South East Regional Hospital, Bega NSW

TRANSPORT ASSESSMENT

- FINAL Rev A
- January 2013

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1. Introduction

1.1. Background

NSW Government Health Infrastructure (Health Infrastructure/HI) has commissioned Sinclair Knight Merz S2F (SKM) to provide traffic and transport services to support Development Applications (DAs) for a new integrated hospital with 136 beds in Bega, Bega Valley Shire Council (BVSC), NSW.

Health services in the Bega region are delivered by Bega Valley Health Service (BVHS) which forms part of Southern NSW Local Health District. The Service has two public hospitals, Bega and Pambula plus a range of community health centres. The proposed hospital consolidates existing facilities in Bega and Pambula to form a new South East Regional Hospital (proposed development). The existing facilities are expected to close, post occupation of the South East Regional Hospital (SERH), and it is likely that services will be transferred on a phased basis. Once constructed, BVHS will be responsible for the proposed development.

Two DAs will be submitted in respect of the SERH development, the first for early enabling works (Stage 1) and the second for the construction of the hospital building (Stage 2). SKM has produced this Transport Assessment (TA), which will support both applications.

This TA provides a transport overview for SERH examining issues such as accessibility, parking and traffic impacts. The TA has been designed to provide a robust assessment. The TA takes cognisance of State and local policy as well as: Director General; Roads & Maritime Services (RMS); community and BVSC requirements. On-going consultation will be required throughout the planning, development and operation of the proposed SERH ensuring stakeholder requirements conform to hospital functionality and vice versa.

Where applicable any revisions to the site layout which may affect traffic and transport post submission of the first DA (Stage 1) will be submitted as an addendum to this TA.

1.2. South East Regional Hospital Context

The aspiration for the proposed South East Regional Hospital is to develop a purpose built facility with the capacity to meet the needs of the Bega Valley community and its broader catchment. The new facility will consolidate existing services provided at Bega and Pambula while offering new health capabilities such as mental health services. The new facility will have: 136 beds, a 24 hour emergency department, community health services, general surgery, renal care, a maternity/paediatric department plus a range of medical services. Support, administration, catering and maintenance departments will also be provided at SERH.

The south Bega area was chosen by key health, community and local authority stakeholders as the most appropriate site for the proposed SERH. From a community perspective the primary transport

concern for the new site is improving public and community transport services. This TA addresses this important community concern.

Based on data provided by BVHS the proposed SERH is expected to cater daily for:

- 80 inpatients;
- 113 visitors;
- 54 emergency presentations; and
- 60 community health appointments.

Supporting health services at SERH will be 564 Full Time Equivalent (FTE) staff upon hospital opening employed in a range of departments including medical, administration, engineering and community.

Proposed transport infrastructure, to ensure the safe and sustainable accessibility of the site for a wide mix of hospital user groups includes:

- a network of pedestrian and cycle links, including a number of shared paths and dedicated pedestrian zones within the SERH site and linking to Bega town;
- dedicated pedestrian crossing facilities;
- ten cycle parking spaces and the provision of showers and changing facilities for staff;
- a new bus stop located at the hospital entrance and a high level commitment from public transport stakeholders to serve the SERH site;
- a dedicated pick up and drop off zone for emergencies, community transport and taxis;
- 485 car parking spaces including 36 accessible (wheelchair) spaces; and
- a new vehicular access and intersection (roundabout) at Tathra Road/Harry Scanes Avenue.

Appendix 1 highlights the proposed SERH location and includes an indicative site layout.

Opportunities exist for the long term expansion of the SERH building this TA considers the transport infrastructure required to support a 136 bed hospital on a phased basis. Should the hospital expand, supporting documentation would be submitted to secure the necessary approvals. Again in order to provide a robust assessment and test the proposed road network, the implications of an expansion are considered in Chapters 5, 6 and 8 of this TA, for example the consideration of land for overflow car parking.

Within the SERH site there are also opportunities for ‘other’ developments such as educational facilities and additional support health facilities. Should these ‘other’ developments come online they will be required to provide their own car parking and so forth. This TA does not consider the transport infrastructure requirements of any ‘other’ developments these would be secured through

future DAs. This TA does, however include the indicative travel demands associated with 'other' developments to ensure that the proposed road network is capable of accommodating long term vehicle demands.

1.3. Director General Requirements (DGRs)

Director General Requirements have been received in respect of the proposed SERH (Application Number 5307-2012) from a transport and accessibility perspective general DGRs in relation to the concept design are:

Undertake a preliminary assessment of the traffic impact of the concept proposal, with particular regard to:

- *existing road capacity, traffic conditions, expected impacts and any upgrade requirements;*
- *daily and peak traffic movements and impacts on intersections;*
- *access arrangements to and within the site;*
- *delivery, servicing and loading arrangements;*
- *pedestrian and bicycle linkages to and within the site; and*
- *access for emergency vehicles.*

All of these concept DGRs have been considered as standard throughout the masterplanning, concept and schematic design process relating to SERH.

Table 1-1 summarises DGRs for Stage 1 and Stage 2, respectively, and in which Chapter(s) of the TA they are addressed. DGRs for Stage 2 also consider the concept DGRs illustrated above. This TA takes cognisance of these requirements as well as those of other stakeholders.

SKM note the following in respect of DGRs and their inclusion as part of this TA and in reference to **Table 1-1**:

- **Stage 1 DGR Numbers 1-3 and Stage 2 DGR Number 6**.

  Given the early planning and design stages for SERH, it is not possible to provide final construction traffic volumes/routes and therefore any associated: infrastructure requirements, impacts, and mitigation. Thus this TA includes a Framework strategy in relation to construction, based on project assumptions at August 2012. Once a contractor has been identified and a programme determined for Stage 1 and Stage 2 construction, the Framework can then be updated to reflect this information and take cognisance of any changes to baseline transport characteristics. Construction management updates will be circulated to stakeholders as and when applicable for formal commentary and finalisation.

- **Stage 2 DGR Number 4 & 8**

  This TA should be reviewed in tandem with C & M Consulting engineering drawings. This is particularly applicable to Swept Path Analysis confirming that the site layout is capable of

accommodating anticipated large vehicles as well as the new Tathra Road intersection design parameters.

- **Stage 2 DGR Number 6 & 7**

  Traffic generation is based on a review of: anticipated travel demands, RTA's Guide to Traffic Generating Development and experience in sites of a similar nature to SERH. This approach has been agreed with RMS and BVSC. Traffic impact study parameters have also been agreed with BVSC/RMS and demonstrate a robust assessment.

- **Stage 2 DGR Number 10**

  Standards applicable to hospitals underestimate the likely parking demand. Car parking is therefore based on a site specific parking requirement which has been agreed with RMS and BVSC.

- **Stage 2 DGR Number 11 & 13**

  A Travel Plan Framework (TPF) is provided as part of this TA illustrating measures which **could** be provided at SERH to promote sustainable travel and reduce the dependence on private vehicles, particularly single occupancy car trips. It is not pertinent to identify specific travel targets at this stage. Once the hospital is occupied and travel patterns established, then the Travel Plan Framework can be finalised, and measures implemented in a resource efficient manner. NSW 2021 travel targets are considered in this Framework, however SKM utilise these targets as a benchmark only, given their applicability is typical of larger urban areas.

Table 1-1: Director General Requirements (Received 10.08.12)

No.	Stage 1	TA Inclusion	Chapter
1	*Detail proposed car parking arrangements, including parking requirements for Stage 1 Construction Enabling Works*	✓	***9***
2	*Provide accurate details of daily vehicle movements and assess the impacts of the traffic generated on the local road network, including impact on nearby intersections and any potential need for upgrading or road works (if required).*	✓	***9***
3	*Preparation of a Traffic Impact Study to identify potential traffic impacts during construction stage of the project, and measures to mitigate this impact.*	✓	***8 & 9***

No.	*Stage 2*	*TA Inclusion*	*Chapter*
4	*Detail proposed access arrangements to the hospital, including augmentation requirements and intersection upgrade treatments, the type and size of vehicles accessing the site and measures to mitigate any associated pedestrian, cycle or traffic impacts.*	✓	***4, 6 & 8***
5	*Detail proposed on-site car parking arrangements for the development, which shall be sufficient so as to minimise any off-site impacts to the local traffic network.*	✓	***6***
6	*Prepare a Traffic Impact Study to identify potential traffic impacts during the construction and operational stage of Stage 2 Main Construction Works, and measures to mitigate this impact. Traffic generation for public hospitals is not covered in the RTA's Guide to Traffic Generating Development and traffic generation estimates should be based on similar developments and a first principles analysis of the proposal.*	✓	***5, 8 & 9***
7	*Intersection modelling using SIDRA should be undertaken for key junctions including Harry Scanes Avenue, Tathra Road and the proposed new access. The SIDRA analysis should be undertaken considering the following: AM and PM peak volumes and holiday peak volumes and existing traffic volumes with and without the development and 10 year projected volumes with and without the development.*	✓	***5 & 8***
8	*Details of the proposed access, parking provisions and service vehicle movements associated with the proposed development. This requires sight distances at any new access points to comply with safe intersection sight distances in accordance with Austroads Guide to Road Design - Part 4a: Unsignalised Intersections Table 3.2, in both directions*	✓	***4, 5 & 6***

No.	Stage 2	TA Inclusion	Chapter
9	*Prepare a Transport Accessibility Study with reference to the following: NSW State Plan 2021, Guide to Traffic Generating Development (RMS), NSW Planning Guidelines for Walking and Cycling, Integrated Land Use and Transport Policy Package, NSW Bike Plan, Premier's Council for Active Living (PCAL) - Development & Active Living, EIS Guidelines- Road and Related Facilities (DP&I)and Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development*	✓	***2***
10 11 12 13 14	*The Transport Accessibility Study shall:* *-demonstrate the proposed access and parking provisions, including the number of car parking spaces for adequate compliance with the relevant Australian standards and parking codes* *- demonstrate how users of the development will be able to make travel choices that support the achievement of NSW 2021 targets* *- detail existing pedestrian and cycle movements within the vicinity of the site and determine the adequacy of the proposal to meet the likely future demand for increased public transport, pedestrian and cycle access* *- describe measures to be implemented to promote sustainable means of transport including public transport usage and pedestrian and bicycle linkages in addition to addressing the potential for implementing a location specific sustainable travel plan.* *- estimate the total daily and peak hour trips generated by the proposed development, including accurate details of the current and future daily vehicle movements and assess the impacts of the traffic generated on the local road network, including intersection capacity and any potential need for upgrading or road works (if required, having regard to local planning controls).*	✓	***6*** ***7*** ***3, 4, 6 & 7*** ***4 & 7*** ***5 & 8***

1.4. Consultation

SKM has consulted with a number of relevant traffic and transport stakeholders including:

- Transport for NSW;
- Bega Valley Shire Council (BVSC);
- Roads and Maritime Services (RMS); and
- local bus service operators.

Positive responses have been gained from each stakeholder and **Table 1-2** summarises stakeholder consultation to date.

On-going consultation will be undertaken throughout the design, development and operation stages, ensuring stakeholder requirements conform to hospital functionality and vice versa. This is especially applicable to ensuring public transport services are suitable to hospital user needs.

1.5. Transport Assessment Scope

BVSC and RMS are the key transport stakeholders in relation to the transport project scope. Both stakeholders have given an 'in-principle' agreement to the development proposals subject to the outputs and finalisation of this TA and ongoing consultation.

The following denotes BVSC and RMS requirements and considerations to date:

- agreement that the Development Control Plan (DCP) for the area underestimates the likely parking provision associated with a hospital of this nature;
- traffic generation for public hospitals is not included in RTA's *Guide to Traffic Generating Development;* and
- need for pedestrian/cycle and motorised scooter links and facilities.

The methodology to be adopted in the preparation of the TA has been confirmed with BVSC and RMS, specifically detailing the following:

- locations of intersections to be analysed as part of the TA;
- traffic survey parameters such as survey days and timeframes;
- site specific approach to car parking; and
- Transport Assessment scope including intersection modelling parameters.

Appendix 2 includes the agreed TA scope, which provides a robust assessment in consideration of the DGRs.

Since initial consultation with BVSC and RMS, the proposed access arrangements to the hospital have changed. This includes the removal of a potential secondary access for emergency purposes at Boundary Road/Tathra Road. The access and subsequent consultation will therefore not form part of this TA.

1.6. Report Content

The structure of the TA is as follows:

- Chapter 2 details relevant policy and guidance at State and local levels, corresponding to **Stage 2 DGR Number 9**.
- Chapter 3 details the baseline transport conditions for each transport mode, inclusive of **Stage 2 DGR Number 12**.
- Chapter 4 demonstrates the hospital operational context and proposed transport infrastructure inclusive of **Stage 2 DGRs Numbers 4, 8, 12 and 13.**
- Chapter 5 demonstrates the anticipated travel demands for the proposed SERH, trip distributions and sensitivity testing requirements, corresponding to **Stage 2 DGRs Number 6, 7, 8 and 14.**
- Chapter 6 includes access detail plus car parking provisions, allocations and management strategies satisfying **DGR Stage 2 Numbers 4, 5, 8, 10 and 12.**
- Chapter 7 includes the Travel Plan Framework to be formalised upon site occupation and relates to **DGR Stage 2 Numbers 11- 13.**
- Chapter 8 presents the Traffic Impact Study undertaken using SIDRA and based on anticipated travel demands and relating to stakeholder requirements. Specifically **Stage 1 DGR Number 3 and Stage 2 DGR Number 4, 6, 7 and 14.**
- Chapter 9 corresponds to **Stage 1 DGR Numbers 1-3** plus **Stage 2 Number 6** in relation to construction.
- Chapter 10 summaries the TA and concludes the report.

Table 1-2: SKM Stakeholder Consultation Summary

Stakeholder	Transport Subject	Consultation Format	Consultation Dates	Outcome
BVSC	Project Introduction and Commencement Scope	Telephone and email	01.05.12 and 17.05.12	High levels transport issues raised. Actions to be included in traffic study identified.
BVSC	Traffic Survey Requirements	Telephone and email	15.06.12	Location and times for traffic surveys agreed.
BVSC	Project Discussion	Meeting	27.06.12	Agree project expectations, confirm transport requirements and knowledge sharing.
BVSC	Tathra Road access at Harry Scanes Avenue, public transport, pedestrians, cyclists, car parking and internal intersection(s).	Telephone and emails	27.06.12-08.08.12	Proposals agreed subject to detailed design and DA documentation.
BVSC	Transport Assessment Scope	Email	06.08.12-21.08.12	Confirmation of study parameters.
Tathra Bus, Bega Valley Coaches and Deans Coaches	Servicing the site directly by public transport	Telephone and Emails	26.06.12	Agreement to serve the site directly. Operator design requirements circulated to project team for inclusion in the indicative site layout.
Transport for NSW	Bus Servicing	Telephone and Emails	24.07.12	Positive support-await further information prior to occupation.
RMS	Project Introduction, Commencement Scope and Traffic Surveys	Telephone and email	23.05.12, 31.05.12 and 12.06.12	High levels transport issues raised. Actions to be included in traffic study identified.

Stakeholder	Transport Subject	Consultation Format	Consultation Dates	Outcome
RMS	Project Discussion	Meeting	27.06.12	Agree project expectations, confirm transport requirements and knowledge sharing.
RMS	Transport Assessment Scope	Email	06.08.12- 24.08.12	Confirmation of study parameters.

1.7. Terms and Abbreviations

The following terms have been used in this document.

Term/ Abbreviation	Meaning
BVN	Bligh Voller Nield Architecture
BVHS	Bega Valley Health Service
BVSC	Bega Valley Shire Council
CMP	Construction Management Plan
DA	Development Application
DCP	Development Control Plan
DGRs	Director General Requirements
EIS	Environmental Impact Statement
FTE	Full Time Equivalent
HI	Health Infrastructure NSW
HRVs	Heavy Rigid Vehicles
km	Kilometre
km/h	Kilometres per hour
m	Metre
NSW	New South Wales
PCAL	Premier's Council for Active Living
RMS	Roads and Maritime Services of NSW
RTA	Roads and Traffic Authority (now RMS)
SERH	South East Regional Hospital (proposed development)
SKM	Sinclair Knight Merz S2F
SPA	Swept Path Analysis
TA	Transport Assessment
TP	Travel Plan
TPF	Travel Plan Framework

Any reference to C & M Consulting Engineers relates to the civil engineers for the SERH project.

2. Policy and Guidance Context

2.1. Introduction

The following policy and guidance documents were considered from the outset in relation to the SERH design and transport planning process. All of these policy/guidance documents encourage developments to be designed to a standard which is safe, attractive and sustainable.

The following paragraphs summarise State and local transport related policies and correspond to **Stage 2 DGR Number 9.** The SERH development proposals are summarised for each document illustrating how the proposals conform to appropriate transport criteria.

2.2. NSW Plan 2021

The NSW Plan is a strategic 10 year plan to 'make NSW number one'. The Plan has five Strategies:

1. Rebuild the economy.
2. Return quality services.
3. Renovate infrastructure.
4. Strengthen our local environment and communities.
5. Restore accountability to Government.

Transport for NSW will be responsible for delivering strategic infrastructure projects and better coordinating different transport modes to provide clean, reliable, safe, efficient and integrated transport services.

The Plan has 32 goals designed to meet these Strategies and from a transport perspective, these goals include:

- reducing travel times;
- growing patronage on public transport by making it a more attractive travel choice;
- improving the customer experience of transport services; and
- improving road safety.

Each transport related goal has targets and priority actions to be addressed by Transport for NSW and these can be summarised as follows:

- minimise public transport waiting times for customers;
- increase walking and cycling;
- increase real time travel information to customers; and

- reduce road fatalities.

NSW Plan 2021 includes travel mode share targets; these are principally directed to Sydney and its wider Metropolitan Region and include increasing the proportion of journeys to work by public transport to 28% by 2016. Although Bega resides out-with the Sydney Metropolitan area, the target still provides a benchmark for promoting public transport use. The 2006 Bega Valley Shire travel to work survey demonstrates that 1.3% of respondents travel by public transport (*Source: Australian Bureau of Statistics, Census of Population and Housing, 2006, 2001, 1996, and 1991 note: includes those who do not work or work from home*).

Proposal Summary

The development of SERH, Bega considers the NSW Plan 2021. This is particularly evident in the site layout which provides the mechanisms to promote active and sustainable travel through good infrastructure design. This infrastructure has been designed to consider stakeholder and site user needs, for example a bus stop is proposed within the site adjacent to the entrance and Transport for NSW has been consulted regarding strategic servicing of this bus stop. Chapter 4 provides further detail regarding the development proposals. In addition to transport infrastructure, the SERH Travel Plan Framework (TPF) demonstrates where 'softer' measures could be implemented to encourage sustainable travel. The TPF is included in Chapter 7 and will be formalised once the site is occupied. It is this document which provides the management tool for addressing travel mode share percentages and targets.

2.3. Integrating Land Use and Transport Guidelines

This document was developed in 2001 by Transport for NSW, Roads and Traffic Authority (now RMS) and the NSW Department of Urban Affairs and Planning to provide guidelines for new developments aimed at improving transport choice. The objectives of this document are to:

- better integrate land use, transport planning and development;
- provide transport choice and manage travel demand to improve the environment, accessibility and liveability;
- reduce growth in the number and length of private car journeys; and
- make walking, cycling and public transport use more attractive.

The guidelines apply to NSW urban areas and all stages of planning and development. The guidelines include the following ten Principles for accessible development:

1. Concentrate in centres.
2. Mix uses in centres.
3. Align centres within corridors.

4. Link public transport with land use strategies.
5. Connect streets.
6. Improve pedestrian access.
7. Improve cycle access.
8. Manage parking supply.
9. Improve road management.
10. Implement good urban design.

Of pertinence to the SERH development are the Health and Education location and design criterion, which include:

- major hospitals should locate as close as possible to regional centres;
- public transport services can be created or made more viable by the location of medical specialist facilities, which often adjoin major hospitals;
- safe, level and direct pedestrian paths to nearby bus stops, shops and other facilities should link services;
- in the siting and design of schools and hospitals, it is important to balance the need for close proximity to public transport routes with the need to avoid disturbance from noise or vibration and to optimise road safety;
- sufficient off-street space should be provided for the movement of all transport modes — cars, taxis, bicycles, pedestrians, service/ emergency vehicles and buses;
- safe pick up/set down areas away from major roads should be provided for new facilities;
- footpaths should be provided and maintained along nearby streets and within the educational or health facility site; and
- good bicycle storage facilities should be provided, or shared with other uses.

Implementing the good practice and design guidance within the *Integrating Land Use and Transport* document is achieved through consultation, accessibility planning, parking control, active travel planning and design. Most of this implementation falls within the control of local councils, achieved through the provision, management and adherence of local policies for example car parking policy and standards.

Proposal Summary

SKM have considered the guidance Principles and design criterion included within the *Integrating Land Use and Transport* reference document from the outset. During the masterplanning stage for SERH, specific emphasis was placed upon a hierarchy of accessibility with emergency vehicles given the highest priority followed by active travel, public transport and the private car. More detail

regarding the proposed site layout is included in Chapter 4. Of specific importance is the continued and ongoing consultation between SKM and a number of transport stakeholders to ensure that expectations can be met and that a sustainable and functional hospital is provided. Consultation outcomes are included in Chapter 1.

2.4. NSW Planning Guidelines for Walking & Cycling

Developed in 2004 by NSW Government, these guidelines are designed to assist land-use planners to improve their consideration to walking and cycling. It is anticipated that this will led to more opportunities for people to live in places with easy walking and cycling access to urban facilities and amenities. Guidelines are principally directed at local councils so that they may develop site specific plans to improve walking and cycling. Guidelines can include aspects such as: accessibility, designing neighbourhoods, regional walking and cycling routes, catchments, zoning, street design, security/safety, building siting, bicycle parking and community engagement.

Proposal Summary

Walking and cycling infrastructure at SERH is outlined in Chapter 4, while additionally the mechanisms to encourage active travel are included in the Travel Plan Framework for SERH (Chapter 7). SKM has consulted with Bega Valley Shire Council confirming their aspirations, policy and guidance with regard to active travel, particularly cycling and this is detailed further in Paragraph 2.9.

2.5. NSW Bike Plan

In 2010 NSW Government released the Bike Plan inclusive of a 10 year vision for cycling focusing on the delivery of cycling infrastructure and the promotion of its use. State wide this includes partnerships between State agencies, local councils and non government organisations and includes programmes such as bike parking, security, safety training, signage and community initiatives.

Proposal Summary

Given the location of the proposed SERH in rural NSW, some cycling infrastructure and promotional measures won't always be applicable, however cycling has been given due consideration within the site layout and through on-going consultation between SKM and Bega Valley Shire Council to ensure the opportunity for cycling is available for hospital users and the wider community. This will be achieved through the provision of cycle paths, bicycle parking, staff showers and promoted through the TPF.

2.6. Premier's Council for Active Living (PCAL)- Designing Places for Active Living

This NSW Government resource is aimed at ensuring the built environment supports active living and reduces car dependence through an integrated approach to design by local councils,

communities and private developers. Some key design considerations in relation to the proposed SERH include:

- ensure that shared paths are carefully designed with sufficient width, adequate sightlines, gentle gradients and turns and marked centrelines;
- make public transport an easy option, by increasing awareness of public transport, planning clearly signed, safe (eg well-lit) and direct routes to public transport stops within a comfortable walking distance of workplaces;
- bus stops should be attractive, well maintained and secure with appropriate route and timetable information provided;
- provide secure, well-lit and sheltered bicycle parking within (or close to) buildings; and
- encourage access by all modes of transport through a site layout that balances the needs of pedestrians, cyclists, buses as well as driver comfort and visibility.

Proposal Summary

Chapter 4 details how pedestrians, cyclists and public transport users will access the site safely and efficiently.

2.7. Cancer Council NSW- Car Parking for Cancer Patients in NSW

Released in June 2012 this reference report demonstrates the issues faced by cancer patients accessing health care appointments by car. The reference report makes recommendations for health services to improve car parking strategy, provision, management and consultation for NSW cancer patients and their carers. This guidance document has been considered and accessible spaces are proposed in close proximity to the main hospital entrance for patients with reduced mobility. This will be achieved through good way finding and lining. Wheelchair and parent and child car parking spaces will be also be provided at SERH.

2.8. Bega Valley 2030

Bega Valley 2030 sets the direction for the region, the five themes are:

1. A Liveable Place.
2. An Enterprising Place.
3. A Sustainable Place.
4. An Accessible Place.
5. A Leading Organisation.

From a transport perspective the key directions include:

- you can get where you need to go in a way that is accessible, safe, environmentally friendly and efficient;
- finding out how to get where you want to go and what is available there;
- infrastructure planning, design, construction, maintenance and works meet standard; and
- facilities are located to encourage their use rather than letting things just happen.

Outcomes and result areas to meet these key directions include: integrated transport network and information and signage.

Proposal Summary

This TA takes cognisance of Bega Valley 2030, which is particularly evident in the proposed transport network to ensure the SERH site forms part of the Bega township and that staff, patients and visitors can access the site safely and sustainably.

2.9. Bega Valley 2011-2016

Bega Valley 2011-2016 demonstrates the delivery strategy for Bega Valley 2030 themes. Within Bega town, improving health services is a key community issue. From a transport perspective improved public transport options and a cycleway between Bega and Tathra are considered. BVSC have begun the feasibility process for this cycleway. Consultation between SKM and BVSC confirms that the SERH has no detrimental impact on the feasibility of delivering any future cycleway.

2.10. Bega Valley Shire Development Control Plan (DCP) 2011

The DCP details the standards and guidance to which development should conform. The aims of the DCP are to:

- 'Encourage a range of building types and land uses that provide increased housing choice, diversity of employment opportunities, access to retail, commercial and industrial services and other activities that contribute to a sustainable vibrant community.
- Ensure development positively responds to the qualities of the site and its context to ensure high quality design of buildings that have a good relationship with neighbouring developments, the public domain and landscape qualities of the locality.
- Ensure development positively responds to the character of the surrounding area and recognise the significance of heritage items and their settings'.

From a transport perspective and relative to SERH the following is recommended within the DCP:

- 'Parking spaces designated for accessible car parking, Seniors and parents with prams are located as near as possible to the main accessible entrance of the building, and are linked by an accessible path of travel, preferably under cover.

- In medium and larger sized developments 2 in 50 car parking spaces are for people using wheelchairs, 3 in 50 car spaces are for Seniors and 2 in 50 car parking spaces are for parents with prams.
- Where more than one major entrance exists the designated accessible, Seniors and parents with prams car parking facilities shall be located at the closest point to each accessible public entrance.
- The continuous accessible path of travel shall be clearly signposted.
- The provision of accessible parking shall be signposted at the entrance of the car park, and at each individual parking space.
- The recharge point is about encouraging local businesses to provide a power point so you can recharge the battery on your electric wheelchair or scooter, if required. The scheme was developed in response to the increasing number of people with restricted mobility using electric scooters or wheelchairs. Therefore in all medium and larger sized developments at least one designated power point needs to be located in an accessible area.
- An uninterrupted even path of travel must be provided into, around and within a building, providing access to all required facilities and must be arranged to minimize distances to be travelled between these facilities. This accessible path should not incorporate any step, stairway, turnstile, revolving door, escalator or other impediment, which would prevent it from being safely negotiated by older people, people with disabilities and parents with prams.
- Public transport in the Bega Valley Shire is primarily by bus. Subdivision design must make allowance for public transport by bus in the design of the road layout. All roads that may serve as bus routes should form loops rather than 'dead ends'.

Car parking standards for Bega Valley for Hospitals are one space per three beds plus emergency vehicle parking. Utilising these standards the following is applicable:

- 45 spaces plus emergency parking and 20 spaces for wheelchair users.

Proposal Summary

All DCP recommendations have been considered at SERH and discussed with BVSC to ensure that transport and hospital operations can be achieved efficiently and without detriment to the surrounding transport network and local community. The following Chapters consider DCP recommendations, specifically site specific car parking provisions.

2.11. Guide to Traffic Generating Development (RTA 2002)

This document developed in 2002 by RTA (now RMS) describes the procedure for developing a traffic impact study (in this case SERH TA) in order to identify traffic impacts from new developments. This TA follows procedure where applicable and Appendix 3 contains the completed checklist.

In addition to the traffic impact study checklist, the guide illustrates vehicle trip generations by land use. Only private hospitals are denoted in the document. As agreed with RMS and BVSC a site

specific approach has been taken to deriving trip and parking demand at SERH. For reference the guidelines demonstrate two way peak hour vehicle trips of between 119-172 or 1.9-2.8 vehicles per minute. This trip generation is based on a 136 bedroom hospital and the calculation identified in the RTA guidelines.

2.12. EIS Guidelines- Roads and Related Facilities

This document prepared by the Department of Urban Affairs and Planning in 1996 demonstrates determining factors in the preparation of an Environmental Impact Statement (EIS). An EIS has been prepared to support the DA and this is a standalone document to the TA. The EIS considers the content of this TA, where applicable and the TA has been developed taking cognisance of guidelines.

2.13. Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development.

These guidelines issued in 2009 provide a similar guide to the RTA document (Paragraph 2.11) for the management and identification of impacts on the road system arising from development. Again, a similar traffic impact study is included as to that contained in Appendix 3. The Austroads guidelines have been considered as standard in the development of this TA. This is especially pertinent to the provision of a Travel Plan Framework which is encouraged for staff across Australia.

2.14. Policy and Guidance Summary

This TA highlights the potential of the proposed development to meet State and local traffic and transport policy objectives and guidelines as detailed above. This will include the following:

- providing quality pedestrian and cycle infrastructure linking the development to the existing Bega network while ensuring safe access throughout the SERH site;
- providing the opportunities for serving the site directly by bus through the provision of a bus stop and consultation with relevant stakeholders to deliver services;
- providing a Travel Plan Framework; and
- providing a traffic impact study demonstrating the impact of development on the local road network.

This TA takes direction of policy and guidance, however where applicable site specific parameters are utilised, thereby providing a robust assessment.

3. Existing Situation

3.1. Background

This Chapter outlines the current traffic and transport situation in relation to existing healthcare facilities in the Bega region and within the vicinity of the site. This Chapter takes cognisance of **Stage 2 DGR Number 12.**

3.2. Bega and Pambula Hospitals

Two hospitals are located in Bega, one private and one public. The public hospital is proposed to close with operations transferring to SERH. Bega Public Hospital is located 1.5km north west of the proposed SERH site in close proximity to Bega town centre, with good pedestrian links to surrounding facilities and amenities. Local buses serve the existing Bega Public Hospital.

The existing Bega Public Hospital is a District Hospital with 65 beds and 200 car parking spaces. It is noted that this parking provision does not meet existing demand with instances of on-street parking noted.

Data provided by BVHS indicates that there are approximately 22 inpatient and 28 emergency presentations daily at the existing Bega Hospital. Of those emergency patients approximately 85% arrive at the hospital by private car.

Pambula Hospital is located to the north east of Pambula town centre and approximately 30km south east of the proposed SERH site. The hospital is a 30 bed Community Acute facility with 57 car parking spaces. Local buses also serve the hospital. Pedestrian facilities between the hospital and Pambula town centre are of a good quality.

Pambula has an average bed occupancy rate of 20% with approximately 5 daily inpatient admissions.

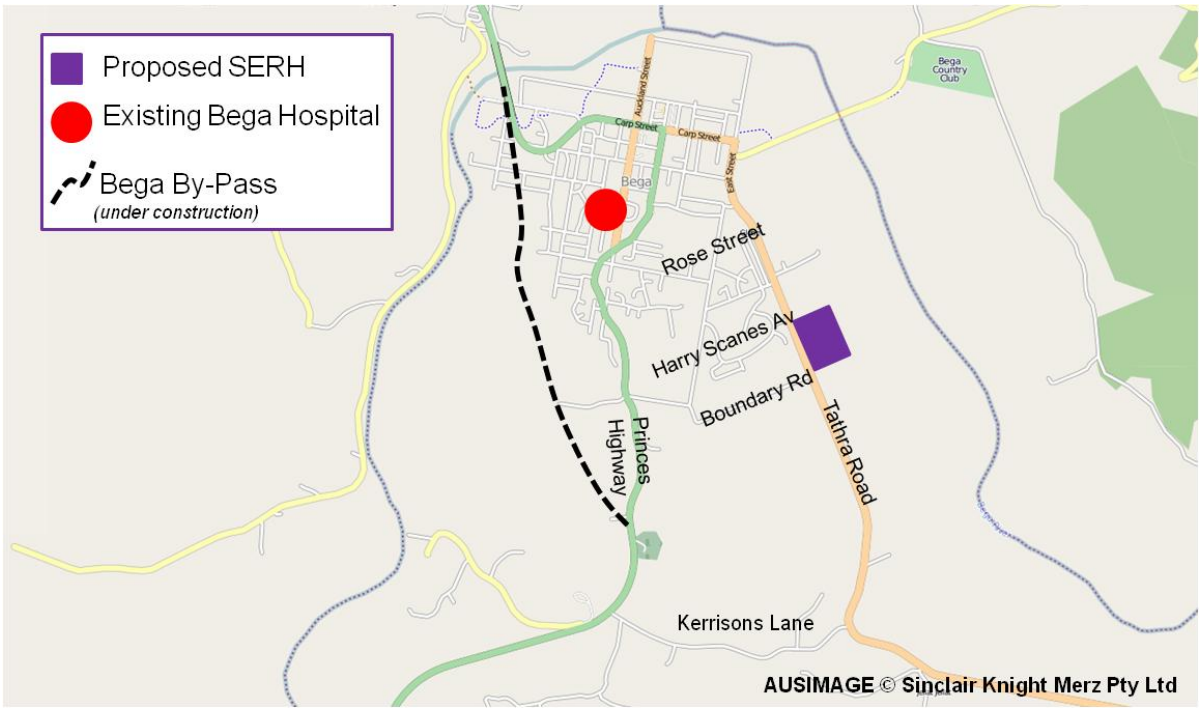
Figure 3-1 illustrates the location of the existing Bega and Pambula facilities.

Figure 3-1: Existing Bega and Pambula Hospital Locations

3.3. SERH Site Location

Figure 3-2 illustrates the location of the proposed SERH site. The site is located 2km south east of Bega town centre and is bounded to the west by Tathra Road; to the north and east by agricultural land and to the south by a small private holding. The SERH site is currently green field and within the site boundary there are opportunities for 'other' developments relating to health and education facilities.

