Proposed Housing Development, Ard an Ghleanna, Mallow, Co Cork

Residential Travel Plan

Document Control Sheet

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Table of Contents

1.0 INTRODUCTION

Martin Hanley Ltd. Consulting Engineers have been engaged by Cork County Council to prepare a Residential Travel Plan in support of a planning application for a new residential development of 138 residential units at, Ard an Ghleanna, Mallow, Co Cork. The proposed development includes both houses and apartments. This report has been prepared as part of the planning application. The site is located on the northeastern side of Mallow. Access to the development will be via the existing Aldworth housing estate from St Joseph's Road The proposed development is located approx. 900m from Mallow town centre.

The development consists of the construction of 138 No. houses and apartments including 1-bedroom and 2-bedroom apartments. Parking for the facility will be located at surface level. It is intended that 183 No. car parking spaces be provided for residential use as well as 172 No. bicycle stands split between external and covered. Vehicular access & egress will be from existing Aldworth Heights housing estate from St Joseph's Road.

Fig 1.1: Site location in red for the proposed 138 residential units.

The proposed development will be supported by a Residential Travel Plan (TP) as a suitable mechanism by which the future development site can support the objectives of sustainable development and the achievement of reduced car dependency. The present document is intended to serve as a template for the implementation of a Travel Plan once the proposed development is completed and operational. The implementation of the final version of the TP shall be the responsibility of the Mobility Manager for the development, who shall also monitor its performance and review the Plan at regular intervals.

This Residential Travel Plan has been prepared in accordance with the requirements of the Cork County Council Development Plan 2022-2028 as well as pertinent national guidance documents.

A Travel Plan is best described as a package of measures put in place to encourage and support sustainable travel patterns amongst the residents of the proposed development. The aim is to reduce the demand and use of the car and to highlight and facilitate the use of alternative modes of transport. The focus in this instance is on commuting residents with the following objectives:

- To inform residents of alternative modes of travel available to them for their journeys.
- To promote healthier, stress-free, and cheaper options of commuting for residents.
- Enhance the environment of the development, improve accessibility, and outline the potential advantages to residents.
- To reduce trip generation to and from the site thus reducing parking demand and traffic flow.

2.0 PURPOSE OF A TRAVEL PLAN

Mobility Management can be described as a transport demand management mechanism, that seeks to provide for the transportation needs of people and goods. It can be applied as a strategic demand management tool or as a site-specific (or area-specific) measure. The aim is to reduce demand for and use of cars by increasing the attractiveness and practicality of other modes of transport.

Within Ireland, transport demand management is becoming well established through the initiatives and strategies identified in documents such as A Platform for Change and Smarter Travel: A Sustainable Future – A New Transport Policy for Ireland 2009-2020. Within these documents, numerous actions have been proposed which aim to foster improved sustainable travel habits for Ireland.

A Travel Plan (TP) is a management tool that brings together transport, user, and site management issues in a coordinated manner. A successful plan generally includes measures to promote and improve the attractiveness of using public transport, cycling, walking, car-sharing, flexible working, or a combination of these as alternatives to drive-alone journeys. It should be considered as a dynamic process where a package of measures and campaigns are identified, piloted, and monitored on an on-going basis. The nature of the plan therefore changes during its implementation: measures that prove successful are retained, while those that are not supported are discarded.

It is important that the plan retains the support of users and receives continuous monitoring. Feedback and active management of the plan are required for it to continue to be successful.

There are many benefits associated with the use of alternative modes of travel including improved accessibility, reduced commuter costs, more reliable journey times and less congestion on the network for those who have no choice but to use the car (school runs prior to work etc.). In addition, there are also health benefits for those walking and cycling as well as an overall decrease in stress levels associated with driving and waiting in traffic.

Peak hour congestion on our roads network is now an accepted norm with up to 90% of car journeys having a single occupier and 80% of all car journeys to and from work are by private car. Car-sharing, public transport use or walking even once a week could dramatically change this figure.

To facilitate the necessary change in our approach to commuting, the travelling public will be required to make changes. Alternative modes of travel need to be actively promoted and participation in car-pooling, cycling, and walking groups supported by a Travel Plan Steering Committee. The public must be presented with an alternative to using the motor car and be encouraged to do so.

The Government also has a role to play in changing current commuting practices. The provision of a better public transport system by fast tracking bus quality corridors, the provision of cycle lane facilities and the implementation of tax saver policies on commuter tickets are just some of the areas where the Government can play their part. There are many examples in other cities and towns around the world where the use of the car is penalised, be it a city centre roads tax or the taxing of car spaces as benefit in kind. Policies such as these may seem dramatic however they do have an overall benefit to the moving of goods and people within the city/town environ. The resulting savings to business and habitants can be significant as congestion and journey times reduce.

National strategy for sustainable transport is set out in the Smarter Travel Document A Sustainable Transport Future. The document sets out the following aims by 2020:

- To support sustainable travel, future population and employment growth will have to predominantly take place in sustainable compact urban areas or rural areas, which discourage dispersed development and long commuting.
- Work-related commuting by car will be reduced from a current modal share of 65% to 45%, which will mean that between 500,000 and 600,000 commuters nationally will be encouraged to take means of transport other than private car (of these, 200,000 would be existing car drivers). Change in personal behaviour will also be necessary for other travel purposes as most travel relates to non-commuting.
- Car drivers should be accommodated by other modes of transport such as walking, cycling, public transport, and car sharing (to the extent that commuting by these modes will rise to 55% by 2020) or through other measures such as e-working.

3.0 CONTENT OF A TRAVEL PLAN

An effective Travel Plan should be informed by and founded upon the following:

- A travel survey of residents, to establish the origins and destinations of trips to and from the development.
- An outline of specific schemes/measures implemented to discourage car-dependent transport to and from the site.
- Any comments/suggestions on travel that have been offered by residents.
- A set of targets, to be set out in accordance with approved guideline documents.
- An outline of the specific schemes that the development plans to make available to its residents, in order to encourage the desired travel patterns to and from the site. These might include, for example: cycle facilities, public transport subsidies, walking groups, cycle groups, communication, and consultation, etc.

It is intended that the Travel Plan for the proposed development will follow the above guidelines. The success of the TP depends on the co-operation of all parties; the appointment of a coordinator and a steering group is vital for the success of the plan. This TP will need to be reviewed on a regular basis by the steering group, with updates implemented as improvements to the transport network in the vicinity of the development site are being carried out.

4.0 POLICY CONTEXT

4.1 National Transport Policy and Guidelines

The National Development Plan 2030 sets out national investment priorities including transport infrastructure. The Department of Transport, Tourism and Sport (DTTS) are currently preparing a 'Planning and Land Use Transportation Outlook' which will provide the long-term strategy for this investment.

'Smarter Travel – A Sustainable Transport Future 2009-2020' sets out the Government's goals to reduce overall demand for travel, maximise efficiency of the transport network, reduce reliance on fossil fuels, reduce emissions and improve access to transport and quality of life. DTTS is currently undertaking a review to produce a policy document to succeed the Smarter Travel 2009-2020 initiative. DTTS and other agencies such as the National Transport Agency (NTA) have issued a range of strategies and guidance relating to sustainable transport including that relating to Alternative Fuels Infrastructure (2017), Permeability (2015), and the National Cycling Manual (2013).

The Programme for Government 2020 contains extensive commitments in support of sustainable transport. DMURS provides guidance on how the objectives of sustainability may be achieved by design in urban areas. DMURS also contains detailed guidance on designing attractive and safe roads and streets and on technical aspects including sightlines within the 60kmh zone. Outside of the 60kmh zone guidance on sightlines is provided in Rural Road Link Design; Geometric Design of Junctions 2017/2019.
The Spatial Planning and National Roads - Guidelines for Planning Authorities (2012) provide guidance on how national roads should be dealt with in development plans, local area plans and planning applications. Other guidelines directly related to transport include Area Based Transport Assessment - Guidance Notes (Transport Infrastructure Ireland (TII), 2018) which deal with the assessment of traffic generation resulting from specific types of development and locations, the Traffic and Transport Assessment Guidelines (TII, 2014) and the guidance on Road Safety Audits (TII 2017).

In order to demonstrate that the development of the site complies with current national and local transport planning policy, a review was undertaken of the following documents:

- Cork County Council Development Plan 2022-2028
- Urban Design Manual: A Best Practice Guide 2009
- Smarter Travel - A Sustainable Transport Future 2009-2020
- Spatial Planning & National Roads – Guidelines for Planning Authorities 2012.

4.2 Smarter Travel – A Sustainable Transport Future 2009-2020

Smarter Travel is “designed to show how Ireland can reverse current unsustainable transport and travel patterns and reduce the health and environmental impacts of current trends and improve our quality of life”. The plan outlines the current transport trends and statistics in Ireland and focuses on policies which aim to increase transport sustainability by 2020.

Key goals of the policy include.

- Improving quality of life and accessibility to transport for all and, in particular, people with reduced mobility and those who may experience isolation due to lack of transport.
- Improving economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructure bottlenecks.
- Minimising the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions.
- Reducing overall travel demand and commuting distances travelled by the private car.

In Chapter 3 of the Smarter Travel Document the Government reaffirms its vision for sustainability in transport and sets out five key goals:

(i) to reduce overall travel demand,
(ii) to maximise the efficiency of the transport network,
(iii) to reduce reliance on fossil fuels,
(iv) to reduce transport emissions and
(v) to improve accessibility to transport.

To achieve these goals and to ensure that we have sustainable travel and transport by 2020, the Government sets the following key targets:

- Future population and employment growth will predominantly take place in sustainable compact forms, which reduce the need to travel for employment and services.
- 500,000 more people will take alternative means to commute to work to the extent that the total share of car commuting will drop from 65% to 45%
- Alternatives such as walking, cycling and public transport will be supported and provided to the extent that these will rise to 55% of total commuter journeys to work.
- The total kilometres travelled by the car fleet in 2023 will not increase significantly from current levels.
- A reduction will be achieved on the 2005 figure for greenhouse gas emissions from the transport sector.

An effective Mobility Management Plan should be informed by and founded upon the following:

- A travel survey of residents, to establish the origins and destinations of trips to and from the development.
- An outline of specific schemes/measures implemented to discourage car-dependent transport to and from the site.
- Any comments/suggestions on travel that have been offered by development occupants.
- A set of targets, to be set out in accordance with approved guideline documents.
- An outline of the specific schemes that the development plans to make available to its occupants, in order to encourage the desired travel patterns to and from the site. These might include, for example: cycle facilities, public transport subsidies, walking groups, cycle groups, communication, and consultation, etc.

It is intended that the Travel Plan for the proposed development will follow the above guidelines. The success of the Travel Plan depends on the co-operation of all parties; the appointment of a coordinator and a steering group is vital for the success of the plan. This Travel Plan will need to be reviewed on a regular basis by the steering group, with updates implemented, as improvements to the transport network in the vicinity of the development site are carried out.

4.3 Cork County Council Development Plan 2022-2028

Cork County Council Development Plan 2022-2028 Chapter 12 requires that for developments of 50 employees or more, residential developments over 100 units, all education facilities, community facilities, health facilities, as well as major extensions to existing such uses developers will be required to prepare mobility management plans (travel plans). The travel plan should have a strong emphasis on sustainable travel modes consistent with published NTA guidance to promote safe, attractive, convenient, alternative, and sustainable modes of transport as part of the proposal.

Baseline trips data indicates that a significant majority of trips (77.47%) originating in Mallow Electoral Area of Cork County are by private transport and are mainly car-based. Walking accounts for a significant proportion of journeys at 9.57 % while cycling comprises 0.71% of trips. Approximately 0.78% of trips are taken by public transport. See Table 4.1 below is an extract from Cork County Council Development Plan 2022-2028 Chapter 12 Transport and Mobility. The targets for modal share for 2028 are also set out in the Development Plan and are shown in Table 4.1 below.

Commuting to or within	% Travelling to work by private Car	% Travelling to work by walking	% Travelling to work by cycling	% Travelling to work by public transport
Mallow Baseline	77.47	9.57	0.71	0.78
Mallow Targets 2028	60.0	14.0	4.0	11.0

Table 4.1: Cork County Development Plan – Mallow existing baseline mode share for commuting compared to target mode for commuting.

5.0 PROPOSED DEVELOPMENT

The proposed development consists of the construction of a housing development involving 138 housing units. The development will consist of 74 houses and 64 apartments with provision for a creche to also be provided.
This proposed development layout in figure 5.1 has been provided by Deady Gahan Architects.
Parking will be provided as per Section 10.0 of this report.

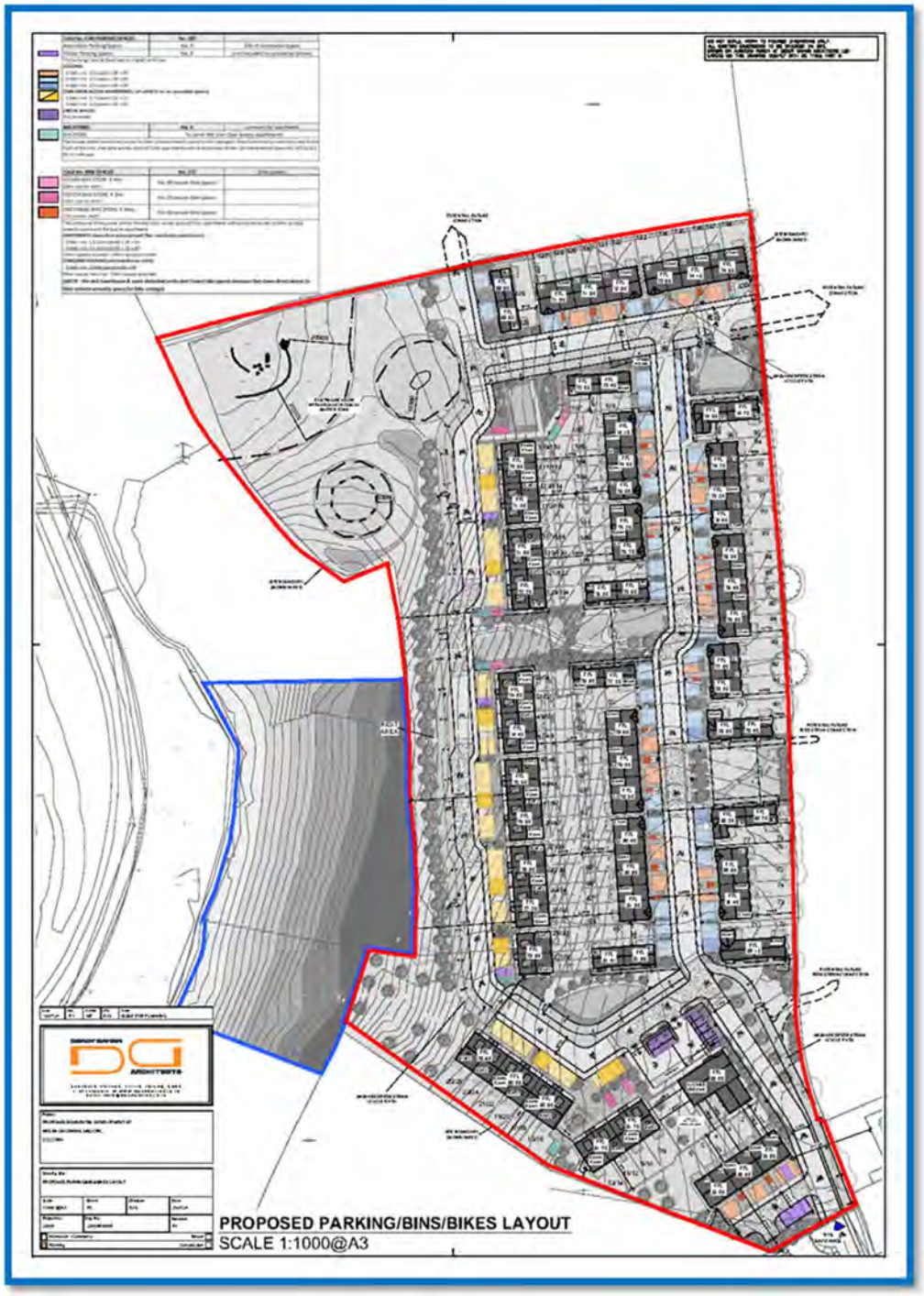


Fig 5.1: Proposed Development Layout.

6.0 EXSITING SERVICES

The proposed Development has a number of existing services including, Scoil Aonghusa Community School, a Doctors Surgery, and local businesses in close proximity to the proposed development. See Fig 6.1 below.

Mallow Town centre located approx. 1km from the proposed Development provides a significant number of additional shops businesses, restaurants, and facilities all in close proximity to the proposed development.

Fig 6.1 below shows the main services with 15minutes walk of the proposed development site. The site is located within 13mins walk of Mallow Town centre.

- Mallow Community National School – 6mins walk.
- The Laurels Surgery - 8min walk.
- Promara Ltd - 3min walk.
- Mallow Rugby Club – 9min walk.
- BHIOS Prints – 7min walk.
- Mallow Castle Playground – 13min walk.
- Auroca Store – 12min walk.
- Dunnes Stores – 17min walk.

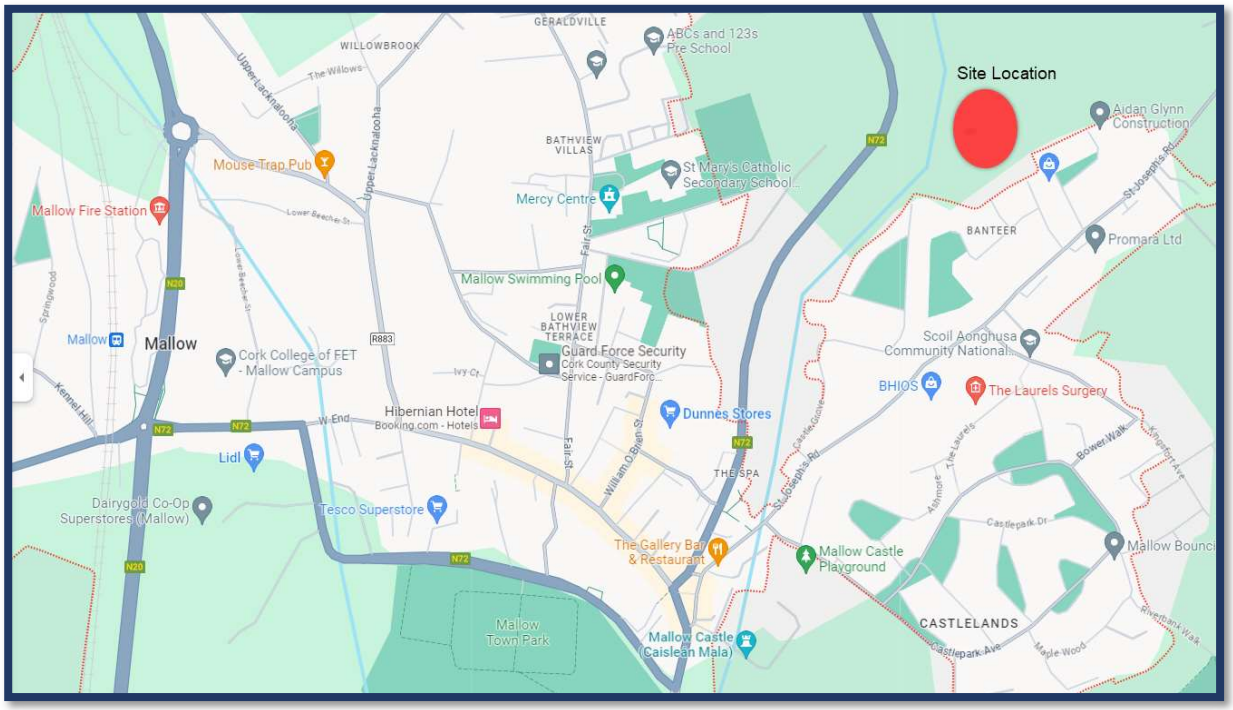


Fig 6.1: Local services

7.0 PUBLIC TRANSPORT FACILITIES

As part of the preparation of the Travel Plan, an assessment of the existing public transport infrastructure in the area was undertaken. A number of bus routes to both Cork and Charleville are available from Mallow Town Centre. The following existing bus services are available,

- Bus Éireann Route 243, Cork - Mallow - Kanturk - Charleville.
- TFI Local Link Cork Route 522 Charleville to Mallow.
- Expressway Timetable Route 51, Galway - Limerick – Cork service Mallow Town Centre.

Figure 7.1 below shows the existing Bus routes in red

Figure 7.1 Bus public transport services in the vicinity of the proposed Development.

The nearest bus stop is located on Park road which is accessible from the proposed development in 21mins by walking and 8mins by bicycle.

Mallow is also served by a Cork / Dublin mainline train service. The station is located 2.7km from the proposed development. This can be accessed by car in 7mins by cycle in 10min or by walking in 33mins. Fig 7.3 below shows Mallow Train Station connectivity map highlighting the onward connections to Cork, Limerick, Tralee Waterford, and Dublin.

Figure 7.2 Mallow Train Sation Location.

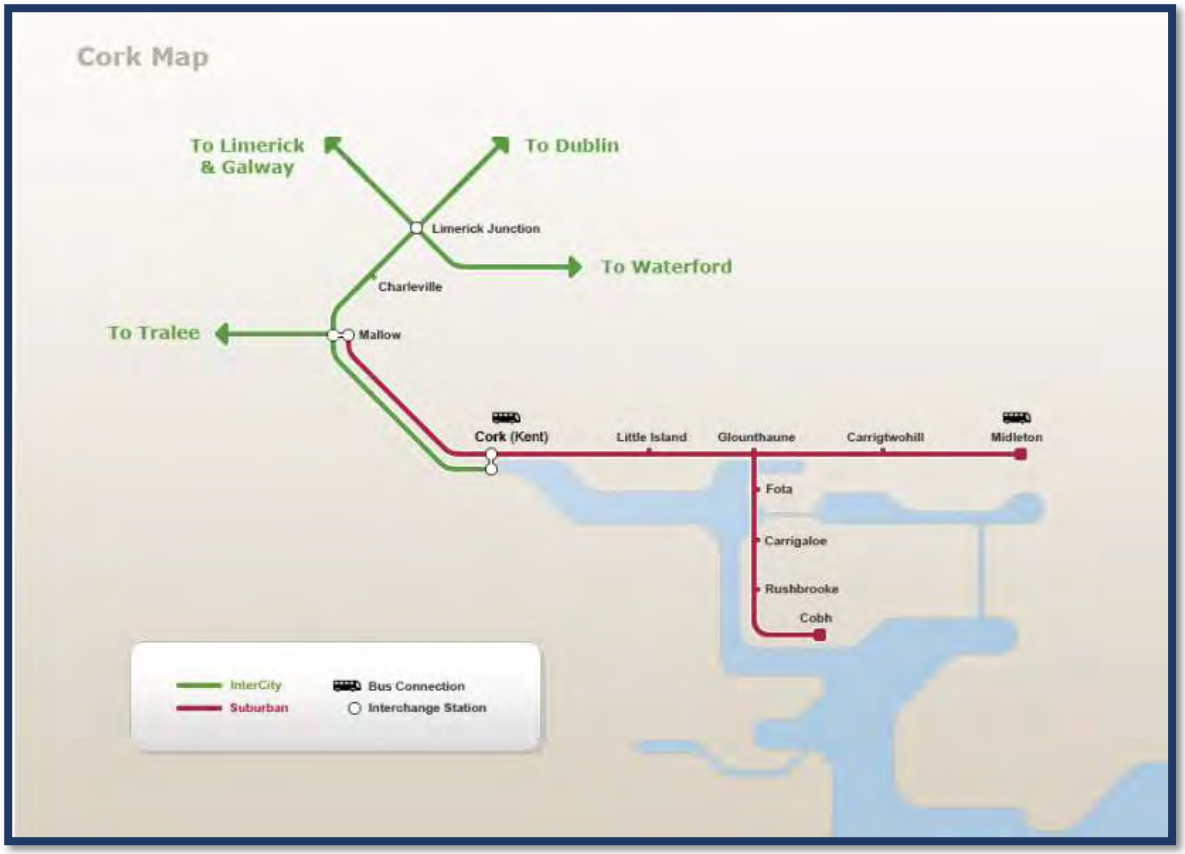


Figure 7.3 Mallow Train Station map showing connectivity to Cork, Limerick, Tralee Waterford, and Dublin.

8.0 PEDESTRIAN FACILITIES

Pedestrian facilities from the proposed development are available along St Joseph's Road. A survey of the pedestrian routes available with suggested improvements are shown on drawing SJ-PR-P01 & SJ-PR-P02 in the appendix of the report.
In general footpath facilities along St Joseph's Road vary in width from 1.4m to 3.0m.
An alternative route for pedestrians may also be available through the existing Castle Grove housing development. Although a connection this pedestrian route will be subject to negotiation and planning approval.

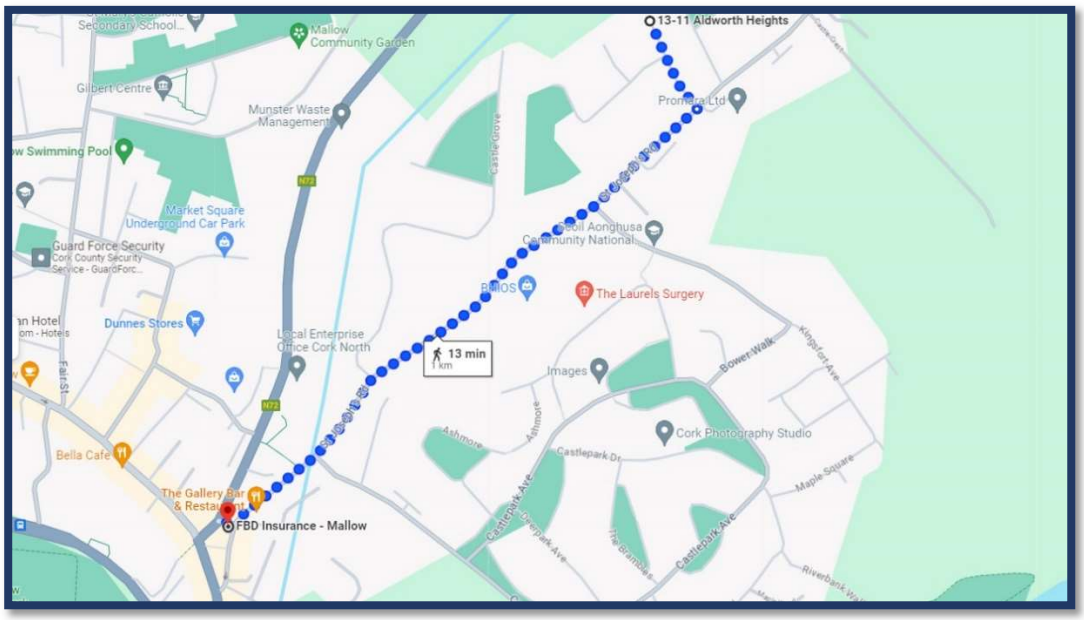


Figure 8.1 Route from proposed development along St Joseph's Road to Town Centre 13mins walking distance.

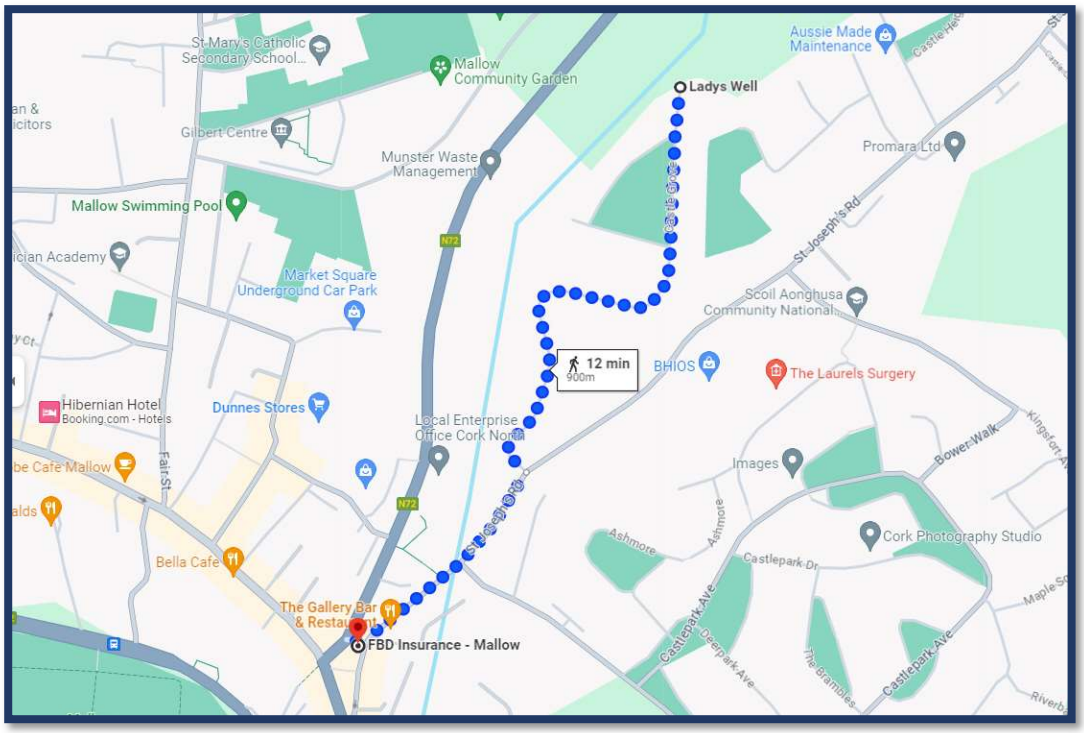


Figure 8.2 Route from proposed development through Castle Grove to Town Centre 12mins walking distance.

9.0 CYCLE FACILITIES

While cycle facilities are limited within Mallow town centre there is a network of footpaths and cycle tracks from the spa walk through the Castle Grounds and along the Blackwater River as shown in Fig 9.1 below. The proposed development will include a 3.0m wide two-way cycle lane within the development.

Figure 9.1 Existing footpath and cycle tracks show in red dashed line.

The shortest route for cyclist and pedestrians to the spa walk through the Castle Grounds and along the Blackwater River is through Kingsfort along Riverbank Walk. This is approx. 900 away from the proposed development and would take 2mins by bicycle.

10.0 PARKING PROVISION

Parking inevitably remains an integral element of overall land use and transportation policy. The purpose of parking standards is to ensure that a considered and appropriate level of parking is provided to serve new development.

10.1 Car Parking

Cork County Council Development Plan 2022 gives guidance on car parking standards for new developments. Table 12.6 of the Plan sets the car space allocation for various types of development including residential developments. Table 9.1 below shows a schedule of car parking spaces as set out by the Cork County Development Plan. Table 10.1 below shows a schedule of car parking spaces as set out by the Development Plan.

Land Use Category	Cork County Council Development Plan 2022-2028 - Car Parking Standards	Total Spaces Per Unit	Total Units	Parking spaces required
RESIDENTIAL				
74 House	2 spaces per unit	2	74	148
66 Apartments	1.25 spaces per unit	1.25	66	83
Creche	1.0 spaces per 3 staff	0.333	10	3
Creche	1.0 spaces per 10 children	0.1	42	4
Total				238

Table 10.1: Car parking allocation as per the Cork County Council Development Plan

VEHICLE PARKING SPACES - HOUSING			
Unit Types	**No. of Units**	**Parking x Units**	**Total Parking**
4 bed semi-detached	4	2no. parking spaces per unit	8
3 bed semi-detached	14	2no. parking spaces per unit	28
3 bed end townhouse	20	2no. parking spaces per unit	40
2 bed end townhouse	2	1no. parking spaces per unit	2
2 bed mid townhouse	34	1no. parking spaces per unit	34
TOTAL NUMBER OF PRIVATE PARKING SPACES	**74**		**112**
TOTAL NUMBER OF VISITOR PARKING SPACES			**5**
This equates to 1.58 spaces per house			

VEHICLE PARKING SPACES - APARTMENTS			
Unit Types	**No. of Units**	**Parking x Units**	**Total Parking**
2 bed duplex	32	1no. parking spaces per unit	32
1 bed GF apartment	32	0.7no. parking spaces per unit	23
TOTAL NUMBER OF PRIVATE PARKING SPACES	**64**		**55**
TOTAL NUMBER OF VISITOR PARKING SPACES			**3**
This equates to 0.9 spaces per apartment			

VEHICLE PARKING SPACES - CRECHE			
Unit Types	**No. of Units**	**Parking x Units**	**Total Parking**
42 Child Creche	1	1no. parking spaces per 3no. staff & 1no. parking spaces per 10no. children	8
TOTAL NUMBER OF PARKING SPACES	**1**		**8**

TOTAL NUMBER OF CAR PARKING SPACES (ENTIRE SITE)	**183**
NOTE: The total number of parking spaces can be reduced by 38no. if the 4 & 3 bed units are provided with 1no. parking spaces per unit. This shall reduce the total number of car parking spaces for the entire site to 145no. parking spaces	

Table 10.2: Suggested Car parking allocation

It is intended that all parking for the residential development will be facilitated within the site curtilage of each housing unit and parking for the apartments and visitors will be located in close proximity to the apartment blocks. The total number of parking spaces provided will be a maximum of 238 spaces for the proposed residential development. The actual number of car spaces provided will be 183 spaces. The proposal to provide 183 car spaces complies with the requirements of the Development Plan and Sustainable Urban Housing Design Standards for New Apartments Guidelines for Planning Authorities. This equates to a 23% reduction in car parking spaces compare to the Development Plan. See Table 10.2 above.
All car parking spaces are required to be a minimum of 2.4m x 4.8m in size.

10.2 Bicycle Parking

Cork County Council Development Plan 2022 gives guidance on cycle parking standards for new developments. Table 12.8 of the Plan sets the cycle space allocation for various types of development including residential developments. Table 10.2 below shows a schedule of required bicycle parking as set out by this document.

Cork County Council Development Plan 2022-2028 - Cycle Parking Standards	Total Spaces Per Unit	Total Units	Min Cycle spaces required
Apartments			
1 per bedroom	1	106	106
1 visitor space per 2 units	0.5	64	32
Additional cycle parking for houisng	1	28	28
Creche 300sqm 1 space per 5 Staff Long Stay	0.2	10	2
Creche 300sqm 1 space per 10 children Visitor	0.1	42	4
Total			172

Table 10.2: Bicycle parking requirements

Dropped kerbs, dished footpaths, raised pedestrian crossings and tactile paving will be provided at appropriate locations such as at the crossing points within the development. A total of 172 bicycle spaces will be provided as part of the development. Cycle spaces can generally be accommodated within the curtilage of the housing units with the apartment and visitor cycle parking provided in a convenient location within the development.

The proposed development is connected to the Town centre by a series of existing footpath and pedestrian crossing facilities. The proposed development is located in close proximity to existing schools, shopping facilities and local services all within walking distance.

11.0 OBJECTIVES OF THE TRAVEL PLAN

The objectives of the Travel Plan for the proposed development are as follows:

Objective 1

To promote and increase the use of public transport, walking and cycling for residents, and visitors, and to facilitate travel by walking, cycling, and Bus.

The encouragement and increased use of other modes of transport, which are less damaging to the environment in terms of congestion and emissions, are directly linked to operating a lower-car-use development. Apart from the environmental benefits, the use of more sustainable modes of transport provide the following benefits to the individual:

- Savings in personal costs. Walking is free, cycling does not incur any fuel costs and buying a bicycle or using public transport is cheaper and can benefit from Government tax incentives.

- Health benefits. Levels of fitness and wellbeing increase with the practice of exercise, which is directly related to walking and cycling. The use of public transport avoids the stress of driving, traffic congestion, seeking parking spaces, etc.

Objective 2

To integrate travel plans into the development decisions, policies, and practices and to work closely with governing bodies on matters of access and transport services around the vicinity of the development site.

Travel Plans and sustainable transport cannot be addressed in isolation, but as part of a more general approach towards the development of a sustainable organisation whose functions deliver significant benefits to the community and the environment, together with economic savings. Regular communication with the Local Authorities on further improving facilities in and around the vicinity of the development can establish good policies and practices when developing decisions, within the Travel Plan.

Objective 3

To provide information on sustainable modes of travel and to have resources readily available to increase awareness of these amongst development users.

The Travel Plan has a significant role to play in the provision of information and resources both to people within the development and to the wider community. Information should be made readily available, and the benefits of sustainable travel should be widely promoted throughout the development when completed.

12.0 INITIAL TARGETS OF THE TRAVEL PLAN

See Table 12.1 below is an extract from Cork County Council Development Plan 2022-2028 Chapter 12 Transport and Mobility. The targets for modal share for 2028 are also set out in the Development Plan and are shown in Table 11.1 below.

Commuting to or within	% Travelling to work by private Car	% Travelling to work by walking	% Travelling to work by cycling	% Travelling to work by public transport
Mallow Baseline	77.47	9.57	0.71	0.78
Mallow Targets 2028	60.0	14.0	4.0	11.0

Table 12.1: Travel to Work Baseline and projected modal shift targets for Mallow Town

The duration of the first phase of the TP, during which the initial target modal splits shall be pursued, will be decided by the Mobility Manager once the development is operational. A phase duration of 2 years is suggested, after which time the first TP review may be conducted and the initial targets revised, if appropriate.

As part of on-going monitoring and review, the percentage shares of individual modes such as walking, cycling and public transport will be monitored to understand how successful implementation of targeted programs have been.

The targets set will require ongoing work and commitment from the development as a whole, without which they will not be achieved. It is recognised that some people will be easier to convert to alternative modes of transport than others. There are those who have no choice but to use the car (school runs prior to work etc.) however the more that is done to facilitate the use of alternative modes, the more they will be used. As it has already been noted, a Travel Plan is an ongoing process and targets that are achieved should be replaced by further targets.

13.0 TRAVEL PLAN MEASURES

The measures identified are a mixture of policies and incentives designed to encourage changes in travel behaviour and sustain a minimal rate of single-occupancy car use. The measures are designed to be implemented over a period of time, allowing costs to be spread and ensuring that policies and incentives are implemented together. While little may be observed in terms of travel behaviour in the short term, as implementation gains momentum so will the impact in terms of travel behaviour. The Travel Plan measures can be grouped under the following headings:

- Marketing and Communications
- Walking & Cycling
- Public Transport
- Car Sharing
- Implementation / Consultation / Monitoring

13.1 Marketing & Communications

The education of residents and visitors on the mobility plan initiatives and the importance of contribution is extremely important. The services available must be communicated in a consistent and continuous manner to sustain behaviour change. Communications will include promotional initiatives and activities aimed at informing residents and visitors of the existing and proposed transport networks. Such initiatives and activities will include:

- Promoting the Travel Plan through both internal communications and external avenues.
- Developing an Access Map to show public transport facility locations and to highlight safe walking and cycling routes. In addition to this, travel information points should be established at dedicated on-site locations, to make users aware of the modal choices available in and around the development site. The travel information points should be conspicuously located at entrance areas to the apartment blocks and provide travel and mobility information such as maps, public transport routes timetables and leaflets, etc.
- Preparing a formalised sustainable travel information pack, which is to be provided to all new residents. The pack will contain all the information relating to the Travel Plan, including the Mobility Access Map and the locations of cycle parking, etc.
- Developing a digital travel information point for the development, to provide details of travel choice to the site, as well as linking to external websites relevant to the development.

13.2 Walking & Cycling

The feasibility of measures that promote cycling and walking will be influenced by factors such as the safety and ease of cycling to and from the site. Generally speaking, a distance of up to 4 km is considered reasonable for walking, and up to 10 km for cycling. These distances are only indicative but can help to define target groups.

All pertinent safe walking and cycling routes should be identified within a radius of at least 5km around the residential development site.

The health benefits of these activities in particular should be promoted throughout the development.

The bicycle parking should be secure and sheltered. Maintaining a toolkit containing puncture repair equipment, pump, etc. for use in emergencies, should be made available to all bicycle users.

13.3 Public Transport

It must be ensured that the information supplied in the development access map, sustainable travel pack and travel information points includes the location of stops, routes, timetables, walking times to main public transport facilities, etc. Changes and improvements to public transport provision must be publicised as well.

Residents and visitors should be offered specific advice on combining public transport with other modes of transport, for instance travelling by bicycle. Information should be provided on the conditions under which standard or folding bicycles may be carried on bus and rail services.

Financial incentives from employers can also be an effective tool in the promotion of public transport use. This can be done through the provision of low interest or interest-free loans for the purchase of public transport season tickets. Some companies have instigated a scheme which offered travel passes to staff in lieu of annual pay increments, a measure that is not subject to benefit in kind taxation, and thus represents a significant tax saving for employees.

13.4 Car Sharing

Car sharing contributes to sustainable transport because it is a less car intensive means of urban transport, and according to The Economist, carsharing can reduce car ownership at an estimated rate of one rental car replacing 15 owned vehicles.

Carsharing can provide numerous transportation, land use, environmental, and social benefits. Neighbourhood carsharing is often promoted as an alternative to owning a car where public transport, walking, and cycling can be used most of the time and a car is only necessary for out-of-town trips, moving large items, or special occasions. It can also be an alternative to owning multiple cars for households with more than one driver. A long-term study of City CarShare members found that 30 percent of households that joined sold a car, others delayed purchasing one. Public transport use, cycling and walking also increased among members. A study of driving behaviour of members from major carsharing organizations found an average decline of 27% in annual vehicle kilometres travelled.

Car sharing can have a significant impact on vehicle numbers travelling to and from a development and can offer a practical alternative for those who feel that public transport is not a viable option. Car sharing is flexible and can be used occasionally or regularly as required. Encouragement of car sharing can entail marketing and promotion, provision of a registration and matching service, and possibly provision of specific incentives.

GoCar is a car sharing club where members can book cars, SUVs, and vans online or via an app for as little as an hour. Much of the GoCar fleet is made up of electric vehicles. GoCar now has over 10,000 members and operates a fleet of over 300 cars across 200+ locations in Ireland.

13.5 Implementation / Consultation / Monitoring

The Travel Plan is a document that evolves over time and depends upon ongoing implementation, management, and monitoring. Its successful implementation requires organisational support, an internal Mobility Manager and financial resourcing. To implement the Travel Plan the following inputs are required:

- Local Authority support and commitment.
- A travel plan manager as the plan coordinator appointed by Apartment Management Company
- Working groups on various related issues.
- Consultations with development occupants and external organisations.

To secure effective results from any initial sustainable travel investment, it is imperative to obtain the agreement of all the stakeholders and the support of external partners, such as the Local Authority, public transport operators, etc.
Ideally, the Travel Plan will be managed by a travel plan manager or travel plan coordinator with the clear mandate to implement and evolve the plan. The travel plan manager will also be best suited to monitor the results of the plan. This role may for example be performed by a member of the Apartment Management Company. Travel surveys of residents (and of visitors, if practicable) should be carried out in the early stages and repeated bi-annually, to monitor the initial success of the travel plan and to gain a better understanding of travel habits. These survey results can also serve as a sustainable travel performance benchmark to indicate how the Travel Plan is performing in comparison to previous years and against the sustainable travel targets initially outlined in the plan.

14.0SUMMARY

In conclusion, the proposed development is well located in Mallow for the implementation of the Travel Plan promoting alternative modes of transport. The proposed development has access to bus routes and is within walking & cycling distance of Mallow Town centre.

All sustainable modes of transport should be promoted in the Travel Plan. In particular, walking & cycling should be actively encouraged. This can be achieved via the circulation of useful information such as routes, exercise plans etc. Walking & cycling societies could be formed to create a community culture around the activity. Attention should also be drawn to the regular bus and rail routes. A bulletin board could be placed in the lobby of apartment blocks or other such communal areas where information on all alternative transport modes could be posted.

The recommended measures to be implemented as part of the Travel Plan are summarised as follows:

General

- Put in place a formal Travel Plan.
- Appoint a travel plan manager by Apartment Management Company.
- Create an access map.
- Provide a dedicated on-site travel information point.
- Provide travel information to residents, in the form of a sustainable travel Information pack.
- Monitor the operation of the plan by residents and visitors, through travel surveys.
- Revise and update the plan as required.

Walking and Cycling

- Maintain and promote facilities for walkers and cyclists.

Public Transport

- Provide information on locations of stops, routes, timetables, walking/cycling times to main public transport facilities, etc.
- Provide tailored advice on multi-modal journeys to include public transport.

Car Sharing

- Provide information e.g., benefits of car sharing, annual cost savings, map of bases in locality, links to website etc.

The continued dependence on the motor car is not sustainable into the future. Planning and development of new commercial and residential schemes should go hand in hand with a transport strategy limiting the dependence on the private motor car. The proposed residential development in Mallow will aim to achieve these goals.

A Site Plan of the proposed development can be found in Appendix A.

15.0 REFERENCES

Cork County Council Development Plan 2022-2028,
Published by Cork County Council.

The Route to Sustainable Commuting, An Employer's Guide to Mobility Management Plans
published by Dublin Transportation Office, Metropolitan Council, Irish Energy Centre.

The Traffic Management Guidelines
published by the Dublin Transportation Office

2020 Vision-Sustainable Travel and Transport: Public Consultation Document
published by the Department of Transport

Standards for Cycle Parking and associated Cycling Facilities for New Developments 2018,
Published by Cork County Council

Sustainable Urban Housing: Design Guidance for New Apartments 2018,
Published by Department of Housing, Planning & Local Government

www.buseireann.ie

www.irishrail.ie

www.gocar.ie

16.0 APPENDIX A – SITE PLAN A3

date	rev	name	chk	note
16.07.24	P1	MP	EJG	ISSUED FOR PLANNING

DEADY GAHAN ARCHITECTS

EASTGATE VILLAGE, LITTLE ISLAND, CORK
T: 021 4355016 W:WWW.DGARCHITECTS.IE
EMAIL:INFO@DGARCHITECTS.IE

Project

PROPOSED RESIDENTIAL DEVELOPMENT

ARD AN GHLEANNA, MALLOW,

CO. CORK

Drawing title

PROPOSED SITE PLAN

Scale	Drawn	Checked	Date
1:500 @ A1	LM	EJG	06.11.23

Project No.	Drg. No.	Revision
22039	22039/P/003A	P1

☐ Information \ Comments — Tender ☐

■ Planning — Construction ☐

ARD AN GHLEANNA - MALLOW

Unit Type	Description	No. of Bedrooms	Bed Space	Proposed Unit Area (sq.m.)	No. of Unit
A1	Semi-Detached	4	7	134.44	4
B1	Semi-Detached	3	5	101.11	6
B2	Semi-Detached	3	5	100.98	8
C1	Townhouse	3	5	104.34	20
D1	Townhouse	2	4	84.5	2
D2	Townhouse	2	4	84.5	34
E1	Duplex Apartment	2	4	90.2	5
E2	Duplex Apartment	2	4	90.2	27
F1	Ground Floor Apartment	1	2	56.7	5
F2	Ground Floor Apartment	1	2	55.2	27

4 bed	4	2.9%
3 bed	34	24.6%
2 bed	68	49.3%
1 bed	32	23.2%
houses	74	53.6%
duplex-apartments	64	46.4%
TOTAL NUMBER OF UNITS	138	
SITE AREA	4.52 HA	
SITE DEVELOPABLE AREA	3.9 HA	
DENSITY	35.4 UNITS / HA	
OVERALL OPEN SPACE	26%	
USABLE OPEN SPACE	15%	
42-child CRECHE	G.I.A.: 359.9 sq.m. / G.A.: 411.6 sq.m.	

183 no. Car parking Spaces Provided in Total

(2 no. Spaces per 3 and 4 Bed Unit, 1 no. Space per 2 Bed Unit, 0.7-1 no. Spaces per Apartment Unit, 8 no. Creche Spaces and a modest number of Additional Visitor Spaces are also provided.

KEY:

- SITE BOUNDARY
- LANDS WITHIN APPLICANTS OWNERSHIP
- RIGHT OF WAY

Note

- Please refer to the landscape proposal prepared by Forestbird Design for public realm and open space information.
- Refer to accompanying plans prepared by WDG for additional engineering details etc.

DO NOT SCALE. WORK TO FIGURED DIMENSIONS ONLY.
ALL EXISTING DIMENSIONS TO BE CHECKED ON SITE.
DRAWN ON AUTOCAD R2004 AT DEADY GAHAN ARCHITECTS LTD
LAYERS ON THIS DRAWING COMPLY WITH BS 1192: PART 5

N W E S

POTENTIAL FUTURE CONNECTION

SITE BOUNDARY SHOWN IN RED

POTENTIAL FUTURE CONNECTION

3M SHARED PEDESTRIAN / CYCLE PATH

EXISTING MEADOW WITH ARCHAEOLOGICAL BUFFER ZONE

SITE BOUNDARY SHOWN IN RED

REST AREA

3M SHARED PEDESTRIAN / CYCLE PATH

SITE BOUNDARY SHOWN IN RED

POTENTIAL FUTURE PEDESTRIAN CONNECTION

POTENTIAL FUTURE PEDESTRIAN CONNECTION

3M SHARED PEDESTRIAN / CYCLE PATH

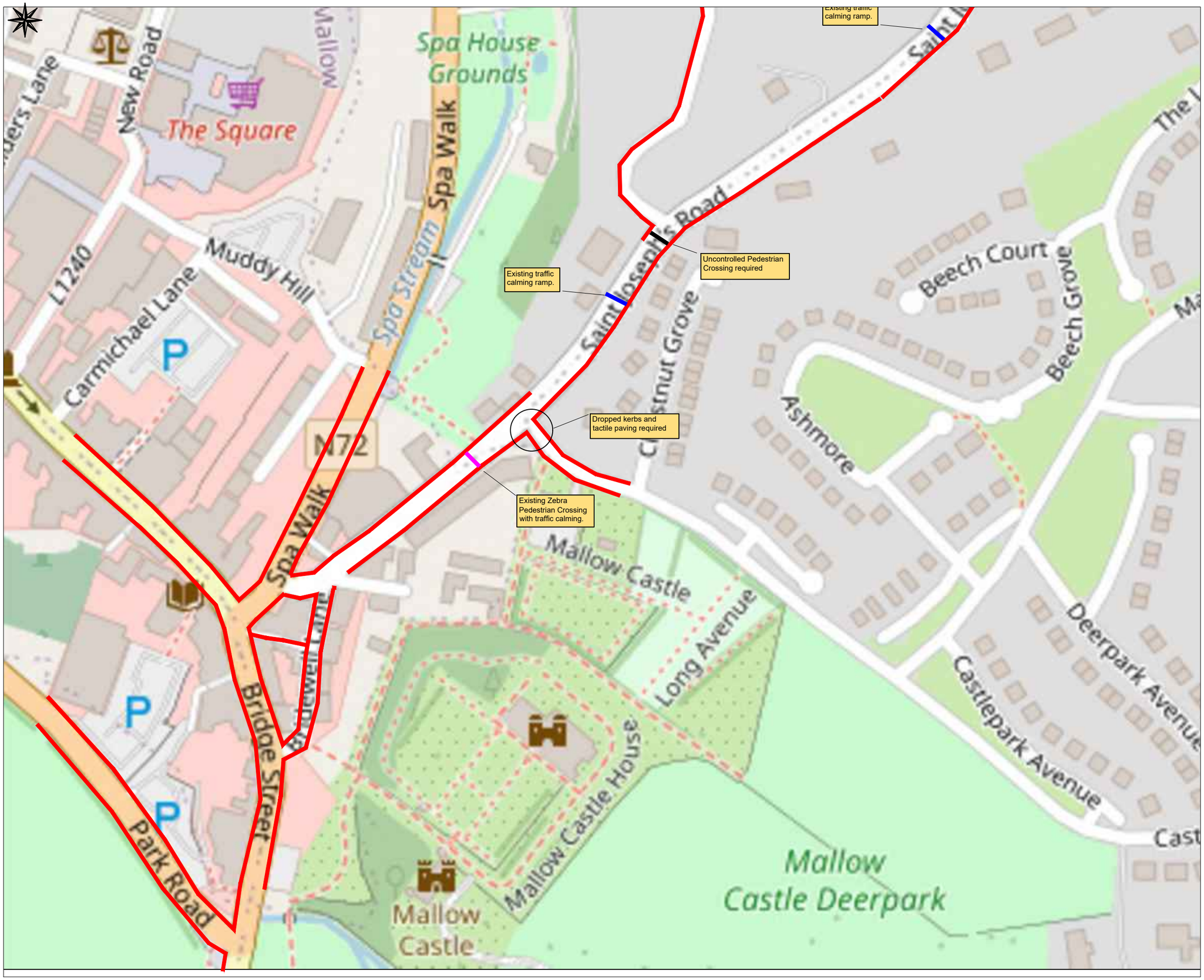
LOCATION OF SITE NOTICE

SITE ENTRANCE

PROPOSED SITE PLAN

SCALE 1:500@A1

17.0 APPENDIX B – SURVEY OF EXISTING FOOTPATH ROUTES A3



NOTES:

All dimensions in metres.
Do not scale from drawing.
For any discrepancies found please consult with design office.
This drawing should be read in conjunction with all contract drawings, documents and specifications.

LEGEND:

- Existing Footpaths
- Proposed Uncontrolled Pedestrian Crossing
- Zebra Pedestrian Crossing

Rev	By	Date	Description

Drawing Status: PLANNING
NOT CERTIFIED FOR CONSTRUCTION

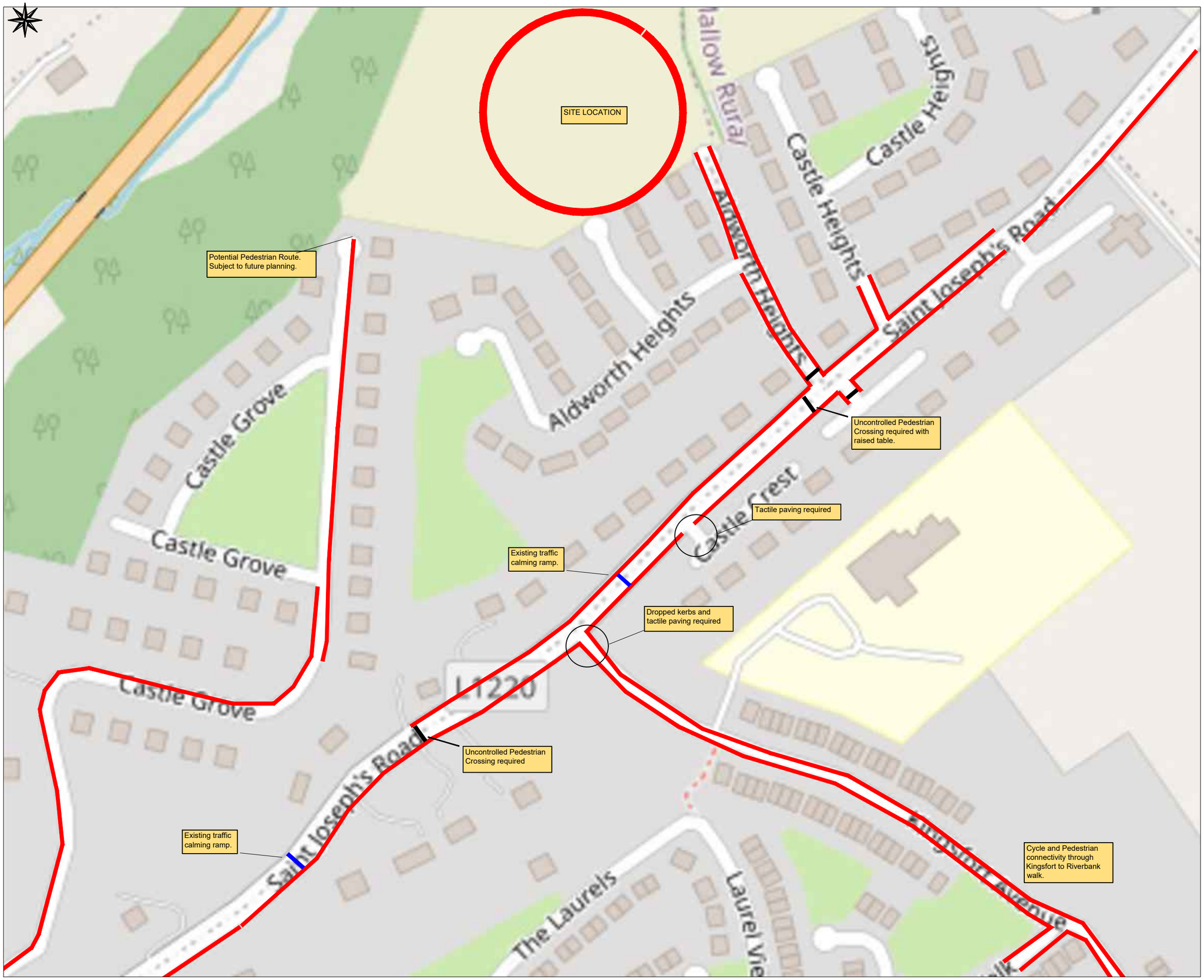
Project Title: Proposed Residential Housing Development, An Ghleanna, Mallow, Co Cork

Drawing Title: Pedrstrian Routes.

Client: CORK COUNTY COUNCIL

Martin Hanley
Traffic & Transportation
Consulting Engineers.
70 Lissdaell,
Maryborough Hill,
Douglas, Cork.
Tel: 021-4857959
E-Mail:martinrhanley1@gmail.com

Designed:		
MH		
Scale: 1/2000 at A3	Date: Dec 2023	
Job No: 23-02TT	Drawing No: SJ-PR-P01	Revision:



NOTES:

All dimensions in metres.
Do not scale from drawing.
For any discrepancies found please consult with design office.
This drawing should be read in conjunction with all contract drawings, documents and specifications.

LEGEND:

- Existing Footpaths
- Proposed Uncontrolled Pedestrian Crossing
- Zebra Pedestrian Crossing

Rev	By	Date	Description

Drawing Status: PLANNING
NOT CERTIFIED FOR CONSTRUCTION

Project Title:
Proposed Residential Housing Development,
An Ghleanna, Mallow, Co Cork

Drawing Title:
Pedrstrian Routes.

Client:
CORK COUNTY COUNCIL

Martin Hanley
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70 Lissdaell, Maryborough Hill, Douglas, Cork.
Tel: 021-4857959
E-Mail:martinrhanley1@gmail.com

Designed:		
MH		
Scale: 1/2000 at A3	Date:	Dec 2023
Job No:	Drawing No:	Revision:
23-02TT	SJ-PR-P02	

Road Safety Matters

Road Safety Audit

Stage 1/2

for

ACCESS TO PROPOSED RESIDENTIAL DEVELOPMENT

AT

ARD AN GHLEANNA, MALLOW, Co CORK.

Date: July 2024

Report produced for: Martin Hanley Traffic & Transportation

Report produced by: Road Safety Matters Ltd

Reference: RSM/MOB/150923/MALLOW RSA1-2

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mobrien@roadsafetymatters.net
www.roadsafetymatters.net

Company Registration No 657952 VAT No IE 3649269UH

DOCUMENT CONTROL SHEET

Client	Martin Hanley Traffic & Transportation
Project Title	Access to Residential Development, Ard na Ghleanna, Mallow, Co. Cork.
Document Title	Stage 1/2 Road Safety Audit
Document Ref.	RSM/MOB/150923/MALLOW RSA1-2
Status	FINAL

Record of Issue

Rev	Originator	Team Member	Date	Distribution
DRAFT 1	M O' B	AJS	5/6/24	Martin Hanley, Martin Hanley Traffic & Transportation Engineers
FINAL	M O' B	AJS	29/7/24	Martin Hanley, Martin Hanley Traffic & Transportation Engineers

BACKGROUND INFORMATION

The report which follows is the Stage 1/2 Combined Detailed Design Road Safety Audit for the access to a proposed residential development site of 138 housing units in Mallow, Co Cork, based on the information supplied to the RSA Team as detailed below. The proposals involve an extension to an existing access road to the Aldworth housing estate from St Joseph's Road (L1220), and construction of an internal road network and surface car parking to serve the proposed development, to include footways, road markings, signage and all associated ancillary works. The extent of the Road Safety Audit is confined to the red line on the preliminary design drawings supplied for the site, and does not include the entrance onto St Josephs Road, which will be upgraded under a granted Part 8 planning application and will be subject to a separate RSA Report.

Table 1: Information Supplied

Item		Supplied	Comment
A	Plans / Drawings	Y	Drg No 22039/P/003A Rev P1: Site Plan
			Drg No L105 Rev A: LANDSCAPE MASTERPLAN
			Drg No 22039/P/003B Rev P1 PROPOSED BOUNDARY TREATMENT PLAN
			Drg No 22039/P/003E Rev P1: PROPOSED PARKING LAYOUT
			Drg No 22039_P_005A Rev P1: PROPOSED SITE SECTION A-A, B-B AND C-C
			Drg No 22039/P/005B Rev P1: PROPOSED SITE SECTION D-D
			Drg No 22054-ZZ-XX-XX-XX-DR-WDG-CE-001 Rev 0: Site Layout Roads & Levels
			Drg No 22054-ZZ-XX-XX-XX-DR-WDG-CE-002 Rev 0: Site Layout Drainage
			Drg No 22054-ZZ-XX-XX-XX-DR-WDG-CE-003 Rev 0: Site Layout water Supply
			Drg No 22054-ZZ-XX-XX-XX-DR-WDG-CE-004 Rev 0: Site Layout Proposed SuDS Measures
			Drg No 22054-ZZ-XX-XX-XX-DR-WDG-CE-005 Rev 0: Site Layout, Vehicle Tracking Analysis (Fire Tender & refuse Vehicle)
			Drg No 22054-ZZ-XX-XX-XX-DR-WDG-CE-301 Rev 0: Road longitudinal Sections
			Drg No 22054-ZZ-XX-XX-XX-DR-WDG-CE-504 Rev 0: Construction Details

Table 1 Continued….			
A	Plans / Drawings	Y	22054-ZZ-XX-XX-XX-DR-WDG-CE-903 Rev 0: Site Layout Areas to be Taken in Charge
			E2 Rev A: Public Lighting Services
B	Traffic Volume Information	Y	Final TTA Report Mallow 08-04-24 [Traffic and Transport Assessment (TTA) Report]
C	Speed Count Data	N	
D	Collision Data	N	
E	Departures from Standards	N	
F	Audit Brief	Y	Stage 1/2, Combined Detailed Design Road Safety Audit
G	Other Data / Documents	Y	St Joseph's Road Mallow Cork - Outdoor Lighting Report Rev 2 14 May 2024

TABLE OF CONTENTS

1. INTRODUCTION

1.1 This report results from a Stage 1/2 Combined Detailed Design Road Safety Audit (RSA) of the proposed access to a residential development site in Mallow, Co Cork, carried out at the request of Martin Hanley Traffic & Transportation. The development comprises 138 new dwellings with associated vehicular access junctions and internal road network, and includes parking, footways, road markings, signage and all associated ancillary works. The access road will be constructed as an extension to an existing estate road in the Aldworth housing estate from St Joseph's Road (Local Road - L1220). The site is at the location shown in figure 1, with the proposed access roads and internal site layout shown in figure 2. This Audit examines the road safety implications associated with the proposed access to the development site and any potential safety issues arising for road users. The extent of the Road Safety Audit is confined to the red line on the preliminary design drawings supplied for the site, and does not include the entrance onto St Joseph's Road, which will be upgraded under a granted Part 8 planning application and will be subject to a separate RSA Report.

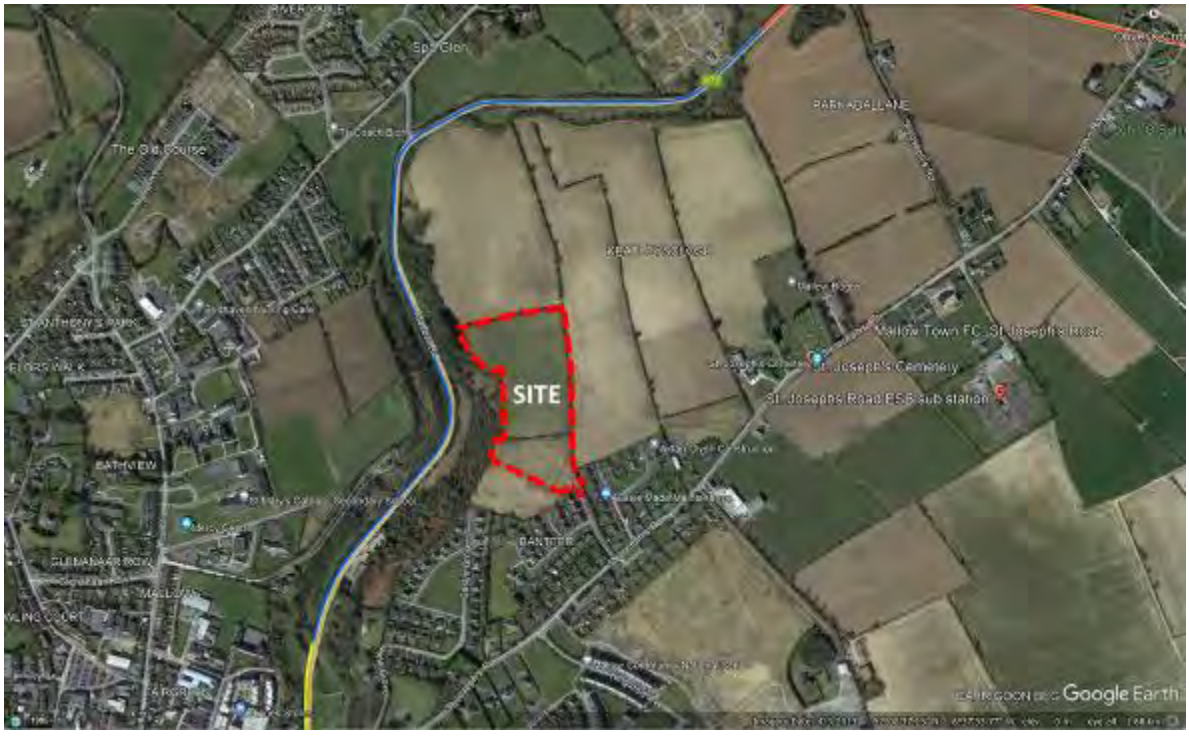


Figure 1: Site Location Plan

Figure 2: Proposed Internal Site Layout

1.2 The RSA was carried out during May 2024 and included a site visit by the Audit Team on Friday 15th September 2023 during daylight hours. The weather at the time of the site visit was dull with intermittent rain showers, and the surface of the road was wet. Traffic conditions were light, and Vulnerable Road User (VRU – including pedestrians and cyclists) was low. The posted speed limit on the road network adjacent to the site was the default urban speed limit of 50 km/hr.

1.3 The Audit Team Membership was as follows;

Team Leader:	Miriam O'Brien – BE (Civil) FIHE MIEI MCIHT SoRSA CoC
Team Member:	Anthony Sumner – HNC Civil Eng, AEng, MIEI, MCIHT

1.4 The Audit took place at the offices of Road Safety Matters Ltd following the site visit by the Audit Team. The Audit was undertaken in accordance with the Design Team's Audit Brief, and comprised an examination of the plans provided by the Design Team, as listed in Background Information, Table 1.

