days
05	EAST MIDLANDS		
	DY	DERBY	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 250 to 1146 (units:)
Range Selected by User: 250 to 1500 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 09/11/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	6 days
Wednesday	4 days
Thursday	4 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	16 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	14
Neighbourhood Centre (PPS6 Local Centre)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	11
Village	1
Out of Town	3
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	7 days - Selected
Servicing vehicles Excluded	11 days - Selected

Secondary Filtering selection:

Use Class:

C3	16 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	7 days
10,001 to 15,000	3 days
15,001 to 20,000	3 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	2 days
50,001 to 75,000	2 days
75,001 to 100,000	3 days
125,001 to 250,000	5 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	10 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	13 days
No	3 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	16 days

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 DY-03-A-01 MIXED HOUSES DERBY
RADBOURNE LANE
DERBY

Edge of Town
Residential Zone
Total No of Dwellings: 371
Survey date: TUESDAY *10/07/18* *Survey Type: MANUAL*

2 HC-03-A-26 MIXED HOUSES & FLATS HAMPSHIRE
BOTLEY ROAD
WHITELEY

Edge of Town
Out of Town
Total No of Dwellings: 270
Survey date: THURSDAY *24/06/21* *Survey Type: MANUAL*

3 KC-03-A-06 MIXED HOUSES & FLATS KENT
MARGATE ROAD
HERNE BAY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 363
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

4 KC-03-A-07 MIXED HOUSES KENT
RECULVER ROAD
HERNE BAY

Edge of Town
Residential Zone
Total No of Dwellings: 288
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

5 KC-03-A-11 MIXED HOUSES & FLATS KENT
COLDHARBOUR ROAD
GRAVESEND

Edge of Town
No Sub Category
Total No of Dwellings: 375
Survey date: MONDAY *20/03/23* *Survey Type: MANUAL*

6 NF-03-A-06 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 275
Survey date: MONDAY *23/09/19* *Survey Type: MANUAL*

7 NF-03-A-09 MIXED HOUSES & FLATS NORFOLK
ROUND HOUSE WAY
NORWICH
CRINGLEFORD
Edge of Town
Residential Zone
Total No of Dwellings: 984
Survey date: TUESDAY *24/09/19* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

8 NF-03-A-23 MIXED HOUSES & FLATS NORFOLK
SILFIELD ROAD
WYMONDHAM

Edge of Town
Out of Town
Total No of Dwellings: 514
Survey date: WEDNESDAY *22/09/21* *Survey Type: MANUAL*

9 NF-03-A-28 MIXED HOUSES & FLATS NORFOLK
ATLANTIC AVENUE
NORWICH
SPROWSTON
Edge of Town
Residential Zone
Total No of Dwellings: 1146
Survey date: THURSDAY *22/09/22* *Survey Type: MANUAL*

10 NF-03-A-30 MIXED HOUSES NORFOLK
BRANDON ROAD
SWAFFHAM

Edge of Town
Residential Zone
Total No of Dwellings: 266
Survey date: THURSDAY *23/09/21* *Survey Type: MANUAL*

11 NF-03-A-38 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 537
Survey date: TUESDAY *20/09/22* *Survey Type: MANUAL*

12 NF-03-A-46 MIXED HOUSES & FLATS NORFOLK
BURGH ROAD
AYLSHAM

Edge of Town
Residential Zone
Total No of Dwellings: 300
Survey date: TUESDAY *14/09/21* *Survey Type: MANUAL*

13 SC-03-A-08 MIXED HOUSES SURREY
REIGATE ROAD
HORLEY

Edge of Town
Residential Zone
Total No of Dwellings: 790
Survey date: WEDNESDAY *04/05/22* *Survey Type: MANUAL*

14 SP-03-A-02 MIXED HOUSES & FLATS SOUTHAMPTON
BARNFIELD WAY
NEAR SOUTHAMPTON
HEDGE END
Edge of Town
Out of Town
Total No of Dwellings: 250
Survey date: TUESDAY *12/10/21* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

15 WS-03-A-11 MIXED HOUSES WEST SUSSEX
ELLIS ROAD
WEST HORSHAM
S BROADBRIDGE HEATH
Edge of Town
Residential Zone
Total No of Dwellings: 918
Survey date: TUESDAY *02/04/19* *Survey Type: MANUAL*

16 WS-03-A-21 MIXED HOUSES WEST SUSSEX
HILLAND ROAD
BILLINGSHURST

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 480
Survey date: THURSDAY *09/11/23* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.68