Figure 3-2: Site Location



3.4. Walking and Cycling

Within the vicinity of the proposed SERH site, there are minimal existing pedestrian facilities. There are currently no existing continuous, safe and attractive routes between the site and Bega town centre. The closest formal pedestrian facilities to the proposed site are a footway along Glen Mia Drive (accessed from Harry Scanes Avenue) and along the western side of Tathra Road, at Rose Street (700m north of the site).

No dedicated on or off road cycle facilities are provided within the vicinity of the site, with cycling achievable on the carriageway.

3.5. Public Transport

A number of bus services operate within Bega, serving the town and surrounding communities. The following three key operators serve Bega: Bega Valley Coaches, Deans Coaches and Tathra Buses. At present a limited service is available along Tathra Road, equating to approximately 9 daily services. No formal bus stops are provided along Tathra Road with a hail and ride system in operation.

3.6. Private Vehicles

Vehicular access to the proposed site will be from Tathra Road, at present a farm track illustrates the approximate location of this access opposite Harry Scanes Avenue. Tathra Road is an RMS Regional Road and within the vicinity of the site has a speed limit of 100km/h. This reduces to 60km/h north of Harry Scanes Avenue. Tathra Road is a two lane single carriageway which has rural undulating characteristics. To the south of the SERH site, Tathra Road is approximately 7.5m wide. Traffic surveys indicate a peak hour two way flow along Tathra Road of 401 vehicles per hour. No accidents have been recorded at the location of the proposed access to SERH.

Harry Scanes Avenue is a two lane single carriageway with a speed limit of 50km/h providing access to residential properties from Tathra Road at Glen Mia Drive. At its intersection with Tathra Road vehicles are currently priority controlled with a peak hour two way traffic flow of 36 vehicles recorded at this location.

Boundary Road is located at the southern extremity of the site and is a two lane rural road subject to a speed limit of 100km/h reducing to 60km/h. Boundary Road is unsealed and forms a four arm priority controlled crossroads with Tathra Road and a private property. One crash occurred in 2009 at the Boundary Road/Tathra Road intersection resulting in an injury. Boundary Road, at its intersection with Princes Highway, has a peak two way traffic flow of 60 vehicles per hour.

Kerrisons Lane is approximately 2.5km south of the SERH site and provides a key link to/from the Princes Highway and particularly for those likely to travel to the site from the south of the region. Kerrisons Lane is a two way single carriageway subject to a 80km/h speed limit. Traffic surveys at Kerrisons Lane/Princes Highway indicate a peak hour two way flow of 146 vehicles.

The proposed SERH site is located 2.3km east of Princes Highway providing good connectivity to additional strategic and local vehicular routes.

The Bega by-pass is currently under construction and when complete in 2014 will be a two lane 3.5km highway by-passing Bega town between Bega River Bridge and Finucane Lane. This new route is intended to remove heavy vehicles from Bega town, improve air quality/road safety and reduce travel times.

4. SERH Development Proposals

4.1. Introduction

This Chapter outlines the SERH development proposals in a hierarchal order with emergency access the priority. More detail regarding parking and access is included in Chapter 6. This Chapter provides the supporting detail for the site in consideration to State and local policy as well as **Stage 2 DGRs Numbers 4, 8, 12 and 13.**

4.2. SERH Phasing

Ongoing consultation is underway regarding the long term strategy for healthcare in the region. In order to provide a TA which is capable of accommodating this strategy the follow approach has been taken in respect of phasing, this is only applicable to car parking:

- The indicative site layout (Appendix 1) demonstrates car parking spaces to accommodate the demand associated with a 136 bed hospital and supporting patient requirements. Staff parking demand is based on full time equivalent (FTE) numbers provided by BVHS for 2016 (anticipated year of opening).
- Should staff requirements change post 2016, BVHS will review car parking requirements. It is anticipated that there is potential for staff numbers to increase by 10% within the first 5 years of the hospital opening. In this respect three areas are illustrated in Appendix 1 which have the potential to accommodate increased parking demand. Any development of these areas will be undertaken in consultation with BVSC. Parking for other user groups remains consistent with the 2016 requirements, given this is based on a robust assessment.
- Should the hospital expand in the long term e.g an increase in the number of beds then appropriate planning permission would be submitted at a later date. In order to future proof the site, three areas are illustrated which are capable of accommodating car parking associated with an expansion. BVSC will be consulted regarding any future expansion and subsequent car parking requirements.

More detail regarding car parking is provided in Chapter 6.

4.3. SERH Operations

The proposed SERH will serve the Bega Valley region as well as surrounding communities in Eurobodalla, Cooma-Monaro, Bombala and Snowy River. This equates to an approximate population catchment of over 35,000 people. The largest population centre within the region is Bega followed by Merimbula, Pambula and Eden to the south and Bermagui to the north.

The location and design of the proposed SERH has been driven by user group input, commentary and feedback to ensure that the needs of a wide range of patients and staff can be considered. Considerations include:

- accessible car parking for those with permanent or reduced mobility;

- accessible and safe car parking for staff who transport bulky items or work at night;
- sheltered and secure external pedestrian areas;
- a bus stop located within the site and in close proximity to the main entrance;
- capabilities to accommodate ambulances, servicing vehicles and a mobile MRI scanner;
- fleet vehicle parking; and
- facilities provided on site such as catering to reduce the need to travel.

As detailed in Chapter 1, a wide variety of health services will be offered at SERH and it is important to ensure that from a transport context differing user groups with specific travel demands can access the site safely and sustainably and that the site is capable of accommodating any future service changes.

Appendix 1 contains the indicative site layout for SERH. Drawings prepared by C & M Consulting Engineers should be reviewed in tandem with this TA. Included in these drawings are Swept Path profiles for the larger vehicles anticipated to serve SERH.

4.4. Emergency Vehicles

Emergency vehicles (ambulances) will access the proposed site from Tathra Road, the proposed Hospital Drive and proposed Spine Road. The proposed Hospital Drive is 11m wide while the Spine Road is 8m.

In order to accommodate emergency vehicles the following is proposed:

- dedicated ambulance only entry point to the emergency department;
- separation of pedestrians and cyclists from vehicular traffic to avoid potential conflict; and
- appropriate location and provision of car parking within car parks to reduce conflicts.

4.5. Walking, Cycling and Motorised Scooters

External to the site and in order to connect SERH with Bega town centre appropriate pedestrian facilities will be provided at Tathra Road. HI have committed to provide a 700m pedestrian/cycle link along the eastern side of Tathra Road from Harry Scanes Avenue to Rose Street. This route will be developed in consultation with RMS and BVSC. Pertinent to any pedestrian link is ensuring that the proposed infrastructure has the ability to tie in with any future links. This is evident within the proposed site layout and proposed vehicular access.

A network of pedestrian and cycle routes are proposed within the site, principally along Hospital Drive and the proposed Spine Road. The principal route will be a shared 3m wide path and will connect to the hospital entrance with appropriate crossing facilities and way finding. Given the site

gradient, this route is not DDA compliant across its length. It is also important to note that the main hospital entrance is 500m or a 6 minute walk from Tathra Road.

Further pedestrian routes are provided on site linking the car parks, bus stop and pick-up points to the hospital building entrances. All pedestrian routes linking the building with these facilities are DDA compliant.

Ten cycle parking spaces are proposed in close proximity to the main entrance for use by all hospital users. Within the building staff have access to showers and changing facilities.

Provision has been made for those accessing the site on motorised scooters. Scooter users can utilise the shared 3m wide path and charging facilities will be provided on site.

4.6. Public Transport

SKM have consulted with local bus operators and Transport for NSW to ascertain the acceptability of serving SERH directly by bus. This is vital given the gradient of the site, walk distances to Tathra Road and the needs of hospital users. An agreement has been made in this respect and a bus stop is proposed in close proximity to the main entrance. This bus stop will be designed to appropriate standards. As and when planning and development progresses, Transport for NSW will be consulted again so they may consider bus service contracts and timetables to the new facility. This is particularly important to ensure that a quality and frequent service can be provided. Transport for NSW have a requirement that by 1 January 2013, operators must ensure that 55% of their services are wheelchair accessible, thus assisting potential SERH site users.

4.7. Community Transport/Specialised Hospital Requirements

Community transport vehicles will be required to access the proposed SERH. These vehicles have a mix of sizes and requirements and will utilise the pick up/drop off point and the public transport bus stop if necessary.

A mobile MRI scanner will access SERH, likely to be once a month, arriving early in the morning and departing late at night. The MRI scanner has been designated a specific parking space and this is illustrated in Appendix 1. Car park management associated with MRI manoeuvring is detailed in Chapter 6.

4.8. Servicing

Servicing vehicles will access SERH via a dedicated route from the Spine Road. This dedicated road will also be used by hospital engineering, trades and the mental health department as and when required.

4.9. Private and Fleet Vehicles

Private and fleet vehicles will access SERH via a new roundabout intersection with Tathra Road. Within the site, access to the main building will be via Hospital Drive and the Spine Road. A dedicated pick up and drop off point is provided at the emergency department entrance for those arriving by private car. This dedicated point will be short stay only.

Access, car park allocation and detail on circulation is included in Chapter 6. This includes detail on ensuring the internal road network is free from on-street parking to ensure the safe and efficient movement of all pedestrians, cyclists, motorised scooter users and motorised vehicles.

4.10. Way Finding

Health Infrastructure (HI) have commenced a way finding and access strategy for SERH, from a transport perspective there are proposals for excellent signing directing each user group to the most appropriate location for their needs.

5. Travel Demands and Trip Distributions

5.1. DGRs

This Chapter relates to **Stage 2 DGRs 6, 7, 8 and 14**.

5.2. Trip Distribution

SKM have agreed trip distributions with BVSC and RMS. These distributions are assumed to be uniform across the day. Distributions were calculated by determining likely travel routes from surrounding towns to the hospital, weighted by the population of each town. Bega itself was given a weighting of double other population centres. Other factors such as the shortest travel route and avoidance of areas with delay were also considered in the trip distributions profile. **Figure 5-1**, overleaf, illustrates trip distributions.

5.3. Travel Demands

In order to assess the likely travel demands associated with SERH, SKM have utilised information provided by Health Infrastructure based on staff and patient numbers and applicable assumptions regarding shift patterns and travel mode shares. These figures are indicative and robust values have been utilised where applicable.

With regard to vehicle trips, it is SKM's understanding that the current guidelines (*RTA Guide to Traffic Generating Developments- Private Hospitals*) do not provide an accurate representation of trips associated with a development similar to SERH. SKM have therefore cross referenced RTA trip generation rates with data provided by Health Infrastructure and our NSW/UK experience to provide what we feel is a more robust and site specific representation of trip generations. This approach and the subsequent trip generation values have been agreed with BVSC and RMS.

These can be summarised as follows:

- AM Peak 163 arrivals 42 departures; and
- PM Peak 49 arrivals 131 departures.

Total vehicle trips are therefore:

- AM- 205 two way trips; and
- PM-180 two way trips.

These trips are on average approximately 20% higher than the existing guidelines, illustrated in Chapter 2. **Figures 5-2** and **5-3** illustrate the anticipated SERH trip generations in the AM and PM peak periods respectively.

5.4. SERH Opening and Operations

It is important to note that for the purposes of this TA different scenarios are noted for parking and traffic impact given the parameters for their calculations differ (e.g parking is based on number of users, traffic impact is based on bed numbers).

For the purposes of the traffic impact study, SERH is assumed to open and be fully operational in 2016. Another traffic impact testing scenario has also been undertaken to provide an extremely robust test scenario, this is an expansion of SERH by 20% in 2025. The following summarises SERH operations (for TA purposes only):

- 2016 opening of SERH and full hospital operation (trip generations noted in Paragraph 5.3); and
- 2025 expansion of SERH at 20% of the proposed number of beds (163 beds).

Any expansion at SERH does not form part of the DA and is considered as a sensitivity test to ensure that the proposed road and local road network can accommodate long term expansion. Therefore the travel demands detailed in Paragraph 5.3 will increase by 20% in 2025 which is a robust assessment used for illustrative purposes. Thus two way trips associated with SERH under this scenario are 246 and 216 two way vehicles in the 2025 AM and PM peaks respectively. It is important to note that it is anticipated that services are phased at SERH with differing departments coming online at different times.

Figures 5-4 and **5-5** illustrate trip generations in the AM and PM periods based on a 20% hospital expansion at SERH, anticipated to occur in 2025.

5.5. 'Other' Development

There are 'other' development opportunities within the SERH site. For example; staff accommodation and/or education facilities. In order to provide a robust assessment, SKM propose to utilise the following travel demands for these developments:

- AM Peak 70 arrivals 23 departures; and
- PM Peak 17 arrivals 66 departures.

These 'other' development opportunities will be tested as operational in 2025, again providing a robust assessment. It is important to recognise that these trips are utilised for sensitivity testing purposes only and will be confirmed through later DA submission(s) by other parties as and when required. This is also the case with parking requirements for 'other' developments.

SKM have agreed anticipated vehicle trip rates with BVSC and RMS for these 'other' developments these are based on a pro rata of developable areas in relation to SERH and its anticipated trip generation.

Figures 5-6 and 5-7 overleaf demonstrate the anticipated AM and PM trip generations associated with the 'other' developments.