1.5 The terms of reference of the Audit are as described in TII GE-STY-01024 Dec 2017. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.

1.6 Section 2 of this report contains issues raised by the Stage 1/2 RSA together with recommendations to be considered. Section 3 contains the Auditor Team Statement. Most issues raised in Section 2 can be cross-referenced with the scheme drawing (**Appendix C)** and photographs taken on the site visit which are included in **Appendix B** & within the body of the Report where necessary.

2. ISSUES RAISED BY THE STAGE 1/2 ROAD SAFETY AUDIT

2.1 GENERAL

2.1.1 The designers have not advised of any departures from standard.

2.1.2 Observation – Collision History

No information was provided on any existing collision statistics in the vicinity of the site. A review of the Road Safety Authority (RSA) online collision database was not possible at the time of writing of this report, and it was not possible to determine the extent of existing available collision records on the existing network on approaches to the site.

Recommendations

The final layout at and on approaches to the site should take into account any existing risks and collision evidence on routes to and from the site at detailed design stage, to include a review of all existing Local Authority / Gardaí collision records on the adjacent road network, with provision for any necessary remediation to ensure that a safe layout has been provided for all road users in the locality at tie-ins.

2.1.3 Problem – Speeds and Traffic Calming Generally

The speed limit on St Joseph's Rd is the default urban speed limit of 50km/hr, and there are currently no reduced 30km/hr speed limit signs or slow zone signs posted on Aldworth Heights on entry to the existing residential estate, and there is no provision for this signage on the proposed road layout for the site. The 50 km/hr speed limit which is applicable on the external network is too high for a residential site and development of this nature, and vehicles travelling at this speed will present increased risks for all road users.

There was no 85th percentile speed data provided for the existing road network adjacent to the site, however observations at the time of the site visit demonstrated that most vehicles appeared to be travelling at or below the posted speed limit on St Joseph's Rd, with lower speeds noted on Aldworth Heights which currently operates as a cul de sac, with no existing speed control measures in place, as shown in figure 3.

Figure 3: Existing Estate Access road – View Norwards towards Site

The proposed design will extend the cul de sac road to create a relatively long straight link (approximately 250m) from the junction with St Joseph's Rd, which may encourage inappropriate speeds, particularly as the proposed road is on a significant downhill gradient northbound from the tie-in point with the existing road.

Recommendations

1. Provision should be made for reduced speed limit signage / slow zone signage on entry to the residential area/site from the south.

2. Detailed design should include cross sections for proposed traffic calming features throughout the site to include slopes and configuration of all ramps, and provision should be made for additional traffic calming measures on the straight section of access road between St Joseph's Rd and the first junction at the intersection of Roads 1 and 3 within the proposed development site.

2.1.4 Problem – Parking Configuration

The design proposals include provision for 183 parking spaces, which represents a 23% reduction in development plan standards according to the Traffic and Transportation Assessment (TTA) report produced for the site, and includes a significant number of on street perpendicular parking spaces to accompany the apartment units, some of which are located adjacent to pedestrian crossing points where parked vehicles may obstruct intervisibility and where a demand for reversing is likely to arise, resulting in an increased risk of pedestrian/vehicular conflict. There was no information provided on anticipated parking demands and parking accumulation for the site, and no provision for any parking restrictions within the proposed design layout, including on approaches to junctions. Inappropriately parked vehicles are likely to obstruct safe two-way movement, and may also compromise visibility.

Recommendations

1. The cumulative parking demand should be assessed for the site to demonstrate that the proposed number of parking spaces will cater for all anticipated demands, with provision for parking restrictions where necessary on approaches to internal junctions and conflict points, including pedestrian crossing points/desire lines.

2. Any proposed on-street parking bays should be located away from pedestrian desire lines and crossing points where intervisibility may be restricted, and ideally configured as parallel spaces to minimise risks arising from reversing manoeuvres.

2.1.5 Problem – Landscaping and Site Clearance

There were no site clearance drawings provided to show treatment of all existing features which will be displaced throughout the site, including utility poles, overhead power lines, mature trees and fencing. Landscaping is provided at locations on the proposed site layout where visibility may be compromised within the site, including at the egress from the creche, as highlighted in figure 4. Inappropriately located landscaping at this location may obstruct clear visibility to/from approaching pedestrians at the junction mouth, including small children, and may also obstruct visibility to/from oncoming motorists. Landscaping may also obstruct clear visibility of children

emerging from the play area highlighted in figure 5, and may restrict forward visibility and sightlines on the sharp internal curve on Road 3. New planting and landscaping is also shown at locations throughout the site where it may impact on intervisibility to and from pedestrians at crossing points, and to and from vehicles turning emerging from parking bays.

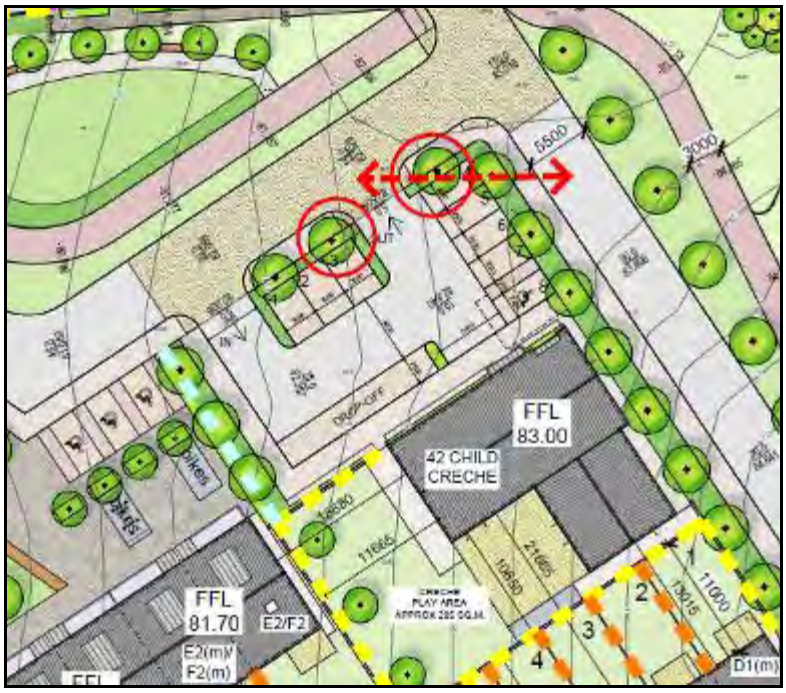


Figure 4: Proposed Landscaping Potentially restricting visibility / intervisibility at creche

Figure 5: Landscaping potentially obstructing clear intervisibility at playground Towards children emerging from the play area

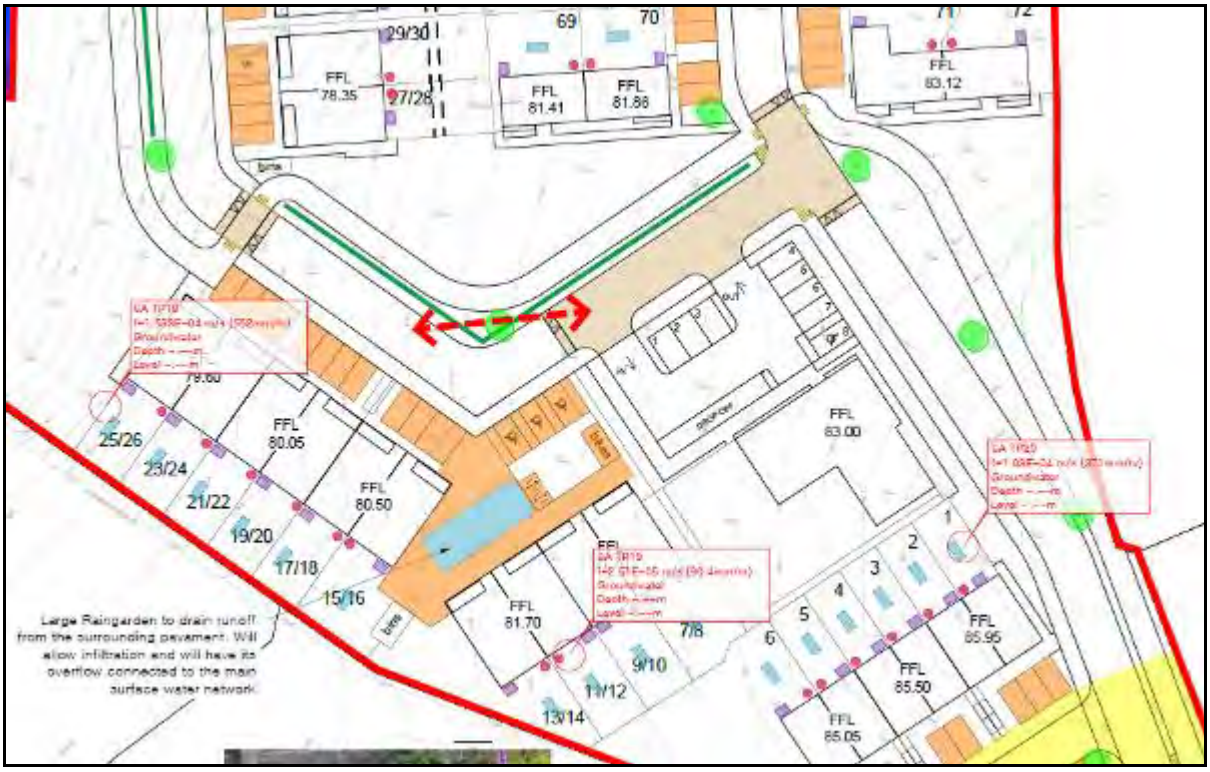


Figure 6: Landscaping may obscure forward visibility on Road 3

Figures 7 & 8: Potential Dynamic Visibility Splay Obstructions arising from landscaping adjacent to Shared VRU Route

Figure 9: Existing Vegetation/Landscaping, fencing & OH Power lines/Poles at Tie-in

Inappropriately located landscaping exceeding 1.05m in height can present obstructions in visibility splays and compromise intervisibility between motorists and VRUs, leading to an increased risk of pedestrian/vehicular conflict. Trees and landscaping are also shown adjacent to VRU facilities throughout the site. As trees mature, this can lead to dark slippy conditions on footways and carriageways, and may compromise the effectiveness of street lighting and present slip and trip hazards, particularly on significant gradients exceeding 3%. Trees overhanging VRU routes can also present hazards at eye and head height.

Recommendations

1. Detailed design should include for site clearance and utilities, and any relocated utility poles should be placed in positions which do not present a hazard to road users or obstruct the movement of VRUs. All features and street furniture including fencing/boundaries, sign faces, landscaping and lighting columns should be at a minimum recommended 450mm offset from the kerb line in an urban environment. Chamber covers and gullies should be located outside VRU desire lines where feasible, with the finished levels of all covers/gullies to be flush with the surrounding surface.

2. Any potential intervisibility obstructions arising from landscaping should be removed, or landscaping should be relocated outside visibility splays and sightlines on all new roads or provided and maintained at a height less than 1.05m.

3. All trees, hedges and landscaping should be located away from positions which could increase the risk of conflict for road users, including pedestrians, and pedestrians should be clearly visible from a point 2m back from both sides of each proposed crossing point and desire line or potential conflict point. Higher dynamic visibility splays are required for cycling facilities which intersect vehicular access roads, which should also be considered as the site design progresses in the context of the proposed design speed for the shared facility, with additional dynamic visibility to be provided on any steep downhill approaches to conflict points.

4. Trees, boundaries and landscaping should be offset a safe distance from the carriageway edges and ideally away from footways or areas where shedding leaves and tree roots may cause slip/trip hazards, or where street lighting luminescence may be compromised.

2.1.6 Problem – Steep Embankments and Fencing/Boundary Treatment

There is no fencing shown on the plans between the proposed 3m shared surface on the western side of the site and steep embankments adjacent. Fencing has been shown indicatively on some of the sections, as highlighted in figure 10, but has not been shown on other cross sections, such as that presented in figure 11, and details of the extent of any proposed fencing along this side of the site have not been shown on the plans, including specification details and heights, and the extent of any requirement which may arise for vehicle containment. Fencing installed adjacent to shared VRU routes presents a continuous linear hazard which impacts on the required design width for comfort and safety of pedestrians and cyclists interacting in a confined space, and the width along the length of the proposed facility appears to be the minimum recommended 3m width for a shared facility, with no margin of error or additional width provided adjacent to any proposed fencing.

The provision for proposed boundary treatment at the tie-in to the south of the site is also likely to obstruct visibility to the left from the existing driveway access at this location. Inappropriately

located boundaries exceeding 1.05m in height can present obstructions in visibility splays leading to an increased risk of right-angled collisions and pulling out type incidents, and can also compromise intervisibility between motorists and VRUs, leading to an increased risk of pedestrian/cyclist/vehicular conflict.

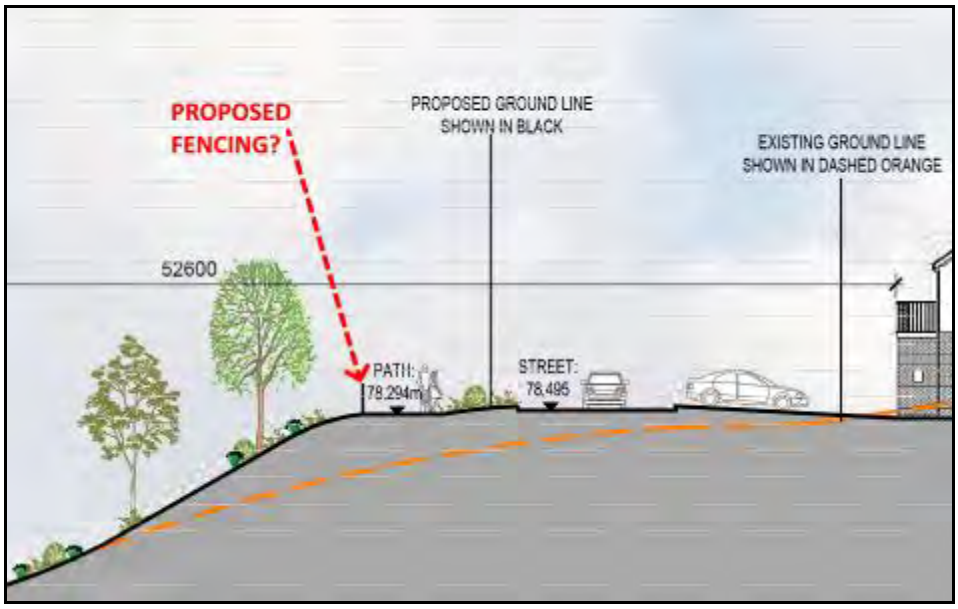


Figure 10: Extract from Section A-A showing fencing (highlighted)

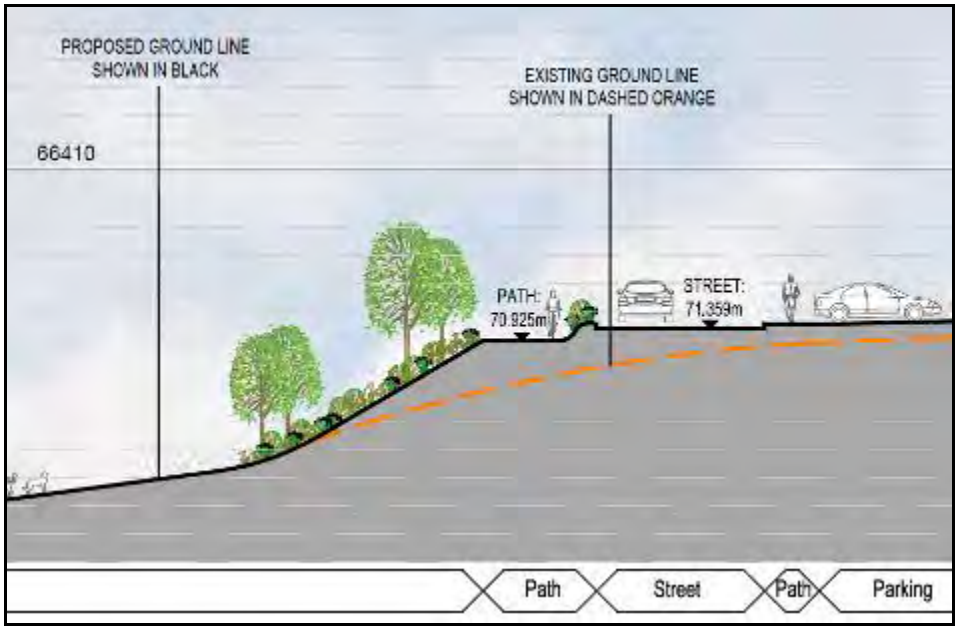


Figure 11: Extract from Section B-B
with no fencing between shared path and steep embankment

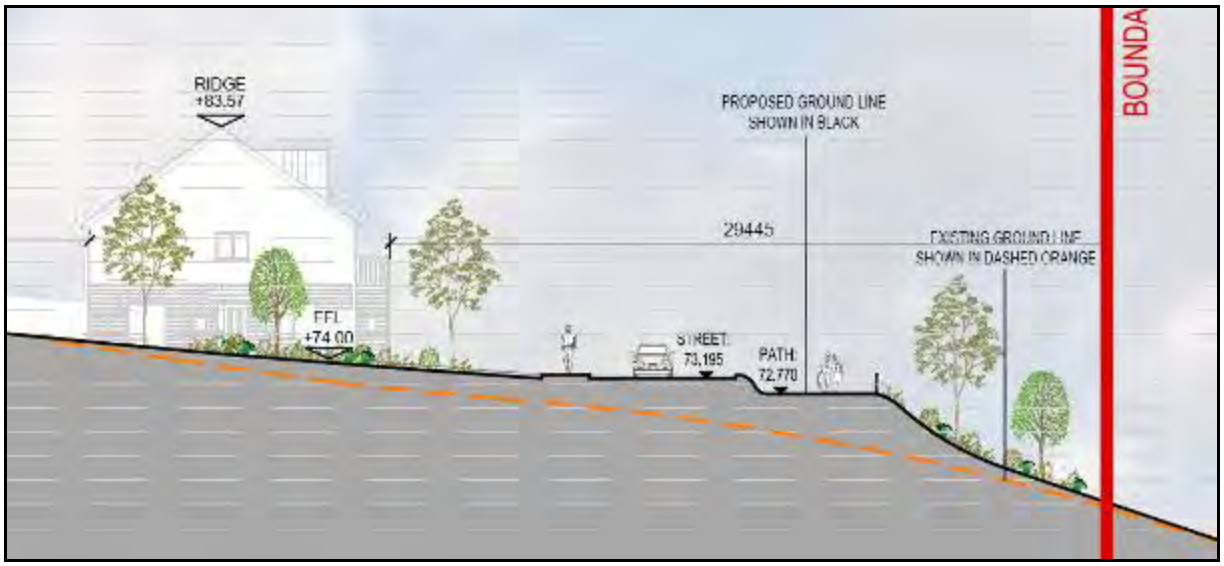


Figure 12: Extract from Section F-F
with fencing shown between shared path and steep embankment

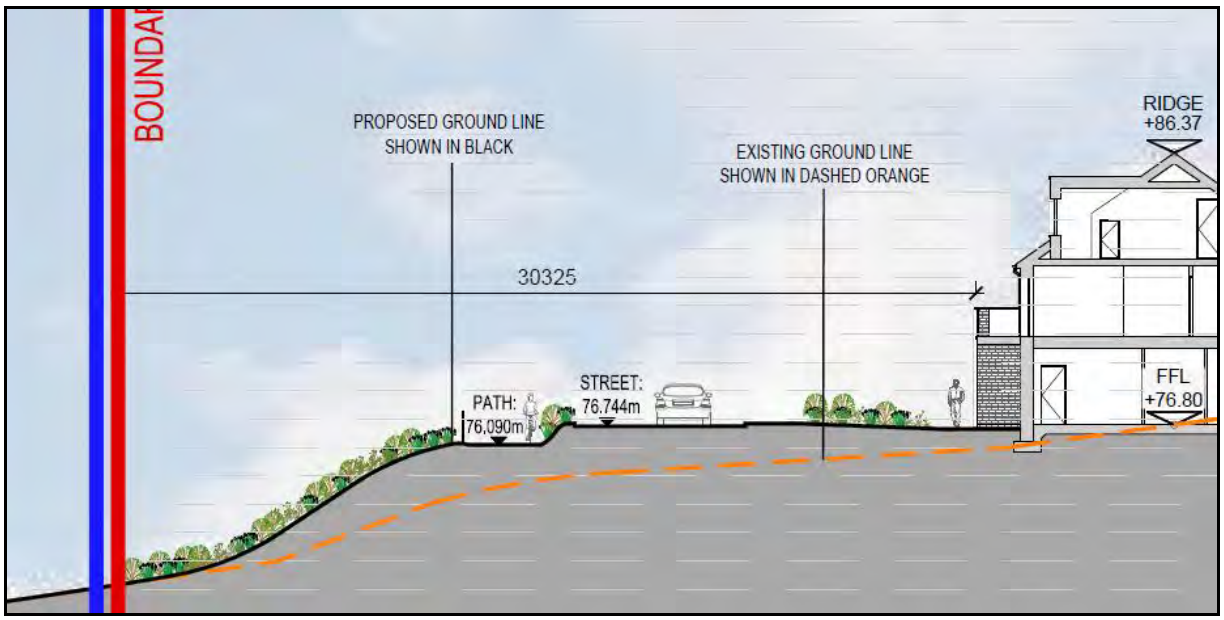


Figure 13: Extract from Section G-G
with fencing shown between shared path and steep embankment

Figure 14: Existing Fencing at Southern Tie-in

Figure 15: Current Visibility to Left from private Driveway at Tie-In Showing existing fencing and restricted visibility on crest curve

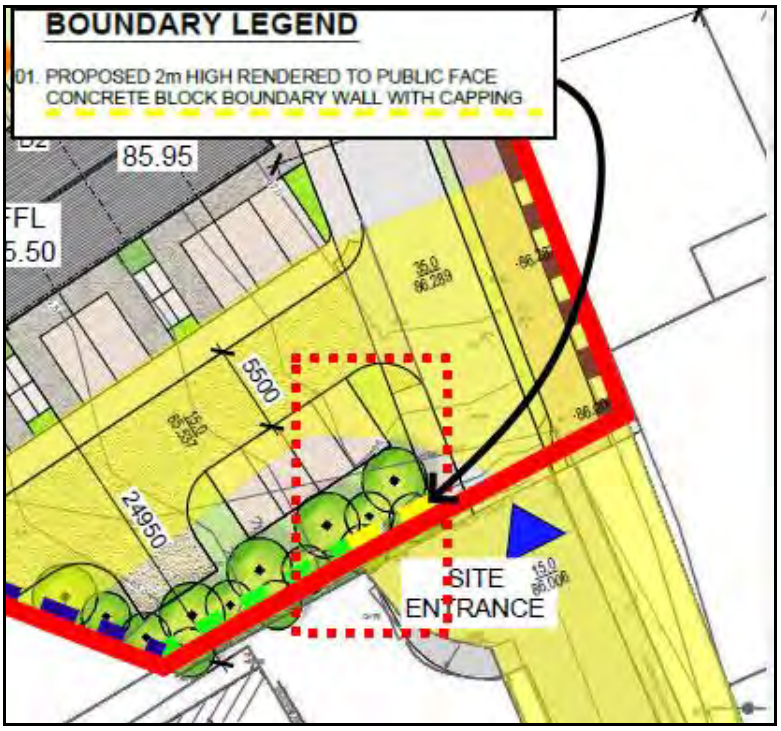


Figure 16: Visibility to left from property at southern tie-in constrained by boundary treatment/vegetation/vertical curvature

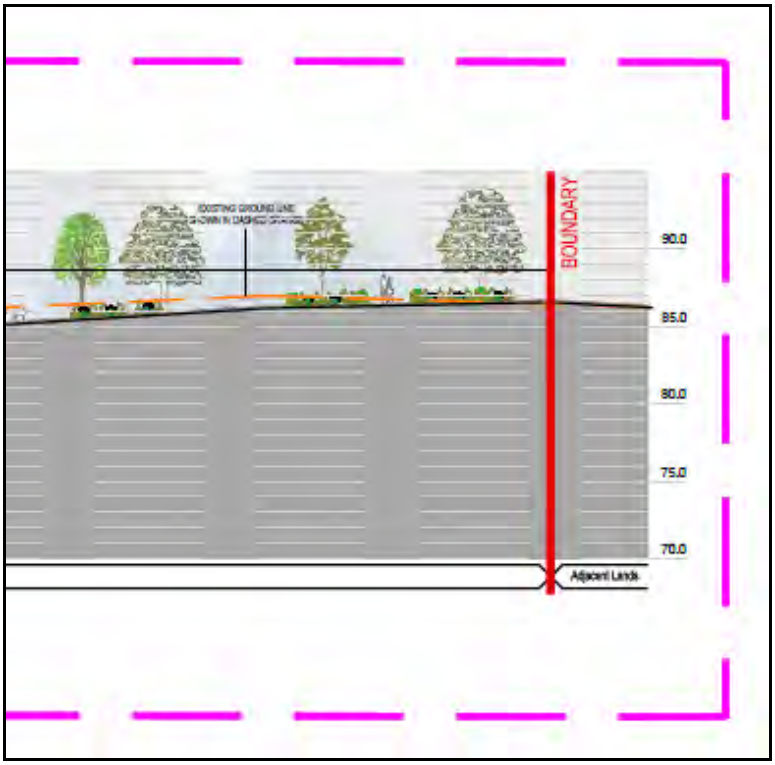


Figure 17: Extract from section E-E showing crest curve at southern Tie-in on Road 1

Recommendations

1. The extent of any proposed fencing, including specification details and heights, should be shown on detailed design plans. The height of any proposed fencing adjacent to cycling facilities should be sufficient to prevent cyclists toppling over, falling from a height or exposure to water hazards in the event of loss of control.

2. Detailed design should include details of earthworks and embankment slopes adjacent to roads and VRU circulation areas to show slope hazards have been removed or suitable fencing provided. Where fencing exceeding 600mm high is provided adjacent to shared VRU routes to be used by cyclists, provision should be made for an additional width of 0.5m above the absolute minimum width of 3m, as per the requirements of the NTA Cycle Design Manual (CDM), Sept 2023. An additional buffer width of 300mm is also typically required, with an additional clearance of 200mm to kerbs between 61-150mm high. On gradients greater than 3%, which is the case on a sections of the proposed roads on this site, cycle track widths should be increased by 0.25m to allow for greater lateral movement. Where the widths for proposed VRU facilities to be used by cyclists do not comply with the NTA CDM guidance, the designer should seek a departure from standard to be approved by the relevant Sanctioning Authority prior to incorporation into the design.

3. Where steep embankment slopes occur adjacent to locations where vehicles could encroach, provision should be made for suitable vehicle containment where required. Safety barrier design should be provided where necessary in accordance with the requirements for vehicle containment set out in DN-REQ-03034 The Design of Road Restraint Systems (Vehicle and Pedestrian) for Roads and Bridges and DN-REQ-03079 Vehicle Restraint for constrained locations.

4. Proposed fencing/boundary treatment should not compromise visibility to/from any junctions, access points or VRU conflict points throughout the scheme, including at the scheme tie-ins, both the existing tie-in to the south and future tie-ins to the north and east, where potential connections have been shown on the design plans, as indicated in figures 18 and 19.

5. The final horizontal and vertical design for the proposed roads should ensure sufficient sightlines can be achieved on both the horizontal and vertical plane, particularly where there are sharp bends or crest curves occurring in close proximity to junctions and access points.

Figures 18 & 19: Details for future connections unknown

2.1.7 Problem – Kerbs, Surface and Drainage Design Generally

The extent of proposed kerbs and design/heights have not been shown on the plans, although indicative kerbs have been shown on some of the cross sections and construction details provided. Proposed gully locations are shown at most places throughout the site, however no gullies for drainage of surface water have been shown at the northern section of the western road (Road 3) or on the northern road connecting the eastern and western spine roads (Road 2), although provision has been made for infiltration trenches within the verge on the southern side of this link. The provision for kerb design in these areas is not clear from the plans supplied. Gullies were noted within raised surface areas at junctions rather than at the bottom of ramps, where surface water will collect. Insufficient drainage of surface water can contribute to an increased risk of skidding and loss of control, as well and slip hazards for VRUs. The site slope is falling northwards, and significant gradients were noted on the two spine roads through the site (see Sections D-D and E-E for Roads 1 & 2) which may cause difficulties for some road users and increase stopping sight distance in wet and icy conditions. Ponds/detention basins are shown for drainage at some locations, which have 1 in 4 slopes adjacent to footways, as shown in figure 20, where they may present a slip hazard. Bins and bike stands are also shown in this

area, and it is not clear how a cyclist will safely access the bicycle parking area adjacent to the slope/water hazard.

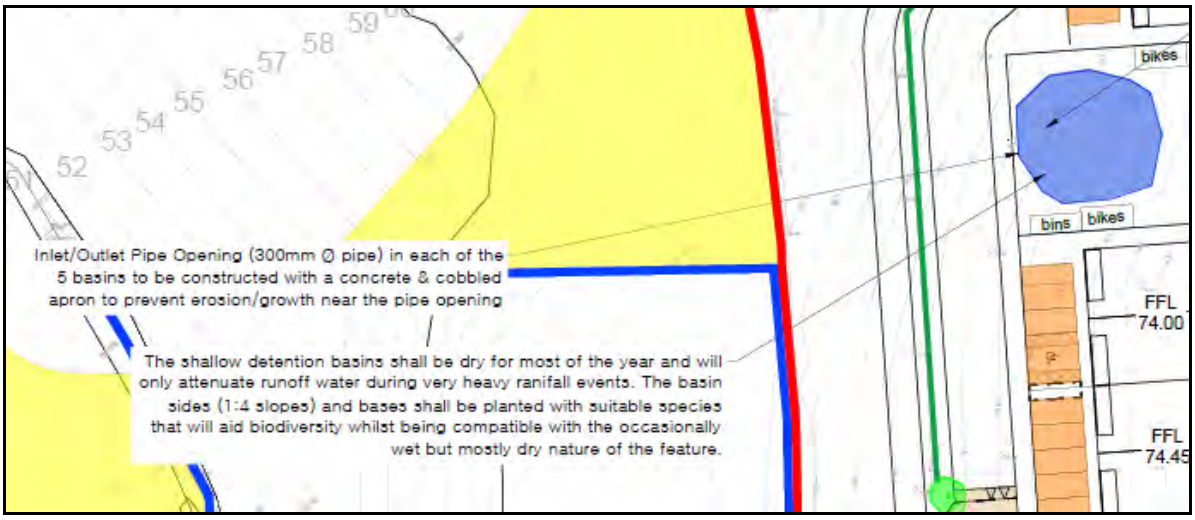


Figure 20: Potential Water/Slope Hazard adjacent to Footways/Route to Cycle Parking

Different surface shading/areas have been shown on the design plans, however no details have been provided on the treatment of joints between different surface types. Inappropriate treatment of surfaces traversed by vehicles, including treatment of joints between differing pavement types, can lead to settlement, cracking and displacement of paving setts where relevant, which can lead to drainage issues and trip hazards.

Figure 21: Extract from plan showing different surface types – details not shown

Figure 22: Extract from plan showing different surface types at junctions & ramps And the location of water hazards

Recommendations

1. Detailed design should be accompanied by proposed kerb design to include details of all kerb heights adjacent to the carriageway and VRU routes, with suitable dropped kerbs to be provided at all driveways/vehicular access points and transitions between on and off-road cycling facilities.

2. Surface water drainage design should ensure gullies are provided where necessary at low points/bottom of ramps and all gullies should be flush with the carriageway surface and kept out of the design line for VRUs, particularly two-wheeled vehicles.

3. Details should be provided on proposals for different surface shading/areas including treatment of joints between differing pavement types, and steep slopes adjacent to the carriageway and footways/bicycle parking areas should be avoided.

4. Longitudinal and transverse joints on the carriageway surfaces should be suitably treated, particularly where joints occur between different surface types, and all joints should be kept out of the wheel track for motorcyclists and cyclists.

5. The proposed carriageway and VRU route should have sufficient surface friction to minimise slipping and skidding risks which may arise in wet and icy conditions, particularly where gradients exceeding 3%-5% arise.

6. Detailed design should include surfacing proposals and kerb design throughout the site, to include suitable longitudinal gradients and crossfall, with all gullies and chamber covers to be flush with the surrounding surface, and with all chamber covers to be kept out of the desire line for VRUs. Kerb upstands exceeding 6mm should be removed from all pedestrian desire lines.

2.2 JUNCTION LAYOUT AND LINK ALIGNMENT/CROSS SECTION

2.2.1 Problem – Geometry Generally

The swept path analysis provided demonstrates that the proposed road layout is restrictive for some vehicles sizes, with obstructed movements at some locations internal links and junctions. Restrictive geometry increases the risk of side swipe and head on collision or encroachment into Vulnerable Road User zones when turning. Sharp kerb edges have also been shown at some locations, e.g. figure 23, which increases the risk of vehicle strike and tyre blow out.

Figure 23: Sharp kerb edges at chicane arrangement

Recommendations

1. The proposed layout should ensure that the swept paths and turning movements of all anticipated vehicle sizes can be accommodated with adequate margins of safety.

2. Sharp kerb edges should be replaced by rounded kerb edges throughout the site to minimise the risk of vehicle strike and damage.

3. Links should not terminate abruptly without provision for a suitable turning circle, and provision should be made for clear signage where there is no provision for a through road.

2.2.2 Problem – Horizontal and Vertical Design

The design plans include long sections incorporating relatively steep gradients, including gradients exceeding 8% on relatively sharp curves, with crest and sag curve K values below recommended minimums, as highlighted in figures 24 - 27 and as shown in Sections D-D and E-E which are shown in figures 28 and 29. A number of horizontal curves are also too sharp, with no provision for widening to accommodate safe unobstructed two-way movements for all vehicle sizes. Steep gradients with sharp curvature, particularly coincidental horizontal and vertical curves, can present difficulty for some motorists and exceeds comfortable gradients for many road users, including pedestrians and cyclists. Low radii and steep gradients used in combination will lead to reduced visibility.

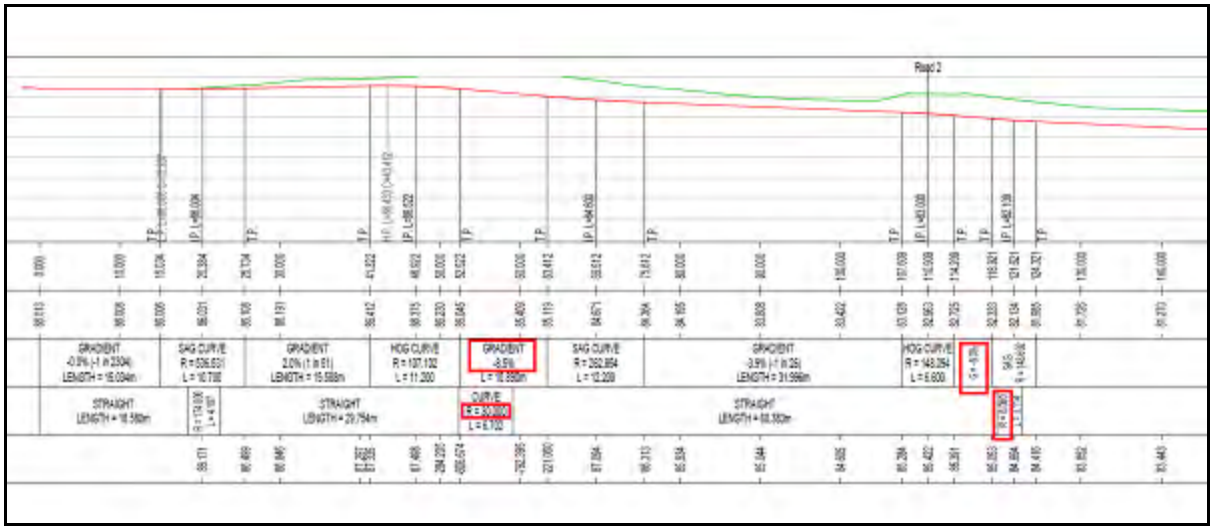


Figure 24: Steep gradients and sharp curves on Road 1
Instantaneous change of grade on approaches to junction

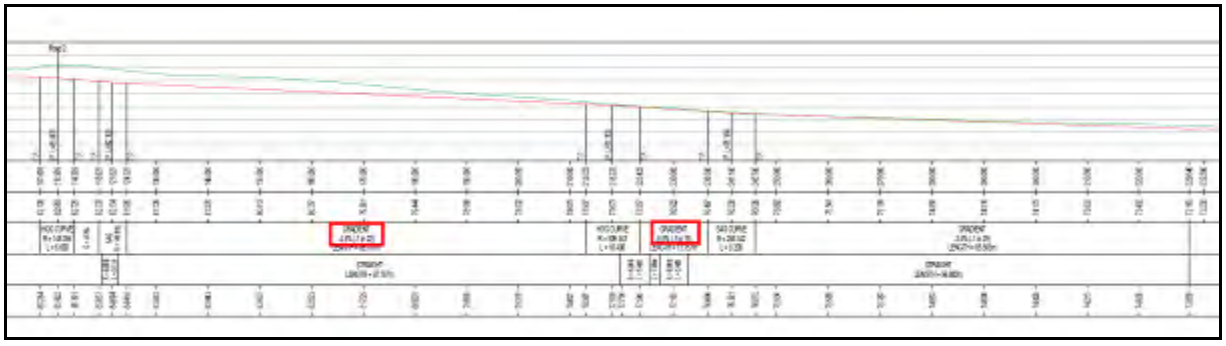


Figure 25: Steep gradients on Road 1

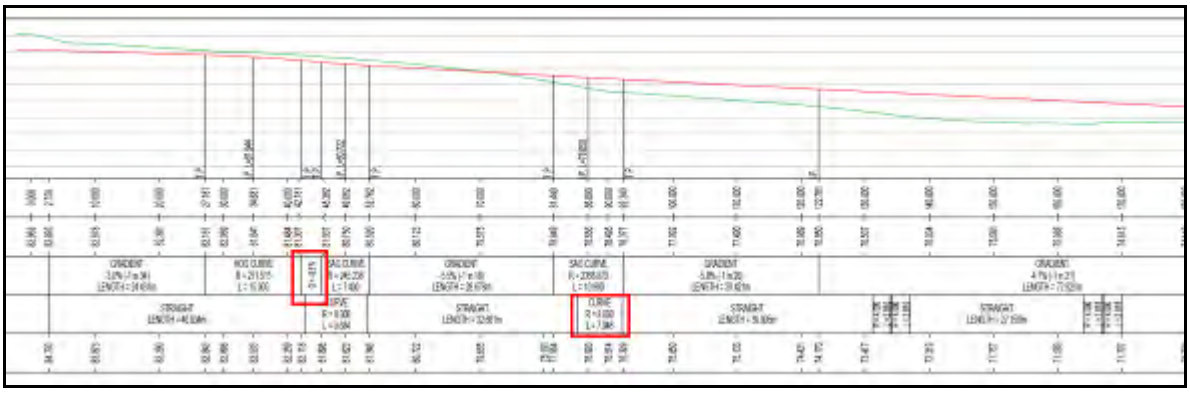


Figure 26: Steep gradients on Road 2

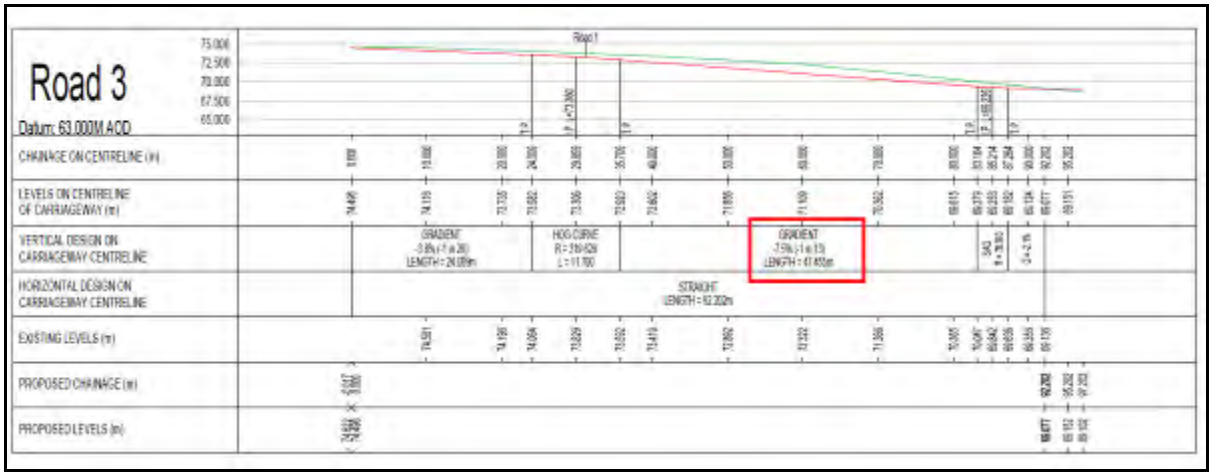


Figure 27: Steep gradient on Road 3

Figure 28: Section D-D Showing Significant Slopes

Figure 29: Section E-E Showing Significant Slopes

Sections F-F and G-G show a sudden drop adjacent to the western spine road (Road 3), and it is unclear how the level difference will be treated at the chicane area, where the proposed verge is narrow and where the risk of vehicle encroachemnt into the verge area and overturning on the slope is increased.

Recommendations

1. The horizontal and vertical design for all roads through the site should be reviewed to provide shallower gradients and increased radii where feasible. Where absolute minimum standards cannot be achieved, provision should be made for reducing the design speed, implementing additional speed control measures and obtaining any necessary departures from the relevant authority in respect of the proposed geometry.

2. Junctions should be located away from crest curves where visibility towards the layout ahead at downstream conflict points may be reduced, and visibility at each internal junction and intersection point throughout the site should be clear and unobstructed at all times in accordance with traffic speeds.

3. A relatively level dwell area (2.5-3% maximum) should be provided for a distance of 15m back from each internal junction/intersection point, to be increased beyond 15m where the road is intersecting with a cycling facility.

2.2.3 Problem - Visibility at junction on Aldworth Heights

The proposed roads will tie-in to The Crescent where visibility to/from any southbound vehicles egressing from the proposed site on this link will be constrained by current boundary treatment on the offside, as shown in figure 31. The design proposals show landscaping at this location, which may preclude vehicular access and egress, however provision has been made for a two-way cycle track at this location, which terminates abruptly at a location where intervisibility will be compromised by boundary treatment for cyclists who wish to continue their journey on this link. Similar issues are likely to arise in respect of tie-ins at College Lawn.

Figure 30: Good Visibility to Right from Aldworth Heights

Figure 31: Existing Wall Restricting Visibility to Left from Aldworth Heights (Note Ponding on existing Road)

Recommendations

1. Visibility at all new intersection points and existing intersection points impacted by proposed works should not be compromised by boundary treatment. See other recommendations on boundary treatment, paragraph 2.1.6.

2. Visibility at all junctions should be clear and unobstructed at all times in accordance with traffic speeds, with visibility to be taken to the nearside channel line/kerb line from a point a minimum 3m distance back from the channel line on the intersecting road.

3. Clear guidance must also be provided at each potential conflict point within the site, including intersections with cycle tracks, and the rights of way and priority should be clear and unambiguous, with clear signage and road markings to be provided where a risk of any ambiguity may arise with respect to right of way at junction locations.

2.3 NON-MOTORISED USER PROVISION

2.3.1 Problem – Pedestrian and Cyclist Provision

There is provision for traffic calming features on the internal road layout for the proposed development site through provision of a number of raised surface areas and horizontal deflection/chicanes on Road Nos 1 & 3, which should assist with reducing the speed of vehicles circulating within the site. The proposed vertical and horizontal deflection measures within the site should also assist in prioritising the movement of VRUs, in line with the principals of the Design Manual for Urban Roads and Streets (DMURS), however there were a number of issues noted in respect of proposed pedestrian and cyclist accessibility to, from and through the site, which should be considered in more detail prior to design finalisation, and can be summarised as follows:

- Potential for poor intervisibility at crossing points due to poorly placed landscaping, as outlined previously. The risk of conflict is increased where the crossing point is provided to accommodate the shared VRU route, as the dynamic visibility splay required for cyclists is significantly greater than that required for a pedestrian only crossing point.

- Intervisibility at the crossing point shown in figure 32 is likely to be constrained by a vehicle parked within the adjacent parking bay on the bend. A vehicle parked at this location will obstruct clear visibility towards a pedestrian waiting to cross from the eastern side of the crossing.

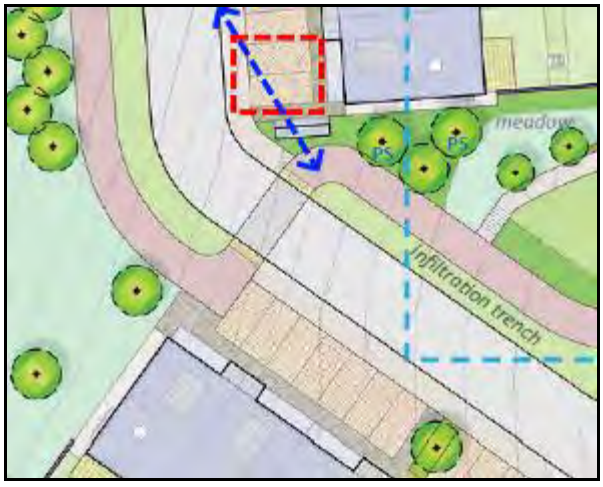
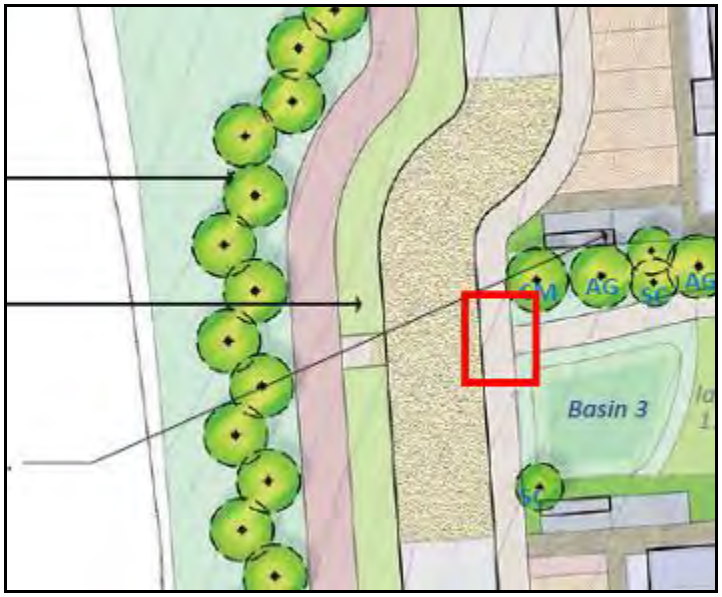
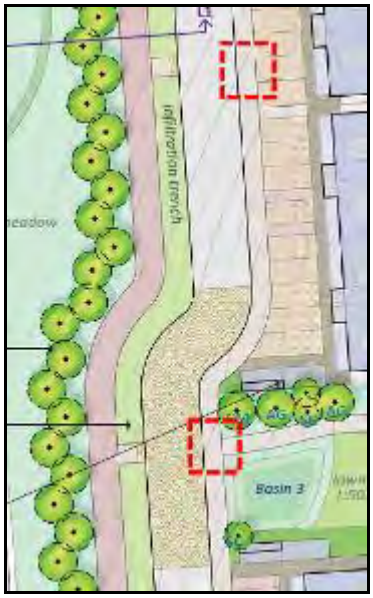


Figure 32: parking restricting intervisibility/dynamic visibility splay at crossing point

- Tactile paving has been shown at some locations for the benefit of visually impaired pedestrians, however there is no provision for tactile paving on the opposing side of the carriageway at some locations, where trip hazards may arise, with examples of where this occurs shown in figures 33 and 34.





Figures 33 & 34: Incomplete Tactile Paving Detail at informal crossing point

- Tactile paving is also poorly orientated at some locations. Where tactile paving does not line up correctly with tactile paving on the opposing side of the crossing point, visually impaired pedestrians are likely to misinterpret the crossing point and walk into the centre of the junction where the risk of conflict is higher, or towards a high kerb upstand where a trip hazard will arise.

- There are a number of location where the proposed 3m wide shared VRU route intersects with narrower footways, and there is no provision for ladder and tramline tactile paving warning surfaces to alert pedestrians and cyclists of the potential for conflict with the other road user.

Figure 35: Poorly Orientated Tactile Paving
Warning surfaces absent at intersections of footways/shared surfaces

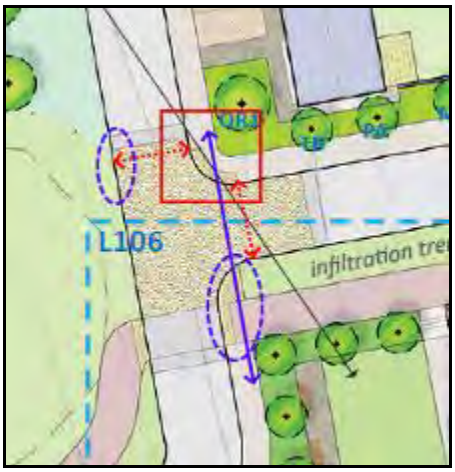


Figure 36: Poorly Orientated Tactile Paving
Warning surfaces absent at intersections of footways/shared surfaces

Figure 37: No provision for ladder & tramline tactile paving at conflict points with cyclists/footways

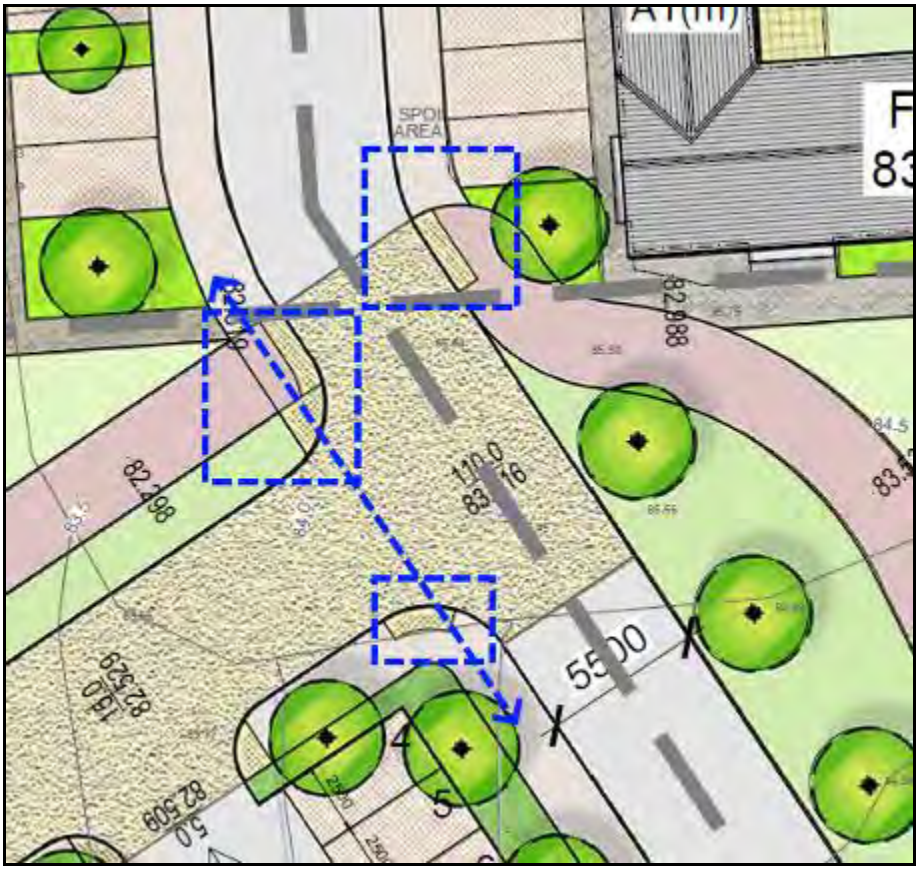


Figure 38: No provision for ladder & tramline tactile paving at conflict points with cyclists/footways

- Steps are shown at some locations throughout the site, and there is no provision for corduroy tactile paving at the top and bottom to alert visually impaired pedestrians to the hazard(s). There is no apparent alternative route for mobility impaired pedestrians at some locations where steps have been provided.

Figures 39 & 40: steps within site

- Details have been shown for informal crossing points, which correctly show buff coloured tactile paving, which is applicable for uncontrolled crossing points, however the width of the crossings are too narrow, as highlighted in figure 41, and conflict may arise, particularly where crossing points are used by both cyclists and pedestrians on the same confined space.

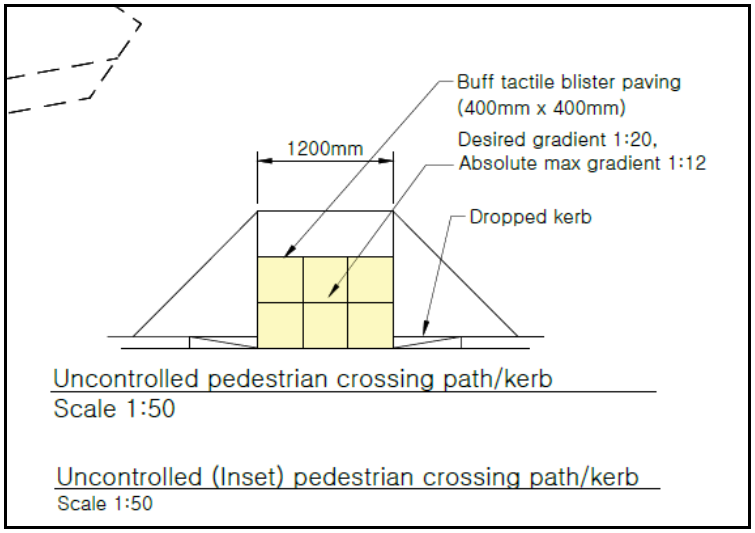


Figure 41: narrow crossing points

- Footways are relatively narrow at a number of locations through the site, which may restrict accessibility for some pedestrians/road users, including those who are mobility impaired, and there is no provision for verges or separation distance between the VRUs

and passing motorists on most of the links through the site, which increases the risk of vehicles mounting the pavemnt and coming into conflict with VRUs, particularly where the cross section is narrow or where vehicles may be parked in a manner which restricts safe two-way movment on a link. There is also increased potential for narrower footways to be blocked by vehicles parked in perpendicular spaces, as it is commonplace for larger vehicles, including larger SUVs and small vans or people carriers to frequently block footways in many modern residential estates, forcing pedestrians including small children, out onto the carriageway where the risk of impact with passing and turning vehicles is higher. These risks are lower where vehicle speeds are low, however signfiicant injuries can still occur for vulnerable road users, even at low vehicle speeds, particularly older and younger pedestrians where mobility and sensory perception may be reduced, or where parked vehicles are more likely to restrict visibility of a child pedestrian due to height.

- The proposed shared surface narrows suddenly at the location highlighted in figure 42, where the risk of conflict between cyclists and pedestrians will increase, as well as the potential for injury on the fencing/boundary adjacent.

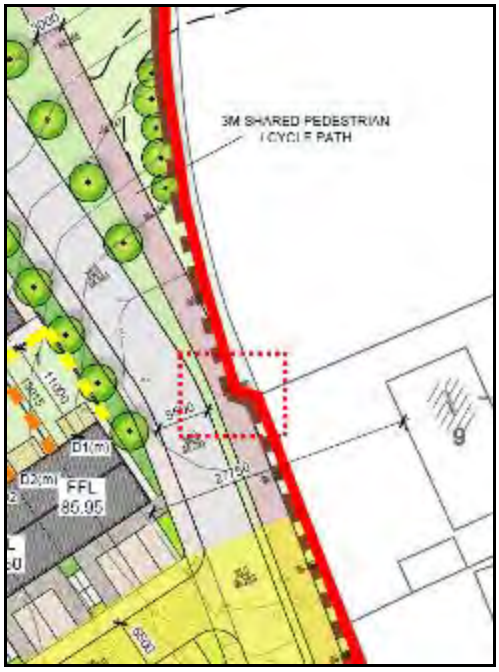
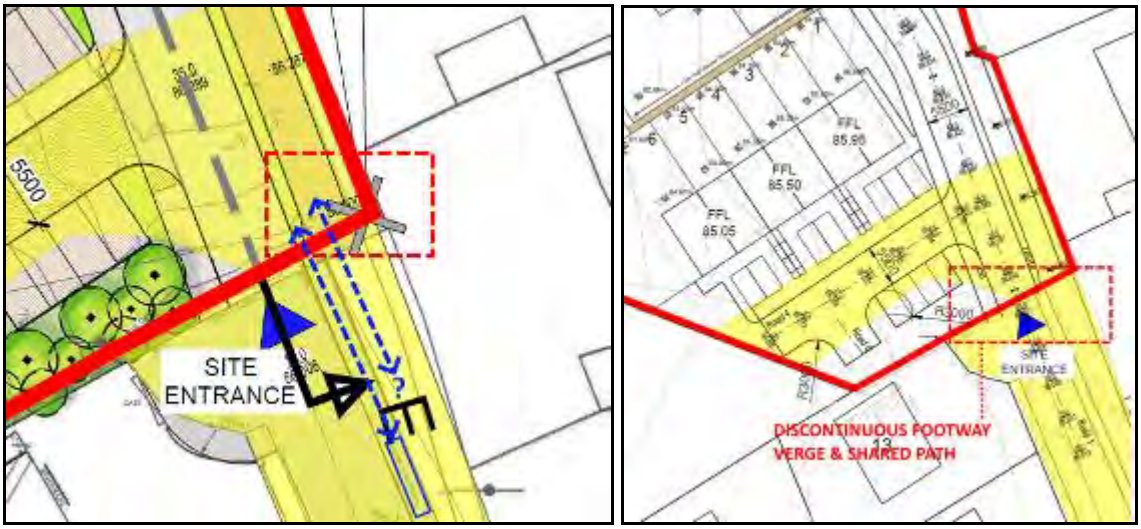


Figure 42: Boundary (2m high mesh fencing & vegetation) encroaching into narrow shared surface

- The proposed shared surface along the eastern side of the site is discontinuous at the southern boundary of the site. There is a footway along this side of the carriageway at

present at the location where the new verge is shown within the site, however the footway is not currently safe to use due to overgrown vegetation, as shown in figures 45 and 46, The footway is also discontinuous across the driveway access on the western side of the link, which may result in trip hazards on the desire line. There is also no provision for lining and signing guidance in respect of the start and end of the shared VRU facility. Pedestrians and cyclists are most vulnerable at tie in points where a facility is discontinuous or where the continuity is ambiguous.



Figures 43 & 44: absent/discontinuous shared surface

Figure 45: Footway is obstructed by overgrown vegetation at the tie-in

Figure 46: Northbound approach to tie-in showing overgrown vegetation

- Cyclists may also be vulnerable in the transition between on and off-road facilities where there is no provision for transition kerbs, or where intervisibility issues may arise due to boundary treatment at nearby junctions, as outlined previously (see figure 31).
- The steep vertical gradients on the internal roads within the site (8%+) will be problematic for cyclists and those with mobility impairment, including wheelchairs, buggies, canes, walking aids and heels, and particularly in wet weather.
- Steep embankments are also shown at a number of locations adjacent to VRU facilities where hazards may arise and the provision for fencing or barriers is unclear, as outlined previously.
- Vegetation and trees are also shown in close proximity to VRU routes, including on steep embankments, where fallen leaves will present slippy conditions, which can be particularly hazardous in wet conditions on steep slopes. Overhanging Trees, branches and foliage may also present hazards at eye or head height, with tree roots adjacnet to VRU routes also presenting potential trip hazards and cracked/damaged paving over time.

- The detailed design plans also show indicative future routes connecting to the north and east of the site, where the embankments appear to be relatively steep, and may also be hazardous for road users, particularly VRUs.

Recommendations

1. Pedestrian and cyclist activity, desire lines and demands should be considered at all tie-in points to the scheme, taking into account issues raised in this Stage 1/2 RSA report, with the movement of VRUs to be prioritised at all times throughout and on approaches to the site.

2. In general, pedestrians should be segregated from vehicular traffic where possible to minimise vehicle encroachment into VRU zones when turning, particularly on sharp corner radii, to minimise conflict risks and to improve the quality of the walking environment, and improve general site walkability. Lack of separation distance between fast moving traffic and VRUs increases risks and can reduce the general walkability and appeal of walking as a mode for some road users.

3. Detailed design should include details of earthworks and embankment slopes adjacent to VRU circulation areas to show slope hazards have been removed or suitable fencing provided. Where fencing exceeding 600mm high is provided adjacent to shared VRU routes to be used by cyclists, provision should be made for an additional width of 0.5m above the absolute minimum width of 3m, as per the requirements of the NTA CDM. Where the widths for proposed VRU facilities to be used by cyclists do not comply with the NTA CDM guidance, the designer should seek a departure from standard to be approved by the relevant Sanctioning Authority prior to incorporation into the design. An additional buffer width of 300mm is also typically required between cycle routes and the carriageway, with an additional clearance of 200mm required to kerbs between 61-150mm high.

4. The desirable minimum values for Dynamic Sight Distance should be provided in accordance with the requirements of the Cycle Design Manual, September 2023 and new cycling infrastructure should not be provided on any gradients exceeding 3%. Where this is unavoidable due to the site terrain, provision should be made for flattening slopes and gradients where feasible, along with the application of suitable high friction surfacing, and

cycle track/path widths should be increased by 0.25m to allow for greater lateral movement. Where these minimum and maximum requirements cannot be achieved, a suitable departure from standard should be obtained.

5. Provision should be made for continuous footways on all pedestrian desire lines, ideally with a minimum 2m width, and an absolute minimum unobstructed 1.2m at isolated sections only, to be separated from fast moving traffic where feasible through provision of a verge. 2m footways should be increased to an absolute minimum 3m where the footway is to be shared with cyclists and gradients on footways should not exceed 5%.

6. Pedestrian crossing points should be a minimum 2.4m width, to be increased to 4m where the crossing point is to be shared with cyclists and dropped kerbs, where relevant, should extend across the full width of the crossing point, unless the crossing is raised, in which case the crossing should be flush with the footways to each side.

7. Pedestrian and Cycling facilities should not terminate abruptly or narrow suddenly, and all cycling facilities should be designed in accordance with the requirements of the NTA Cycle Design Manual (CDM), Sept 2023, or suitable departure from standard obtained through written approval of the relevant approving authority where desirable minimum requirements cannot be achieved.

8. Provision should also be made for suitable transition kerbs where necessary to facilitate transfer between on and off-road cycling facilities, including at tie-ins to existing infrastructure where there are no cycling facilities, and with clear wayfinding to and from any proposed bicycle parking areas and connections to the external cycling network.
9. Provision should also be made for suitable signage and road marking design to accompany shared or segregated pedestrian and cycling facilities in accordance with the requirements of the Traffic Signs Manual, 2019 (RUS Signs), and all signage should be placed in a position which does not obstruct VRU movement or present an overhead hazard to VRUs or a strike hazard for passing and turning vehicles.

10. Detailed design should include details of all proposed kerb heights to include dropped kerbs which are flush with the carriageway or have a maximum upstand of 6mm on pedestrian desire lines and crossing points.

11. Footways should not terminate abruptly, particularly where pedestrians may be brought into unfinished surfaces or out into the carriageway into the path of passing or turning vehicles, or where intervisibility may be restricted by parked vehicles, boundary treatment or landscaping. Suitable parking restrictions should also be considered in areas where vehicles are parking in a manner which might obstruct the safe movement of other road users, including mobility impaired pedestrians.

12. The width of all parking bays throughout the site should ensure there is space for common vehicle sizes to park safely off the carriageway without obstructing movement or intervisibility for VRUs. Parking bays should ideally be positioned away from locations where pedestrians may wish to cross or may be playing, including child pedestrians.

13. Visibility to and from pedestrians wishing to use each proposed crossing point should be clear from a point 2m back from the kerbline on both sides of each crossing point, and clear and unobstructed dynamic visibility splays should also be provided on cyclist crossing points, with the requirements determined by the design speed of the cycling/shared VRU facilities.

14. All potential VRU intervisibility obstructions should be removed, and all crossings should conform to standard layout as either controlled or uncontrolled, with the tactile paving layout to be correctly aligned, and with provision for ladder and tramline paving at conflict points between pedestrians and cyclists, and corduroy tactile paving at the top and bottom of all steps throughout the site. Any proposed steps within and surrounding the site should also be accompanied by handrails, and all completed works on footways and VRU desire lines throughout the site should ensure that safe access can be accommodated for mobility and visually impaired pedestrians, with accessibility to be provided in accordance with the requirements of Government Technical Guidance Document M, Access and Use (2010), to include provision of suitable ramps, gradients and landing areas at regular intervals.

15. Dropped kerbs should be provided across the full extent of the tactile paving for the benefit of visually and mobility impaired pedestrians, to facilitate safe crossing of the carriageway on all desire lines, including across the mouth of all internal junctions. Any Tactile Paving surfaces should be provided in accordance with ‘Guidance on the Use of Tactile Paving Surfaces’.

16. The surface of all pedestrian circulation areas should be slip resistant, especially when wet, in accordance with Guidance on slip resistance given in BS 8300:2009 Annex E. The areas of VRU circulation throughout the site should be smooth and free of debris and trip hazards exceeding 6mm in height.

17. Obstructions such as Utility Poles and Lighting columns should ideally be sited to the rear of the footways, and fencing should also be provided at a sufficient offset and where required adjacent to height differences/steep embankments throughout the site.

18. All hazards within footways should be removed or relocated where necessary to a location which does not obstruct VRU movement, with all street furniture, including the edges of sign faces, to be located at a minimum offset of 450mm from the carriageway edges.

19. All internal gradients on VRU routes should be suitable for accessibility for all road users, including those who are mobility impaired, and all manhole covers and gullies throughout the scheme should ideally be located outside VRU desire lines, with suitable slip resistant surfacing to be used on chamber covers on pedestrian or cyclist desire lines.

20. Final landscaping design should take into account potential hazards arising from trees, including intervisibility obstructions, obstructions of VRU movements, trip and slip hazards, hazards at eye or head height, and potential reduction in lighting at night time or the creation of shadowing leading to slippery surfaces.

21. Detailed design should consider suitable boundary treatments and transitions to future potential VRU connections to the north and east of the site to minimise the impact of any future site expansion, including gradients, widths and volumes of both cyclist and pedestrians, and suitable safe and continuous connectivity should also be provided to VRU facilities on the external road network (both existing and proposed).

2.3.2 Observation – Future Design Considerations to improve Site Accessibility for NMUs/MUs

It was considered by the Audit Team that there is potential for increasing Use of Motorised Scooters and Electric Vehicles (EVs) throughout the scheme area, and there is no provision in the design for electric vehicle charging points. Micromobility – scooters etc, are intended for use on carriageways and dedicated routes rather than on footways, and the use of E-scooters is becoming more prevalent in our communities, however there is increasing potential for the safety of disabled pedestrians and those with limited mobility and sensory impairment to be compromised by these evolving transport modes, particularly in urban areas and dense residential settlements where higher proportions of younger road users are likely. Those with hearing impairment can also experience significant difficulty hearing electric vehicles, and EVs can also be difficult to detect even for those with a reasonable level of hearing.