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.074	16	508	0.297	16	508	0.371
08:00 - 09:00	16	508	0.151	16	508	0.373	16	508	0.524
09:00 - 10:00	16	508	0.133	16	508	0.154	16	508	0.287
10:00 - 11:00	16	508	0.106	16	508	0.125	16	508	0.231
11:00 - 12:00	16	508	0.112	16	508	0.123	16	508	0.235
12:00 - 13:00	16	508	0.138	16	508	0.134	16	508	0.272
13:00 - 14:00	16	508	0.138	16	508	0.126	16	508	0.264
14:00 - 15:00	16	508	0.140	16	508	0.154	16	508	0.294
15:00 - 16:00	16	508	0.231	16	508	0.152	16	508	0.383
16:00 - 17:00	16	508	0.262	16	508	0.152	16	508	0.414
17:00 - 18:00	16	508	0.346	16	508	0.159	16	508	0.505
18:00 - 19:00	16	508	0.283	16	508	0.147	16	508	0.430
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.114			2.096			4.210

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter summary

Trip rate parameter range selected:	250 - 1146 (units:)
Survey date date range:	01/01/16 - 09/11/23
Number of weekdays (Monday-Friday):	16
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.002	16	508	0.002	16	508	0.004
08:00 - 09:00	16	508	0.005	16	508	0.005	16	508	0.010
09:00 - 10:00	16	508	0.002	16	508	0.002	16	508	0.004
10:00 - 11:00	16	508	0.001	16	508	0.001	16	508	0.002
11:00 - 12:00	16	508	0.001	16	508	0.001	16	508	0.002
12:00 - 13:00	16	508	0.001	16	508	0.001	16	508	0.002
13:00 - 14:00	16	508	0.002	16	508	0.001	16	508	0.003
14:00 - 15:00	16	508	0.002	16	508	0.001	16	508	0.003
15:00 - 16:00	16	508	0.004	16	508	0.004	16	508	0.008
16:00 - 17:00	16	508	0.002	16	508	0.003	16	508	0.005
17:00 - 18:00	16	508	0.002	16	508	0.003	16	508	0.005
18:00 - 19:00	16	508	0.001	16	508	0.001	16	508	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.025			0.025			0.050

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.000	16	508	0.001	16	508	0.001
08:00 - 09:00	16	508	0.002	16	508	0.002	16	508	0.004
09:00 - 10:00	16	508	0.002	16	508	0.002	16	508	0.004
10:00 - 11:00	16	508	0.001	16	508	0.001	16	508	0.002
11:00 - 12:00	16	508	0.002	16	508	0.002	16	508	0.004
12:00 - 13:00	16	508	0.001	16	508	0.002	16	508	0.003
13:00 - 14:00	16	508	0.002	16	508	0.002	16	508	0.004
14:00 - 15:00	16	508	0.002	16	508	0.001	16	508	0.003
15:00 - 16:00	16	508	0.001	16	508	0.001	16	508	0.002
16:00 - 17:00	16	508	0.001	16	508	0.001	16	508	0.002
17:00 - 18:00	16	508	0.001	16	508	0.001	16	508	0.002
18:00 - 19:00	16	508	0.000	16	508	0.000	16	508	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.015			0.016			0.031

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.000	16	508	0.000	16	508	0.000
08:00 - 09:00	16	508	0.001	16	508	0.000	16	508	0.001
09:00 - 10:00	16	508	0.000	16	508	0.000	16	508	0.000
10:00 - 11:00	16	508	0.000	16	508	0.000	16	508	0.000
11:00 - 12:00	16	508	0.000	16	508	0.000	16	508	0.000
12:00 - 13:00	16	508	0.000	16	508	0.000	16	508	0.000
13:00 - 14:00	16	508	0.000	16	508	0.000	16	508	0.000
14:00 - 15:00	16	508	0.000	16	508	0.000	16	508	0.000
15:00 - 16:00	16	508	0.000	16	508	0.000	16	508	0.000
16:00 - 17:00	16	508	0.000	16	508	0.000	16	508	0.000
17:00 - 18:00	16	508	0.000	16	508	0.000	16	508	0.000
18:00 - 19:00	16	508	0.000	16	508	0.000	16	508	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.001			0.000			0.001