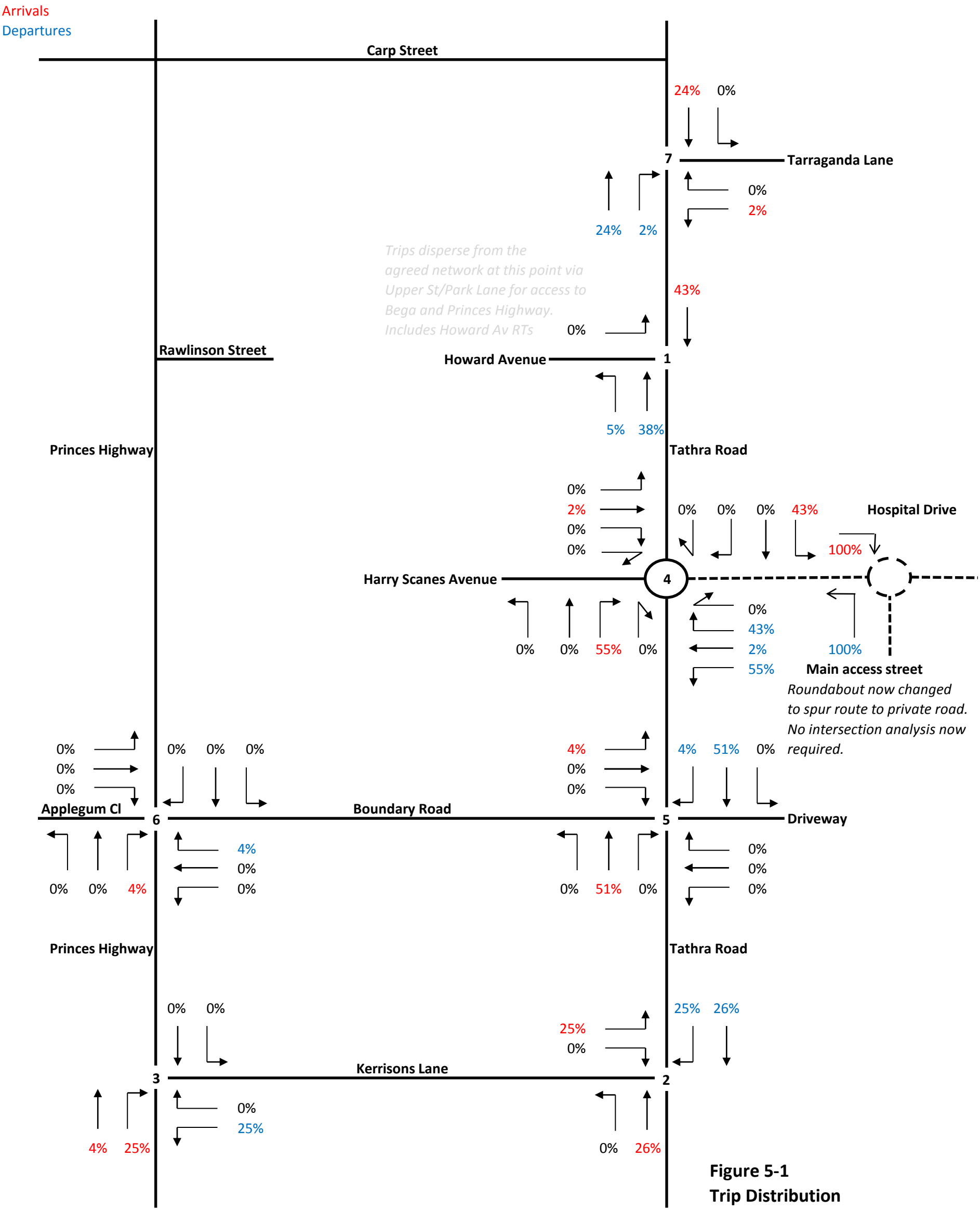


Figure 5-1
Trip Distribution

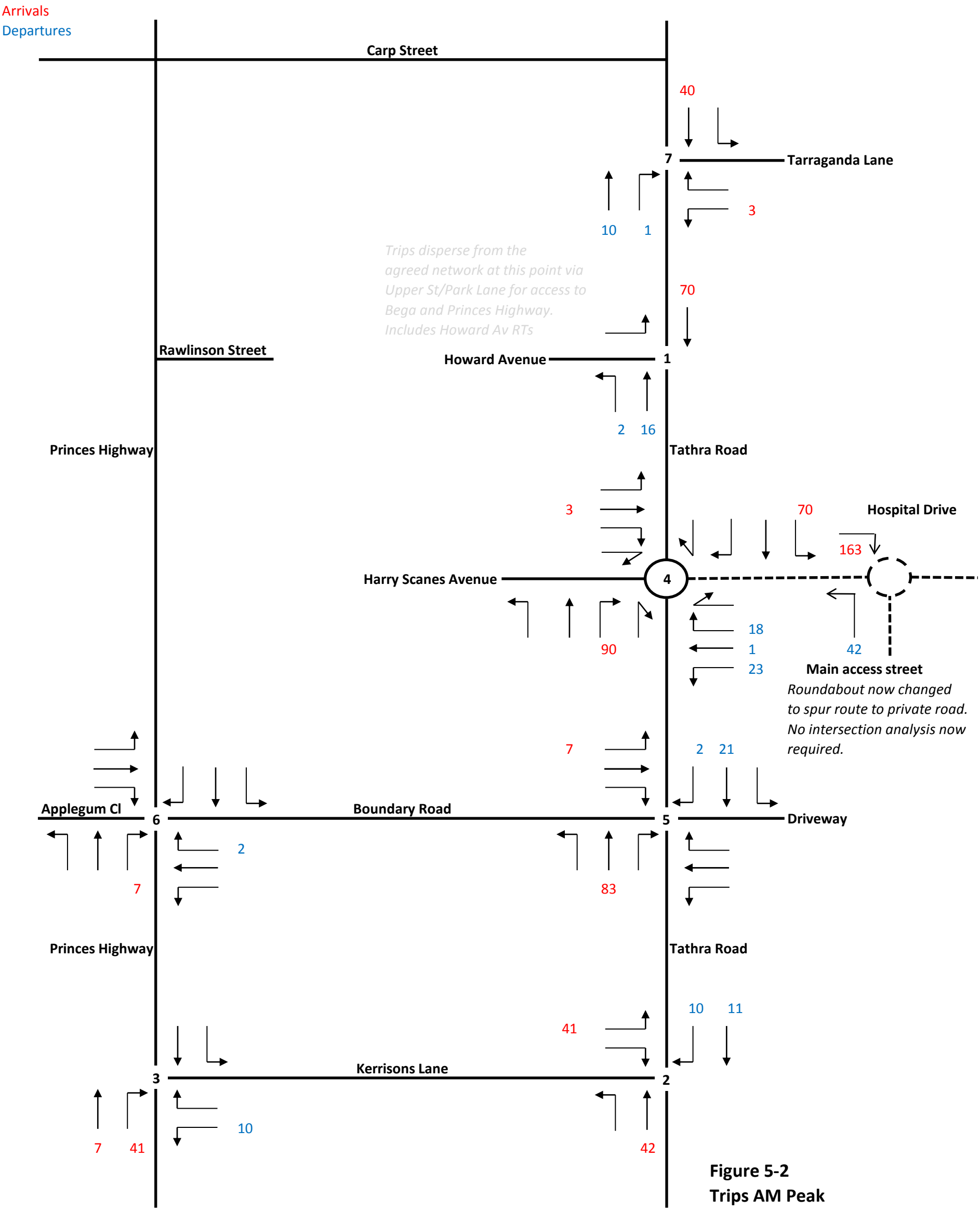


Figure 5-2
Trips AM Peak

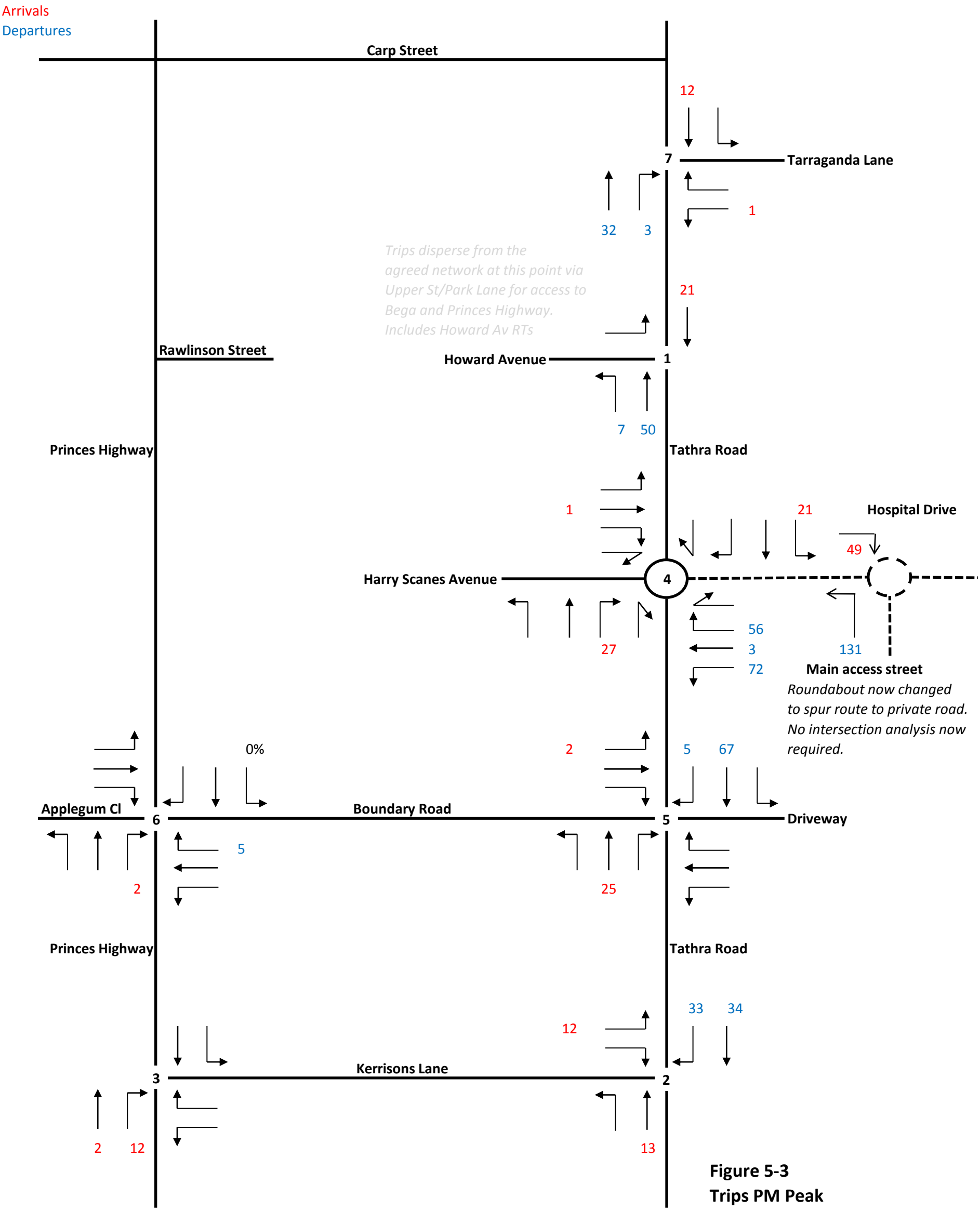


Figure 5-3
Trips PM Peak

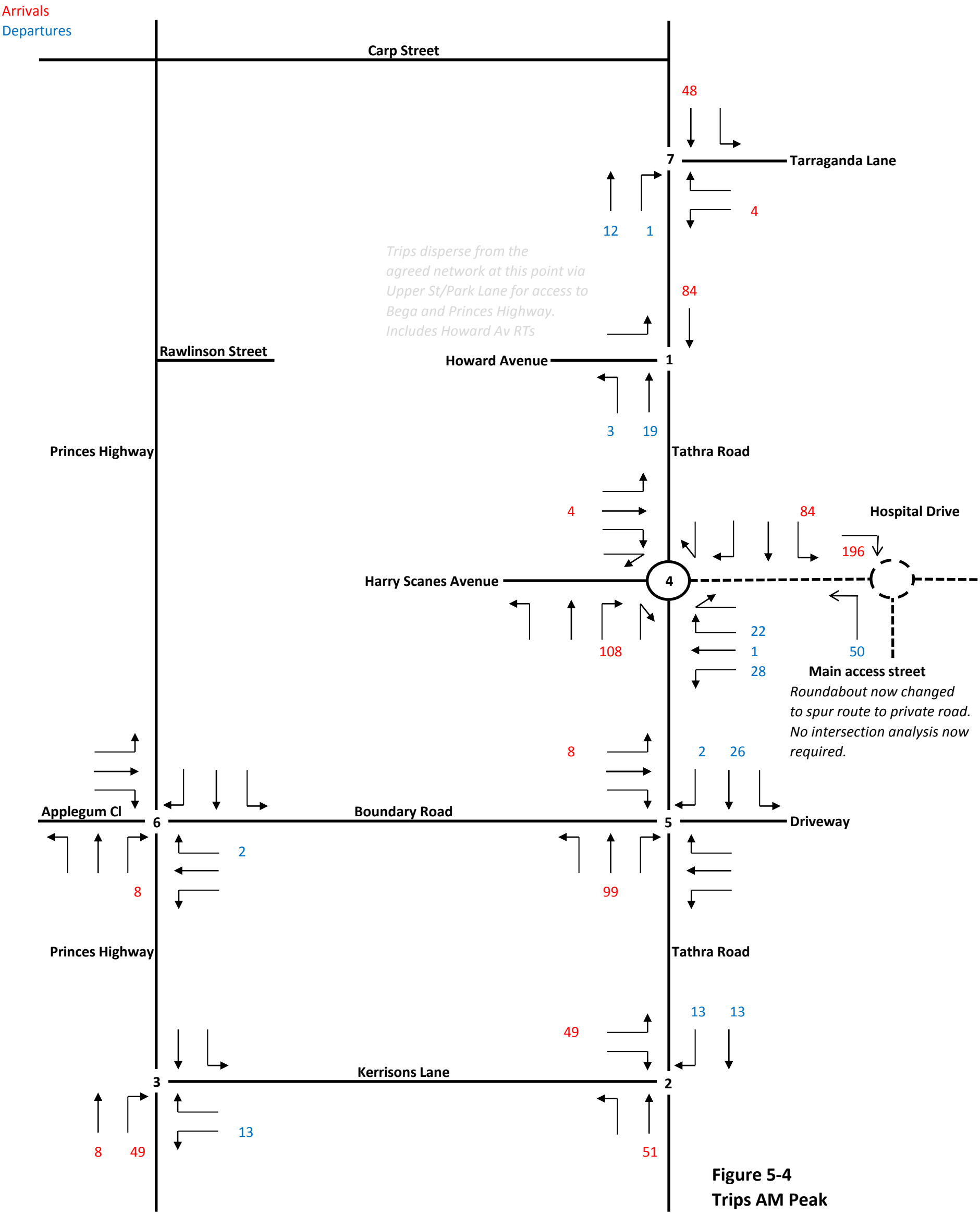


Figure 5-4
Trips AM Peak
and Hospital Expansion

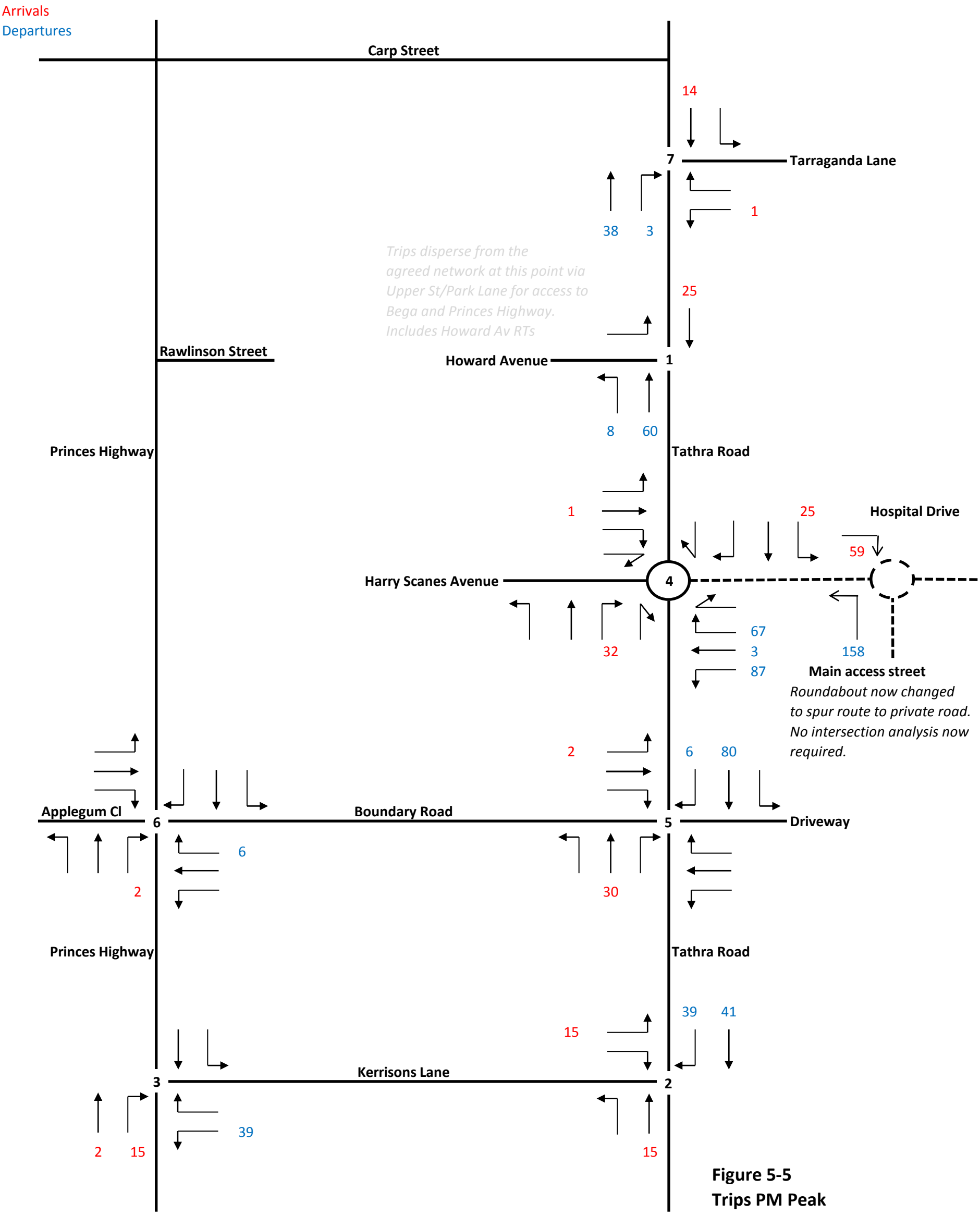


Figure 5-5
Trips PM Peak
and Hospital Expansion

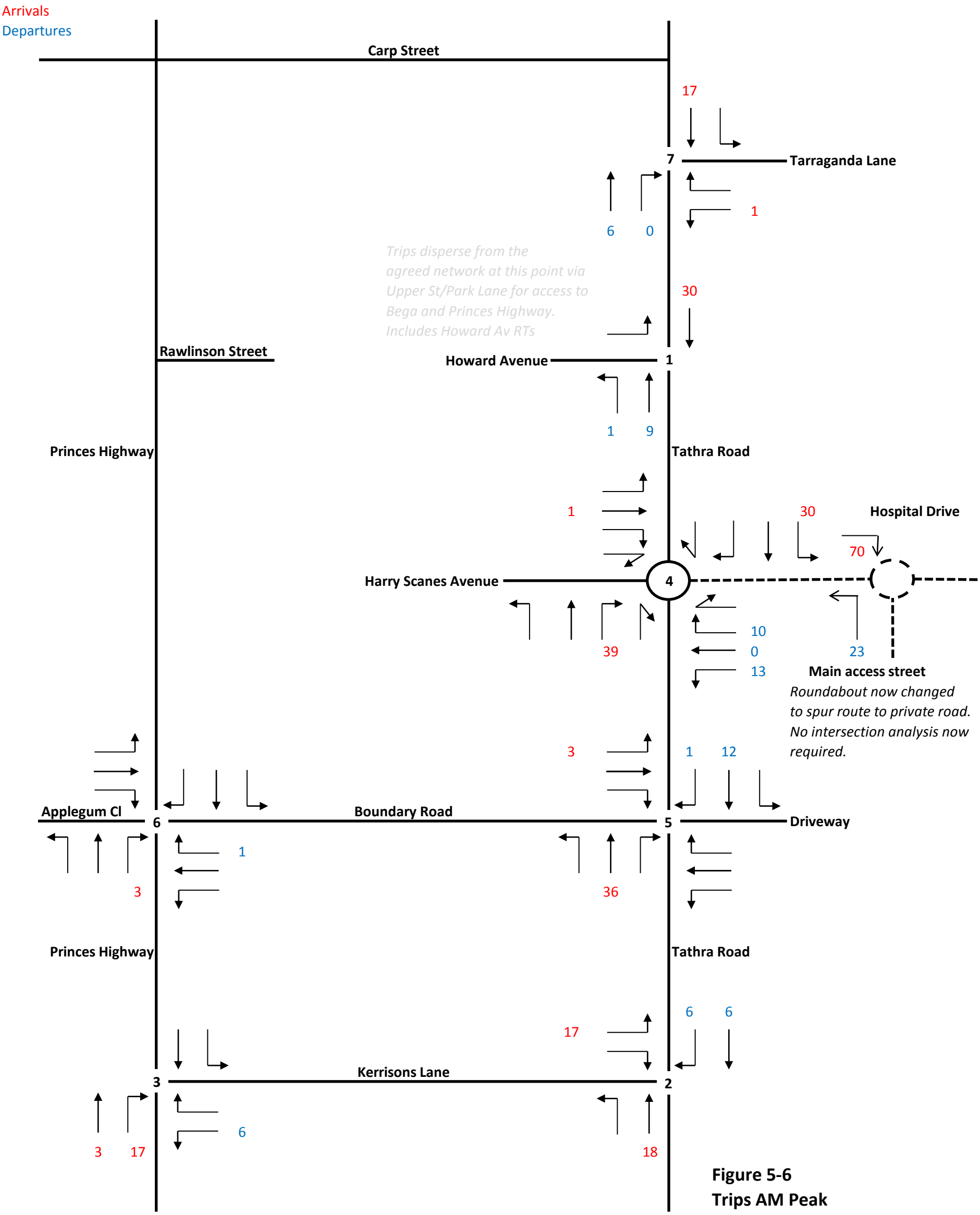


Figure 5-6
Trips AM Peak Development

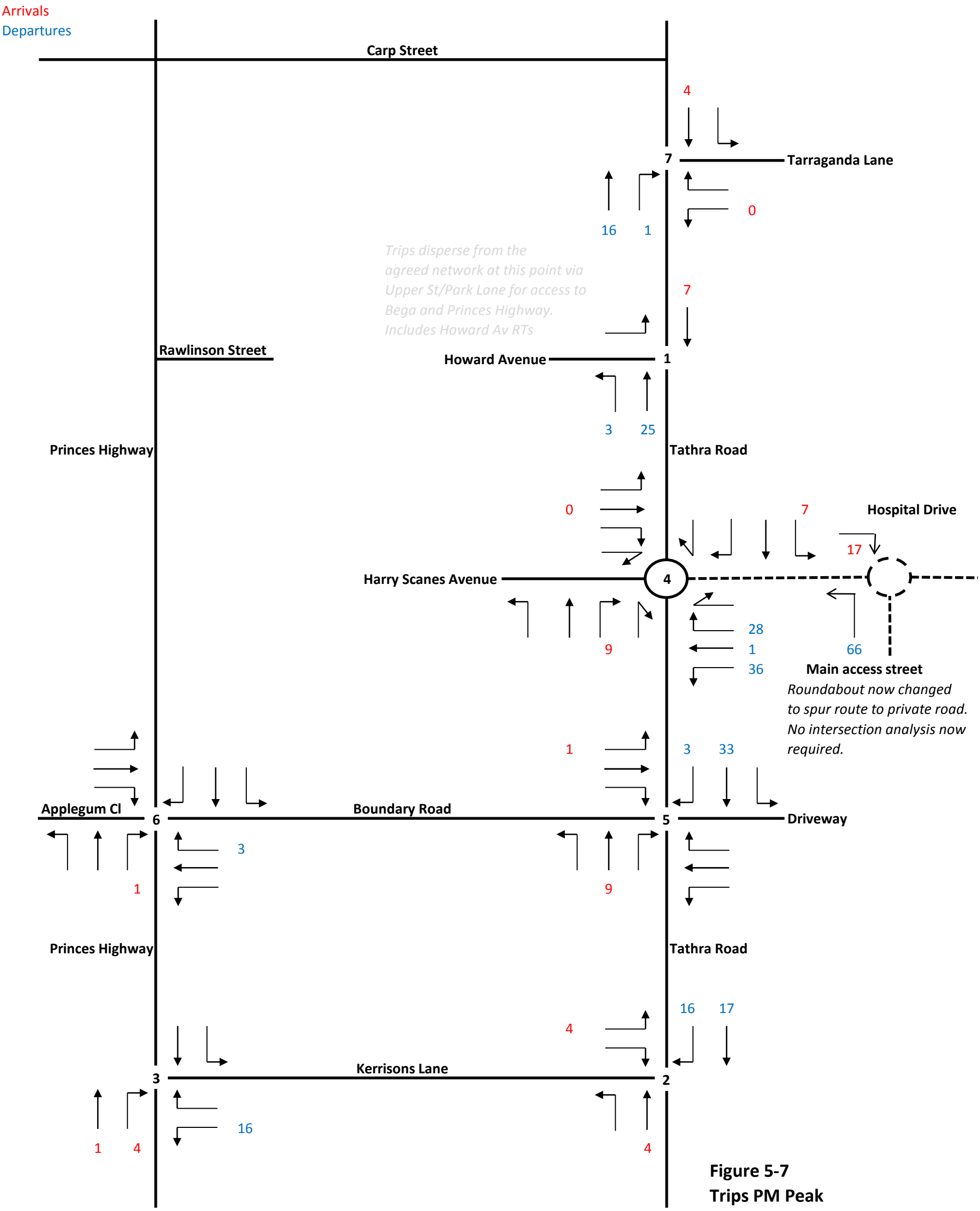


Figure 5-7
Trips PM Peak Development

6. Access, Servicing and Parking

6.1. DGRs

This Chapter corresponds to **Stage 2 DGRs 4, 5, 8, 10 and 12**.

6.2. Access & Servicing

As noted, vehicular access to SERH is proposed via a new four arm roundabout at Tathra Road/Harry Scanes Avenue. This roundabout is designed to standard and can accommodate anticipated larger vehicles. The location of this intersection currently resides within a 100 km/h speed zone. In order to improve safety at the intersection it is proposed to extend the existing 60 km/h speed zone to include the new intersection and for an appropriate distance beyond the intersection. RMS and BVSC have been consulted in respect of the proposed roundabout and speed zone extension and both authorities have agreed to the proposals subject to the submission of this TA and supporting C & M Consulting Engineering drawings. The speed zone extension will allow an intersection to be provided which is in keeping with the nature of the town while providing benefits for hospital users and the local community.

All vehicular traffic associated with SERH will utilise this new intersection at Tathra Road. Within the site a network of new roads will be provided for localised SERH access and consisting primarily of two new routes:

- Hospital Drive; and
- Hospital Spine Road.

The proposed Hospital Drive will be a public road and post completion will be maintained by BVSC, the road is approximately 11m wide and parking will be restricted along this route to aid traffic flow. Street lighting will be provided along Hospital Drive as will a 3m wide shared pedestrian/cycle path.

The proposed Spine Road is a continuation of Hospital Drive south and will be a private road associated with SERH of approximately 8m width. Street lighting will be provided along the Spine Road.

The shared 3m wide path runs along the western side of the Spine Road and appropriate crossing facilities will be provided linking to the main hospital entrance, Tathra Road and a future pedestrian route towards Bega town centre.

The internal functionality of the road network is described in Chapter 4. Specific larger vehicles anticipated at SERH are:

- servicing vehicles;
- buses (public and community);

- emergency vehicles; and
- MRI mobile scanner.

All of these vehicles are capable of utilising the proposed SERH network for access to relevant facilities. Car parking controls will be required for the MRI scanner which is anticipated to access the site once a month arriving early in the morning and departing late at night.

6.3. Service Yard

The SERH service yard is located to the north west of the site, accessible by a dedicated route from the Spine Road, shared with the mental health department. The service yard will cater for deliveries and removals to and from SERH and 4 bays are provided in the yard for Heavy Rigid Vehicles (HRVs). Swept Path Analysis indicates that vehicles can manoeuvre appropriately within the yard.

6.4. Parking Standards and Provisions

Car parking standards for Bega Valley for Hospitals are one space per three beds plus emergency vehicle parking (BVSC). This equates to a standard provision of 45 spaces. SKM have taken direction from BVSC and RMS whereby this standard and provision underestimates the parking demand for a hospital such as SERH.

Parking for SERH has therefore been based on BVHS information and assumptions made in respect of the services to be offered at SERH. This site specific methodology has been agreed with key stakeholders.

The demand profile is summarised below:

- Staff- 247 spaces (based on 2016 FTE staff numbers);
- Visitors (of patients)- 113 spaces (robust assumption assumes 83% of inpatients have a visitor and that each visitor arrives at the same time);
- Patients- 129 spaces (robust assumption that all daily patients arrive on site at once).

This equates to a demand of 489 spaces. Given the robust nature of the demand profile and given that this is based on daily demand 485 spaces are proposed. This ensures that sufficient parking is provided at shift/appointment turnaround periods as well as for circulatory vehicle requirements, fleet vehicles and general visitors.

6.5. Accessible Parking

SERH will be the primary health facility in the region and it is important that those with permanent and temporary mobility concerns can park on site and close to the main hospital entrance. A number of user groups with mobility concerns have been identified including:

- Persons in wheelchairs;
- renal patients;
- oncology patients; and
- parents with children.

Thirty six wheelchair car parking spaces are proposed at SERH, this is sixteen more spaces than are required by BVSC standards. The car park located adjacent to the main entrance will be dedicated for use by those with accessibility concerns and renal patients will be considered in the south eastern car park.

All car parking will be managed and monitored by BVHS through the provision of good way finding signs and an honesty policy. Should it become apparent that parking is being misused, BVHS will review parking controls.

6.6. Parking Allocation & Circulation

In total five car parks are proposed at SERH to cater for anticipated demand. Each car park will satisfy the demand of different user group needs. Excellent way finding will be provided to ensure allocations are clear. The anticipated circulation for each car park will be a one way system with the exception of the car park to the south of ambulatory care.

6.6.1. Future Parking Demands and Phasing

The proposed 485 SERH spaces have been allocated based on the demand profile assumption that the hospital is fully operational and based on 2016 staff numbers (anticipated year of opening). As noted should the staff profile increase or if the hospital expands this growth will be accommodated within the three identified over flow car park locations.

Indicative calculations based on BVHS long term staff profile is for 627 FTE in 2021 this is 11% greater than the 2016 figure. In order to assess parking demand for staff, it is assumed that approximately 44% of staff will be on site daily and require a car parking space. This creates a potential additional demand for 28 car parking spaces. This accounts for annual leave, an 85% modal split by car (alone), likely shift patterns and considers parking for the busier shift turnaround periods. Parking for visitors remains consistent with the 2016 values given that figure is based on the number of beds, this is also true of patients given these are based on the full functionality of the hospital. Additional parking associated with increased staff numbers can be adequately accommodated within one of the three identified overflow car parks.

Long term expansion to SERH beyond 2021 can also be accommodated within the three identified overflow car parks if required.

6.7. Car Parking Strategy

Getting the parking strategy right at this stage of the SERH development will be pivotal to the future functionality of the hospital. SERH serves a rural community and although sustainable travel will be encouraged, there will inherently be a high percentage of trips made by private car. Measures to manage car use are detailed in the following Chapter.

The follow points illustrate the strategic approach to car park management at SERH:

- providing car parking which meets anticipated demands;
- identifying locations for overflow car parking for any additional demands (short and long term);
- allocating parking for those with specialised needs and promoting the availability of this parking;
- promoting sustainable travel to reduce vehicle trips and parking demand;
- promoting car sharing to reduce single occupancy vehicle trips and parking demand;
- making existing BVHS staff aware of the parking situation in advance of their transfer to SERH;
- providing an excellent way finding strategy;
- car park circulation which assists vehicle flows within the site;
- car park control for the day of the MRI mobile scanner; and
- consideration of additional parking control measures such as barriers and 'policing'.

Car parking also needs to be considered during the construction of the site and this is noted in Chapter 9. This can be summarised as below:

- Stage 1- On street parking will be discouraged along Tathra Road. The contractor will be required to provide temporary parking within the site for construction staff accessed via the existing farm track. The number of parking spaces will be based on the contractor's programme and staff requirements and will be confirmed when the contactor is appointed.
- Stage 2- Construction staff will park in the car parking built for SERH as part of Stage 1. The contractor will be responsible for managing parking.

6.8. Car Park Summary

485 car parking spaces are proposed at SERH, three suitable over flow car park locations have also been identified should the hospital expand in the long and short term. It is envisaged that this parking provision/strategy will be sufficient to fully accommodate SERH parking demand and there will be no requirement for on-street parking on the local road network.

7. Travel Plan Framework

7.1. Introduction

This Travel Plan Framework (TPF) has been designed as the mechanism to provide and promote sustainable travel choices for all SERH site users. It illustrates measures which could be provided prior to and post occupation to reduce the reliance on single occupancy private car trips, relating to **Stage 2 DGRs 11-13.**

Once the development is occupied specific measures can be identified and resources focussed on the identified behaviour of those accessing the site. Thus this TPF acts as a precursor to a finalised Travel Plan (TP), typically delivered within 6 months of formal occupation of the development.

Although primarily focussed on influencing staff travel behaviour, this TPF also identifies the opportunities for providing patients and visitors with sustainable travel choices.

7.2. Travel Plan (TP) Benefits

A Travel Plan (TP) is a management tool designed to enable the users of a site to make more informed decisions about their travel while minimising the adverse impacts of a development on the environment. This is achieved by setting out a strategy for eliminating the barriers keeping users of the site from using sustainable travel modes and managing single occupancy car use.

If well-designed and properly managed, the implementation of a TP can lead to a decrease in the proportion of users reaching the site by private car and an increase in the proportion reaching the site by sustainable modes, including public transport, walking and cycling.

Travel Plans can also:

- improve the environmental credentials of the occupying organisations;
- alleviate car parking shortages;
- reduce the carbon footprint of the organisation/development;
- reduce the traffic impact on the local road network;
- improve the health and wellbeing of the workforce through formation of active travel patterns; and
- reduce adverse impacts on local residents and businesses.

7.3. Travel Plan (TP) Strategy

A TP is an active, dynamic document that requires a strategy for its implementation and requires to be updated on a regular basis.

The successful implementation of the TPF will require active participation from a wide range of stakeholders. The implementation of the TPF should be led by a Travel Plan Co-ordinator (TPC) who will be responsible for coordinating all the promotional activities, marketing materials and offering general travel planning assistance.

7.4. Aim

The overarching aim of the TPF is to offer a wide range of travel options for all users of SERH and thus minimise the proportion of trips to/from the site by single occupancy vehicles.

7.5. Targets

Targets are essential for monitoring the progress and success of any TP. The aim of the TPF is to minimise the proportion of single occupancy vehicle trips. Therefore, targets should be aimed at achieving a realistic reduction in car trips over a set period; typically 5 years post site occupation with interim progress targets set. An example target setting for staff of the proposed development is demonstrated in **Table 7-1**. This is purely for illustrative purposes and will be reviewed when the site is occupied and travel surveys completed. Given the nature of the site it is not prudent to set travel targets for patients or visitors.

Table 7-1: Illustrative SERH Staff Mode Share Targets

Mode	Baseline	2016 Site Occupation	2021
Train	0.3%	0.3%	0.3%
Bus	1.0%	1.2%	1.5%
Tram/Ferry	0%	0%	0%
Taxi	0.2%	0.2%	0.2%
Car as driver	58.2%	57.5%	55.4%
Car as passenger	6.8%	7%	7.5%
Truck	2.3%	2.3%	2.3%
Motorbike	0.8%	0.8%	0.8%
Bicycle	0.5%	0.6%	0.7%
Walking	5.4%	5.6%	5.8%
Other	1.3%	1.3%	1.3%
Does not work/Works from home/Not stated	24.2%	24.2%	24.2%

The modes and baseline values illustrated in **Table 7-1** are from: *Australian Bureau of Statistics, Census of Population and Housing, 2006, 2001, 1996, and 1991.* Again targets are indicative. These targets do not correspond to NSW Plan 2021 targets given the current baseline values and the rural nature of the Bega region.

7.6. Implementation Strategy

Delivery of the TP will begin prior to occupation with the implementation of site-wide physical measures (infrastructure such as bus stops and footways) and staff consultation. It should continue post occupation with the implementation of site-specific infrastructure and promotional measures.

7.7. Package of Measures

The following paragraphs set out the package of measures / action targets which **could** be implemented at SERH to encourage sustainable travel and to work towards the achievement of the objectives and targets.

7.7.1. Marketing and Travel Information

Effective communication about travel options is essential. The dissemination of information about the Travel Plan is vital to raising awareness of the various travel options and the benefits of travelling in a sustainable way, as well as setting out the purpose and benefits of the Travel Plan.

Notice boards and a suggestion box should be displayed in staff rooms and within relevant patient and visitor waiting areas. Notice boards create a focal point for Travel Plan information and provide up-to-date travel information and details of upcoming promotional campaigns.

It is important to make information about different ways to reach the site easily available to staff, patients and visitors. Informing people of their travel options and of the car parking situation will help them to make more sustainable choices. This awareness raising should commence before SERH opens providing comfort to site users and reducing the stress of travelling to a new site for the first time. Staff should be informed of the transport situation prior to their transfer to SERH so they have the opportunity to better plan their journey.

A Travel Options Leaflet could be produced and should be made available in hard and electronic format. An example Leaflet is provided in Appendix 4 for a new UK Greenfield hospital site.

Regular sustainable travel events and challenges should be held aimed at encouraging staff, patients and visitors to try an alternative travel mode for a day. The hospital will endeavour to take part in events to help promote sustainable travel. **Table 7-2** illustrates TP measures which could be implemented at SERH and which user groups they apply to.

Table 7-2: Marketing and Travel Information Measures

Measure	For Staff	For Patients	For Visitors
Notice Boards	✓	✓	✓
Travel Options Leaflet	✓	✓	✓
Website	✓	✓	✓
Events	✓	✓	

7.7.2. Walking and Cycling

Active travel (walking and cycling) is cheap, offers reliable journey times and is environmentally friendly. It can lead to a healthier more productive workforce while for patients and visitors, it can ease the burden of navigating an unknown public transport and road network.

Table 7-3 summarises the measures that could be introduced to encourage walking and cycling to and from the site for staff, patients and visitors.

Table 7-3: Measures to Encourage Walking and Cycling

Measure	For Staff	For Patients	For Visitors
Provision of information in key hospital areas, electronically and on notice boards giving directions and walking times to key destinations such as public transport interchanges and local town centres.	✓	✓	✓
Provision of 10 cycle spaces.	✓	✓	✓
Provision of local cycling maps, routes and cycle times to key destinations.	✓	✓	✓
Provision of lockers, shower and changing rooms.	✓		
Provision of an on-site emergency cycle repair kit.	✓		

7.7.3. Public Transport

For many staff, patients and visitors who live out with a reasonable walking or cycling distance from the hospital, public transport may be a viable alternative. **Table 7-4** provides a summary of the measures that could be introduced to encourage travel by public transport.

Table 7-4: Measures to Encourage Public Transport Use

Measure	For Staff	For Patients	For Visitors
Induction pack containing information on public transport routes, timetables and prices.	✓		
Provision of maps and guides of local bus information including walking times to interchanges made available in hard and electronic format.	✓	✓	✓

7.7.4. Managing Car Use

Despite the alternatives to the private car, some people will continue to use their car for certain trips, especially in the case of those with mobility concerns and staff carrying bulky equipment. **Table 7-5** sets out the measures that could be introduced at the hospital to manage car usage.

Multi-occupancy car travel is shown to improve the environmental credentials of the private car considerably in comparison to single occupancy vehicle travel. The hospital will encourage employees to find someone who is also employed in the same area to share their journey to work. This scheme is not limited to car sharing. It can also facilitate the sharing of walking, cycling and taxi trips.

7.7.4.1. Car Park Parking- Operation and Construction

Despite the alternatives to the private car, some people will continue to use their car and need to use their car for trips to SERH. The approach to car parking at SERH will be to encourage those who choose to drive to the site to use a car park which corresponds to their reason for accessing the site and thereafter walk to their destination. This will be managed through way finding.

Table 7-5: Measures to Manage Car Use and Car Parking

Measure	For Staff	For Patients	For Visitors
Reception to provide information on local taxi services and book taxis at no charge.		✓	✓
Personalised travel planning offered to all staff during induction.	✓		
Promote car sharing	✓	✓	✓
Provision of information on the hospital website about sustainable access to the site.	✓	✓	✓

7.8. Monitoring and Review

A Travel Plan is a continuous and evolving document requiring monitoring, review and revision to ensure that it remains relevant to all users of the site.

8. Traffic Impact Study

8.1. Introduction

This Chapter corresponds to **Stage 1 DGRs Number 3** and **Stage 2 DGRs Numbers 4, 6, 7 and 14.**

8.2. Scope of Study

Existing traffic count information was obtained from classified traffic surveys commissioned by SKM at seven intersections in Bega on 21 June 2012 between 0730-0930 and 1500-1800. The survey parameters were directed by RMS and BVSC requirements and the AM and PM peak hours are as follows:

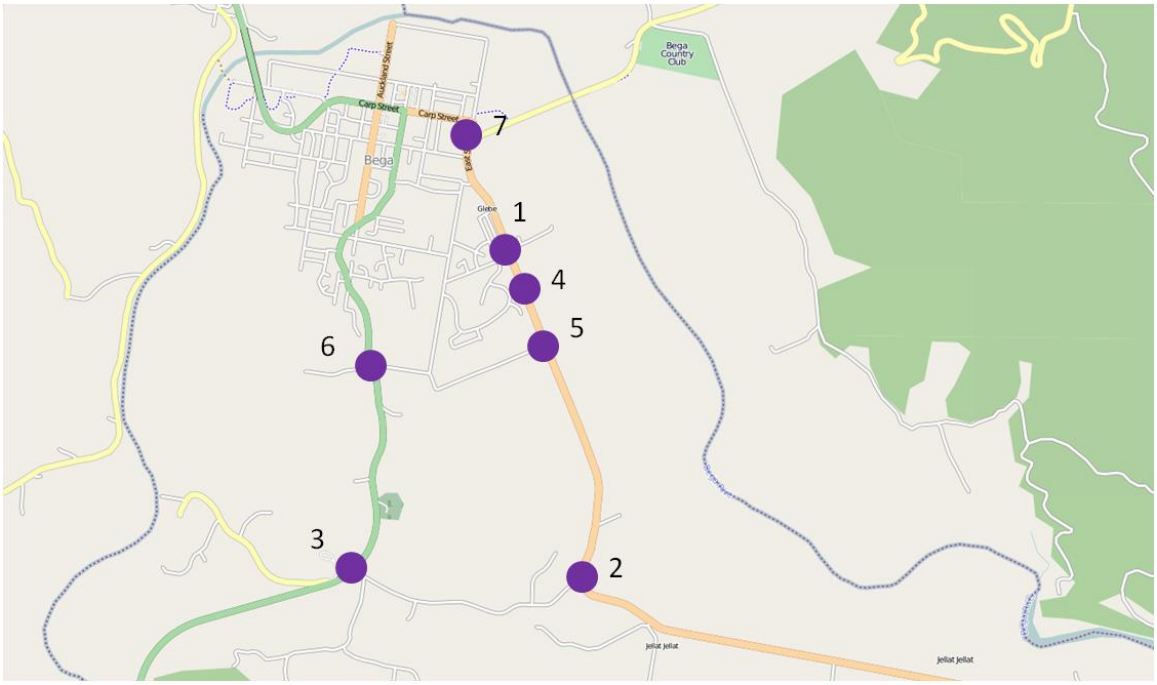
1. Howard Avenue/ Tathra Road 0800-0900 and 1615-1715
2. Kerrisons Lane/ Tathra Road 0800-0900 and 1615-1715
3. Kerrisons Lane/ Princes Hwy 0800-0900 and 1630-1730
4. Harry Scanes Avenue/ Tathra Rd 0745-0845 and 1615-1715
5. Boundary Rd/ Tathra Road 0800-0900 and 1630-1730
6. Boundary Rd/ Princes Hwy 0800-0900 and 1515-1615
7. East Street/ Tarraganda Lane 0815-0915 and 1615-1715

In order to provide a robust assessment the existing intersection peak hours are utilised in subsequent intersection analysis, irrespective of proposed SERH peak periods.

Figure 8-1 illustrates the location of these intersections. No internal intersection analysis is required given the proposed site layout and anticipated operation.

The following scope of assessment has been agreed with BVSC and RMS.

Figure 8-1: Intersection Locations for Traffic Impact Study



AUSIMAGE © Sinclair Knight Merz Pty Ltd

8.3. Traffic Growth and Seasonal Factors

A growth factor of 2% per annum has been utilised to increase 2012 traffic counts to the anticipated 2016 SERH opening year and to 2025 as an indicative date for sensitivity testing. This provides a robust case.

Existing traffic counts were undertaken in winter. To ensure a robust assessment can be made of the traffic impact of SERH a seasonal factor has been utilised to increase the surveyed data to the typically busier summer months. The factor used to seasonally adjust the data is 1.2.

The operation of the seven intersections are considered for the following traffic scenarios during the AM and PM peak periods:

- Summer 2016 (without development);
- Summer 2016 + SERH;
- Summer 2025 (without development); and
- SENSITIVITY Summer 2025 + SERH + Expansion + 'Other Developments'.

It should be noted that no account has been taken of the Bega by-pass which is currently under construction. Again this provides a robust assessment as it is anticipated that the by-pass will reduce general traffic through the town. The intersection likely to experience a benefit from this reduction in through traffic is Boundary Road/Princes Highway (Intersection 6).

8.4. 2012 Winter Base Traffic Flows

The existing 2012 traffic volumes are illustrated in **Figures 8-2 and 8-3** for the AM and PM peak periods respectively. These traffic flows are provided for illustrative purposes.

8.5. 2016 Summer Traffic Flows

Figures 8-4 and **8-5** demonstrate traffic volumes in summer 2016 for the AM and PM peak periods, respectively.

Figures 8-6 and **8-7** demonstrate traffic volumes in summer 2016 plus SERH trips for the AM and PM peak periods respectively.

These traffic volumes were used to assess the operation of the seven intersections in 2016.

8.6. 2025 Summer Traffic Flows

Figures 8-8 and **8-9** demonstrate traffic volumes in summer 2025 for the AM and PM peak periods, respectively.

Figures 8-10 and **8-11** demonstrate traffic flows in summer 2025 plus SERH trips plus SERH expansion plus 'other' developments for the AM and PM peak periods respectively.

These traffic volumes are used to assess the operation of the seven intersections in 2025.

8.7. Cumulative Impacts

BVSC did not identify any significant local committed developments for inclusion in the traffic impact study.

8.8. SIDRA

The traffic impact study has been undertaken using the industry standard software package SIDRA Intersection. **Table 8-1** demonstrates how to review SIDRA outputs in respect of the primary traffic impact indicator- Level of Service (LoS).