Recommendations

1. The layout should ensure there are safe access routes and measures to improve amenity and safety for mobility or sensory impaired pedestrians throughout the extent of the scheme inclusive of terms of reference of the Disability Audit, as described in the National Disability Authority Guidelines, the Disability Act 2005 and the Building Regulations 2014.

2. E-scooters should not be permitted for usage on footpaths, and the final layout should consider safely accommodating shared use of road spaces by all road users, including new and evolving modes of transport. Where a significant proportion of E-scooters is anticipated, the design speed of all associated routes should be a recommended 12 km/hr maximum, in line with most European Countries, and consideration should also be given to the use of Alert Vehicular Acoustic Systems (AVAS).

3. Provision should be made for a suitable number of EV parking spaces where necessary in accordance with the latest legislation requirements, and any associated street furniture should be located in areas where there are safe segregated pedestrian zones and where they do not present an obstruction to VRUs.

4. ISO 23599:2012 should be consulted to determine the requirements for Tactile Walking Surface Indicators (TWSIs) for blind or vision impaired persons (BVIPs), where there are insufficient cues for wayfinding, or at specific hazards to assist them with travelling independently through the site, and should be considered in this urban environment where

'traditional' tactile wayfinding measures (building lines, kerbs) may be interrupted, e.g. on shared surfaces or by signposts, bollards, lighting columns, other street furniture, bins etc.

5. Consideration should be given to use of a Braille Trail for BVIPs. The design for a Braille Trail includes tactile elements, embedding smartphone-supported assistive technologies to points of interest and sensory soft landscaping. Tactile perception and Wayfinding can be improved through use of Tactile maps, signs and other information about environments, which will support orientation and navigation (wayfinding) and afford equal access to information. For signs, the use of tactile lettering and Braille is also recommended.

6. Where the interface between footways and raised carriageway surfaces at raised tables/junction plateaus is flush, or has an upstand of less than 25mm, it is vital to ensure that vision impaired people are not able to stray inadvertently onto the carriageway. This could be achieved by creating a level difference between the footway and carriageway of at least 25mm (so that the transition is not actually flush), or by using an appropriate form of physical barrier.

7. Holes within manhole covers should be filled or covered with suitable material to minimise risks to pedestrians with walking aids, canes, heels, or wheelchairs, and all chamber covers should have slip resistance/pedestrian friendly specification.

8. The maximum cross fall on any accessible route, to be used by mobility impaired pedestrians, should be 1:50 (2%).

9. The specification for any new tree pits throughout the scheme should be pedestrian/cyclist friendly. Slots in gratings for landscaping features (and drainage) should not be more than 13mm wide and set at right angles to the dominant line of travel. All potential hazards for mobility impaired pedestrians, including those with canes, or for wheels on wheelchairs/buggies, as well as for pedestrians with heels, should also be removed from pedestrian circulation areas, particularly at proposed crossing points.

10. Suitable dropped kerbs should be provided adjacent to any proposed disabled parking bays, and all disabled parking spaces should be configured in line with standard requirements, to include blue coloured surfacing and minimum required widths, and with sufficient widths on

footways adjacent to ensure passengers can alight, wait and circulate safely away from areas where vehicles will be circulating and where the risk of conflict with motorised vehicles is higher.

11. The minimum unobstructed width of all accessible routes through the site, including surrounding all buildings where public access is to be provided, should be 1800mm but preferably 2000mm. Occasional narrowing of the width of the accessible route, where unavoidable, may be acceptable provided an absolute minimum width of 1200mm is maintained at isolated locations only, and the restricted width extends for a maximum of 2000mm. (EN 17210: 2021, 7.1.6 and BS 8300-1: 2018, 8.1.2).

12. Wayfinding signage should be provided to inform all users (drivers, pedestrians and cyclists) about the nature of the intended usage, and direct people to comfort zones or other features of importance, as per recommendations of the National Council for the Blind, Ireland (NCBI). Wayfinding clues and supports should be thought into the overall plan for areas of the site to be accessible to the public, and the built environment shall be designed, constructed and managed to facilitate wayfinding, orientation and navigation.

13. The final detailed design layout should ensure the various accessibility needs of blind or vision impaired pedestrians (BVIPs) have been considered, along with the needs of those who are mobility impaired, including features such as road-walkway colour contrast, the general quality and availability of signage, and the consistency of lighting in public spaces, all of which are important in informing wayfinding. Failing to create effective accessible wayfinding measures will reduce the potential for safe independent movement for BVIPs which should be considered for a residential site of this size and urban location[1].

14. All surfaces and any ramps throughout the scheme should have a maximum gradient of 1:20 (preferable) or 1:12 (absolute maximum over short distances only) at all locations. An alternative means of access for wheelchair users must be provided in all locations where

[1] The final layout and design should be bound by the obligations of 1. The United Nations' Convention on the Rights of Persons with Disabilities (UN CRPD), 2006 and the European Standard on Wayfinding, Orientation and Navigation, which can be found in the "Accessibility and Usability of the Built Environment – Functional Requirements" document, also known as I.S. EN 17210:2021; 2. EN 17210 : 2021 Accessibility and usability of the built environment – Functional Requirements; 3. EN 17621: 2021 Accessibility and usability of the built environment – Technical performance criteria and specifications; 4. Guidance on the use of tactile paving surfaces – UK Department for Transport Dec. 2021; 5. BS 8300 – 1: 2018 Design of an accessible and inclusive built environment Part 1 External Environment; 6. Building for Everyone – A Universal Design Approach Sxn 1 External Environment pub. Centre for Excellence in Universal Design 2012; 7. 2021 International Standard for Building Construction – Accessibility and Usability of the Built Environment, also known as ISO/DIS 21542; 9. British Standards, esp. BS 8300:2018, NDA Building for Everyone: TGD M Access and Use (2010).

steps have been provided and where there is no ramp, or where ramp gradients of 1:20 or greater are provided, with a total ramp rise greater than 2m.

2.4 ROAD SIGNS, MARKINGS AND LIGHTING

2.4.1 Problem – Lighting

The design includes proposals for lighting columns which are located in close proximity to the kerb edges, where they may be struck by passing and turning vehicles, or in a location which obstructs relatively narrow footways or may obstruct entry to/from car parking spaces, e.g. locations shown in figure 47. Lighting around walkways and in other public areas is an essential wayfinding measure. A lack of lighting or ineffective lights makes it harder for pedestrians to see and increases collision risks in poor weather conditions and at night-time. Excessive lighting can produce a glare, which has a similar debilitating effect. Uneven lighting can produce shadows and dark spots which are difficult to navigate through with low vision.

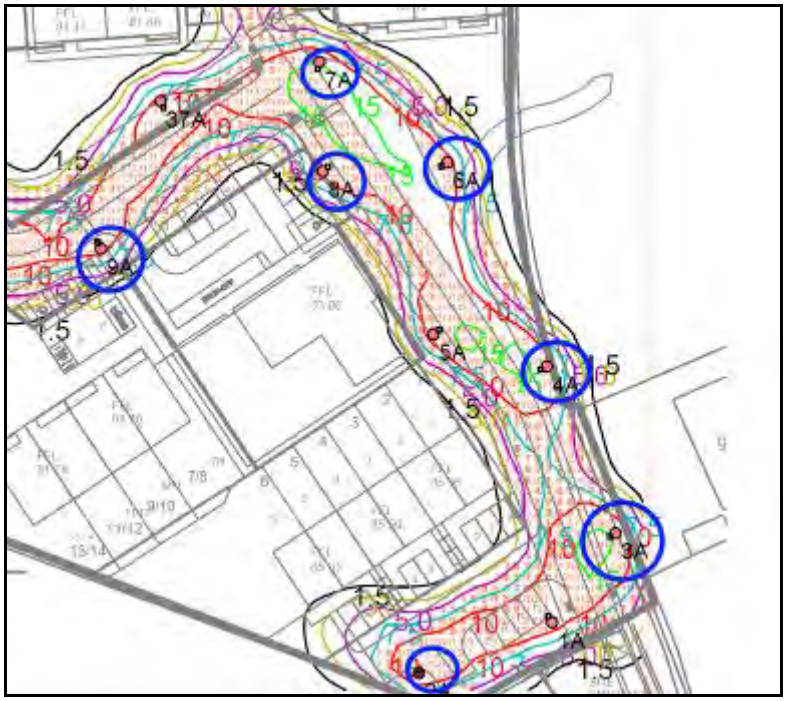


Figure 46: examples of Locations where Lighting Columns are located too close to kerb edges, or at locations likely to obstruct VRU routes

Recommendations

1. Lighting proposals to be finalised taking into account the findings of this Stage1/2 RSA report, with all lighting columns to be placed to the rear of footways where possible at a sufficient offset from the carriageway edge, and should not obstruct VRU or vehicular movement.

2. Any internal lighting should not interfere with or cause dazzle on the external road network.

3. Final lighting design should ensure needs of BVIPs are taken into consideration, as per observations made in paragraph 2.3.2.

2.4.2 Problem – Road Signs and Road Markings

There was no signing and lining schedule provided with the detailed design in accordance with the Traffic Signs Manual, however the following issues were noted which should be considered in more detail as the site design progresses:

- There is no provision for parking restrictions on approaches to any internal junctions;
- There are no centreline or stop/yield markings and lines, which may lead to ambiguity and misinterpretation regarding the rights of way and priority;
- The position of all road signage has not been shown on the internal site layout.
- There are no warning signs for junctions, raised surfaces or pedestrian crossing points, or children at play signs adjacent to green areas.
- There is no provision for reduced speed limit or slow zone signage on entry to the site or the approach
- There is no provision for RUS signage for VRU facilities, in accordance with the requirements of the Traffic Signs Manual (TSM), particularly at the start and end of facilities where risks are highest.

Recommendations

1. A signing and lining schedule should be produced for any proposed signs and lines to accompany the detailed road design, to take into account all issues raised in this Stage 1/2 RSA report, to include provision for standardised road markings and signage in accordance with the Traffic Signs Manual, 2019, including suitable pole diameters, sign sizes and text heights.

2. The rights of way and priority at all junctions throughout the scheme should be clear and unambiguous, to include suitable yield or stop arrangements where ambiguity may arise.

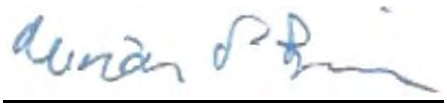
3. All final sign locations throughout the site must not obstruct VRU movements and must be provided at a suitable mounting height to prevent an overhead hazard.

4. Any new or relocated signs should be posted in full view of motorists in a safe location with a minimum offset of 450mm from the edge of the sign face to the carriageway edge. The lowest edge of all signs should be set at a height of 2.1m or higher over footway and at 2.4m or higher over a surface which may be used by cyclists.

5. All road markings and signage to be highly reflective material to ensure visibility during the hours of darkness, including refreshed road markings to replace worn or illegible markings.

3. AUDIT TEAM STATEMENT

We certify that we have visited the site and examined the drawings and information supplied. This examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified to improve the safety of the scheme. The problems identified have been noted within the report, together with suggestions for improvements which are recommended to be studied for implementation. No one on the Audit Team has been otherwise involved with the design of the measures audited. This audit has been carried out in accordance with TII GE-STY-01024 December 2017.

Signed:  Date: 26/7/24

MIRIAM O'BRIEN

Signed:  Date: 26/7/24

ANTHONY SUMNER

APPENDIX A – ROAD SAFETY AUDIT BRIEF CHECKLIST

Have the following been included in the audit brief?: (*if 'No', reasons should be given below)*

	Yes	No
1. The Design Brief	☑	☐
2. Departures from Standard	☐	☑
3. Scheme Drawings	☑	☐
4. Scheme Details (e.g. signs schedules, traffic signal staging)	☐	☑
5. Collision data for existing roads affected by scheme	☐	☑
6. Traffic surveys	☐	☑
7. Previous Road Safety Audit Reports and Designer Responses/Feedback Form	☐	☑
8. Previous Exception Reports	☐	☑
9. Start date for construction and expected opening date	☐	☑
10. Any elements to be excluded from audit	☐	☑

Any other information? ☐ ☑

APPENDIX B – SITE PHOTOGRAPHS

APPENDIX C – SCHEME DRAWINGS

Road Safety Matters Ltd
Urlingford Rd, Johnstown
Co Kilkenny, Ireland E41 W721
Tel +353 (0)56 883 8428
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Road Safety Audit Feedback Form

Scheme: Access to Residential Development, St Joseph's Rd, Mallow, Co Cork

Route No. N/A

Audit Stage: 1/2

Date Audit Completed: July 2024

To Be Completed By Designer				To Be Completed byAudit Team Leader
Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Describe alternative measure(s). Give reasons for not accepting recommended measure. Only Complete if Recommended Measure is NOT accepted	Alternative measures or reasons accepted by auditors (yes/no)
2.1.2	Yes	Yes		
2.1.3	Yes	Yes	Speed limit reviewed and reduced to 20/hr., All audit items have been addressed or will be addressed at detailed design stage	
2.1.4	Yes	Yes	Detailed analysis of parking requirement completed. Restrictions if required will be addressed at detailed design stage	
2.1.5	Yes	Yes	Landscaping will be setback to provide adequate sightline for pedestrians. Adequate sightlines now shown on WDG 22054-XX-XX-XX-XX-DR-WDG-CE-001-P3-0	
2.1.6	Yes	Yes	Fencing now shown on Arch plans an x sections. All cycle paths now proposed to be shared cycle and pedestrian. Gradients widths etc will comply with Part 4.1.5.2 of the NTA Cycle Design Manual 2023	
2.1.7	Yes	Yes	Site plans amended. All outstanding issues will be addressed at detail design stage	

2.2.1	Yes	Yes	Site plans amended. All outstanding issues will be addressed at detail design stage	
2.2.2	Yes	Yes	Site plans amended. All outstanding issues will be addressed at detail design stage	
2.2.3	Yes	Yes	Site plans amended. All outstanding issues will be addressed at detail design stage	
2.3.1	Yes	Yes	Site plans amended. All outstanding issues will be addressed at detail design stage	
2.3.2	Yes	Yes	Site plans amended. All outstanding issues will be addressed at detail design stage	
2.4.1	Yes	Yes	Site plans amended. All outstanding issues will be addressed at detail design stage	
2.4.2	Yes	Yes	Site plans amended. All outstanding issues will be addressed at detail design stage	

Signed: _____ **Designer** **Date** 16-07-2024

Signed: _____ **Audit Team Leader** **Date** 26.7.24

Signed: _____ **Employer** **Date** 17/7/24

Proposed Housing Development, Ard an Ghleanna, Mallow, Co Cork.

Traffic & Transport Assessment.

Document Control Sheet

Client	Cork County Council.
Project Title	Proposed Housing Development, Ard an Ghleanna, Mallow, Co Cork.
Document Title	Traffic and Transport Assessment
Document No.	2302-TTA-D01
Job No.	2302TT
Date	19th July 2024
Status	Final Issue

Martin Hanley Consulting Engineers Ltd.
Traffic & Transportation,
Consulting Engineers,

Table of Contents

1.0 Introduction

Martin Hanley Traffic and Transportation Consulting Engineers have been engaged by Cork County Council, to prepare a Traffic and Transport Assessment (TTA) for the construction of a housing development involving 138 residential units including both houses and apartments. This report has been prepared as part of the planning application. The site is located on the northeastern side of Mallow. Access to the development will be via the existing Aldworth housing estate from St Joseph's Road The proposed development is located approx. 800m from Mallow town center.

Traffic counts were carried out by Traffinomics Ltd on the 09th of May 2023 for the morning peak hours of 07:30 - 09:30 and the evening peak hours of 16:30-18:30. Counts were undertaken at the major junctions accessing the proposed development included the following junctions,

- Junction 1 St Joseph's Road / N72 North
- Junction 2 St Joseph's Road / Aldworth Heights Housing Development
- Junction 3 St Joseph's Road / Kingsfort
- Junction 4 St Joseph's Road / Castlepark
- Junction 5 St Joseph's Road / N72 South
- Junction 6 N72 South / Davis Street
- Junction 7 Bridge Street N72 / Bridewell Lane
- Junction 8 Bridge Street / Park Road N72

The expected year of completion for Phase 1 of the development is taken to be 2025. In accordance with the "Traffic and Transport Assessment Guidelines, TII 2014", a traffic analysis was carried out for the AM & PM peak hours for the following time periods.

Base Year 2023

Opening Year 2025

Opening Year + 5 Year Forecast 2030.

Opening Year + 15 Year Forecast 2040.

This report has been prepared in accordance with the TII's 2014 publication "Traffic and Transport Assessment Guidelines" PE-PDV-02045 and the "Guidelines for Traffic Impact Assessments" as published by the Institution of Highways & Transportation U.K. in 1994. The purpose of a TTA is to assess the traffic impact of a development on the existing road network and propose any necessary mitigation measures to best accommodate the expected traffic volumes generated by the proposed development.

1.1 Conclusion Non- Technical Summary

The following are the main conclusions of the LinSig traffic analysis.

Junction 1 St Joseph's Road / N72 North

- The maximum degree of saturation of the junction in 2023 is 21.4% for the evening peak hour. This increases to 33.6% in the design year 2040. No changes are recommended to this junction although this junction will be upgraded as part of the Mallow Northern Relief Road Project.

Junction 2 St Joseph's Road / Aldworth Heights Housing Development

- The maximum degree of saturation of the junction in 2023 is only 3.9% for the morning peak hour for traffic exiting the Aldworth Heights Housing Estate. This increases to 13.8% saturation in the design year 2040.
- The junction with St Joseph's Road will be upgraded to provide adequate junction sight distance and improved footpath and pedestrian crossing facilities as a part of separate permission granted under a Part 8 application by Cork County Council .
- Junction sight distance of 49m to the east and west will be provided at 2.4m back from the road edge measured for design speed of 50km/hr in accordance with DMURS. The junction will be an uncontrolled STOP junction with appropriate road marking and signage provided.

Junction 3 St Joseph's Road / Kingsfort

- The maximum degree of saturation of the junction in 2023 is 20.8% for the morning peak hour for traffic exiting Kingsfort housing development. This increases to 35.2% in the design year 2040.
- The kerb radii could be reduced and dropped kerbs and tactile paving provided to improve pedestrian facility at the junction.

Junction 4 St Joseph's Road / Castlepark

- The maximum degree of saturation of the junction in 2023 is 25.3% for the morning peak hour for traffic exiting Castlepark housing development. This increases to 41.2% in the design year 2040 for the morning peak hour.
- The kerb radii could be provided and dropped kerbs and tactile paving provided to improve pedestrian facility at the junction.

Junction 5 St Joseph's Road / N72 South

- The maximum degree of saturation at the junction in 2023 is 32.6% for the morning peak hour for traffic heading northbound on the N72. This increases to 45.6 % in the design year 2040 for traffic on St Joseph's Road heading towards the N72 the morning peak hour.
- Dropped kerbs and tactile paving could be provided to improve pedestrian facility at the junction.

Junction 6 N72 South / Main Street

- The maximum degree of saturation of the junction in 2023 is 65.1 % for the evening peak hour for traffic on Main Street at this signalised junction. This increases to 82.6 % in the design year 2040 for traffic on Main Street for the evening peak hour.
- No improvements to this junction are recommended.

Junction 7 Bridge Street N72 / Bridewell Lane

- The maximum degree of saturation of the junction in 2023 is 43.5 % for the morning peak hour for traffic on Bridewell lane at this uncontrolled junction. This increases to 78.7 % in the design year 2040 for traffic on Main Street for the morning peak hour.
- The kerb radii could be reduced and dropped kerbs and tactile paving provided to improve pedestrian facility at the junction.

Junction 8 Bridge Street / Park Road N72

- The maximum degree of saturation of the junction in 2023 is 70.1 % for the morning peak hour for traffic on N72 Bridge Street heading south at this signalised junction. This increases to over 100% saturation by the design year 2040 if changes to the traffic signals staging are not undertaken.
- The current junction arrangement shows straight through and right turn traffic from Bridge Street travelling south on different signal phases. Site observation indicates that any HGV waiting to turn right blocks the straight through traffic. Also, any significant right turn traffic volumes can again block the straight through traffic as the right turn lane is too short at approx. 15.0m. A car waiting to turn right will also block a HGV travelling south.
- The recommended change to the junction would be to operate the right turn and straight through traffic from Bridge Street on a single traffic signal phase with both lanes moving together. This will reduce the saturated flow from over 100% to 84.3% for traffic on Bridge Street heading south in the design year 2040.

2.0 Policy Context

2.1 Introduction

In order to demonstrate that the development of the site complies with current national and local transport planning policy, a review was undertaken of the following documents:

- Cork County Council Development Plan 2022-2028
- Urban Design Manual: A Best Practice Guide 2009
- Smarter Travel - A Sustainable Transport Future 2009-2020
- Spatial Planning & National Roads – Guidelines for Planning Authorities 2012

2.2 Urban Design Manual: A Best Practice Guide 2009

This guide "focuses on creating well-designed, sustainable neighbourhoods that will stand the test of time." This can also extend to industrial developments and provides a strong foundation for the design of such sites in relation to their accessibility – in particular, walking and cycling. The manual follows a set of criteria of which the following are directly linked to this Transport Assessment.

- There are attractive routes in and out for pedestrians and cyclists
- The development is located in or close to a mixed-use centre
- The development's layout makes it easy for a bus to serve the scheme
- The layout links to existing movement routes and the places people will want to get to
- Appropriate density, dependant on location, helps support efficient public transport

The manual recognises the need for planners to facilitate connections between new and existing developments, as well as key locations around the sites. These connections should be of high quality, direct, safe, and secure and facilitate existing movement and desired routes. Furthermore, public transport and sustainable transport is prioritised over private cars. Quality interchanges are highly desirable in promoting the uptake of public transport, including integration with sustainable transport modes, such as cycle parking/storage.

2.3 Smarter Travel – A Sustainable Transport Future 2009-2020

Smarter Travel is "designed to show how Ireland can reverse current unsustainable transport and travel patterns and reduce the health and environmental impacts of current trends and improve our quality of life." The plan outlines the current transport trends and statistics in Ireland and focuses on policies which aim to increase transport sustainability by 2020.

Key goals of the policy include.

- Improving quality of life and accessibility to transport for all and, in particular, people with reduced mobility and those who may experience isolation due to lack of transport.
- Improving economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructure bottlenecks.
- Minimising the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions.
- Reducing overall travel demand and commuting distances travelled by the private car.

In Chapter 3 of the Smarter Travel Document the Government reaffirms its vision for sustainability in transport and sets out five key goals:

(i) to reduce overall travel demand,
(ii) to maximise the efficiency of the transport network,
(iii) to reduce reliance on fossil fuels,
(iv) to reduce transport emissions and
(v) to improve accessibility to transport.

To achieve these goals and to ensure that we have sustainable travel and transport by 2020, the Government sets the following key targets:

- Future population and employment growth will predominantly take place in sustainable compact forms, which reduce the need to travel for employment and services.
- 500,000 more people will take alternative means to commute to work to the extent that the total share of car commuting will drop from 65% to 45%
- Alternatives such as walking, cycling and public transport will be supported and provided to the extent that these will rise to 55% of total commuter journeys to work.
- The total kilometres travelled by the car fleet in 2020 will not increase significantly from current levels.
- A reduction will be achieved on the 2005 figure for greenhouse gas emissions from the transport sector.

2.4 Cork County Council Development Plan 2022-2028

Baseline trips data indicates that a significant majority of trips (77.47%) originating in Mallow Electoral Area of Cork County are by private transport and are mainly car-based. Walking accounts for a significant proportion of journeys at 9.57 % while cycling comprises 0.71% of trips. Approximately 0.78% of trips are taken by public transport. See Table 2.1 below is an extract from Cork County Council Development Plan 2022-2028 Chapter 12 Transport and Mobility. The targets for modal share for 2028 are also set out in the Development Plan and are shown in Table 2.1 below.

Commuting to or within	% Travelling to work by private Car	% Travelling to work by walking	% Travelling to work by cycling	% Travelling to work by public transport
Mallow Baseline	77.47	9.57	0.71	0.78
Mallow Targets 2028	60.0	14.0	4.0	11.0

Table 2.1: Cork County Development Plan – Mallow existing baseline mode share for commuting compared to target mode for commuting.

3.0 Existing Conditions

3.1 Local Road Network

The site is located off the St Joseph's Road, Mallow. The site is located approx. 0.9km to the northeast of the town centre. Access to the development will be via the existing Aldworth housing estate from St Joseph's Road.
The proposed development of 138 housing unts is located to the north of the existing Aldworth Housing Estate. The traffic analysis also takes account of a proposed development of 420 housing units proposed on the Kingsfort lands to the south of the St Josephs Road.

Fig 3.1: Local Road Network and site location shown for 138 Housing Units. (CHANGE TO 138 UNITS)

3.2 Existing Traffic Conditions

Traffic counts were carried out by Traffinomics Ltd. on 23rd of May 2023 for the morning peak hours of 07:30 - 09:30 and the evening peak hours of 16:30-18:30. Full traffic count data can be found in appendix A of this report. Traffic counts were undertaken for the busiest traffic hours.

The existing junctions were analysed using LinSig traffic modelling software. The outputs from LinSig show Degree of Saturation and Queue lengths as indicators of the operational efficiency of the junction. A Degree of Saturation of 100% indicates that the junction is operating at its theoretical maximum capacity, however, a value of 85% is considered to be the maximum optimum degree of saturation for an uncontrolled junction and 90% for traffic signal-controlled junctions, allowing for a 15% & 10% reserve capacity for unusual events such as Bank Holiday weekends and sporting events.

A base model was developed in LinSig using the recorded traffic counts. LinSig software requires that all traffic modes collected from the counts be converted to Passenger Carrying Units (PCU's or car-equivalents). This is done to standardise the size disparity of different vehicle types, preventing an overestimation of smaller vehicle categories and underestimation of HGV's and other large vehicle categories. The traffic counts converted in PCU format allow for all modelled traffic flows to be equally represented in comparison to other categories, thereby removing any discrepancies in the input data.

Output from LinSig can be seen in Fig 3.2 for the AM peak hour 2023 and Fig 3.3 for the PM peak hour 2023 for the following junctions.

Junction 1 St Joseph's Road / N72 North

For the existing AM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 8 St Joseph's Road of the junction as can be seen in Fig 3.2 below. The degree of saturation is measured at 20.7% with a mean maximum car queue length of 0.1 vehicles for the morning peak hours 08:15-09:15. See Appendix C for LinSig output data.

Junction 2 St Joseph's Road / Aldworth Heights Housing Development

For the existing AM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 7 St Joseph's Road of the junction as can be seen in Fig 3.2 below. The degree of saturation is measured at 7.6% with a mean maximum car queue length of 0 vehicles for the morning peak hours 08:15-09:15. The existing Aldworth Height housing estate has a degree of saturation of only 3.9%

Junction 3 St Joseph's Road / Kingsfort

For the existing AM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 2 Kingsfort of the junction as can be seen in Fig 3.2 below. The degree of saturation is measured at 20.8% with a mean maximum car queue length of 0.1 vehicles for the morning peak hours 08:15-09:15.

Junction 4 St Joseph's Road / Castlepark

For the existing AM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 15 Castlepark of the junction as can be seen in Fig 3.2 below. The degree of saturation is measured at 25.3% with a mean maximum car queue length of 0.2 vehicles for the morning peak hours 08:15-09:15.

Junction 5 St Joseph's Road / N72 South

For the existing AM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 23 St Joseph's Road of the junction as can be seen in Fig 3.2 below. The degree of saturation is measured at 32.6% with a mean maximum car queue length of 0.2 vehicles for the morning peak hours 08:15-09:15.

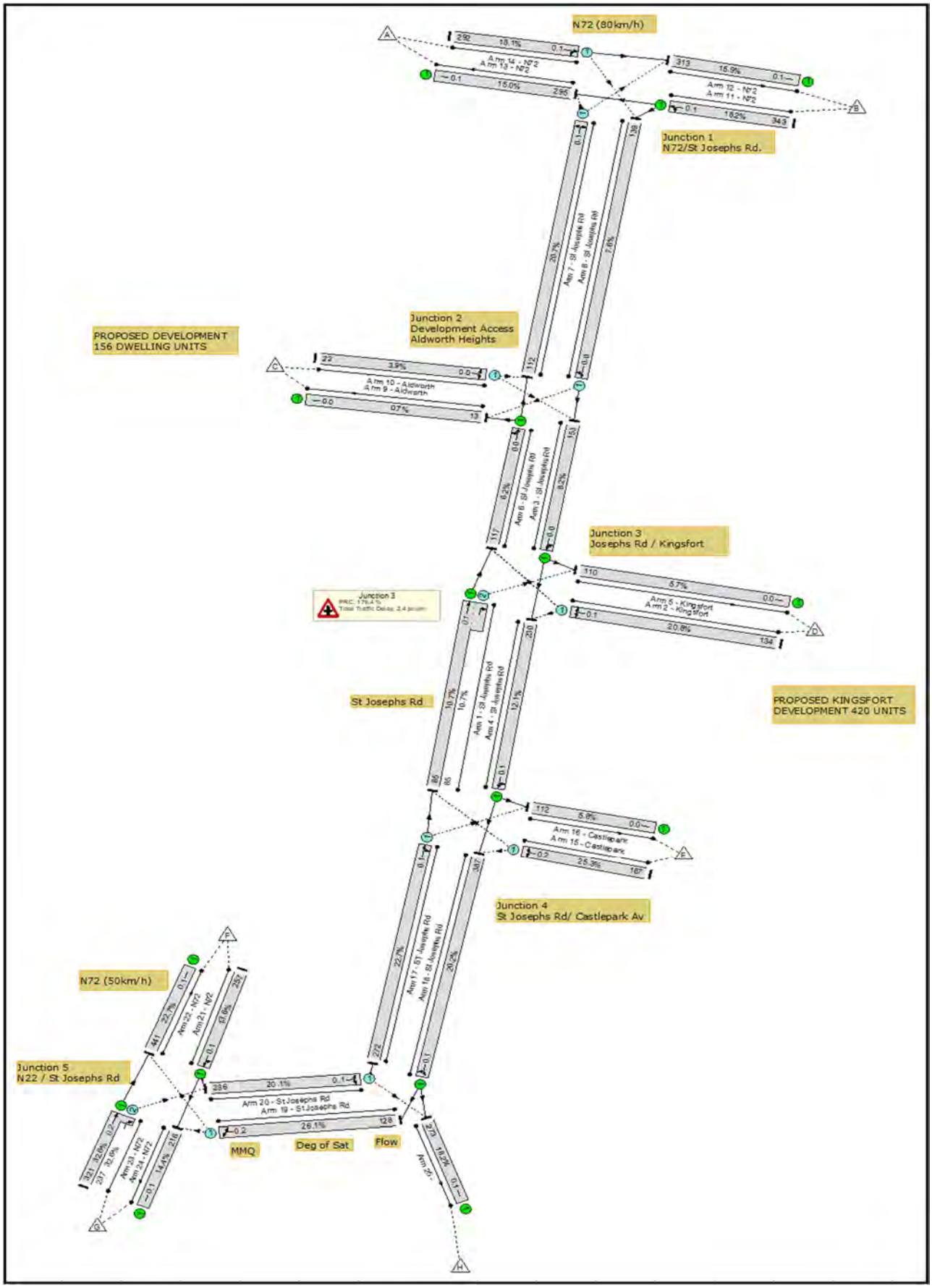


Fig 3.2: Scenario 1 AM 2023 Current Year Uncontrolled Junctions.

The following is the result of the traffic analysis for the existing evening peak hour in 2023 for junctions 1-5.

Junction 1 St Joseph's Road / N72 North

For the existing PM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm14 N72 of the junction as can be seen in Fig 3.3 below. The degree of saturation is measured at 21.4% with a mean maximum car queue length of 0.1 vehicles for the evening peak hours 16:30-17:30. See Appendix C for LinSig output data.

Junction 2 St Joseph's Road / Aldworth Heights Housing Development

For the existing PM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 7 St Joseph's Road of the junction as can be seen in Fig 3.3 below. The degree of saturation is measured at 7.6% with a mean maximum car queue length of 0 vehicles for the evening peak hours 16:30-17:30. The existing Aldworth Height housing estate has a degree of saturation of only 1.7%

Junction 3 St Joseph's Road / Kingsfort

For the existing PM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 3 St Joseph's Road of the junction as can be seen in Fig 3.3 below. The degree of saturation is measured at 7.4% with a mean maximum car queue length of 0 vehicles for the evening peak hours 16:30-17:30.

Junction 4 St Joseph's Road / Castlepark

For the existing PM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 17 St Joseph's Road of the junction as can be seen in Fig 3.3 below. The degree of saturation is measured at 23.4% with a mean maximum car queue length of 0.2 vehicles for the evening peak hours 16:30-17:30.

Junction 5 St Joseph's Road / N72 South

For the existing PM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 23 St Joseph's Road of the junction as can be seen in Fig 3.3 below. The degree of saturation is measured at 31.2% with a mean maximum car queue length of 0.2 vehicles for the evening peak hours 16:30-17:30.

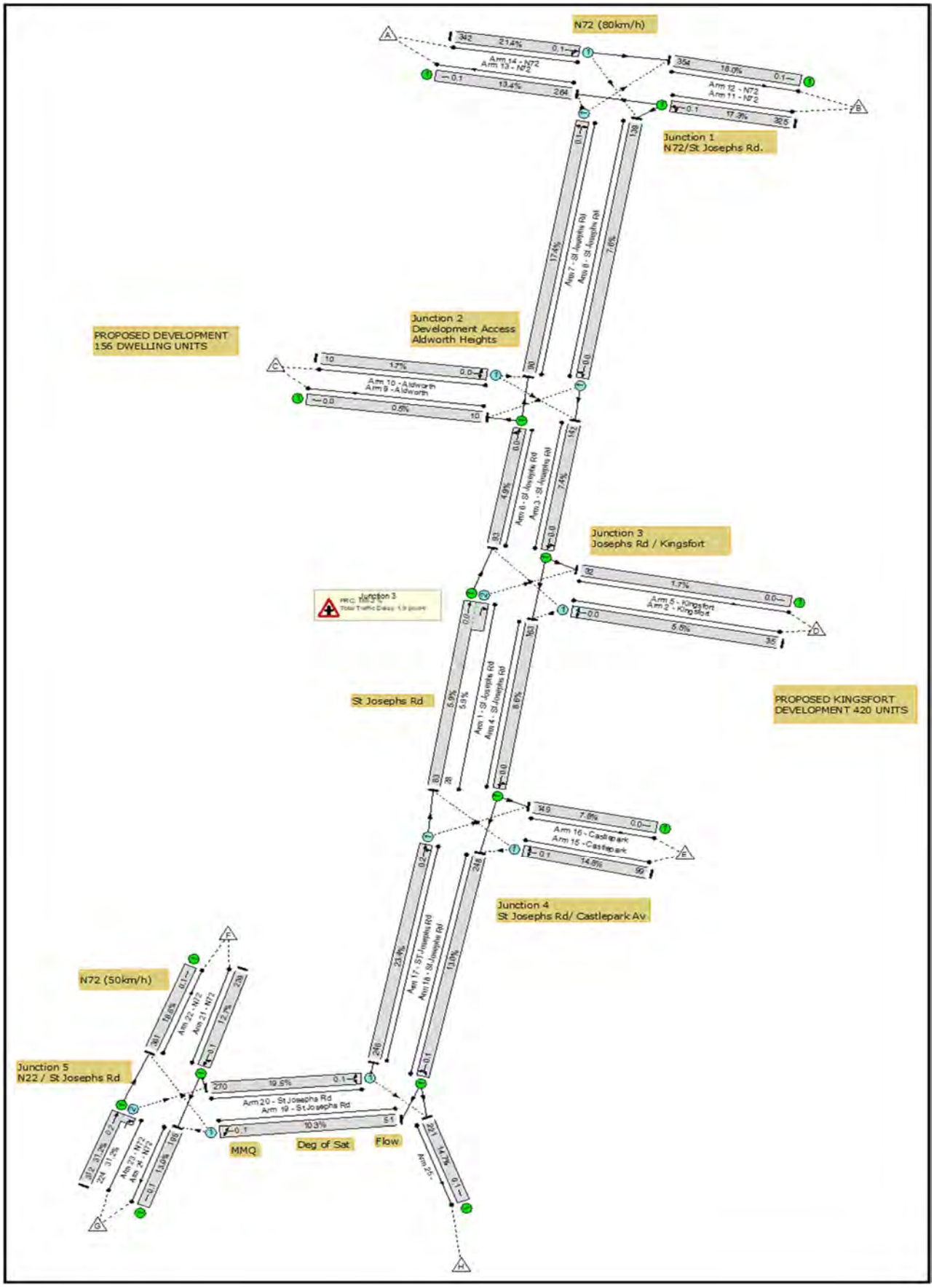


Fig 3.3: Scenario 5 PM 2023 Current Year Uncontrolled Junctions.

The following is the result of the traffic analysis for the existing morning peak hour in 2023 for junctions 6-8.

Output from LinSig can be seen in Fig 3.4 for the AM peak hour 2023 and Fig 3.5 for the PM peak hour 2023 for the following junctions.

Junction 6 N72 South / Davis Street
For the existing AM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 2 Main Street of the junction as can be seen in Fig 3.4 below. The degree of saturation is measured at 61.2% for the morning peak hour 08:15-09:15. See Appendix D for LinSig output data.

Junction 7 Bridge Street N72 / Bridewell Lane
For the existing AM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 8 Bridewell Lane of the junction as can be seen in Fig 3.4 below. The degree of saturation is measured at 42.5% for the morning peak hour 08:15-09:15.

Junction 8 Bridge Street / Park Road N72
For the existing AM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 1 Bridge Street of the junction as can be seen in Fig 3.4 below. The degree of saturation is measured at 71.0% for the morning peak hour 08:15-09:15.

The following is the result of the traffic analysis for the existing evening peak hour in 2023 for junctions 6-8.
Output from LinSig can be seen in Fig 3.5 for the PM peak hour 2023 for the following junctions. The following is a summary of the results for the PM peak hour.

Junction 6 N72 South / Davis Street
For the existing PM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 2 Main Street of the junction as can be seen in Fig 3.5 below. The degree of saturation is measured at 62.8% for the evening peak hour 16:30-17:30 See Appendix D for LinSig output data.

Junction 7 Bridge Street N72 / Bridewell Lane
For the existing PM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 8 Bridewell Lane of the junction as can be seen in Fig 3.5 below. The degree of saturation is measured at 35.3% for the evening peak hour 16:30-17:30.

Junction 8 Bridge Street / Park Road N72
For the existing PM 2023 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 3 Bridge Street of the junction as can be seen in Fig 3.5 below. The degree of saturation is measured at 71.9% for the evening peak hour 16:30-17:30.

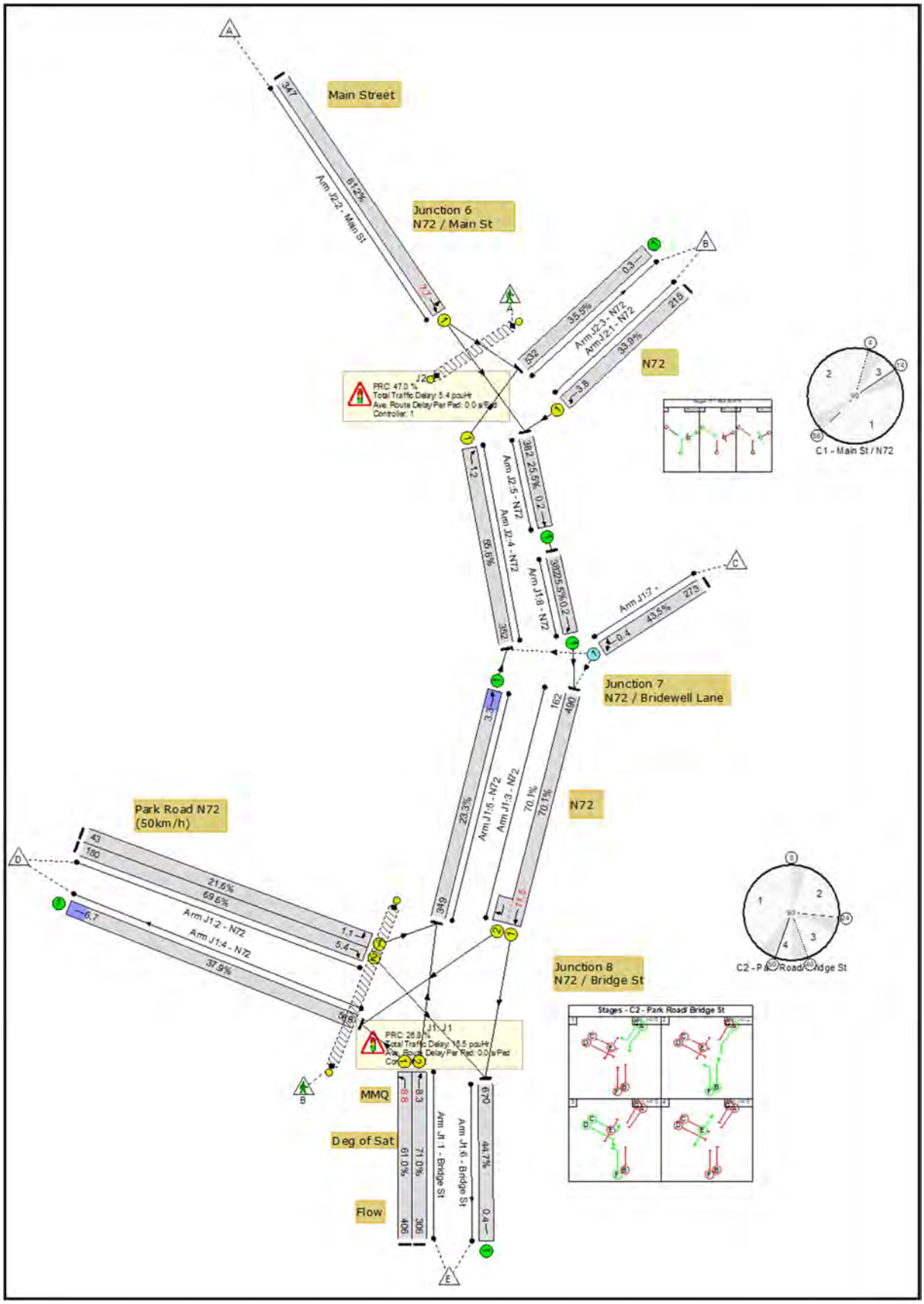


Fig 3.4: Scenario 5 AM 2023 Current Year Signalised Junctions

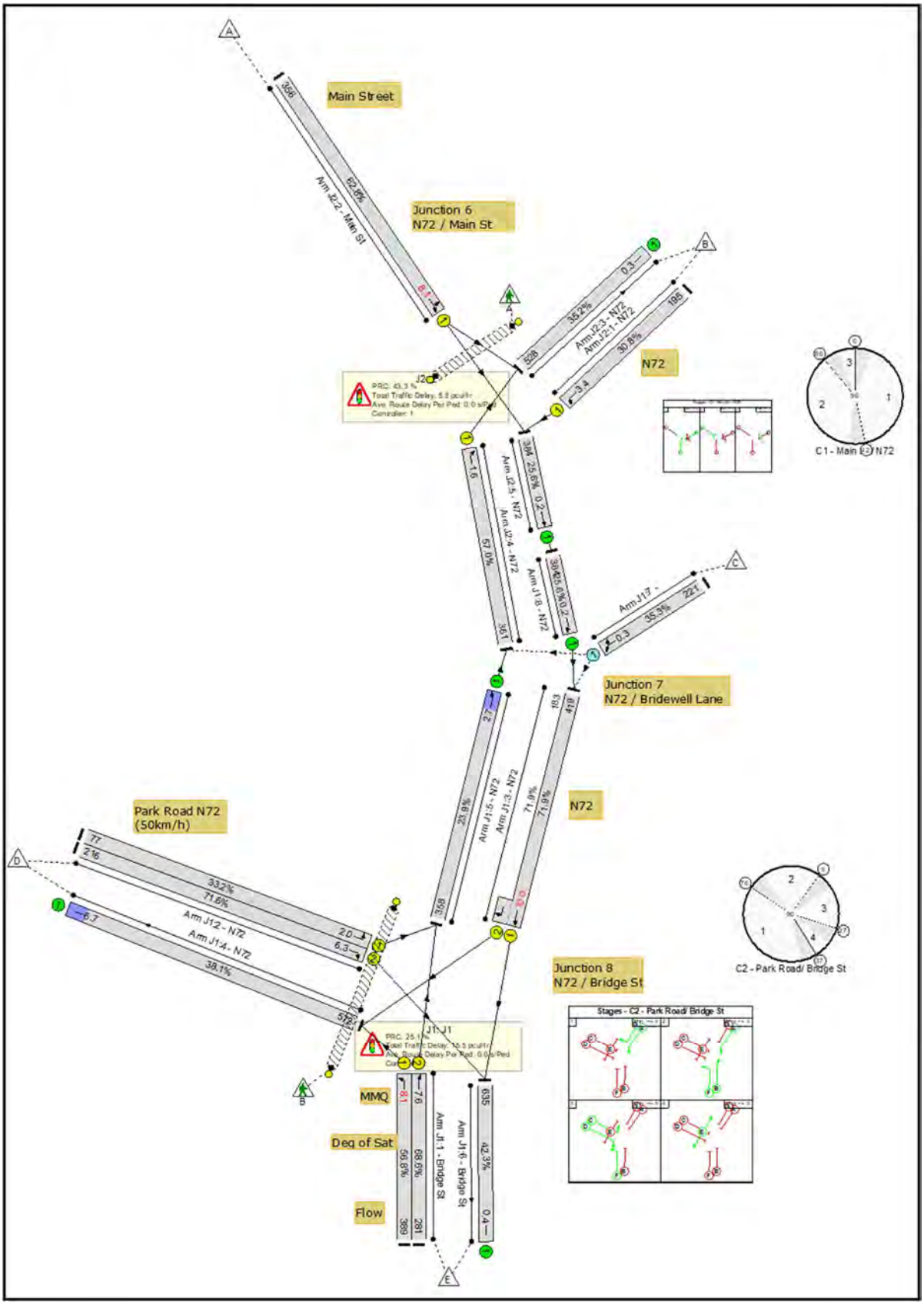


Fig 3.5: Scenario 5 PM 2023 Current Year Signalised Junctions

3.3 Mallow Northern Relief Road

Fig 3.6 below shows the route of the proposed Mallow Northern Relief Road N72-N73. The Relief Road will connect the National Routes N72 & N73 to the N20 Mallow Road. The route will commence at Olivers Cross and travel westward towards the N20 connecting with the N20 near Mallow General Hospital.
This Relief road will provide considerable traffic relief to Mallow town centre. In particular the large numbers of heavy goods vehicles will be diverted along the relief road towards the N20 away from the town centre.

Bridge Street in Mallow north of the Park Road signalised junction has narrow streets. Heavy good vehicles have difficulty passing each other leading to traffic congestion. The junction of Bridge Street southbound near the River Bridge is constrained with narrow road widths.. Cork County Council is currently reviewing the traffic signal timings at the Junction of Park Road / Bridge Street N72 with a view to improving traffic flows.

The Minister for Transport Eamon Ryan has confirmed that the recent allocation of €300,000 announced in February 2024 for the Mallow Relief Road will enable the project to progress through the planning and design stages.

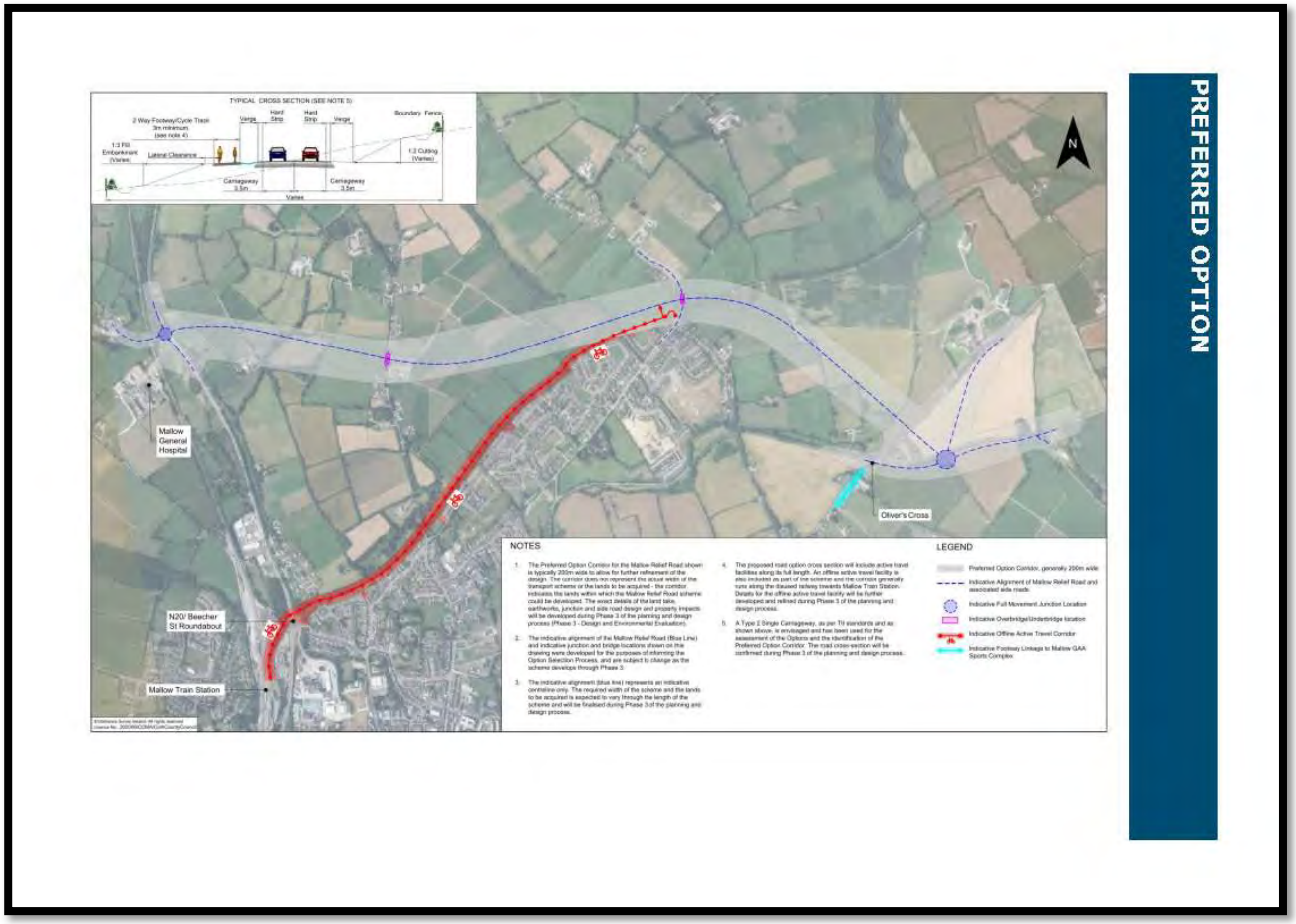


Fig 3.6: Proposed Route of the Mallow Northern Relief Road N72-N73

4.0 Development

The proposed development consists of the construction of a housing development involving 138 housing units. The development will consist of 138 housing units comprising 74 houses and 64 apartments with provision for a creche to also be provided.

See drawings in Appendix E for the roads layout plan. This proposed development layout in figure 4.1 has been provided by DG Architects

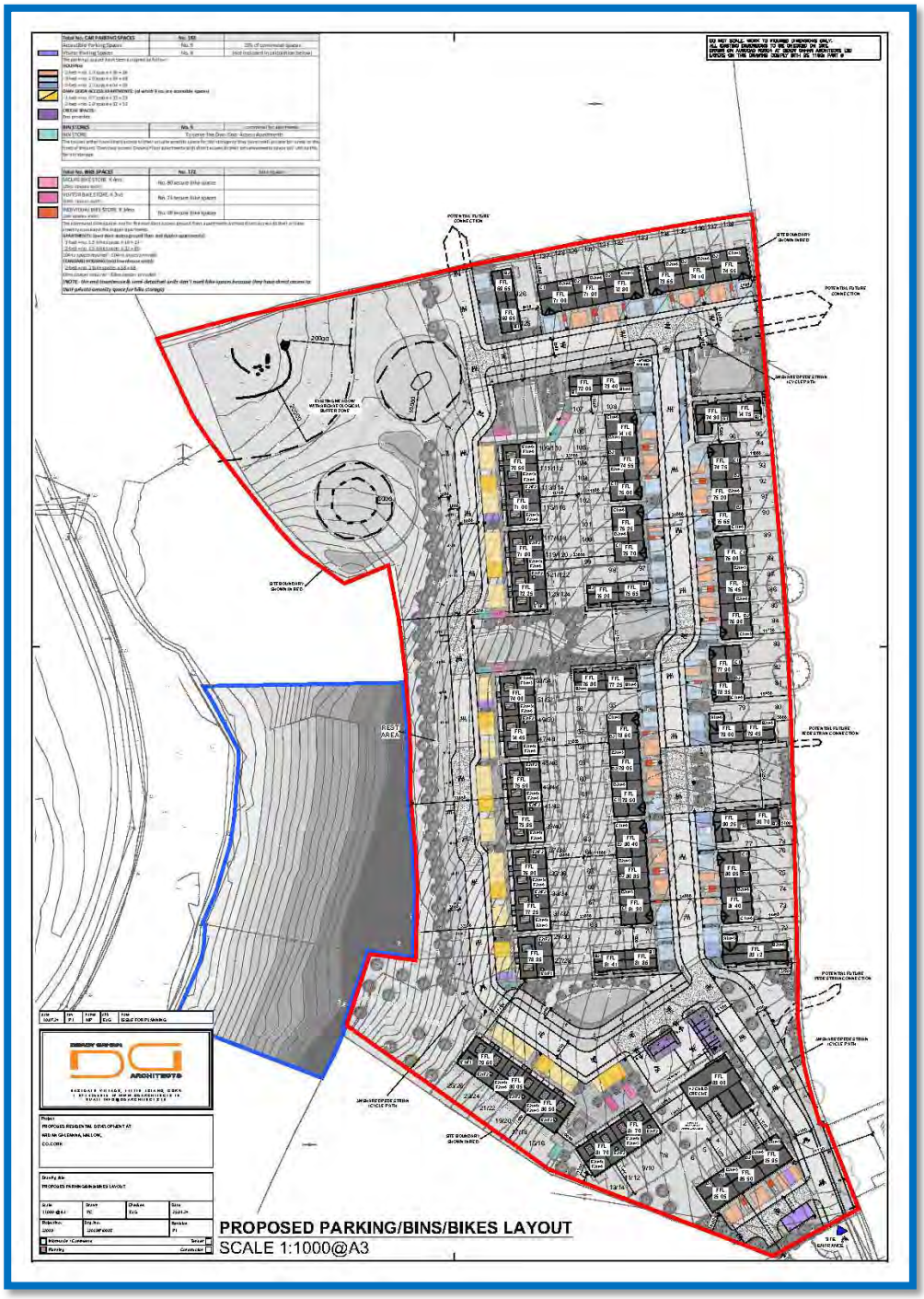


Fig 4.1 Proposed Development Layout.

5.0 Trip Generation, Modal Split and Trip Distribution.

5.1 Trip Generation

TII's 2014 publication "Traffic and Transport Assessment Guidelines" states that for new developments a traffic analysis should be carried out during the busiest hours which have been identified from traffic counts as 08:15-09:15 and 16:30-17:30. As this is a residential development the morning and evening peak hours are considered as the peak hours for traffic generation. The TRICS database can be used to calculate the trip generation for this development. TRICS is a well-established UK and Irish national database which holds in excess of 2,100 site locations and 4,700 survey counts with over 98 separate land use sub-categories. Tables 5.1, 5.2, & 5.3 below shows the total number of trips generated by the development for both the Aldworth and Kingsfort Housing Development. See Appendix B for trics data.

The Aldworth Development represents just 25% of the total traffic which has been included in the traffic analysis. The balance of 75% will be generated by the proposed Kingsfort Development. The following assumptions have been made regarding the expected delivery of housing units for both the Aldworth and Kingsfort Housing Developments.

- Aldworth Development of 138 units - 40No units to be constructed by 2025 with 40 units per annum constructed thereafter.
- Kingsfort Development of 420 units - 50No units to be constructed by 2026 with 50 units per annum constructed thereafter.

Residential Deverlopment St Josephs Road Developed by 2025		AM ARRIVAL 08:15-09:15	AM DEPARTURES 08:15-09:15	PM ARRIVAL 17:15-18:15	PM DEPARTURES 17:15-18:15
74 Houses Aldw orth	per unit	0.18	0.46	0.45	0.25
	No.	40	40	40	40
	Trips	7	18	18	10
64 Apartments Aldw orth	per unit	0.046	0.256	0.218	0.043
Total 138 Units	No.	0	0	0	0
	Trips	0	0	0	0
280 Houses Kingsfort	per unit	0.18	0.46	0.45	0.25
	No.	0	0	0	0
	Trips	0	0	0	0
140 Apartments Kingsfort	per unit	0.046	0.256	0.218	0.043
Total 420 Units	No.	0	0	0	0
	Trips	0	0	0	0
		AM ARRIVAL	AM DEPARTURES	PM ARRIVAL	PM DEPARTURES
TOTAL TRIPS PEAK HOURS		7	18	18	10

Table 5.1: Trip Generation from proposed Developments by 2025

Residential Deverlopment St Josephs Road Developed by 2030		AM ARRIVAL 08:15-09:15	AM DEPARTURES 08:15-09:15	PM ARRIVAL 17:15-18:15	PM DEPARTURES 17:15-18:15
74 Houses Aldw orth	per unit	0.18	0.46	0.45	0.25
	No.	74	74	74	74
	Trips	13	34	33	19
64 Apartments Aldw orth	per unit	0.046	0.256	0.218	0.043
Total 138 Units	No.	64	64	64	64
	Trips	3	16	14	3
Creche Aldw orth 300sqm	per 100 sqm	2	0.899	1	1.667
	No.	3	3	3	3
	Trips	6	3	3	5
280 Houses Kingsfort	per unit	0.18	0.46	0.45	0.25
	No.	170	170	170	170
	Trips	31	78	77	43
140 Apartments Kingsfort	per unit	0.046	0.256	0.218	0.043
Total 420 Units	No.	80	80	80	80
	Trips	4	20	17	3
		AM ARRIVAL	AM DEPARTURES	PM ARRIVAL	PM DEPARTURES
TOTAL TRIPS PEAK HOURS		57	152	144	72

Table 5.2: Trip Generation from proposed Developments by 2030

Residential Deverlopment St Josephs Road Developed by 2030		AM ARRIVAL 08:15-09:15	AM DEPARTURES 08:15-09:15	PM ARRIVAL 17:15-18:15	PM DEPARTURES 17:15-18:15
74 Houses Aldw orth	per unit	0.18	0.46	0.45	0.25
	No.	74	74	74	74
	Trips	13	34	33	19
64 Apartments Aldw orth	per unit	0.046	0.256	0.218	0.043
Total 138 Units	No.	64	64	64	64
	Trips	3	16	14	3
Creche Aldw orth 300sqm	per 100 sqm	2	0.899	1	1.667
	No.	3	3	3	3
	Trips	6	3	3	5
280 Houses Kingsfort	per unit	0.18	0.46	0.45	0.25
	No.	170	170	170	170
	Trips	31	78	77	43
140 Apartments Kingsfort	per unit	0.046	0.256	0.218	0.043
Total 420 Units	No.	80	80	80	80
	Trips	4	20	17	3
		AM ARRIVAL	AM DEPARTURES	PM ARRIVAL	PM DEPARTURES
TOTAL TRIPS PEAK HOURS		57	152	144	72

Table 5.3: Trip Generation from proposed Developments by 2040

5.2 Modal Split

In order to predict the level of traffic that will be generated by the proposed development, the means of transport (modal split) and quantity of traffic generated (trip attraction) must be considered. Given the location of the proposed development, the peak hour trips generated will primarily be by public transport and private car. In terms of modal split and national policies for the promotion of sustainable transport solutions, a reduction in car trips would be expected, with improvement in pedestrian / cycle facilities as well as improvement in public transport. In order to provide a robust traffic analysis, no reduction in car traffic volumes has been assumed in this report.

National policies, strategies, and guidelines for improvements to public transport systems and reductions in car usage are outlined in the Department of Transport Tourism and Sport's Planning Guidelines for Spatial Planning and National Roads 2012 and the Department of Transport, Tourism and Sport's Smarter Travel: A Sustainable Transport Future. In addition, the document a New Policy for Ireland 2009-2020 states that the key aims of any development plan must be to secure a more sustainable residential developments that reduces overall demand for transport by car and encourages modal shift towards sustainable travel modes (e.g., walking, cycling and public transport), whilst also ensuring the strategic traffic function of national roads is maintained."

5.3 Trip Distribution

The current distribution of traffic along St Joseph's Road, the N72 and Bridge Street will be used to determine directional split to and from the proposed development for both morning and evening peak hours. This peak hour directional split pattern is assumed to remain constant with the passage of time.

6.0 Traffic Growth

In order to predict likely future traffic conditions so that the impact of a development proposal on the road and transport network can be predicted and assessed, traffic forecasting considers the possible traffic flows generated by a development proposal as well as the existing background network traffic which is factored up.

The assessment years considered in this report are the Base Year (2023), which is the year the baseline traffic surveys were undertaken, the proposed Opening Year, which is the year of expected completion of Phase 1 of the proposed development (2025) and the Design Years, taken as the opening year plus 5 years (2030) & the opening year plus 15 years (2040).

Transport Infrastructure Irelands publication "Project Appraisal Guidelines for National Roads Unit 5.3" 2019 was used to calculate growth factors for the background road network traffic. These Guidelines state that for the years 2016-2030 within Co Cork, a growth rate of 1.73% per annum can be assumed. This changes to 0.67% beyond 2030. The traffic counts from 2023 were factored up using these projected growth rates. The effects of traffic growth on the existing network plus the additional traffic generated by the proposed development have been compiled to provide a robust set of data for the traffic analysis.

Table 6.1 below shows the calculated growth factors based on a growth rate measured from the current year 2023.

Location		2025	2030	2040
County Cork	Growth Rate From 2023	3.49%	12.76%	19.66%

Table 6.1: TII Traffic Growth Rates County Cork.

7.0 Assignment of Development Trips

The proposed development will generate trips as outlined in section 5 of this report. As outlined in section 5.2 and 5.3, the expected modal split has been assumed to remain as it is at present with no increase in modal shift towards more sustainable transport patterns.

7.1 Traffic Assignment Model 1 Uncontrolled Junctions

Traffic models were produced for the scenarios outlined below. As this was a large traffic study 2No LinSig traffic models were prepared. Model 1 included all the uncontrolled junctions 1-6 while Model 2 included all the signalised junction 6-8.

These models incorporate the measured traffic flows outlined in section 3.0, factored up as per section 6.0, along with predicted development traffic as described in section 5.1.

The list of traffic models built for the proposed development traffic assessment are:

- Base Year 2023
- Opening Year 2025
- Opening Year + 5 Year Forecast 2030
- Opening Year + 15 Year Forecast 2040

For LinSig Model 1 eight zones were used to construct the LinSig network labelled A to H. Access to the development will be through Zone C. The following are the trip assignment matrices.

		Destination								
		A	B	C	D	E	F	G	H	Tot
	A	0	257	1	5	1	9	1	18	292
	B	239	0	3	18	3	25	2	53	343
Origin	C	2	2	0	2	0	5	0	11	22
	D	15	15	2	0	2	31	2	67	134
	E	1	1	0	2	0	50	3	110	167
	F	7	7	1	14	19	0	208	1	257
	G	31	31	6	69	87	321	0	13	558
	H	0	0	0	0	0	0	0	0	0
	Tot	295	313	13	110	112	441	216	273	1773

Table 7.1: Traffic Assignment for AM Peak 2023

		Destination								
		A	B	C	D	E	F	G	H	Tot
	A	0	298	1	1	3	8	0	31	342
	B	230	0	3	3	6	18	1	64	325
Origin	C	1	2	0	0	0	1	0	6	10
	D	4	6	0	0	1	4	0	20	35
	E	1	2	0	1	0	18	1	76	99
	F	5	8	1	4	26	0	193	2	239
	G	23	38	5	23	113	312	0	22	536
	H	0	0	0	0	0	0	0	0	0
	Tot	264	354	10	32	149	361	195	221	1586

Table 7.2: Traffic Assignment for PM Peak 2023

		Destination								
		A	B	C	D	E	F	G	H	Tot
	A	0	266	2	5	1	9	1	19	303
	B	247	0	4	18	3	26	2	55	355
Origin	C	5	5	0	2	0	8	5	15	40
	D	15	15	2	0	2	31	2	67	134
	E	1	1	0	2	0	50	3	110	167
	F	7	7	3	14	19	0	215	1	267
	G	32	32	9	69	87	332	0	13	575
	H	0	0	0	0	0	0	0	0	0
	Tot	308	326	20	110	112	456	228	280	1841

Table 7.3: Traffic Assignment for AM Peak 2025

		Destination								
		A	B	C	D	E	F	G	H	Tot
	A	0	308	5	1	3	8	0	32	358
	B	238	0	7	3	6	19	1	66	340
Origin	C	3	4	0	0	0	3	2	8	20
	D	4	6	0	0	1	4	0	20	35
	E	1	2	0	1	0	18	1	76	99
	F	5	8	6	4	26	0	200	2	251
	G	24	39	10	23	113	323	0	23	555
	H	0	0	0	0	0	0	0	0	0
	Tot	275	368	28	32	149	375	204	227	1658

Table 7.4: Traffic Assignment for PM Peak 2025

		Destination								
		A	B	C	D	E	F	G	H	Tot
	A	0	290	5	9	5	10	1	20	340
	B	269	0	7	22	7	28	2	60	396
Origin	C	12	12	0	2	0	17	12	23	78
	D	25	25	2	0	2	41	12	77	184
	E	11	11	0	2	0	60	13	120	217
	F	8	8	6	14	19	0	235	1	290
	G	35	35	10	74	92	362	0	15	623
	H	0	0	0	0	0	0	0	0	0
	Tot	360	381	30	123	125	518	275	316	2128

Table 7.5: Traffic Assignment for AM Peak 2030

		Destination								
		A	B	C	D	E	F	G	H	Tot
	A	0	336	13	13	15	9	0	35	421
	B	259	0	15	15	18	20	1	72	401
Origin	C	6	7	0	0	0	5	4	11	33
	D	9	11	0	0	1	8	4	25	58
	E	6	7	0	1	0	22	5	81	122
	F	6	9	13	4	26	0	218	2	278
	G	26	43	17	35	125	352	0	25	622
	H	0	0	0	0	0	0	0	0	0
	Tot	312	413	58	68	185	416	232	251	1935

Table 7.6: Traffic Assignment for PM Peak 2030

		Destination								
		A	B	C	D	E	F	G	H	Tot
	A	0	308	5	12	8	11	1	22	366
	B	286	0	7	25	10	30	2	63	424
Origin	C	12	12	0	2	0	17	12	23	78
	D	31	31	2	0	2	47	19	84	216
	E	17	17	0	2	0	66	20	127	249
	F	8	8	6	21	26	0	249	1	320
	G	37	37	10	76	94	384	0	16	654
	H	0	0	0	0	0	0	0	0	0
	Tot	391	413	30	138	140	555	303	336	2306

Table 7.7: Traffic Assignment for AM Peak 2040

		Destination								
		A	B	C	D	E	F	G	H	Tot
	A	0	357	18	18	20	10	0	37	459
	B	275	0	20	20	23	22	1	77	438
Origin	C	8	9	0	0	0	8	7	13	45
	D	11	13	0	0	1	11	7	27	70
	E	8	9	0	1	0	25	8	83	134
	F	6	10	19	22	44	0	231	2	334
	G	28	45	23	40	131	373	0	26	667
	H	0	0	0	0	0	0	0	0	0
	Tot	336	443	80	101	219	448	254	265	2146

Table 7.8: Traffic Assignment for PM Peak 2040

7.2 Traffic Assignment Model 2 Signalised Junctions.

For LinSig Model 2 five zones were used to construct the LinSig network labelled A to E. The following are the trip assignment matrices. Model 2 included all the signalised junction 6-8.