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.003	16	508	0.007	16	508	0.010
08:00 - 09:00	16	508	0.004	16	508	0.014	16	508	0.018
09:00 - 10:00	16	508	0.002	16	508	0.003	16	508	0.005
10:00 - 11:00	16	508	0.002	16	508	0.002	16	508	0.004
11:00 - 12:00	16	508	0.001	16	508	0.002	16	508	0.003
12:00 - 13:00	16	508	0.002	16	508	0.002	16	508	0.004
13:00 - 14:00	16	508	0.003	16	508	0.001	16	508	0.004
14:00 - 15:00	16	508	0.003	16	508	0.003	16	508	0.006
15:00 - 16:00	16	508	0.008	16	508	0.002	16	508	0.010
16:00 - 17:00	16	508	0.010	16	508	0.005	16	508	0.015
17:00 - 18:00	16	508	0.008	16	508	0.005	16	508	0.013
18:00 - 19:00	16	508	0.005	16	508	0.004	16	508	0.009
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.051			0.050			0.101

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.090	16	508	0.412	16	508	0.502
08:00 - 09:00	16	508	0.188	16	508	0.624	16	508	0.812
09:00 - 10:00	16	508	0.170	16	508	0.215	16	508	0.385
10:00 - 11:00	16	508	0.141	16	508	0.174	16	508	0.315
11:00 - 12:00	16	508	0.152	16	508	0.171	16	508	0.323
12:00 - 13:00	16	508	0.184	16	508	0.182	16	508	0.366
13:00 - 14:00	16	508	0.187	16	508	0.166	16	508	0.353
14:00 - 15:00	16	508	0.194	16	508	0.206	16	508	0.400
15:00 - 16:00	16	508	0.406	16	508	0.217	16	508	0.623
16:00 - 17:00	16	508	0.418	16	508	0.217	16	508	0.635
17:00 - 18:00	16	508	0.503	16	508	0.227	16	508	0.730
18:00 - 19:00	16	508	0.410	16	508	0.223	16	508	0.633
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.043			3.034			6.077

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.012	16	508	0.039	16	508	0.051
08:00 - 09:00	16	508	0.024	16	508	0.082	16	508	0.106
09:00 - 10:00	16	508	0.021	16	508	0.021	16	508	0.042
10:00 - 11:00	16	508	0.016	16	508	0.018	16	508	0.034
11:00 - 12:00	16	508	0.017	16	508	0.015	16	508	0.032
12:00 - 13:00	16	508	0.020	16	508	0.018	16	508	0.038
13:00 - 14:00	16	508	0.021	16	508	0.018	16	508	0.039
14:00 - 15:00	16	508	0.027	16	508	0.029	16	508	0.056
15:00 - 16:00	16	508	0.068	16	508	0.030	16	508	0.098
16:00 - 17:00	16	508	0.038	16	508	0.021	16	508	0.059
17:00 - 18:00	16	508	0.038	16	508	0.032	16	508	0.070
18:00 - 19:00	16	508	0.034	16	508	0.030	16	508	0.064
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.336			0.353			0.689

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.001	16	508	0.019	16	508	0.020
08:00 - 09:00	16	508	0.001	16	508	0.021	16	508	0.022
09:00 - 10:00	16	508	0.003	16	508	0.008	16	508	0.011
10:00 - 11:00	16	508	0.003	16	508	0.007	16	508	0.010
11:00 - 12:00	16	508	0.004	16	508	0.007	16	508	0.011
12:00 - 13:00	16	508	0.004	16	508	0.004	16	508	0.008
13:00 - 14:00	16	508	0.004	16	508	0.004	16	508	0.008
14:00 - 15:00	16	508	0.006	16	508	0.004	16	508	0.010
15:00 - 16:00	16	508	0.015	16	508	0.004	16	508	0.019
16:00 - 17:00	16	508	0.019	16	508	0.003	16	508	0.022
17:00 - 18:00	16	508	0.014	16	508	0.003	16	508	0.017
18:00 - 19:00	16	508	0.010	16	508	0.003	16	508	0.013
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.084			0.087			0.171

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.000	16	508	0.006	16	508	0.006
08:00 - 09:00	16	508	0.000	16	508	0.006	16	508	0.006
09:00 - 10:00	16	508	0.000	16	508	0.002	16	508	0.002
10:00 - 11:00	16	508	0.000	16	508	0.001	16	508	0.001
11:00 - 12:00	16	508	0.001	16	508	0.001	16	508	0.002
12:00 - 13:00	16	508	0.000	16	508	0.000	16	508	0.000
13:00 - 14:00	16	508	0.000	16	508	0.000	16	508	0.000
14:00 - 15:00	16	508	0.000	16	508	0.000	16	508	0.000
15:00 - 16:00	16	508	0.001	16	508	0.001	16	508	0.002
16:00 - 17:00	16	508	0.002	16	508	0.000	16	508	0.002
17:00 - 18:00	16	508	0.006	16	508	0.000	16	508	0.006
18:00 - 19:00	16	508	0.004	16	508	0.000	16	508	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.014			0.017			0.031