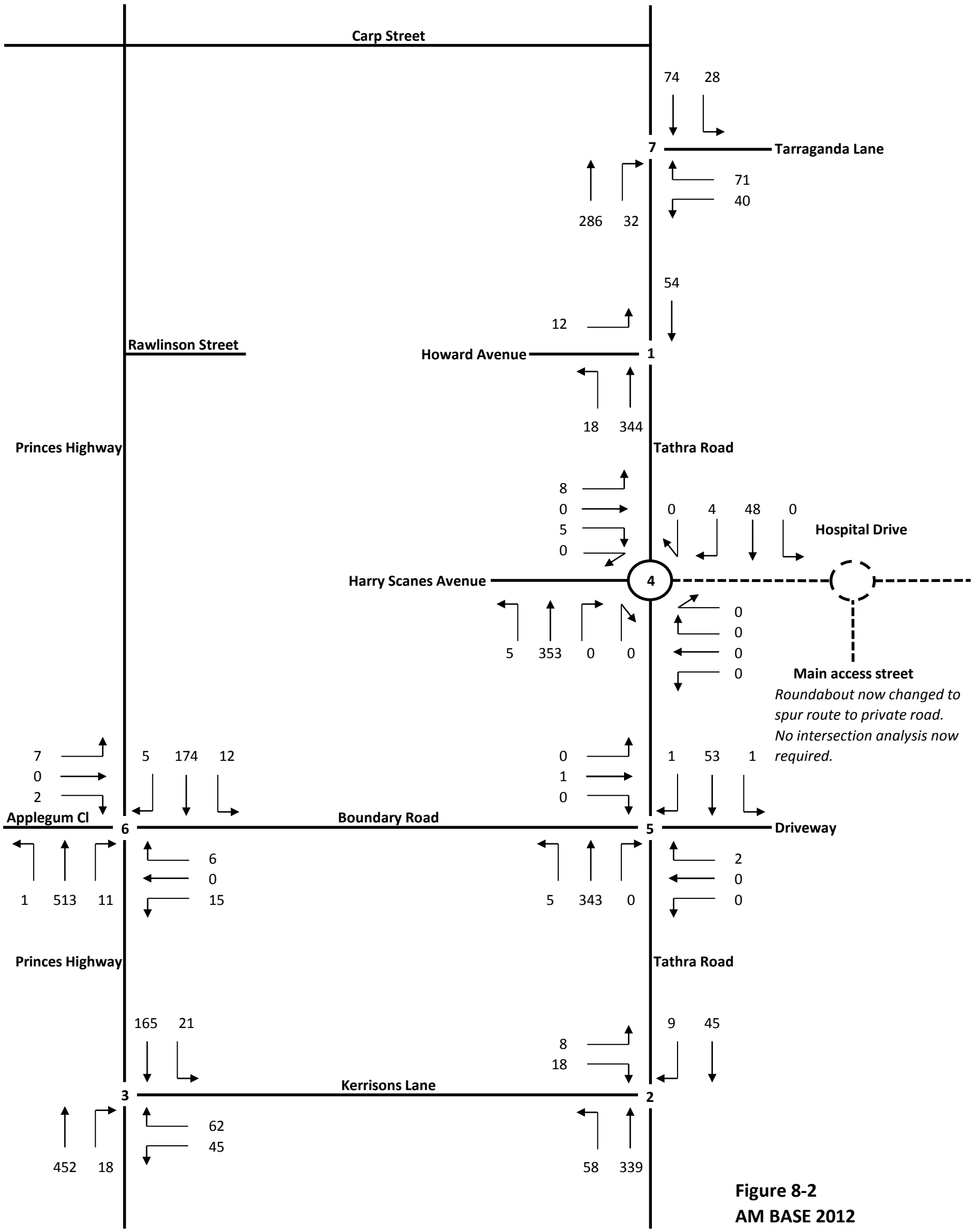


Figure 8-2
AM BASE 2012

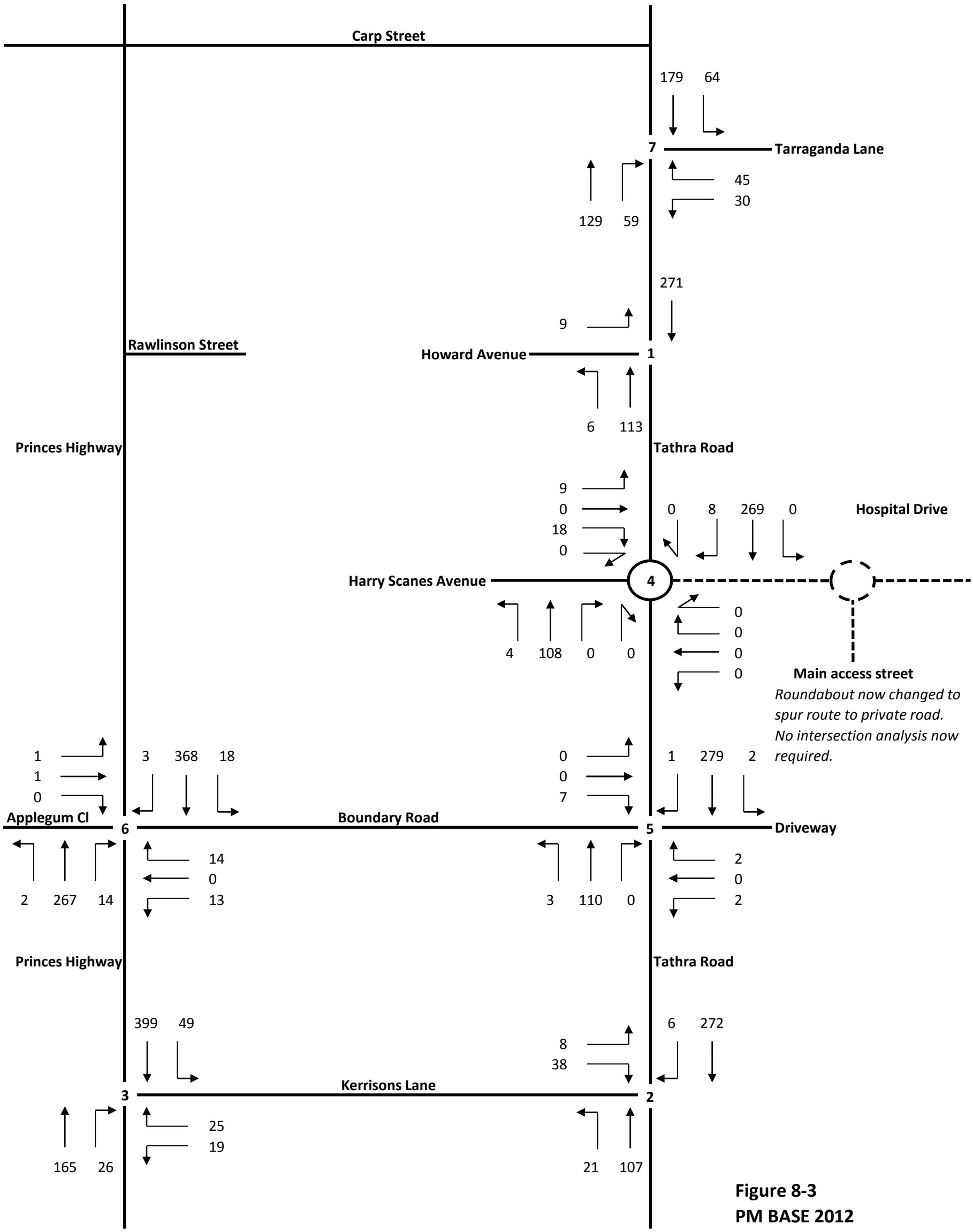


Figure 8-3
PM BASE 2012

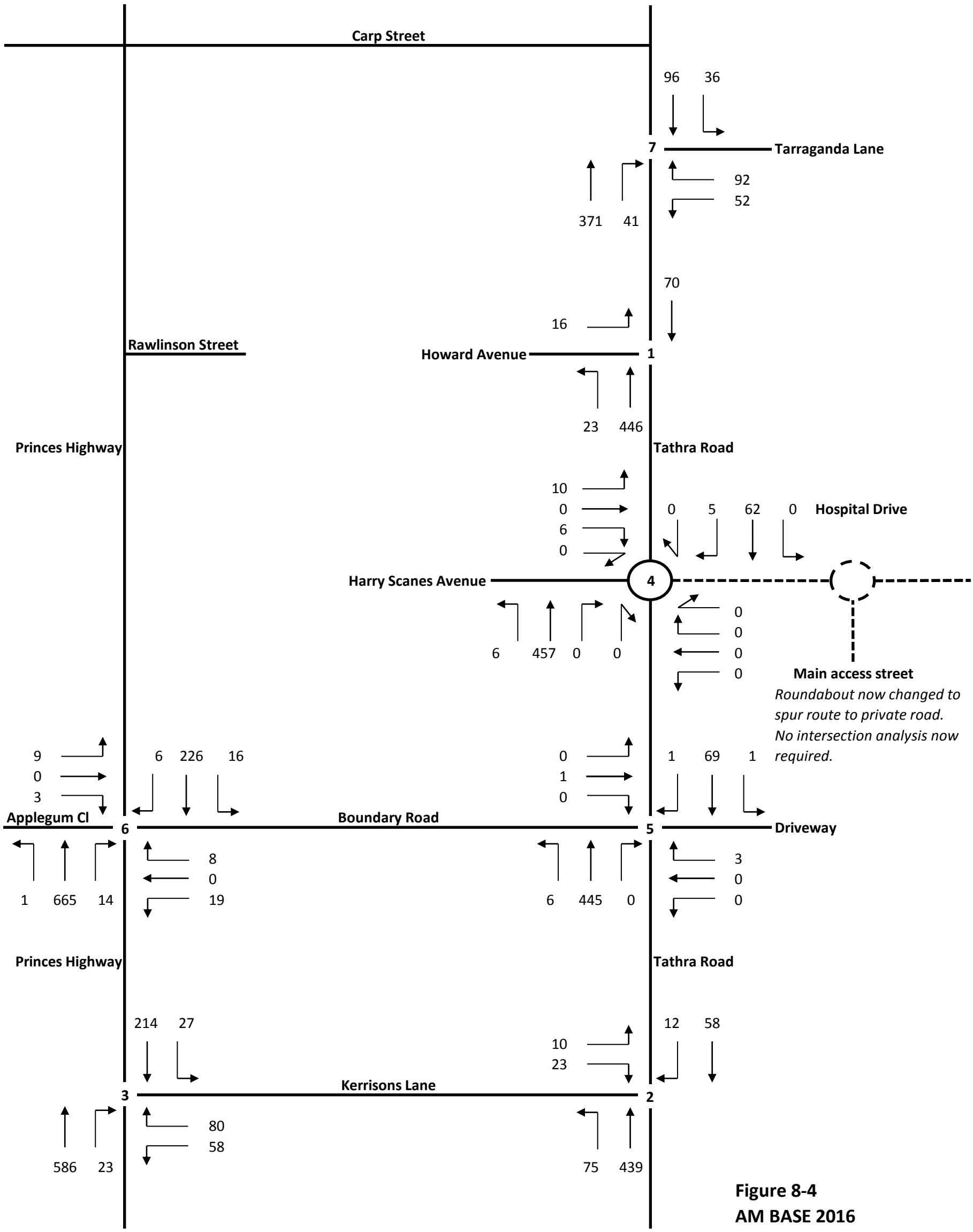


Figure 8-4
AM BASE 2016
Summer

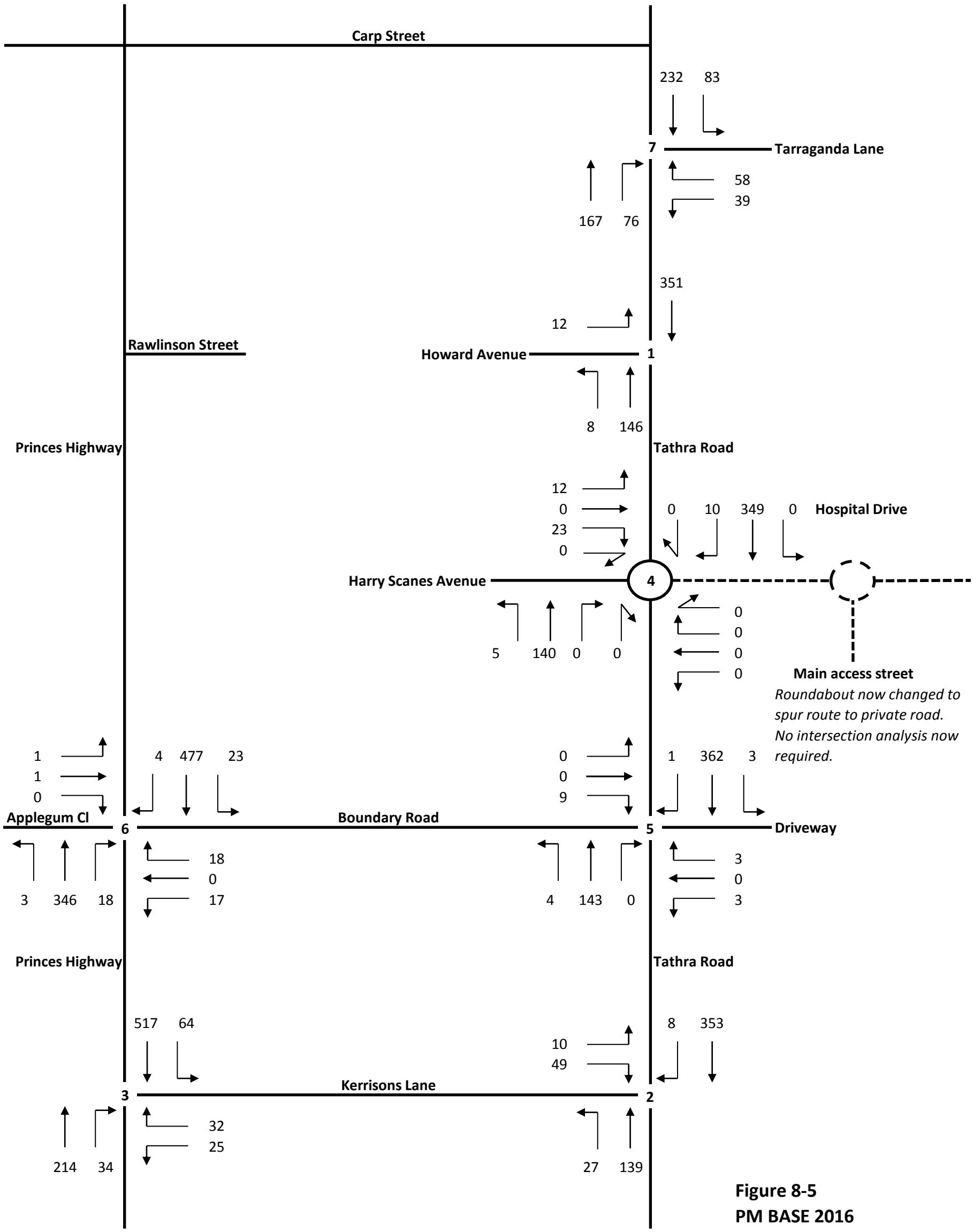


Figure 8-5
PM BASE 2016
Summer

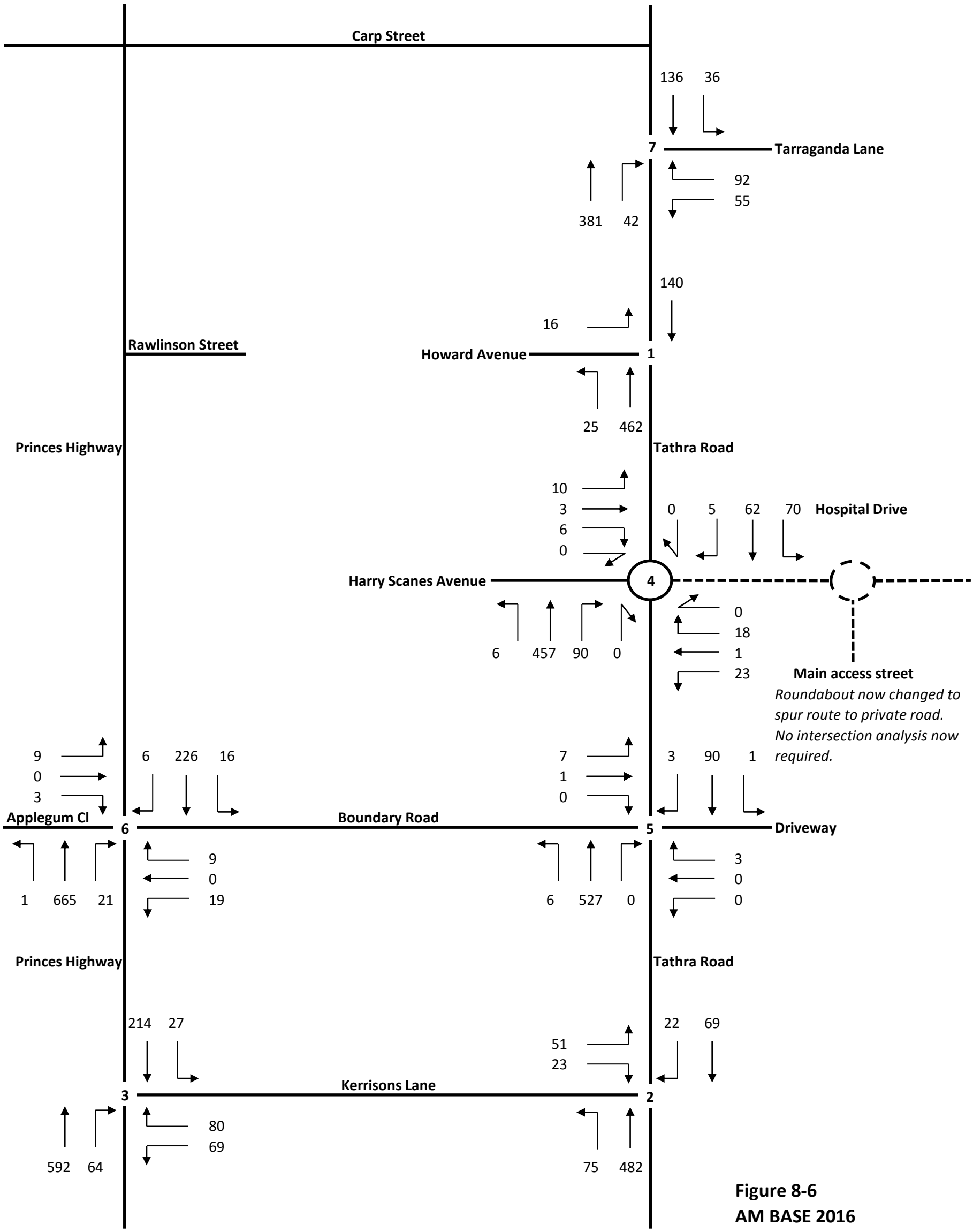


Figure 8-6
AM BASE 2016 and Hospital Summer

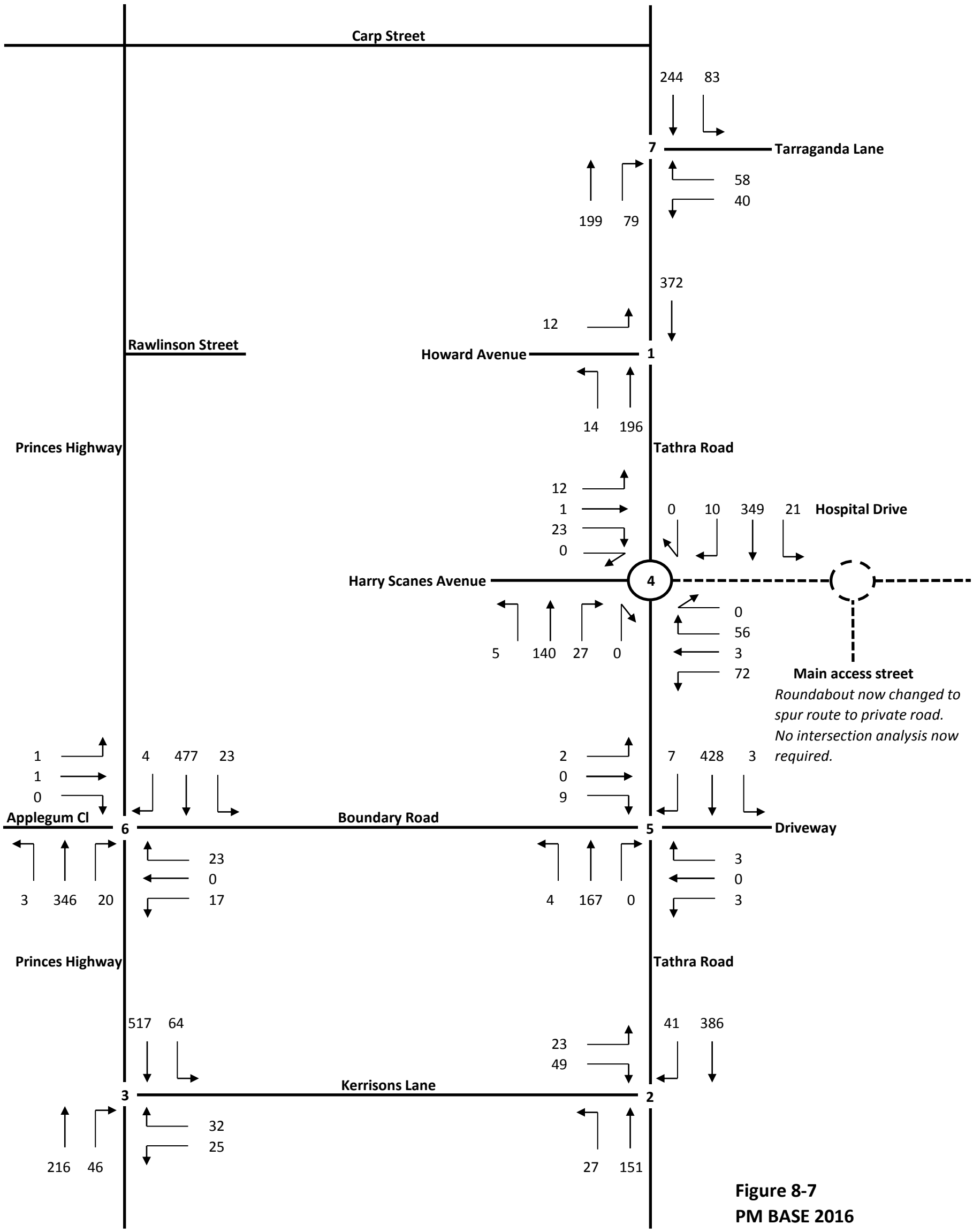


Figure 8-7
PM BASE 2016 and Hospital Summer

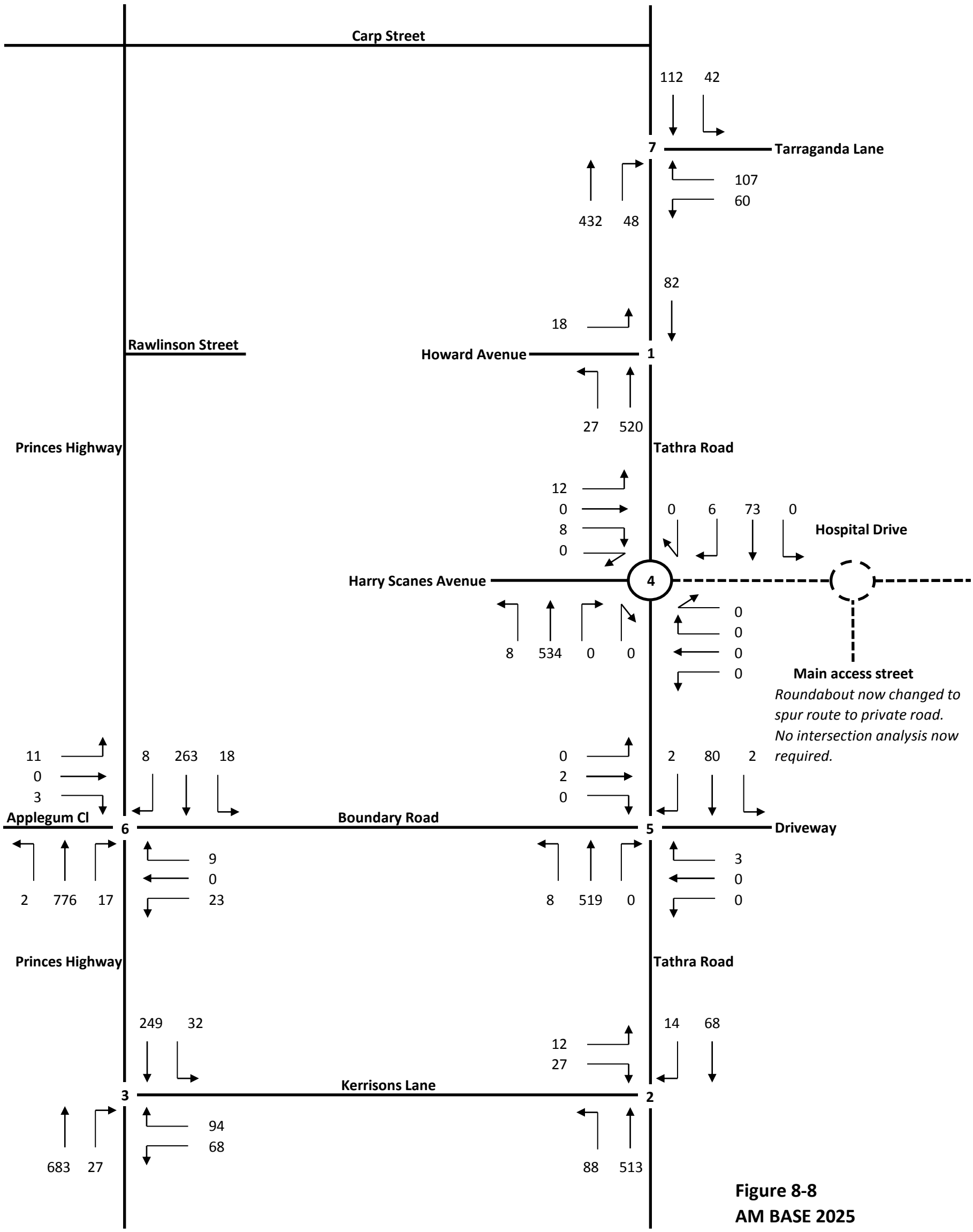


Figure 8-8
AM BASE 2025
Summer

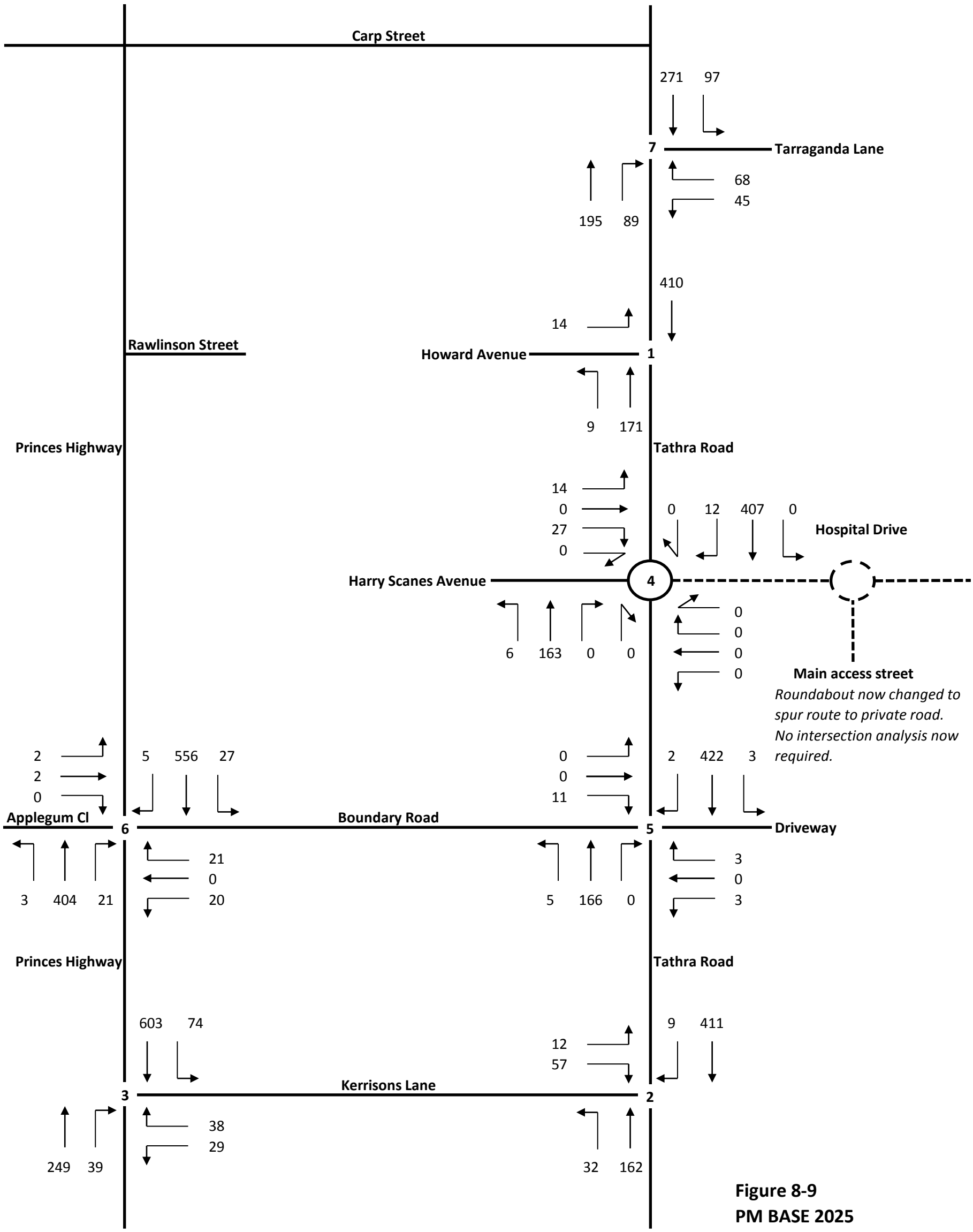


Figure 8-9
PM BASE 2025
Summer

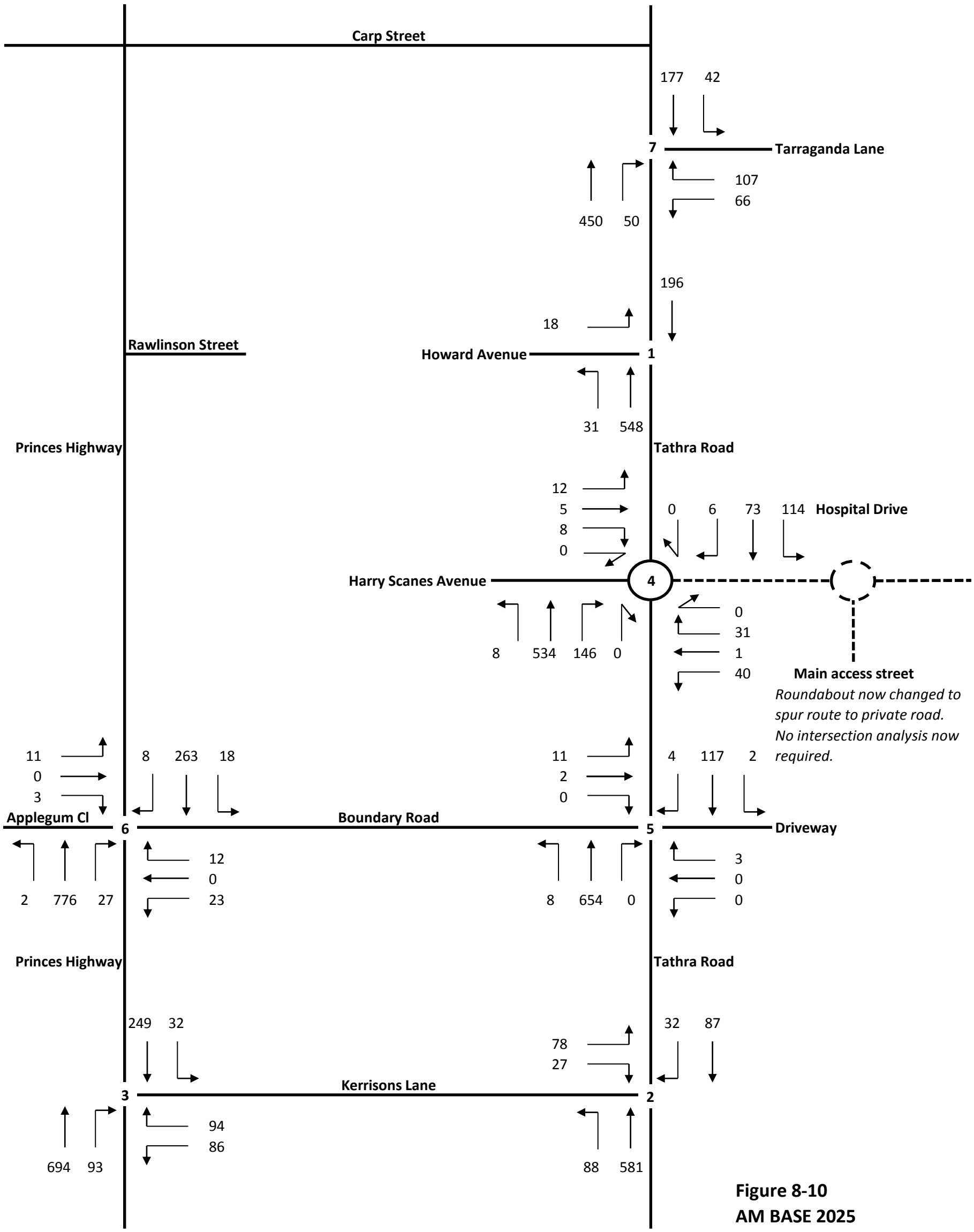


Figure 8-10
AM BASE 2025 and Hospital plus expansion and 'Other' Developments Summer

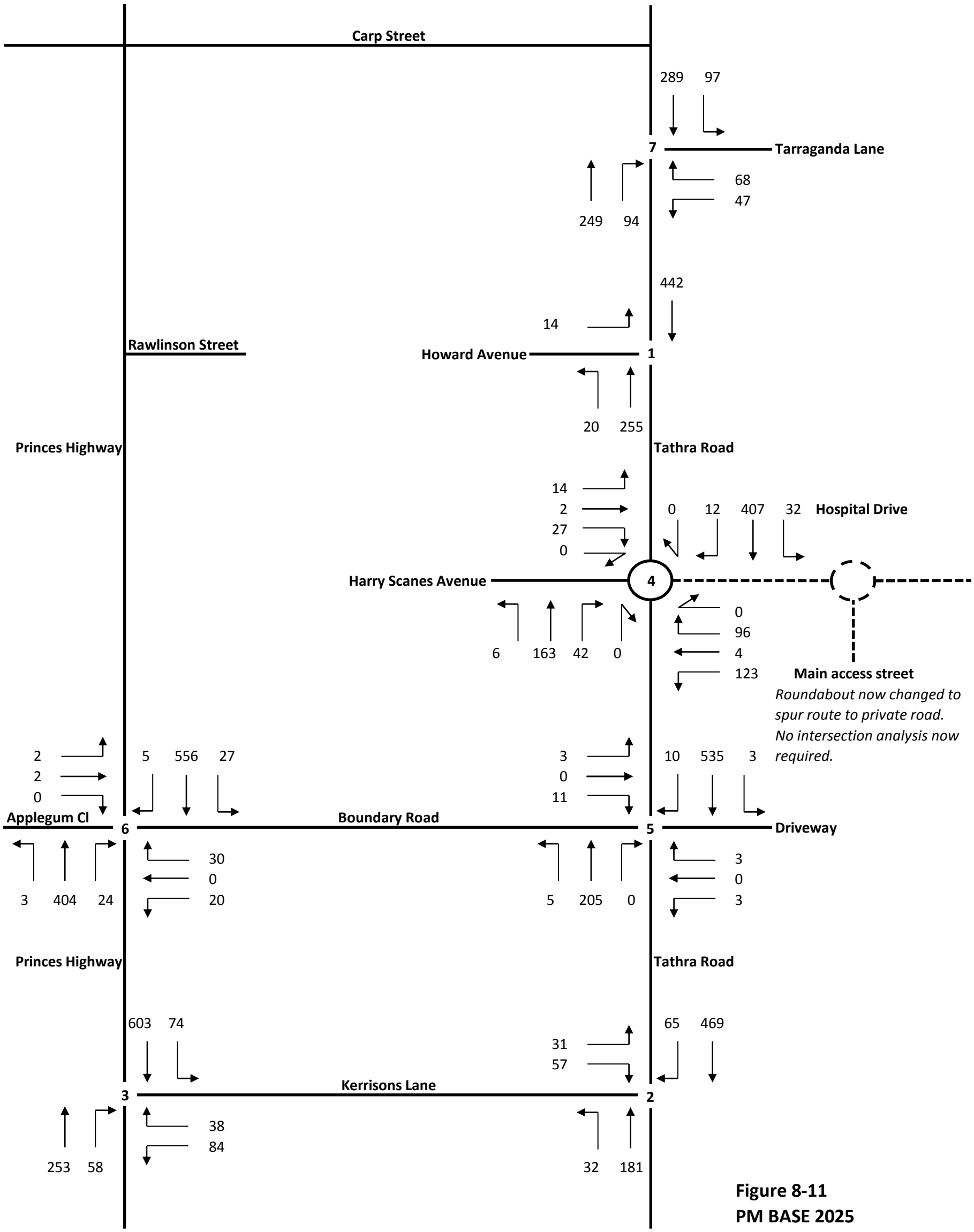


Figure 8-11
PM BASE 2025 and Hospital plus expansion and 'Other' Developments Summer

Table 8-1: Level of Service (LoS) Classifications.

Level of Service	Average Delay per Vehicle (sec/veh)	Traffic Signals and Roundabouts	Give Way and Stop Signs
A	Less than 15	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause delays Roundabouts require other control mode	At capacity, requires other control mode
F	Over 70	Extra capacity required	Extreme delay, traffic signal or other major treatment required.

8.9. Intersection Impacts

Appendix 5 contains intersection layout diagrams and a detailed breakdown of the SIDRA outputs. The Level of Service (LoS) is summarised below:

Summer 2016 (without development)

The SIDRA analysis indicates that in the summer months of 2016 prior to any SERH development all intersections operate with LoS C or better with the exception of Intersection 6 (Boundary Road/Princes Highway) which operates at a LoS of D in the PM peak only. This demonstrates that this intersection is near capacity in the future baseline scenario. It is important to recognise that a 2% yearly growth rate is conservative and that no account of the by-pass has been considered in the analysis. As discussed earlier, the by-pass is anticipated to reduce through traffic within Bega town centre and, in particular, at Intersection 6.

Summer 2016 + SERH

SIDRA analysis indicates that in the summer months of 2016 including the trips associated with SERH all intersections operate with LoS C or better, again with the exception of Intersection 6 in the PM peak. Intersection 6 remains at Level of Service D as is the case in the existing scenario. It is important to stress that the SERH only generates seven vehicle trips in the PM peak that utilise

Intersection 6. Therefore, the operational performance of this intersection is not significantly impacted by the SERH development.

Summer 2025 (without development)

Similar to the 2016 scenarios, in 2025 all intersections would operate with a LoS of C or better with the exception of Intersection 6 in the PM peak only. In addition, Intersection 3 in the AM peak operates with a LoS of D indicating that the intersection is operating near capacity. It is important to recognise that the growth factors used in the summer 2025 scenarios are extremely conservative.

In this scenario the operational performance of Intersection 6 deteriorates to LoS **F**. It is important to note that no by-pass consideration has been made in this scenario which would reduce through traffic volumes and provide improved opportunities for side road flows. The growth factors are also extremely robust with the cumulative growth factor increasing existing background traffic flows by more than 40%.

Summer 2025 + SERH + Expansion + 'Other'

All intersections operate with LoS C or better with the exception of Intersection 6 during the PM peak (LoS F) and Intersection 3 LoS E during the AM peak.

At Intersection 3 it is important to note that this intersection is currently operating close to its capacity so the addition of a very robust SERH scenario causes this intersection to deteriorate to a LoS of E.

At Intersection 6 it is important to note that the traffic generated by the SERH development only contributes 12 additional trips to this intersection. Furthermore, the performance of this intersection should be considered in light of the following:

- robust growth and seasonal factors; and
- no consideration of the positive impact of the Bega by-pass.

8.10. Traffic Impact Study Summary

The results of the SIDRA analysis, under extremely robust test circumstances, demonstrate that the intersections will operate with a LoS of C or better with the exception of Intersection 6 in the PM peak and Intersection 3 in the AM peak.

The traffic generated by the SERH development only contributes 12 additional trips to the background traffic utilising Intersection 6 and no account of the positive impact of the Bega by-pass has been made in the assessment.

Given that Intersections 3 and 6 are anticipated to operate at near capacity in the future base years and that SERH trips are minimal no mitigation measures are necessary at this or any of the study

intersections. Any impact on pedestrians and cyclists associated with SERH vehicle trips would also be negligible.

9. Draft Construction Strategy & Traffic Impact Assessment

9.1. Introduction

The SERH development is still within the early planning stage and is yet to progress to detailed design. Thus it is not prudent or possible to identify construction traffic volumes and impacts at this stage. Once a contractor has been appointed and a programme for construction works agreed between key stakeholders, then the construction traffic impacts can be formalised. This Chapter demonstrates draft construction strategies and impacts for Stage 1 and Stage 2.

Stage 1 relates to the early works package inclusive of roads and car parking. Stage 2 relates to construction of the hospital building. It is important to note that given the size of the SERH site the majority of construction works can be contained within the site.

This Chapter should be reviewed in tandem with C & M Consulting drawings and corresponds to **Stage 1 DGR Numbers 1-3** and **Stage 2 DGR Number 6**.

9.2. Access Arrangements for Construction Vehicles

Stage 1

All construction vehicles, deliveries and staff will access the site from Tathra Road. An existing farm track accesses the SERH site from Tathra Road opposite Harry Scanes Avenue. This track will be utilised during Stage 1. This farm track has good visibility and the current intersection form is wide and capable of accommodating HRVs and AVs. Traffic flows along Tathra Road at this location are minimal with 7 two way vehicles a minute noted. Vehicles to/from Harry Scanes Avenue equate to 0.65 a minute in the peak hour.