		Destination					
		A	B	C	D	E	Tot
	A	0	180	0	41	126	347
	B	0	0	0	58	157	215
Origin	C	0	3	0	63	207	273
	D	0	43	0	0	180	223
	E	0	306	0	406	0	712
	Tot	0	532	0	568	670	1770

Table 7.9: Traffic Assignment for AM Peak 2023

		Destination					
		A	B	C	D	E	Tot
	A	0	167	0	59	130	356
	B	0	0	0	61	134	195
Origin	C	0	3	0	63	155	221
	D	0	77	0	0	216	293
	E	0	281	0	389	0	670
	Tot	0	528	0	572	635	1735

Table 7.10: Traffic Assignment for PM Peak 2023

		Destination					
		A	B	C	D	E	Tot
	A	0	186	0	42	130	359
	B	0	0	0	60	162	223
Origin	C	0	3	0	71	220	295
	D	0	47	0	0	186	233
	E	0	320	0	420	0	740
	Tot	0	556	0	594	699	1849

Table 7.11: Traffic Assignment for AM Peak 2025

		Destination					
		A	B	C	D	E	Tot
	A	0	173	0	61	135	368
	B	0	0	0	63	139	202
Origin	C	0	3	0	69	164	237
	D	0	86	0	0	224	309
	E	0	297	0	403	0	699
	Tot	0	558	0	596	661	1816

Table 7.12: Traffic Assignment for PM Peak 2025

		Destination					
		A	B	C	D	E	Tot
	A	0	203	0	46	142	391
	B	0	0	0	65	177	242
Origin	C	0	3	0	126	288	418
	D	0	66	0	0	203	269
	E	0	363	0	458	0	821
	Tot	0	636	0	695	810	2142

Table 7.13: Traffic Assignment for AM Peak 2030

		Destination					
		A	B	C	D	E	Tot
	A	0	188	0	67	147	401
	B	0	0	0	69	151	220
Origin	C	0	3	0	96	199	298
	D	0	139	0	0	244	382
	E	0	369	0	439	0	807
	Tot	0	699	0	670	740	2109

Table 7.14: Traffic Assignment for PM Peak 2030

		Destination					
		A	B	C	D	E	Tot
	A	0	215	0	49	151	415
	B	0	0	0	69	188	257
Origin	C	0	4	0	152	325	481
	D	0	78	0	0	215	294
	E	0	393	0	486	0	879
	Tot	0	691	0	757	879	2326

Table 7.15: Traffic Assignment for AM Peak 2040

		Destination					
		A	B	C	D	E	Tot
	A	0	200	0	71	156	426
	B	0	0	0	73	160	233
Origin	C	0	4	0	110	221	335
	D	0	167	0	0	258	426
	E	0	411	0	465	0	877
	Tot	0	782	0	719	796	2297

Table 7.16: Traffic Assignment for PM Peak 2040

8.0 Road Impact

8.1 LinSig Analysis Model 1

During the preparation of this report discussions have taken place with Cork County Council Roads Department. Traffic models were produced for the scenarios outlined below. As this was a large traffic study 2No LinSig traffic models were prepared. Model 1 included all the uncontrolled junctions 1-6 while Model 2 included all the signalised junctions 6-8.

In order to assess the capacity of the existing road network and access junction to the proposed development, traffic models were constructed using LinSig. LinSig is a computer software program dealing with capacities, mean max queue lengths (pcu) and delays at uncontrolled and signalised junctions.

The output results sheets from LinSig consist of tables of demand flow, capacities, queues and delays for the morning and evening peak hour analysis, for each arm of the junction. These tables contain start and finish times for each arm, traffic demand, Degree of Saturated Flow (DOS %), start queue length and queuing delay.

The DOS provides the basis for judging the acceptability of junction design and the capacity of existing junctions. In general, a DOS of 90% or less for controlled junctions is considered acceptable during the peak periods. A DOS of this value would indicate that at peak times the junction is at 90% of its operational capacity and therefore has a practical reserve capacity of 10%. This reserve capacity of 10% is considered by traffic engineers to be the level of reserve capacity at a junction required to cater for periods of unusually high traffic flow, such as bank holiday weekends, public entertainment, and sporting events etc.

The results from the LinSig analysis are shown in the pages which follow for the following traffic scenarios.

Scenario 2 AM 2025 Design Year
Scenario 3 AM 2030 Design Year
Scenario 4 AM 2040 Design Year
Scenario 6 PM 2025 Design Year
Scenario 7 PM 2030 Design Year
Scenario 8 PM 2040 Design Year

The full output from LinSig traffic analysis is available in Appendix C.

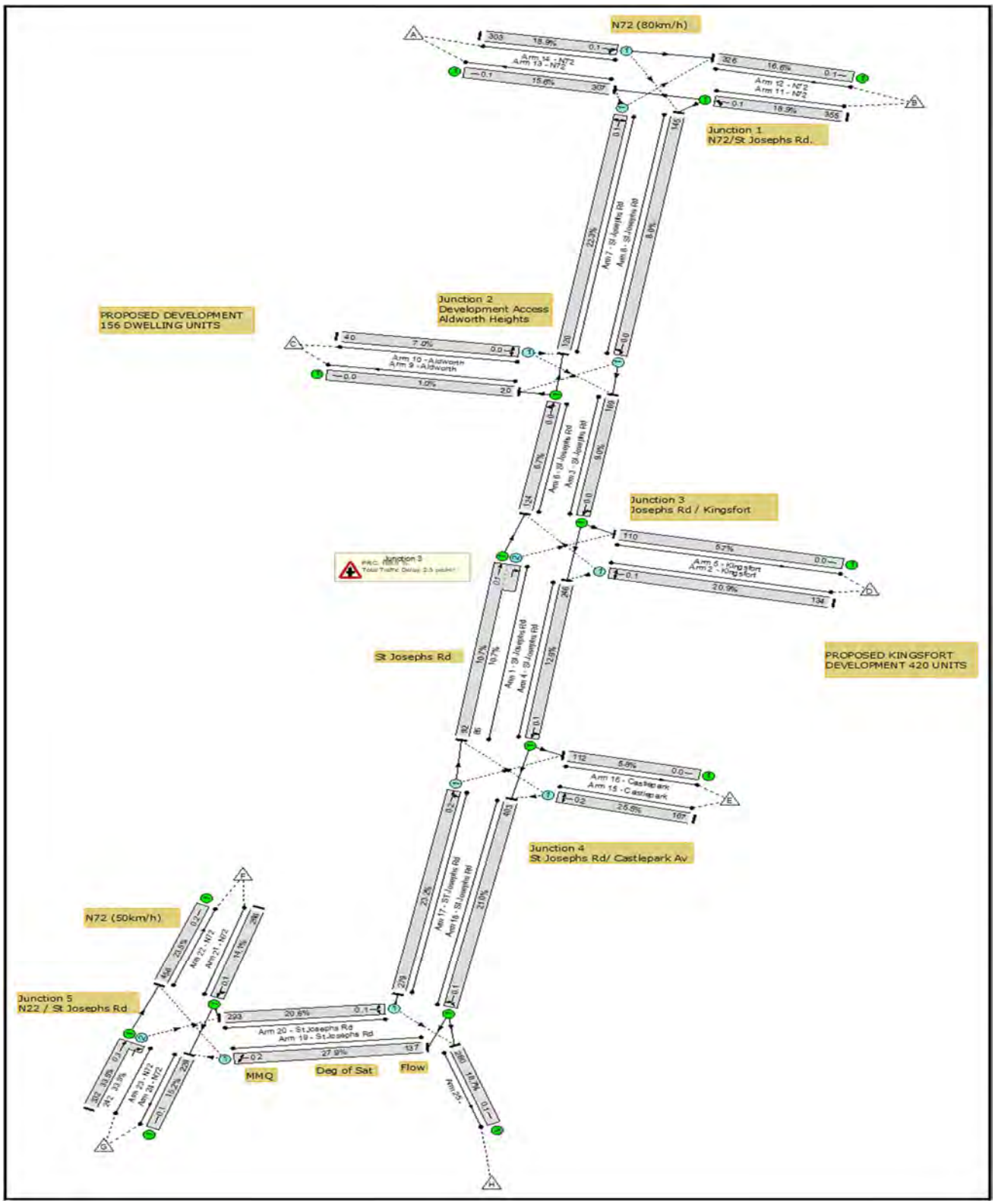


Fig 8.1: 'Scenario 2 AM 2025' Network Layout Diagram

For the AM 2025 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 23 N72 Northbound at junction 5 as can be seen in Fig 8.1 above. The degree of saturation is measured at 33.5.% with a mean maximum car queue length of 0.3 vehicles for the morning peak hour. The maximum degree of saturation for the Aldworth housing development is 7.0%.

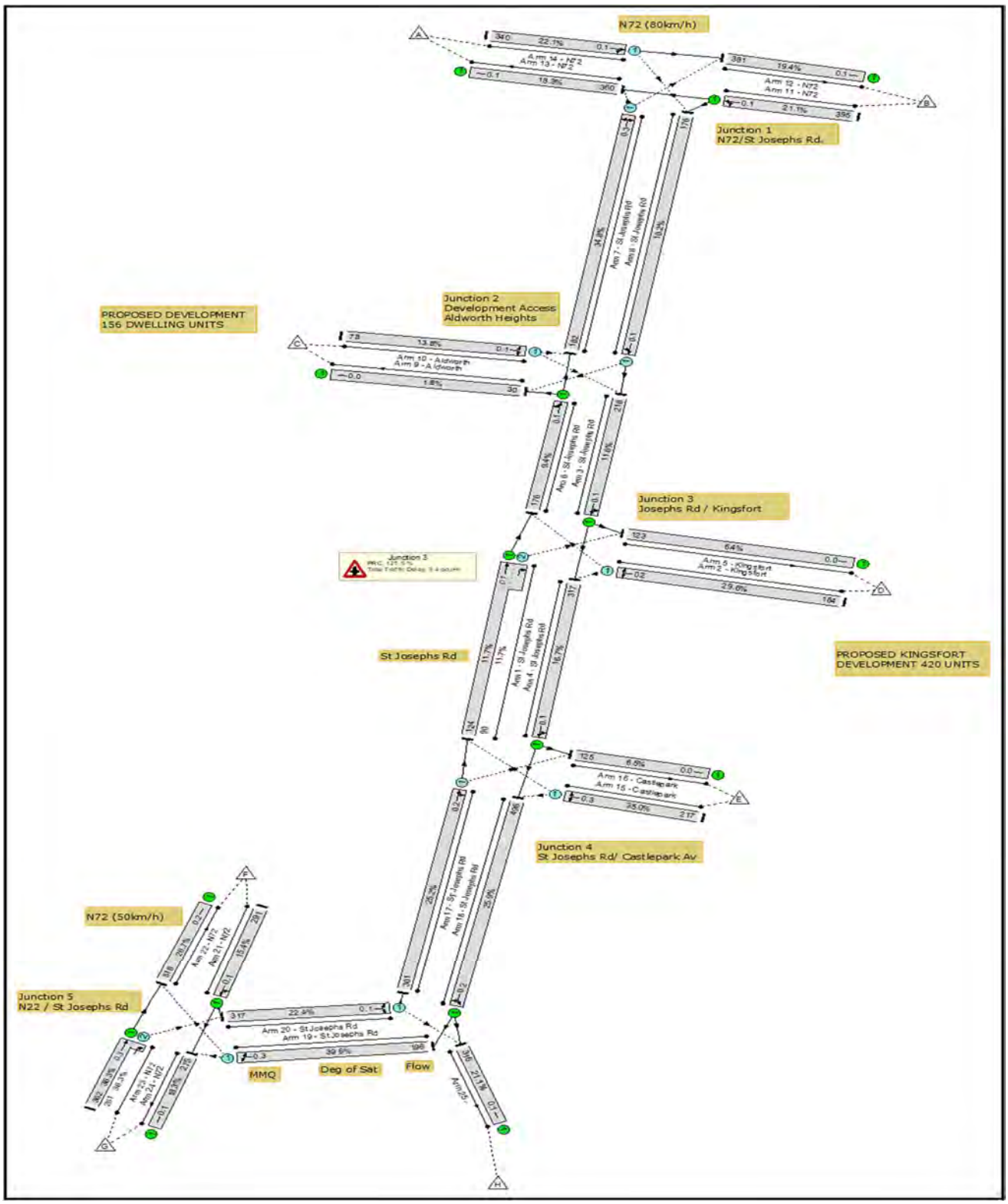


Fig 8.2: 'Scenario 3 AM 2030' Network Layout Diagram

For the AM 2030 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 23 N72 Northbound at junction 5 as can be seen in Fig 8.2 above. The degree of saturation is measured at 36.3.% with a mean maximum car queue length of 0.3 vehicles for the morning peak hour. The maximum degree of saturation for the Aldworth housing development is 13.8%.

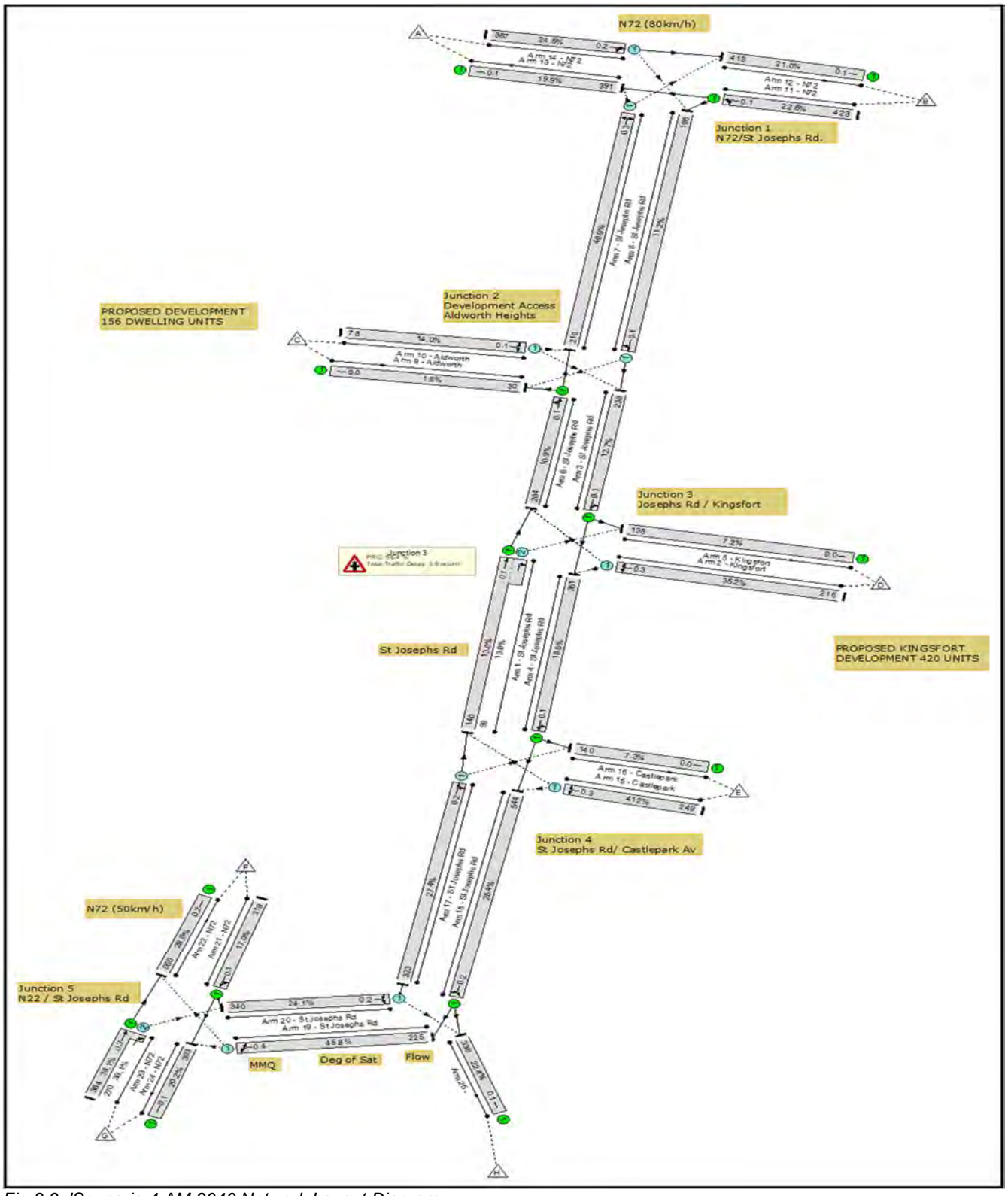


Fig 8.3: 'Scenario 4 AM 2040 Network Layout Diagram

For the AM 2040 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 2 Kingsfort estate westbound at junction 3 as can be seen in Fig 8.3 above. The degree of saturation is measured at 41.2.% with a mean maximum car queue length of 0.3 vehicles for the morning peak hour. The maximum degree of saturation for the Aldworth housing development is 14.0%.

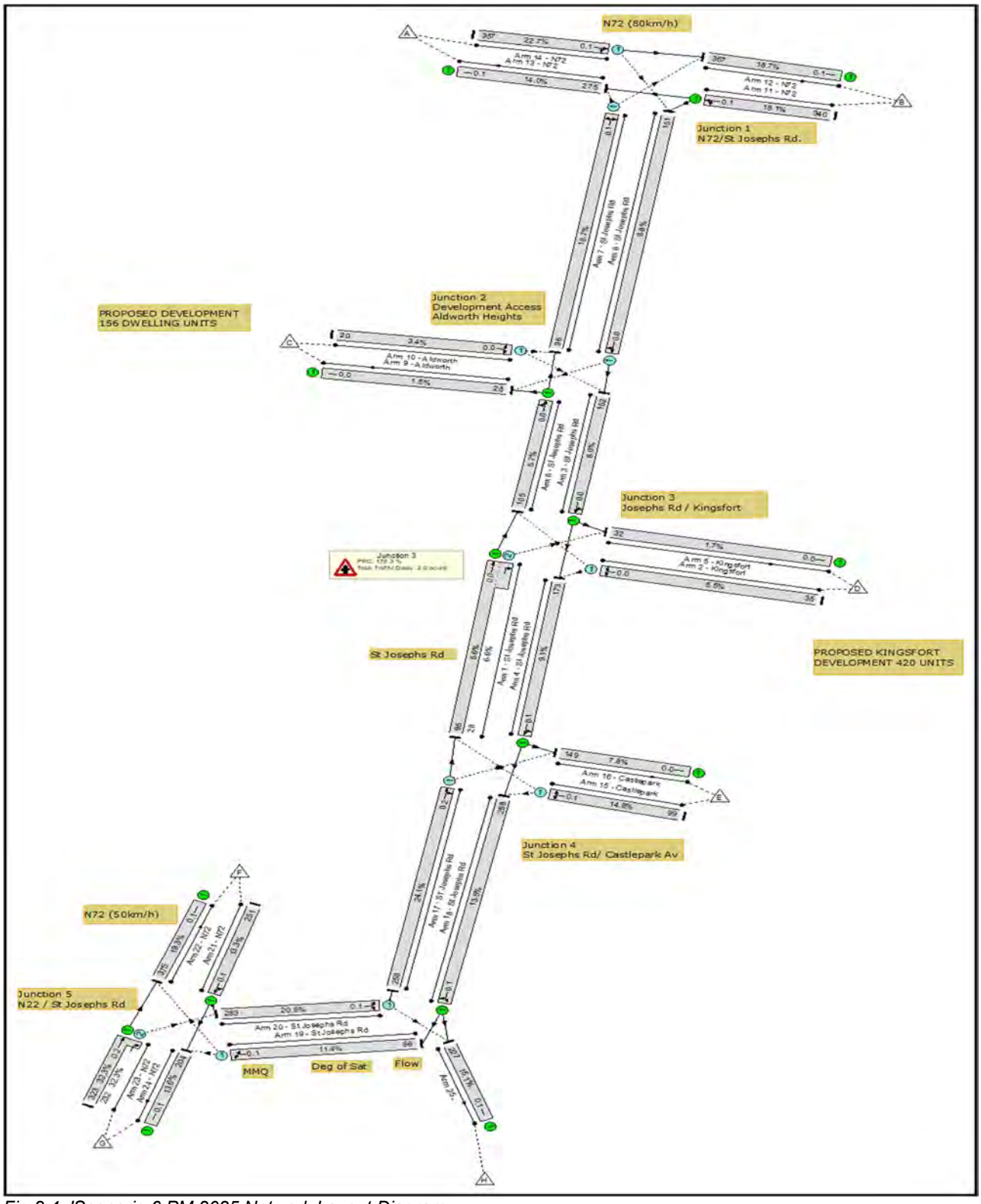


Fig 8.4: 'Scenario 6 PM 2025 Network Layout Diagram

For the PM 2025 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 23 N72 Northbound at junction 5 as can be seen in Fig 8.4 above. The degree of saturation is measured at 32.3% with a mean maximum car queue length of 0.2 vehicles for the evening peak hour. The maximum degree of saturation for the Aldworth housing development is 3.4%. See Appendix C for LinSig output data.

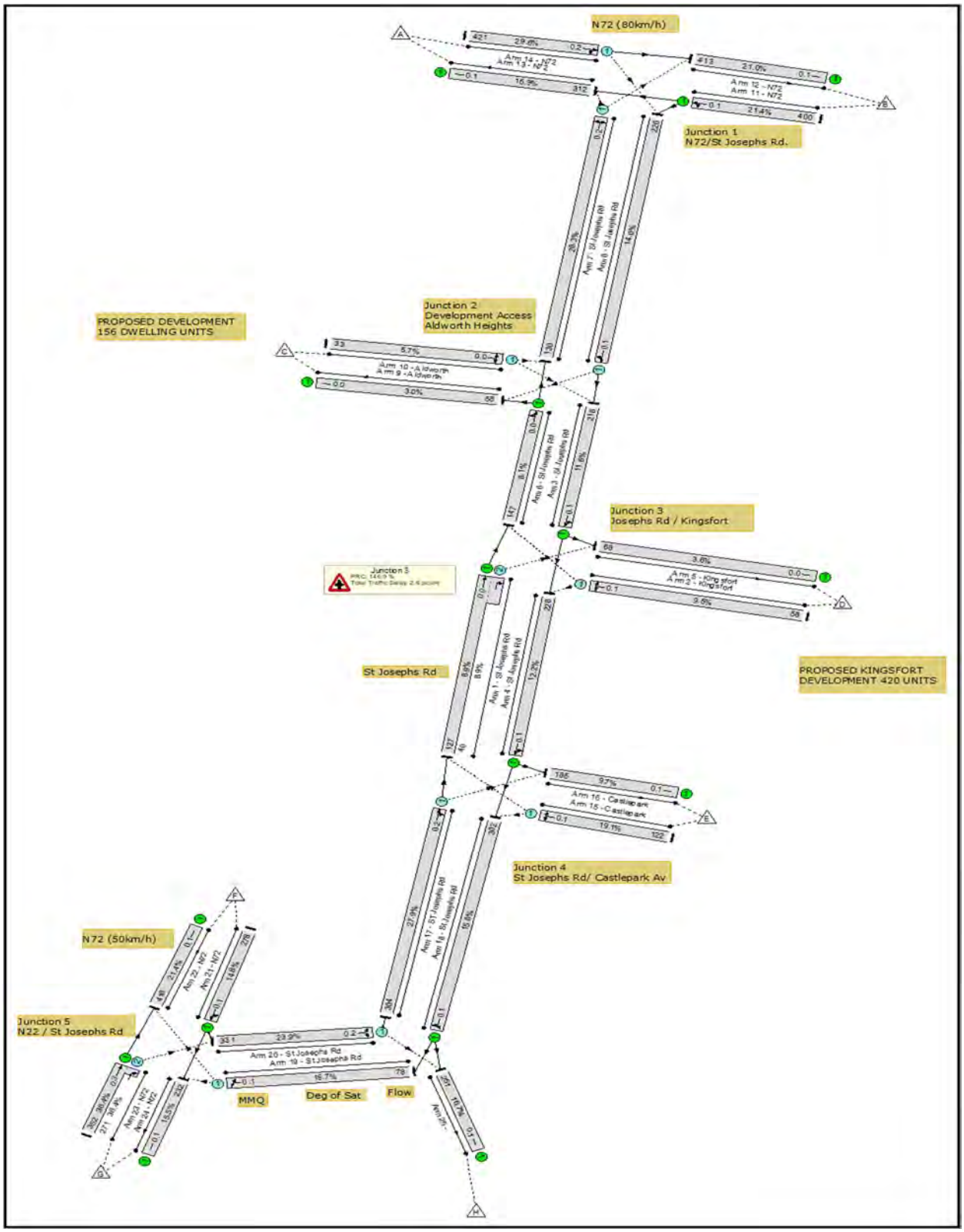


Fig 8.5: 'Scenario 7 PM 2030 Network Layout Diagram

For the PM 2030 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 23 N72 Northbound at junction 5 as can be seen in Fig 8.5 above. The degree of saturation is measured at 36.4% with a mean maximum car queue length of 0.3 vehicles for the evening peak hour. The maximum degree of saturation for the Aldworth housing development is 5.7%.

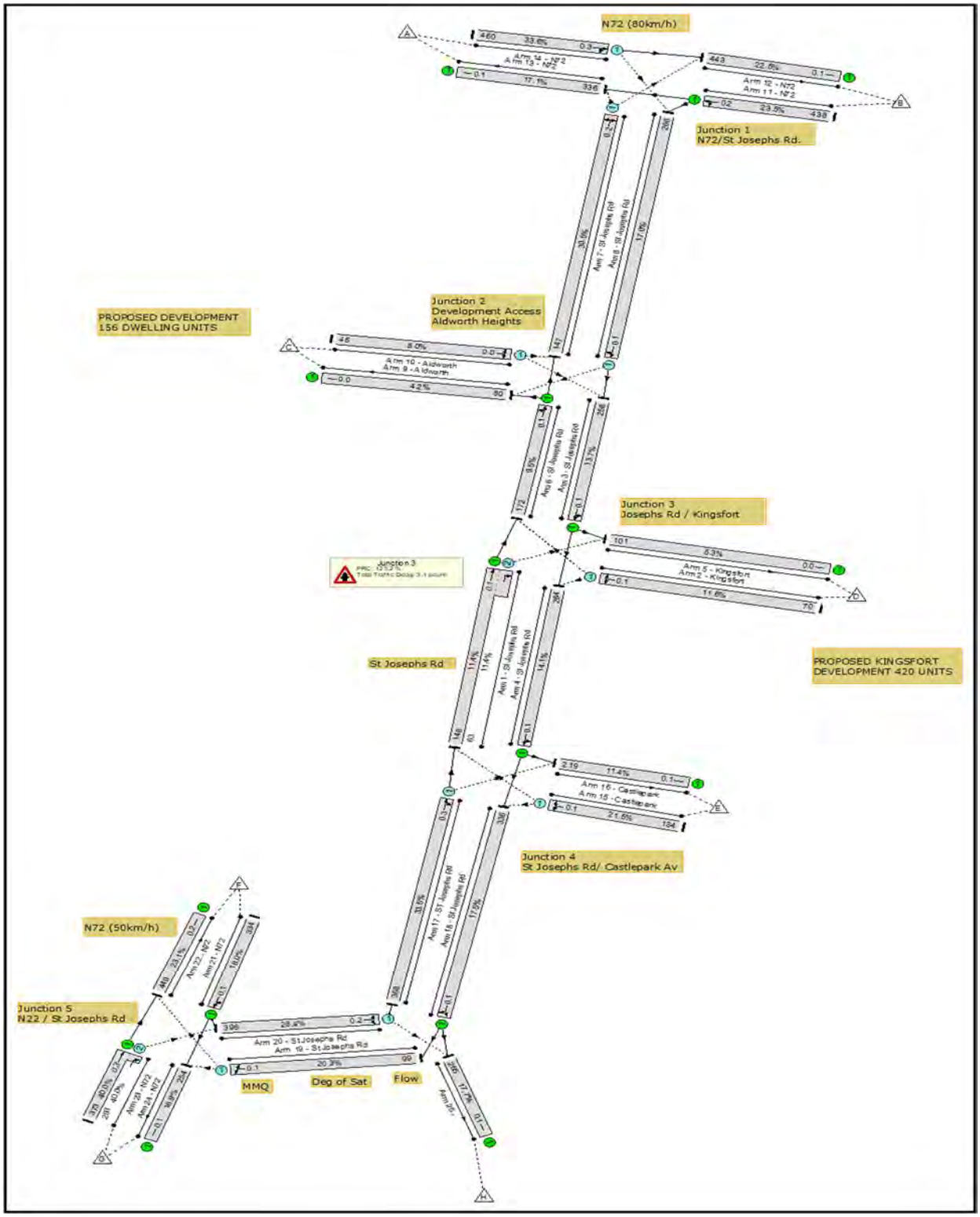


Fig 8.6: 'Scenario 8 PM 2040 Network Layout Diagram

For the PM 2040 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm 23 N72 Northbound at junction 5 as can be seen in Fig 8.6 above. The degree of saturation is measured at 40.0% with a mean maximum car queue length of 0.3 vehicles for the evening peak hour. The maximum degree of saturation for the Aldworth housing development is 8.0%.

The LinSig analysis shows how the saturation levels of the junctions increases over time, however, all junctions are also shown to be operating well within for all future design years. The detailed LinSig output data sheets are contained in Appendix C of the report.

8.2 LinSig Analysis Model 2

As this was a large traffic study 2No LinSig traffic models were prepared. Model 1 included all the uncontrolled junctions 1-6 while Model 2 included all the signalised junction 6-8.

The results from the LinSig analysis are shown in the pages which follow for the following traffic scenarios.

Scenario 2 AM 2025 Design Year
Scenario 3 AM 2030 Design Year
Scenario 4 AM 2040 Design Year
Scenario 6 PM 2025 Design Year
Scenario 7 PM 2030 Design Year
Scenario 8 PM 2040 Design Year

The full output from LinSig traffic analysis is available in Appendix D. The following are the result of the traffic modelling for the signalised junction 6-8.

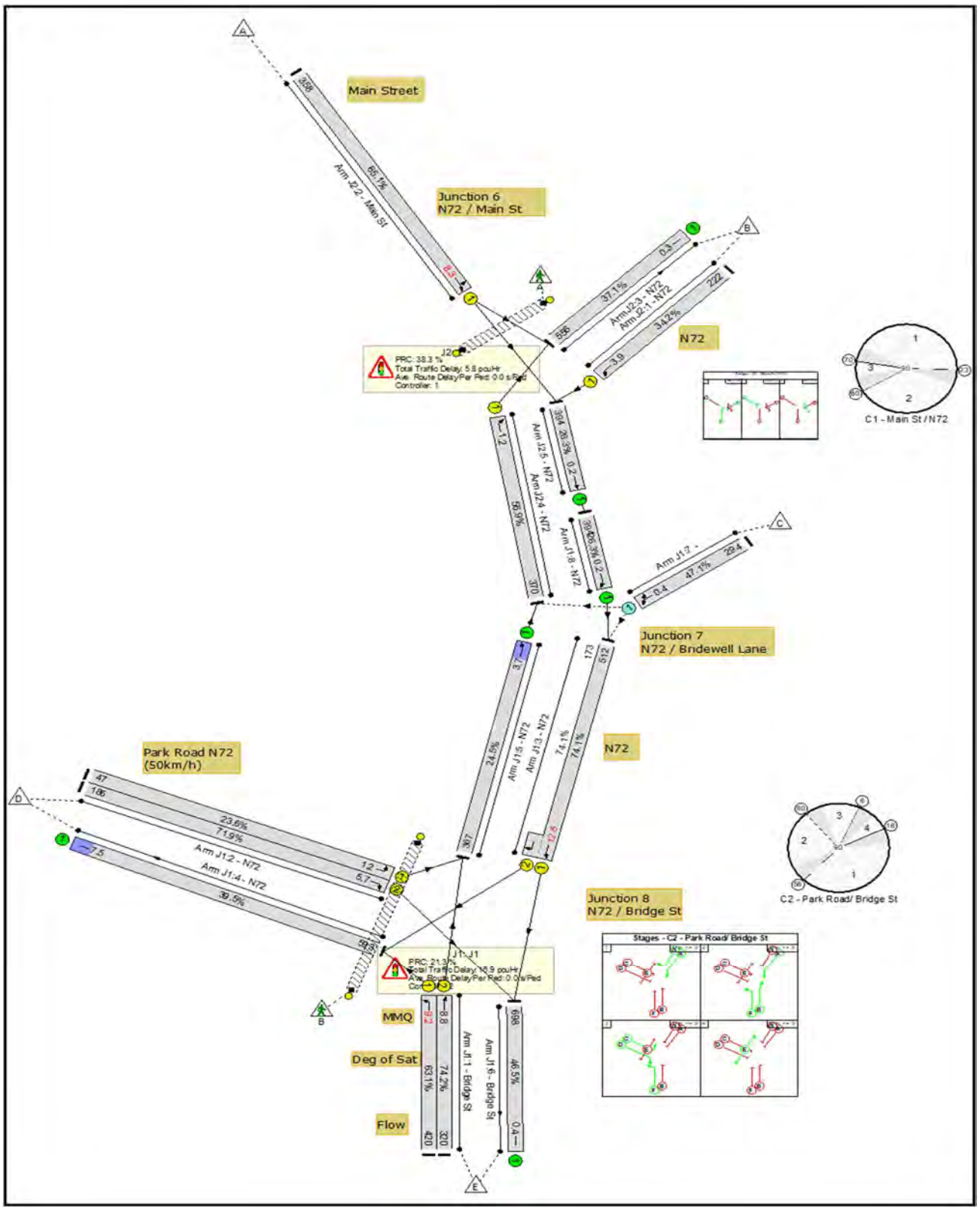


Fig 8.7: 'Scenario 2 AM 2025' Network Layout Diagram

For the AM 2025 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm J1 1 Bridge Street northbound as can be seen in Fig 8.7 above. The degree of saturation is measured at 74.2% for the morning peak hour. The N72 southbound at junction 8 has a maximum degree of saturation of 74.1%.

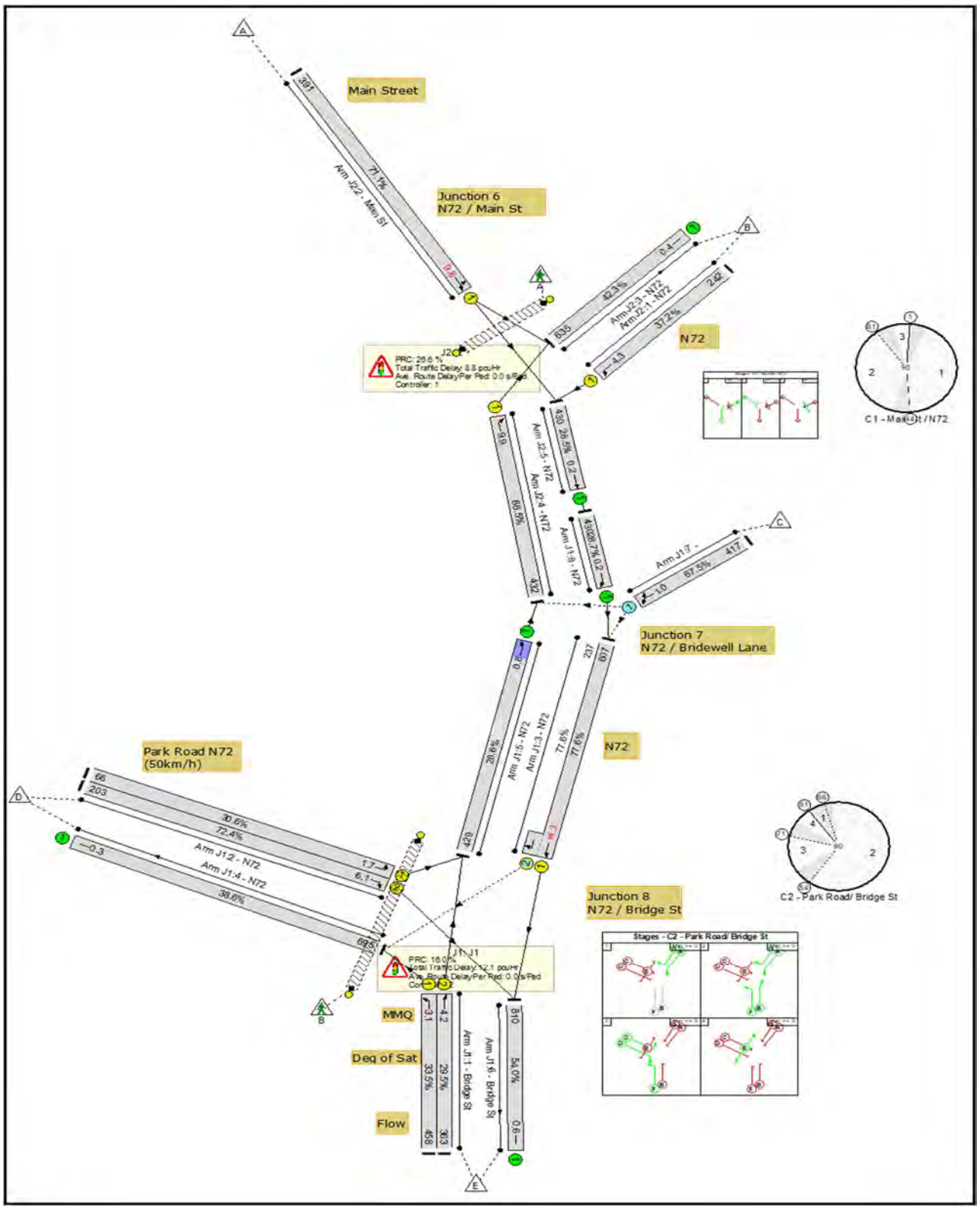


Fig 8.8: 'Scenario 2 AM 2030' Network Layout Diagram

For the AM 2030 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm J1:3 N72 southbound at junction 8 as can be seen in Fig 8.8 above. The degree of saturation is measured at 77.6% for the morning peak hour. The phases of the traffic signals has been changed at Junction 8 to allow a single stage from N72 Southbound thus increasing capacity.

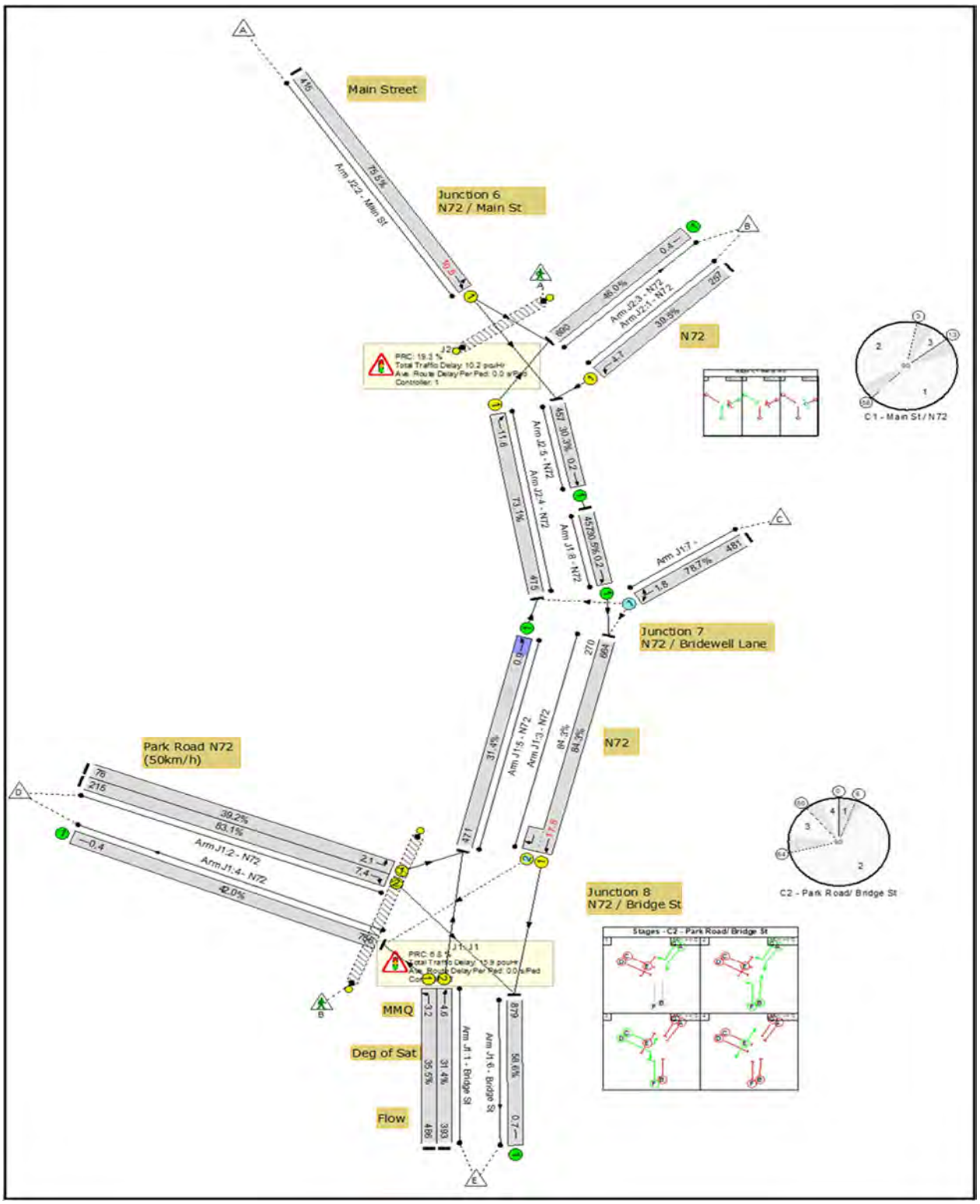


Fig 8.9: 'Scenario 2 AM 2040' Network Layout Diagram

For the AM 2040 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on N72 southbound at junction 8 as can be seen in Fig 8.9 above. The degree of saturation is measured at 84.3% for the morning peak hour.

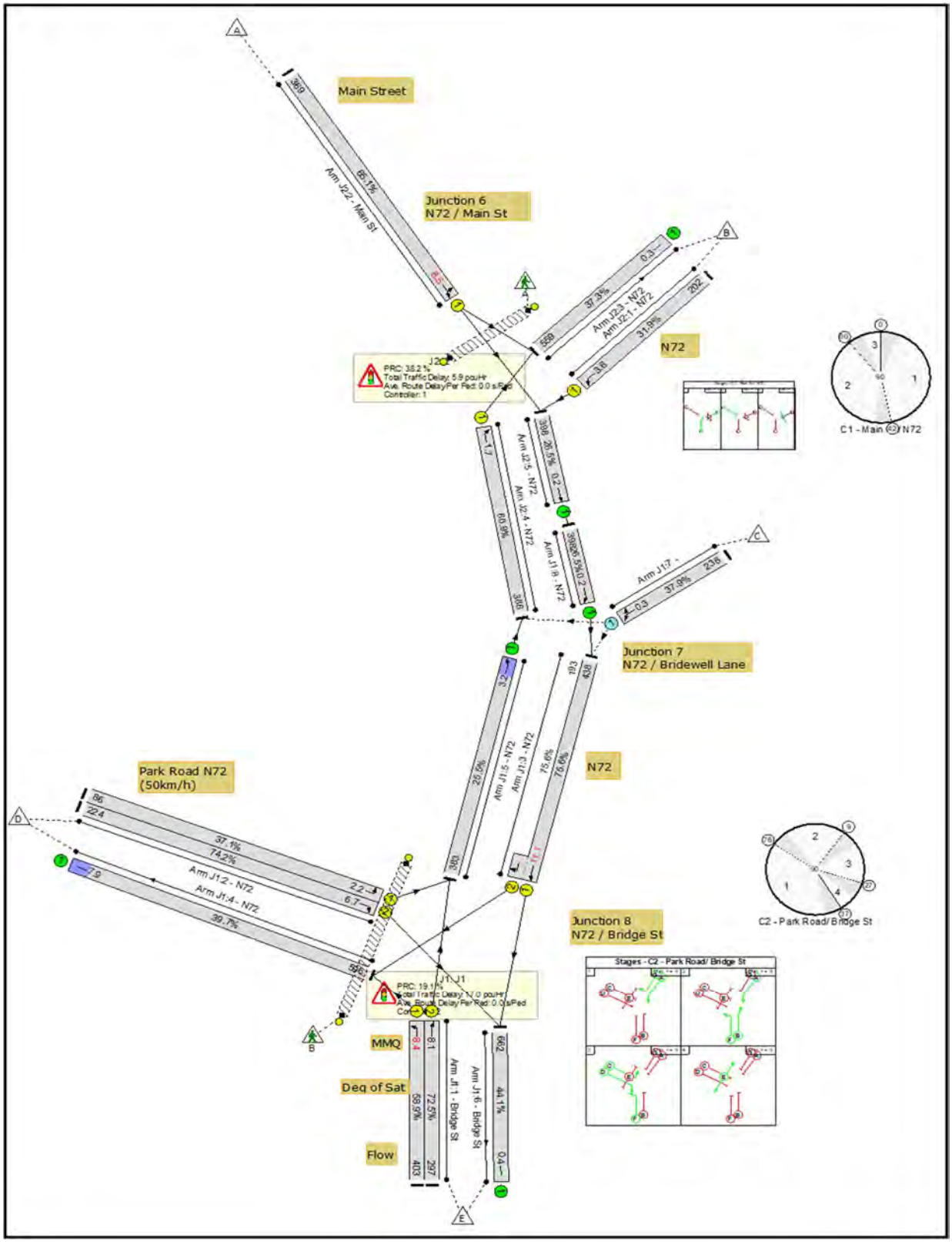


Fig 8.10: 'Scenario 2 PM 2025' Network Layout Diagram

For the PM 2025 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm J1:3 N72 southbound at junction 8 as can be seen in Fig 8.10 above. The degree of saturation is measured at 75.6% for the evening peak hour.

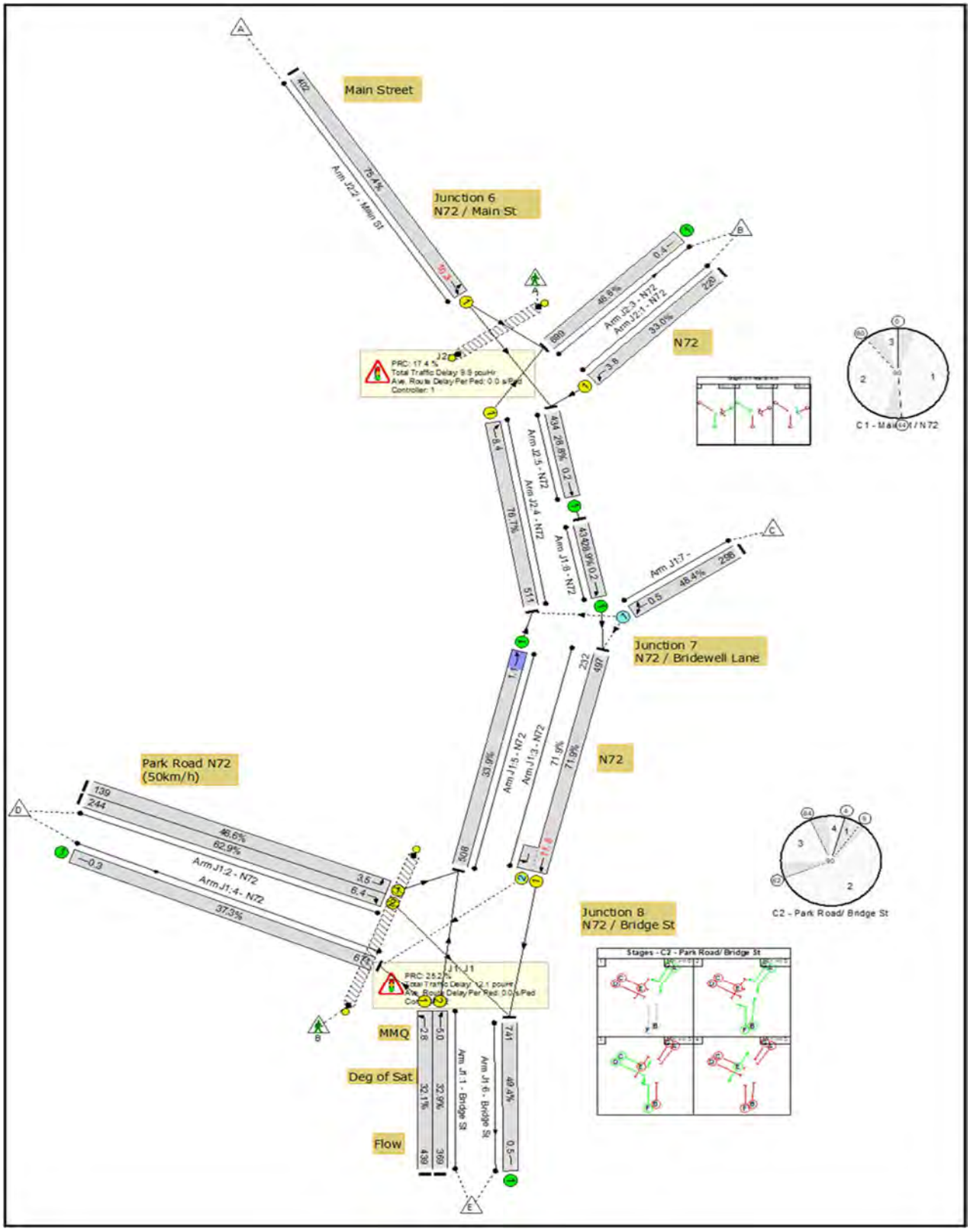


Fig 8.11: 'Scenario 2 PM 2030' Network Layout Diagram

For the PM 2025 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm J1:3 N72 southbound at junction 8 as can be seen in Fig 8.11 above. The degree of saturation is measured at 71.9% for the evening peak hour. The phases of the traffic signals has been changed at Junction 8 to allow a single stage from N72 Southbound thus increasing capacity.

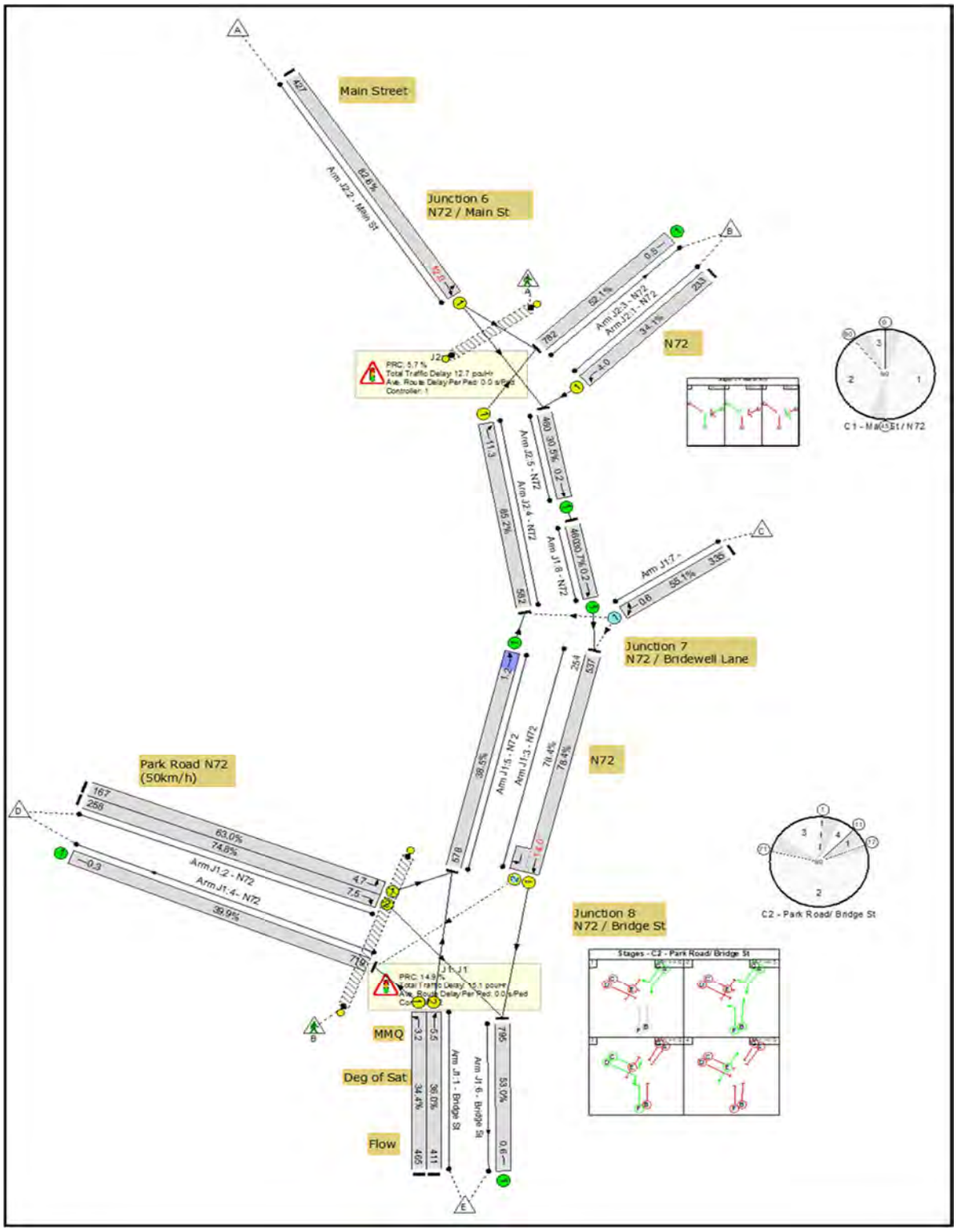


Fig 8.12: 'Scenario 2 PM 2040' Network Layout Diagram

For the PM 2040 scenario, the LinSig traffic analysis shows that the maximum degree of saturation occurs on Arm J1:3 N72 southbound at junction 8 as can be seen in Fig 8.12 above. The degree of saturation is measured at 78.4% for the evening peak hour.

8.3 Conclusions

The following are the main conclusions of the LinSig traffic analysis for the eight number junctions within the study area.

Junction 1 St Joseph's Road / N72 North

- The maximum degree of saturation of the junction in 2023 is 21.4% for the evening peak hour. This increases to 33.6% in the design year 2040. No changes are recommended to this junction although this junction will be upgraded as part of the Mallow Northern Relief Road Project.

Junction 2 St Joseph's Road / Aldworth Heights Housing Development

- The maximum degree of saturation of the junction in 2023 is only 3.9% for the morning peak hour for traffic exiting the Aldworth Height Housing Estate. This increases to 13.8% saturation in the design year 2040.
- The junction with St Joseph's Road will be upgraded to provide adequate junction sight distance and improved footpath and pedestrian crossing facilities as a part of separate permission granted under a Part 8 application by Cork County Council .
- Junction sight distance of 49m to the east and west will be provided at 2.4m back from the road edge measured for design speed of 50km/hr in accordance with DMURS. The junction will be an uncontrolled STOP junction with appropriate road marking and signage provided.

Junction 3 St Joseph's Road / Kingsfort

- The maximum degree of saturation of the junction in 2023 is 20.8% for the morning peak hour for traffic exiting Kingsfort housing development. This increases to 35.2% in the design year 2040.
- The kerb radii could be reduced and dropped kerbs and tactile paving provided to improve pedestrian facility at the junction.

Junction 4 St Joseph's Road / Castlepark

- The maximum degree of saturation of the junction in 2023 is 25.3% for the morning peak hour for traffic exiting Castlepark housing development. This increases to 41.2% in the design year 2040 for the morning peak hour.
- The kerb radii could be provided and dropped kerbs and tactile paving provided to improve pedestrian facility at the junction.

Junction 5 St Joseph's Road / N72 South

- The maximum degree of saturation of the junction in 2023 is 32.6% for the morning peak hour for traffic heading northbound on the N72. This increases to 45.6 % in the design year 2040 for traffic on St Joseph's Road heading towards the N72 the morning peak hour.
- Dropped kerbs and tactile paving could be provided to improve pedestrian facility at the junction.

Junction 6 N72 South / Main Street

- The maximum degree of saturation of the junction in 2023 is 65.1 % for the evening peak hour for traffic on Main Street at this signalised junction. This increases to 82.6 % in the design year 2040 for traffic on Main Street for the evening peak hour.
- No improvements to this junction are recommended.

Junction 7 Bridge Street N72 / Bridewell Lane

- The maximum degree of saturation of the junction in 2023 is 43.5 % for the morning peak hour for traffic on Bridewell lane at this uncontrolled junction. This increases to 78.7 % in the design year 2040 for traffic on Main Street for the morning peak hour.
- The kerb radii could be reduced and dropped kerbs and tactile paving provided to improve pedestrian facility at the junction.

Junction 8 Bridge Street / Park Road N72

- The maximum degree of saturation of the junction in 2023 is 70.1 % for the morning peak hour for traffic on N72 Bridge Street heading south at this signalised junction. This increases to over 100% saturation by the design year 2040 if changes to the traffic signals staging are not undertaken.
- The current junction arrangement shows straight through and right turn traffic from Bridge Street travelling south on different signal phases. Site observation indicates that any HGV waiting to turn right blocks the straight through traffic. Also, any significant right turn traffic volumes can again block the straight through traffic as the right turn lane is too short at approx. 15.0m. A car waiting to turn right will also block a HGV travelling south.
- The recommended change to the junction would be to operate the right turn and straight through traffic from Bridge Street on a single traffic signal phase with both lanes moving together. This will reduce the saturated flow from over 100% to 84.3% for traffic on Bridge Street heading south in the design year 2040.

9.0 Internal layout & Parking

Parking is an integral element of overall land use and transportation policy. The purpose of parking standards is to ensure that a considered and appropriate level of parking is provided to serve the new residential development.

Cork County Council Development Plan 2022 gives guidance on car parking standards for new developments. Table 12.6 of the Plan sets the car space allocation for various types of development including residential developments. Table 9.1 below shows a schedule of car parking spaces as set out by the Cork County Development Plan.

Land Use Category	Cork County Council Development Plan 2022-2028 - Car Parking Standards	Total Spaces Per Unit	Total Units	Parking spaces required
RESIDENTIAL				
74 House	2 spaces per unit	2	74	148
66 Apartments	1.25 spaces per unit	1.25	66	83
Creche	1.0 spaces per 3 staff	0.333	10	3
Creche	1.0 spaces per 10 children	0.1	42	4
Total				238

Table 9.1: Car parking allocation

VEHICLE PARKING SPACES - HOUSING			
Unit Types	No. of Units	Parking x Units	Total Parking
4 bed semi-detached	4	2no. parking spaces per unit	8
3 bed semi-detached	14	2no. parking spaces per unit	28
3 bed end townhouse	20	2no. parking spaces per unit	40
2 bed end townhouse	2	1no. parking spaces per unit	2
2 bed mid townhouse	34	1no. parking spaces per unit	34
TOTAL NUMBER OF PRIVATE PARKING SPACES	74		112
TOTAL NUMBER OF VISITOR PARKING SPACES			5
This equates to 1.58 spaces per house			

VEHICLE PARKING SPACES - APARTMENTS			
Unit Types	No. of Units	Parking x Units	Total Parking
2 bed duplex	32	1no. parking spaces per unit	32
1 bed GF apartment	32	0.7no. parking spaces per unit	23
TOTAL NUMBER OF PRIVATE PARKING SPACES	64		55
TOTAL NUMBER OF VISITOR PARKING SPACES			3
This equates to 0.9 spaces per apartment			

VEHICLE PARKING SPACES - CRECHE			
Unit Types	No. of Units	Parking x Units	Total Parking
42 Child Creche	1	1no. parking spaces per 3no. staff & 1no. parking spaces per 10no. children	8
TOTAL NUMBER OF PARKING SPACES	1		8

TOTAL NUMBER OF CAR PARKING SPACES (ENTIRE SITE)	183
NOTE: The total number of parking spaces can be reduced by 38no. if the 4 & 3 bed units are provided with 1no. parking spaces per unit. This shall reduce the total number of car parking spaces for the entire site to 145no. parking spaces	

Table 9.2: Suggested Car parking allocation

It is intended that all parking for the residential development will be facilitated within the site curtilage of each housing unit and parking for the apartments and visitors will be located in close proximity to the apartment blocks. The total number of parking spaces provided will be a maximum of 238 spaces for the proposed residential development. The actual number of car spaces provided will be 183 spaces. The proposal to provide 183 car spaces complies with the requirements of the Development Plan and Sustainable Urban Housing Design Standards for New Apartments Guidelines for Planning Authorities. This equates to a 23% reduction in car parking spaces compare to the Development Plan. See Table 9.2 above.
All car parking spaces are required to be a minimum of 2.4m x 4.8m in size.

10.0 Pedestrians / Cyclists / Access for People with Disabilities

Cork County Council Development Plan 2022 gives guidance on cycle parking standards for new developments. Table 12.8 of the Plan sets the cycle space allocation for various types of development including residential developments.

Cork County Council Development Plan 2022-2028 - Cycle Parking Standards	Total Spaces Per Unit	Total Units	Min Cycle spaces required
Apartments			
1 per bedroom	1	106	106
1 visitor space per 2 units	0.5	64	32
Additional cycle parking for houisng	1	28	28
Creche 300sqm 1 space per 5 Staff Long Stay	0.2	10	2
Creche 300sqm 1 space per 10 children Visitor	0.1	42	4
Total			172

Table 10.1: Bicycle parking Standards.

Dropped kerbs, dished footpaths, raised pedestrian crossings and tactile paving will be provided at appropriate locations such as at the crossing points within the development. A total of 172 bicycle spaces will be provided as part of the development. Cycle spaces can generally be accommodated within the curtilage of the housing units with the apartment and visitor cycle parking provided in a convenient location within the development.

The proposed development is connected to the Town centre by a series of existing footpath and pedestrian crossing facilities. The proposed development is located in close proximity to existing schools, shopping facilities and local services all within walking distance.

11.0 References

Cork County Council Development Plan (2022-2028)
Transport Infrastructure Ireland (2014) Traffic and Transport Assessment Guidelines TII, Dublin
Institution of Highways & Transportation (1994) Guidelines for Traffic Impact Assessment IHT, London
Transport Infrastructure Ireland (revised 2015) Design Manual for Roads and Bridges TII, Dublin
TRICS – A Trip Generation Database for Development Control, JMP, London
Transport Infrastructure Ireland (November 2004) Draft Traffic and Transport Assessment Guidelines TII, Dublin
Transport Infrastructure Ireland Project Appraisal Guidelines TII, Dublin 2010
Department of Tourism Transport and Sport "Design Manual for Urban Roads and Streets" (DMURS - 2013) DTTaS, Dublin
National Transport Authority "National Cycle Manual" (NCM - 2011) NTA, Dublin

Mr Martin Hanley, BE CEng MIEI

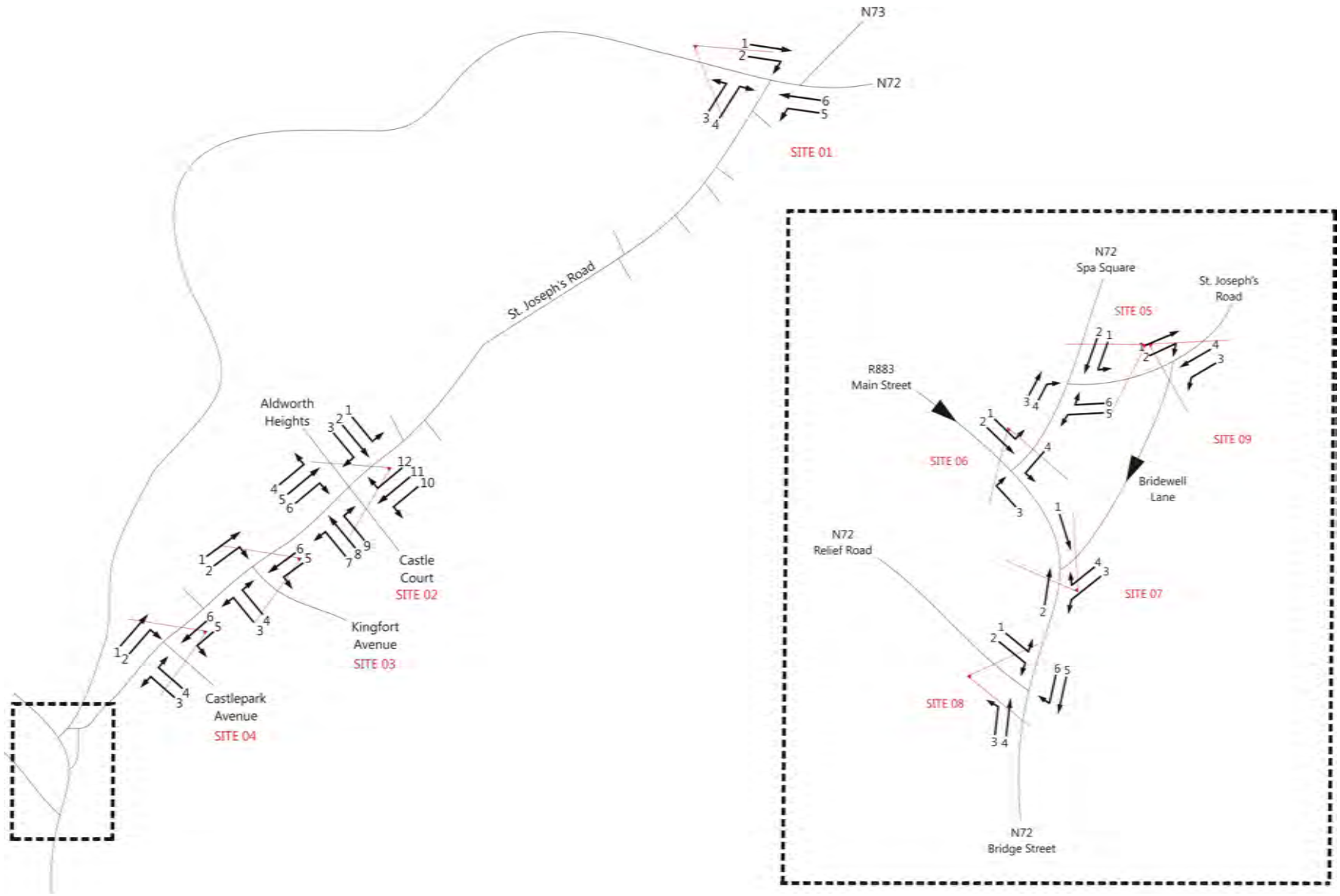
Signed: ……..