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL COACH PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.000	16	508	0.000	16	508	0.000
08:00 - 09:00	16	508	0.000	16	508	0.000	16	508	0.000
09:00 - 10:00	16	508	0.000	16	508	0.000	16	508	0.000
10:00 - 11:00	16	508	0.000	16	508	0.000	16	508	0.000
11:00 - 12:00	16	508	0.000	16	508	0.000	16	508	0.000
12:00 - 13:00	16	508	0.000	16	508	0.000	16	508	0.000
13:00 - 14:00	16	508	0.000	16	508	0.000	16	508	0.000
14:00 - 15:00	16	508	0.000	16	508	0.000	16	508	0.000
15:00 - 16:00	16	508	0.000	16	508	0.000	16	508	0.000
16:00 - 17:00	16	508	0.000	16	508	0.000	16	508	0.000
17:00 - 18:00	16	508	0.000	16	508	0.000	16	508	0.000
18:00 - 19:00	16	508	0.000	16	508	0.000	16	508	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.001	16	508	0.024	16	508	0.025
08:00 - 09:00	16	508	0.001	16	508	0.027	16	508	0.028
09:00 - 10:00	16	508	0.003	16	508	0.010	16	508	0.013
10:00 - 11:00	16	508	0.003	16	508	0.008	16	508	0.011
11:00 - 12:00	16	508	0.005	16	508	0.008	16	508	0.013
12:00 - 13:00	16	508	0.004	16	508	0.004	16	508	0.008
13:00 - 14:00	16	508	0.004	16	508	0.004	16	508	0.008
14:00 - 15:00	16	508	0.006	16	508	0.005	16	508	0.011
15:00 - 16:00	16	508	0.016	16	508	0.005	16	508	0.021
16:00 - 17:00	16	508	0.022	16	508	0.003	16	508	0.025
17:00 - 18:00	16	508	0.021	16	508	0.003	16	508	0.024
18:00 - 19:00	16	508	0.015	16	508	0.003	16	508	0.018
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.101			0.104			0.205

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.68

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.106	16	508	0.482	16	508	0.588
08:00 - 09:00	16	508	0.217	16	508	0.747	16	508	0.964
09:00 - 10:00	16	508	0.196	16	508	0.248	16	508	0.444
10:00 - 11:00	16	508	0.162	16	508	0.201	16	508	0.363
11:00 - 12:00	16	508	0.175	16	508	0.197	16	508	0.372
12:00 - 13:00	16	508	0.210	16	508	0.206	16	508	0.416
13:00 - 14:00	16	508	0.215	16	508	0.189	16	508	0.404
14:00 - 15:00	16	508	0.230	16	508	0.243	16	508	0.473
15:00 - 16:00	16	508	0.498	16	508	0.254	16	508	0.752
16:00 - 17:00	16	508	0.487	16	508	0.246	16	508	0.733
17:00 - 18:00	16	508	0.570	16	508	0.267	16	508	0.837
18:00 - 19:00	16	508	0.463	16	508	0.260	16	508	0.723
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.529			3.540			7.069

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.061	16	508	0.265	16	508	0.326
08:00 - 09:00	16	508	0.129	16	508	0.339	16	508	0.468
09:00 - 10:00	16	508	0.113	16	508	0.133	16	508	0.246
10:00 - 11:00	16	508	0.089	16	508	0.107	16	508	0.196
11:00 - 12:00	16	508	0.095	16	508	0.105	16	508	0.200
12:00 - 13:00	16	508	0.121	16	508	0.116	16	508	0.237
13:00 - 14:00	16	508	0.119	16	508	0.106	16	508	0.225
14:00 - 15:00	16	508	0.123	16	508	0.138	16	508	0.261
15:00 - 16:00	16	508	0.208	16	508	0.131	16	508	0.339
16:00 - 17:00	16	508	0.233	16	508	0.135	16	508	0.368
17:00 - 18:00	16	508	0.314	16	508	0.142	16	508	0.456
18:00 - 19:00	16	508	0.261	16	508	0.134	16	508	0.395
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.866			1.851			3.717