In respect of construction works on Tathra Road (new four arm roundabout) a strategy will be agreed with RMS and BVSC in order to minimise traffic disruption including the identification of alternative through traffic routes, where appropriate. Residents of Glen Mia Drive will also be considered within the construction strategy.

Stage 2

During Stage 2, construction vehicles, deliveries and staff will access the site from the newly formed four arm roundabout with Tathra Road and Harry Scanes Avenue. This roundabout has been designed to accommodate large vehicles.

9.3. Vehicle Types

The exact vehicles to be used are not known at this time, however are expected to mainly be rigid flatbed HRVs with HIAB loading equipment AVs and Truck & Dog. Vans and private cars will also

access the site. Exact vehicle types and movements will be confirmed when the phasing of the development has been agreed, however the existing farm track and the proposed 4 arm roundabout are capable of accommodating large vehicles.

9.4. Construction Detail

HGVs, AVs and/or Truck & Dogs are expected to deliver construction material and equipment. There will be van movements associated with plant services, materials and other construction items and private vehicles for construction labourers.

All heavy construction traffic is expected to originate from Princes Highway. Private vehicle origination will be dependent on construction staff home locations. This will be confirmed at a later date, where applicable.

Exact traffic numbers for construction vehicles are not yet know at this stage as the phasing of the development is to be agreed. Details of this will be agreed with RMS and BVSC at a later date.

9.5. Access Routes

The preferred construction access route is from the Princes Highway via Kerrisons Lane giving heavy vehicles travelling from the north the opportunity to use the new by-pass (when complete). Construction routes will be agreed with key stakeholders to determine their suitability and to identify sensitive receptors.

9.6. Highway Works

In order to facilitate the proposed construction no off-site highway works have been identified at this stage. Once a programme and route are established any necessary works can be reviewed.

9.7. Parking Arrangements

It is expected that due to the location of the site and the majority of works being carried out on private land that the construction works will have no effect on parking in the area. All site parking will be provided for within the site ensuring sufficient parking capacity for all staff and operatives to ensure there is no overspill parking in the local areas. Parking will be managed by the contractor's site manager.

9.8. Pedestrian and Cyclist Safety

Given the location of the site, pedestrian and cycle activity is minimal at present and there are no footways adjacent to the site with cyclists utilising the highway. The contractor will be responsible for managing public and site staff safety.

9.9. Traffic Impact

Until it is known how many vehicles will access the site and where they are travelling from it is not possible to identify their impact on the local road network. The traffic impact study included in Chapter 8 details that the study area is capable of accommodating over 400 vehicles in the peak hour. This is a greater peak hour generation than likely during construction.

9.10. Emergency Vehicle Access

The site will remain accessible for emergency vehicles from Tathra Road at Harry Scanes Avenue. Consultation will be required with the emergency services where restrictions are applicable along Tathra Road and to ensure Glen Mia Drive residents are not affected.

9.11. Proposed Working Hours

Construction work and the use of vehicles, plant and machinery will only take place between set times and on set days. No works are expected to take place on Sunday. Where applicable local and regional events will be considered with respect to working hours and days to ensure construction impacts are appropriately managed.

The site access will be open during set periods and when not in use will be appropriately secured and managed by the contractor.

9.12. Construction Management Plan (CMP)

A CMP will be provided once more detail is known regarding the programme and the scope of development, this Plan will include traffic and transport. The transport elements of the CMP will ensure that the impact of construction traffic is managed and where applicable mitigated to maintain a safe and efficient transport network.

Strategic high level measures to maintain a safe transport network include:

- managing traffic to arrive/depart out with the local road network peak periods;
- encouraging construction staff to car share or providing mini bus services from local transport facilities and/or staff accommodation;
- public consultation events/notification;
- excellent way finding; and
- expectation of full compliance of all site staff and suppliers to abide by the CMP.

10. Summary and Conclusions

10.1. Background

Sinclair Knight Merz S2F (SKM) has been commissioned by Health Infrastructure (Health Infrastructure/HI) to provide traffic and transport services to support Development Applications (DAs) for a new integrated hospital with 136 beds in Bega, Bega Valley Shire Council (BVSC), NSW. The proposed hospital consolidates existing facilities in Bega and Pambula to form a new South East Regional Hospital (SERH) for the Bega Valley and the wider community.

Two Development Applications (DAs) will be submitted in respect of the SERH development, the first for early enabling works (Stage 1) and the second for the construction of the hospital building (Stage 2). SKM has produced this Transport Assessment (TA), which will support both applications.

This TA provides a transport overview for SERH examining issues such as accessibility, parking and traffic impacts. The TA has been designed to provide a robust assessment. The TA takes cognisance of State and local policy as well as: Director General; Roads & Maritime Services (RMS); community and BVSC requirements. On-going consultation will be required throughout the planning, development and operation of the proposed SERH ensuring stakeholder requirements conform to hospital functionality and vice versa.

Where applicable any revisions to the site layout which may affect traffic and transport post submission of the first DA (Stage 1) will be submitted as an addendum to this TA.

10.2. Summary

Proposed transport infrastructure, to ensure the safe and sustainable accessibility of the SERH site for a wide mix of hospital user groups includes:

- a network of pedestrian and cycle links, including a number of shared paths and dedicated pedestrian zones including the creation of a shared link from SERH to Bega town;
- dedicated pedestrian crossing facilities;
- ten cycle parking spaces and the provision of showers and changing facilities for staff;
- a new bus stop located at the hospital entrance and a high level commitment from public transport stakeholders to serve the SERH site;
- a dedicated pick up and drop off zone for emergencies, community transport and taxis;
- 485 car parking spaces including 36 accessible (wheelchair) spaces; and
- a new vehicular access and intersection (roundabout) at Tathra Road/Harry Scanes Avenue.

Reference is made to State and local policy and guidance documents. These documents at all levels aim to promote sustainable travel, provide a choice of transport mode and reduce the impact of private car use.

Pedestrians and cyclists will be catered for with the provision of a shared 3m path linking the main hospital entrance with Tathra Road. HI have committed to the development of a shared route from the proposed Tathra Road roundabout northwards to Bega town to link with existing facilities at Rose Street. This link will run along the east of Tathra Road for approximately 700m. A network of pedestrian routes are proposed with the SERH site linking the car parks to hospital entrances. Ten cycle parking spaces will be provided for use by all hospital users. Showers and changing facilities will be provided for staff. SKM have consulted with local bus operators, who have agreed to access the site directly, a bus stop is proposed close to the main hospital entrance to facilitate public transport use.

It is proposed that the SERH site will be accessed via a new roundabout intersection with Tathra Road and Harry Scanes Avenue. This access will be used for all vehicles associated with SERH.

A Travel Plan Framework has been prepared outlining measures which **could** be implemented to increase staff, patient and visitor awareness of sustainable modes and reduce private car usage.

Vehicle trip generations have been estimated for SERH based on information provided by BVHS/HI and utilising SKM NSW/UK experience. These trips have been tested for a number of robust scenarios at 7 local intersections.

10.3. Conclusions

The approach to car parking at SERH will be to encourage those who choose to drive to the site to use a car park which corresponds to their reason for accessing the site and thereafter walk to their desired destination. This will be managed through way finding and the Travel Plan Framework.

485 car parking spaces are proposed at SERH, three suitable over flow car park locations have also been identified should the hospital expand in the long and short term. It is envisaged that this parking provision/strategy will be sufficient to fully accommodate SERH parking demand and there will be no requirement for on-street parking on the local road network. Ongoing consultation with BVSC will be undertaken to ensure parking strategy and provisions conform to hospital functionality.

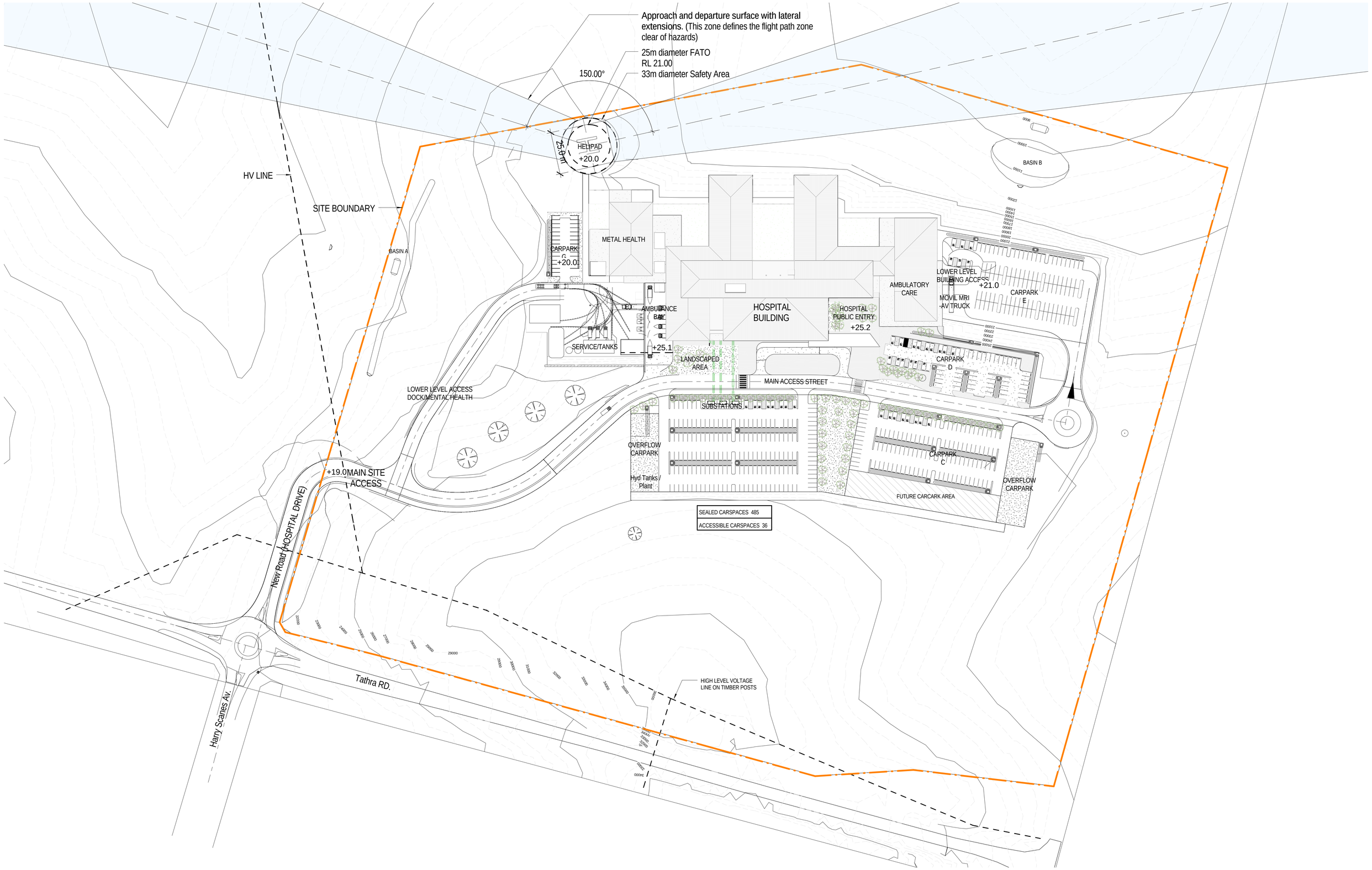
The traffic impact study ensured an extremely robust test scenario with traffic increased by 40% over existing volumes and no account of the positive impact of the Bega by-pass taken. The results of the SIDRA analysis under these extremely robust test circumstances demonstrates that the intersections assessed will operate at a LoS of C or better with the exception of Intersection 3 (Kerrisons Lane/Princes Highway) and Intersection 6 (Boundary Road/Princes Highway). However, both intersections would operate close to capacity in future years regardless of the development of

the SERH. Given that the impact of the traffic generated by the SERH on the operation of these intersections is comparatively minor no mitigation is proposed .

A Construction Management Plan will be provided once more detail is known regarding the programme and the scope of construction, this Plan will include traffic and transport. The transport elements of the CMP will ensure that the impact of construction traffic is managed and where applicable mitigated to maintain a safe and efficient transport network.

Appendix 1

Indicative Site Layout (BVN, August 2012)



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SK_101

LV- Site setout plan

1 : 1000

BVN

BVNArchitecture

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Site Plan

SK_101 31.08.12

Appendix 2

Transport Assessment Scope

Sinclair Knight Merz
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St Leonards NSW 2065 Australia
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PO Box 164 St Leonards NSW 2065 Australia

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Peter Newton
Engineering Development Co-ordinator
Bega Valley Shire Council
Zingel Place
Bega
NSW 2550

06 August 2012 *Traffic scope BVSC06.03.12.docx*

Dear Peter,

South East Regional Hospital (SERH), Bega- Transport Assessment Scope

Following on from initial discussions between Bega Valley Shire Council (BVSC), Roads & Maritime Services (RMS) and SKM we write to you to confirm the parameters and scope of the Transport Assessment (TA) which will be submitted in support of Development Applications (DAs) for the above proposal. The TA takes cognisance of all BVSC, RMS and Director General Requirements submitted to date. The TA will take the form of one standalone document covering all traffic and transport related issues and consultation outcomes pertaining to the SERH proposal. The TA will therefore include:

- Policy and Guidance context;
- Accessibility by all travel modes;
- Travel and parking demands;
- Travel Plan Framework;
- Car Parking Strategy;
- Draft Construction Traffic Management Plan; and
- Traffic Impact Assessment at 7 intersections plus the proposed internal SERH access.

Health Infrastructure propose to submit two DAs, one for the early works the other for the SERH building. From a transport context our TA will support each application. For your reference Health Infrastructure intend to submit the first DA in early September. Given the proposed timescales, we would appreciate your early attention to the TA scope detailed below.

Development Proposals

The SERH will have approximately 136 beds and 500-600 car parking spaces. The TA will confirm the rationale and understanding behind the proposed parking demands. A number of

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services will be offered at the hospital such as emergency, maternity, community and mental health, thus travel and parking demands are varied.

Sustainable Accessibility

Appropriate pedestrian links are provided from the proposed hospital and SKM are currently in the process of integrating these links with existing Bega pedestrian infrastructure, where appropriate. A shared 3m wide foot/cycle way is provided through the site. Cycle parking, showers and changing facilities are also proposed.

SKM have consulted with local bus operators and Transport for NSW, gaining positive responses in respect of the SERH proposal. Responses principally confirm that bus operators will serve the site directly and a bus stop is proposed within the site in close proximity to the hospital entrance to facilitate bus usage.

A Travel Plan Framework is provided within the TA demonstrating measures which **could** be implemented to promote sustainable travel and reduce dependence on private vehicle travel, particularly single occupancy vehicle trips. This Framework will be applicable to all site users, but with a particular emphasis on staff travel. Once the site is occupied the Framework can be updated and formalised based on observed travel patterns.

Traffic Surveys

SKM commissioned traffic surveys at seven intersections in Bega on 21 June 2012 between 0730-0930 and 1500-1800. The survey parameters were directed by RMS and BVSC requirements and we can confirm the AM and PM peak hours are as follows:

1) Howard Avenue/ Tathra Road 0800-0900 and 1615-1715
2) Kerrisons Lane/ Tathra Road 0800-0900 and 1615-1715
3) Kerrisons Lane/ Princes Hwy 0800-0900 and 1630-1730
4) Harry Scanes Avenue/ Tathra Rd 0745-0845 and 1615-1715
5) Boundary Rd/ Tathra Road 0800-0900 and 1630-1730
6) Boundary Rd/ Princes Hwy 0800-0900 and 1515-1615
7) East Street/ Tarraganda Lane 0815-0915 and 1615-1715

In order to provide a robust assessment these peak base hours are utilised in subsequent intersection analysis, irrespective of proposed SERH peak periods.

For your information, **Figures 1 and 2** overleaf illustrate the Base 2012 peak hour flows at each intersection.

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Initial SIDRA Analysis

SKM has had the opportunity to assess the baseline performance of each of the seven intersections and can confirm all intersections operate with a Level of Service of A in each of their respective AM and PM peak periods.

Travel Demands

In order to assess the likely travel demands associated with SERH, SKM have utilised information provided by Health Infrastructure based on staff and patient numbers and applicable assumptions regarding shift patterns and travel mode shares.

With regard to vehicle trips, it is SKM's belief that guidelines (RTA Guide to Traffic Generating Developments- Private Hospitals) do not provide an accurate representation of trips associated with a development similar to SERH. SKM have therefore cross referenced RTA trip generations with data provided by Health Infrastructure and our NSW/UK experience to provide what we feel is a more robust and accurate representation of trip generations.

These can be summarised as follows:

- AM Peak 163 arrivals 42 departures; and
- PM Peak 49 arrivals 131 departures.

Totals trips:

- AM- 205 two way trips; and
- PM-180 two way trips.

These trips are approximately 20% higher than RTA guidelines.

For the purposes of the TA we are assuming the following SERH operations:

- 2016 Opening of SERH; and
- 2025 Expansion of SERH at 20% of the proposed number of beds.

Thus the travel demands demonstrated above will increase by 20% in 2025 which is a robust assessment used for illustrative purposes. Thus two way trips associated with SERH are 246 and 216 in the 2025 AM and PM peaks respectively.

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As you are aware there are 'other' development opportunities within the SERH site. For example; staff accommodation and/or education facilities. In order to provide a robust assessment, SKM propose to utilise the following travel demands for these developments:

- AM Peak 70 arrivals 23 departures; and
- PM Peak 17 arrivals 66 departures.

These 'other' development opportunities will be tested as operational in 2025, again providing a robust assessment. It is important to recognise that these trips are utilised for sensitivity testing purposes only and will be confirmed through later DA submission(s) by other parties as and when required. This is also the case with parking requirements for 'other' developments.

Trip Distributions

SKM have based trip distributions on existing population catchments and routes to these catchments. **Figure 3** highlights the trip distribution percentages, which for the purposes of our TA are assumed to be uniform in the AM and PM peak period and during the summer months.

Base and Seasonal Traffic Growth

SKM have made the following indicative assumptions with regard to baseline traffic growth:

- Average yearly background traffic growth of 2%; and
- A winter to summer seasonal traffic growth factor of 1.2.

SKM would appreciate any local knowledge that you may have with regard to confirming the above values. Should you have any previously commissioned traffic surveys at or in close proximity to the seven intersections we would be grateful for the opportunity to review them in order to determine traffic growth and/or seasonal fluctuations were applicable. Otherwise we will proceed with the above values which demonstrate an extremely robust case.

Intersection scenarios

SKM propose to undertake intersection analysis for the following scenarios thereby representing a robust case:

- 2016 Summer + Development; and
- SENSITIVITY 2025 Summer + Expansion + 'Other Developments'.

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These scenarios will be tested for each intersection in the AM and PM peak periods.

Committed Developments

SKM would be grateful if you could confirm the travel demands associated with any committed developments (developments with planning consent) in the proximity of the proposed SERH site which may impact upon the seven intersections assessed as part of our study.

Bega By-Pass

In line with our consultation to date, the uncompleted Bega town by-pass has not been considered within our TA. It is our understanding that this by-pass would reduce trips at a number of intersections within our study area; therefore by excluding the by-pass we are providing a robust assessment of the traffic impacts of the development. SKM would welcome your thoughts on this approach.

Vehicular Access from Tathra Road

At present the speed zone on Tathra Road is 100 km/h and the road has a rural undulating nature with instances of poor visibility. To the north of the proposed main hospital access the speed limit reduces to 60km/h.

In order to achieve a safe access from Tathra Road, SKM propose to extend the 60km/h speed zone south, this will allow an appropriate intersection to be provided to a standard which is in keeping with the requirements of a hospital. SKM have discussed this speed limit extension with RMS and Bega Valley Shire Council (BVSC) and have a verbal agreement to this proposal subject to the outputs of the Transport Assessment and continued dialogue.

Boundary Road Access

SKM recognise RMS concerns regarding a secondary proposed access to the south of the main hospital access forming a crossroads with Boundary Road and Tathra Road. This secondary access resides in the 100km/h speed limit and sightlines are poor. Ongoing consultation is underway between RMS, BVSC and SKM to confirm the acceptability of this intersection including speed surveys. Again thank you for your ongoing support and assistance in this matter.

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We look forward to your early response so that we may complete the TA utilising agreed parameters. For your reference this scope has also been issued to RMS.

Should you have any questions or queries please do not hesitate to contact me.

Yours sincerely

Carolyn Rollo
Phone: +61 2 9928 2524
Fax: +61 2 9928 2500
E-mail: crollo@globalskm.com

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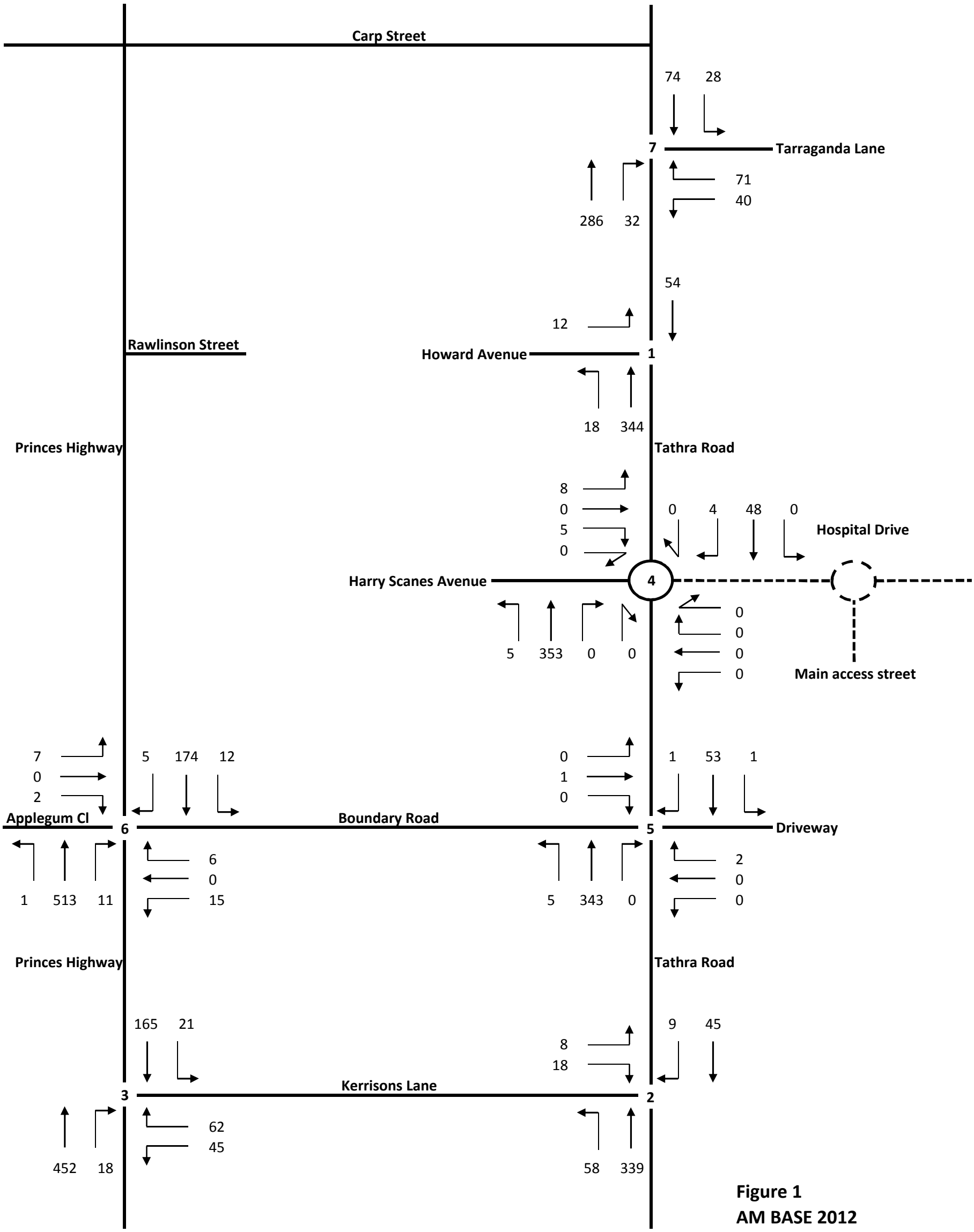


Figure 1
AM BASE 2012

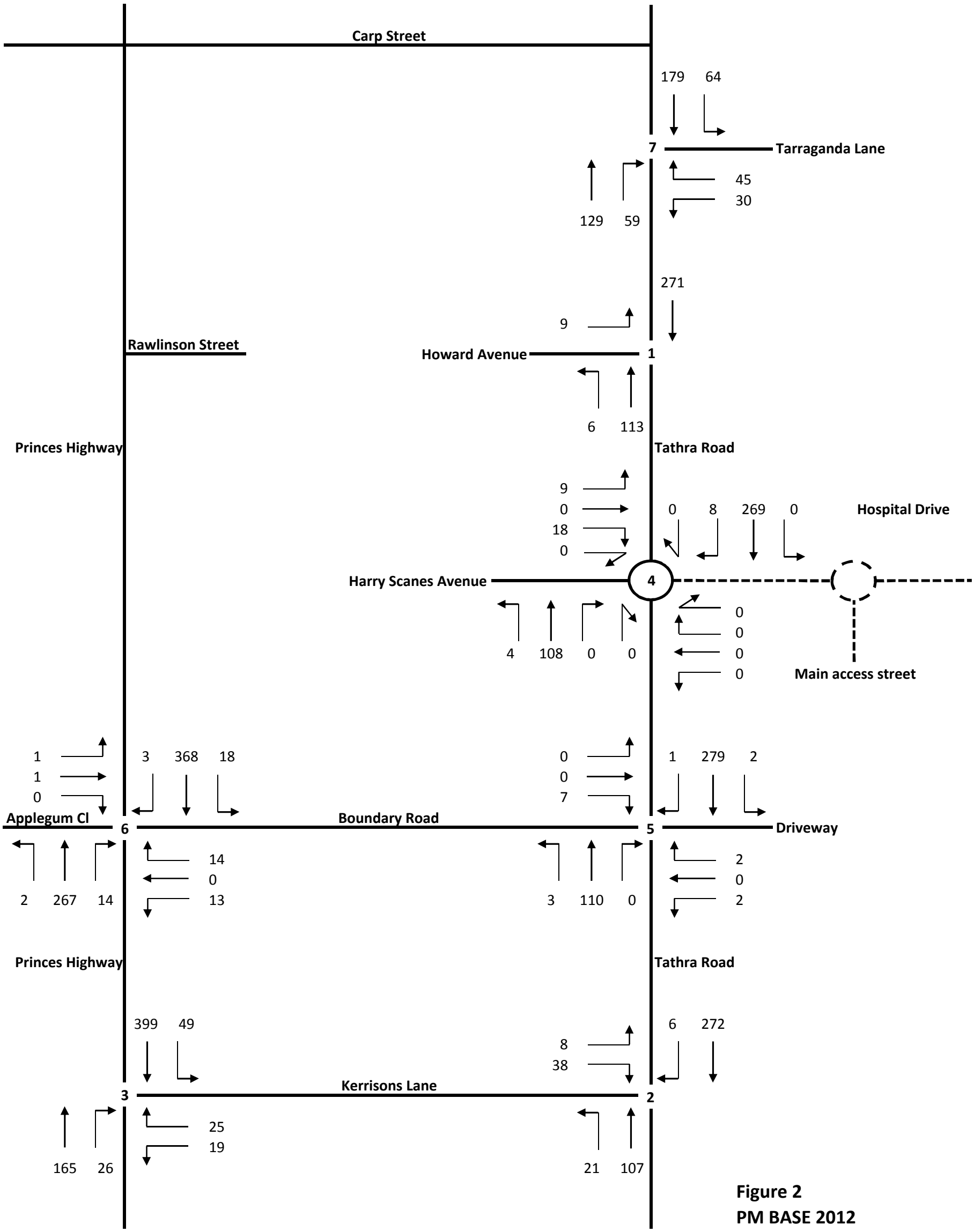


Figure 2
PM BASE 2012

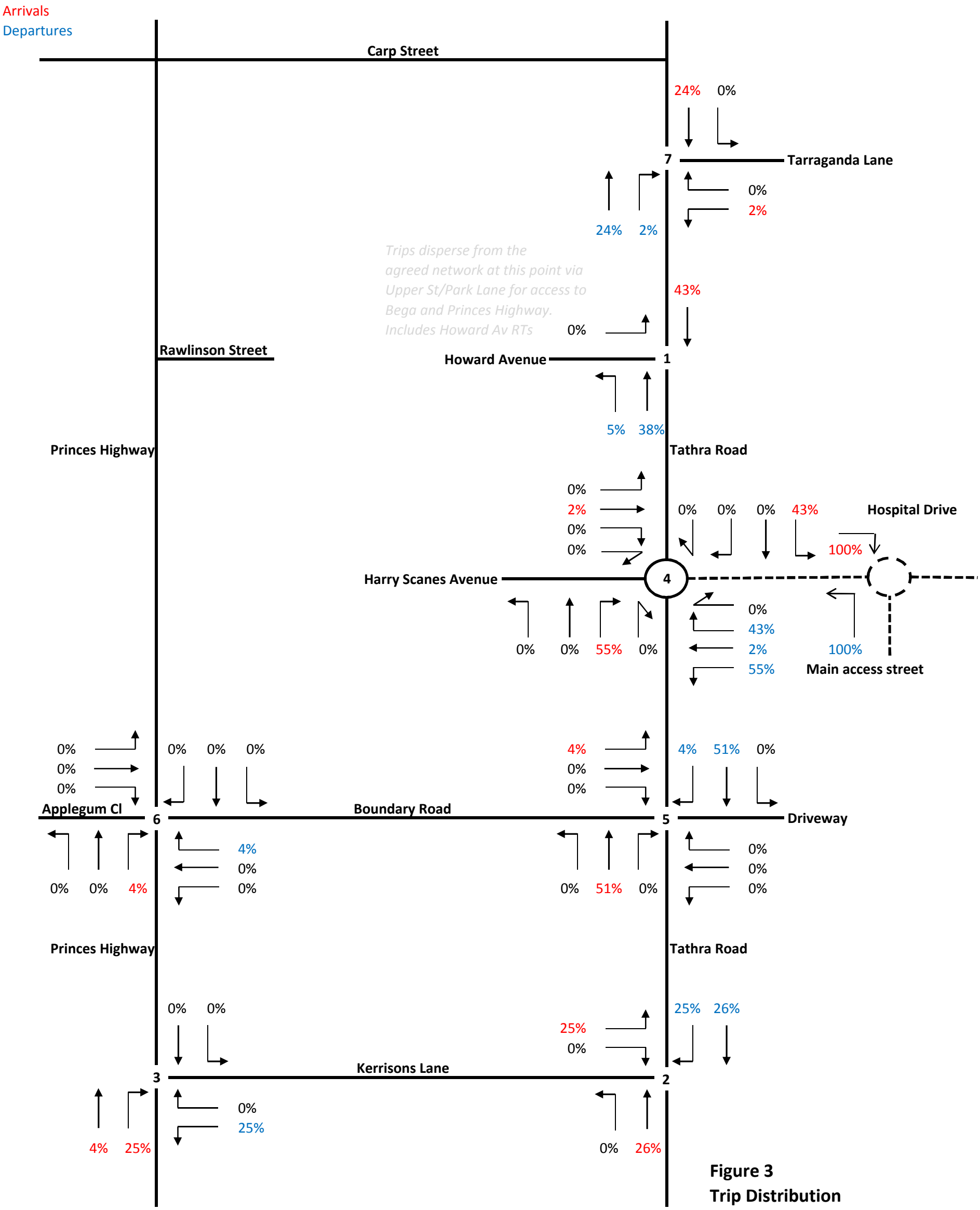


Figure 3
Trip Distribution

Appendix 3

RTA Traffic Impact Study Checklist

APPENDIX 3

2.3 Issues to be addressed.

A traffic impact study should follow the standard format and structure that is listed in Table 2.1. This format covers the key issues to be addressed in determining the impact on traffic of a development. Use of this format and the checklist will ensure those involved in the preparation and / or assessment of Development Applications that the most significant matters are considered.