Senior Transportation Engineer.
Date: 19/07/2024

12.0 Appendices

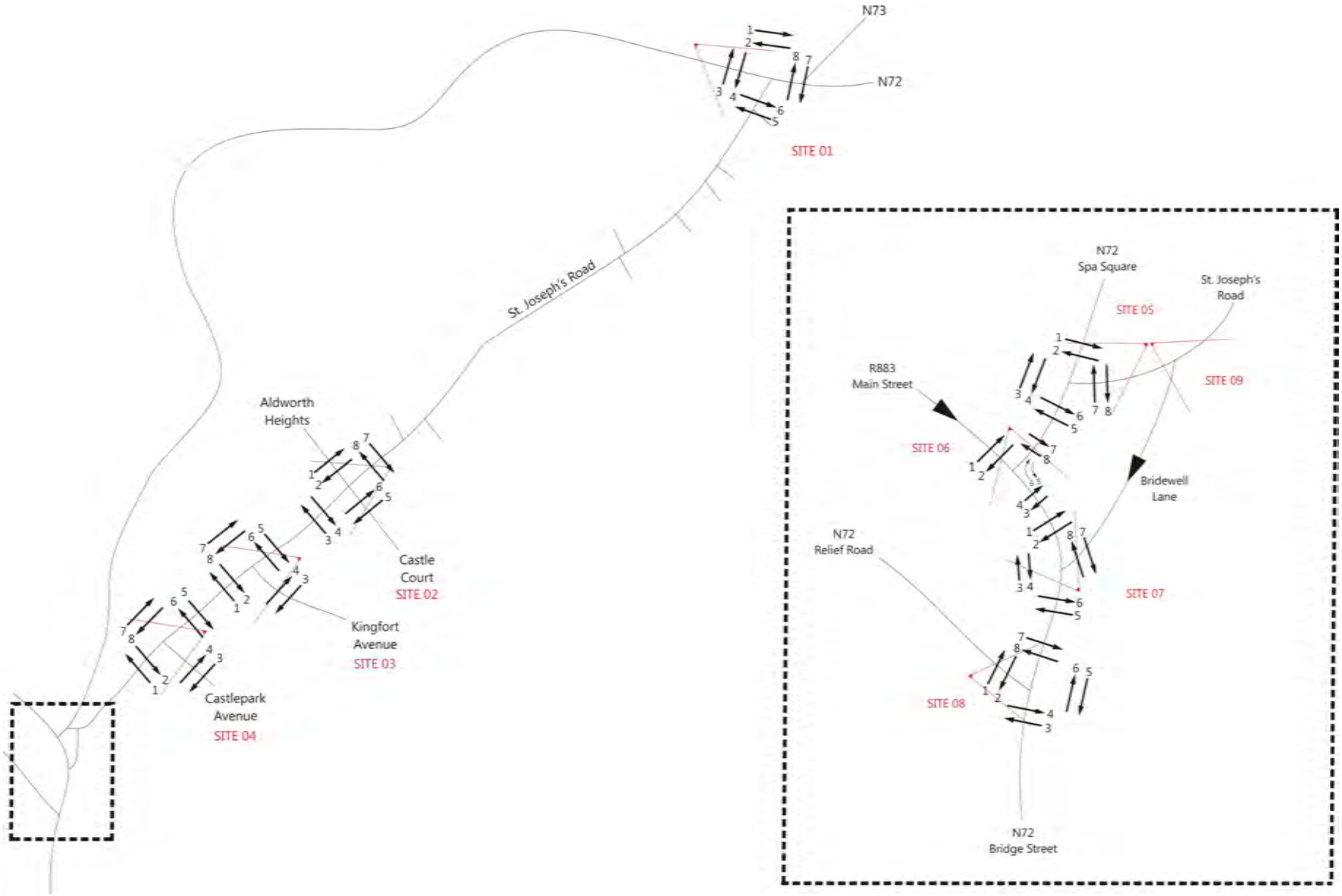
13.0 Appendix A – Traffic Count Data

Traffic Count Site/Movement Numbering



Job number: TRA/23/112	Job Date: 9th May 2023	Drawing No: TRA/23/112-02 (Traffic)	traffinomics.ie
Client: Martin Hanley Consulting	Job Day: Tuesday	Author: SPW	

Pedestrian Count Site/Movement Numbering



Job number: TRA/23/112	Job Date: 9th May 2023	Drawing No: TRA/23/112-02 (Pedestrian)	traffinomics.ie
Client: Martin Hanley Consulting	Job Day: Tuesday	Author: SPW	

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 01 DATE: 9th May 2023

LOCATION: N72/St. Joseph's Road DAY: Tuesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
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07:45	0	0	22	14	7	3	46	56	0	0	2	0	0	0	2	2	0	0	1	0	2	0	3	5
08:00	0	0	30	11	10	0	51	61	0	0	2	1	1	0	4	5	0	0	4	0	0	0	4	4
08:15	0	0	27	11	12	2	52	66	0	0	2	1	0	0	3	3	0	0	9	3	0	0	12	12
H/TOT	0	0	99	51	39	5	194	238	0	0	6	2	2	0	10	12	0	0	15	4	5	0	24	29
08:30	0	0	27	13	6	0	46	52	0	0	4	2	0	0	6	6	0	0	17	0	0	0	17	17
08:45	0	0	47	9	9	0	65	74	0	0	4	0	0	1	5	6	0	0	13	0	1	0	14	15
09:00	0	0	24	21	7	1	53	61	0	0	10	0	0	0	10	10	0	0	10	1	0	0	11	11
09:15	0	0	24	14	9	1	48	58	0	0	23	0	1	1	25	27	0	0	2	0	0	0	2	2
H/TOT	0	0	122	57	31	2	212	245	0	0	41	2	1	2	46	49	0	0	42	1	1	0	44	45
P/TOT	0	0	221	108	70	7	406	483	0	0	47	4	3	2	56	61	0	0	57	5	6	0	68	74

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
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16:45	0	0	46	10	4	0	60	64	0	0	8	1	1	1	11	13	0	0	5	0	1	0	6	7
17:00	0	0	51	9	5	0	65	70	0	0	2	0	1	0	3	4	0	0	5	2	0	0	7	7
17:15	0	0	72	14	3	1	90	94	0	0	6	0	1	0	7	8	0	0	7	1	0	0	8	8
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17:30	0	0	56	9	13	0	78	91	0	0	5	2	0	0	7	7	0	0	8	0	0	0	8	8
17:45	0	0	38	5	4	0	47	51	0	0	11	0	0	0	11	11	0	0	4	1	0	0	5	5
18:00	0	0	59	15	5	0	79	84	0	0	16	3	0	0	19	19	0	0	9	1	0	0	10	10
18:15	0	0	31	10	5	0	46	51	0	0	35	3	0	0	38	38	0	0	9	2	0	0	11	11
H/TOT	0	0	184	39	27	0	250	277	0	0	67	8	0	0	75	75	0	0	30	4	0	0	34	34
P/TOT	0	0	409	82	44	1	536	581	0	0	87	10	5	1	103	109	0	0	50	7	2	0	59	61

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ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 01 DATE: 9th May 2023

LOCATION: N72/St. Joseph's Road DAY: Tuesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	3	2	0	0	5	5	0	0	12	2	0	0	14	14	0	0	17	7	2	0	26	28
07:45	0	0	3	1	0	0	4	4	0	0	18	6	0	1	25	26	0	0	35	12	7	1	55	63
08:00	0	0	9	2	1	0	12	13	0	0	14	3	1	1	19	21	0	0	36	9	7	2	54	63
08:15	0	0	10	1	1	1	13	15	0	0	18	3	1	0	22	23	0	0	48	4	5	0	57	62
H/TOT	0	0	25	6	2	1	34	37	0	0	62	14	2	2	80	84	0	0	136	32	21	3	192	216
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H/TOT	0	0	35	14	2	0	51	53	0	0	71	8	2	0	81	83	0	0	130	49	25	0	204	229
P/TOT	0	0	60	20	4	1	85	90	0	0	133	22	4	2	161	167	0	0	266	81	46	3	396	445

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:30	0	0	6	0	0	0	6	6	0	0	18	4	0	0	22	22	0	0	47	22	4	0	73	77
16:45	0	0	8	3	0	0	11	11	0	0	8	6	1	1	16	18	0	0	29	8	5	0	42	47
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18:00	0	0	6	2	0	0	8	8	0	0	21	3	1	0	25	26	0	0	26	4	1	0	31	32
18:15	0	0	4	3	0	0	7	7	0	0	10	4	0	0	14	14	0	0	24	7	4	0	35	39
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P/TOT	0	0	65	16	1	0	82	83	0	0	116	38	4	1	159	164	0	0	278	74	37	2	391	430

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS
PEDESTRIAN CROSSING COUNTS

SITE: 01 DATE:

LOCATION: N72/St. Joseph's Road DAY:

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
112	07:30	0	0	0	0	0	0	0	0	0
156	07:45	0	0	0	0	0	0	0	0	0
167	08:00	0	1	0	0	0	0	0	1	1
181	08:15	0	0	0	0	0	0	0	0	0
616	**H/TOT**	0	1	0	0	0	0	0	1	1
183	08:30	0	0	0	0	0	0	0	0	0
179	08:45	0	0	0	0	0	0	0	0	0
178	09:00	0	0	0	0	0	0	0	0	0
164	09:15	0	0	0	0	0	0	0	0	0
704	**H/TOT**	0	0	0	0	0	0	0	0	0
1320	**P/TOT**	0	1	0	0	0	0	0	1	1

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
195	16:30	0	0	0	0	0	0	0	0	0
160	16:45	0	0	0	0	0	0	0	0	0
181	17:00	0	0	0	0	0	0	0	0	0
199	17:15	0	0	0	0	0	0	0	0	0
735	**H/TOT**	0	0	0	0	0	0	0	0	0
193	17:30	0	0	0	0	0	0	0	0	0
161	17:45	0	0	0	0	0	0	0	0	0
179	18:00	0	0	0	0	0	0	0	0	0
160	18:15	0	0	0	0	0	0	0	0	0
693	**H/TOT**	0	0	0	0	0	0	0	0	0
1428	**P/TOT**	0	0	0	0	0	0	0	0	0

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 02 DATE: 9th May 2023

LOCATION: Aldworth Heights/St. Joseph's Road/Castle Court DAY: Tuesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	4
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
08:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	5	0	0	0	5	5
08:15	0	0	2	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	5
H/TOT	0	0	2	1	0	0	3	3	0	0	2	0	0	0	2	2	0	0	13	4	0	0	17	17
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
08:45	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
09:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	2	0	1	0	3	4
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
H/TOT	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	11	1	1	0	13	14
P/TOT	0	0	3	1	0	0	4	4	0	0	3	0	0	0	3	3	0	0	24	5	1	0	30	31

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
H/TOT	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	7
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:15	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
H/TOT	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6
P/TOT	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13	13

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 02 DATE: 9th May 2023

LOCATION: Aldworth Heights/St. Joseph's Road/Castle Court DAY: Tuesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	1	0	0	0	1	1	0	0	10	3	1	0	14	15	0	0	0	0	0	0	0	0
07:45	0	0	0	1	0	0	1	1	0	0	14	5	1	1	21	23	0	0	0	0	0	0	0	0
08:00	0	0	1	0	0	0	1	1	0	0	17	7	2	0	26	28	0	0	0	0	0	0	0	0
08:15	0	0	1	0	0	0	1	1	0	0	21	6	0	0	27	27	0	0	0	0	0	0	0	0
H/TOT	0	0	3	1	0	0	4	4	0	0	62	21	4	1	88	93	0	0	0	0	0	0	0	0
08:30	0	0	2	0	0	0	2	2	0	0	27	3	0	0	30	30	0	0	0	0	0	0	0	0
08:45	0	0	4	0	0	0	4	4	0	0	37	5	0	0	42	42	0	0	0	0	0	0	0	0
09:00	0	0	0	1	0	0	1	1	0	0	19	3	0	0	22	22	0	0	0	0	0	0	0	0
09:15	0	0	2	0	0	0	2	2	0	0	6	1	0	0	7	7	0	0	0	0	0	0	0	0
H/TOT	0	0	8	1	0	0	9	9	0	0	89	12	0	0	101	101	0	0	0	0	0	0	0	0
P/TOT	0	0	11	2	0	0	13	13	0	0	151	33	4	1	189	194	0	0	0	0	0	0	0	0

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	0	0	1	0	0	0	1	1	0	0	14	1	0	0	15	15	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	11	1	0	0	12	12	0	0	0	0	0	0	0	0
17:00	0	0	4	0	0	0	4	4	0	0	16	2	1	0	19	20	0	0	0	0	0	0	0	0
17:15	0	0	1	0	0	0	1	1	0	0	24	2	0	0	26	26	0	0	0	0	0	0	0	0
H/TOT	0	0	6	0	0	0	6	6	0	0	65	6	1	0	72	73	0	0	0	0	0	0	0	0
17:30	0	0	2	0	0	0	2	2	0	0	16	3	0	0	19	19	0	0	0	1	0	0	1	1
17:45	0	0	1	0	0	0	1	1	0	0	25	2	0	0	27	27	0	0	0	0	0	0	0	0
18:00	0	0	5	0	0	0	5	5	0	0	26	5	0	0	31	31	0	0	0	0	0	0	0	0
18:15	0	0	2	0	0	0	2	2	0	0	38	1	0	0	39	39	0	0	0	0	0	0	0	0
H/TOT	0	0	10	0	0	0	10	10	0	0	105	11	0	0	116	116	0	0	0	1	0	0	1	1
P/TOT	0	0	16	0	0	0	16	16	0	0	170	17	1	0	188	189	0	0	0	1	0	0	1	1

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 02 DATE: 9th May 2023

LOCATION: Aldworth Heights/St. Joseph's Road/Castle Court DAY: Tuesday

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	2	0	0	0	2	2
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	3	0	0	0	3	3
08:30	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
P/TOT	0	0	0	1	0	0	1	1	0	0	2	0	0	0	2	2	0	0	4	1	0	0	5	5

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 02 DATE: 9th May 2023

LOCATION: Aldworth Heights/St. Joseph's Road/Castle Court DAY: Tuesday

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	0	0	0	0	0	0	0	0	18	3	0	0	21	21	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	25	4	0	0	29	29	0	0	0	0	0	0	0	0
08:00	0	0	2	0	0	0	2	2	0	0	21	4	1	2	28	31	0	0	0	1	0	0	1	1
08:15	0	0	0	0	0	0	0	0	0	0	29	7	1	0	37	38	0	0	0	0	0	0	0	0
H/TOT	0	0	2	0	0	0	2	2	0	0	93	18	2	2	115	119	0	0	0	1	0	0	1	1
08:30	0	0	0	0	0	0	0	0	0	0	26	3	0	0	29	29	0	0	1	0	0	0	1	1
08:45	0	0	0	0	0	0	0	0	0	0	43	0	0	1	44	45	0	0	1	0	0	0	1	1
09:00	0	0	1	0	0	0	1	1	0	0	36	4	1	0	41	42	0	0	1	0	1	0	2	3
09:15	0	0	0	0	0	0	0	0	0	0	20	3	1	0	24	25	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	1	1	0	0	125	10	2	1	138	141	0	0	3	0	1	0	4	5
P/TOT	0	0	3	0	0	0	3	3	0	0	218	28	4	3	253	260	0	0	3	1	1	0	5	6

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:30	0	0	0	0	0	0	0	0	0	0	17	5	0	0	22	22	0	0	2	0	0	0	2	2
16:45	0	0	0	0	0	0	0	0	0	0	22	7	1	1	31	33	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	24	13	0	0	37	37	0	0	2	0	0	0	2	2
17:15	0	0	0	0	0	0	0	0	0	0	10	7	1	0	18	19	0	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	73	32	2	1	108	111	0	0	5	0	0	0	5	5
17:30	0	0	0	0	0	0	0	0	0	0	17	2	0	0	19	19	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	31	6	1	0	38	39	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	25	4	1	0	30	31	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	23	3	0	0	26	26	0	0	0	1	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	96	15	2	0	113	115	0	0	0	1	0	0	1	1
P/TOT	0	0	0	0	0	0	0	0	0	0	169	47	4	1	221	226	0	0	5	1	0	0	6	6

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

PEDESTRIAN CROSSING COUNTS **TRA/23/112**

SITE: 02 DATE: 9th May 2023

LOCATION: Aldworth Heights/St. Joseph's Road/Castle Court DAY: Tuesday

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
42	07:30	0	0	0	0	1	0	1	0	2
56	07:45	1	0	0	0	0	1	0	0	2
74	08:00	0	0	0	1	3	0	0	0	4
74	08:15	0	0	0	1	0	1	0	0	2
246	**H/TOT**	1	0	0	2	4	2	1	0	10
66	08:30	0	0	0	3	0	0	0	0	3
97	08:45	0	0	0	1	0	0	0	0	1
76	09:00	0	0	0	0	0	0	0	0	0
37	09:15	0	1	0	0	0	0	0	0	1
276	**H/TOT**	0	1	0	4	0	0	0	0	5
522	**P/TOT**	1	1	0	6	4	2	1	0	15

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
43	16:30	0	0	3	0	0	1	0	0	4
48	16:45	0	0	0	0	0	0	0	0	0
63	17:00	0	0	0	1	0	1	0	0	2
52	17:15	1	0	0	0	0	0	0	0	1
206	**H/TOT**	1	0	3	1	0	2	0	0	7
41	17:30	0	0	0	0	1	1	0	0	2
70	17:45	0	0	0	0	1	2	0	0	3
68	18:00	0	0	1	0	1	0	0	0	2
72	18:15	0	0	0	0	1	1	0	0	2
251	**H/TOT**	0	0	1	0	4	4	0	0	9
457	**P/TOT**	1	0	4	1	4	6	0	0	16

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 03 DATE: 9th May 2023

LOCATION: St. Joseph's Road/Kingsfort Avenue DAY: Tuesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	8	2	1	0	11	12	0	0	5	0	0	0	5	5	0	0	8	2	0	0	10	10
07:45	0	0	12	4	2	1	19	22	0	0	7	1	0	0	8	8	0	0	15	0	0	0	15	15
08:00	0	0	10	8	2	0	20	22	0	0	5	0	0	0	5	5	0	0	21	0	0	0	21	21
08:15	0	0	17	4	0	0	21	21	0	0	6	0	0	0	6	6	0	0	17	1	0	0	18	18
H/TOT	0	0	47	18	5	1	71	77	0	0	23	1	0	0	24	24	0	0	61	3	0	0	64	64
08:30	0	0	28	6	0	0	34	34	0	0	16	0	0	1	17	18	0	0	13	1	0	2	16	18
08:45	0	0	18	0	0	1	19	20	0	0	37	1	0	0	38	38	0	0	17	1	0	0	18	18
09:00	0	0	8	5	0	0	13	13	0	0	11	2	0	0	13	13	0	0	29	1	0	1	31	32
09:15	0	0	9	1	0	0	10	10	0	0	7	0	0	0	7	7	0	0	8	1	0	0	9	9
H/TOT	0	0	63	12	0	1	76	77	0	0	71	3	0	1	75	76	0	0	67	4	0	3	74	77
P/TOT	0	0	110	30	5	2	147	154	0	0	94	4	0	1	99	100	0	0	128	7	0	3	138	141

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:30	0	0	9	2	0	0	11	11	1	0	10	0	0	0	11	10	0	0	6	0	0	0	6	6
16:45	0	0	11	2	0	0	13	13	0	0	8	0	0	0	8	8	0	0	6	0	0	0	6	6
17:00	0	0	15	1	1	0	17	18	0	0	2	1	0	0	3	3	0	0	6	0	0	0	6	6
17:15	0	0	26	2	0	0	28	28	0	0	5	0	0	0	5	5	0	0	4	0	0	0	4	4
H/TOT	0	0	61	7	1	0	69	70	1	0	25	1	0	0	27	26	0	0	22	0	0	0	22	22
17:30	0	0	18	6	0	0	24	24	0	0	10	0	0	0	10	10	0	0	6	0	0	0	6	6
17:45	0	0	24	2	0	0	26	26	0	0	10	1	0	0	11	11	0	0	5	0	0	0	5	5
18:00	0	0	26	3	0	0	29	29	0	0	11	0	0	0	11	11	0	0	4	1	0	0	5	5
18:15	0	0	29	2	0	0	31	31	0	0	10	0	0	0	10	10	0	0	4	1	0	0	5	5
H/TOT	0	0	97	13	0	0	110	110	0	0	41	1	0	0	42	42	0	0	19	2	0	0	21	21
P/TOT	0	0	158	20	1	0	179	180	1	0	66	2	0	0	69	68	0	0	41	2	0	0	43	43

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 03 DATE: 9th May 2023

LOCATION: St. Joseph's Road/Kingsfort Avenue DAY: Tuesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	2	1	0	0	3	3	0	0	1	0	0	0	1	1	0	0	15	6	0	0	21	21
07:45	0	0	4	0	0	0	4	4	0	0	2	0	0	0	2	2	0	0	25	6	0	0	31	31
08:00	0	0	7	0	0	0	7	7	0	0	3	0	0	0	3	3	0	0	19	3	1	1	24	26
08:15	0	0	9	0	0	0	9	9	0	0	3	0	0	0	3	3	0	0	31	8	1	1	41	43
H/TOT	0	0	22	1	0	0	23	23	0	0	9	0	0	0	9	9	0	0	90	23	2	2	117	121
08:30	0	0	9	0	0	0	9	9	0	0	1	0	0	0	1	1	0	0	30	6	0	0	36	36
08:45	0	0	13	1	0	0	14	14	0	0	17	0	0	1	18	19	0	0	29	1	0	0	30	30
09:00	0	0	10	0	0	0	10	10	0	0	11	1	0	0	12	12	0	0	26	2	1	0	29	30
09:15	0	0	0	1	0	0	1	1	0	0	1	0	1	0	2	3	0	0	24	4	1	0	29	30
H/TOT	0	0	32	2	0	0	34	34	0	0	30	1	1	1	33	35	0	0	109	13	2	0	124	126
P/TOT	0	0	54	3	0	0	57	57	0	0	39	1	1	1	42	44	0	0	199	36	4	2	241	247

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:30	0	0	4	0	0	0	4	4	0	0	4	1	0	0	5	5	0	0	20	4	0	0	24	24
16:45	0	0	1	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	22	6	1	1	30	32
17:00	0	0	2	1	0	0	3	3	0	0	1	0	0	0	1	1	0	0	24	14	0	0	38	38
17:15	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	15	7	1	0	23	24
H/TOT	0	0	10	1	1	0	12	13	0	0	5	1	0	0	6	6	0	0	81	31	2	1	115	118
17:30	0	0	1	0	0	0	1	1	0	0	4	0	0	0	4	4	0	0	13	2	0	0	15	15
17:45	0	0	8	1	0	0	9	9	0	0	13	1	0	0	14	14	0	0	21	5	1	0	27	28
18:00	0	0	2	0	0	0	2	2	1	0	5	2	0	0	8	7	0	3	23	1	1	0	28	27
18:15	0	0	15	0	0	0	15	15	0	0	6	0	0	0	6	6	0	0	21	3	0	0	24	24
H/TOT	0	0	26	1	0	0	27	27	1	0	28	3	0	0	32	31	0	3	78	11	2	0	94	94
P/TOT	0	0	36	2	1	0	39	40	1	0	33	4	0	0	38	37	0	3	159	42	4	1	209	212

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS
PEDESTRIAN CROSSING COUNTS

SITE: 03 DATE: DATE: DATE:

LOCATION: St. Joseph's Road/Kingsfort Avenue DAY: DAY: DAY:

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	P2	P3	P4	P5	P6	P7	P8	TOTAL
52	07:30	0	1	1	0	0	0	0	1	1
82	07:45	0	0	0	1	0	0	0	0	1
84	08:00	0	0	0	0	0	0	0	0	0
100	08:15	0	0	0	0	0	0	0	0	0
318	**H/TOT**	0	1	1	1	0	0	0	1	2
116	08:30	0	0	3	0	0	0	0	0	0
139	08:45	0	0	1	0	0	0	0	0	0
110	09:00	0	0	0	0	0	0	0	0	0
60	09:15	0	0	0	0	0	0	0	0	0
425	**H/TOT**	0	0	4	0	0	0	0	0	0
743	**P/TOT**	0	1	5	1	0	0	0	1	2

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	P2	P3	P4	P5	P6	P7	P8	TOTAL
60	16:30	0	0	0	4	0	0	0	0	4
62	16:45	0	0	0	0	0	0	0	0	0
69	17:00	0	0	0	0	0	0	0	0	0
64	17:15	0	0	0	1	0	0	0	0	1
255	**H/TOT**	0	0	0	5	0	0	0	0	5
60	17:30	0	0	0	0	0	0	0	0	0
93	17:45	0	0	0	1	0	0	0	0	1
81	18:00	0	0	1	1	0	0	0	0	1
91	18:15	1	0	1	1	0	0	0	1	2
325	**H/TOT**	1	0	2	3	0	0	0	1	4
581	**P/TOT**	1	0	2	8	0	0	0	1	9

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 04 DATE: 9th May 2023

LOCATION: St. Joseph's Road/Castlepark Avenue DAY: Tuesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	18	1	3	0	22	25	0	0	6	0	0	0	6	6	1	1	30	3	0	0	35	34
07:45	0	0	17	6	0	1	24	25	0	0	13	0	0	0	13	13	1	0	40	6	0	0	47	46
08:00	0	0	17	9	2	0	28	30	0	0	13	3	0	0	16	16	0	0	43	4	0	0	47	47
08:15	0	0	25	3	0	1	29	30	0	0	15	4	0	0	19	19	0	0	59	4	0	0	63	63
H/TOT	0	0	77	19	5	2	103	110	0	0	47	7	0	0	54	54	2	1	172	17	0	0	192	190
08:30	0	0	52	6	0	1	59	60	0	0	22	0	0	0	22	22	0	0	49	3	0	0	52	52
08:45	0	0	46	4	0	0	50	50	0	0	33	4	0	0	37	37	0	0	21	2	0	0	23	23
09:00	0	0	23	2	0	0	25	25	0	0	21	3	0	0	24	24	0	0	16	1	0	0	17	17
09:15	0	0	16	1	0	0	17	17	0	0	15	3	0	0	18	18	0	0	15	2	0	0	17	17
H/TOT	0	0	137	13	0	1	151	152	0	0	91	10	0	0	101	101	0	0	101	8	0	0	109	109
P/TOT	0	0	214	32	5	3	254	262	0	0	138	17	0	0	155	155	2	1	273	25	0	0	301	299

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	0	0	23	3	0	0	26	26	2	1	17	5	0	0	25	23	1	0	20	2	0	1	24	24
16:45	0	0	21	4	0	0	25	25	0	0	26	4	0	0	30	30	0	0	19	3	0	0	22	22
17:00	0	0	23	2	1	0	26	27	0	0	37	3	0	0	40	40	0	0	21	3	0	0	24	24
17:15	0	0	31	2	0	0	33	33	0	1	40	5	0	0	46	45	0	0	20	0	1	0	21	22
H/TOT	0	0	98	11	1	0	110	111	2	2	120	17	0	0	141	138	1	0	80	8	1	1	91	92
17:30	0	0	36	6	0	0	42	42	0	0	40	2	0	0	42	42	0	0	33	0	0	0	33	33
17:45	0	0	26	2	0	0	28	28	1	0	36	5	0	0	42	41	0	0	23	6	0	0	29	29
18:00	0	0	37	3	0	0	40	40	0	0	43	4	0	0	47	47	0	0	22	4	0	0	26	26
18:15	0	0	48	2	0	0	50	50	0	1	29	7	0	0	37	36	0	0	23	1	0	0	24	24
H/TOT	0	0	147	13	0	0	160	160	1	1	148	18	0	0	168	167	0	0	101	11	0	0	112	112
P/TOT	0	0	245	24	1	0	270	271	3	3	268	35	0	0	309	305	1	0	181	19	1	1	203	204

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 04 DATE: 9th May 2023

LOCATION: St. Joseph's Road/Castlepark Avenue DAY: Tuesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	6	0	0	30	30
07:45	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	44	8	1	1	54	56
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	5	1	1	54	56
08:15	0	0	1	0	0	0	1	1	0	0	5	0	0	0	5	5	0	0	52	8	1	1	62	64
H/TOT	0	0	2	0	0	0	2	2	0	0	5	0	0	0	5	5	0	0	167	27	3	3	200	206
08:30	0	0	3	0	0	0	3	3	0	0	2	0	0	0	2	2	0	0	49	12	0	2	63	65
08:45	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	46	2	0	0	48	48
09:00	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	55	4	1	1	61	63
09:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	32	4	1	0	37	38
H/TOT	0	0	5	1	0	0	6	6	0	0	4	0	0	0	4	4	0	0	182	22	2	3	209	214
P/TOT	0	0	7	1	0	0	8	8	0	0	9	0	0	0	9	9	0	0	349	49	5	6	409	420

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	0	0	2	0	0	0	2	2	0	0	2	1	0	0	3	3	0	0	26	4	0	0	30	30
16:45	0	0	0	0	0	0	0	0	0	0	2	0	0	1	3	4	0	0	33	6	1	0	40	41
17:00	0	0	0	1	0	0	1	1	0	0	1	0	0	0	1	1	0	0	28	13	0	0	41	41
17:15	0	0	3	0	0	0	3	3	0	0	2	0	1	0	3	4	0	0	15	9	0	0	24	24
H/TOT	0	0	5	1	0	0	6	6	0	0	7	1	1	1	10	12	0	0	102	32	1	0	135	136
17:30	0	0	1	0	0	0	1	1	0	0	2	1	0	0	3	3	0	0	29	4	2	0	35	37
17:45	0	0	6	1	0	0	7	7	0	0	2	0	0	0	2	2	0	0	23	2	0	0	25	25
18:00	0	0	2	0	0	0	2	2	0	0	2	0	0	0	2	2	0	0	24	5	0	0	29	29
18:15	0	0	3	0	0	0	3	3	0	0	2	0	0	0	2	2	0	0	22	2	0	0	24	24
H/TOT	0	0	12	1	0	0	13	13	0	0	8	1	0	0	9	9	0	0	98	13	2	0	113	115
P/TOT	0	0	17	2	0	0	19	19	0	0	15	2	1	1	19	21	0	0	200	45	3	0	248	251

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS
PEDESTRIAN CROSSING COUNTS

SITE: 04 DATE: DATE: DATE:

LOCATION: St. Joseph's Road/Castlepark Avenue DAY: DAY: DAY:

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
95	07:30	3	2	0	0	0	0	0	3	3
141	07:45	3	0	0	0	0	0	0	0	0
149	08:00	4	4	0	0	0	0	0	1	1
182	08:15	18	0	0	0	0	2	0	1	3
567	**H/TOT**	28	6	0	0	0	2	0	5	7
204	08:30	6	7	0	0	0	0	0	0	0
160	08:45	2	4	1	0	0	0	1	1	3
131	09:00	3	3	1	0	0	1	0	1	3
91	09:15	6	4	0	0	0	0	0	0	0
586	**H/TOT**	17	18	2	0	0	1	1	2	6
1153	**P/TOT**	45	24	2	0	0	3	1	7	13

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
108	16:30	7	5	0	2	0	0	1	0	3
122	16:45	2	12	0	0	0	0	0	0	0
134	17:00	5	8	0	0	0	3	0	0	3
131	17:15	2	3	0	1	0	0	0	0	1
495	**H/TOT**	16	28	0	3	0	3	1	0	7
158	17:30	3	10	0	0	0	0	1	0	1
132	17:45	1	1	0	0	1	0	0	0	1
146	18:00	4	0	0	0	0	0	0	0	0
139	18:15	2	7	0	1	0	0	1	0	2
576	**H/TOT**	10	18	0	1	1	0	2	0	4
1071	**P/TOT**	26	46	0	4	1	3	3	0	11

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 05 DATE: 9th May 2023

LOCATION: N72 Spa Square/St. Joseph's Road DAY: Tuesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	2	1	0	0	3	3	0	0	18	9	4	0	31	35	0	0	31	10	12	0	53	65
07:45	0	0	5	1	0	0	6	6	0	0	30	7	3	1	41	45	0	0	29	10	9	2	50	61
08:00	0	0	5	2	0	0	7	7	0	0	32	6	5	2	45	52	0	0	30	8	9	4	51	64
08:15	0	0	3	2	1	0	6	7	0	0	44	3	1	0	48	49	0	0	62	6	7	3	78	88
H/TOT	0	0	15	6	1	0	22	23	0	0	124	25	13	3	165	181	0	0	152	34	37	9	232	278
08:30	0	0	11	0	0	0	11	11	0	0	42	6	7	0	55	62	0	0	38	8	7	1	54	62
08:45	0	0	11	3	0	0	14	14	0	0	46	1	3	0	50	53	0	0	52	3	7	0	62	69
09:00	0	0	9	0	0	0	9	9	0	0	29	4	4	0	37	41	0	0	61	9	5	2	77	84
09:15	0	0	4	4	0	0	8	8	0	0	17	4	3	0	24	27	0	0	47	7	9	0	63	72
H/TOT	0	0	35	7	0	0	42	42	0	0	134	15	17	0	166	183	0	0	198	27	28	3	256	287
P/TOT	0	0	50	13	1	0	64	65	0	0	258	40	30	3	331	364	0	0	350	61	65	12	488	565

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	0	0	5	1	0	0	6	6	0	0	38	11	4	0	53	57	0	0	73	10	4	0	87	91
16:45	0	0	12	1	0	0	13	13	0	0	34	5	2	1	42	45	0	0	52	9	1	1	63	65
17:00	0	0	16	2	0	0	18	18	0	0	45	6	2	0	53	55	0	0	64	5	4	0	73	77
17:15	0	0	7	1	0	0	8	8	0	0	29	3	2	0	34	36	0	0	60	8	1	1	70	72
H/TOT	0	0	40	5	0	0	45	45	0	0	146	25	10	1	182	193	0	0	249	32	10	2	293	305
17:30	0	0	16	2	0	0	18	18	0	0	30	5	2	0	37	39	0	1	54	9	8	0	72	79
17:45	0	0	15	4	0	0	19	19	0	0	26	7	7	0	40	47	0	0	63	10	2	0	75	77
18:00	0	0	31	0	0	0	31	31	0	0	36	5	5	0	46	51	0	0	82	8	6	0	96	102
18:15	0	0	7	1	0	0	8	8	0	0	17	2	1	0	20	21	0	1	56	6	3	0	66	68
H/TOT	0	0	69	7	0	0	76	76	0	0	109	19	15	0	143	158	0	2	255	33	19	0	309	327
P/TOT	0	0	109	12	0	0	121	121	0	0	255	44	25	1	325	351	0	2	504	65	29	2	602	632

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 05 DATE: 9th May 2023

LOCATION: N72 Spa Square/St. Joseph's Road DAY: Tuesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	19	2	2	0	23	25	0	0	0	0	0	0	0	0	0	1	6	1	0	0	8	7
07:45	0	0	25	4	1	1	31	33	0	0	0	0	0	0	0	0	0	0	17	0	0	0	17	17
08:00	0	0	29	13	1	0	43	44	0	0	0	0	0	0	0	0	0	0	22	3	0	1	26	27
08:15	0	0	41	8	0	1	50	51	0	0	3	1	1	0	5	6	0	0	44	3	0	0	47	47
H/TOT	0	0	114	27	4	2	147	153	0	0	3	1	1	0	5	6	0	1	89	7	0	1	98	98
08:30	0	0	52	5	0	1	58	59	0	0	0	0	0	0	0	0	0	0	41	1	0	0	42	42
08:45	0	0	75	4	0	0	79	79	0	0	1	0	0	0	1	1	0	0	25	2	0	1	28	29
09:00	0	0	35	5	0	0	40	40	0	0	2	1	0	0	3	3	0	0	17	2	0	0	19	19
09:15	0	0	27	2	0	0	29	29	0	0	0	0	0	0	0	0	0	0	19	1	0	0	20	20
H/TOT	0	0	189	16	0	1	206	207	0	0	3	1	0	0	4	4	0	0	102	6	0	1	109	110
P/TOT	0	0	303	43	4	3	353	360	0	0	6	2	1	0	9	10	0	1	191	13	0	2	207	208

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	1	1	33	5	0	0	40	39	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13	13
16:45	0	0	48	7	0	0	55	55	0	0	1	0	0	0	1	1	0	0	14	2	0	0	16	16
17:00	0	0	52	5	1	0	58	59	0	0	1	0	0	0	1	1	0	0	13	0	0	0	13	13
17:15	0	1	61	10	0	0	72	71	0	0	0	0	0	0	0	0	0	0	11	2	1	0	14	15
H/TOT	1	2	194	27	1	0	225	224	0	0	2	0	0	0	2	2	0	0	51	4	1	0	56	57
17:30	0	0	55	6	0	0	61	61	0	0	0	0	0	0	0	0	0	0	18	0	0	0	18	18
17:45	1	0	55	6	0	0	62	61	0	0	0	0	0	0	0	0	0	0	18	1	0	0	19	19
18:00	0	0	52	7	0	0	59	59	0	0	0	0	0	0	0	0	0	0	15	3	0	0	18	18
18:15	0	1	62	8	0	0	71	70	0	0	0	0	0	0	0	0	0	0	12	4	0	0	16	16
H/TOT	1	1	224	27	0	0	253	252	0	0	0	0	0	0	0	0	0	0	63	8	0	0	71	71
P/TOT	2	3	418	54	1	0	478	476	0	0	2	0	0	0	2	2	0	0	114	12	1	0	127	128

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS
PEDESTRIAN CROSSING COUNTS

SITE: 05 DATE: DATE: DATE:

LOCATION: N72 Spa Square/St. Joseph's Road DAY: DAY: DAY:

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
135	07:30	0	0	1	6	4	1	0	0	12
162	07:45	0	0	5	5	3	1	1	0	15
194	08:00	0	0	3	2	5	1	0	0	11
248	08:15	0	0	3	9	5	0	1	2	20
739	**H/TOT**	0	0	12	22	17	3	2	2	58
236	08:30	0	0	2	6	7	3	0	0	18
245	08:45	0	0	7	3	5	1	0	0	16
196	09:00	0	1	4	7	5	7	0	1	24
156	09:15	0	0	1	7	6	1	1	1	17
833	**H/TOT**	0	1	14	23	23	12	1	2	75
1572	**P/TOT**	0	1	26	45	40	15	3	4	133

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
206	16:30	1	2	13	15	5	19	4	2	58
195	16:45	0	1	17	12	11	15	0	0	55
223	17:00	2	0	17	8	21	22	2	1	71
202	17:15	1	1	29	7	4	20	3	3	66
826	**H/TOT**	4	4	76	42	41	76	9	6	250
215	17:30	0	0	12	5	5	17	2	0	41
223	17:45	0	0	7	6	15	12	0	0	40
261	18:00	0	0	9	7	5	17	1	1	40
184	18:15	1	3	7	3	7	8	1	0	26
883	**H/TOT**	1	3	35	21	32	54	4	1	147
1709	**P/TOT**	5	7	111	63	73	130	13	7	397

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 06 DATE: 9th May 2023

LOCATION: N72/R883 Main Street DAY: Tuesday

	MOVEMENT 1								MOVEMENT 2							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	21	7	8	0	36	44	0	0	25	3	2	1	31	34
07:45	0	0	20	8	4	1	33	38	0	0	15	10	1	1	27	29
08:00	0	0	25	9	4	0	38	42	0	0	21	7	2	0	30	32
08:15	0	0	24	5	3	2	34	39	0	0	32	7	2	0	41	43
H/TOT	0	0	90	29	19	3	141	163	0	0	93	27	7	2	129	138
08:30	0	0	39	3	2	1	45	48	0	0	32	8	2	0	42	44
08:45	0	0	40	5	3	0	48	51	0	0	40	5	1	0	46	47
09:00	0	0	33	5	1	1	40	42	0	0	29	2	1	0	32	33
09:15	0	0	27	3	2	0	32	34	0	0	33	9	1	0	43	44
H/TOT	0	0	139	16	8	2	165	175	0	0	134	24	5	0	163	168
P/TOT	0	0	229	45	27	5	306	338	0	0	227	51	12	2	292	306

	MOVEMENT 1								MOVEMENT 2							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	1	1	40	7	0	0	49	48	0	0	35	5	1	0	41	42
16:45	0	0	29	4	0	0	33	33	2	0	40	2	0	0	44	42
17:00	0	0	36	4	0	0	40	40	0	0	51	6	0	0	57	57
17:15	0	1	41	3	1	0	46	46	0	0	44	4	0	0	48	48
H/TOT	1	2	146	18	1	0	168	167	2	0	170	17	1	0	190	189
17:30	0	1	31	7	3	0	42	44	0	0	33	2	0	0	35	35
17:45	0	0	35	2	0	0	37	37	1	0	38	4	0	0	43	42
18:00	0	0	45	6	1	0	52	53	1	0	43	1	0	0	45	44
18:15	0	1	36	8	0	0	45	44	0	0	41	2	0	0	43	43
H/TOT	0	2	147	23	4	0	176	179	2	0	155	9	0	0	166	164
P/TOT	1	4	293	41	5	0	344	346	4	0	325	26	1	0	356	354

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 06 DATE: 9th May 2023

LOCATION: N72/R883 Main Street DAY: Tuesday

	MOVEMENT 3								MOVEMENT 4							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	29	5	6	0	40	46	0	0	18	9	4	0	31	35
07:45	0	0	34	6	6	2	48	56	0	0	30	7	3	1	41	45
08:00	0	0	34	12	6	4	56	66	0	0	32	6	5	2	45	52
08:15	0	0	79	9	4	2	94	100	0	0	47	4	2	0	53	55
H/TOT	0	0	176	32	22	8	238	268	0	0	127	26	14	3	170	187
08:30	0	0	51	10	5	1	67	73	0	0	42	6	7	0	55	62
08:45	0	0	87	2	4	0	93	97	0	0	47	1	3	0	51	54
09:00	0	0	63	9	4	1	77	82	0	0	31	5	4	0	40	44
09:15	0	0	47	6	7	0	60	67	0	0	17	4	3	0	24	27
H/TOT	0	0	248	27	20	2	297	319	0	0	137	16	17	0	170	187
P/TOT	0	0	424	59	42	10	535	587	0	0	264	42	31	3	340	374

	MOVEMENT 3								MOVEMENT 4							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	0	0	66	8	4	0	78	82	0	0	38	11	4	0	53	57
16:45	0	0	71	12	1	1	85	87	0	0	35	5	2	1	43	46
17:00	0	0	80	6	5	0	91	96	0	0	46	6	2	0	54	56
17:15	0	0	80	15	0	1	96	97	0	0	29	3	2	0	34	36
H/TOT	0	0	297	41	10	2	350	362	0	0	148	25	10	1	184	195
17:30	0	0	78	8	5	0	91	96	0	0	30	5	2	0	37	39
17:45	1	0	83	14	2	0	100	101	0	0	26	7	7	0	40	47
18:00	0	0	89	9	5	0	103	108	0	0	36	5	5	0	46	51
18:15	0	1	82	6	3	0	92	94	0	0	17	2	1	0	20	21
H/TOT	1	1	332	37	15	0	386	400	0	0	109	19	15	0	143	158
P/TOT	1	1	629	78	25	2	736	762	0	0	257	44	25	1	327	353

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS
PEDESTRIAN CROSSING COUNTS

SITE: 06 DATE: DATE: DATE:

LOCATION: N72/R883 Main Street DAY: DAY: DAY:

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
159	07:30	0	1	0	0	0	0	1	4	5
168	07:45	0	3	3	0	3	0	1	3	10
192	08:00	1	2	2	0	2	0	1	5	10
237	08:15	5	2	3	1	3	1	0	5	13
756	**H/TOT**	6	8	8	1	8	1	3	17	38
227	08:30	1	4	6	2	6	0	3	7	24
249	08:45	4	0	3	1	4	1	1	5	15
201	09:00	1	3	0	4	1	0	7	5	17
172	09:15	3	3	0	2	1	2	1	6	12
849	**H/TOT**	9	10	9	9	12	3	12	23	68
1605	**P/TOT**	15	18	17	10	20	4	15	40	106

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
229	16:30	3	7	1	1	3	1	19	5	30
208	16:45	3	5	15	5	1	0	15	11	47
249	17:00	8	3	4	3	0	5	22	21	55
227	17:15	9	2	12	7	5	3	20	4	51
913	**H/TOT**	23	17	32	16	9	9	76	41	183
214	17:30	7	3	8	2	1	0	17	5	33
227	17:45	6	7	4	6	2	4	12	15	43
256	18:00	5	5	3	16	0	0	17	5	41
203	18:15	6	4	5	6	0	0	8	7	26
901	**H/TOT**	24	19	20	30	3	4	54	32	143
1814	**P/TOT**	47	36	52	46	12	13	130	73	326

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 07 DATE: 9th May 2023

LOCATION: N72/Bridewell Lane DAY: Tuesday

	MOVEMENT 1								MOVEMENT 2							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	43	12	6	1	62	69	0	0	29	5	6	0	40	46
07:45	0	0	45	17	4	2	68	74	0	0	34	6	6	2	48	56
08:00	0	0	53	13	7	2	75	84	0	0	34	12	6	4	56	66
08:15	0	0	79	11	4	0	94	98	0	0	78	9	4	2	93	99
H/TOT	0	0	220	53	21	5	299	325	0	0	175	32	22	8	237	267
08:30	0	0	74	14	9	0	97	106	0	0	50	10	5	1	66	72
08:45	0	0	87	6	4	0	97	101	0	0	87	2	4	0	93	97
09:00	0	0	60	7	5	0	72	77	0	0	62	9	4	1	76	81
09:15	0	0	50	13	4	0	67	71	0	0	46	6	7	0	59	66
H/TOT	0	0	271	40	22	0	333	355	0	0	245	27	20	2	294	316
P/TOT	0	0	491	93	43	5	632	680	0	0	420	59	42	10	531	583

	MOVEMENT 1								MOVEMENT 2							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	0	0	73	16	5	0	94	99	0	0	66	8	4	0	78	82
16:45	2	0	75	7	2	1	87	88	0	0	69	12	1	1	83	85
17:00	0	0	97	12	2	0	111	113	0	0	80	6	5	0	91	96
17:15	0	0	73	7	2	0	82	84	0	0	79	15	0	1	95	96
H/TOT	2	0	318	42	11	1	374	384	0	0	294	41	10	2	347	359
17:30	0	0	63	7	2	0	72	74	0	0	77	8	5	0	90	95
17:45	1	0	64	11	7	0	83	89	1	0	83	14	2	0	100	101
18:00	1	0	79	6	5	0	91	95	0	0	87	9	5	0	101	106
18:15	0	0	58	4	1	0	63	64	0	1	81	6	3	0	91	93
H/TOT	2	0	264	28	15	0	309	322	1	1	328	37	15	0	382	396
P/TOT	4	0	582	70	26	1	683	707	1	1	622	78	25	2	729	755

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 07 DATE: 9th May 2023

LOCATION: N72/Bridewell Lane DAY: Tuesday

	MOVEMENT 3								MOVEMENT 4							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	47	13	0	0	60	60	0	0	0	0	0	0	0	0
07:45	2	0	62	11	1	1	77	77	0	0	0	0	0	0	0	0
08:00	0	0	61	6	1	0	68	69	0	0	0	0	0	0	0	0
08:15	0	0	66	5	0	1	72	73	0	0	1	0	0	0	1	1
H/TOT	2	0	236	35	2	2	277	279	0	0	1	0	0	0	1	1
08:30	0	0	65	15	0	1	81	82	0	0	1	0	0	0	1	1
08:45	0	0	52	2	0	0	54	54	0	0	0	0	0	0	0	0
09:00	0	0	53	4	1	1	59	61	0	0	1	0	0	0	1	1
09:15	0	0	39	8	1	0	48	49	0	0	1	0	0	0	1	1
H/TOT	0	0	209	29	2	2	242	246	0	0	3	0	0	0	3	3
P/TOT	2	0	445	64	4	4	519	525	0	0	4	0	0	0	4	4

	MOVEMENT 3								MOVEMENT 4							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	1	0	49	6	0	0	56	55	0	0	0	0	0	0	0	0
16:45	0	1	37	8	1	0	47	47	0	0	2	0	0	0	2	2
17:00	0	0	45	16	0	1	62	63	0	0	0	0	0	0	0	0
17:15	0	0	43	9	0	0	52	52	0	0	1	0	0	0	1	1
H/TOT	1	1	174	39	1	1	217	218	0	0	3	0	0	0	3	3
17:30	0	0	34	4	0	0	38	38	0	0	1	0	0	0	1	1
17:45	0	0	34	4	1	0	39	40	0	0	0	0	0	0	0	0
18:00	2	3	51	5	1	0	62	60	0	0	2	0	0	0	2	2
18:15	0	0	31	7	0	0	38	38	0	0	1	0	0	0	1	1
H/TOT	2	3	150	20	2	0	177	176	0	0	4	0	0	0	4	4
P/TOT	3	4	324	59	3	1	394	393	0	0	7	0	0	0	7	7

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS
PEDESTRIAN CROSSING COUNTS

SITE: 07 DATE:

LOCATION: N72/Bridewell Lane DAY:

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
175	07:30	0	0	3	2	0	0	1	0	6
207	07:45	0	0	3	5	0	0	1	0	9
219	08:00	0	3	6	6	1	0	1	4	18
271	08:15	0	0	11	8	0	0	4	0	23
872	**H/TOT**	0	3	23	21	1	0	7	4	56
261	08:30	1	2	13	23	0	0	0	0	36
252	08:45	0	3	16	6	0	1	1	1	25
220	09:00	0	0	16	12	0	0	2	0	30
187	09:15	0	5	11	54	0	0	0	2	67
920	**H/TOT**	1	10	56	95	0	1	3	3	158
1792	**P/TOT**	1	13	79	116	1	1	10	7	214

PCU's Through Junction		PEDESTRIAN CROSSING COUNTS								
		P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**TOTAL**
236	16:30	0	0	15	20	0	0	0	0	35
223	16:45	0	0	13	13	0	3	4	2	35
272	17:00	5	2	10	18	0	0	0	6	34
233	17:15	0	0	21	5	0	0	0	2	28
964	**H/TOT**	5	2	59	56	0	3	4	10	132
208	17:30	1	1	14	17	0	0	6	3	40
230	17:45	6	2	13	8	0	1	3	3	28
263	18:00	1	5	10	8	0	0	2	0	20
196	18:15	2	4	5	10	0	1	1	0	17
898	**H/TOT**	10	12	42	43	0	2	12	6	105
1862	**P/TOT**	15	14	101	99	0	5	16	16	237

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 08 DATE: 9th May 2023

LOCATION: N72/N72 Relief Road/N72 Bridge Street DAY: Tuesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	2	0	2	0	4	6	0	0	7	6	2	1	16	19	1	0	27	3	1	0	32	32
07:45	0	0	2	0	4	0	6	10	0	0	17	4	1	2	24	27	1	0	42	10	1	0	54	54
08:00	0	0	1	4	5	0	10	15	0	0	27	3	1	2	33	36	0	0	51	8	4	3	66	73
08:15	0	0	3	1	2	0	6	8	0	0	37	3	0	2	42	44	0	0	91	6	1	3	101	105
H/TOT	0	0	8	5	13	0	26	39	0	0	88	16	4	7	115	126	2	0	211	27	7	6	253	264
08:30	0	0	2	1	4	1	8	13	0	0	43	5	2	1	51	54	1	0	96	8	0	0	105	104
08:45	0	0	6	1	2	0	9	11	0	0	36	6	0	1	43	44	0	0	109	8	0	3	120	123
09:00	0	0	11	0	0	0	11	11	0	0	38	0	0	0	38	38	1	0	52	16	2	1	72	74
09:15	0	0	10	1	2	0	13	15	0	0	37	4	0	1	42	43	2	0	52	5	2	0	61	61
H/TOT	0	0	29	3	8	1	41	50	0	0	154	15	2	3	174	179	4	0	309	37	4	4	358	363
P/TOT	0	0	37	8	21	1	67	89	0	0	242	31	6	10	289	305	6	0	520	64	11	10	611	627

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	0	0	12	0	1	0	13	14	0	0	48	7	1	0	56	57	1	0	77	7	0	1	86	86
16:45	0	0	20	3	0	0	23	23	0	0	44	8	2	1	55	58	0	0	78	10	3	1	92	96
17:00	0	0	14	3	2	0	19	21	0	0	48	4	0	0	52	52	1	0	86	7	3	0	97	99
17:15	0	0	14	7	0	0	21	21	0	0	44	3	1	0	48	49	0	1	94	13	0	0	108	107
H/TOT	0	0	60	13	3	0	76	79	0	0	184	22	4	1	211	216	2	1	335	37	6	2	383	389
17:30	0	0	18	1	2	0	21	23	0	0	79	5	0	0	84	84	0	0	77	11	0	0	88	88
17:45	0	0	17	0	0	0	17	17	1	0	43	7	3	0	54	56	0	0	70	7	0	0	77	77
18:00	0	0	12	2	4	0	18	22	0	0	52	5	0	0	57	57	0	0	62	9	1	0	72	73
18:15	0	0	30	2	3	0	35	38	0	0	55	6	0	0	61	61	1	0	78	6	1	0	86	86
H/TOT	0	0	77	5	9	0	91	100	1	0	229	23	3	0	256	258	1	0	287	33	2	0	323	324
P/TOT	0	0	137	18	12	0	167	179	1	0	413	45	7	1	467	474	3	1	622	70	8	2	706	713

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 08 DATE: 9th May 2023

LOCATION: N72/N72 Relief Road/N72 Bridge Street DAY: Tuesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	27	5	4	0	36	40	0	0	69	16	4	1	90	95	0	0	21	9	2	0	32	34
07:45	0	0	32	6	2	2	42	46	0	0	76	19	4	3	102	109	2	0	31	9	1	0	43	42
08:00	0	0	33	8	1	4	46	51	0	0	98	17	6	2	123	131	0	0	16	2	2	0	20	22
08:15	0	0	75	8	2	2	87	91	0	0	119	15	3	1	138	142	0	0	26	1	1	0	28	29
H/TOT	0	0	167	27	9	8	211	228	0	0	362	67	17	7	453	477	2	0	94	21	6	0	123	127
08:30	0	0	48	9	1	0	58	59	0	0	115	22	4	1	142	147	0	0	24	7	5	0	36	41
08:45	0	0	81	1	2	0	84	86	0	0	107	6	1	0	114	115	0	0	32	2	3	0	37	40
09:00	0	0	51	9	4	1	65	70	0	0	71	7	3	1	82	86	0	0	42	4	3	0	49	52
09:15	0	0	36	5	5	0	46	51	0	0	60	18	2	0	80	82	0	0	29	3	3	0	35	38
H/TOT	0	0	216	24	12	1	253	266	0	0	353	53	10	2	418	430	0	0	127	16	14	0	157	171
P/TOT	0	0	383	51	21	9	464	494	0	0	715	120	27	9	871	907	2	0	221	37	20	0	280	298

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:30	0	0	54	8	3	0	65	68	0	0	75	13	4	0	92	96	1	0	47	9	1	0	58	58
16:45	0	0	49	9	1	1	60	62	2	1	81	9	1	1	95	95	0	0	31	6	2	0	39	41
17:00	0	0	66	3	3	0	72	75	0	0	113	19	2	1	135	138	0	0	29	9	0	0	38	38
17:15	0	0	65	8	0	1	74	75	0	0	78	11	1	0	90	91	0	0	38	5	1	0	44	45
H/TOT	0	0	234	28	7	2	271	280	2	1	347	52	8	2	412	420	1	0	145	29	4	0	179	182
17:30	0	0	59	7	3	0	69	72	0	0	57	5	2	0	64	66	0	0	40	6	0	0	46	46
17:45	1	0	66	14	2	0	83	84	1	0	67	14	3	0	85	87	0	0	31	1	5	0	37	42
18:00	0	0	75	7	1	0	83	84	2	0	97	6	3	0	108	109	1	3	33	5	3	0	45	45
18:15	0	1	51	4	0	0	56	55	0	0	69	6	0	0	75	75	0	0	20	5	1	0	26	27
H/TOT	1	1	251	32	6	0	291	296	3	0	290	31	8	0	332	338	1	3	124	17	9	0	154	160
P/TOT	1	1	485	60	13	2	562	576	5	1	637	83	16	2	744	757	2	3	269	46	13	0	333	343

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS
PEDESTRIAN CROSSING COUNTS

SITE: 08 DATE:

LOCATION: N72/N72 Relief Road/N72 Bridge Street DAY:

PCU's Through Junction			PEDESTRIAN CROSSING COUNTS								
			P1	P2	P3	P4	P5	P6	P7	P8	TOTAL
226		07:30	5	6	0	0	0	0	0	0	11
289		07:45	1	4	0	0	0	0	0	0	5
328		08:00	6	6	0	0	0	0	0	0	12
419	1262	08:15	19	17	0	0	0	0	0	0	36
1262		**H/TOT**	31	33	0	0	0	0	0	0	64
418	1454	08:30	15	26	0	0	0	0	0	0	41
419	1584	08:45	9	45	0	0	0	0	0	0	54
331	1587	09:00	22	10	0	0	0	0	0	0	32
290	1459	09:15	10	45	0	0	0	0	0	0	55
1459		**H/TOT**	56	126	0	0	0	0	0	0	182
2721		**P/TOT**	87	159	0	0	0	0	0	0	246

PCU's Through Junction			PEDESTRIAN CROSSING COUNTS								
			P1	P2	P3	P4	P5	P6	P7	P8	TOTAL
379		16:30	15	15	0	0	0	0	0	0	30
375		16:45	23	14	0	0	0	0	0	0	37
423		17:00	11	25	0	0	0	0	0	0	36
388	1566	17:15	20	13	0	0	0	0	0	0	33
1566		**H/TOT**	69	67	0	0	0	0	0	0	136
379	1565	17:30	9	20	0	0	0	0	0	0	29
364	1554	17:45	16	20	0	0	0	0	0	0	36
391	1522	18:00	12	13	0	0	0	0	0	0	25
343	1476	18:15	4	16	0	0	0	0	0	0	20
1476		**H/TOT**	41	69	0	0	0	0	0	0	110
3042		**P/TOT**	110	136	0	0	0	0	0	0	246

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 09 DATE: 9th May 2023

LOCATION: St. Joseph's Road/Bridewell Lane DAY: Tuesday

	MOVEMENT 1								MOVEMENT 2							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	20	3	2	0	25	27	0	0	1	0	0	0	1	1
07:45	0	0	26	5	1	1	33	35	0	0	4	0	0	0	4	4
08:00	0	0	34	13	1	0	48	49	0	0	0	2	0	0	2	2
08:15	0	0	44	9	1	1	55	57	0	0	0	1	0	0	1	1
H/TOT	0	0	124	30	5	2	161	168	0	0	5	3	0	0	8	8
08:30	0	0	60	5	0	1	66	67	0	0	3	0	0	0	3	3
08:45	0	0	81	7	0	0	88	88	0	0	5	0	0	0	5	5
09:00	0	0	42	5	0	0	47	47	0	0	2	0	0	0	2	2
09:15	0	0	29	4	0	0	33	33	0	0	2	2	0	0	4	4
H/TOT	0	0	212	21	0	1	234	235	0	0	12	2	0	0	14	14
P/TOT	0	0	336	51	5	3	395	403	0	0	17	5	0	0	22	22

	MOVEMENT 1								MOVEMENT 2							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	1	1	35	6	0	0	43	42	0	0	3	0	0	0	3	3
16:45	0	0	56	8	0	0	64	64	0	0	4	0	0	0	4	4
17:00	0	0	62	6	1	0	69	70	0	0	6	1	0	0	7	7
17:15	0	1	61	11	0	0	73	72	0	0	7	0	0	0	7	7
H/TOT	1	2	214	31	1	0	249	248	0	0	20	1	0	0	21	21
17:30	0	0	66	7	0	0	73	73	0	0	5	1	0	0	6	6
17:45	1	0	66	9	0	0	76	75	0	0	4	1	0	0	5	5
18:00	0	0	79	7	0	0	86	86	0	0	4	0	0	0	4	4
18:15	0	1	69	9	0	0	79	78	0	0	0	0	0	0	0	0
H/TOT	1	1	280	32	0	0	314	313	0	0	13	2	0	0	15	15
P/TOT	2	3	494	63	1	0	563	561	0	0	33	3	0	0	36	36

TRAFFINOMICS LIMITED

ST. JOSEPH'S ROAD, MALLOW TRAFFIC COUNTS **MAY 2023**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/23/112**

SITE: 09 DATE: 9th May 2023

LOCATION: St. Joseph's Road/Bridewell Lane DAY: Tuesday

	MOVEMENT 3								MOVEMENT 4							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	46	13	0	0	59	59	0	1	6	1	0	0	8	7
07:45	2	0	58	11	1	1	73	73	0	0	17	0	0	0	17	17
08:00	0	0	61	4	1	0	66	67	0	0	22	3	0	1	26	27
08:15	0	0	67	4	0	1	72	73	0	0	47	4	1	0	52	53
H/TOT	2	0	232	32	2	2	270	272	0	1	92	8	1	1	103	104
08:30	0	0	63	15	0	1	79	80	0	0	41	1	0	0	42	42
08:45	0	0	47	2	0	0	49	49	0	0	26	2	0	1	29	30
09:00	0	0	52	4	1	1	58	60	0	0	19	3	0	0	22	22
09:15	0	0	38	6	1	0	45	46	0	0	19	1	0	0	20	20
H/TOT	0	0	200	27	2	2	231	235	0	0	105	7	0	1	113	114
P/TOT	2	0	432	59	4	4	501	507	0	1	197	15	1	2	216	218

	MOVEMENT 3								MOVEMENT 4							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:30	1	0	46	6	0	0	53	52	0	0	13	0	0	0	13	13
16:45	0	1	35	8	1	0	45	45	0	0	15	2	0	0	17	17
17:00	0	0	39	15	0	1	55	56	0	0	14	0	0	0	14	14
17:15	0	0	37	9	0	0	46	46	0	0	11	2	1	0	14	15
H/TOT	1	1	157	38	1	1	199	200	0	0	53	4	1	0	58	59
17:30	0	0	30	3	0	0	33	33	0	0	18	0	0	0	18	18
17:45	0	0	30	3	1	0	34	35	0	0	18	1	0	0	19	19
18:00	2	3	49	5	1	0	60	58	0	0	15	3	0	0	18	18
18:15	0	0	32	7	0	0	39	39	0	0	12	4	0	0	16	16
H/TOT	2	3	141	18	2	0	166	165	0	0	63	8	0	0	71	71
P/TOT	3	4	298	56	3	1	365	364	0	0	116	12	1	0	129	130

PCU's Through Junction
94
129
145
184
553
192
172
131
103
598
1151

PCU's Through Junction
110
130
147
140
528
130
134
166
133
563
1091

14.0 Appendix B – Trics Data

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate
00:00 - 01:00	41	63	0.02	41	63	0.01	41	63	0.03
01:00 - 02:00	41	63	0.01	41	63	0.01	41	63	0.02
02:00 - 03:00	41	63	0.01	41	63	0.00	41	63	0.01
03:00 - 04:00	41	63	0.00	41	63	0.01	41	63	0.01
04:00 - 05:00	41	63	0.01	41	63	0.02	41	63	0.03
05:00 - 06:00	41	63	0.02	41	63	0.06	41	63	0.08
06:00 - 07:00	41	63	0.05	41	63	0.16	41	63	0.21
07:00 - 08:00	59	70	0.11	59	70	0.41	59	70	0.52
08:00 - 09:00	59	70	0.18	**59**	**70**	**0.46**	59	70	0.64
09:00 - 10:00	59	70	0.17	59	70	0.23	59	70	0.40
10:00 - 11:00	59	70	0.17	59	70	0.20	59	70	0.37
11:00 - 12:00	59	70	0.19	59	70	0.19	59	70	0.38
12:00 - 13:00	59	70	0.23	59	70	0.21	59	70	0.44
13:00 - 14:00	59	70	0.22	59	70	0.24	59	70	0.46
14:00 - 15:00	59	70	0.24	59	70	0.21	59	70	0.45
15:00 - 16:00	59	70	0.33	59	70	0.23	59	70	0.56
16:00 - 17:00	59	70	0.39	59	70	0.23	59	70	0.62
17:00 - 18:00	**59**	**70**	**0.45**	59	70	0.25	**59**	**70**	**0.70**
18:00 - 19:00	59	70	0.38	59	70	0.30	59	70	0.68
19:00 - 20:00	41	63	0.33	41	63	0.28	41	63	0.61
20:00 - 21:00	41	63	0.25	41	63	0.18	41	63	0.43
21:00 - 22:00	41	63	0.19	41	63	0.12	41	63	0.31
22:00 - 23:00	41	63	0.12	41	63	0.07	41	63	0.19
23:00 - 24:00	41	63	0.06	41	63	0.04	41	63	0.10
Daily Trip Rates.			4.12			4.14			8.25

Parameter summary

Trip rate parameter range selected:	5 - 425 (units:)
Survey date date range:	01/01/97 - 30/06/05
Number of weekdays (Monday-Friday):	59
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	YES
Surveys manually removed from selection:	0

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
VEHICLES
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	8	116	0.045	**8**	**116**	**0.256**	**8**	**116**	**0.301**
08:00 - 09:00	8	116	0.046	8	116	0.254	8	116	0.300
09:00 - 10:00	8	116	0.055	8	116	0.101	8	116	0.156
10:00 - 11:00	8	116	0.030	8	116	0.057	8	116	0.087
11:00 - 12:00	8	116	0.044	8	116	0.045	8	116	0.089
12:00 - 13:00	8	116	0.069	8	116	0.080	8	116	0.149
13:00 - 14:00	8	116	0.084	8	116	0.073	8	116	0.157
14:00 - 15:00	8	116	0.078	8	116	0.067	8	116	0.145
15:00 - 16:00	8	116	0.113	8	116	0.061	8	116	0.174
16:00 - 17:00	8	116	0.141	8	116	0.057	8	116	0.198
17:00 - 18:00	**8**	**116**	**0.218**	8	116	0.043	8	116	0.261
18:00 - 19:00	8	116	0.192	8	116	0.055	8	116	0.247
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.115			1.149			2.264