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL LGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.009	16	508	0.027	16	508	0.036
08:00 - 09:00	16	508	0.014	16	508	0.024	16	508	0.038
09:00 - 10:00	16	508	0.015	16	508	0.017	16	508	0.032
10:00 - 11:00	16	508	0.014	16	508	0.015	16	508	0.029
11:00 - 12:00	16	508	0.014	16	508	0.015	16	508	0.029
12:00 - 13:00	16	508	0.013	16	508	0.014	16	508	0.027
13:00 - 14:00	16	508	0.014	16	508	0.016	16	508	0.030
14:00 - 15:00	16	508	0.012	16	508	0.012	16	508	0.024
15:00 - 16:00	16	508	0.015	16	508	0.014	16	508	0.029
16:00 - 17:00	16	508	0.023	16	508	0.012	16	508	0.035
17:00 - 18:00	16	508	0.026	16	508	0.011	16	508	0.037
18:00 - 19:00	16	508	0.017	16	508	0.009	16	508	0.026
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.186			0.186			0.372

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL MOTOR CYCLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	508	0.001	16	508	0.002	16	508	0.003
08:00 - 09:00	16	508	0.000	16	508	0.004	16	508	0.004
09:00 - 10:00	16	508	0.000	16	508	0.000	16	508	0.000
10:00 - 11:00	16	508	0.001	16	508	0.001	16	508	0.002
11:00 - 12:00	16	508	0.000	16	508	0.001	16	508	0.001
12:00 - 13:00	16	508	0.001	16	508	0.001	16	508	0.002
13:00 - 14:00	16	508	0.001	16	508	0.001	16	508	0.002
14:00 - 15:00	16	508	0.001	16	508	0.001	16	508	0.002
15:00 - 16:00	16	508	0.002	16	508	0.002	16	508	0.004
16:00 - 17:00	16	508	0.002	16	508	0.001	16	508	0.003
17:00 - 18:00	16	508	0.003	16	508	0.001	16	508	0.004
18:00 - 19:00	16	508	0.003	16	508	0.001	16	508	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.015			0.016			0.031

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Appendix D – Model Output Files

**Available electronically upon request*

Appendix E – R772 / Beech Road sensitivity test

8.2.6 The table below provides a comparison between the 55% car driver mode share presented in the main body of the TA, and a sensitivity test, which assumes that the car driver mode share from the development remains as per the Census 2022 results, i.e. at 70%. The Dublin Road/Beech Road junction has been evaluated with both mode share assumptions in place.

Arm	AM peak hour (0800-0900)			PM peak hour (1700-1800)		
	Queue (pcu)	Delay (s)	RFC	Queue (pcu)	Delay (s)	RFC
Base 2032 + School + Dev (500 units) 70% Mode Share						
R772 Dublin Rd (S)	14.5	23.3	59.10%	10.4	17.8	46.50%
Beech Road	15.5	40.6	75.2 : 75.2%	6.8	36.2	54.8 : 54.8%
R772 Dublin Rd (N)	17.3	41.9	76.50%	12.8	24.8	55.90%
Base 2032 + School + Dev (500 units) 55% Mode Share						
R772 Dublin Rd (S)	15.2	24.5	61.10%	10.9	24.7	49.10%
Beech Road	18.1	43.4	80.7 : 80.7%	12.5	31.6	66.2 : 66.2%
R772 Dublin Rd (N)	18.3	47.0	81.00%	14.2	33.7	64.20%
Base 2042 + School + Dev (500 units) 70% Mode Share						
R772 Dublin Rd (S)	16.0	25.7	63.20%	12.0	17.6	51.30%
Beech Road	19.6	44.6	83.0 : 83.0%	7.5	38.7	58.2 : 58.2%
R772 Dublin Rd (N)	19.5	51.6	84.60%	13.5	25.3	58.00%
Base 2042 + School + Dev (500 units) 55% Mode Share						
R772 Dublin Rd (S)	16.9	27.2	66.00%	12.7	27.4	55.50%
Beech Road	25.6	56.2	91.5 : 91.5%	16.6	33.8	74.8 : 74.8%
R772 Dublin Rd (N)	23.2	72.7	93.20%	15.6	39.2	71.80%

8.2.7 The results show that assuming the Census 2022 mode share remains in place:

- Junction performance slightly worsens in Phase 1B, but the junction is predicted to remain within capacity; and
- The junction is predicted to operate slightly over practical capacity in the AM peak hour in 2042 (Phase 1C).

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