Table 2.1
Key issues in preparing traffic impact studies

Procedures & Key Parameters	Source	Check✓
Brief description of the development		✓
Application and study process		✓
Introduction		
Background		✓
Scope of report		✓
The key issues and objectives of a traffic impact study		✓
General Data Collection / Existing Conditions		
Description of the Site and Proposed Activity		✓
Site location		✓
Current land use characteristics (zoning) of the proposed site and land use in the vicinity	Development Consent Authority	✓
Site access		✓
The Existing Traffic Conditions		✓
Road hierarchy; including the identification of the classified road network (major and minor roads) which may be affected by the development proposal	Council / RTA	✓
Inventory of road widths, road conditions, traffic management and parking control	Council / RTA and Survey	✓
Current and proposed roadworks, traffic management works and bikeways	Council / RTA	✓
Traffic Flows		

Procedures & Key Parameters	Source	Check✓
Selection of key streets - possibly divided into the major and the minor road network; selection of key assessment periods, chosen to cover the times at which the development would be expected to have its major impacts	Section 3	✓
AADT on key streets	Council / RTA and Survey	HOURLY FLOWS
Daily traffic flow hourly distribution, particularly in or near residential areas	Survey	✓
Estimate of the speed of traffic on the road to which vehicular access is proposed	Survey	✓
Current traffic generation of site	Survey	NA
Daily and peak period heavy vehicle flows and percentages	Survey	✓
The adaptation of appropriate computer models or techniques for assessing levels of traffic congestion and queuing conditions		✓
Traffic Safety		
Accident history of road network in the area	Council / RTA	✓
Parking Supply and Demand		
On-street parking provision	Council	✓
Off-street parking provision	Council / Survey	✓
Current parking demand, including utilisation by time of day and turnover rates	Survey	NA
Short term pick up and set down areas	Council / Survey	✓
Modal Split		
Public Transport		
Rail station locations	State Rail / Cityrail	NA
Bus routes and bus stop locations; Pedestrian access to bus stops; Constraints and conflicts	STA / Private Operators / Council / Survey	✓
Rail and bus service frequencies, ideally separated into Monday to Friday, Saturday and Sunday, for both peak and off-peak times	State Rail / Cityrail / Survey	✓

Procedures & Key Parameters	Source	Check✓
Commuter parking provision	State Rail / Cityrail / Survey	✓
Pedestrian Network		
Identify major pedestrian routes	Survey	✓
Pedestrian flows and potential conflicts with vehicles, particularly where such conflicts cause capacity constraint on either vehicular or pedestrian movement	Survey	✓
Pedestrian infrastructure	Survey	✓
Proposed developments in the vicinity		
Proposed Development		
The Development		
Plan reference, if plans not contained in study report		✓
Nature of development		✓
Gross floor areas of each component of development		BED BASED
Projected number of employees/users/residents		✓
Hours and days of operations		✓
Staging and timing of development		✓
Selection of appropriate design vehicles for determining access and circulation requirements	Section 6	✓
Access		
Driveway location, including review of alternative locations	Sections 5, 6	✓
Sight distance of driveways and comparisons with stopping and desirable minimum sight distances	Section 6	✓
Service vehicle access	Section 6	✓
Analysis of projected queuing at entrances	Section 6	✓
Current access to site and comparison with proposed access		✓
Provision for access to, and by, public transport	Section 6	✓

Procedures & Key Parameters	Source	Check✓
Circulation		
Proposed pattern of circulation	Section 6	✓
Internal road widths	Section 6	✓
Provision for bus movements	Section 6	✓
Service area layout		✓
Parking		
Proposed supply		✓
Parking provision recommended by State Government policy	RTA / DUAP	SITE SPECIFIC
Council code and local parking policies and plans	Council	SITE SPECIFIC
Parking layout		✓
Projected peak demand, based where appropriate on similar research reports and on surveys of similar developments;	Section 5	✓
Parking for Service / courier vehicles and bicycles	Section 5	✓
Impact of Proposed Development		
Traffic generation during design periods		
Daily and seasonal factors		✓
Pedestrian generation and movements		✓
Traffic Distribution and Assignments		
Hourly distribution of trips		✓
Assignments of these trips to the road system based where possible on development feasibility studies or on origin/ destination surveys undertaken at similar developments in the areas		✓
Impact on Traffic Safety		✓
Assessment of Road Safety Impact		✓
Impact of Generated Traffic		
Daily traffic flows and composition on key streets and their expected effect on the environment particularly in residential areas		JEE EIS ALSO

Procedures & Key Parameters	Source	Check✓
Peak period volumes at key intersections and effect of generated traffic on congestion levels	Survey	✓
Impact of construction traffic during construction stages		✓
Other proposed developments in the vicinity their timing and likely impact, if known		NA
Assessment of traffic noise		SEE EIS ALSO
Public Transport		
Options for extensions and changes to bus routes and bus stops following discussions with the STA and or private bus operators	STA / Private Operators	✓
Provision for pedestrian access to bus stops		✓
Recommended Works		
Improvements to site access and circulation		NA
Improvements to roads, signals, roundabouts and other traffic management measures		NA
Improvements to pedestrian facilities		✓
Effect of recommended works on the operation of adjacent developments		NA
Effect of recommended works on public transport services including access to bus routes and bus stops		NA
Provision of LATM measures		NA
Funding of proposed improvement projects		NA
Noise attenuation measures		SEE EIS ALSO.

Appendix 4

Example Travel Options Leaflet

NHS
Forth Valley

Forth Valley Royal Hospital Travel Options

Walking and Cycling

Valid from August 2010

Introduction

Welcome to your walking and cycling guide for travel to Forth Valley Royal Hospital.

Travelling to the hospital on foot or by bike is a great way to get yourself fit and help the environment! The maps in this booklet will help you to plan your journey to the hospital on foot or by bike.

The site layout on the opposite page shows the walking and cycling routes within the hospital and also where you can park your bike safely and securely. The map in the centre of this guide highlights recognised routes in the surrounding area to help you safely plan your journey. The map on pages 6 and 7 shows the close area in further detail.

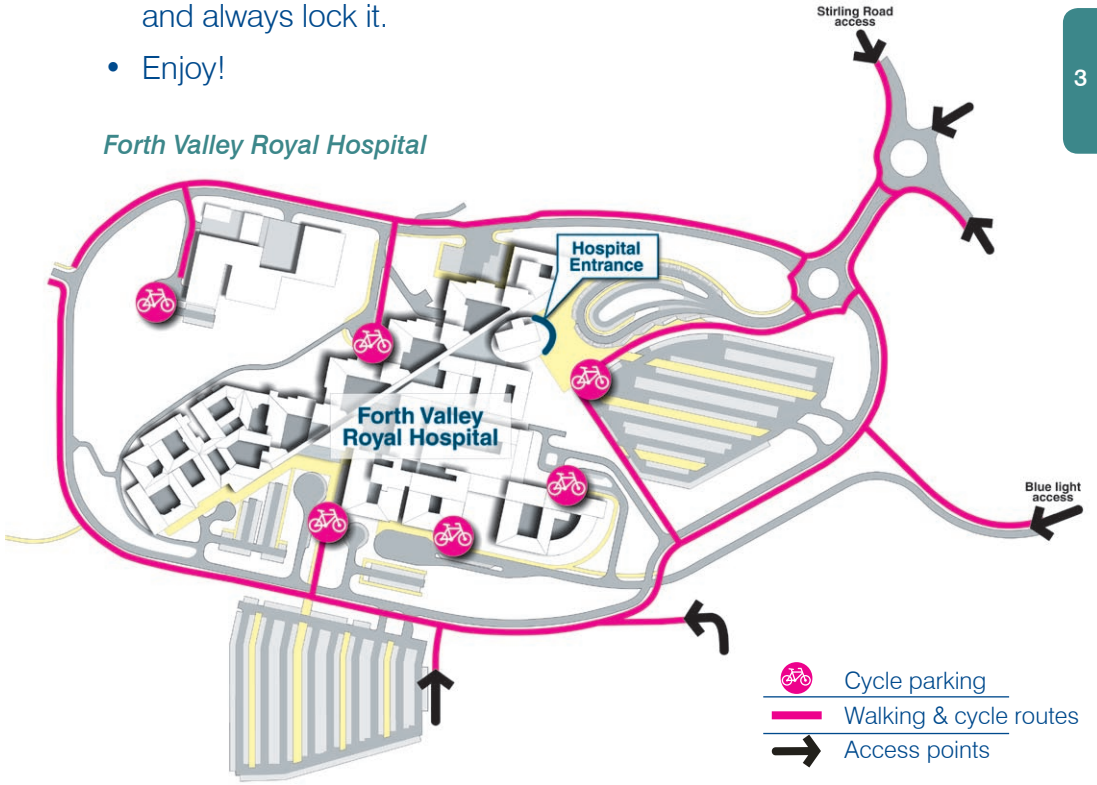
If you have any comments about your journey then please contact NHS Forth Valley via email: ***FV-UHB.yourhealthservice@nhs.net*** telephone **0800 456033** (free phone line) or write to us at **NHS Forth Valley Travel Manager, Strategic Projects & Property Team, 1st Floor, Acute HQ, Westburn Avenue, Falkirk, FK1 5SU.**

Further information on the local routes and sustainable travel initiatives can be found via the Falkirk Council website at ***www.falkirk.gov.uk/taketherightroute*** and also at ***www.sustrans.org.uk***

Cycling Tips

- Always wear a helmet.
- Check and maintain your bike regularly.
- Park your bike safely and considerately and always lock it.
- Enjoy!

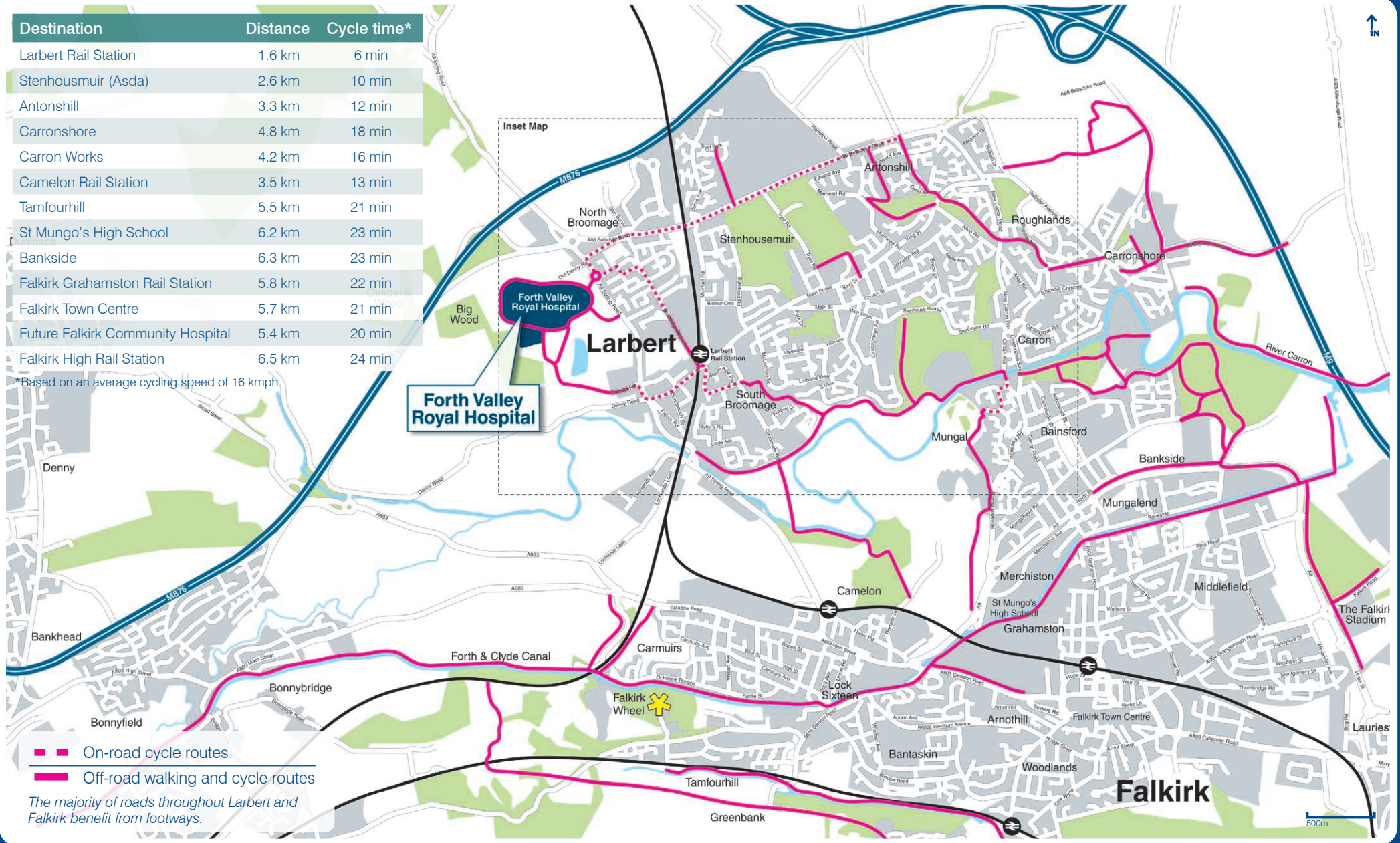
Forth Valley Royal Hospital



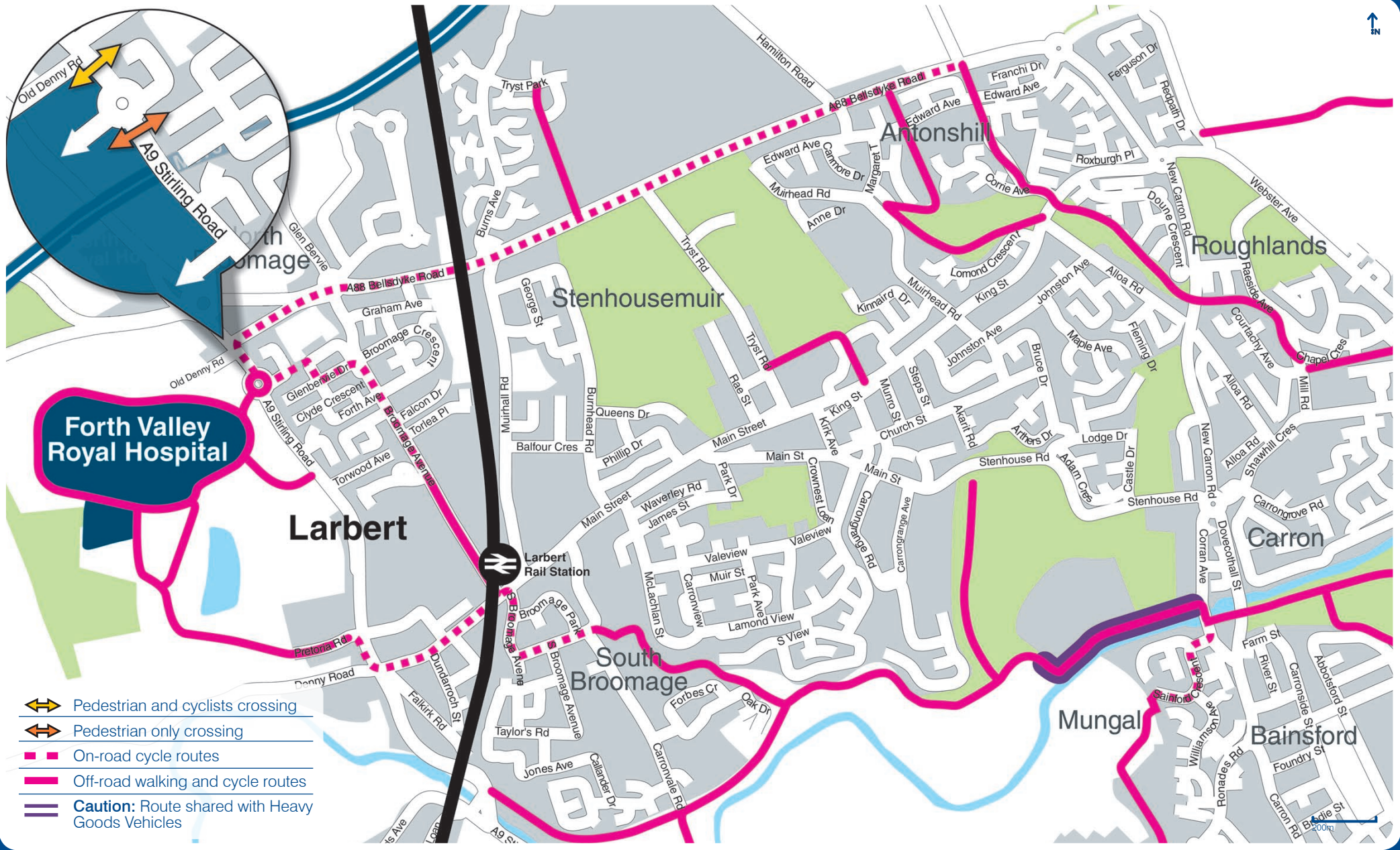
Walking & cycling routes to Forth Valley Royal Hospital

Destination	Distance	Cycle time*
Larbert Rail Station	1.6 km	6 min
Stenhousmuir (Asda)	2.6 km	10 min
Antonshill	3.3 km	12 min
Carronshore	4.8 km	18 min
Carron Works	4.2 km	16 min
Camelon Rail Station	3.5 km	13 min
Tamfourhill	5.5 km	21 min
St Mungo's High School	6.2 km	23 min
Bankside	6.3 km	23 min
Falkirk Grahamston Rail Station	5.8 km	22 min
Falkirk Town Centre	5.7 km	21 min
Future Falkirk Community Hospital	5.4 km	20 min
Falkirk High Rail Station	6.5 km	24 min

*Based on an average cycling speed of 16 kmph



Inset Map


Old Denny Rd
A9 Stirling Road
Tryst Park
Hamilton Road
A88 Bellsdyke Road
Antonshill
Franchi Dr
Edward Ave
Ferguson Dr
Redpath Dr
Roxburgh Pl
New Carron Rd
Webster Ave
Doune Crescent
Corrie Ave
Edward Ave
Canmore Dr
Margaret T
Muirhead Rd
Anne Dr
Roughlands
Lomond Crescent
King St
Johnston Ave
Alloa Rd
Raeside Ave
Courtachy Ave
Chapel Cres
Maple Ave
Fleming Dr
Bruce Dr
Mill Rd
Alloa Rd
Shawhill Cres
New Carron Rd
Carrongrove Rd
Carron
Corran Ave
Dovecothall St
Farm St
River St
Carronside St
Abbotsford St
Bainsford
Foundry St
Carron Rd
Bodie St
Ronades Rd
Williamson Ave
Salford Cres
Mungal
Stenhousemuir
Tryst Rd
George St
Burns Ave
Glen Bervie
Graham Ave
Broomage Crescent
Glenbervie Dr
Clyde Crescent
Forth Ave
Falcon Dr
Torlea Pl
Torwood Ave
Broomage Avenue
Old Denny Rd
A9 Stirling Road
Forth Valley Royal Hospital
Larbert
Muirhall Rd
Burnhead Rd
Queens Dr
Balfour Cres
Phillip Dr
Rae St
Main Street
Kirk Ave
King St
Munro St
Steps St
Church St
Akarit Rd
Arthers Dr
Lodge Dr
Castle Dr
Adam Cres
Stenhouse Rd
Main St
Crownest Loan
Carrongrange Ave
Carrongrange Rd
Waverley Rd
James St
Park Dr
Valeview
Muir St
Park Ave
Lamond View
S View
McLachlan St
Carronview
Larbert Rail Station
S Broomage Park
S Broomage Avenue
Broomage Park
South Broomage
Pretoria Rd
Denny Road
Dundarroch St
Falkirk Rd
Taylor's Rd
Jones Ave
Callander Dr
Carronvale Rd
Forbes Cr
Oak Dr
Pedestrian and cyclists crossing
Pedestrian only crossing
On-road cycle routes
Off-road walking and cycle routes
Caution: Route shared with Heavy Goods Vehicles
200m

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Valid from 26 March 2012

NHS Forth Valley

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If you have any comments about this service, please contact W.A.V.E at 17 Munro Road, Springkerse Industrial Estate, Stirling, FK7 7UU. Tel: **01786 465355**
Email: **wave.enquiries@dial-a-journey.org**

Stub it Out!

Smoking is not permitted inside or anywhere in the grounds of Forth Valley Royal Hospital. This includes the area outside the main entrance, bus shelters and car parks.

If you can't go let us know!

Every month around 2,000 people fail to turn up for hospital appointments in Forth Valley. This costs the NHS millions of pounds each year and increases waiting times. So if you are unable to attend or no longer require your hospital appointment please let us know so we can offer it to someone else.

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Forth Valley Royal Hospital Travel Options

Bus Times – H1 | H2

Hillfoots – Alloa – Clackmannan – Forth Valley Royal Hospital

Fare offers!

for services H1 | H2 | H3 | H3a | H4 | H4a

Full details are shown in the Fares Leaflet at *www.nhsforthvalley.com/forthvalleyroyal*

Regular traveller?

Buy a ten journey ticket and you could save over 50% on the cost of buying ten single tickets.

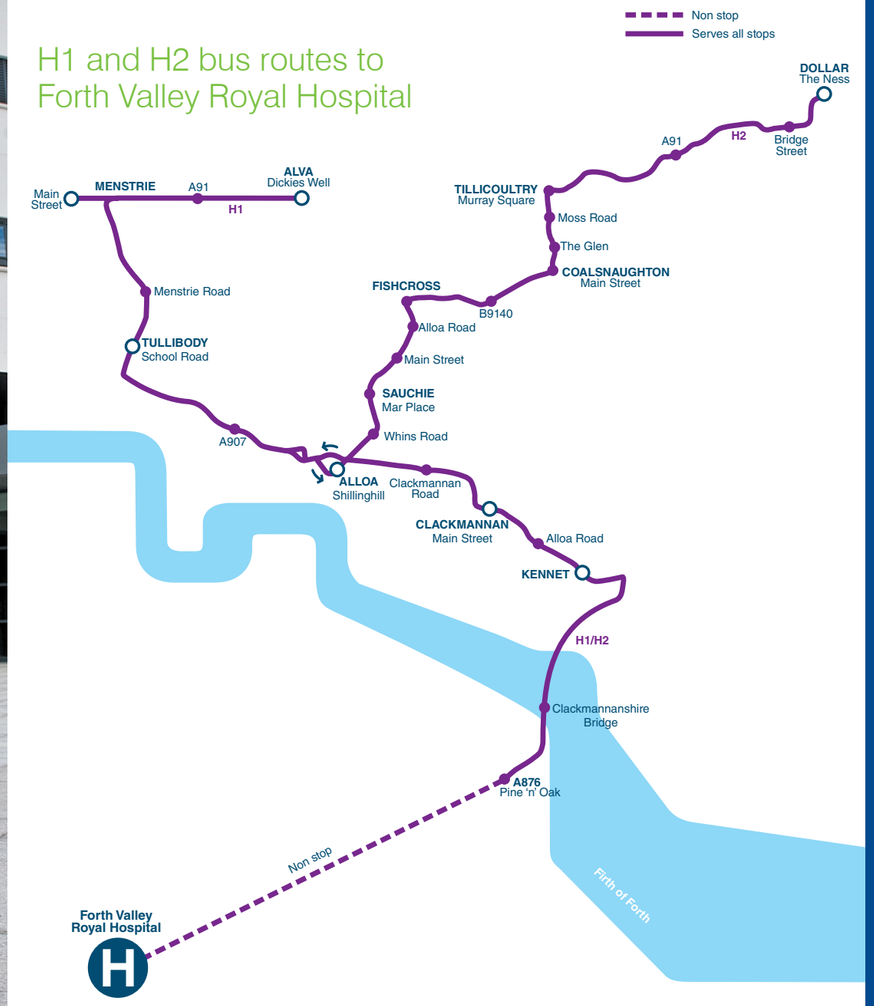
Ask the driver for details.

Student at Forth Valley College?

Show your College pass and travel for child fare (50% discount on Adult tickets). Services H1 & H2 serve the new Forth Valley College campus at Alloa.

NHS Forth Valley

H1 and H2 bus routes to Forth Valley Royal Hospital



Service Changes

Service H1 & H2

From **Monday 26 March 2012** changes will be made to the route and times of services H1 & H2. Both services will now operate non-stop between A876, Pine & Oak and Forth Valley Royal Hospital. This change is due to long term road works and a number of temporary closures at Bellsdyke Road railway bridge to electrify the railway line.

Operating non-stop will allow buses the flexibility to operate via Bellsdyke Road, King Street or the M876 to maintain a reliable service on the rest of the route. To allow for anticipated congestion, changes are also being made to the timetable with buses operating three minutes earlier between Forth Valley Royal Hospital and Alloa and arriving three minutes later on journeys to Forth Valley Royal Hospital.

We apologise for any inconvenience caused by these changes. A number of options were considered, but this was thought to offer the best solution for the majority of passengers.

To Forth Valley Royal Hospital

H1 ALVA – MENSTRIE – TULLIBODY – ALLOA – CLACKMANNAN – FORTH VALLEY ROYAL HOSPITAL

H2 DOLLAR – TILLICOULTRY – COALSNAUGHTON – ALLOA – CLACKMANNAN – FORTH VALLEY ROYAL HOSPITAL

Mondays to Sundays

Service number	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H2
Notes	NSu	NS	NSu	NSu	NSu	NSu	A									
Dollar, The Ness	0530	----	0730	----	0930	----	1130	----	1330	----	1530	----	1730	----	1930	2130
Dollar, Kings Seat	0533	----	0733	----	0933	----	1133	----	1333	----	1533	----	1733	----	1933	2133
Tillicoultry, Bus Stance	0540	----	0740	----	0940	----	1140	----	1340	----	1540	----	1740	----	1940	2140
Coalsnaughton, Main Street	0543	----	0743	----	0943	----	1143	----	1343	----	1543	----	1743	----	1943	2143
Fishcross, Burnee	0547	----	0747	----	0947	----	1147	----	1347	----	1547	----	1747	----	1947	2147
Sauchie, Mar Place	0550	----	0750	----	0950	----	1150	----	1350	----	1550	----	1750	----	1950	2150
Alva, Lover's Loan	----	0631	----	0831	----	1031	----	1231	----	1431	----	1631	----	1831	----	----
Alva, Stirling St opp. Cross Keys	----	0633	----	0833	----	1033	----	1233	----	1433	----	1633	----	1833	----	----
Menstrie, Windsor Street	----	0640	----	0840	----	1040	----	1240	----	1440		1640	----	1840	----	----
Tullibody, Menstrie Road	----	0645	----	0845	----	1045	----	1245	----	1445	----	1645	----	1845	----	----
Tullibody, School Road	----	0646	----	0846	----	1046	----	1246	----	1446	----	1646	----	1846	----	----
Alloa, Shillinghill	0555	0655	0755	0855	0955	1055	1155	1255	1355	1455	1555	1655	1755	1855	1955	2155
Clackmannan, Main Street	0603	0703	0803	0903	1003	1103	1203	1303	1403	1503	1603	1703	1803	1903	2003	2203
Kennet	0607	0707	0807	0907	1007	1107	1207	1307	1407	1507	1607	1707	1807	1907	2007	2207
A876, Pine 'n' Oak	0612	0712	0812	0912	1012	1112	1212	1312	1412	1512	1612	1712	1812	1912	2012	2212
Forth Valley Royal Hospital	0626	0726	0826	0926	1026	1126	1226	1326	1426	1526	1626	1726	1826	1926	2026	2226

No change is given on these services.
Services operate non-stop between A876, Pine 'n' Oak and Forth Valley Royal Hospital.

Notes:
NS: Not Saturdays & Sundays
NSu: Not Sundays
A: On Sundays starts from Alloa, Shillinghill and shows service number H1

These services are operated by low floor fully accessible vehicles.
Operated by W.A.V.E Ltd on behalf of NHS Forth Valley.

H1 and H2 services do not operate on 25/26 December or 1/2 January.

For public transport information visit **www.travelinescotland.com** or call **08712 00 22 33**. Calls cost 10p/min from BT landlines. Charges from other operators or mobiles may vary. Single, return and ten journey tickets are available. Please see H1/H2/H3/H3a/H4/H4a Fares Guide or ask the driver for information.

From Forth Valley Royal Hospital

H1 FORTH VALLEY ROYAL HOSPITAL – CLACKMANNAN – ALLOA – TULLIBODY – MENSTRIE – ALVA

H2 FORTH VALLEY ROYAL HOSPITAL – CLACKMANNAN – ALLOA – COALSNAUGHTON – TILLICOULTRY – DOLLAR

Mondays to Sundays

Service number	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H2
Notes	NSu	NS	NSu	NSu	NSu	NSu										
Forth Valley Royal Hospital	0632	0732	0832	0932	1032	1132	1232	1332	1432	1532	1632	1732	1832	1932	2032	2232
A876, Pine 'n' Oak	0643	0743	0843	0943	1043	1143	1243	1343	1443	1543	1643	1743	1843	1943	2043	2243
Kennet	0648	0748	0848	0948	1048	1148	1248	1348	1448	1548	1648	1748	1848	1948	2048	2248
Clackmannan, Main Street	0653	0753	0853	0953	1053	1153	1253	1353	1453	1553	1653	1753	1853	1953	2053	2253
Alloa, Shillinghill	0703	0803	0903	1003	1103	1203	1303	1403	1503	1603	1703	1803	1903	2003	2103	2303
Tullibody, School Road	----	0812	----	1012	----	1212	----	1412	----	1612	----	1812	----	2012	----	----
Tullibody, Menstrie Road	----	0813	----	1013	----	1213	----	1413	----	1613	----	1813	----	2013	----	----
Menstrie, Windsor Street	----	0818	----	1018	----	1218	----	1418	----	1618	----	1818	----	2018	----	----
Alva, The Cross Keys	----	0825	----	1025	----	1225	----	1425	----	1625	----	1825	----	2025	----	----
Alva, Dickies Well	----	0827	----	1027	----	1227	----	1427	----	1627	----	1827	----	2027	----	----
Sauchie, Mar Place	0708	----	0908	----	1108	----	1308	----	1508	----	1708	----	1908	----	2108	2308
Fishcross, Burnee	0710	----	0910	----	1110	----	1310	----	1510	----	1710	----	1910	----	2110	2310
Coalsnaughton, Main Street	0715	----	0915	----	1115	----	1315	----	1515	----	1715	----	1915	----	2115	2315
Tillicoultry, Bus Stance	0718	----	0918	----	1118	----	1318	----	1518	----	1718	----	1918	----	2118	2318
Dollar, Kings Seat	0725	----	0925	----	1125	----	1325	----	1525	----	1725	----	1925	----	2125	2325
Dollar, The Ness	0728	----	0928	----	1128	----	1328	----	1528	----	1728	----	1928	----	2128	2328

No change is given on these services.
Services operate non-stop between Forth Valley Royal Hospital and A876, Pine 'n' Oak.

Notes:
NS: Not Saturdays & Sundays
NSu: Not Sundays
A: On Sundays starts from Alloa, Shillinghill and shows service number H1

These services are operated by low floor fully accessible vehicles.
Operated by W.A.V.E Ltd on behalf of NHS Forth Valley.

H1 and H2 services do not operate on 25/26 December or 1/2 January.

For public transport information visit **www.travelinescotland.com** or call **08712 00 22 33**. Calls cost 10p/min from BT landlines. Charges from other operators or mobiles may vary. Single, return and ten journey tickets are available. Please see H1/H2/H3/H3a/H4/H4a Fares Guide or ask the driver for information.

Valid from 26 March 2012

NHS Forth Valley

Forth Valley Royal Hospital Travel Options

Bus Fare Chart

H1 | H2 | H3 | H3a | H4 | H4a

Please note that these services do not give change.

Adult single fare chart (please use fare table below to calculate return and 10-journey tickets)

Service H1/H2: Hillfoots - Alloa - Clackmannan - Forth Valley Royal Hospital

Dollar (H2)									
£1.40	Alva (H1)/ Tillicoultry (H2)								
£1.70	£1.40	Menstrie (H1)/ Coalsnaughton (H2)							
£1.70	£1.70	£1.40	Fishcross (H2)						
£2.20	£2.20^	£2.20*	£1.40	Tullibody (H1)/ Sauchie (H2)					
£2.20	£2.20	£2.20	£1.70	£1.40	Alloa				
£2.20	£2.20	£2.20	£1.70	£1.70	£1.40	Clackmannan			
£2.70	£2.70	£2.70	£2.20	£2.20	£2.20	£1.40	Kennet		
£2.20	£2.70	£2.70	£2.20	£2.20	£2.20	£1.70	£1.40	Larbert	
£3.20	£3.20	£3.20	£2.70	£2.70	£2.70	£2.20	£2.20	£1.40	Forth Valley Royal Hospital

*Fare from Menstrie to Tullibody is 140.
^Fare from Alva to Tullibody is 170.

Service H3/H3a/H4/H4a: Fankerton/ Denny/ Dunipace - Forth Valley Royal Hospital - Brightons - Maddiston

Fankerton (H4)/ Dunipace (H4a)/ Denny, Nethermains (H3)									
£1.40	Denny, Town Centre								
£1.70	£1.40	M876							
£1.70	£1.70	£1.40	Forth Valley Royal Hospital						
£2.20	£2.20	£2.20	£1.40	Stenhousemuir					
£2.20	£2.20	£2.20	£1.70	£1.40	Carronshore				
£2.20	£2.20	£2.20	£1.70	£1.70	£1.40	Skinflats			
£2.70	£2.70	£2.70	£2.20	£2.20	£2.20	£1.40	Grangemouth		
£3.20	£3.20	£3.20	£2.70	£2.70	£2.70	£2.20	£1.40	Polmont	
£3.20	£3.20	£3.20	£2.70	£2.70	£2.70	£2.20	£1.70	£1.40	Brightons
£3.20	£3.20	£3.20	£2.70	£2.70	£2.70	£2.20	£1.70	£1.70	£1.40	Maddiston (H3)

Fare table

Zone	Single, return and 10-journey tickets				
	Adult single	Adult return	Child single	Child return	10-journey
One stage fare	£1.40	£2.50	£0.70	£1.20	£11.00
Travel within one zone	£1.70	£3.00	£0.80	£1.50	£13.00
Travel between two adjacent zones	£2.20	£3.50	£1.10	£1.70	£15.00
Travel between three adjacent zones	£2.70	£4.00	£1.30	£2.00	£18.00
Travel between up to five adjacent zones	£3.20	£4.50	£1.60	£2.20	£20.00

NHS Forth Valley

Forth Valley Royal Hospital Travel Options

Travel Information

Bus stance	Service number and destinations	
1	**H3**	Maddiston via Larbert Rail Station, Stenhousemuir, Grangemouth & Polmont
	H3a	Stenhousemuir via Larbert Rail Station
	H4 H4a	Wallacestone via Larbert Rail Station, Stenhousemuir, Grangemouth & Polmont
2	**5**	Falkirk via Camelon
	6a 67 76	Bo'ness via Larbert Rail Station, Stenhousemuir, Falkirk & Grangemouth
	27 27B	Falkirk via Camelon & Falkirk Community Hospital
	38 X38	Edinburgh via Camelon, Falkirk & Polmont
	60	Falkirk via Camelon
	X19	Edinburgh via Camelon, Falkirk, Grangemouth & Bo'ness
3	**27**	Glasgow via Dennyloanhead, Bonnybridge & Banknock
	27B	Banknock via Dennyloanhead & Bonnybridge
	H1	Alva via Clackmannan & Alloa
	H2	Dollar via Clackmannan & Alloa
	H3	Denny
	H4	Fankerton via Denny
	H4a	Dunipace via Denny
4	**5**	Stirling via Plean & Bannockburn
	38 X38	Stirling via Plean & Bannockburn
	60	Clackmannan via Plean, Bannockburn, Stirling & Alloa

By public transport:

- The nearest rail station is Larbert Rail station approximately one mile from the site. Trains run frequently from Edinburgh, Glasgow and Stirling
- A frequent shuttle bus service connects Larbert Rail station with Forth Valley Royal Hospital.
- The H3/H3a/H4/H4a services are free between Larbert Rail Station and Forth Valley Royal Hospital on presentation of a valid rail ticket

traveline scotland
0871 200 22 33
www.travelinescotland.com

Calls cost 10p/min from BT landlines. Charges from other operators or mobiles may vary.