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:	20 - 340 (units:)
Survey date date range:	01/01/11 - 22/11/16
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
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 04 - EDUCATION/D - NURSERY
VEHICLES
Calculation factor: 100 sqm
Estimated TRIP rate value per 234 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated 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	2	900	0.333	0.780	2	900	0.167	0.390	2	900	0.500	1.170
08:00 - 09:00	**2**	**900**	**2.000**	**4.680**	2	900	0.889	2.080	2	900	2.889	6.760
09:00 - 10:00	2	900	1.611	3.770	**2**	**900**	**1.778**	**4.160**	**2**	**900**	**3.389**	**7.930**
10:00 - 11:00	2	900	0.222	0.520	2	900	0.333	0.780	2	900	0.555	1.300
11:00 - 12:00	2	900	0.444	1.040	2	900	0.167	0.390	2	900	0.611	1.430
12:00 - 13:00	2	900	1.444	3.380	2	900	1.722	4.030	2	900	3.166	7.410
13:00 - 14:00	2	900	1.056	2.470	2	900	1.000	2.340	2	900	2.056	4.810
14:00 - 15:00	2	900	1.111	2.600	2	900	0.722	1.690	2	900	1.833	4.290
15:00 - 16:00	2	900	0.278	0.650	2	900	0.944	2.210	2	900	1.222	2.860
16:00 - 17:00	2	900	0.667	1.560	2	900	0.611	1.430	2	900	1.278	2.990
17:00 - 18:00	2	900	1.000	2.340	2	900	1.667	3.900	2	900	2.667	6.240
18:00 - 19:00	2	900	0.000	0.000	2	900	0.222	0.520	2	900	0.222	0.520
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			10.166	23.790			10.222	23.920			20.388	47.710

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.*

15.0 Appendix C – LinSig Traffic Analysis Output Data – Uncontrolled Junctions 1-5

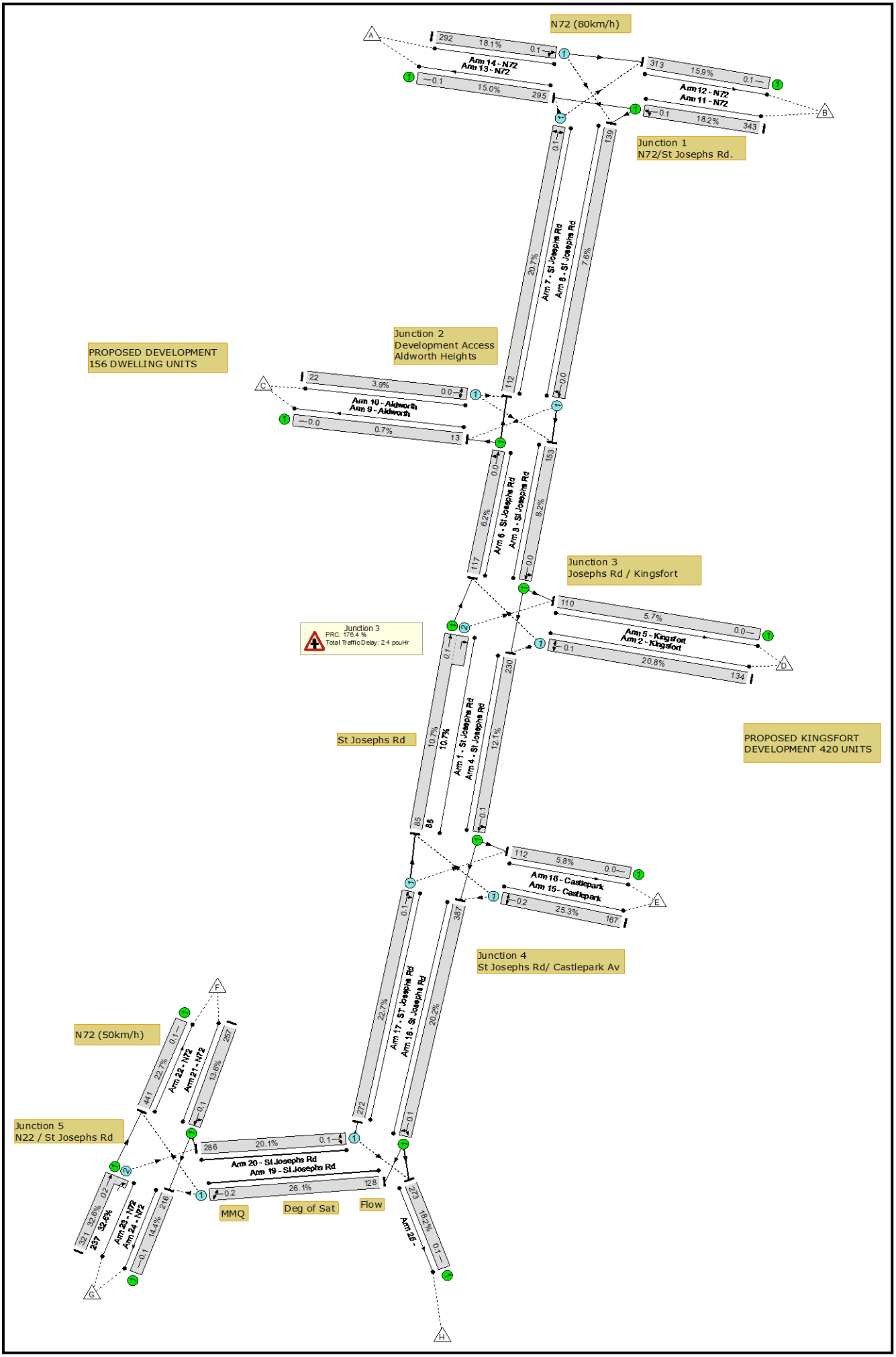
Basic Results Summary

User and Project Details

Project:	**Aldworth Heights Residential Development**
Title:	**Existing Road Network with Development**
Location:	
Additional detail:	1 Hour Traffic Flows
File name:	Mallow Traffic Model 2023.lsg3x
Author:	Martin Hanley
Company:	Consulting Engineers
Address:	

Scenario 1: 'Morning Peak 2023' (FG1: 'Morning Peak 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram


N72 (80km/h)
Arm 14 - N72
Arm 13 - N72
Arm 12 - N72
Arm 11 - N72
Junction 1
N72/St Josephs Rd.
Arm 7 - St Josephs Rd
Arm 8 - St Josephs Rd
Junction 2
Development Access
Aldworth Heights
PROPOSED DEVELOPMENT
156 DWELLING UNITS
Arm 10 - Aldworth
Arm 9 - Aldworth
Arm 6 - St Josephs Rd
Arm 3 - St Josephs Rd
Junction 3
Josephs Rd / Kingsfort
Junction 3
PRC: 179.4 %
Total Traffic Delay: 2.4 pcuHr
Arm 5 - Kingsfort
Arm 2 - Kingsfort
St Josephs Rd
Arm 1 - St Josephs Rd
Arm 4 - St Josephs Rd
PROPOSED KINGSFORT
DEVELOPMENT 420 UNITS
Arm 16 - Castlepark
Arm 15 - Castlepark
Junction 4
St Josephs Rd/ Castlepark Av
Arm 17 - ST Josephs Rd
Arm 18 - St Josephs Rd
N72 (50km/h)
Arm 22 - N72
Arm 21 - N72
Junction 5
N22 / St Josephs Rd
Arm 20 - St Josephs Rd
Arm 19 - St Josephs Rd
Arm 23 - N72
Arm 24 - N72
Arm 25 -
MMQ
Deg of Sat
Flow

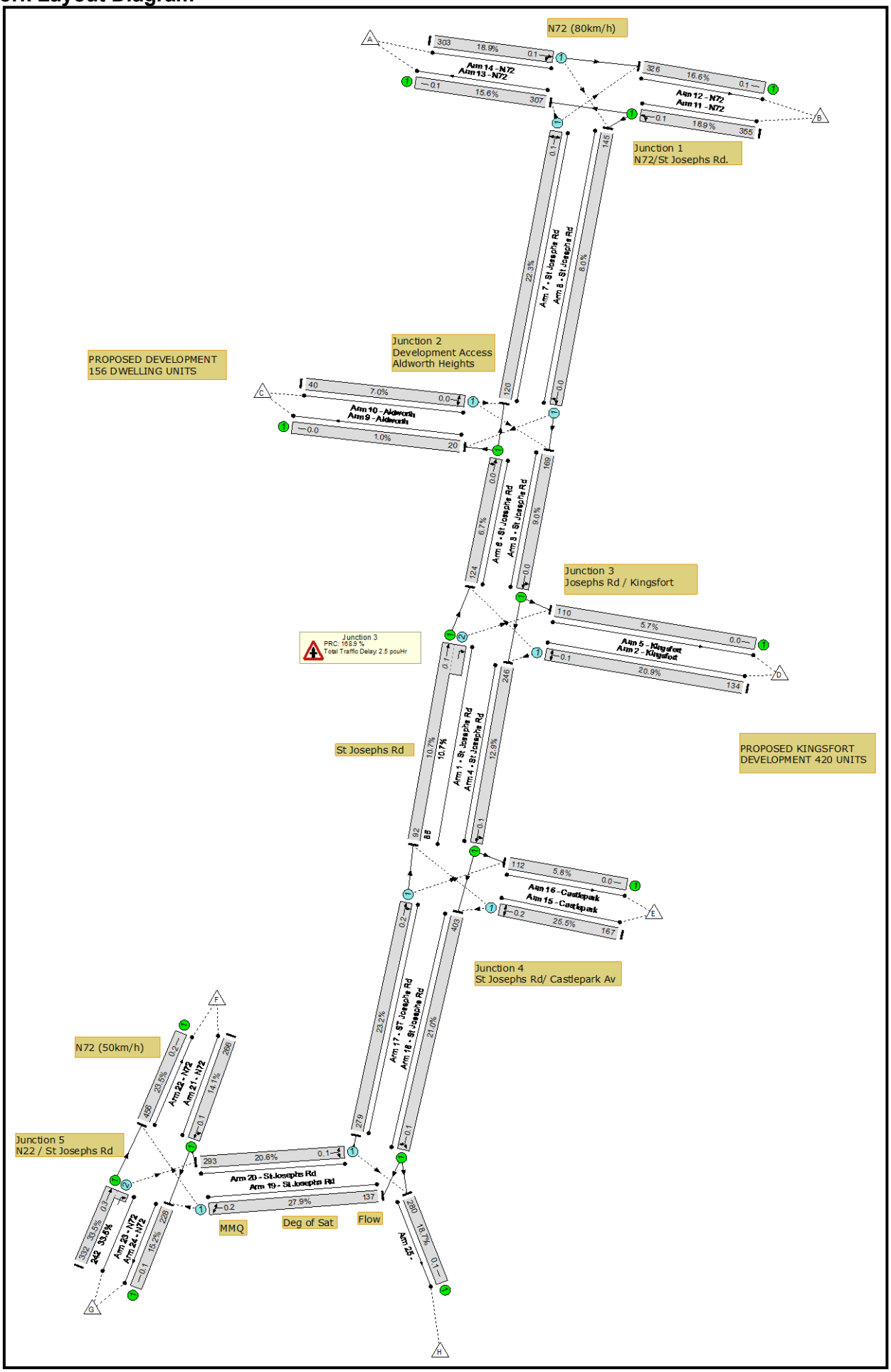
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	**32.6%**	**1044**	**0**	**0**	**2.4**	-	-
Junction 3	-	-	-		-	-	-	-	-	**32.6%**	**1044**	**0**	**0**	**2.4**	-	-
1/1+1/2	St Josephs Rd Right Ahead	U+O	-		-	-	-	170	1915:1735	10.7 : 10.7%	85	0	0	0.1	1.3	0.1
2/1	Kingsfort Left Right	O	-		-	-	-	134	1692	20.8%	134	0	0	0.1	3.5	0.1
3/1	St Josephs Rd Ahead Left	U	-		-	-	-	153	1869	8.2%	-	-	-	0.0	1.0	0.0
4/1	St Josephs Rd Left Ahead	U	-		-	-	-	230	1908	12.1%	-	-	-	0.1	1.1	0.1
5/1	Kingsfort	U	-		-	-	-	110	1915	5.7%	-	-	-	0.0	1.0	0.0
6/1	St Josephs Rd Ahead Left	U	-		-	-	-	117	1879	6.2%	-	-	-	0.0	1.0	0.0
7/1	St Josephs Rd Right Left	O	-		-	-	-	112	1721	20.7%	112	0	0	0.1	4.2	0.1
8/1	St Josephs Rd Ahead Right	O	-		-	-	-	139	1907	7.6%	4	0	0	0.0	1.1	0.0
9/1	Aldworth	U	-		-	-	-	13	1915	0.7%	-	-	-	0.0	0.9	0.0
10/1	Aldworth Right Left	O	-		-	-	-	22	1639	3.9%	22	0	0	0.0	3.3	0.0
11/1	N72 Left Ahead	U	-		-	-	-	343	1880	18.2%	-	-	-	0.1	1.2	0.1
12/1	N72	U	-		-	-	-	313	1965	15.9%	-	-	-	0.1	1.1	0.1
13/1	N72	U	-		-	-	-	295	1965	15.0%	-	-	-	0.1	1.1	0.1
14/1	N72 Right Ahead	O	-		-	-	-	292	1930	18.1%	35	0	0	0.1	1.4	0.1
15/1	Castlepark Right Left	O	-		-	-	-	167	1668	25.3%	167	0	0	0.2	3.7	0.2
16/1	Castlepark	U	-		-	-	-	112	1915	5.8%	-	-	-	0.0	1.0	0.0
17/1	ST Josephs Rd Ahead Right	O	-		-	-	-	272	1861	22.7%	106	0	0	0.1	1.9	0.1

18/1	St Josephs Rd Right Ahead	U	-		-	-	-	387	1915	20.2%	-	-	-	0.1	1.2	0.1
19/1	St Josephs Rd Right Left	O	-		-	-	-	128	1500	26.1%	128	0	0	0.2	5.0	0.2
20/1	St Josephs Rd Left Right	O	-		-	-	-	286	1500	20.1%	14	0	0	0.1	1.6	0.1
21/1	N72 Left Ahead	U	-		-	-	-	257	1886	13.6%	-	-	-	0.1	1.1	0.1
22/1	N72	U	-		-	-	-	441	1940	22.7%	-	-	-	0.1	1.2	0.1
23/1+23/2	N72 Right Ahead	U+O	-		-	-	-	558	1915:1500	32.6 : 32.6%	237	0	0	0.2	1.6	0.2
24/1	N72	U	-		-	-	-	216	1500	14.4%	-	-	-	0.1	1.4	0.1
25/1		U	-		-	-	-	273	1500	18.2%	-	-	-	0.1	1.5	0.1

C1 - Fox Hounds Stream: 1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 0.00 Cycle Time (s): 90
PRC Over All Lanes (%): 176.4 Total Delay Over All Lanes(pcuHr): 2.41

Scenario 2: 'Morning Peak 2025 ' (FG2: 'Morning Peak 2025', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



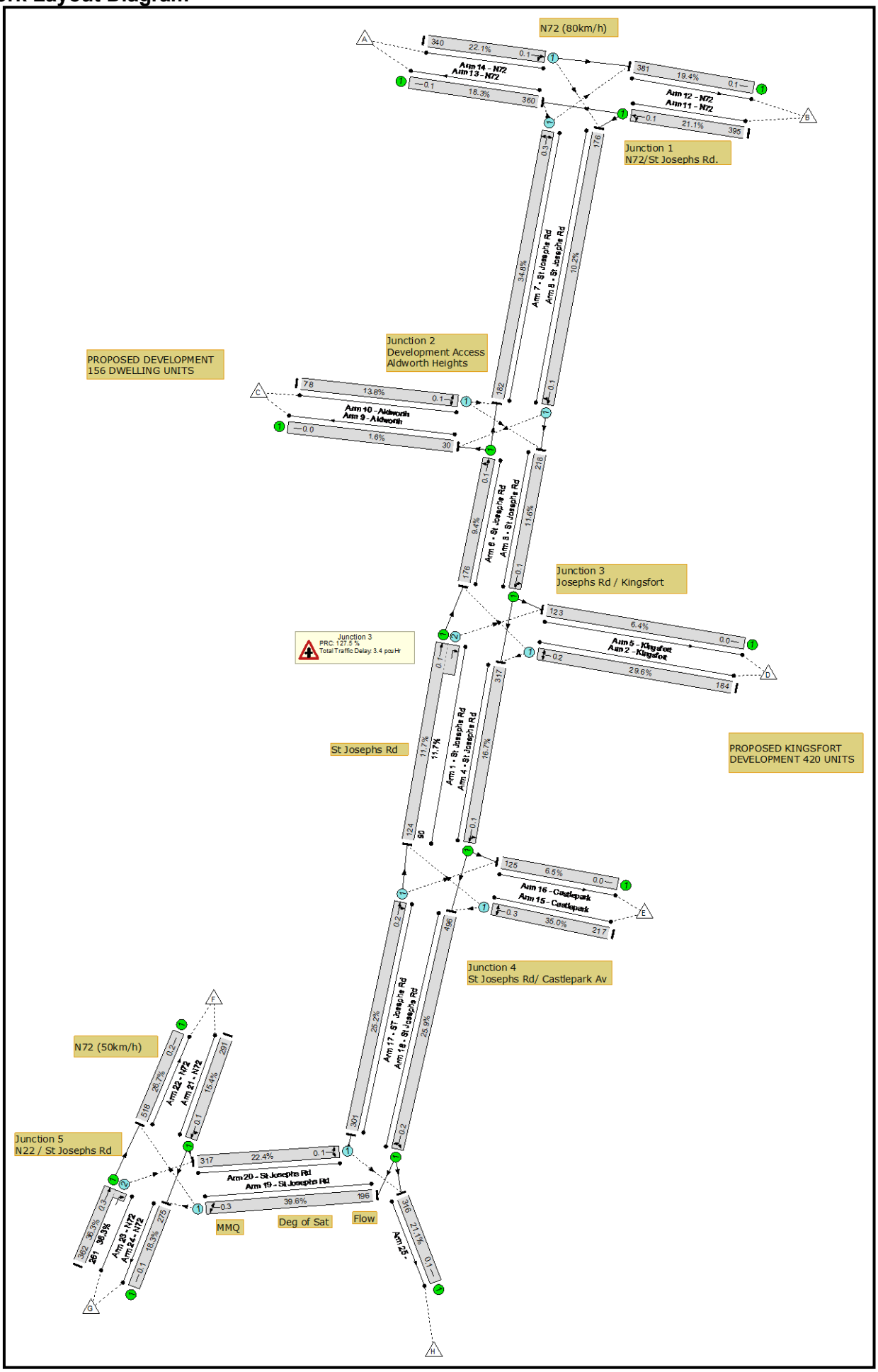
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	**33.5%**	**1088**	**0**	**0**	**2.5**	-	-
Junction 3	-	-	-		-	-	-	-	-	**33.5%**	**1088**	**0**	**0**	**2.5**	-	-
1/1+1/2	St Josephs Rd Right Ahead	U+O	-		-	-	-	177	1915:1735	10.7 : 10.7%	85	0	0	0.1	1.2	0.1
2/1	Kingsfort Left Right	O	-		-	-	-	134	1692	20.9%	134	0	0	0.1	3.6	0.1
3/1	St Josephs Rd Ahead Left	U	-		-	-	-	169	1873	9.0%	-	-	-	0.0	1.1	0.0
4/1	St Josephs Rd Left Ahead	U	-		-	-	-	246	1908	12.9%	-	-	-	0.1	1.1	0.1
5/1	Kingsfort	U	-		-	-	-	110	1915	5.7%	-	-	-	0.0	1.0	0.0
6/1	St Josephs Rd Ahead Left	U	-		-	-	-	124	1862	6.7%	-	-	-	0.0	1.0	0.0
7/1	St Josephs Rd Right Left	O	-		-	-	-	120	1721	22.3%	120	0	0	0.1	4.3	0.1
8/1	St Josephs Rd Ahead Right	O	-		-	-	-	145	1903	8.0%	6	0	0	0.0	1.1	0.0
9/1	Aldworth	U	-		-	-	-	20	1915	1.0%	-	-	-	0.0	0.9	0.0
10/1	Aldworth Right Left	O	-		-	-	-	40	1630	7.0%	40	0	0	0.0	3.4	0.0
11/1	N72 Left Ahead	U	-		-	-	-	355	1879	18.9%	-	-	-	0.1	1.2	0.1
12/1	N72	U	-		-	-	-	326	1965	16.6%	-	-	-	0.1	1.1	0.1
13/1	N72	U	-		-	-	-	307	1965	15.6%	-	-	-	0.1	1.1	0.1
14/1	N72 Right Ahead	O	-		-	-	-	303	1930	18.9%	37	0	0	0.1	1.4	0.1
15/1	Castlepark Right Left	O	-		-	-	-	167	1668	25.5%	167	0	0	0.2	3.7	0.2
16/1	Castlepark	U	-		-	-	-	112	1915	5.8%	-	-	-	0.0	1.0	0.0
17/1	ST Josephs Rd Ahead Right	O	-		-	-	-	279	1862	23.2%	106	0	0	0.2	1.9	0.2

18/1	St Josephs Rd Right Ahead	U	-		-	-	-	403	1915	21.0%	-	-	-	0.1	1.2	0.1
19/1	St Josephs Rd Right Left	O	-		-	-	-	137	1500	27.9%	137	0	0	0.2	5.1	0.2
20/1	St Josephs Rd Left Right	O	-		-	-	-	293	1500	20.6%	14	0	0	0.1	1.6	0.1
21/1	N72 Left Ahead	U	-		-	-	-	266	1886	14.1%	-	-	-	0.1	1.1	0.1
22/1	N72	U	-		-	-	-	456	1940	23.5%	-	-	-	0.2	1.2	0.2
23/1+23/2	N72 Right Ahead	U+O	-		-	-	-	574	1915:1500	33.5 : 33.5%	242	0	0	0.3	1.6	0.3
24/1	N72	U	-		-	-	-	228	1500	15.2%	-	-	-	0.1	1.4	0.1
25/1		U	-		-	-	-	280	1500	18.7%	-	-	-	0.1	1.5	0.1

C1 - Fox Hounds Stream: 1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 0.00 Cycle Time (s): 90
PRC Over All Lanes (%): 168.9 Total Delay Over All Lanes(pcuHr): 2.54

Scenario 3: 'Morning Peak 2030' (FG3: 'Morning Peak 2030', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



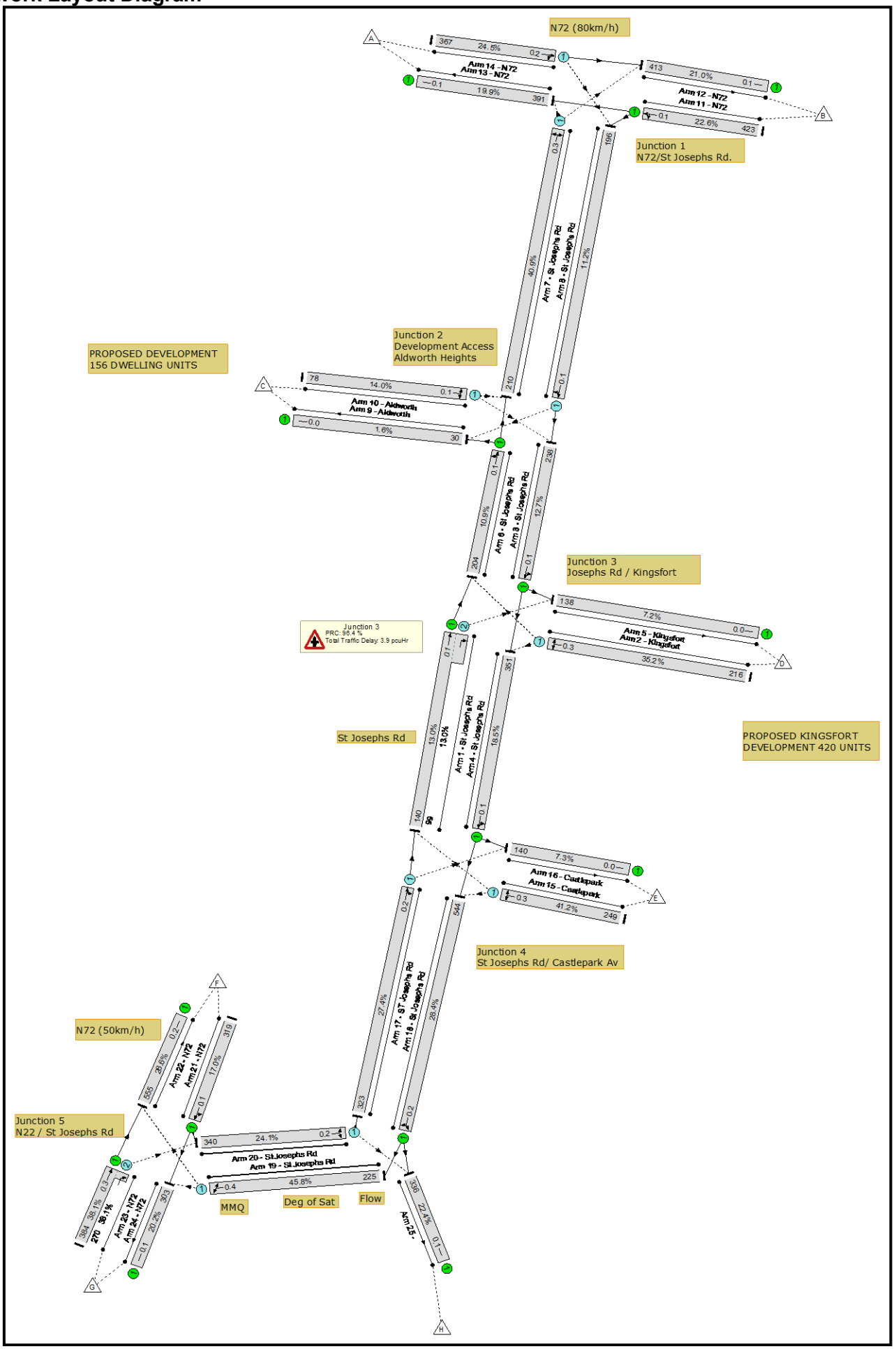
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	**39.6%**	**1397**	**0**	**0**	**3.4**	-	-
Junction 3	-	-	-		-	-	-	-	-	**39.6%**	**1397**	**0**	**0**	**3.4**	-	-
1/1+1/2	St Josephs Rd Right Ahead	U+O	-		-	-	-	214	1915:1735	11.7 : 11.7%	90	0	0	0.1	1.1	0.1
2/1	Kingsfort Left Right	O	-		-	-	-	184	1696	29.6%	184	0	0	0.2	4.1	0.2
3/1	St Josephs Rd Ahead Left	U	-		-	-	-	218	1872	11.6%	-	-	-	0.1	1.1	0.1
4/1	St Josephs Rd Left Ahead	U	-		-	-	-	317	1902	16.7%	-	-	-	0.1	1.1	0.1
5/1	Kingsfort	U	-		-	-	-	123	1915	6.4%	-	-	-	0.0	1.0	0.0
6/1	St Josephs Rd Ahead Left	U	-		-	-	-	176	1867	9.4%	-	-	-	0.1	1.1	0.1
7/1	St Josephs Rd Right Left	O	-		-	-	-	182	1721	34.8%	182	0	0	0.3	5.3	0.3
8/1	St Josephs Rd Ahead Right	O	-		-	-	-	176	1896	10.2%	12	0	0	0.1	1.2	0.1
9/1	Aldworth	U	-		-	-	-	30	1915	1.6%	-	-	-	0.0	1.0	0.0
10/1	Aldworth Right Left	O	-		-	-	-	78	1622	13.8%	78	0	0	0.1	3.7	0.1
11/1	N72 Left Ahead	U	-		-	-	-	395	1875	21.1%	-	-	-	0.1	1.2	0.1
12/1	N72	U	-		-	-	-	381	1965	19.4%	-	-	-	0.1	1.1	0.1
13/1	N72	U	-		-	-	-	360	1965	18.3%	-	-	-	0.1	1.1	0.1
14/1	N72 Right Ahead	O	-		-	-	-	340	1923	22.1%	50	0	0	0.1	1.5	0.1
15/1	Castlepark Right Left	O	-		-	-	-	217	1677	35.0%	217	0	0	0.3	4.5	0.3
16/1	Castlepark	U	-		-	-	-	125	1915	6.5%	-	-	-	0.0	1.0	0.0
17/1	ST Josephs Rd Ahead Right	O	-		-	-	-	301	1863	25.2%	111	0	0	0.2	2.0	0.2

18/1	St Josephs Rd Right Ahead	U	-		-	-	-	496	1915	25.9%	-	-	-	0.2	1.3	0.2
19/1	St Josephs Rd Right Left	O	-		-	-	-	196	1500	39.6%	196	0	0	0.3	6.0	0.3
20/1	St Josephs Rd Left Right	O	-		-	-	-	317	1500	22.4%	16	0	0	0.1	1.6	0.1
21/1	N72 Left Ahead	U	-		-	-	-	291	1886	15.4%	-	-	-	0.1	1.1	0.1
22/1	N72	U	-		-	-	-	518	1940	26.7%	-	-	-	0.2	1.3	0.2
23/1+23/2	N72 Right Ahead	U+O	-		-	-	-	623	1915:1500	36.3 : 36.3%	261	0	0	0.3	1.6	0.3
24/1	N72	U	-		-	-	-	275	1500	18.3%	-	-	-	0.1	1.5	0.1
25/1		U	-		-	-	-	316	1500	21.1%	-	-	-	0.1	1.5	0.1

C1 - Fox Hounds Stream: 1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 0.00 Cycle Time (s): 90
PRC Over All Lanes (%): 127.5 Total Delay Over All Lanes(pcuHr): 3.37

Scenario 4: 'Morning Peak 2040' (FG4: 'Morning Peak 2040', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



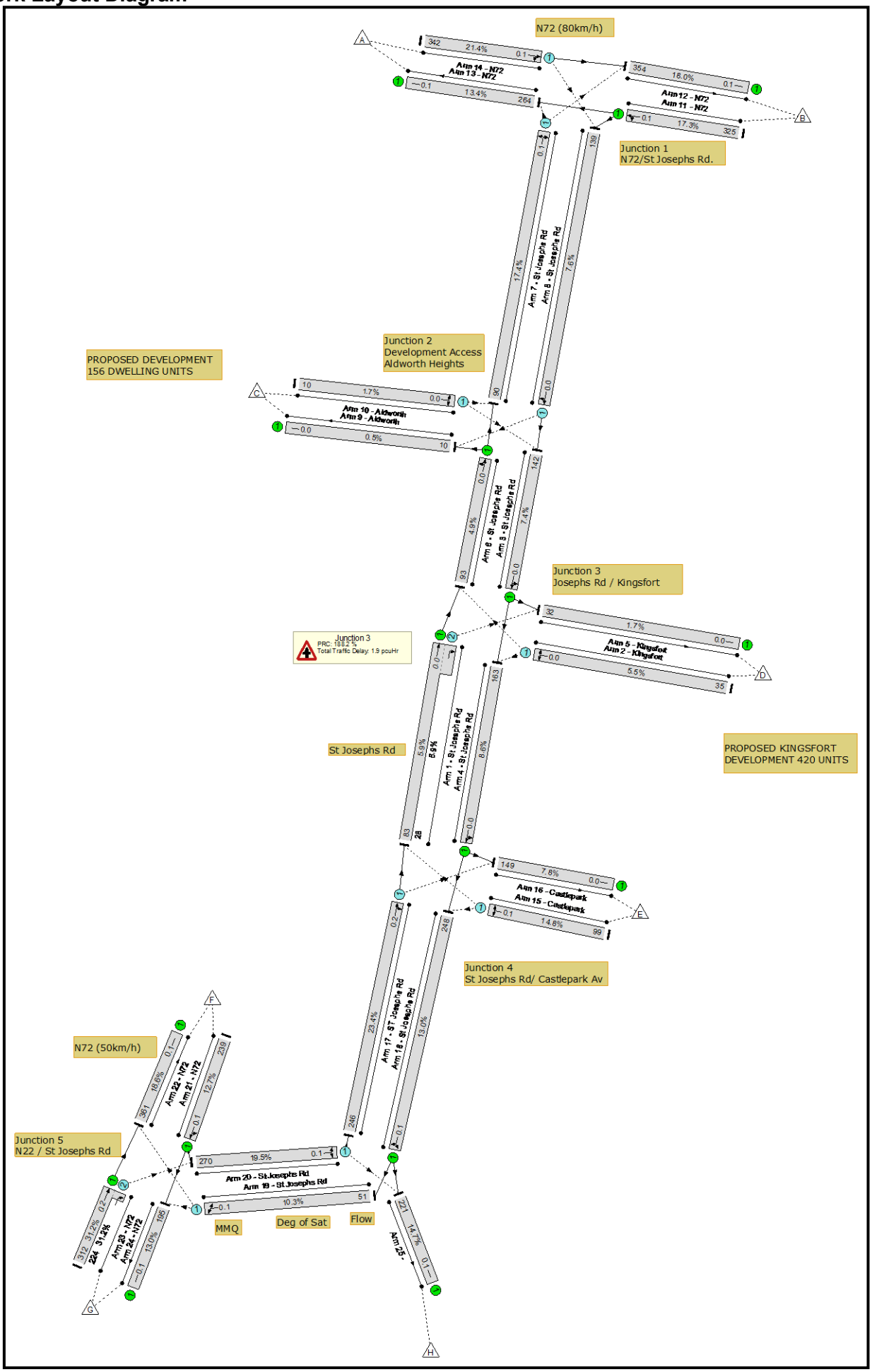
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	**45.8%**	**1555**	**0**	**0**	**3.9**	-	-
Junction 3	-	-	-		-	-	-	-	-	**45.8%**	**1555**	**0**	**0**	**3.9**	-	-
1/1+1/2	St Josephs Rd Right Ahead	U+O	-		-	-	-	239	1915:1735	13.0 : 13.0%	99	0	0	0.1	1.1	0.1
2/1	Kingsfort Left Right	O	-		-	-	-	216	1698	35.2%	216	0	0	0.3	4.5	0.3
3/1	St Josephs Rd Ahead Left	U	-		-	-	-	238	1869	12.7%	-	-	-	0.1	1.1	0.1
4/1	St Josephs Rd Left Ahead	U	-		-	-	-	351	1899	18.5%	-	-	-	0.1	1.2	0.1
5/1	Kingsfort	U	-		-	-	-	138	1915	7.2%	-	-	-	0.0	1.0	0.0
6/1	St Josephs Rd Ahead Left	U	-		-	-	-	204	1874	10.9%	-	-	-	0.1	1.1	0.1
7/1	St Josephs Rd Right Left	O	-		-	-	-	210	1721	40.9%	210	0	0	0.3	5.9	0.3
8/1	St Josephs Rd Ahead Right	O	-		-	-	-	196	1898	11.2%	12	0	0	0.1	1.2	0.1
9/1	Aldworth	U	-		-	-	-	30	1915	1.6%	-	-	-	0.0	1.0	0.0
10/1	Aldworth Right Left	O	-		-	-	-	78	1622	14.0%	78	0	0	0.1	3.8	0.1
11/1	N72 Left Ahead	U	-		-	-	-	423	1874	22.6%	-	-	-	0.1	1.2	0.1
12/1	N72	U	-		-	-	-	413	1965	21.0%	-	-	-	0.1	1.2	0.1
13/1	N72	U	-		-	-	-	391	1965	19.9%	-	-	-	0.1	1.1	0.1
14/1	N72 Right Ahead	O	-		-	-	-	367	1919	24.5%	59	0	0	0.2	1.6	0.2
15/1	Castlepark Right Left	O	-		-	-	-	249	1681	41.2%	249	0	0	0.3	5.1	0.3
16/1	Castlepark	U	-		-	-	-	140	1915	7.3%	-	-	-	0.0	1.0	0.0
17/1	ST Josephs Rd Ahead Right	O	-		-	-	-	323	1863	27.4%	120	0	0	0.2	2.1	0.2

18/1	St Josephs Rd Right Ahead	U	-		-	-	-	544	1915	28.4%	-	-	-	0.2	1.3	0.2
19/1	St Josephs Rd Right Left	O	-		-	-	-	225	1500	45.8%	225	0	0	0.4	6.7	0.4
20/1	St Josephs Rd Left Right	O	-		-	-	-	340	1500	24.1%	17	0	0	0.2	1.7	0.2
21/1	N72 Left Ahead	U	-		-	-	-	319	1878	17.0%	-	-	-	0.1	1.2	0.1
22/1	N72	U	-		-	-	-	555	1940	28.6%	-	-	-	0.2	1.3	0.2
23/1+23/2	N72 Right Ahead	U+O	-		-	-	-	654	1915:1500	38.1 : 38.1%	270	0	0	0.3	1.7	0.3
24/1	N72	U	-		-	-	-	303	1500	20.2%	-	-	-	0.1	1.5	0.1
25/1		U	-		-	-	-	336	1500	22.4%	-	-	-	0.1	1.5	0.1

C1 - Fox Hounds Stream: 1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 0.00 Cycle Time (s): 90
PRC Over All Lanes (%): 96.4 Total Delay Over All Lanes(pcuHr): 3.93

Scenario 5: 'Evening Peak 2023' (FG5: 'Evening Peak 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



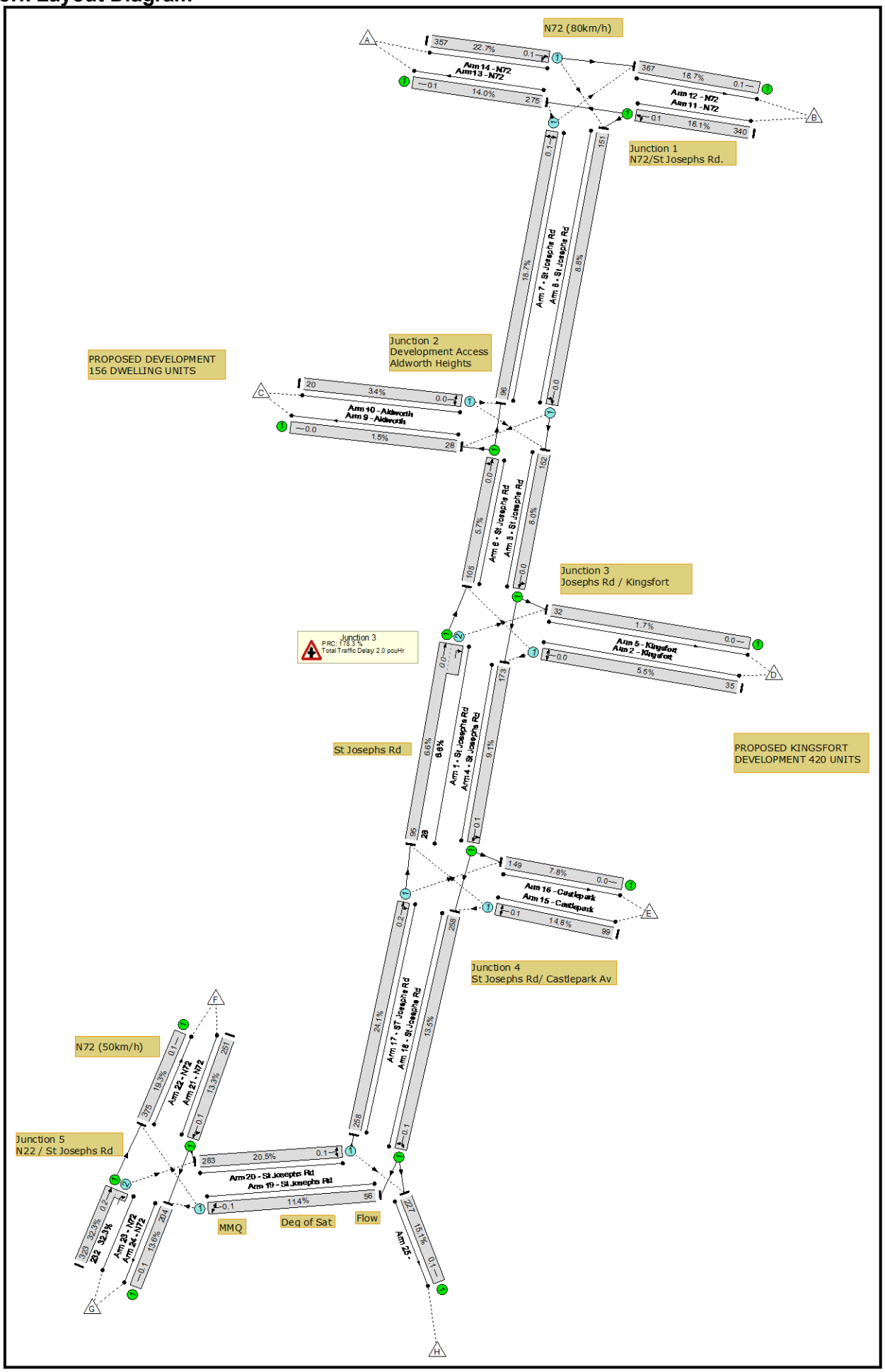
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	**31.2%**	**748**	**0**	**0**	**1.9**	-	-
Junction 3	-	-	-		-	-	-	-	-	**31.2%**	**748**	**0**	**0**	**1.9**	-	-
1/1+1/2	St Josephs Rd Right Ahead	U+O	-		-	-	-	111	1915:1735	5.9 : 5.9%	28	0	0	0.0	1.0	0.0
2/1	Kingsfort Left Right	O	-		-	-	-	35	1697	5.5%	35	0	0	0.0	3.0	0.0
3/1	St Josephs Rd Ahead Left	U	-		-	-	-	142	1907	7.4%	-	-	-	0.0	1.0	0.0
4/1	St Josephs Rd Left Ahead	U	-		-	-	-	163	1898	8.6%	-	-	-	0.0	1.0	0.0
5/1	Kingsfort	U	-		-	-	-	32	1915	1.7%	-	-	-	0.0	1.0	0.0
6/1	St Josephs Rd Ahead Left	U	-		-	-	-	93	1885	4.9%	-	-	-	0.0	1.0	0.0
7/1	St Josephs Rd Right Left	O	-		-	-	-	90	1736	17.4%	90	0	0	0.1	4.2	0.1
8/1	St Josephs Rd Ahead Right	O	-		-	-	-	139	1907	7.6%	4	0	0	0.0	1.1	0.0
9/1	Aldworth	U	-		-	-	-	10	1915	0.5%	-	-	-	0.0	0.9	0.0
10/1	Aldworth Right Left	O	-		-	-	-	10	1623	1.7%	10	0	0	0.0	3.1	0.0
11/1	N72 Left Ahead	U	-		-	-	-	325	1882	17.3%	-	-	-	0.1	1.2	0.1
12/1	N72	U	-		-	-	-	354	1965	18.0%	-	-	-	0.1	1.1	0.1
13/1	N72	U	-		-	-	-	264	1965	13.4%	-	-	-	0.1	1.1	0.1
14/1	N72 Right Ahead	O	-		-	-	-	342	1928	21.4%	44	0	0	0.1	1.4	0.1
15/1	Castlepark Right Left	O	-		-	-	-	99	1670	14.8%	99	0	0	0.1	3.1	0.1
16/1	Castlepark	U	-		-	-	-	149	1915	7.8%	-	-	-	0.0	1.0	0.0
17/1	ST Josephs Rd Ahead Right	O	-		-	-	-	246	1837	23.4%	139	0	0	0.2	2.2	0.2

18/1	St Josephs Rd Right Ahead	U	-		-	-	-	248	1915	13.0%	-	-	-	0.1	1.1	0.1
19/1	St Josephs Rd Right Left	O	-		-	-	-	51	1500	10.3%	51	0	0	0.1	4.1	0.1
20/1	St Josephs Rd Left Right	O	-		-	-	-	270	1500	19.5%	24	0	0	0.1	1.6	0.1
21/1	N72 Left Ahead	U	-		-	-	-	239	1886	12.7%	-	-	-	0.1	1.1	0.1
22/1	N72	U	-		-	-	-	361	1940	18.6%	-	-	-	0.1	1.1	0.1
23/1+23/2	N72 Right Ahead	U+O	-		-	-	-	536	1915:1500	31.2 : 31.2%	224	0	0	0.2	1.5	0.2
24/1	N72	U	-		-	-	-	195	1500	13.0%	-	-	-	0.1	1.4	0.1
25/1		U	-		-	-	-	221	1500	14.7%	-	-	-	0.1	1.4	0.1

C1 - Fox Hounds Stream: 1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 0.00 Cycle Time (s): 90
PRC Over All Lanes (%): 188.2 Total Delay Over All Lanes(pcuHr): 1.88

Scenario 6: 'Evening Peak 2025' (FG6: 'Evening Peak 2025', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



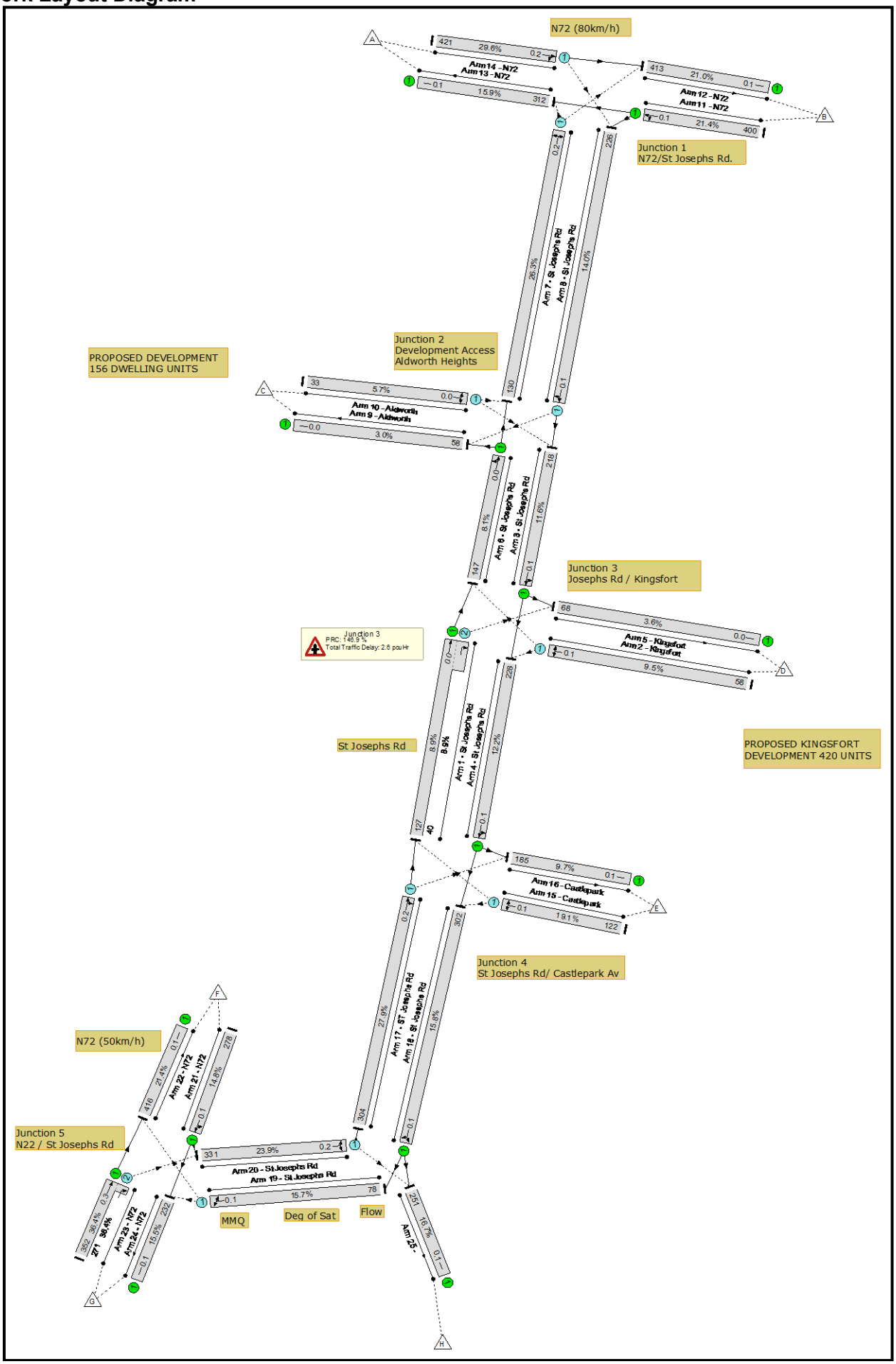
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	**32.3%**	**791**	**0**	**0**	**2.0**	-	-
Junction 3	-	-	-		-	-	-	-	-	**32.3%**	**791**	**0**	**0**	**2.0**	-	-
1/1+1/2	St Josephs Rd Right Ahead	U+O	-		-	-	-	123	1915:1735	6.6 : 6.6%	28	0	0	0.0	1.0	0.0
2/1	Kingsfort Left Right	O	-		-	-	-	35	1697	5.5%	35	0	0	0.0	3.0	0.0
3/1	St Josephs Rd Ahead Left	U	-		-	-	-	152	1907	8.0%	-	-	-	0.0	1.0	0.0
4/1	St Josephs Rd Left Ahead	U	-		-	-	-	173	1899	9.1%	-	-	-	0.1	1.0	0.1
5/1	Kingsfort	U	-		-	-	-	32	1915	1.7%	-	-	-	0.0	1.0	0.0
6/1	St Josephs Rd Ahead Left	U	-		-	-	-	105	1845	5.7%	-	-	-	0.0	1.0	0.0
7/1	St Josephs Rd Right Left	O	-		-	-	-	96	1735	18.7%	96	0	0	0.1	4.3	0.1
8/1	St Josephs Rd Ahead Right	O	-		-	-	-	151	1892	8.8%	12	0	0	0.0	1.2	0.0
9/1	Aldworth	U	-		-	-	-	28	1915	1.5%	-	-	-	0.0	1.0	0.0
10/1	Aldworth Right Left	O	-		-	-	-	20	1616	3.4%	20	0	0	0.0	3.2	0.0
11/1	N72 Left Ahead	U	-		-	-	-	340	1880	18.1%	-	-	-	0.1	1.2	0.1
12/1	N72	U	-		-	-	-	367	1965	18.7%	-	-	-	0.1	1.1	0.1
13/1	N72	U	-		-	-	-	275	1965	14.0%	-	-	-	0.1	1.1	0.1
14/1	N72 Right Ahead	O	-		-	-	-	357	1925	22.7%	49	0	0	0.1	1.5	0.1
15/1	Castlepark Right Left	O	-		-	-	-	99	1670	14.8%	99	0	0	0.1	3.2	0.1
16/1	Castlepark	U	-		-	-	-	149	1915	7.8%	-	-	-	0.0	1.0	0.0
17/1	ST Josephs Rd Ahead Right	O	-		-	-	-	258	1841	24.1%	139	0	0	0.2	2.2	0.2

18/1	St Josephs Rd Right Ahead	U	-		-	-	-	258	1915	13.5%	-	-	-	0.1	1.1	0.1
19/1	St Josephs Rd Right Left	O	-		-	-	-	56	1500	11.4%	56	0	0	0.1	4.1	0.1
20/1	St Josephs Rd Left Right	O	-		-	-	-	283	1500	20.5%	25	0	0	0.1	1.6	0.1
21/1	N72 Left Ahead	U	-		-	-	-	251	1883	13.3%	-	-	-	0.1	1.1	0.1
22/1	N72	U	-		-	-	-	375	1940	19.3%	-	-	-	0.1	1.1	0.1
23/1+23/2	N72 Right Ahead	U+O	-		-	-	-	555	1915:1500	32.3 : 32.3%	232	0	0	0.2	1.5	0.2
24/1	N72	U	-		-	-	-	204	1500	13.6%	-	-	-	0.1	1.4	0.1
25/1		U	-		-	-	-	227	1500	15.1%	-	-	-	0.1	1.4	0.1

C1 - Fox Hounds Stream: 1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 0.00 Cycle Time (s): 90
PRC Over All Lanes (%): 178.3 Total Delay Over All Lanes(pcuHr): 2.00

Scenario 7: 'Evening Peak 2030' (FG7: 'Evening Peak 2030', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



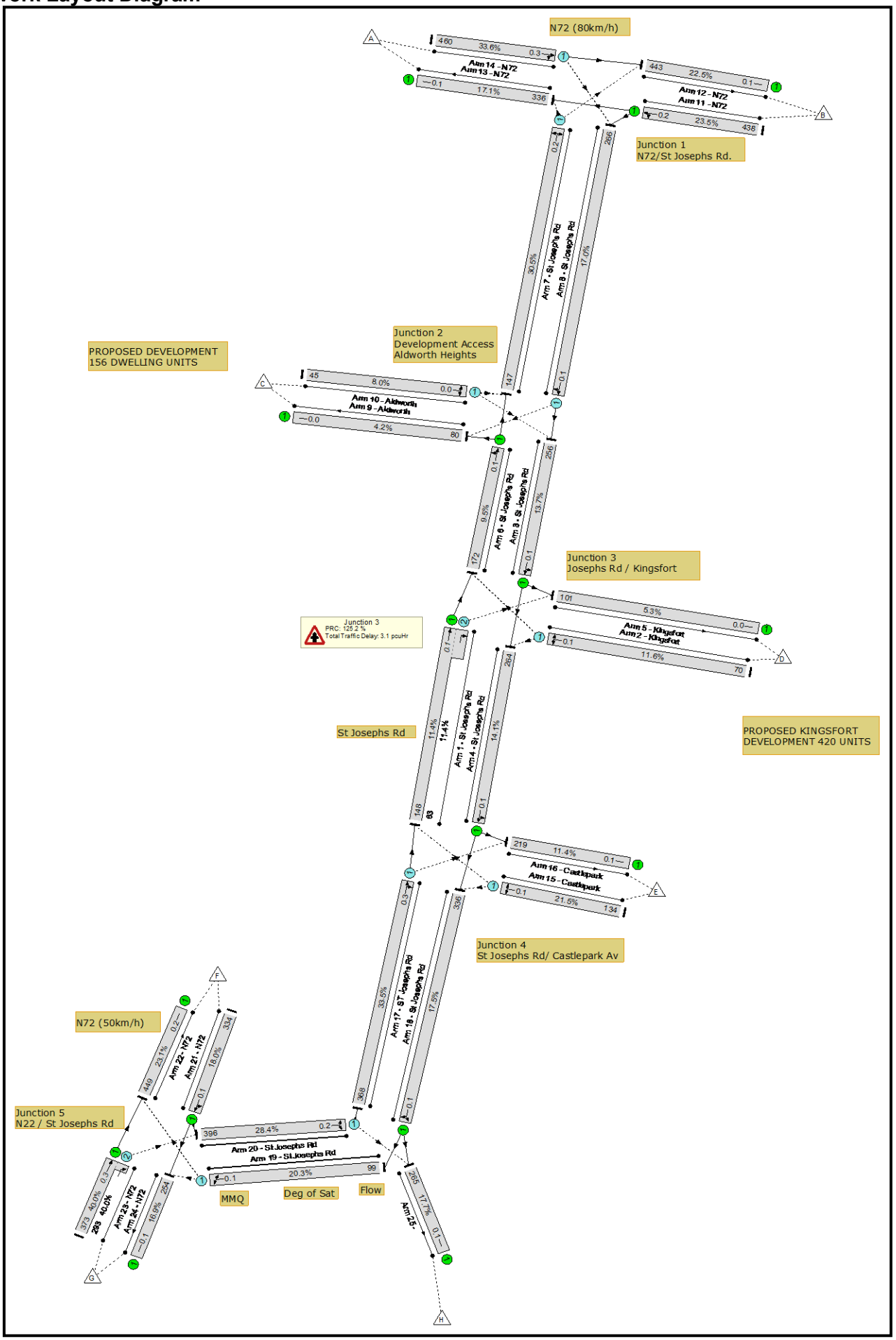
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	**36.4%**	**1023**	**0**	**0**	**2.6**	-	-
Junction 3	-	-	-		-	-	-	-	-	**36.4%**	**1023**	**0**	**0**	**2.6**	-	-
1/1+1/2	St Josephs Rd Right Ahead	U+O	-		-	-	-	167	1915:1735	8.9 : 8.9%	40	0	0	0.0	1.1	0.0
2/1	Kingsfort Left Right	O	-		-	-	-	58	1704	9.5%	58	0	0	0.1	3.3	0.1
3/1	St Josephs Rd Ahead Left	U	-		-	-	-	218	1879	11.6%	-	-	-	0.1	1.1	0.1
4/1	St Josephs Rd Left Ahead	U	-		-	-	-	228	1873	12.2%	-	-	-	0.1	1.1	0.1
5/1	Kingsfort	U	-		-	-	-	68	1915	3.6%	-	-	-	0.0	1.0	0.0
6/1	St Josephs Rd Ahead Left	U	-		-	-	-	147	1822	8.1%	-	-	-	0.0	1.1	0.0
7/1	St Josephs Rd Right Left	O	-		-	-	-	130	1732	26.3%	130	0	0	0.2	4.9	0.2
8/1	St Josephs Rd Ahead Right	O	-		-	-	-	226	1880	14.0%	28	0	0	0.1	1.3	0.1
9/1	Aldworth	U	-		-	-	-	58	1915	3.0%	-	-	-	0.0	1.0	0.0
10/1	Aldworth Right Left	O	-		-	-	-	33	1610	5.7%	33	0	0	0.0	3.3	0.0
11/1	N72 Left Ahead	U	-		-	-	-	400	1866	21.4%	-	-	-	0.1	1.2	0.1
12/1	N72	U	-		-	-	-	413	1965	21.0%	-	-	-	0.1	1.2	0.1
13/1	N72	U	-		-	-	-	312	1965	15.9%	-	-	-	0.1	1.1	0.1
14/1	N72 Right Ahead	O	-		-	-	-	421	1907	29.6%	85	0	0	0.2	1.8	0.2
15/1	Castlepark Right Left	O	-		-	-	-	122	1678	19.1%	122	0	0	0.1	3.5	0.1
16/1	Castlepark	U	-		-	-	-	185	1915	9.7%	-	-	-	0.1	1.0	0.1
17/1	ST Josephs Rd Ahead Right	O	-		-	-	-	304	1846	27.9%	151	0	0	0.2	2.3	0.2

18/1	St Josephs Rd Right Ahead	U	-		-	-	-	302	1915	15.8%	-	-	-	0.1	1.1	0.1
19/1	St Josephs Rd Right Left	O	-		-	-	-	78	1500	15.7%	78	0	0	0.1	4.3	0.1
20/1	St Josephs Rd Left Right	O	-		-	-	-	331	1500	23.9%	27	0	0	0.2	1.7	0.2
21/1	N72 Left Ahead	U	-		-	-	-	278	1879	14.8%	-	-	-	0.1	1.1	0.1
22/1	N72	U	-		-	-	-	416	1940	21.4%	-	-	-	0.1	1.2	0.1
23/1+23/2	N72 Right Ahead	U+O	-		-	-	-	623	1915:1500	36.4 : 36.4%	271	0	0	0.3	1.7	0.3
24/1	N72	U	-		-	-	-	232	1500	15.5%	-	-	-	0.1	1.4	0.1
25/1		U	-		-	-	-	251	1500	16.7%	-	-	-	0.1	1.4	0.1

C1 - Fox Hounds Stream: 1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 0.00 Cycle Time (s): 90
PRC Over All Lanes (%): 146.9 Total Delay Over All Lanes(pcuHr): 2.59

Scenario 8: 'Evening Peak 2040' (FG8: 'Evening Peak 2040', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	**40.0%**	**1195**	**0**	**0**	**3.1**	-	-
Junction 3	-	-	-		-	-	-	-	-	**40.0%**	**1195**	**0**	**0**	**3.1**	-	-
1/1+1/2	St Josephs Rd Right Ahead	U+O	-		-	-	-	211	1915:1735	11.4 : 11.4%	63	0	0	0.1	1.1	0.1
2/1	Kingsfort Left Right	O	-		-	-	-	70	1703	11.6%	70	0	0	0.1	3.4	0.1
3/1	St Josephs Rd Ahead Left	U	-		-	-	-	256	1873	13.7%	-	-	-	0.1	1.1	0.1
4/1	St Josephs Rd Left Ahead	U	-		-	-	-	264	1868	14.1%	-	-	-	0.1	1.1	0.1
5/1	Kingsfort	U	-		-	-	-	101	1915	5.3%	-	-	-	0.0	1.0	0.0
6/1	St Josephs Rd Ahead Left	U	-		-	-	-	172	1805	9.5%	-	-	-	0.1	1.1	0.1
7/1	St Josephs Rd Right Left	O	-		-	-	-	147	1731	30.5%	147	0	0	0.2	5.4	0.2
8/1	St Josephs Rd Ahead Right	O	-		-	-	-	266	1875	17.0%	38	0	0	0.1	1.4	0.1
9/1	Aldworth	U	-		-	-	-	80	1915	4.2%	-	-	-	0.0	1.0	0.0
10/1	Aldworth Right Left	O	-		-	-	-	45	1612	8.0%	45	0	0	0.0	3.5	0.0
11/1	N72 Left Ahead	U	-		-	-	-	438	1861	23.5%	-	-	-	0.2	1.3	0.2
12/1	N72	U	-		-	-	-	443	1965	22.5%	-	-	-	0.1	1.2	0.1
13/1	N72	U	-		-	-	-	336	1965	17.1%	-	-	-	0.1	1.1	0.1
14/1	N72 Right Ahead	O	-		-	-	-	460	1901	33.6%	103	0	0	0.3	2.0	0.3
15/1	Castlepark Right Left	O	-		-	-	-	134	1680	21.5%	134	0	0	0.1	3.7	0.1
16/1	Castlepark	U	-		-	-	-	219	1915	11.4%	-	-	-	0.1	1.1	0.1
17/1	ST Josephs Rd Ahead Right	O	-		-	-	-	368	1849	33.5%	175	0	0	0.3	2.5	0.3

18/1	St Josephs Rd Right Ahead	U	-		-	-	-	336	1915	17.5%	-	-	-	0.1	1.1	0.1
19/1	St Josephs Rd Right Left	O	-		-	-	-	99	1500	20.3%	99	0	0	0.1	4.6	0.1
20/1	St Josephs Rd Left Right	O	-		-	-	-	396	1500	28.4%	28	0	0	0.2	1.8	0.2
21/1	N72 Left Ahead	U	-		-	-	-	334	1854	18.0%	-	-	-	0.1	1.2	0.1
22/1	N72	U	-		-	-	-	449	1940	23.1%	-	-	-	0.2	1.2	0.2
23/1+23/2	N72 Right Ahead	U+O	-		-	-	-	666	1915:1500	40.0 : 40.0%	293	0	0	0.3	1.8	0.3
24/1	N72	U	-		-	-	-	254	1500	16.9%	-	-	-	0.1	1.4	0.1
25/1		U	-		-	-	-	265	1500	17.7%	-	-	-	0.1	1.5	0.1

C1 - Fox Hounds Stream: 1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 0.00 Cycle Time (s): 90
PRC Over All Lanes (%): 125.2 Total Delay Over All Lanes(pcuHr): 3.10

16.0 Appendix D – LinSig Traffic Analysis Output Data – Signalised Junctions 6-8

Basic Results Summary

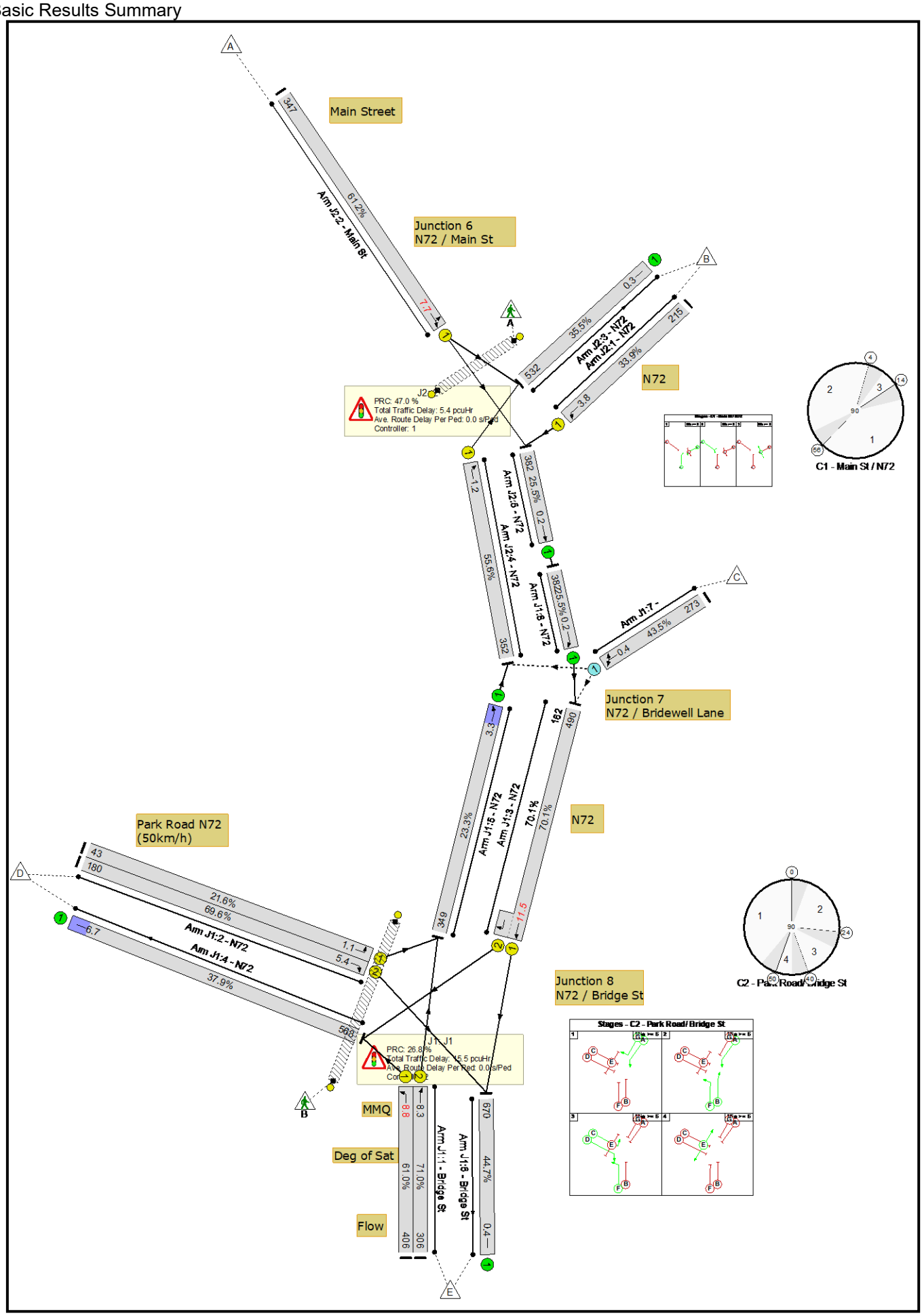
User and Project Details

Project:	**Aldworth Heights Residential Development**
Title:	**Existing Road Network with Development**
Location:	
Additional detail:	1 Hour Traffic Flows
File name:	Mallow Traffic Model 2023 Signalised Junctions.lsg3x
Author:	Martin Hanley
Company:	Consulting Engineers
Address:	

Scenario 1: 'Morning Peak 2023' (FG1: 'Morning Peak 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

Basic Results Summary



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	-	**71.0%**	**273**	**0**	**0**	**20.9**	-	-
J1: J1	-	-	-		-	-	-	-	-	-	**71.0%**	**273**	**0**	**0**	**15.5**	-	-
1/1	Bridge St Left	U	C2:F		1	35	-	406	1665	666	61.0%	-	-	-	3.2	28.3	8.8
1/2	Bridge St Ahead	U	C2:B		1	19	-	306	1940	431	71.0%	-	-	-	3.9	46.4	8.3
2/1	N72 Left	U	C2:C		1	11	-	43	1492	199	21.6%	-	-	-	0.6	46.4	1.1
2/2	N72 Right	U	C2:D		1	11	-	180	1940	259	69.6%	-	-	-	3.0	59.5	5.4
3/1+3/2	N72 Right Ahead	U	C2:A C2:G		1	59:35	-	652	1500:1500	699+231	70.1 : 70.1%	-	-	-	3.0	16.8	11.5
4/1	N72	U	-		-	-	-	568	1500	1500	37.9%	-	-	-	0.6	3.6	6.7
5/1	N72 Ahead	U	-		-	-	-	349	1500	1500	23.3%	-	-	-	0.3	2.8	3.3
6/1	Bridge St	U	-		-	-	-	670	1500	1500	44.7%	-	-	-	0.4	2.2	0.4
7/1	Ahead Right	O	-		-	-	-	273	1500	627	43.5%	273	0	0	0.4	5.1	0.4
8/1	N72 Ahead	U	-		-	-	-	382	1500	1500	25.5%	-	-	-	0.2	1.6	0.2
Ped Link: P1	Unnamed Ped Link	-	C2:E		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
J2: 2	-	-	-		-	-	-	-	-	-	**61.2%**	**0**	**0**	**0**	**5.4**	-	-
1/1	N72 Left	U	C1:B		1	37	-	215	1500	633	33.9%	-	-	-	1.3	21.8	3.8
2/1	Main St Left Ahead	U	C1:A		1	33	-	347	1500	567	61.2%	-	-	-	3.0	30.8	7.7
3/1	N72	U	-		-	-	-	532	1500	1500	35.5%	-	-	-	0.3	1.9	0.3
4/1	N72 Right	U	C1:C		1	37	-	352	1500	633	55.6%	-	-	-	0.7	7.1	1.2
5/1	N72 Ahead	U	-		-	-	-	382	1500	1500	25.5%	-	-	-	0.2	1.6	0.2
Ped Link: P1	Unnamed Ped Link	-	C1:D		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

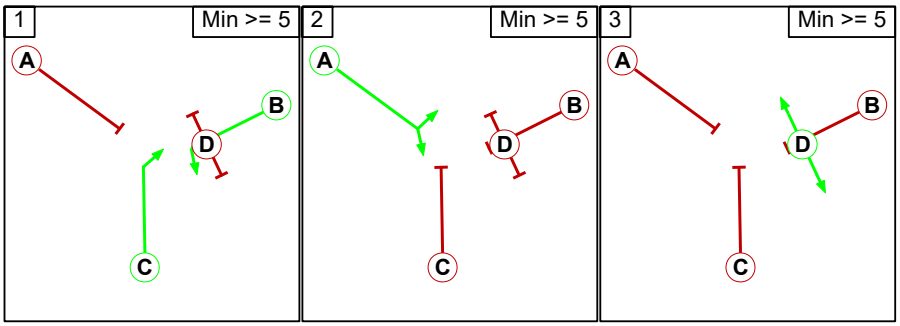
Basic Results Summary

C1 - Main St / N72	PRC for Signalled Lanes (%):	47.0	Total Delay for Signalled Lanes (pcuHr):	4.97	Cycle Time (s):	90
C2 - Park Road/ Bridge St	PRC for Signalled Lanes (%):	26.8	Total Delay for Signalled Lanes (pcuHr):	13.71	Cycle Time (s):	90
	PRC Over All Lanes (%):	26.8	Total Delay Over All Lanes(pcuHr):	20.92		

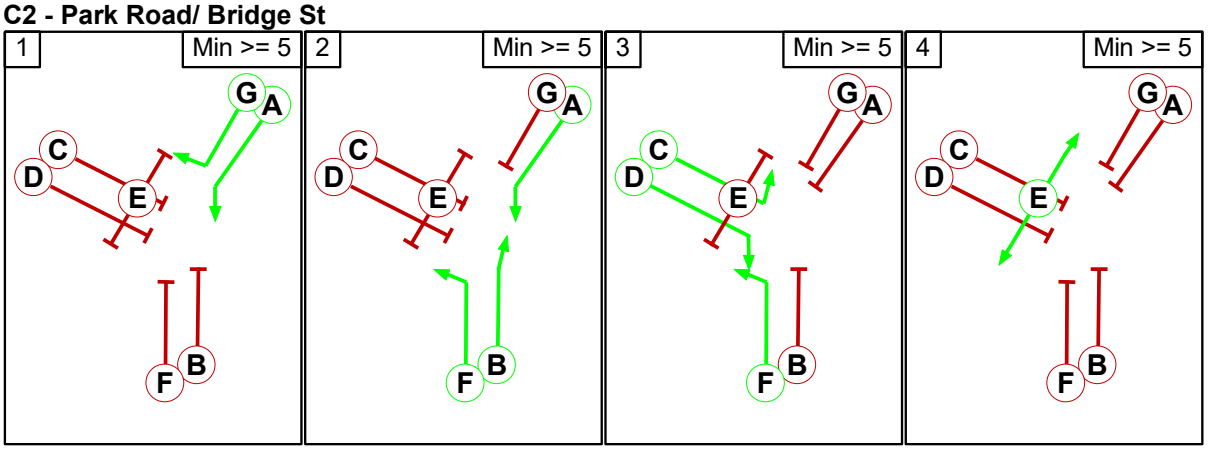
Basic Results Summary

Stage Diagram

C1 - Main St / N72

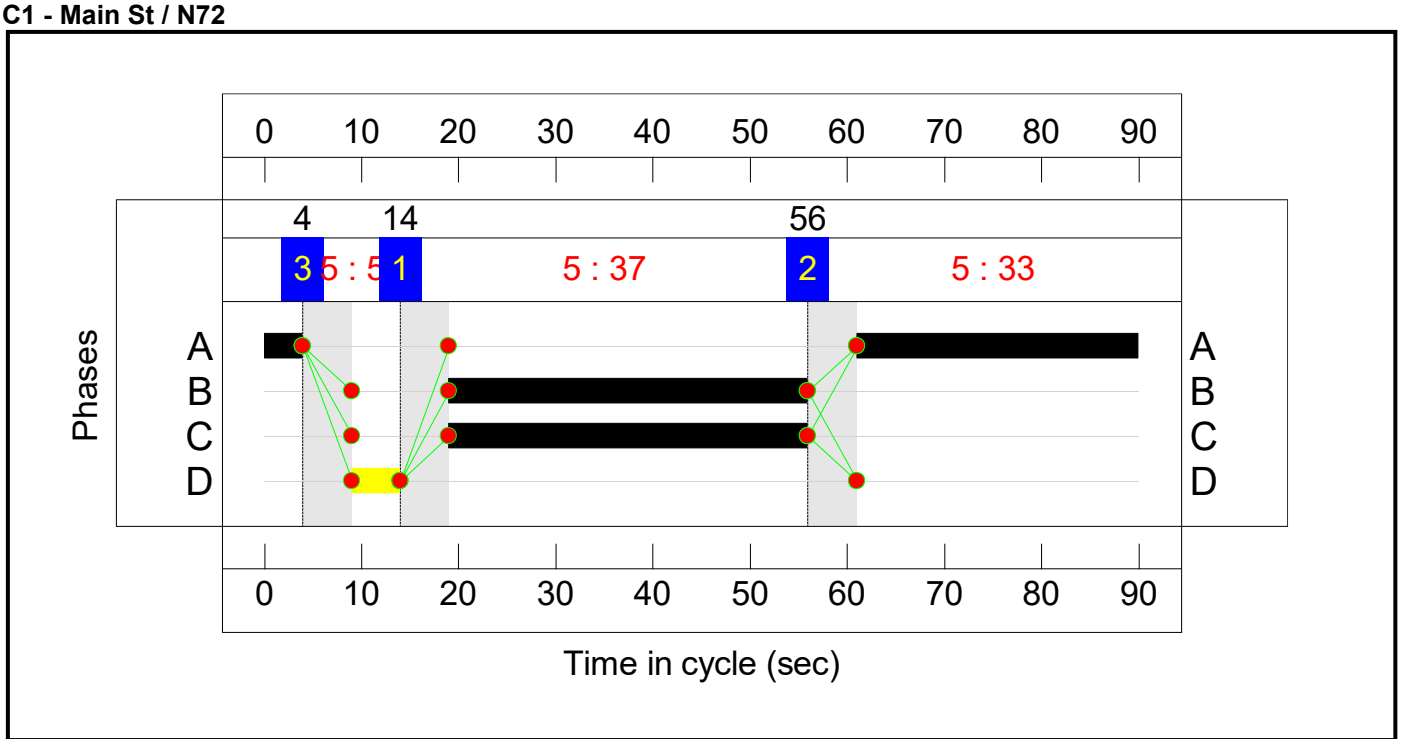


C2 - Park Road/ Bridge St



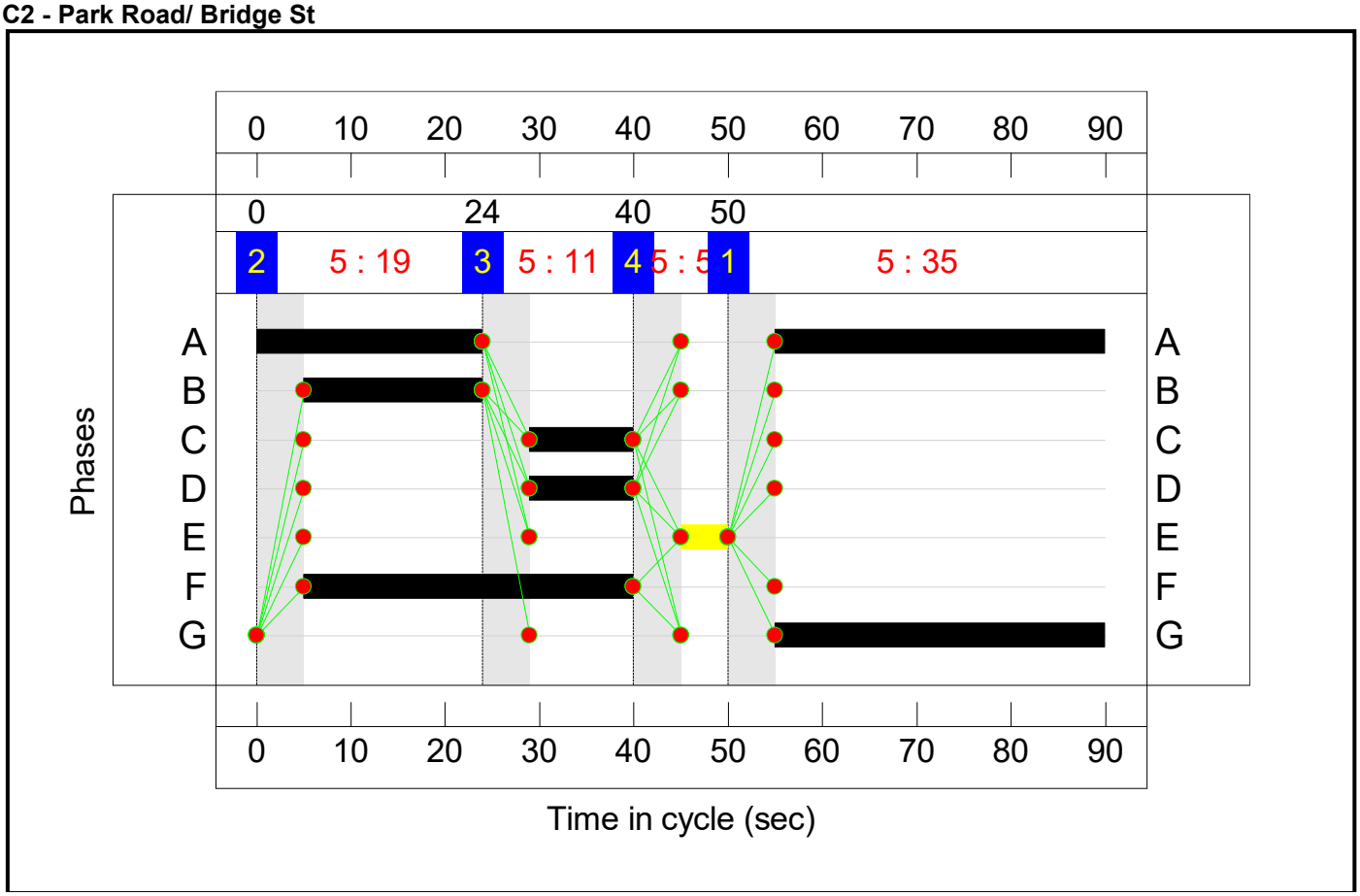
Signal Timings Diagram

C1 - Main St / N72



Basic Results Summary

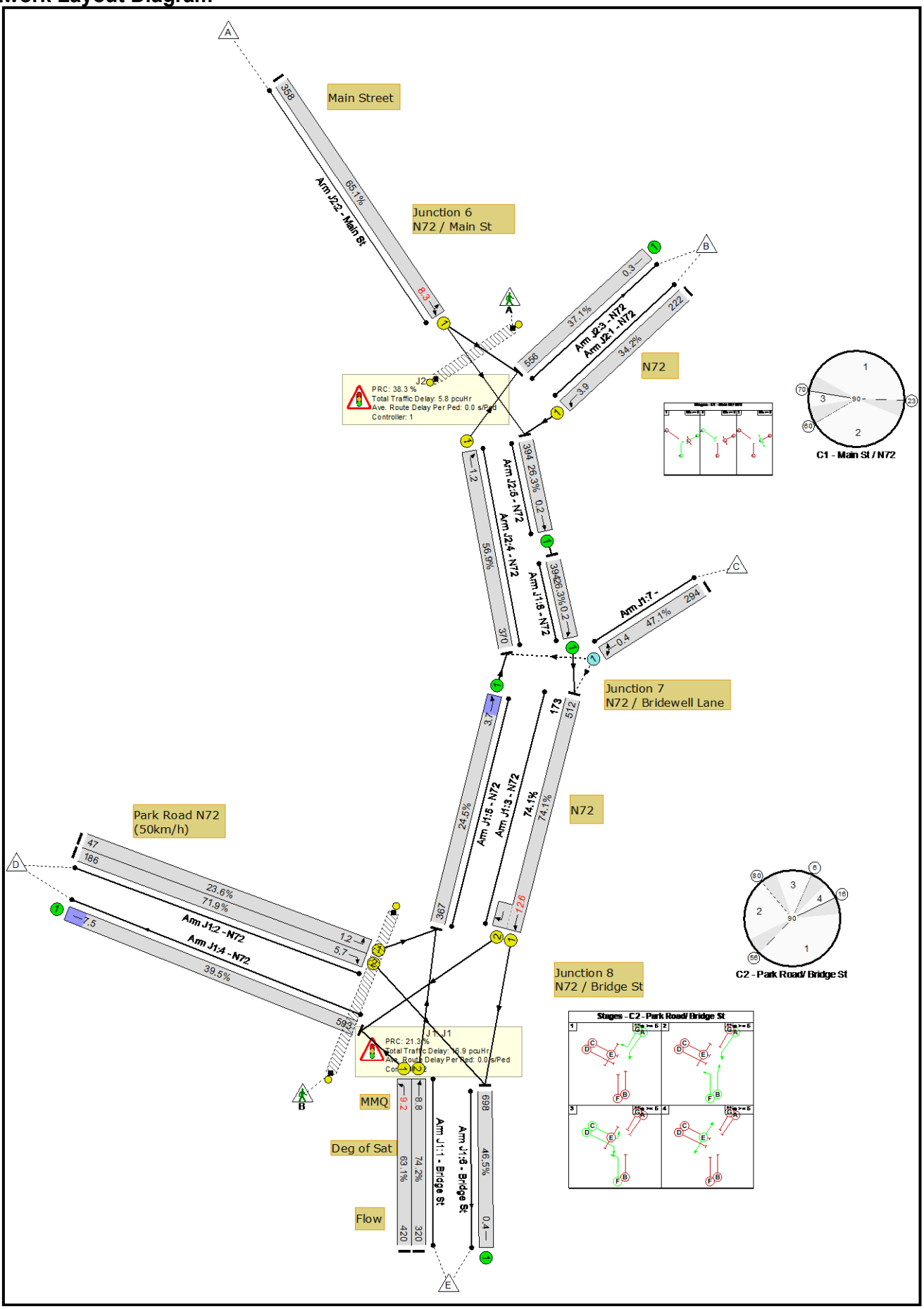
C2 - Park Road/ Bridge St



Basic Results Summary

Scenario 2: 'Morning Peak 2025 ' (FG2: 'Morning Peak 2025', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	-	**74.2%**	**294**	**0**	**0**	**22.7**	-	-
J1: J1	-	-	-		-	-	-	-	-	-	**74.2%**	**294**	**0**	**0**	**16.9**	-	-
1/1	Bridge St Left	U	C2:F		1	35	-	420	1665	666	63.1%	-	-	-	3.4	28.9	9.2
1/2	Bridge St Ahead	U	C2:B		1	19	-	320	1940	431	74.2%	-	-	-	4.3	48.4	8.8
2/1	N72 Left	U	C2:C		1	11	-	47	1492	199	23.6%	-	-	-	0.6	46.8	1.2
2/2	N72 Right	U	C2:D		1	11	-	186	1940	259	71.9%	-	-	-	3.2	61.3	5.7
3/1+3/2	N72 Right Ahead	U	C2:A C2:G		1	59:35	-	685	1500:1500	691+233	74.1 : 74.1%	-	-	-	3.5	18.2	12.6
4/1	N72	U	-		-	-	-	593	1500	1500	39.5%	-	-	-	0.6	3.8	7.5
5/1	N72 Ahead	U	-		-	-	-	367	1500	1500	24.5%	-	-	-	0.3	2.9	3.7
6/1	Bridge St	U	-		-	-	-	698	1500	1500	46.5%	-	-	-	0.4	2.2	0.4
7/1	Ahead Right	O	-		-	-	-	294	1500	625	47.1%	294	0	0	0.4	5.4	0.4
8/1	N72 Ahead	U	-		-	-	-	394	1500	1500	26.3%	-	-	-	0.2	1.6	0.2
Ped Link: P1	Unnamed Ped Link	-	C2:E		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
J2: 2	-	-	-		-	-	-	-	-	-	**65.1%**	**0**	**0**	**0**	**5.8**	-	-
1/1	N72 Left	U	C1:B		1	38	-	222	1500	650	34.2%	-	-	-	1.3	21.2	3.9
2/1	Main St Left Ahead	U	C1:A		1	32	-	358	1500	550	65.1%	-	-	-	3.3	33.0	8.3
3/1	N72	U	-		-	-	-	556	1500	1500	37.1%	-	-	-	0.3	1.9	0.3
4/1	N72 Right	U	C1:C		1	38	-	370	1500	650	56.9%	-	-	-	0.7	7.0	1.2
5/1	N72 Ahead	U	-		-	-	-	394	1500	1500	26.3%	-	-	-	0.2	1.6	0.2
Ped Link: P1	Unnamed Ped Link	-	C1:D		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

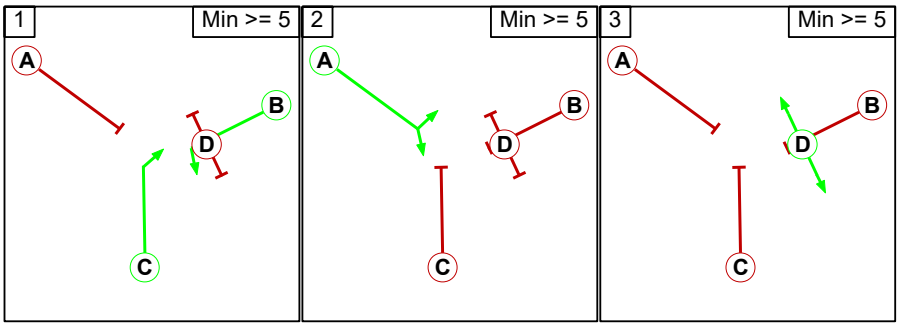
Basic Results Summary

C1 - Main St / N72	PRC for Signalled Lanes (%):	38.3	Total Delay for Signalled Lanes (pcuHr):	5.31	Cycle Time (s):	90
C2 - Park Road/ Bridge St	PRC for Signalled Lanes (%):	21.3	Total Delay for Signalled Lanes (pcuHr):	14.91	Cycle Time (s):	90
	PRC Over All Lanes (%):	21.3	Total Delay Over All Lanes(pcuHr):	22.68		

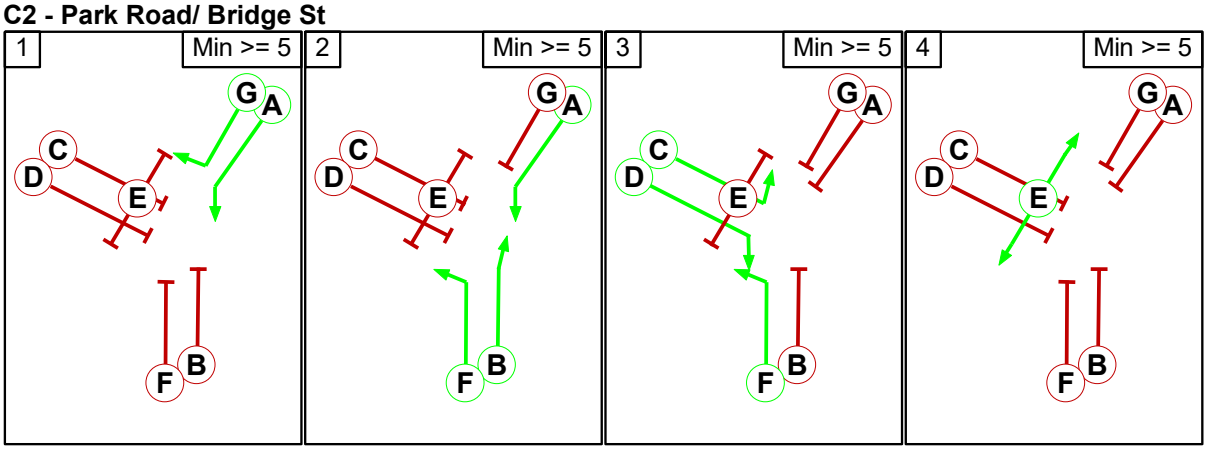
Basic Results Summary

Stage Diagram

C1 - Main St / N72

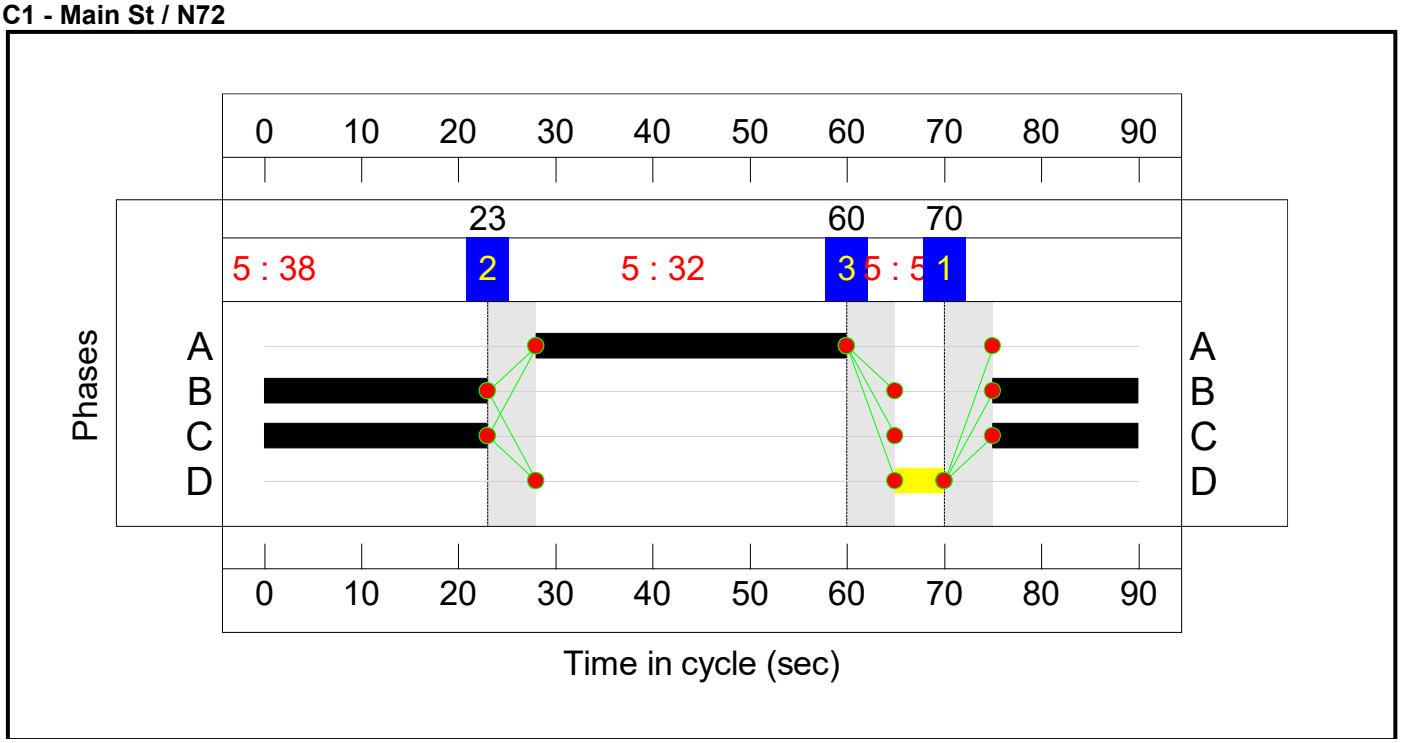


C2 - Park Road/ Bridge St



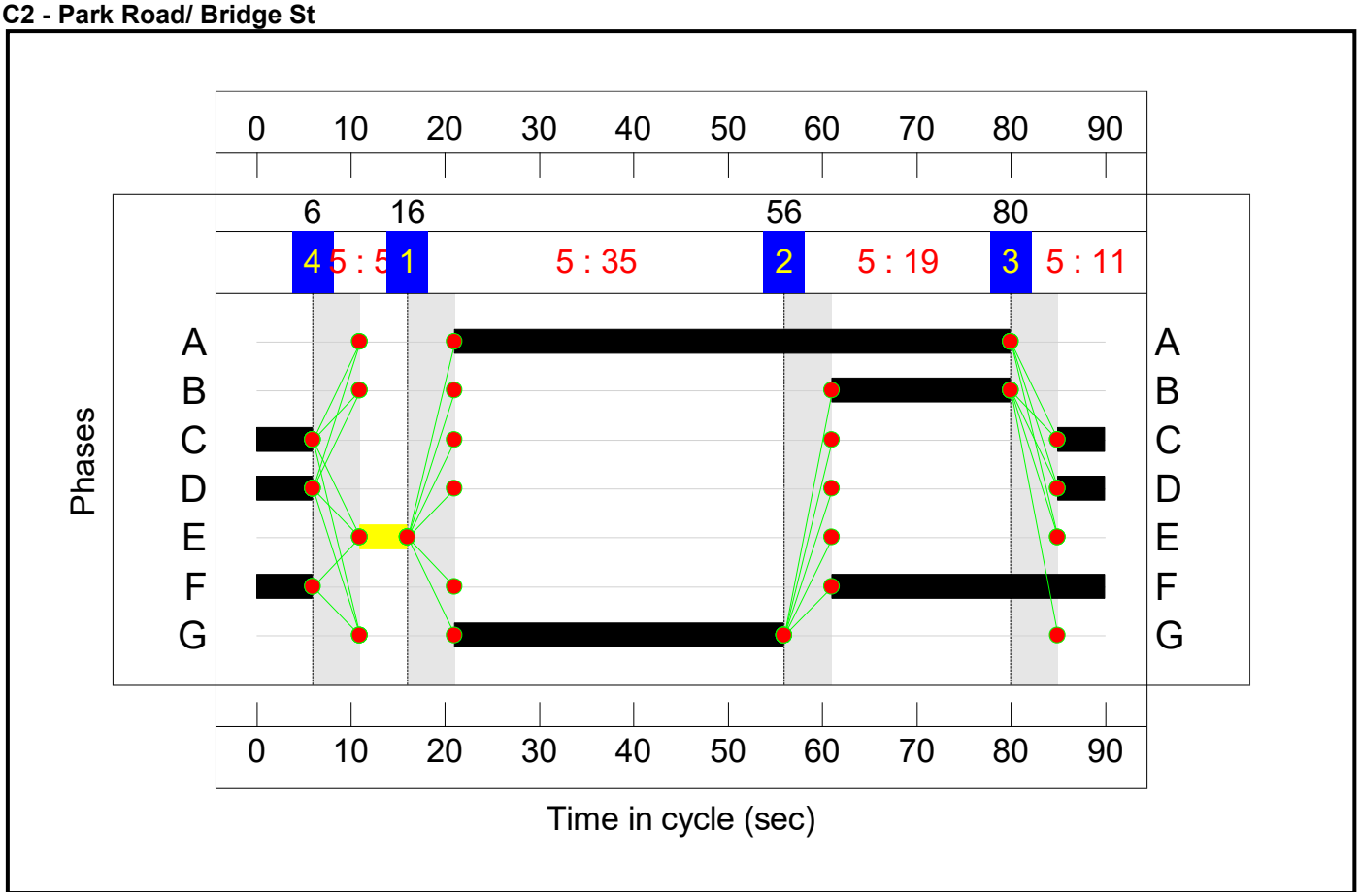
Signal Timings Diagram

C1 - Main St / N72



Basic Results Summary

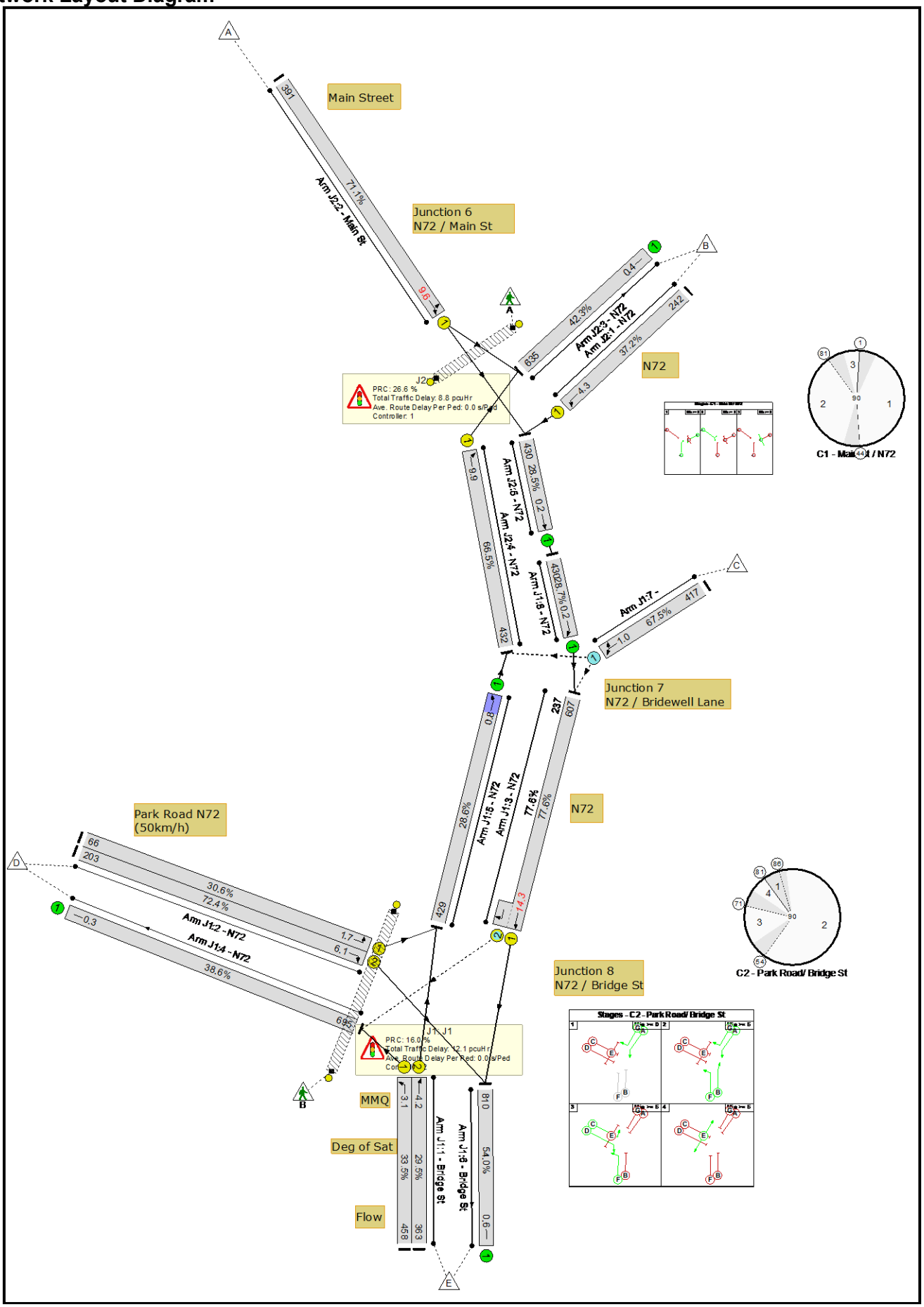
C2 - Park Road/ Bridge St



Basic Results Summary

Scenario 3: 'Morning Peak 2030' (FG3: 'Morning Peak 2030', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

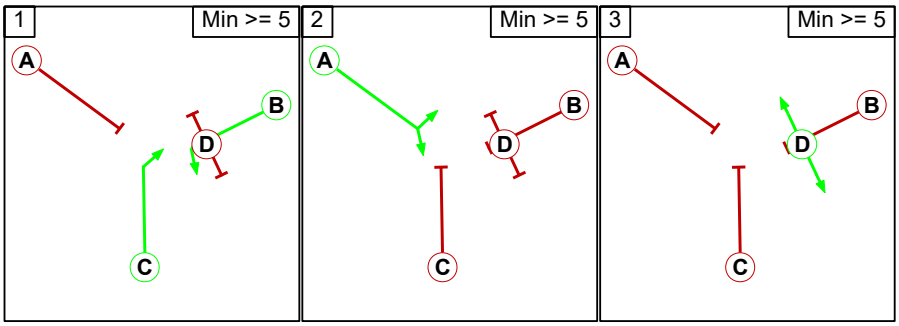
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	-	**77.6%**	**616**	**38**	**0**	**20.8**	-	-
J1: J1	-	-	-		-	-	-	-	-	-	**77.6%**	**616**	**38**	**0**	**12.1**	-	-
1/1	Bridge St Left	U	C2:F		1	73	-	458	1665	1369	33.5%	-	-	-	0.5	3.9	3.1
1/2	Bridge St Ahead	U	C2:B		1	56	-	363	1940	1229	29.5%	-	-	-	1.0	9.5	4.2
2/1	N72 Left	U	C2:C		1	12	-	66	1492	216	30.6%	-	-	-	0.9	46.5	1.7
2/2	N72 Right	U	C2:D		1	12	-	203	1940	280	72.4%	-	-	-	3.3	59.4	6.1
3/1+3/2	N72 Right Ahead	U+O	C2:A C2:G		1	58	-	844	1500:1865	782+305	77.6 : 77.6%	199	38	0	4.1	17.3	14.3
4/1	N72	U	-		-	-	-	695	1800	1800	38.6%	-	-	-	0.3	1.6	0.3
5/1	N72 Ahead	U	-		-	-	-	429	1500	1500	28.6%	-	-	-	0.2	2.0	0.8
6/1	Bridge St	U	-		-	-	-	810	1500	1500	54.0%	-	-	-	0.6	2.6	0.6
7/1	Ahead Right	O	-		-	-	-	417	1500	618	67.5%	417	0	0	1.0	8.9	1.0
8/1	N72 Ahead	U	-		-	-	-	430	1500	1500	28.7%	-	-	-	0.2	1.7	0.2
Ped Link: P1	Unnamed Ped Link	-	C2:E		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
J2: 2	-	-	-		-	-	-	-	-	-	**71.1%**	**0**	**0**	**0**	**8.8**	-	-
1/1	N72 Left	U	C1:B		1	38	-	242	1500	650	37.2%	-	-	-	1.5	21.6	4.3
2/1	Main St Left Ahead	U	C1:A		1	32	-	391	1500	550	71.1%	-	-	-	3.9	35.6	9.6
3/1	N72	U	-		-	-	-	635	1500	1500	42.3%	-	-	-	0.4	2.1	0.4
4/1	N72 Right	U	C1:C		1	38	-	432	1500	650	66.5%	-	-	-	2.9	24.0	9.9
5/1	N72 Ahead	U	-		-	-	-	430	1509	1509	28.5%	-	-	-	0.2	1.7	0.2
Ped Link: P1	Unnamed Ped Link	-	C1:D		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

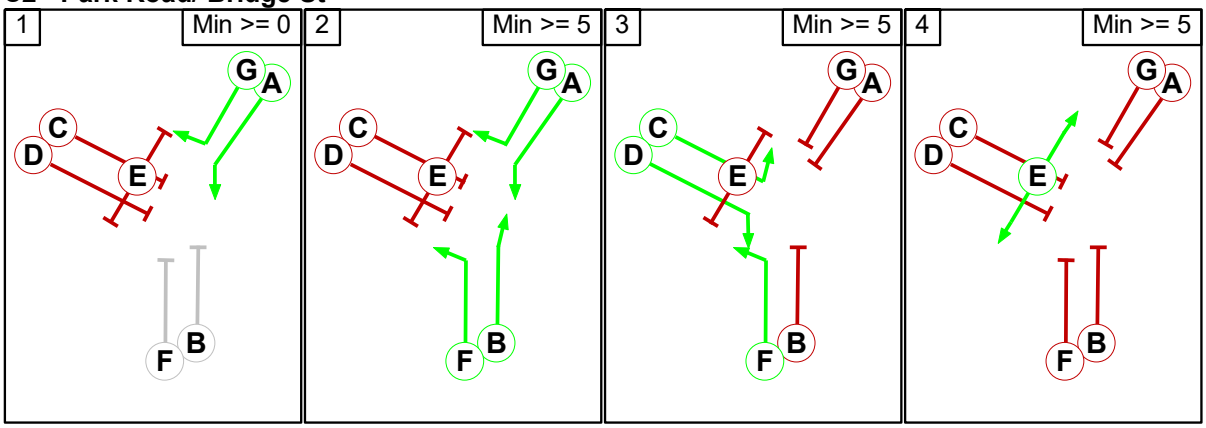
Basic Results Summary

Stage Diagram

C1 - Main St / N72

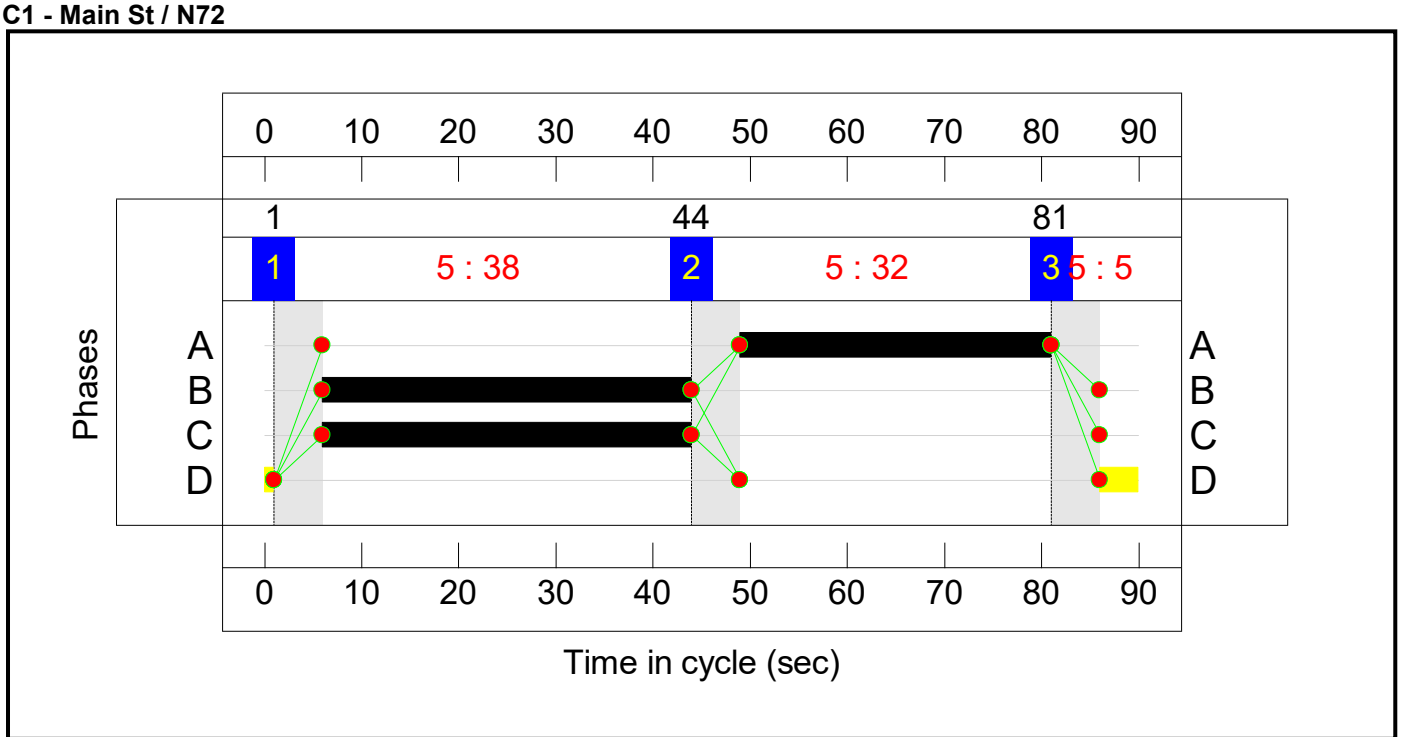


C2 - Park Road/ Bridge St

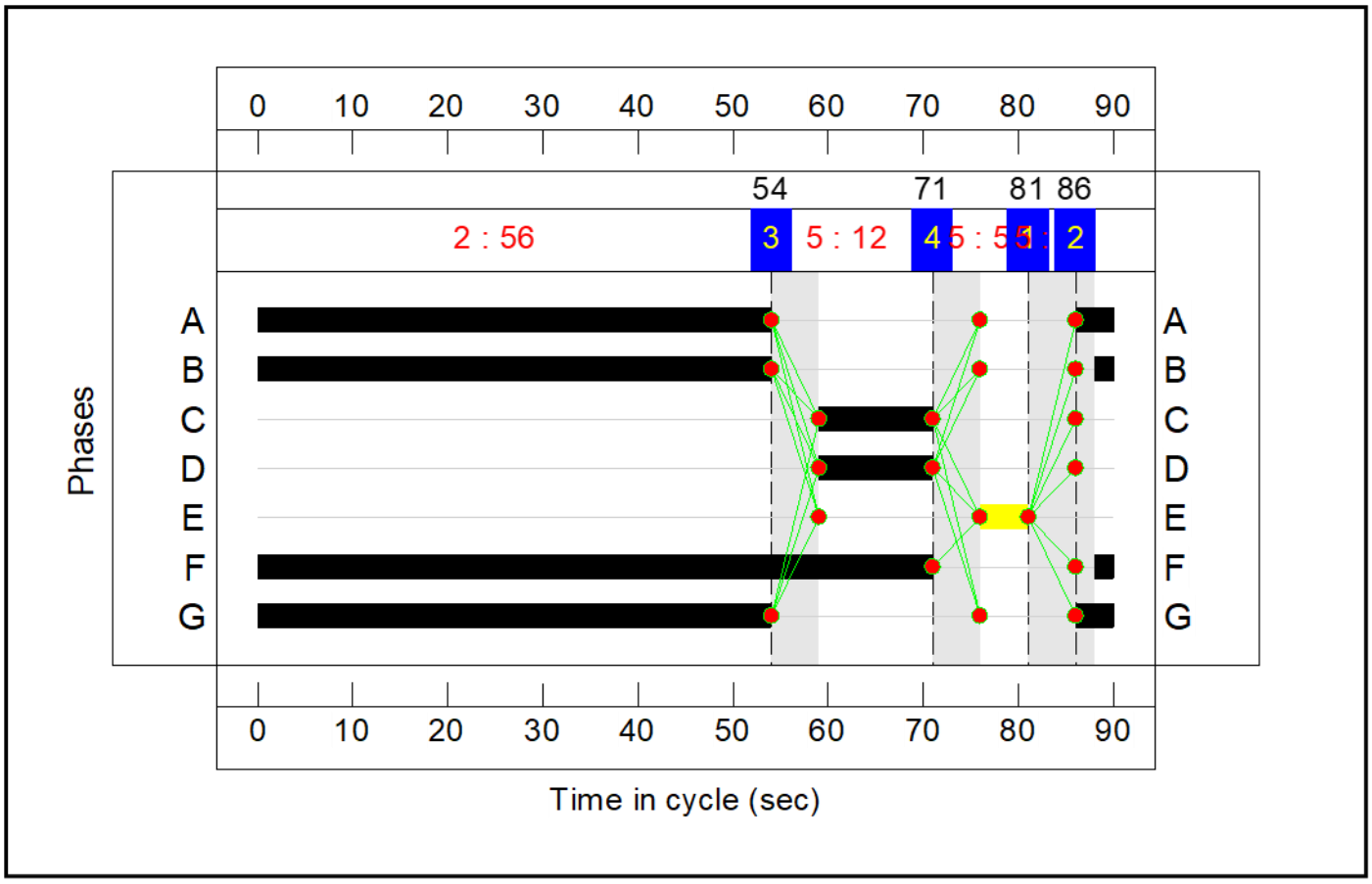


Signal Timings Diagram

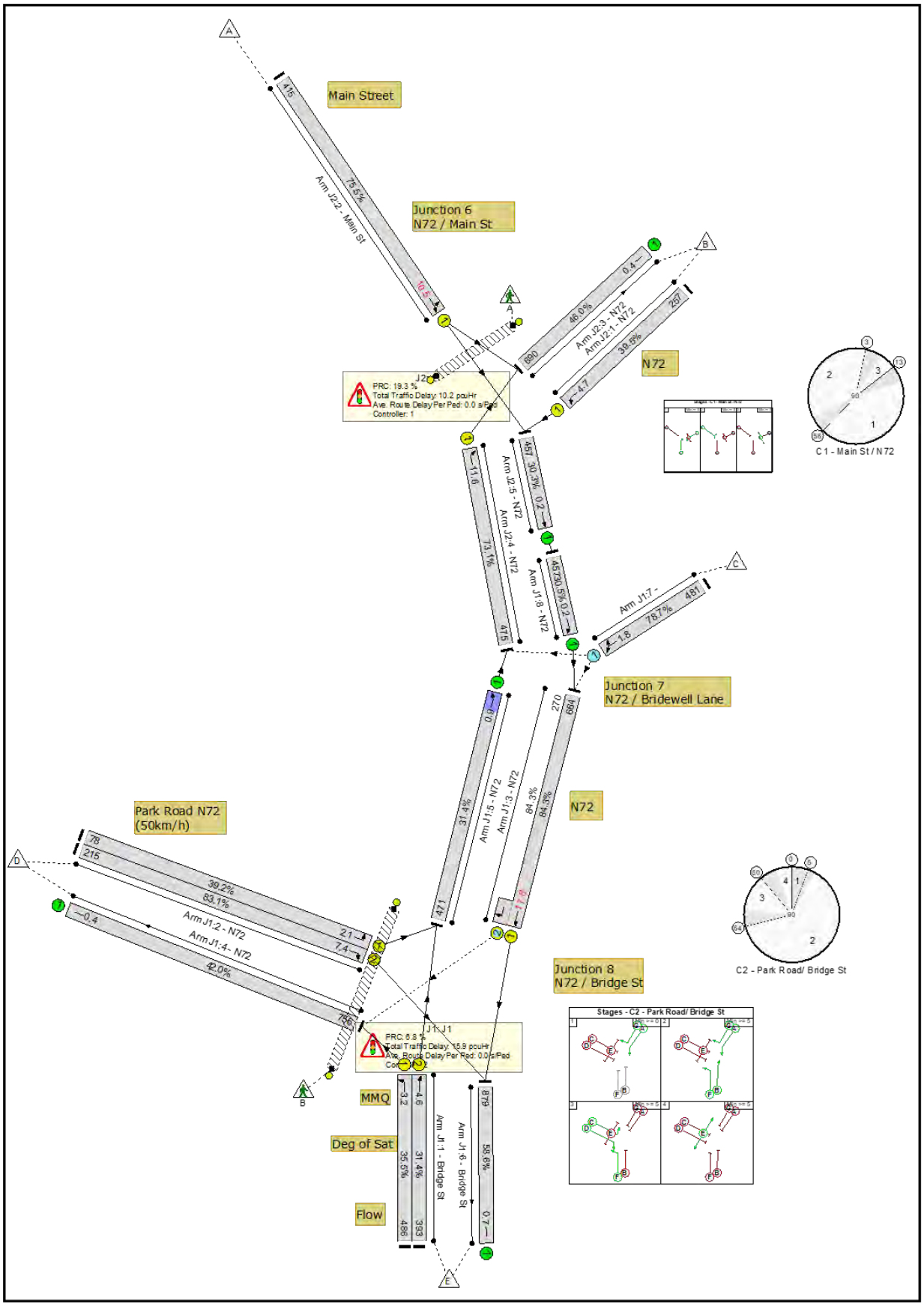
C1 - Main St / N72



Basic Results Summary



Scenario 4: 'Morning Peak 2040' (FG4: 'Morning Peak 2040', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	-	**84.3%**	**711**	**40**	**0**	**26.2**	-	-
J1: J1	-	-	-		-	-	-	-	-	-	**84.3%**	**711**	**40**	**0**	**15.9**	-	-
1/1	Bridge St Left	U	C2:F		1	73	-	486	1665	1369	35.5%	-	-	-	0.5	4.0	3.2
1/2	Bridge St Ahead	U	C2:B		1	57	-	393	1940	1250	31.4%	-	-	-	1.0	9.2	4.6
2/1	N72 Left	U	C2:C		1	11	-	78	1492	199	39.2%	-	-	-	1.1	50.5	2.1
2/2	N72 Right	U	C2:D		1	11	-	215	1940	259	83.1%	-	-	-	4.5	75.4	7.4
3/1+3/2	N72 Right Ahead	U+O	C2:A C2:G		1	59	-	934	1500:1865	788+320	84.3 : 84.3%	230	40	0	5.4	20.9	17.8
4/1	N72	U	-		-	-	-	756	1800	1800	42.0%	-	-	-	0.4	1.7	0.4
5/1	N72 Ahead	U	-		-	-	-	471	1500	1500	31.4%	-	-	-	0.3	2.0	0.9
6/1	Bridge St	U	-		-	-	-	879	1500	1500	58.6%	-	-	-	0.7	2.9	0.7
7/1	Ahead Right	O	-		-	-	-	481	1500	611	78.7%	481	0	0	1.8	13.4	1.8
8/1	N72 Ahead	U	-		-	-	-	457	1500	1500	30.5%	-	-	-	0.2	1.7	0.2
Ped Link: P1	Unnamed Ped Link	-	C2:E		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
J2: 2	-	-	-		-	-	-	-	-	-	**75.5%**	**0**	**0**	**0**	**10.2**	-	-
1/1	N72 Left	U	C1:B		1	38	-	257	1500	650	39.5%	-	-	-	1.6	22.0	4.7
2/1	Main St Left Ahead	U	C1:A		1	32	-	415	1500	550	75.5%	-	-	-	4.4	38.0	10.5
3/1	N72	U	-		-	-	-	690	1500	1500	46.0%	-	-	-	0.4	2.2	0.4
4/1	N72 Right	U	C1:C		1	38	-	475	1500	650	73.1%	-	-	-	3.6	27.6	11.6
5/1	N72 Ahead	U	-		-	-	-	457	1509	1509	30.3%	-	-	-	0.2	1.7	0.2
Ped Link: P1	Unnamed Ped Link	-	C1:D		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

Basic Results Summary

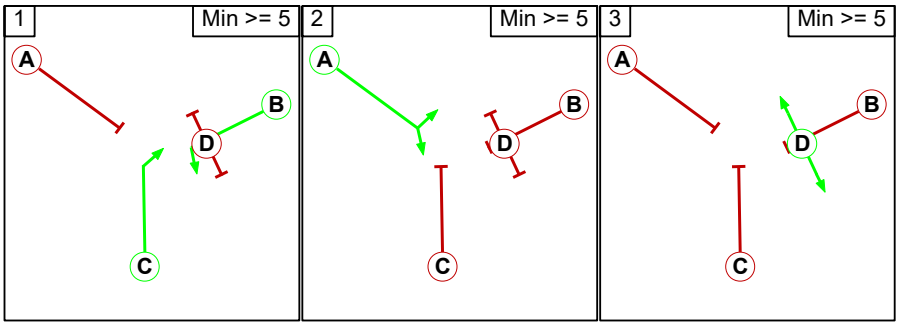
C1 - Main St / N72	PRC for Signalled Lanes (%):	19.3	Total Delay for Signalled Lanes (pcuHr):	9.60	Cycle Time (s):	90
C2 - Park Road/ Bridge St	PRC for Signalled Lanes (%):	6.8	Total Delay for Signalled Lanes (pcuHr):	12.58	Cycle Time (s):	90
	PRC Over All Lanes (%):	6.8	Total Delay Over All Lanes(pcuHr):	26.17		

Basic Results Summary

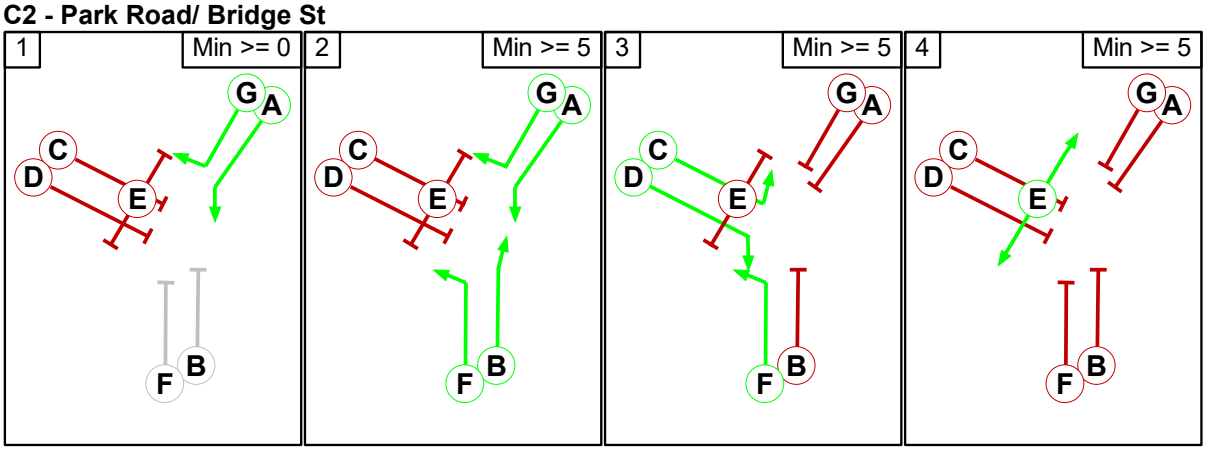
Stage Diagram

Stage Diagram

C1 - Main St / N72

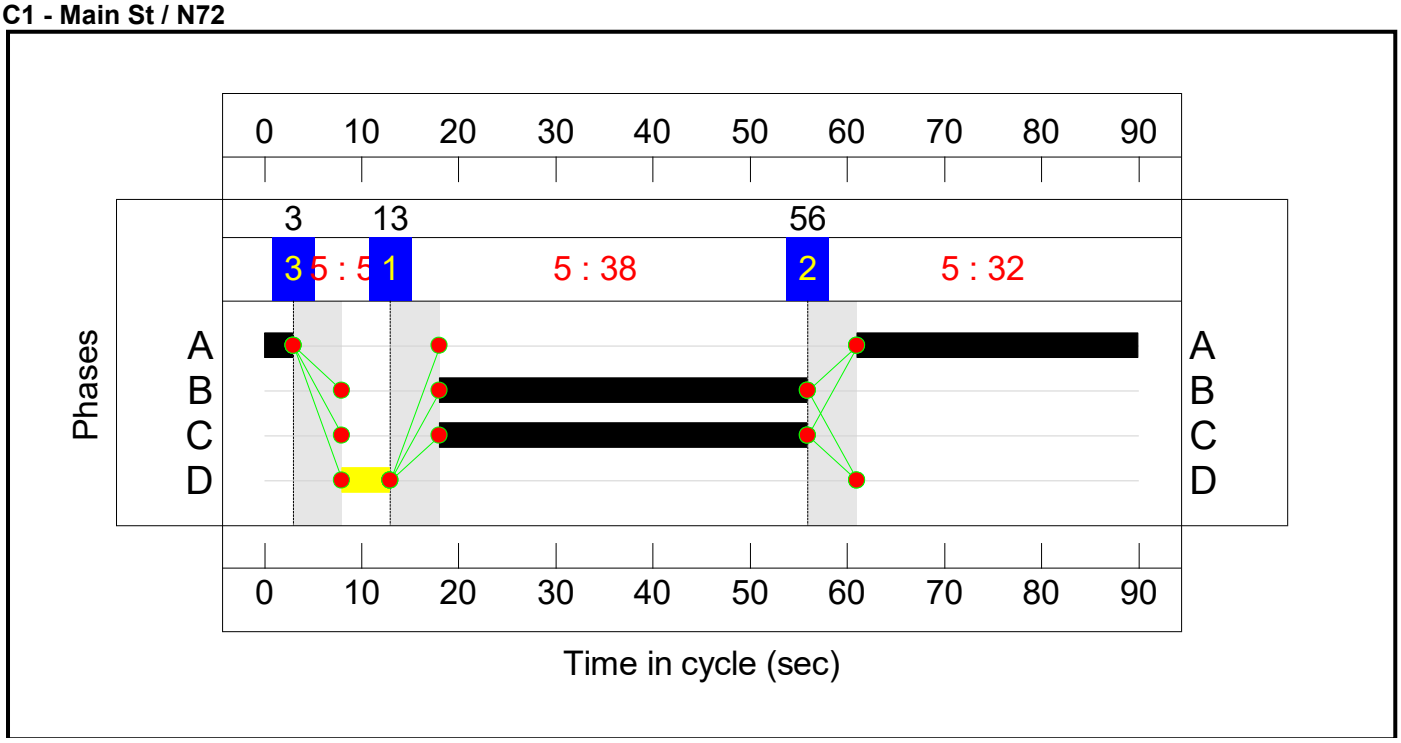


C2 - Park Road/ Bridge St

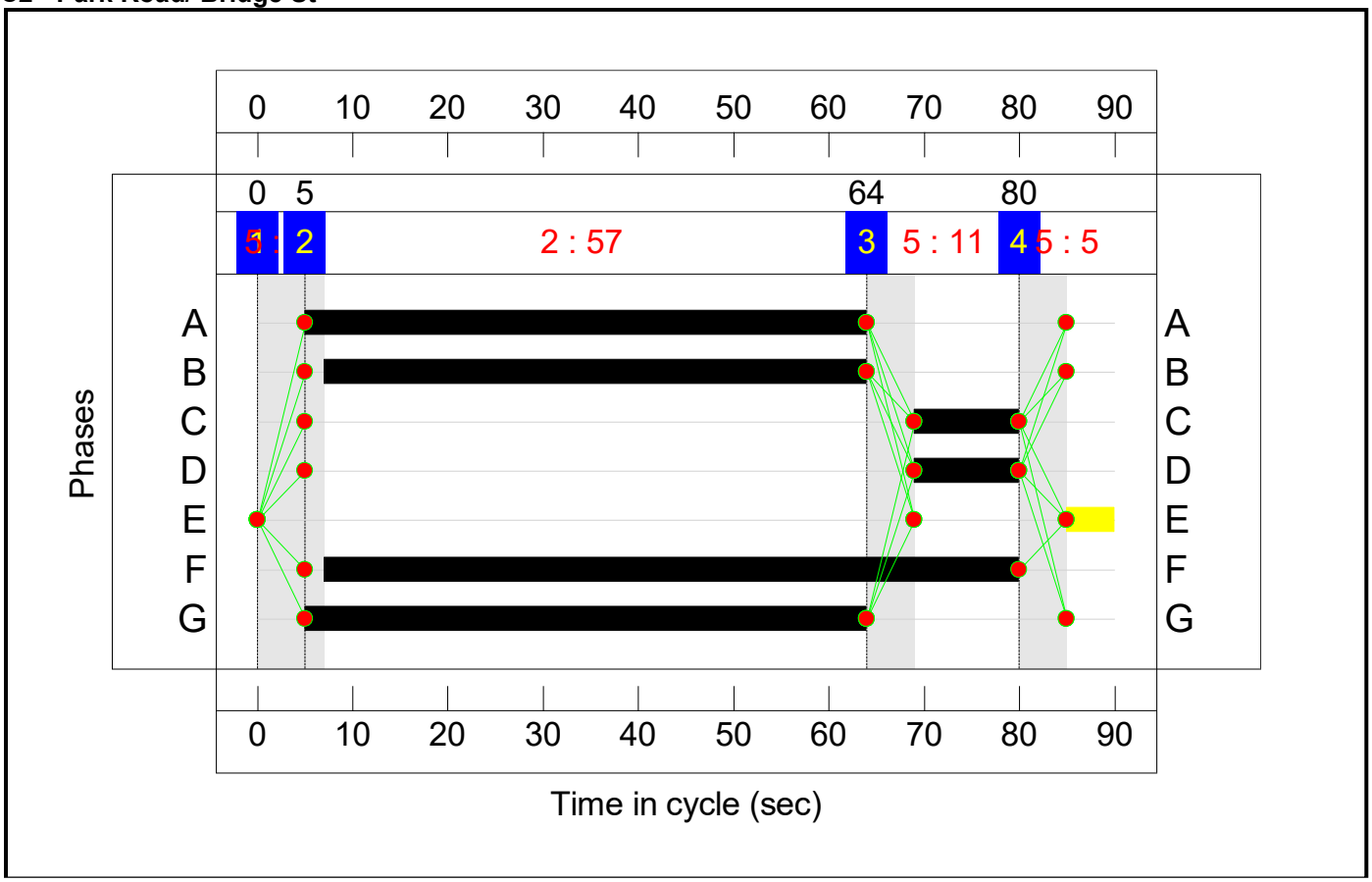


Signal Timings Diagram

C1 - Main St / N72



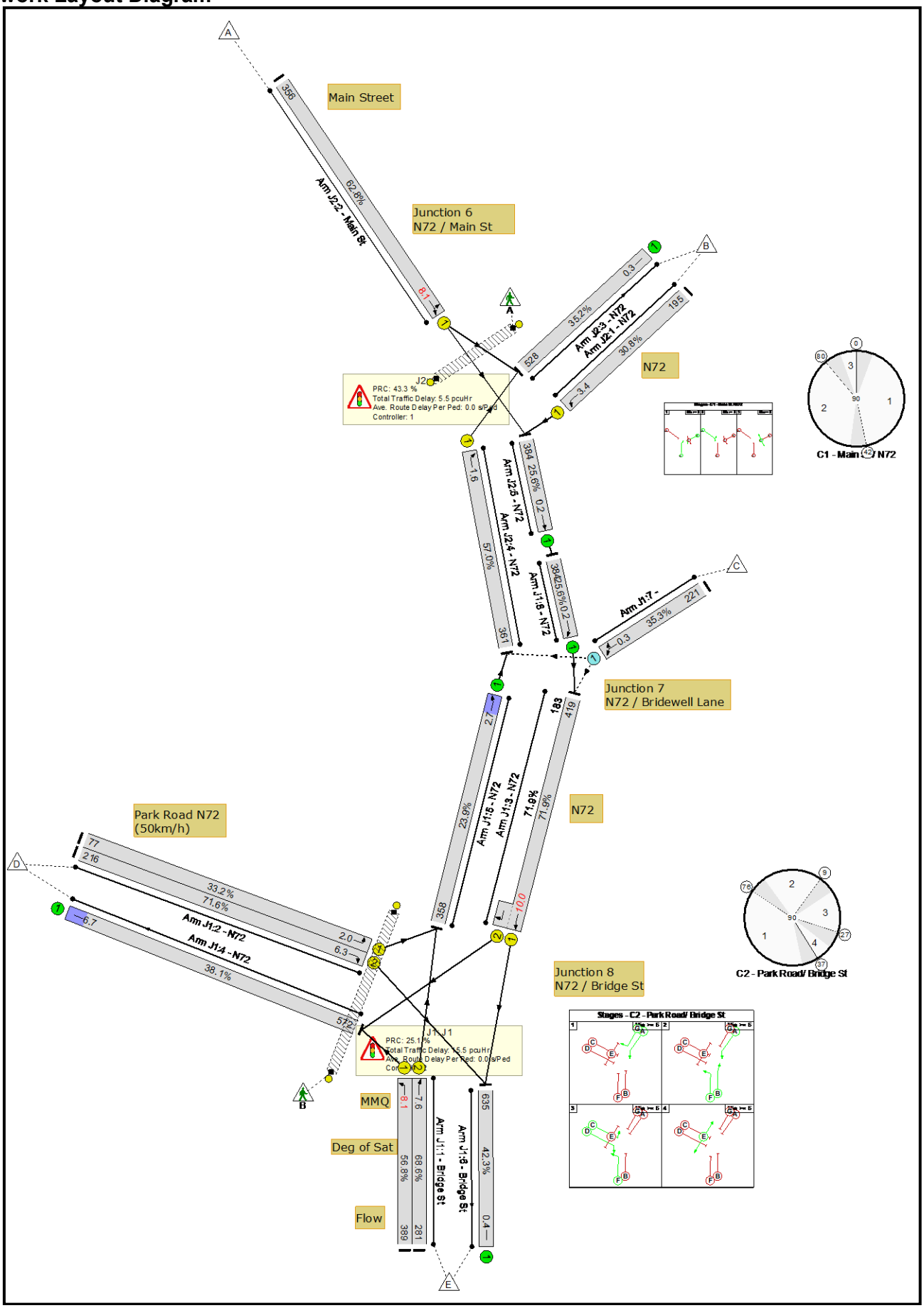
C2 - Park Road/ Bridge St



Basic Results Summary

Scenario 5: 'Evening Peak 2023' (FG5: 'Evening Peak 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	-	**71.9%**	**221**	**0**	**0**	**21.0**	-	-
J1: J1	-	-	-		-	-	-	-	-	-	**71.9%**	**221**	**0**	**0**	**15.5**	-	-
1/1	Bridge St Left	U	C2:F		1	36	-	389	1665	685	56.8%	-	-	-	2.9	26.4	8.1
1/2	Bridge St Ahead	U	C2:B		1	18	-	281	1940	410	68.6%	-	-	-	3.6	46.5	7.6
2/1	N72 Left	U	C2:C		1	13	-	77	1492	232	33.2%	-	-	-	1.0	45.4	2.0
2/2	N72 Right	U	C2:D		1	13	-	216	1940	302	71.6%	-	-	-	3.4	56.5	6.3
3/1+3/2	N72 Right Ahead	U	C2:A C2:G		1	57:34	-	602	1500:1500	582+254	71.9 : 71.9%	-	-	-	3.0	18.1	10.0
4/1	N72	U	-		-	-	-	572	1500	1500	38.1%	-	-	-	0.6	3.6	6.7
5/1	N72 Ahead	U	-		-	-	-	358	1500	1500	23.9%	-	-	-	0.3	2.6	2.7
6/1	Bridge St	U	-		-	-	-	635	1500	1500	42.3%	-	-	-	0.4	2.1	0.4
7/1	Ahead Right	O	-		-	-	-	221	1500	626	35.3%	221	0	0	0.3	4.4	0.3
8/1	N72 Ahead	U	-		-	-	-	384	1500	1500	25.6%	-	-	-	0.2	1.6	0.2
Ped Link: P1	Unnamed Ped Link	-	C2:E		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
J2: 2	-	-	-		-	-	-	-	-	-	**62.8%**	**0**	**0**	**0**	**5.5**	-	-
1/1	N72 Left	U	C1:B		1	37	-	195	1500	633	30.8%	-	-	-	1.2	21.4	3.4
2/1	Main St Left Ahead	U	C1:A		1	33	-	356	1500	567	62.8%	-	-	-	3.1	31.3	8.1
3/1	N72	U	-		-	-	-	528	1500	1500	35.2%	-	-	-	0.3	1.9	0.3
4/1	N72 Right	U	C1:C		1	37	-	361	1500	633	57.0%	-	-	-	0.8	7.8	1.6
5/1	N72 Ahead	U	-		-	-	-	384	1500	1500	25.6%	-	-	-	0.2	1.6	0.2
Ped Link: P1	Unnamed Ped Link	-	C1:D		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