Getting to Forth Valley Royal Hospital by car

From South East of Falkirk by car:

- Join the A803 for Falkirk Town Centre
- Continue through the town centre along the A803 following the signs for Camelon
- Take the 2nd exit at the mini roundabout
- At Rosebank Roundabout take the 1st exit signed "A803 Camelon"
- Continue through Camelon High Street
- Follow directions "from Camelon by car"

From Camelon by car:

- At Camelon Roundabout take exit signed "A9 Larbert"
- Continue north along the A9
- At Larbert Cross continue north along the A9
- Take the 1st exit at the next roundabout into Forth Valley Royal Hospital
- Refer to site layout for route to final destination from vehicle entry point

From Alloa by car:

- Take the A907 heading south to Kincardine
- At Gartarry Roundabout take the 3rd exit signed "A876 Kincardine Bridge""
- Travel south along the A977
- At Kilbagie Roundabout take 2nd exit signed "A876/M876"
- Continue over the Clackmannanshire Bridge
- At Higgins' Neuk Roundabout take 2nd exit signed "A876/M876"
- Travel west along M876
- Exit M876 at Junction 3 signed "A905 Larbert"
- Travel south along A905
- At South Bellsdyke Roundabout take the 2nd exit signed "A88 Larbert"
- Continue west along the A88
- At North Broomage Roundabout take the 1st exit signed "A9 Larbert"
- At the next roundabout take the 3rd exit into Forth Valley Royal Hospital
- Refer to site layout for route to final destination from vehicle entry point

From Grangemouth by car:

- Join the M9 at Junction 4 or 5 heading north signed "Stirling"
- Exit M9 at Junction 7 signed "M876 Kincardine Bridge"
- Exit M876 at Junction 3 signed "A905 Larbert"
- Travel south along A905
- At South Bellsdyke Roundabout take the 2nd exit signed "A88 Larbert"
- Continue west along the A88
- At North Broomage Roundabout take the 1st exit signed "A9 Larbert"
- Take the 3rd exit at the next roundabout into Forth Valley Royal Hospital
- Refer to site layout for route to final destination from vehicle entry point

From North West of Stirling by car:

- Take the A85 heading south
- Join the A84 heading south east
- Continue south east and join the M9 at Junction 10
- Exit M9 at Junction 7 signed "M876 Kincardine Bridge"
- Exit M876 at Junction 3 signed "A905 Larbert"
- Travel south along A905
- At South Bellsdyke Roundabout take the 2nd exit signed "A88 Larbert"
- Continue west along the A88
- At North Broomage Roundabout take the 1st exit signed "A9 Larbert"
- Take the 3rd exit at the next roundabout into Forth Valley Royal Hospital
- Refer to site layout for route to final destination from vehicle entry point

From West of Stirling by car:

- Take the A873 heading east
- Join the A84 heading south east
- Join the M9 at Junction 10
- Exit M9 at Junction 7 signed "M876 Kincardine Bridge"
- Exit M876 at Junction 3 signed "A905 Larbert"
- Travel south along A905
- At South Bellsdyke Roundabout take the 2nd exit signed "A88 Larbert"
- Continue west along the A88
- At North Broomage Roundabout take the 1st exit signed "A9 Larbert"
- Take the 3rd exit at the next roundabout into Forth Valley Royal Hospital
- Refer to site layout for route to final destination from vehicle entry point

From South West of Stirling by car:

- Take the A811 heading east into Stirling City Centre and follow the signs for the "A9(S)"
- At Craig's Roundabout take the 4th exit signed "A9(S)"
- At St Ninians Roundabout take the 1st exit signed "A9 Bannockburn"
- Continue south along the A9 through Bannockburn, Plean and Torwood
- At North Broomage Roundabout take the 3rd exit signed "A9 Larbert"
- Take the 3rd exit at the next roundabout into Forth Valley Royal Hospital
- Refer to site layout for route to final destination from vehicle entry point

From Perth/North East of Stirling by car:

- Take the A9 heading south
- Continue south and join the M9
- Exit M9 at Junction 7 signed "M876 Kincardine Bridge"
- Exit M876 at Junction 3 signed "A905 Larbert"
- Travel south along A905
- At South Bellsdyke Roundabout take the 2nd exit signed "A88 Larbert"
- Continue west along the A88
- At North Broomage Roundabout take the 1st exit signed "A9 Larbert"
- Take the 3rd exit at the next roundabout into Forth Valley Royal Hospital
- Refer to site layout for route to final destination from vehicle entry point

From Edinburgh by car:

- Take the M9 heading north
- Exit M9 at Junction 7 signed "M876 Kincardine Bridge"
- Exit M876 at Junction 3 signed "A905 Larbert"
- Travel south along A905
- At South Bellsdyke Roundabout take the 2nd exit signed "A88 Larbert"
- Continue west along the A88
- At North Broomage Roundabout take the 1st exit signed "A9 Larbert"
- Take the 3rd exit at the next roundabout into Forth Valley Royal Hospital
- Refer to site layout for route to final destination from vehicle entry point

From Glasgow by car:

- Take the A80 and M876
- Exit M876 at Junction 2 signed "A9 Larbert"
- Take the 4th exit at the roundabout signed "A9 Larbert"
- Take the 3rd exit at the next roundabout into the Forth Valley Royal Hospital site
- Refer to site layout for route to final destination from vehicle entry point

TRAVEL SMARTER AYR COLLEGE

AYR COLLEGE

TRAVEL PLAN GUIDE 2011

Ayr College

INTRODUCTION

I AM DELIGHTED TO INTRODUCE THIS TRAVEL PLAN GUIDE WHICH SETS OUT HOW THE COLLEGE PLANS TO PROMOTE AND ENCOURAGE ACTIVE AND SUSTAINABLE TRAVEL.

Accessibility is an important issue for the College and we want to ensure that our staff, students and visitors have a number of travel options and are not reliant on the car for getting here.

We all make choices about how we travel to the College. By choosing to drive, we contribute to road congestion, air pollution and parking problems. Our travel choices also impact on our health, fitness and our finances.

This Travel Plan Guide explains what we plan to do to help you to choose active and sustainable modes of travel instead of driving your car on your own. Why not consider if you could walk, cycle, use public transport, Park & Ride or car share for your journey to College?

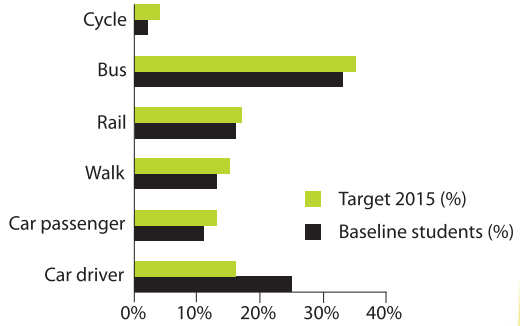
Please take some time to read this guide and think about how you could alter your travel behaviour, even if it is only once a week or once a fortnight. A small change by everyone could have a big impact on the environment and reduce the College's carbon footprint. Being more active could also improve your health and fitness and save you money.

So what are you waiting for, why not give it a try?

Diane Rawlinson
Principal

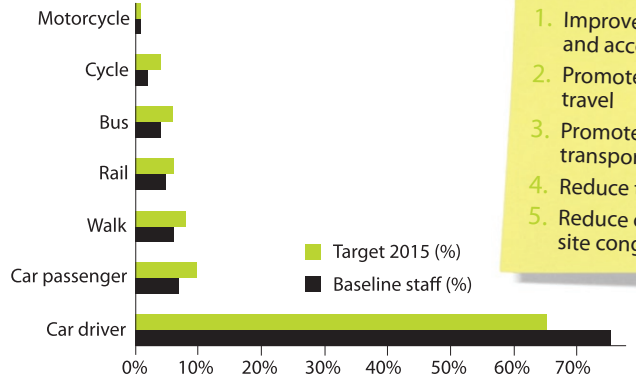
WHAT IS A TRAVEL PLAN?

A TRAVEL PLAN IS A PACKAGE OF MEASURES DESIGNED TO PROMOTE MORE SUSTAINABLE TRANSPORT CHOICES BY ENCOURAGING PEOPLE TO WALK, CYCLE, USE PUBLIC TRANSPORT, CAR SHARE OR REDUCE THE NUMBER OF TRIPS THEY MAKE. THIS TRAVEL PLAN IS SPECIFIC TO AYR COLLEGE AND SETS OUT MEASURES IDENTIFIED THROUGH THE TRAVEL SURVEY AS APPROPRIATE FOR STAFF AND STUDENTS.



OUR TRAVEL PATTERNS

The travel survey carried out in 2010 showed that, while there is good use of active and sustainable travel modes, particularly by students, there is scope for increasing the share of these modes and reducing single occupancy car travel.



OBJECTIVES

Our Travel Plan objectives are:

1. Improve transport infrastructure and access
2. Promote and encourage active travel
3. Promote and increase public transport use
4. Reduce the need for travel
5. Reduce car parking demand and site congestion

IMPACT ON THE ENVIRONMENT?

CLIMATE CHANGE IS A SIGNIFICANT CHALLENGE FOR SCOTLAND. THE CLIMATE CHANGE (SCOTLAND) ACT 2009 CREATED A STATUTORY FRAMEWORK FOR GREENHOUSE GAS EMISSIONS REDUCTIONS IN SCOTLAND BY SETTING AN INTERIM 42% REDUCTION TARGET FOR 2020 AND AN 80% REDUCTION TARGET FOR 2050.

The transport sector accounts for about 26% of total Scottish emissions, so it is important that we all do what we can to reduce emissions from transport.

The Climate Change Report on Proposals and Policies: Transport published in November 2010 sets out proposals and policies for meeting Scotland's statutory emissions reduction targets and making the transition to a low carbon economy.

The transport measures identified in the draft report fall into three broad categories: reducing the need to travel; widening travel choices to encourage lower carbon options; and encouraging more energy efficient driving.

Ayr College has signed the University & College's Climate Commitment for Scotland. This signifies the College's commitment to addressing the challenges of climate change and reducing its carbon footprint.

The remit of the College's Eco Group is to promote environmental initiatives, including encouraging staff and students to travel by more sustainable modes.

"One double-deck bus can take 75 cars off the road, giving a potential annual carbon saving of 67,200kg. Why not try the bus?"

WALKING & CYCLING

WALKING AND CYCLING ARE REALISTIC OPTIONS FOR SHORT JOURNEYS I.E THOSE UP TO FIVE MILES. ONE IN THREE JOURNEYS IN SCOTLAND ARE UNDER TWO MILES. THESE SHORT JOURNEYS OFFER SCOPE FOR MODE SHIFT AWAY FROM THE CAR TO ALTERNATIVE MODES, ESPECIALLY WALKING AND CYCLING.

According to the staff travel survey carried out in 2010, some 76% of staff and 21% of students who travelled by car drove under two miles to the College. Some of these journeys could be switched to foot or cycle.

WALKING can be easily accommodated into our daily lives. Virtually all trips include walking links to other forms of transport. Ayr railway and bus stations and the town centre are within walking distance of Dam Park. Cumnock Community College and the Carrick Buildings in Girvan are located close to respective town centres, neighbouring communities and bus stops.

There is potential to increase **CYCLING** trips on journeys of up to 5 miles. Cycling can lead to significant improvements in health and fitness levels. It is a reliable and convenient form of transport; takes you from door to door and is fast, especially when the roads are congested.

Dam Park is located under 10 minute's cycling time from National Cycle Route 7 which is a traffic free route from Carlisle to Glasgow. The College provides facilities to make it easier for you to cycle. Six cycle racks are provided to the front of the Riverside Building and two cycle racks are provided behind the Dam Park Building. Changing facilities and two showers are also provided. 20 cycle stands and 4 showers are planned for the new Aircraft Engineering Training Centre.

"Aim for 10,000 steps each day - get a pedometer and set yourself a target to achieve this."

Cumnock Community College is located near a quiet residential area making on-road cycling convenient. There are plans to install 10 cycle parking spaces here during 2011. **The Carrick Buildings** are located within the town centre where cyclists can use the local road network.

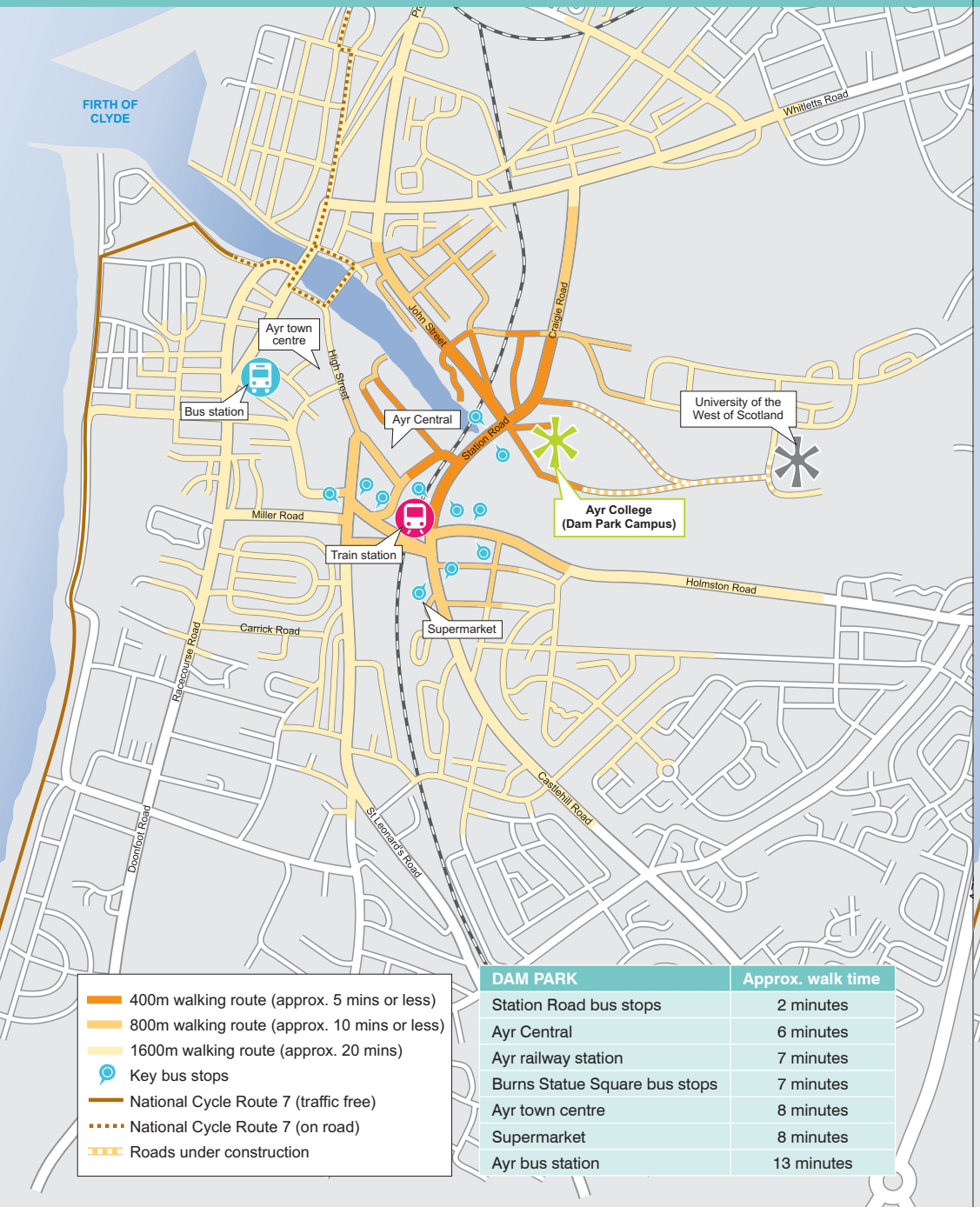
Staff are entitled to claim cycle mileage for cycle travel associated with business. Staff can also take advantage of the Cycle to Work scheme which offers discounts to staff who buy cycles and cycle accessories to enable them to cycle to work and pay for this monthly through their salaries. For further information about the scheme, contact Kerry Kirk, Director of Human Resources.

ECO GROUP

The College's walking group organises lunchtime walks. For further information contact the Eco Group webpage forum.

"All truly great thoughts are conceived while walking"
(Nietzsche)

DAM PARK CAMPUS
WALKING ROUTES



- 400m walking route (approx. 5 mins or less)
- 800m walking route (approx. 10 mins or less)
- 1600m walking route (approx. 20 mins)
- Key bus stops
- National Cycle Route 7 (traffic free)
- National Cycle Route 7 (on road)
- Roads under construction

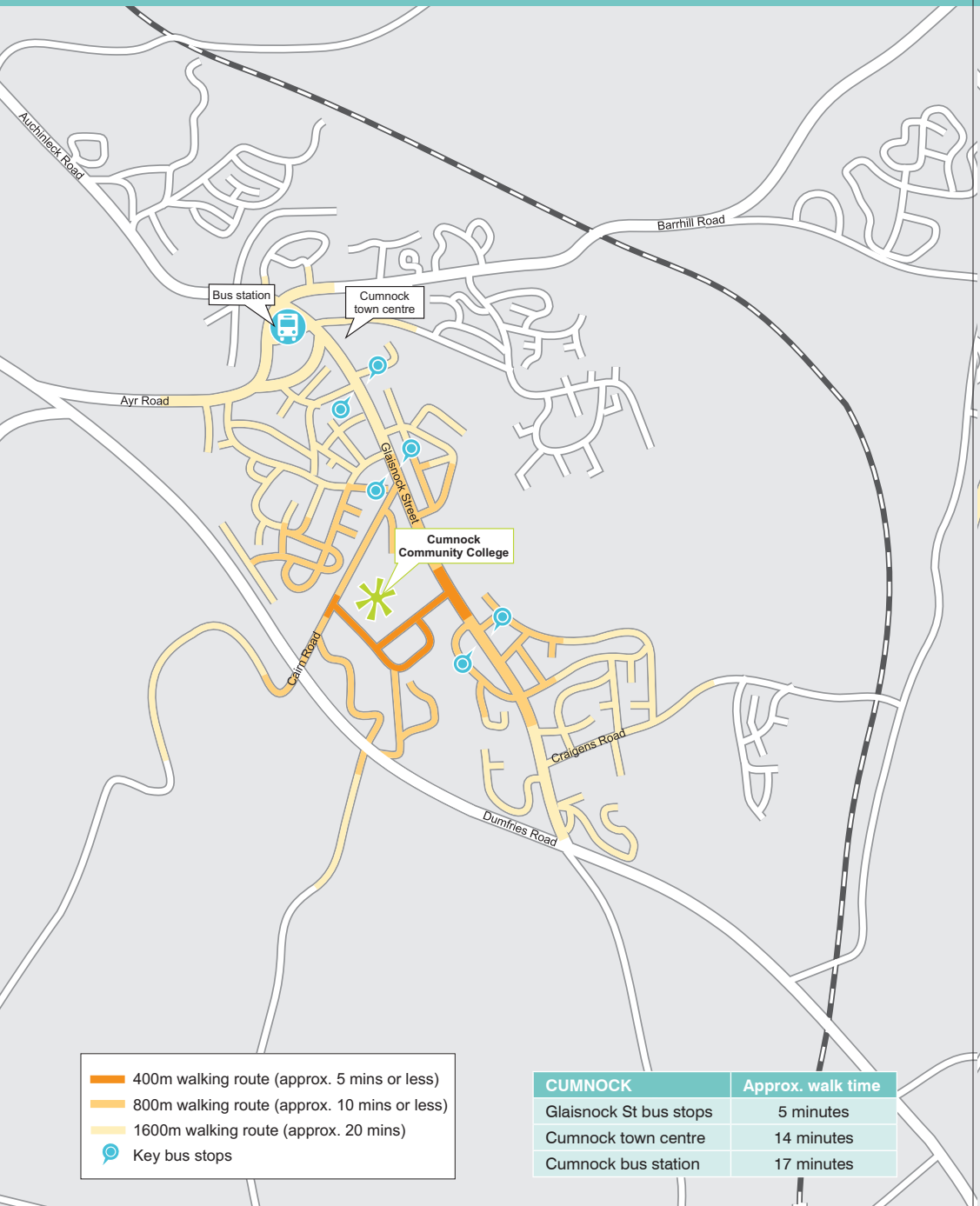
DAM PARK	Approx. walk time
Station Road bus stops	2 minutes
Ayr Central	6 minutes
Ayr railway station	7 minutes
Burns Statue Square bus stops	7 minutes
Ayr town centre	8 minutes
Supermarket	8 minutes
Ayr bus station	13 minutes

DAM PARK CAMPUS
CYCLING ROUTES

CAMPUS BUILDINGS	Cycle parking spaces
① The Dam Park Building	72
② Aircraft Engineering Training Centre	20*
③ The Riverside Building	6
	*coming soon!

- 2.5km cycling route (approx. 20 mins)
- Key bus stops
- National Cycle Route 7 (traffic free)
- National Cycle Route 7 (on road)
- Roads under construction

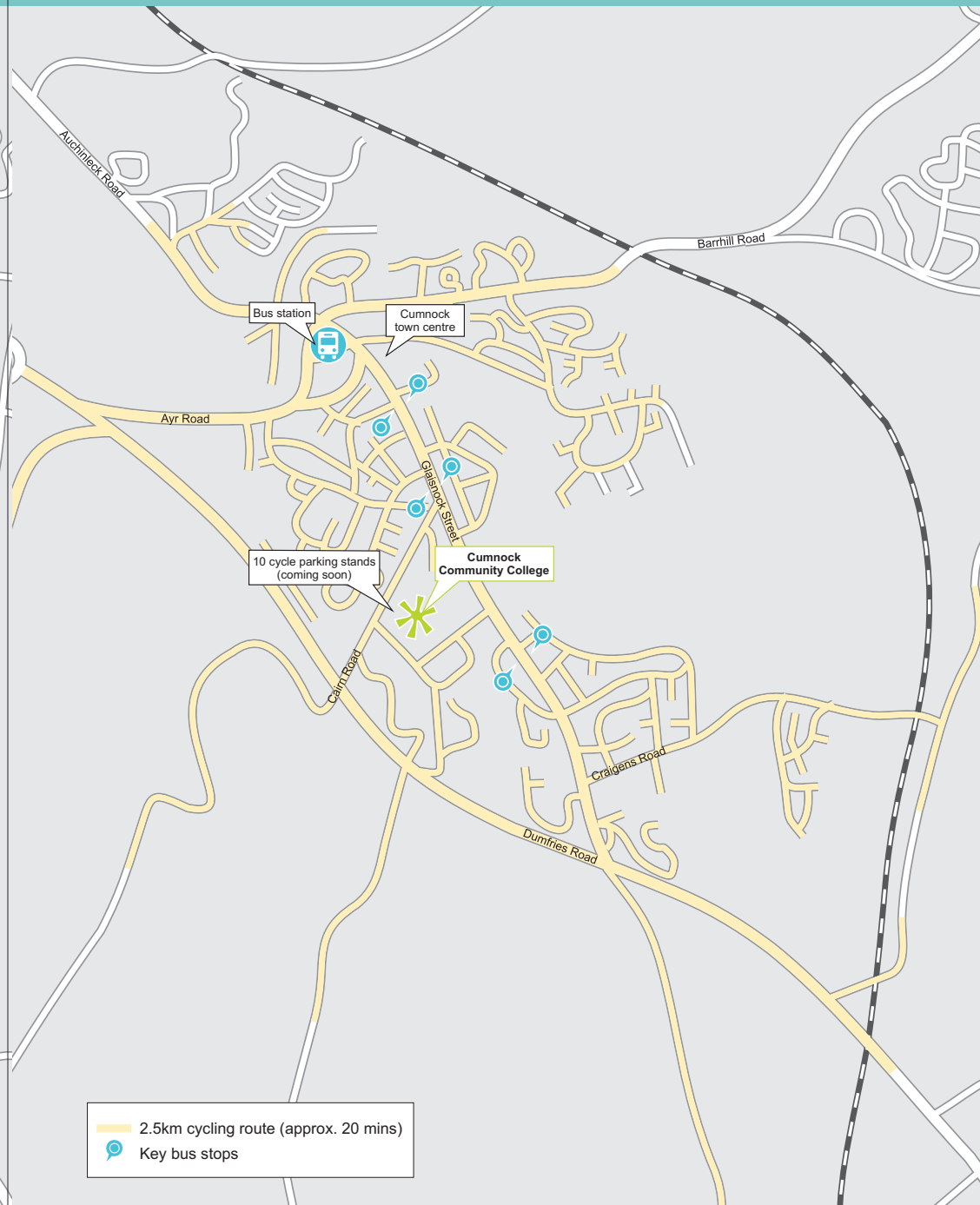
CUMNOCK COMMUNITY COLLEGE
WALKING ROUTES



400m walking route (approx. 5 mins or less)
800m walking route (approx. 10 mins or less)
1600m walking route (approx. 20 mins)
Key bus stops

CUMNOCK	Approx. walk time
Glaisnock St bus stops	5 minutes
Cumnock town centre	14 minutes
Cumnock bus station	17 minutes

CUMNOCK COMMUNITY COLLEGE
CYCLING ROUTES



2.5km cycling route (approx. 20 mins)
Key bus stops

PUBLIC TRANSPORT

OUR CAMPUSES ARE WELL SERVED BY PUBLIC TRANSPORT AND MANY OF US ALREADY TRAVEL BY BUS OR TRAIN.

At Dam Park, 48% of students and 9.4% of staff travel by bus or train, while at Cumnock Community College, 100% of students travel by bus. (Travel Survey 2010)

Using public transport is more relaxing than driving. It gives you the chance to read a book or do some work instead of being stressed by driving on congested roads or searching for a car parking space. Purchasing season tickets can make public transport more cost effective and you can plan your journey effectively by checking out your travel options at www.travelinescotland.com, www.scotrail.co.uk and www.stagecoachbus.com.

"If every bus took just one more car driver, we could save up to 1.2 million tonnes of CO_2 per year."

CAR SHARING

IF IT IS NECESSARY FOR YOU TO DRIVE TO THE COLLEGE, WHY NOT THINK ABOUT SHARING YOUR CAR WITH SOMEONE WHO IS MAKING THE SAME OR SIMILAR JOURNEY AS YOU.

In the recent travel survey, 17% of staff and 22.5% of students said that they would consider car sharing on their journey to the College. If more people shared their car journeys, the roads would be quieter, the air cleaner, journeys quicker and the roads would be safer.

Remember that you don't have to car share every day. By car sharing on one day out of five, you can reduce your costs by up to 20% and save up to £1,000 per annum on the cost of fuel and car maintenance. Think what else you could spend that money on?

Why not register with the College's journey sharing website provided in partnership with the University of the West of Scotland, Liftshare and SPT? Check out the website at: www.ayrcollegejourneyshare.com. The site will help you to find a car share partner who has similar travel needs to you. It can also help you to find someone with whom you can walk, cycle or share a taxi.

From March 2011, as an incentive to car sharing, dedicated spaces will be allocated in the Dam Park car park close to the entrance to the building.

"A nationwide poll has found that 20% of UK drivers car share at least once a week. The research found that petrol prices, parking costs and the opportunity to reduce CO2 emissions were the main reasons that one in five people now car share regularly."

DO YOU NEED TO TRAVEL?

BEFORE MAKING A JOURNEY OR ARRANGING A MEETING, THINK ABOUT WHETHER YOU REALLY NEED TO TRAVEL AT ALL.

Use local services and try out the College's video and teleconferencing facilities. Using these can reduce the time you spend travelling on business and make you more productive.

Video conferencing facilities are located in Room F137 (Board Room). If you need any advice on how to use the facilities, contact Matthew Scobie on 01292 293421 or *m.scobie@ayrcoll.ac.uk*

Why not think about using Skype? See *www.skype.com* for information.

Phone, video and web-based conferencing has helped BT save £146 million a year, helping the environment by eliminating unnecessary travel for meetings at the same time. Virtual conferencing eliminates almost 340,000 face-to-face meetings every year at BT. Employees can now avoid some 1.35m return journeys, a major bonus for staff that might otherwise be travelling the length and breadth of the country for just an hour-long meeting.

CAR PARKING

Managing car parking is an integral part of a Travel Plan. Car parking at the College is limited and we will be carrying out a review of the car parking management and permit policy during 2011.

TARGETS

We have set various targets that will contribute to the achievement of the Travel Plan's objectives, where a target box is 'ticked' this means we are currently addressing that point.

1. IMPROVE TRANSPORT INFRASTRUCTURE AND ACCESS

	TARGETS
	Review cycleways and footpaths in the immediate vicinity of the College campuses and assess their surfacing and safety. Inform South Ayrshire Council of any instances of poor pedestrian or cycling infrastructure.
	Review and seek to upgrade any poor internal footpaths, crossing points and street lighting around campuses
	Work with key stakeholders to ensure future town/region cycling and walking infrastructure projects can be accessible to staff, students and visitors.
✓	Provide 20 new cycle parking spaces at the new aeronautical facility.
	Review existing cycle space provision, location and safety.
✓	Negotiate the location of a new bus stop along the main College road with the University of the West of Scotland (UWS) and South Ayrshire Council.
✓	Ensure the bus service(s) proposed by UWS are suitable for College users taking account of user disabilities, timetabling and staff/student home locations.
✓	Review the operation of all car parks.
	Foster a cultural and behavioural change among College users which prioritises sustainable access through College policy, including business travel policies.
	Ensure the transport needs of College users are represented effectively to the Board, senior management and key stakeholders and that travel feedback is actioned, where appropriate.

2. PROMOTE AND ENCOURAGE ACTIVE TRAVEL

	TARGETS
✓	Review and improve existing on-site shower and changing facilities where there is demand.
✓	Produce a Travel Options Leaflet to illustrate walking and cycling options.
✓	Update existing active travel information via the EcoGroup, while promoting new promotional tools such as the electronic display noticeboards and visitor travel direction emails.
✓	Establish and promote a private journey sharing group on SPT's journey share website.
✓	Hold a Green Travel Day in summer 2011.
	Further promote the activities of the Walking Group.
	Further promote the Cycle to Work scheme to staff, while ensuring an efficient administration process.
	Provide on-site emergency cycle repair kits.
	Organise visits from the Bike Doctor.
✓	Provide regular and varied active travel challenges.

3. PROMOTE AND INCREASE PUBLIC TRANSPORT USE

	TARGETS
✓	Produce a Travel Options Leaflet with public transport information.
	Consider the feasibility of purchasing annual season tickets and allowing staff to spread the cost of the ticket over the year via monthly salary deductions.
	Consider the feasibility of subsidising public transport use either via monetary contributions or other incentives.
	Consider offering a subsidy for the cost of purchasing a Young Person's Railcard.
✓	Invite Stagecoach and First ScotRail to the College to promote their ticket options and route network, and consider the feasibility of a mobile ticket office.

4. REDUCE THE NEED FOR TRAVEL

	TARGETS
	Ensure high speed broadband is available for video and tele-conferencing facilities.
	Review existing video and tele-conferencing facilities and seek to provide more facilities.
	Work with UWS to ensure hardware and software compliance in video-tele conferencing facilities.
	Review staff travel policy to include criteria to encourage tele-video conferencing use.
	Provide training in the use of tele and video conferencing facilities.
	Consider the feasibility of providing course materials/classes online, where appropriate.
	When business travel is required, prioritise the use of sustainable and active travel.

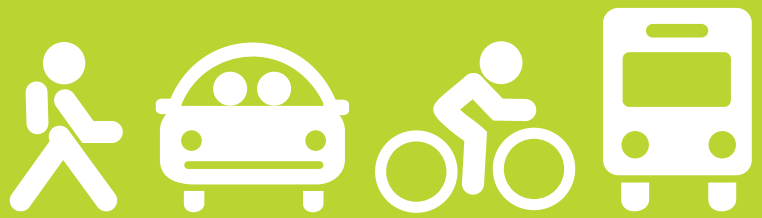
5. REDUCE CAR PARKING DEMANDS AND SITE CONGESTION

	TARGETS
	Continue cooperation and dialogue with UWS, Strathclyde Police, Local Residents and SAC to ensure that car parking is managed appropriately.
	Consider the introduction of a car park barrier and revised permit system to reduce inappropriate parking by non-College users.

MONITORING & REVIEW

Our Travel Plan is an evolving document and it will be monitored on an ongoing basis. We will undertake annual travel surveys to measure mode share and identify any changes in use of transport mode and attitudes to travel. Make sure that you give us feedback through future surveys so that we can keep track of how we are getting on. We will also monitor and report on progress in the achievement of the targets.

TOP TEN WAYS TO TRAVEL MORE SUSTAINABLY...



1. CONSIDER IF YOUR JOURNEY IS REALLY NECESSARY
2. CONSIDER WALKING FOR ALL, MORE OR PART OF YOUR JOURNEY
3. IF YOU HAVE THE SKILLS, THINK ABOUT CYCLING FOR ALL, MORE OR PART OF YOUR JOURNEY
4. USE PUBLIC TRANSPORT, CHECK THE OPERATORS' WEBSITES OR CALL THEM FOR INFORMATION ON SERVICES
5. TO MAKE PUBLIC TRANSPORT CHEAPER, BUY A MONTHLY OR ANNUAL TICKET
6. DON'T WASTE TRAVEL TIME; PLAN YOUR JOURNEY AND TRY TO AVOID THE BUSIEST TIMES
7. TRAVEL DIFFERENTLY FOR ONE DAY OF THE WEEK
8. CAR SHARE WITH SOMEONE TO SHARE COSTS AS WELL AS REDUCE THE NUMBER OF CARS ON THE ROAD.
9. IF YOU DRIVE, PARK & RIDE
10. DRIVE MORE EFFICIENTLY AND MAINTAIN YOUR VEHICLE

USEFUL WEBSITES

GENERAL

www.chooseanotherway.com
www.travelwise.org.uk
www.transformscotland.org.uk
www.workwiseuk.co.uk
www.spt.co.uk
www.cuttingyourcaruse.co.uk
www.south-ayrshire.gov.uk

WALKING AND CYCLING

www.ayrshirecoastalpath.org
www.ayrshirepaths.org.uk
www.theriverayrway.org
www.cyclingscotland.org
www.pathsforall.org.uk
www.sustrans.org.uk
www.ramblers.org.uk

JOURNEY PLANNING

www.travelinescotland.com
www.sptjourneyshare.co.uk
www.multimap.com
www.trafficscotland.org
www.liftshare.org
www.transportdirect.info

PUBLIC TRANSPORT

www.thetrainline.com
www.scotrail.co.uk
www.stagecoachbus.com
www.nationalrail.co.uk
www.citylink.co.uk

Ayr College is a charitable organisation registered in Scotland. Charity number SC 021177.