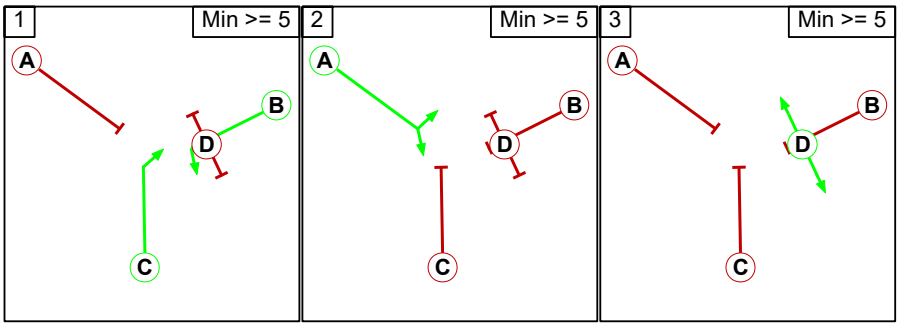
Basic Results Summary

C1 - Main St / N72	PRC for Signalled Lanes (%):	43.3	Total Delay for Signalled Lanes (pcuHr):	5.03	Cycle Time (s):	90
C2 - Park Road/ Bridge St	PRC for Signalled Lanes (%):	25.1	Total Delay for Signalled Lanes (pcuHr):	13.88	Cycle Time (s):	90
	PRC Over All Lanes (%):	25.1	Total Delay Over All Lanes(pcuHr):	20.99		

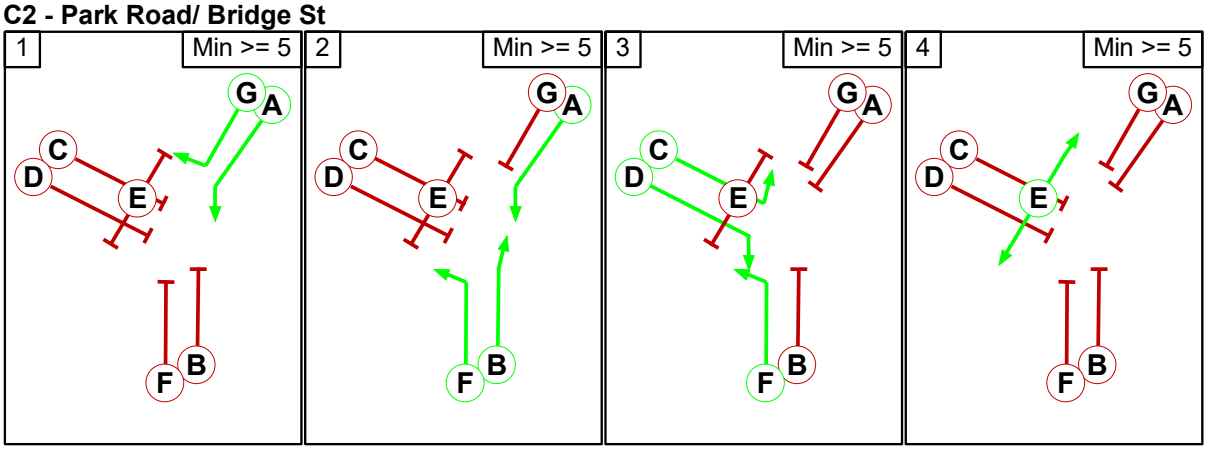
Basic Results Summary

Stage Diagram

C1 - Main St / N72

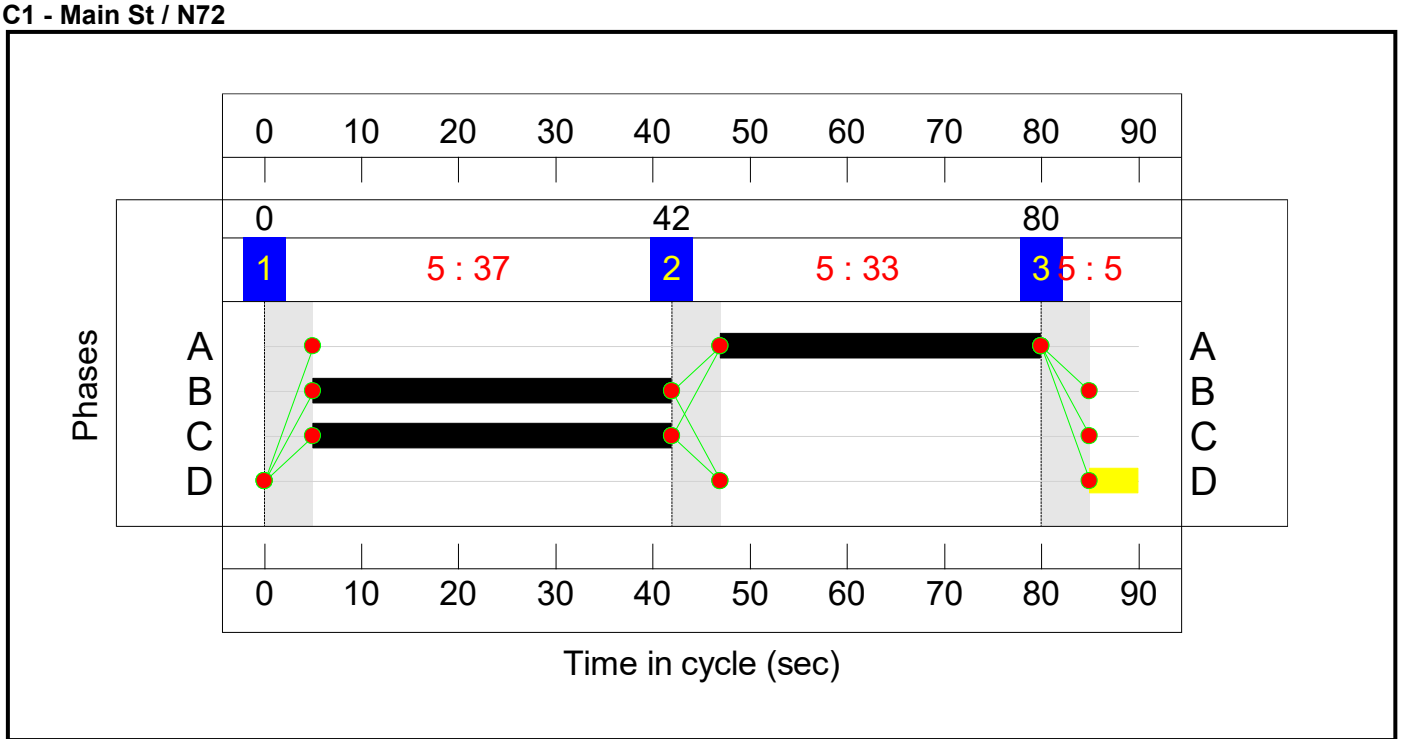


C2 - Park Road/ Bridge St



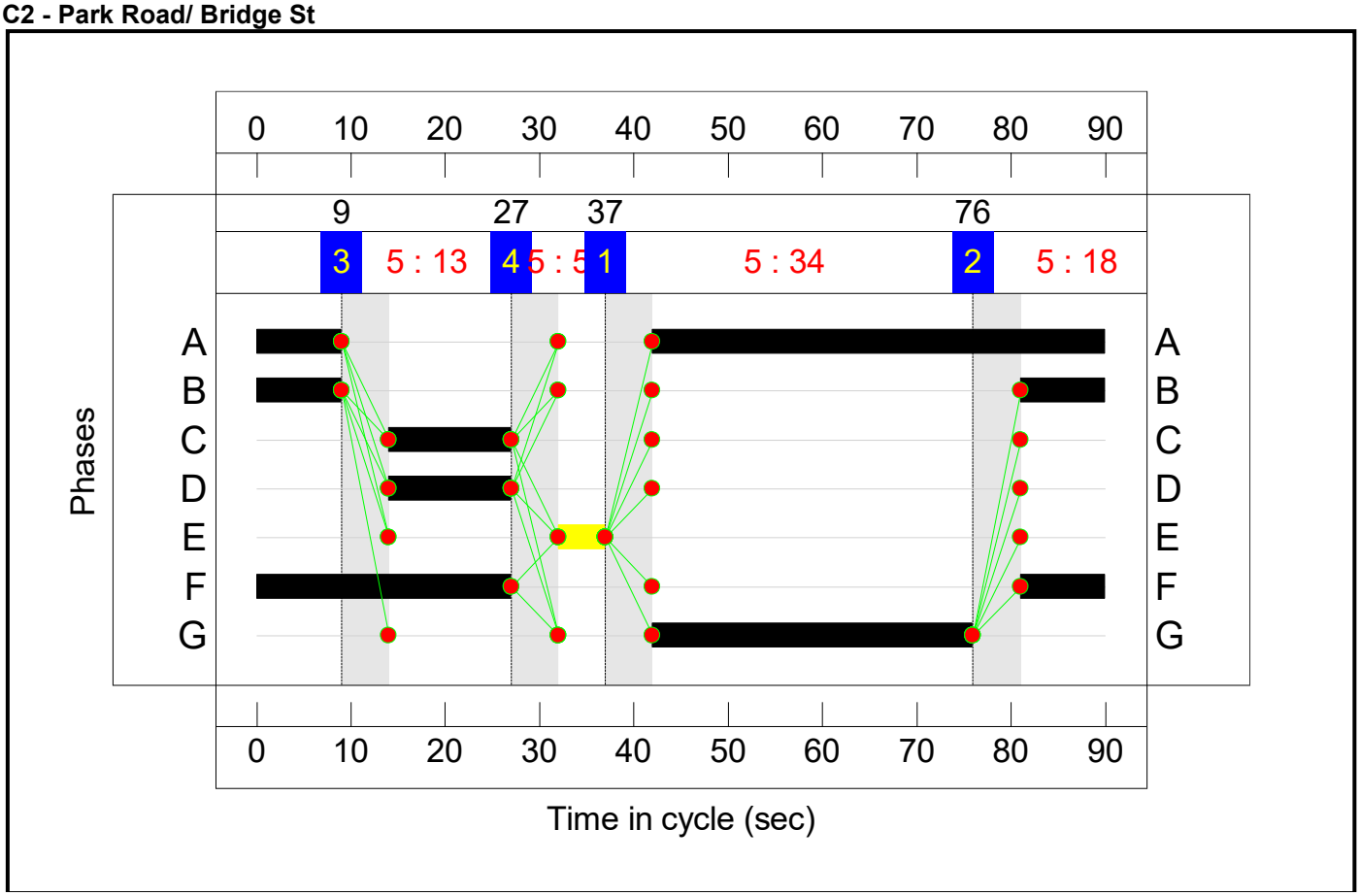
Signal Timings Diagram

C1 - Main St / N72



Basic Results Summary

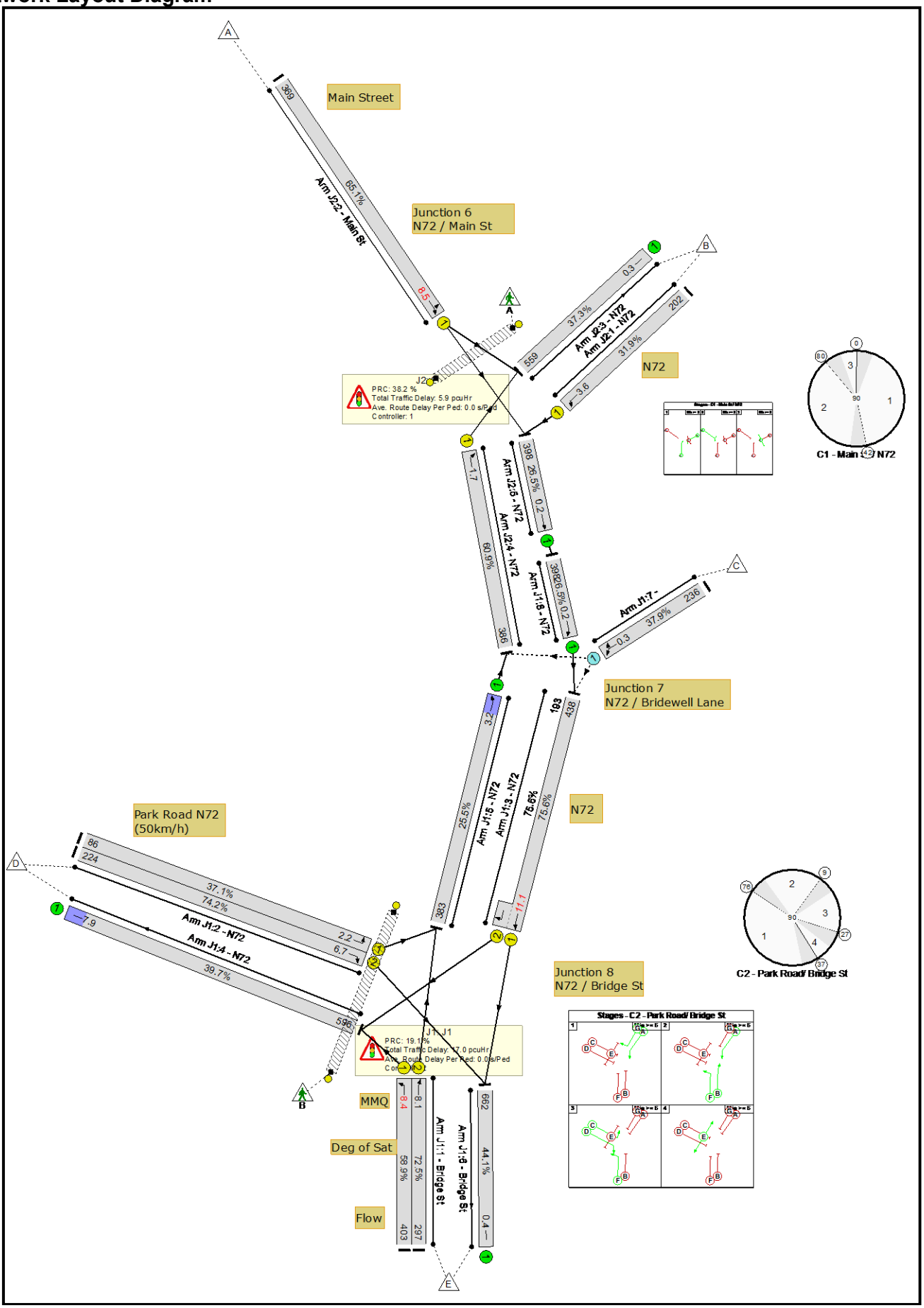
C2 - Park Road/ Bridge St



Basic Results Summary

Scenario 6: 'Evening Peak 2025' (FG6: 'Evening Peak 2025', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	-	**75.6%**	**236**	**0**	**0**	**22.9**	-	-
J1: J1	-	-	-		-	-	-	-	-	-	**75.6%**	**236**	**0**	**0**	**17.0**	-	-
1/1	Bridge St Left	U	C2:F		1	36	-	403	1665	685	58.9%	-	-	-	3.0	27.0	8.4
1/2	Bridge St Ahead	U	C2:B		1	18	-	297	1940	410	72.5%	-	-	-	4.0	48.7	8.1
2/1	N72 Left	U	C2:C		1	13	-	86	1492	232	37.1%	-	-	-	1.1	46.3	2.2
2/2	N72 Right	U	C2:D		1	13	-	224	1940	302	74.2%	-	-	-	3.6	58.6	6.7
3/1+3/2	N72 Right Ahead	U	C2:A C2:G		1	57:34	-	631	1500:1500	579+255	75.6 : 75.6%	-	-	-	3.4	19.6	11.1
4/1	N72	U	-		-	-	-	596	1500	1500	39.7%	-	-	-	0.6	3.9	7.9
5/1	N72 Ahead	U	-		-	-	-	383	1500	1500	25.5%	-	-	-	0.3	2.7	3.2
6/1	Bridge St	U	-		-	-	-	662	1500	1500	44.1%	-	-	-	0.4	2.1	0.4
7/1	Ahead Right	O	-		-	-	-	236	1500	623	37.9%	236	0	0	0.3	4.6	0.3
8/1	N72 Ahead	U	-		-	-	-	398	1500	1500	26.5%	-	-	-	0.2	1.6	0.2
Ped Link: P1	Unnamed Ped Link	-	C2:E		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
J2: 2	-	-	-		-	-	-	-	-	-	**65.1%**	**0**	**0**	**0**	**5.9**	-	-
1/1	N72 Left	U	C1:B		1	37	-	202	1500	633	31.9%	-	-	-	1.2	21.5	3.6
2/1	Main St Left Ahead	U	C1:A		1	33	-	369	1500	567	65.1%	-	-	-	3.3	32.1	8.5
3/1	N72	U	-		-	-	-	559	1500	1500	37.3%	-	-	-	0.3	1.9	0.3
4/1	N72 Right	U	C1:C		1	37	-	386	1500	633	60.9%	-	-	-	0.9	8.5	1.7
5/1	N72 Ahead	U	-		-	-	-	398	1500	1500	26.5%	-	-	-	0.2	1.6	0.2
Ped Link: P1	Unnamed Ped Link	-	C1:D		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

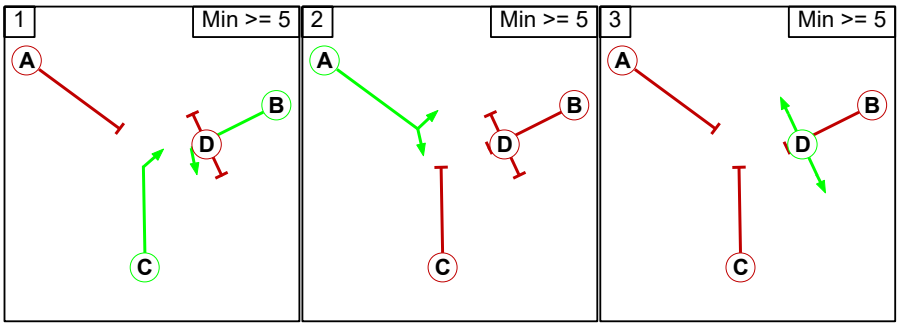
Basic Results Summary

C1 - Main St / N72	PRC for Signalled Lanes (%):	38.2	Total Delay for Signalled Lanes (pcuHr):	5.41	Cycle Time (s):	90
C2 - Park Road/ Bridge St	PRC for Signalled Lanes (%):	19.1	Total Delay for Signalled Lanes (pcuHr):	15.23	Cycle Time (s):	90
	PRC Over All Lanes (%):	19.1	Total Delay Over All Lanes(pcuHr):	22.93		

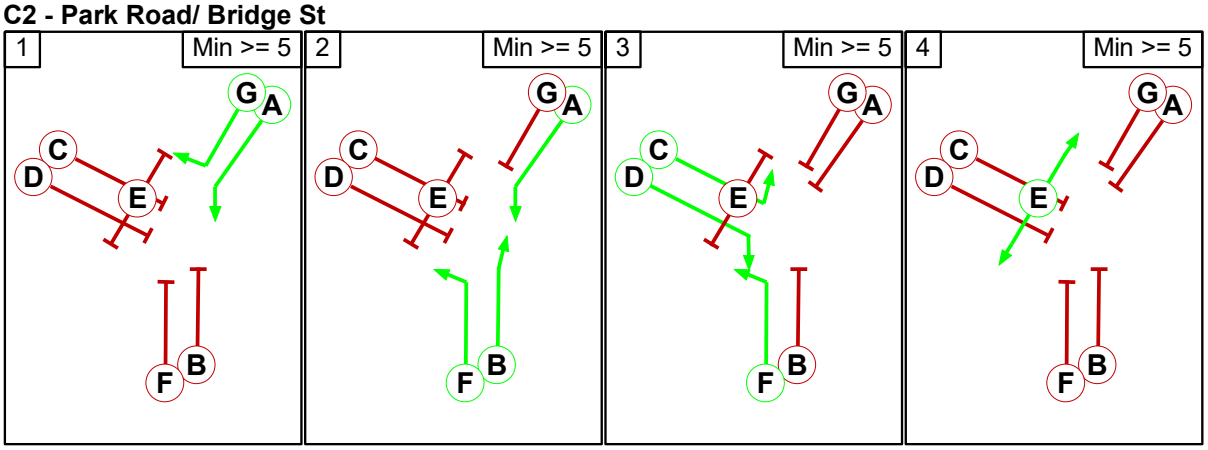
Basic Results Summary

Stage Diagram

C1 - Main St / N72

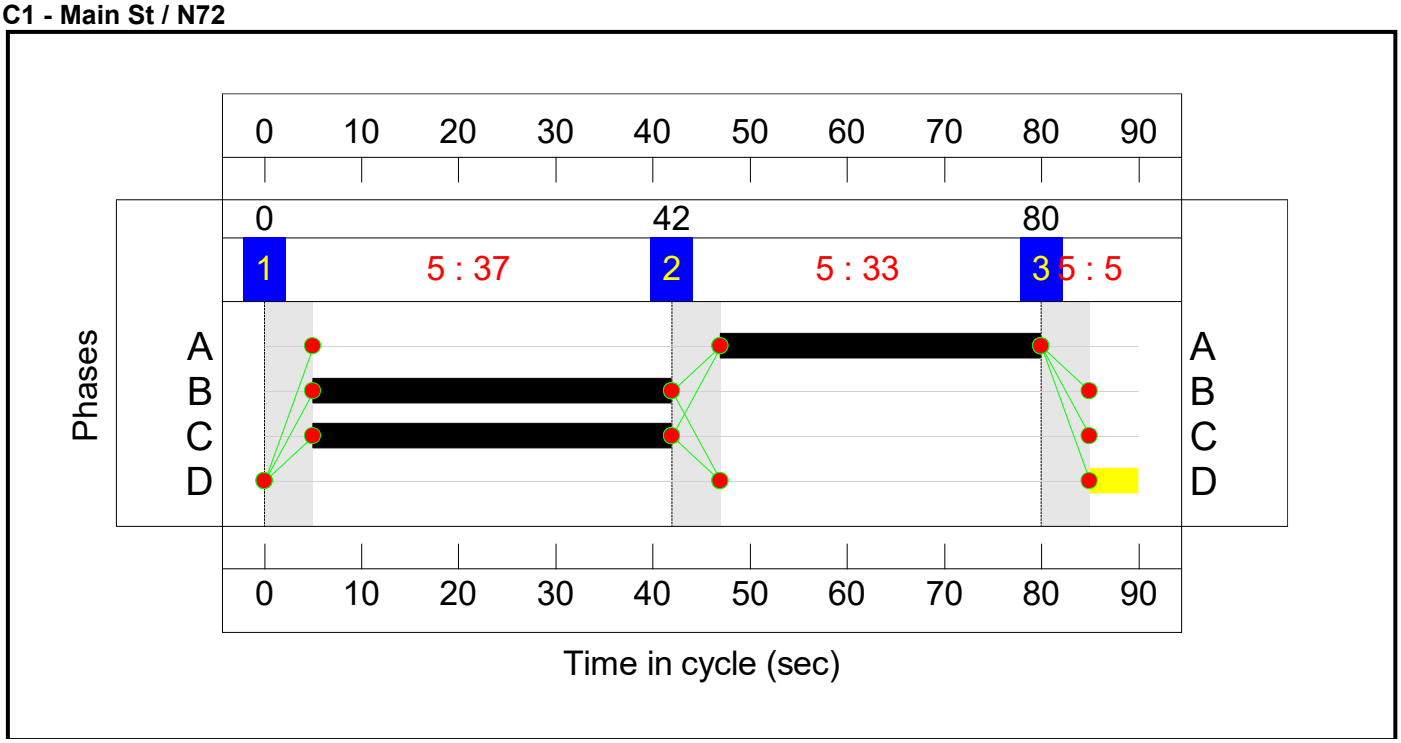


C2 - Park Road/ Bridge St



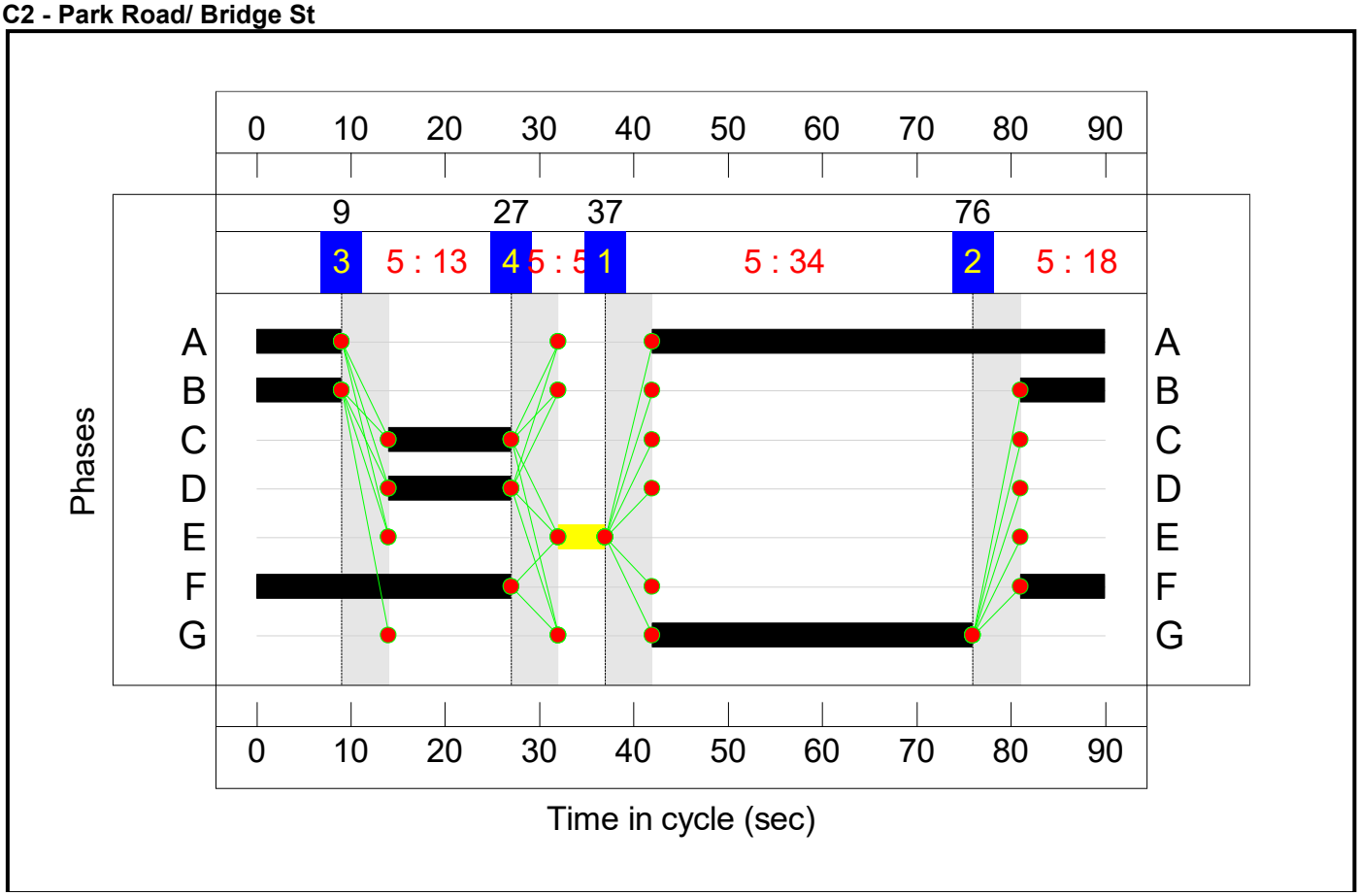
Signal Timings Diagram

C1 - Main St / N72



Basic Results Summary

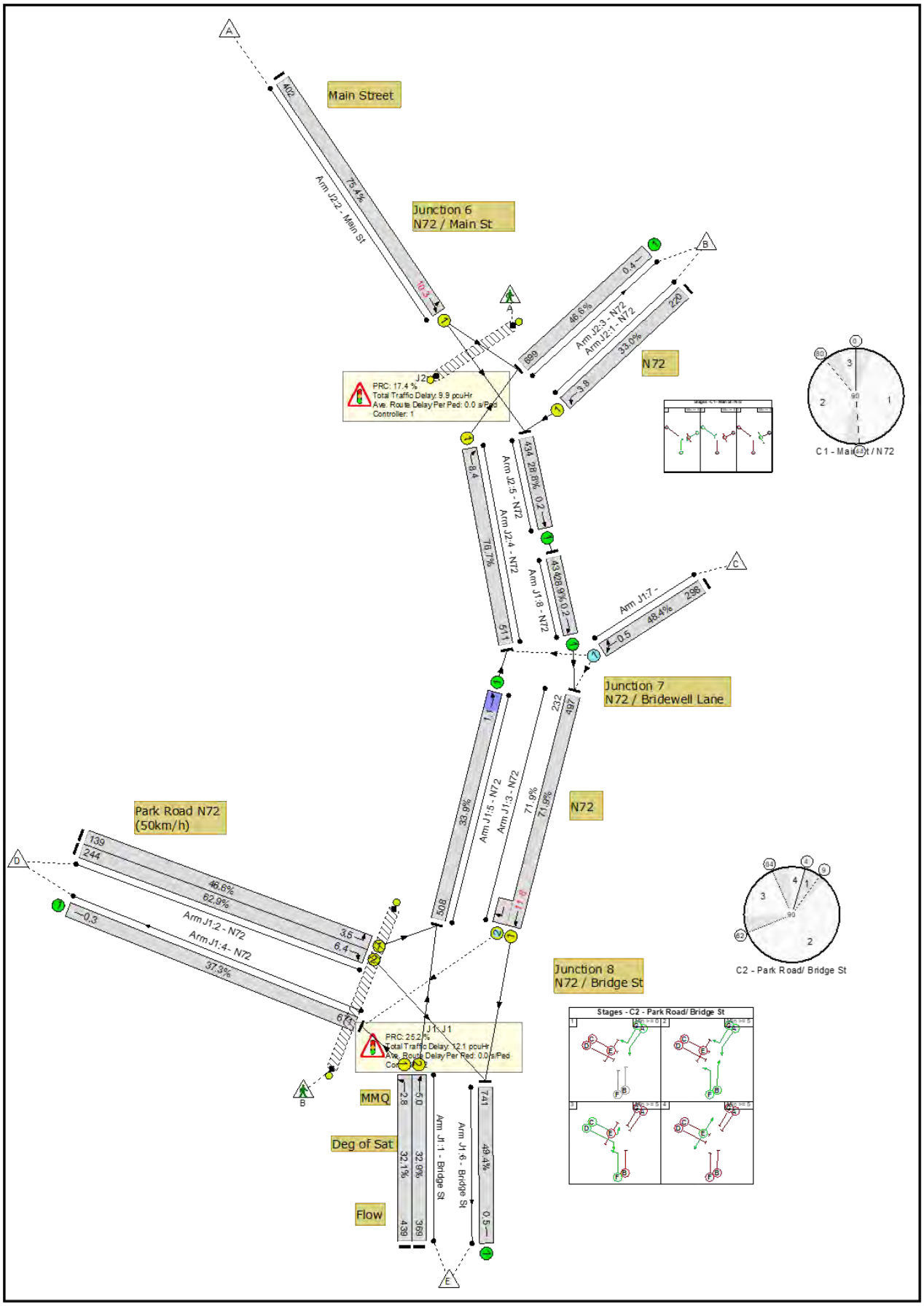
C2 - Park Road/ Bridge St



Basic Results Summary

Scenario 7: 'Evening Peak 2030' (FG7: 'Evening Peak 2030', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	-	**76.7%**	**485**	**45**	**0**	**22.1**	-	-
J1: J1	-	-	-		-	-	-	-	-	-	**71.9%**	**485**	**45**	**0**	**12.1**	-	-
1/1	Bridge St Left	U	C2:F		1	73	-	439	1665	1369	32.1%	-	-	-	0.5	3.9	2.8
1/2	Bridge St Ahead	U	C2:B		1	51	-	369	1940	1121	32.9%	-	-	-	1.3	12.3	5.0
2/1	N72 Left	U	C2:C		1	17	-	139	1492	298	46.6%	-	-	-	1.7	43.0	3.5
2/2	N72 Right	U	C2:D		1	17	-	244	1940	388	62.9%	-	-	-	3.1	45.3	6.4
3/1+3/2	N72 Right Ahead	U+O	C2:A C2:G		1	53	-	729	1500:1865	691+323	71.9 : 71.9%	187	45	0	3.9	19.1	11.8
4/1	N72	U	-		-	-	-	671	1800	1800	37.3%	-	-	-	0.3	1.6	0.3
5/1	N72 Ahead	U	-		-	-	-	508	1500	1500	33.9%	-	-	-	0.3	2.2	1.1
6/1	Bridge St	U	-		-	-	-	741	1500	1500	49.4%	-	-	-	0.5	2.4	0.5
7/1	Ahead Right	O	-		-	-	-	298	1500	616	48.4%	298	0	0	0.5	5.7	0.5
8/1	N72 Ahead	U	-		-	-	-	434	1500	1500	28.9%	-	-	-	0.2	1.7	0.2
Ped Link: P1	Unnamed Ped Link	-	C2:E		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
J2: 2	-	-	-		-	-	-	-	-	-	**76.7%**	**0**	**0**	**0**	**9.9**	-	-
1/1	N72 Left	U	C1:B		1	39	-	220	1500	667	33.0%	-	-	-	1.2	20.3	3.8
2/1	Main St Left Ahead	U	C1:A		1	31	-	402	1500	533	75.4%	-	-	-	4.3	38.9	10.3
3/1	N72	U	-		-	-	-	699	1500	1500	46.6%	-	-	-	0.4	2.2	0.4
4/1	N72 Right	U	C1:C		1	39	-	511	1500	667	76.7%	-	-	-	3.7	26.2	8.4
5/1	N72 Ahead	U	-		-	-	-	434	1509	1509	28.8%	-	-	-	0.2	1.7	0.2
Ped Link: P1	Unnamed Ped Link	-	C1:D		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

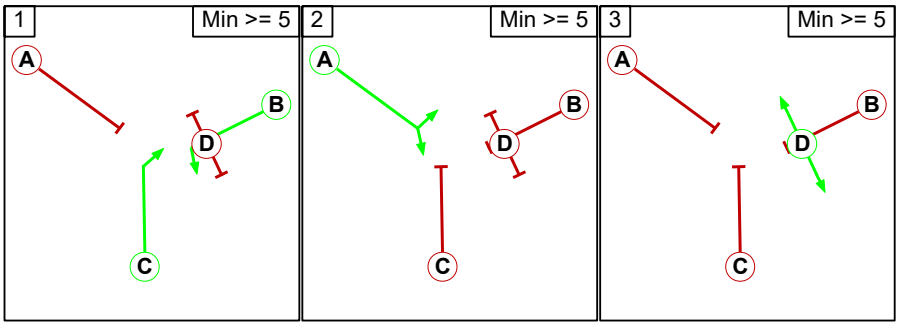
Basic Results Summary

C1 - Main St / N72	PRC for Signalled Lanes (%):	15.7	Total Delay for Signalled Lanes (pcuHr):	7.49	Cycle Time (s):	90
C2 - Park Road/ Bridge St	PRC for Signalled Lanes (%):	1.4	Total Delay for Signalled Lanes (pcuHr):	23.41	Cycle Time (s):	90
	PRC Over All Lanes (%):	1.4	Total Delay Over All Lanes(pcuHr):	34.07		

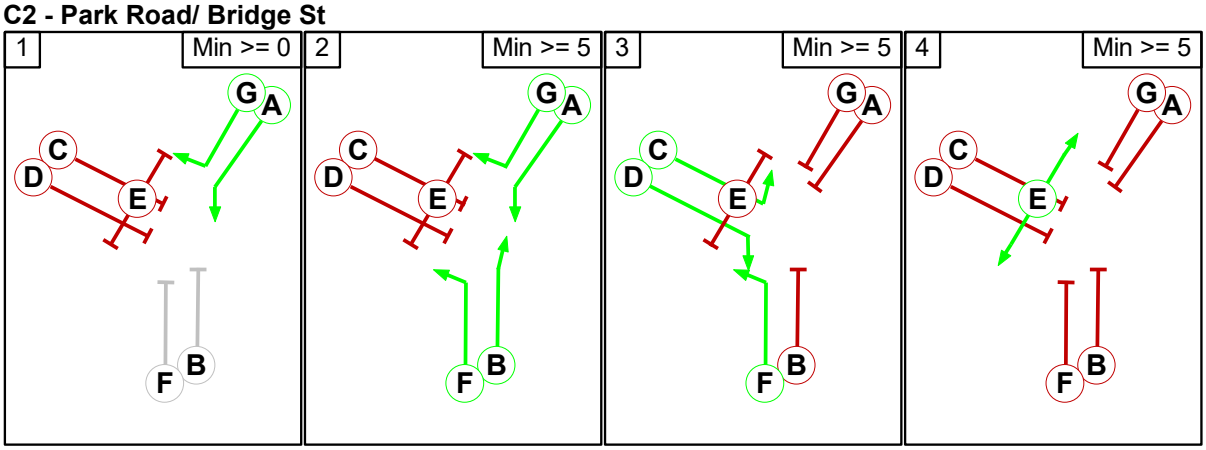
Basic Results Summary

Stage Diagram

C1 - Main St / N72

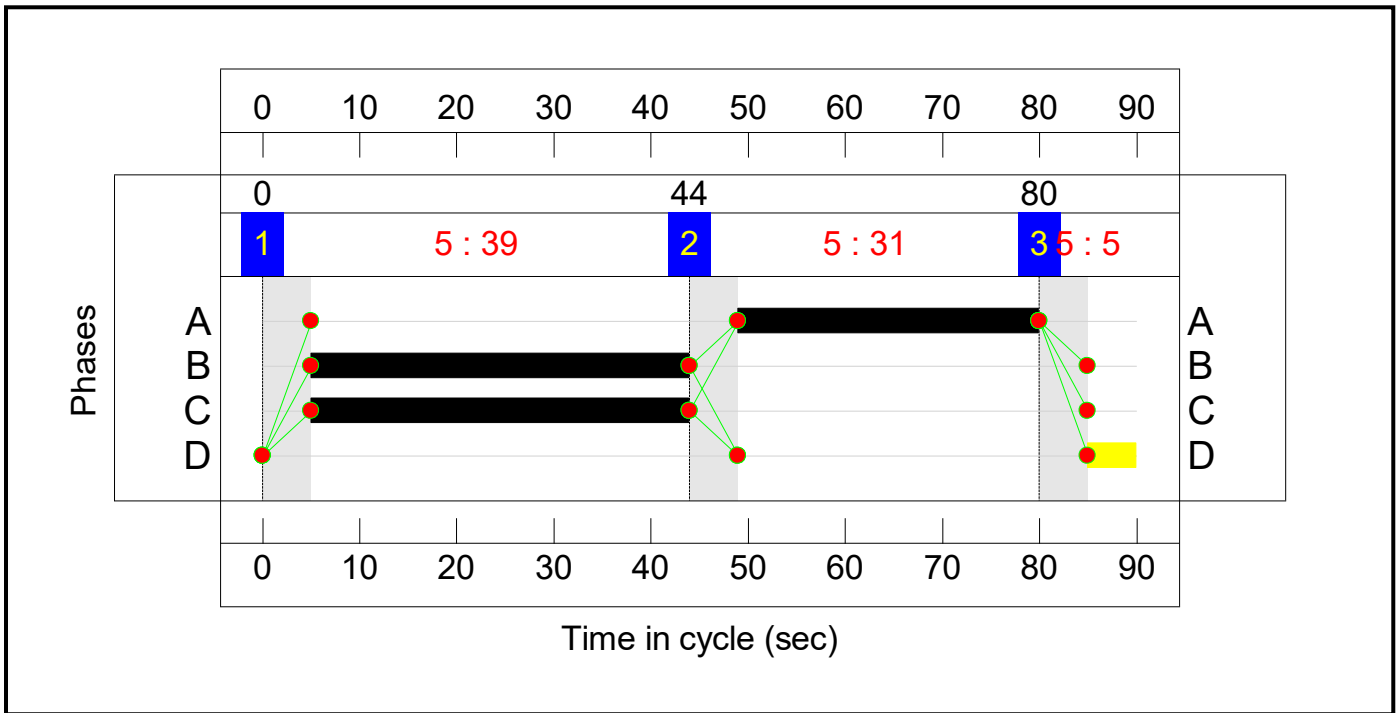


C2 - Park Road/ Bridge St

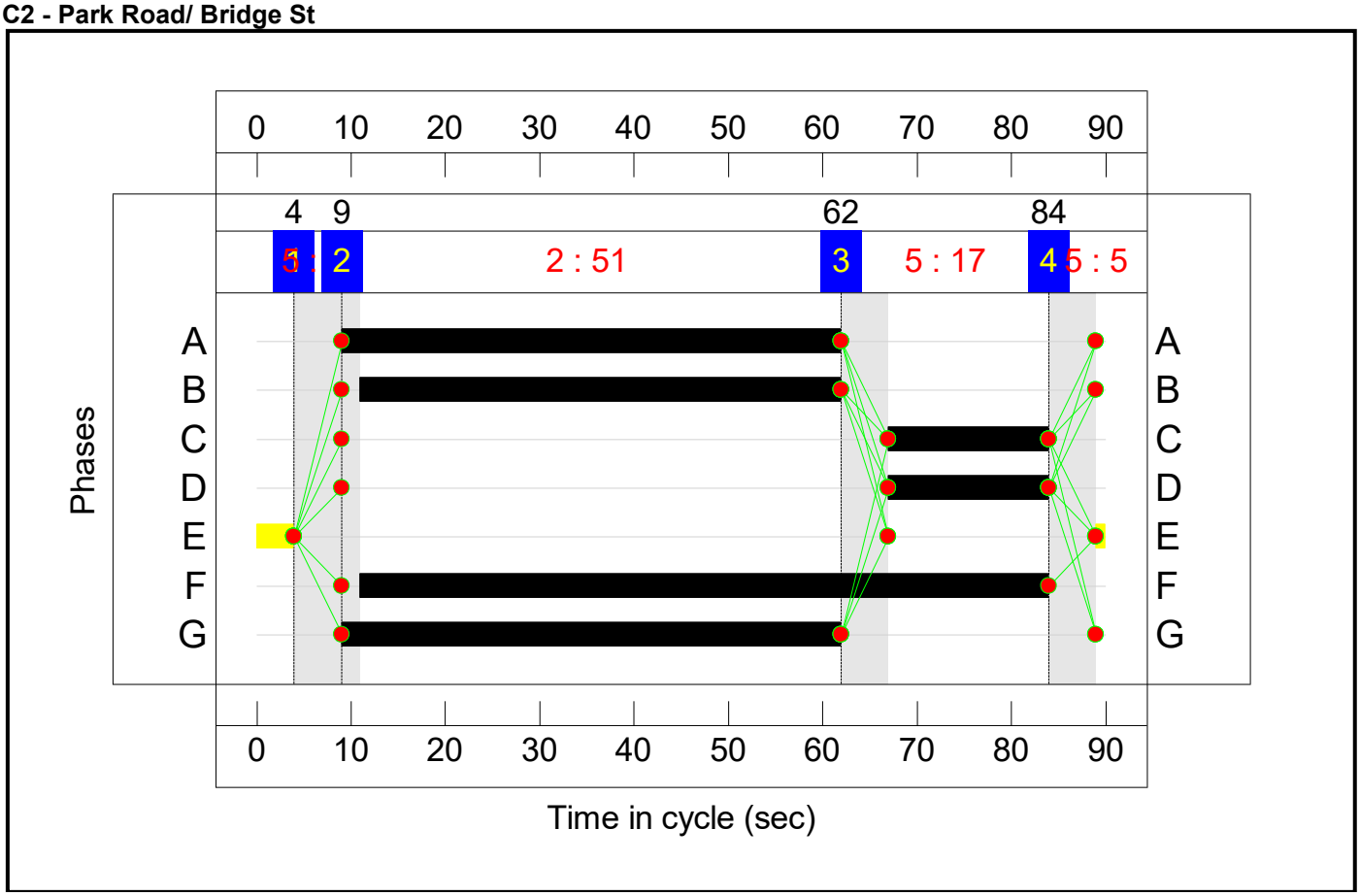


Signal Timings Diagram

C1 - Main St / N72



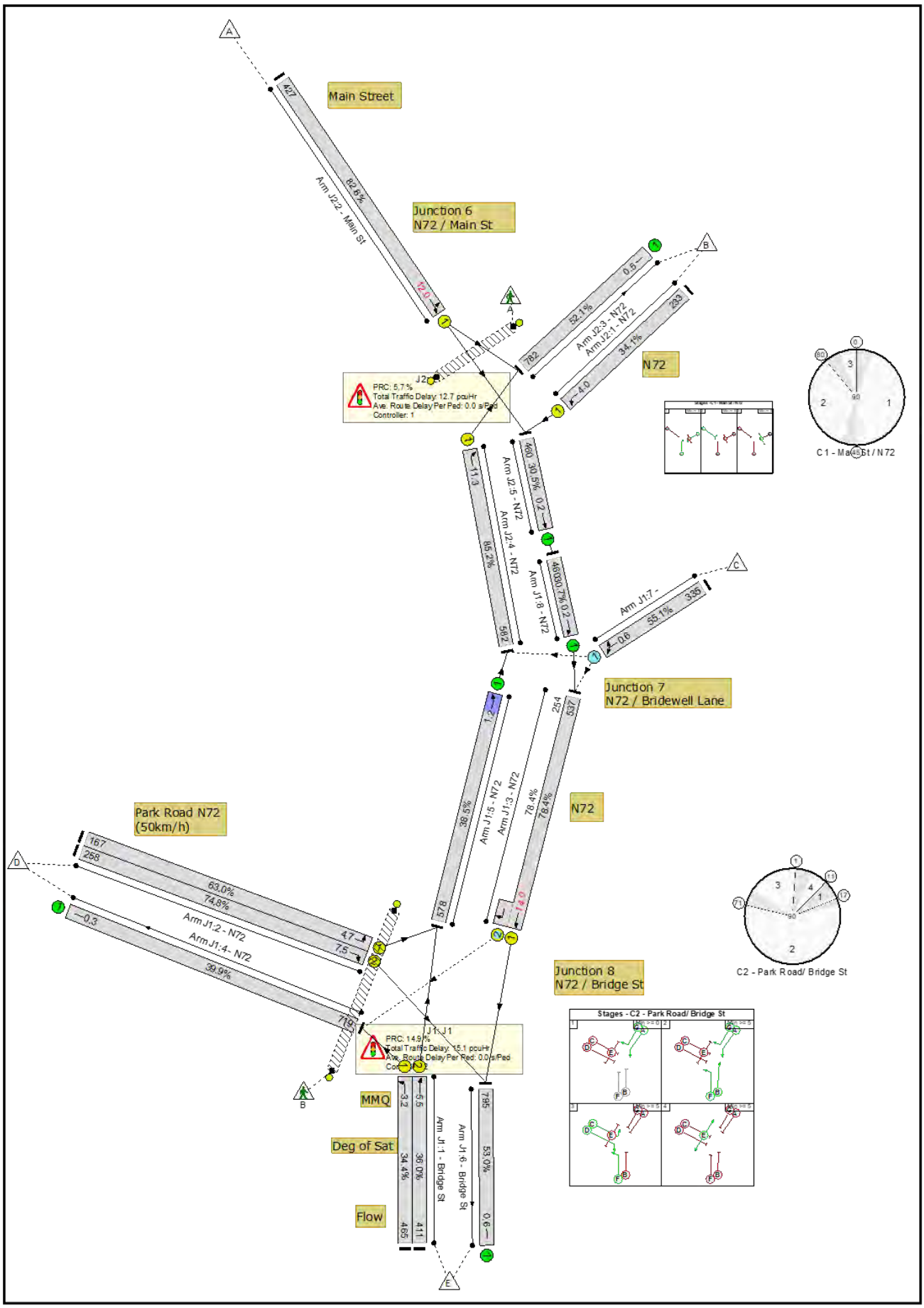
C2 - Park Road/ Bridge St



Basic Results Summary

Scenario 8: 'Evening Peak 2040' (FG8: 'Evening Peak 2040', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Existing Road Network with Development	-	-	-		-	-	-	-	-	-	**85.2%**	**540**	**49**	**0**	**27.8**	-	-
J1: J1	-	-	-		-	-	-	-	-	-	**78.4%**	**540**	**49**	**0**	**15.1**	-	-
1/1	Bridge St Left	U	C2:F		1	72	-	465	1665	1351	34.4%	-	-	-	0.6	4.3	3.2
1/2	Bridge St Ahead	U	C2:B		1	52	-	411	1940	1142	36.0%	-	-	-	1.4	12.1	5.5
2/1	N72 Left	U	C2:C		1	15	-	167	1492	265	63.0%	-	-	-	2.4	52.3	4.7
2/2	N72 Right	U	C2:D		1	15	-	258	1940	345	74.8%	-	-	-	4.0	55.1	7.5
3/1+3/2	N72 Right Ahead	U+O	C2:A C2:G		1	55	-	791	1500:1865	685+324	78.4 : 78.4%	205	49	0	4.7	21.3	14.0
4/1	N72	U	-		-	-	-	719	1800	1800	39.9%	-	-	-	0.3	1.7	0.3
5/1	N72 Ahead	U	-		-	-	-	578	1500	1500	38.5%	-	-	-	0.4	2.4	1.2
6/1	Bridge St	U	-		-	-	-	795	1500	1500	53.0%	-	-	-	0.6	2.5	0.6
7/1	Ahead Right	O	-		-	-	-	335	1500	608	55.1%	335	0	0	0.6	6.6	0.6
8/1	N72 Ahead	U	-		-	-	-	460	1500	1500	30.7%	-	-	-	0.2	1.7	0.2
Ped Link: P1	Unnamed Ped Link	-	C2:E		1	5	-	0	-	0	0.0%	-	-	-	-	-	-
J2: 2	-	-	-		-	-	-	-	-	-	**85.2%**	**0**	**0**	**0**	**12.7**	-	-
1/1	N72 Left	U	C1:B		1	40	-	233	1500	683	34.1%	-	-	-	1.3	19.8	4.0
2/1	Main St Left Ahead	U	C1:A		1	30	-	427	1500	517	82.6%	-	-	-	5.5	46.1	12.0
3/1	N72	U	-		-	-	-	782	1500	1500	52.1%	-	-	-	0.5	2.5	0.5
4/1	N72 Right	U	C1:C		1	40	-	582	1500	683	85.2%	-	-	-	5.2	32.1	11.3
5/1	N72 Ahead	U	-		-	-	-	460	1509	1509	30.5%	-	-	-	0.2	1.7	0.2
Ped Link: P1	Unnamed Ped Link	-	C1:D		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

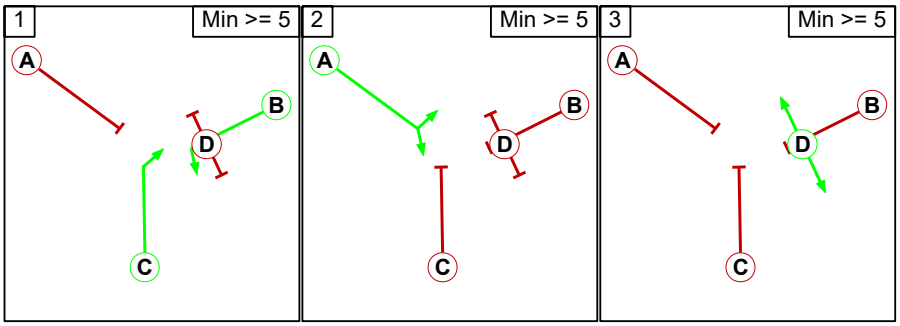
Basic Results Summary

C1 - Main St / N72	PRC for Signalled Lanes (%):	5.7	Total Delay for Signalled Lanes (pcuHr):	11.95	Cycle Time (s):	90
C2 - Park Road/ Bridge St	PRC for Signalled Lanes (%):	14.9	Total Delay for Signalled Lanes (pcuHr):	12.99	Cycle Time (s):	90
	PRC Over All Lanes (%):	5.7	Total Delay Over All Lanes(pcuHr):	27.80		

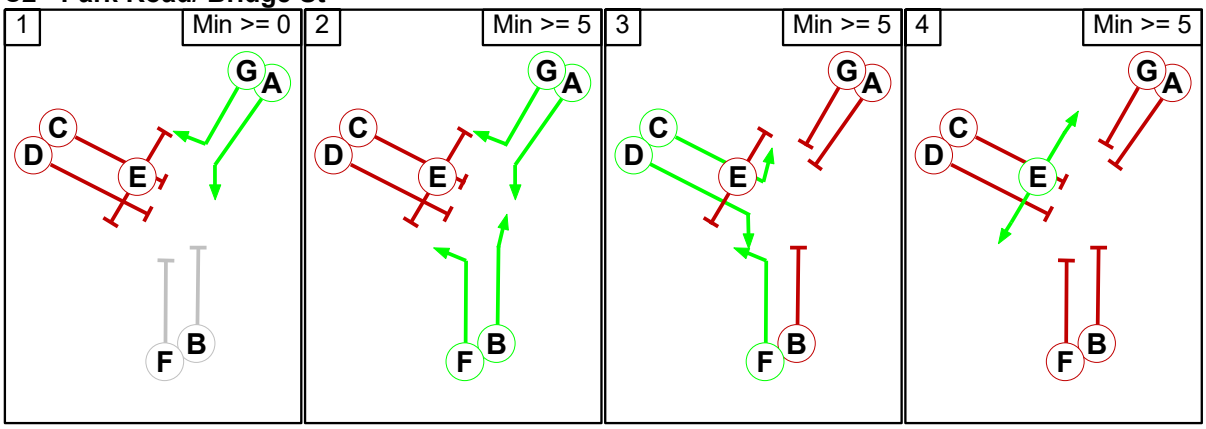
Basic Results Summary

Stage Diagram

C1 - Main St / N72

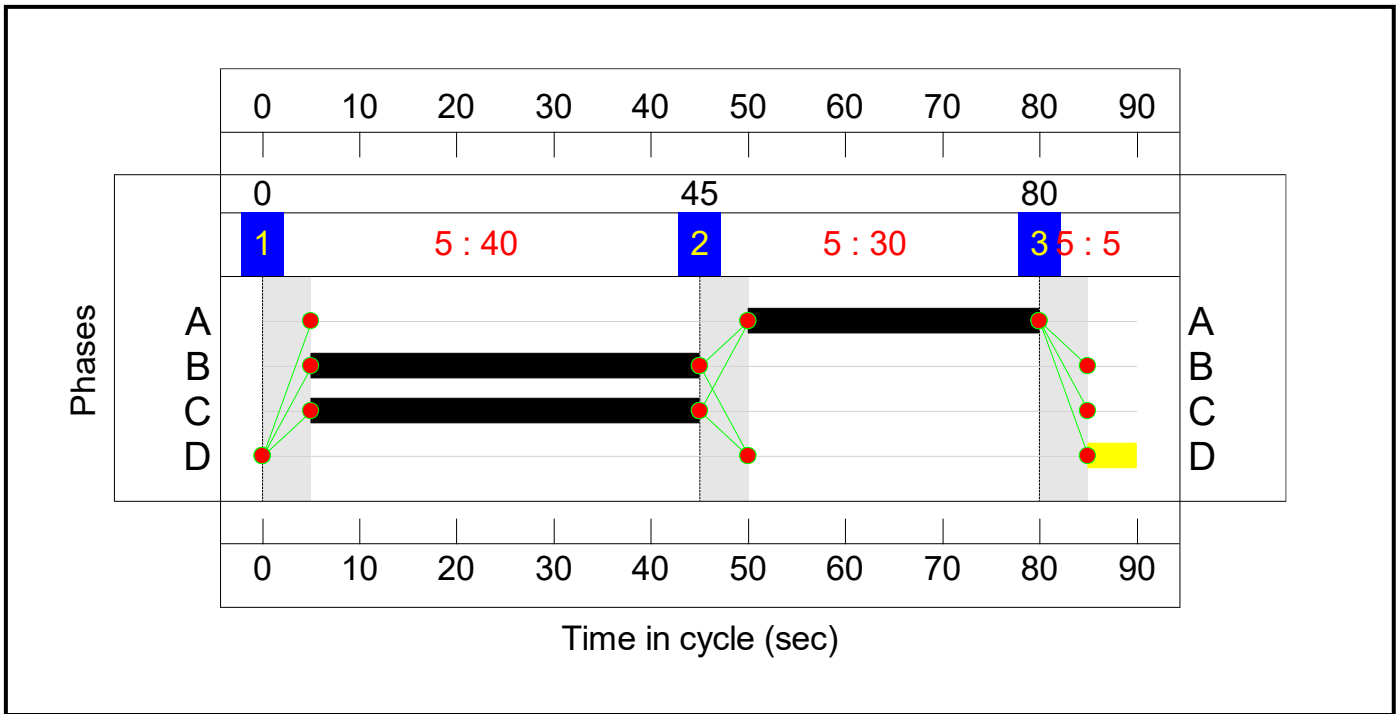


C2 - Park Road/ Bridge St



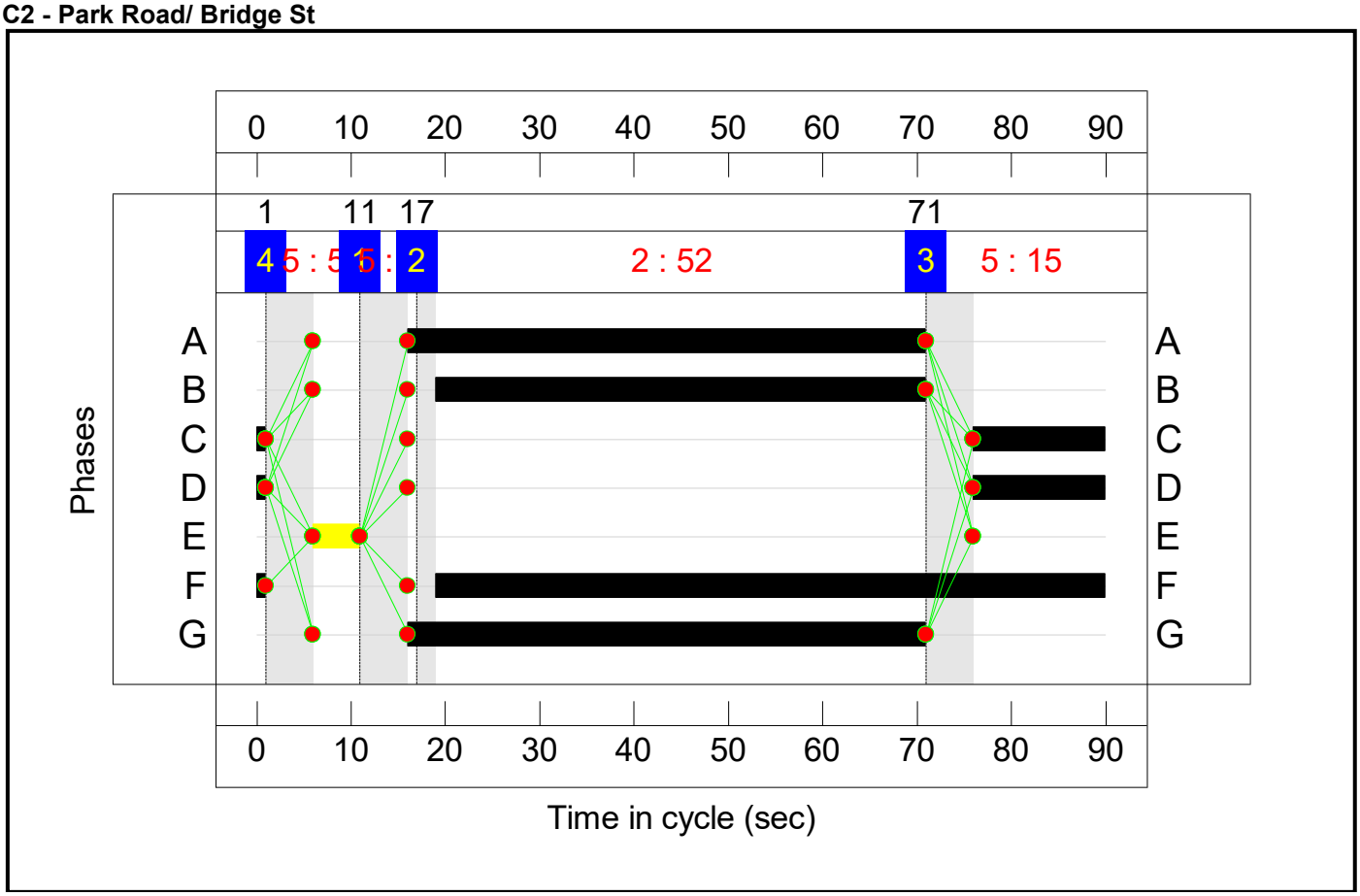
Signal Timings Diagram

C1 - Main St / N72



Basic Results Summary

C2 - Park Road/ Bridge St



17.0 Appendix E- A3 Drawings

date	rev	name	chk	note
16.07.24	P1	MP	EJG	ISSUED FOR PLANNING

DEADY GAHAN ARCHITECTS

EASTGATE VILLAGE, LITTLE ISLAND, CORK
T: 021 4355016 W:WWW.DGARCHITECTS.IE
EMAIL:INFO@DGARCHITECTS.IE

Project

PROPOSED RESIDENTIAL DEVELOPMENT

ARD AN GHLEANNA, MALLOW,

CO. CORK

Drawing title

PROPOSED SITE PLAN

Scale	Drawn	Checked	Date
1:500 @ A1	LM	EJG	06.11.23

Project No.	Drg. No.	Revision
22039	22039/P/003A	P1

☐ Information \ Comments — Tender ☐

■ Planning — Construction ☐

ARD AN GHLEANNA - MALLOW

Unit Type	Description	No. of Bedrooms	Bed Space	Proposed Unit Area (sq.m.)	No. of Unit
A1	Semi-Detached	4	7	134.44	4
B1	Semi-Detached	3	5	101.11	6
B2	Semi-Detached	3	5	100.98	8
C1	Townhouse	3	5	104.34	20
D1	Townhouse	2	4	84.5	2
D2	Townhouse	2	4	84.5	34
E1	Duplex Apartment	2	4	90.2	5
E2	Duplex Apartment	2	4	90.2	27
F1	Ground Floor Apartment	1	2	56.7	5
F2	Ground Floor Apartment	1	2	55.2	27

4 bed	4	2.9%
3 bed	34	24.6%
2 bed	68	49.3%
1 bed	32	23.2%
houses	74	53.6%
duplex-apartments	64	46.4%
TOTAL NUMBER OF UNITS	138	
SITE AREA	4.52 HA	
SITE DEVELOPABLE AREA	3.9 HA	
DENSITY	35.4 UNITS / HA	
OVERALL OPEN SPACE	26%	
USABLE OPEN SPACE	15%	
42-child CRECHE	G.I.A.: 359.9 sq.m. / G.A.: 411.6 sq.m.	

183 no. Car parking Spaces Provided in Total

(2 no. Spaces per 3 and 4 Bed Unit, 1 no. Space per 2 Bed Unit, 0.7-1 no. Spaces per Apartment Unit, 8 no. Creche Spaces and a modest number of Additional Visitor Spaces are also provided.

KEY:

- SITE BOUNDARY
- LANDS WITHIN APPLICANTS OWNERSHIP
- RIGHT OF WAY

Note

- Please refer to the landscape proposal prepared by Forestbird Design for public realm and open space information.
- Refer to accompanying plans prepared by WDG for additional engineering details etc.

DO NOT SCALE. WORK TO FIGURED DIMENSIONS ONLY.
ALL EXISTING DIMENSIONS TO BE CHECKED ON SITE.
DRAWN ON AUTOCAD R2004 AT DEADY GAHAN ARCHITECTS LTD
LAYERS ON THIS DRAWING COMPLY WITH BS 1192: PART 5

N W E S

POTENTIAL FUTURE CONNECTION

SITE BOUNDARY SHOWN IN RED

POTENTIAL FUTURE CONNECTION

3M SHARED PEDESTRIAN / CYCLE PATH

EXISTING MEADOW WITH ARCHAEOLOGICAL BUFFER ZONE

SITE BOUNDARY SHOWN IN RED

REST AREA

3M SHARED PEDESTRIAN / CYCLE PATH

SITE BOUNDARY SHOWN IN RED

POTENTIAL FUTURE PEDESTRIAN CONNECTION

POTENTIAL FUTURE PEDESTRIAN CONNECTION

3M SHARED PEDESTRIAN / CYCLE PATH

LOCATION OF SITE NOTICE

SITE ENTRANCE

PROPOSED SITE PLAN

SCALE 1:500@A1