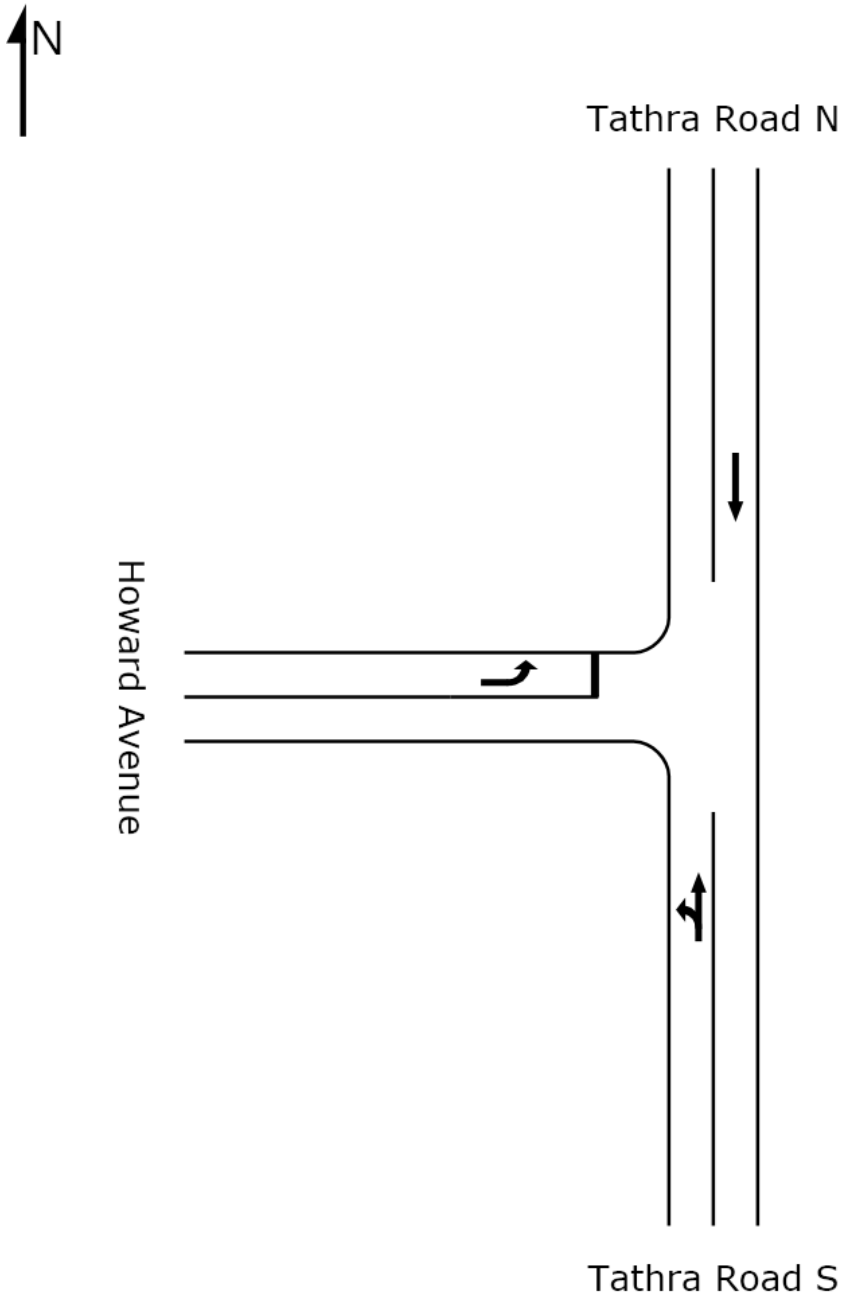
All website references, public transport service frequencies and approximate costings are accurate as of January 2011. For more information on this leaflet or on general College traffic and transport issues please contact the Estates Department.

Designed and produced by Colin Buchanan 2011.

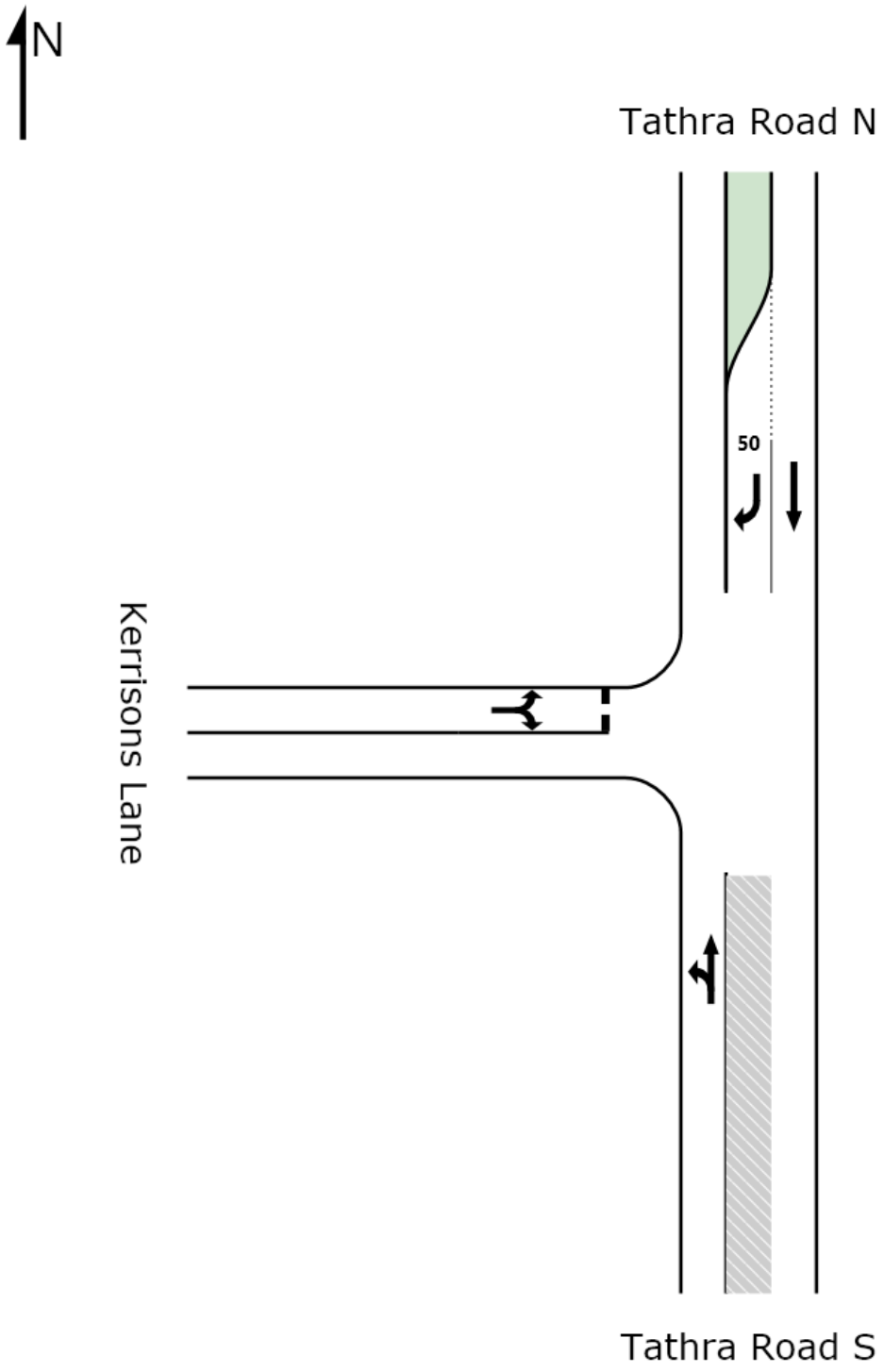
Appendix 5

Traffic Study- Intersection Layout and Results

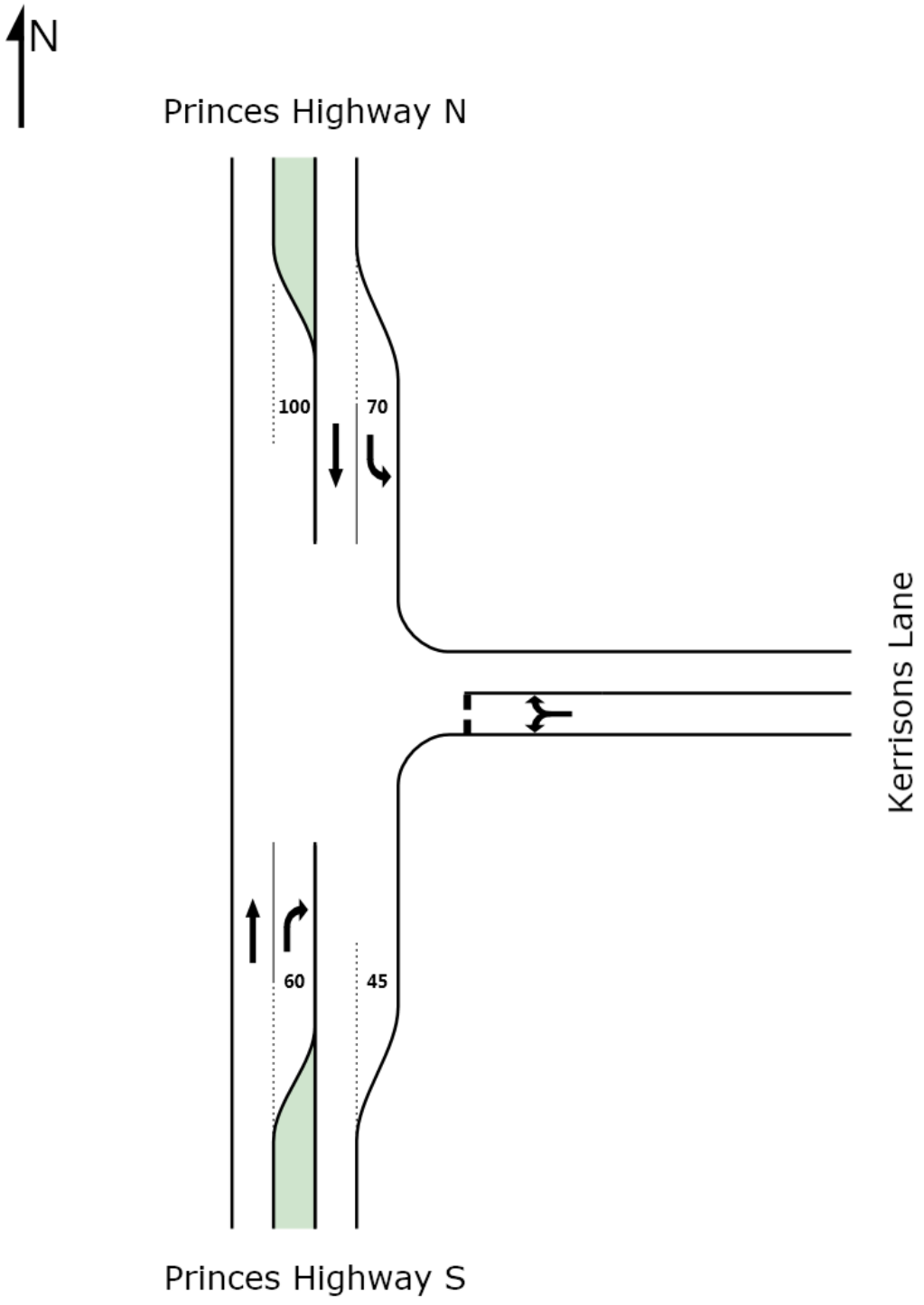
1. Howard Avenue / Tathra Road



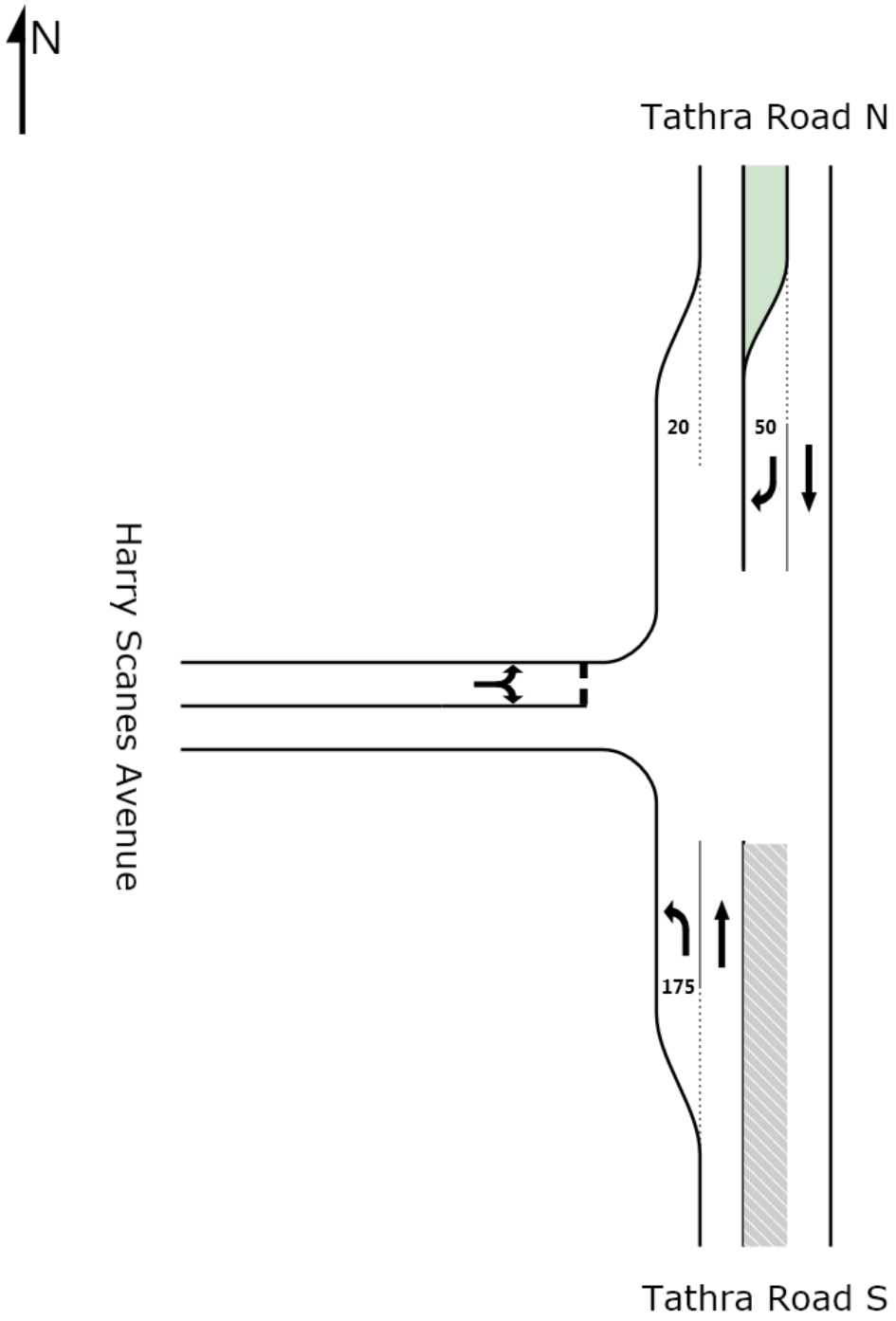
2. Kerrisons Lane / Tathra Road



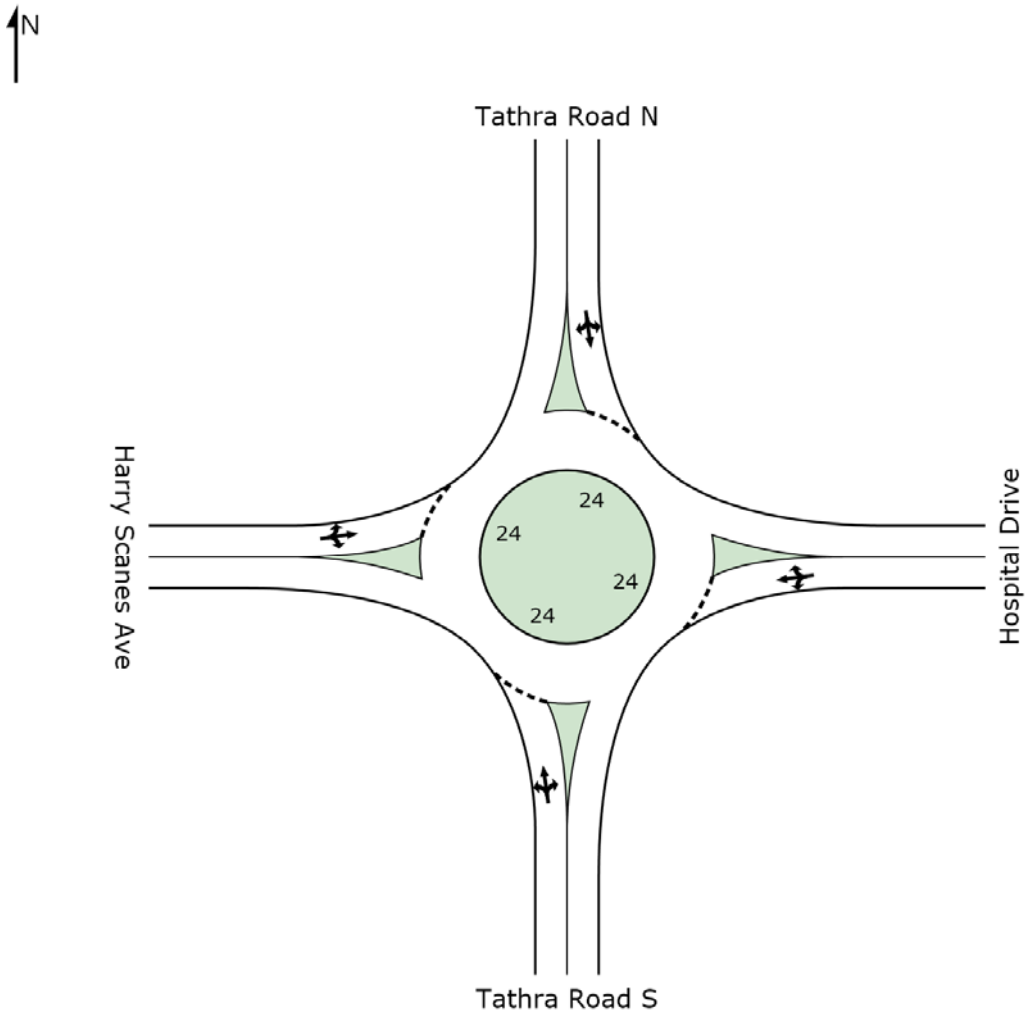
3. Kerrisons Lane / Princes Highway



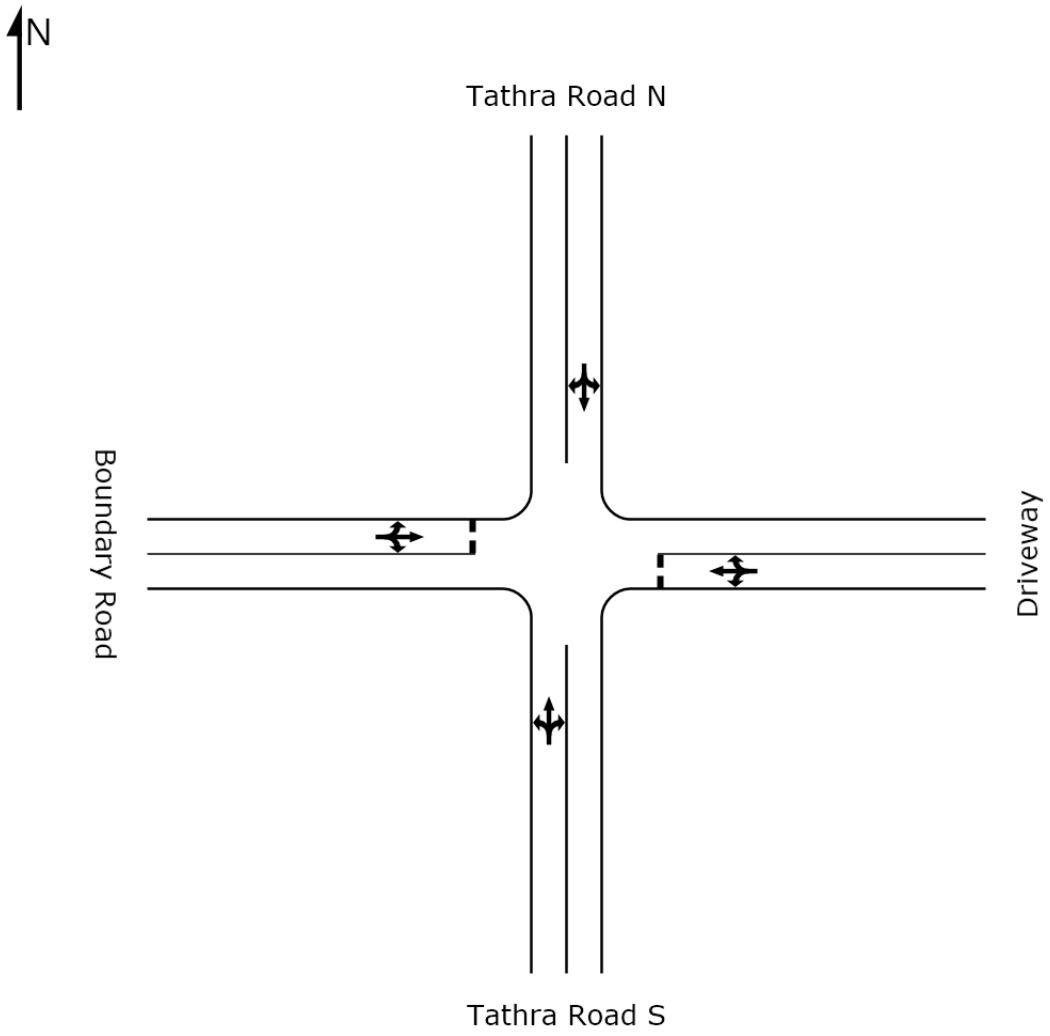
4. Harry Scanes Avenue / Tathra Road (existing configuration)



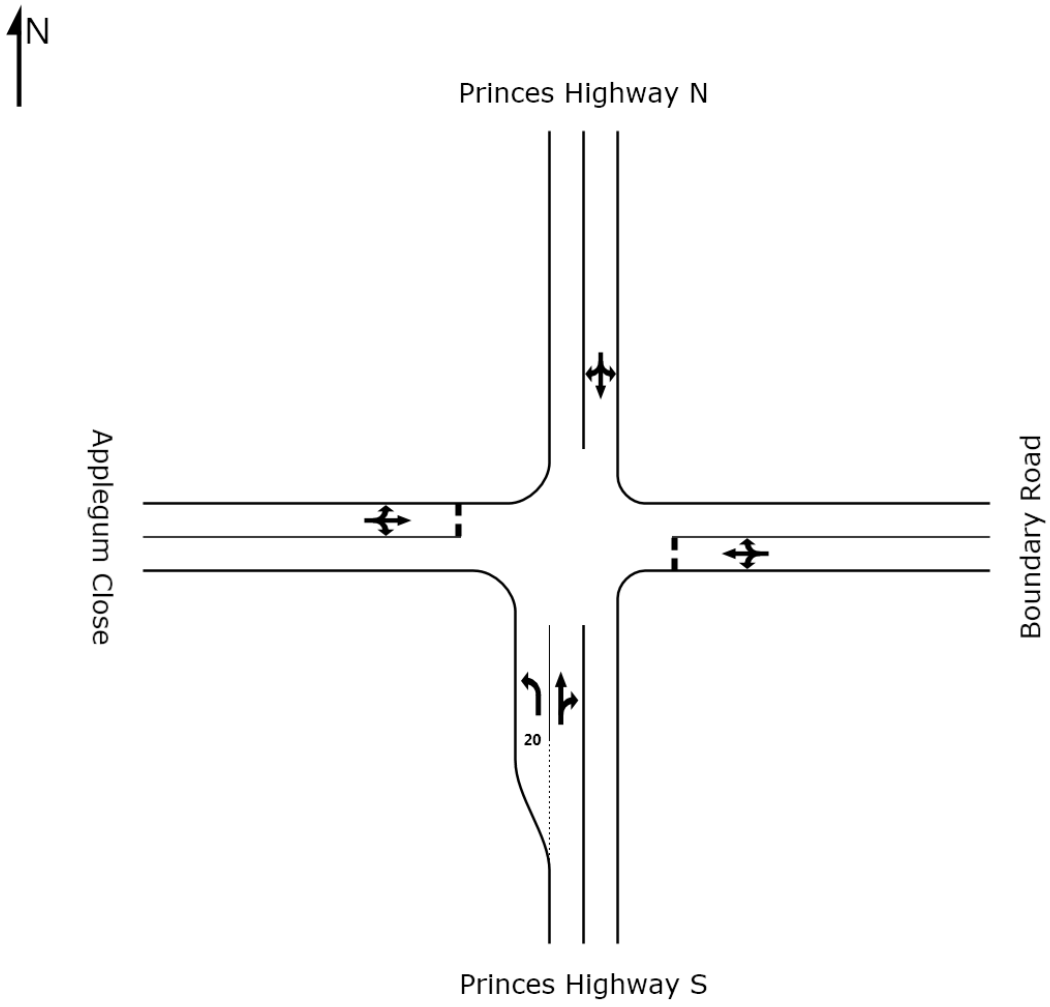
4. Harry Scanes Avenue / Tathra Road (one-lane approach roundabout option)



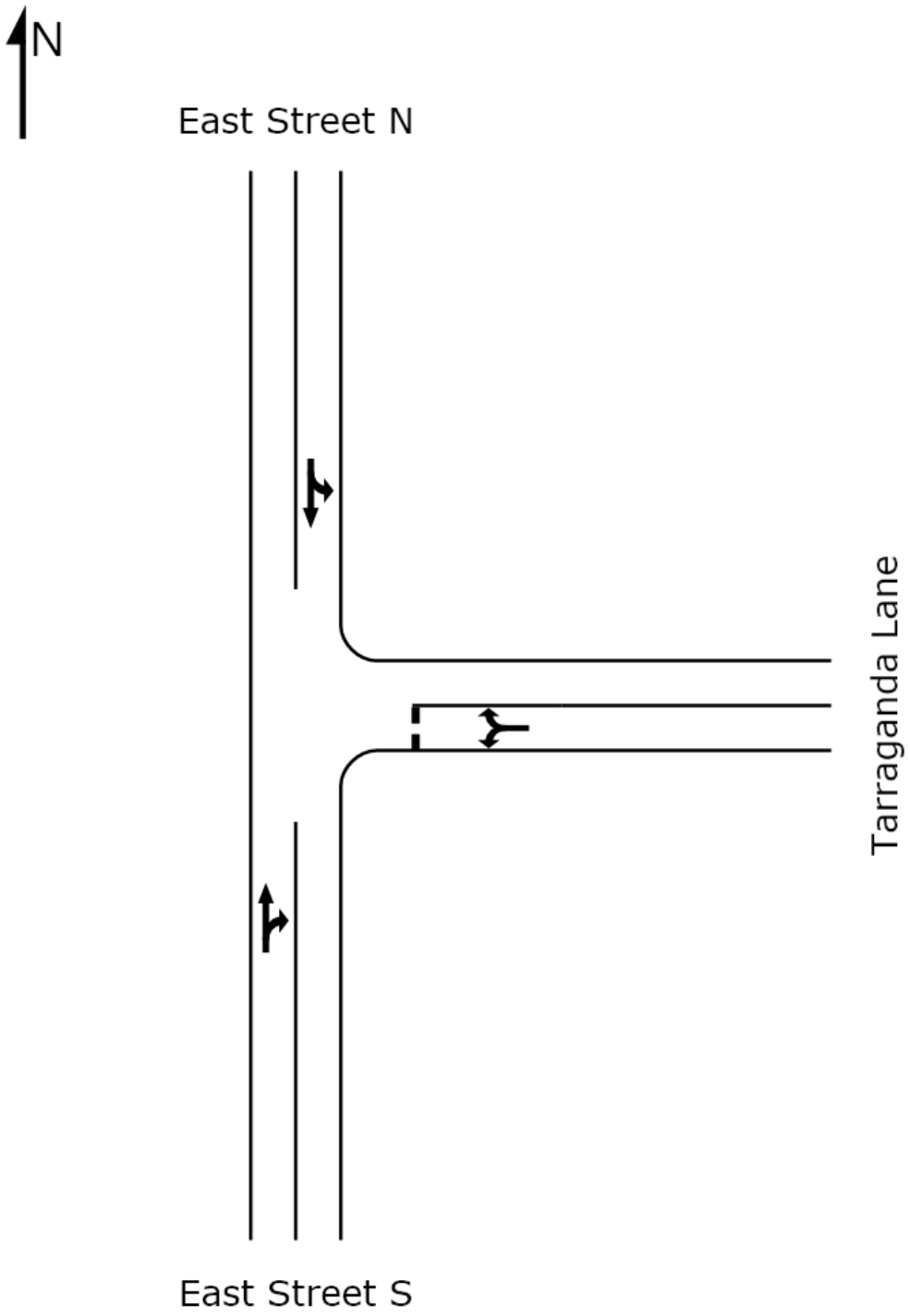
5. Boundary Road / Tathra Road



6. Boundary Road / Princes Highway



7. East Street / Tarraganda Lane



2016 Summer, AM Peak

No.	Intersection	Intersection volume (veh/hr)	Degree of saturation (DoS)	Average delay (s)	Level of service of worst approach (LoS)	Queue length of worst approach (m)
1	Howard Avenue/ Tathra Road	555	0.245	0.7	A	0.9
2	Kerrisons Lane/ Tathra Road	617	0.271	3.1	B	3.8
3	Kerrisons Lane/ Princes Highway	988	0.458	4.6	C	22.0
4	Harry Scanes Avenue/ Tathra Road (existing configuration)	546	0.237	0.7	B	1.2
5	Boundary Road/ Tathra Road	531	0.235	1.2	B	14.3
6	Boundary Road/ Princes Highway	969	0.372	4.6	B	39.9
7	East Street/ Tarraganda Lane	688	0.296	4.5	B	14.6

2016 Summer, PM Peak

No.	Intersection	Intersection volume (veh/hr)	Degree of saturation (DoS)	Average delay (s)	Level of service of worst approach (LoS)	Queue length of worst approach (m)
1	Howard Avenue/ Tathra Road	517	0.183	0.4	A	0.4
2	Kerrisons Lane/ Tathra Road	586	0.184	2.5	B	4.3
3	Kerrisons Lane/ Princes Highway	886	0.269	3.0	B	5.7
4	Harry Scanes Avenue/ Tathra Road (existing configuration)	539	0.182	1.1	A	2.1
5	Boundary Road/ Tathra Road	532	0.190	1.7	B	11.8
6	Boundary Road/ Princes Highway	910	0.272	3.9	D	22.3
7	East Street/ Tarraganda Lane	655	0.216	4.9	B	9.1

2016 Summer + SERH, AM Peak

No.	Intersection	Intersection volume (veh/hr)	Degree of saturation (DoS)	Average delay (s)	Level of service of worst approach (LoS)	Queue length of worst approach (m)
1	Howard Avenue/ Tathra Road	643	0.254	0.7	B	1.0
2	Kerrisons Lane/ Tathra Road	722	0.293	4.1	B	7.9
3	Kerrisons Lane/ Princes Highway	1,046	0.510	5.4	C	26.1
4	Harry Scanes Avenue/ Tathra Road (roundabout upgrade)	751	0.349	6.2	B	20.4
5	Boundary Road/ Tathra Road	642	0.278	1.5	B	18.0
6	Boundary Road/ Princes Highway	977	0.380	4.7	B	40.9
7	East Street/ Tarraganda Lane	742	0.330	4.8	B	15.8

2016 Summer + SERH, PM peak

No.	Intersection	Intersection volume (veh/hr)	Degree of saturation (DoS)	Average delay (s)	Level of service of worst approach (LoS)	Queue length of worst approach (m)
1	Howard Avenue/ Tathra Road	594	0.194	0.4	A	0.4
2	Kerrisons Lane/ Tathra Road	677	0.202	3.1	B	5.3
3	Kerrisons Lane/ Princes Highway	900	0.269	3.1	B	5.9
4	Harry Scanes Avenue/ Tathra Road (roundabout upgrade)	719	0.260	6.7	A	13.7
5	Boundary Road/ Tathra Road	629	0.229	2.1	B	14.9
6	Boundary Road/ Princes Highway	917	0.272	4.0	D	3.0
7	East Street/ Tarraganda Lane	703	0.234	4.9	B	10.7

2025 Summer, AM Peak

No.	Intersection	Intersection volume (veh/hr)	Degree of saturation (DoS)	Average delay (s)	Level of service of worst approach (LoS)	Queue length of worst approach (m)
1	Howard Avenue/ Tathra Road	647	0.285	0.7	B	1.2
2	Kerrisons Lane/ Tathra Road	722	0.317	3.3	B	5.3
3	Kerrisons Lane/ Princes Highway	1,153	0.693	6.8	D	41.6
4	Harry Scanes Avenue/ Tathra Road (existing configuration)	641	0.277	0.8	B	1.8
5	Boundary Road/ Tathra Road	621	0.275	1.5	C	17.6
6	Boundary Road/ Princes Highway	1,132	0.436	6.3	B	65.2
7	East Street/ Tarraganda Lane	801	0.398	5.3	B	18.4

2025 Summer, PM Peak

No.	Intersection	Intersection volume (veh/hr)	Degree of saturation (DoS)	Average delay (s)	Level of service of worst approach (LoS)	Queue length of worst approach (m)
1	Howard Avenue/ Tathra Road	604	0.214	0.4	A	0.4
2	Kerrisons Lane/ Tathra Road	683	0.215	2.7	B	5.8
3	Kerrisons Lane/ Princes Highway	1,032	0.313	3.3	B	9.1
4	Harry Scanes Avenue/ Tathra Road (existing configuration)	629	0.212	1.2	A	2.8
5	Boundary Road/ Tathra Road	619	0.222	2.0	B	14.4
6	Boundary Road/ Princes Highway	1,063	0.318	5.2	F	28.9
7	East Street/ Tarraganda Lane	765	0.294	5.5	B	12.0

2025 Summer + SERH+ Expansion + 'Other', AM Peak

No.	Intersection	Intersection volume (veh/hr)	Degree of saturation (DoS)	Average delay (s)	Level of service of worst approach (LoS)	Queue length of worst approach (m)
1	Howard Avenue/ Tathra Road	793	0.302	0.7	B	1.2
2	Kerrisons Lane/ Tathra Road	893	0.359	5.1	B	15.8
3	Kerrisons Lane/ Princes Highway	1,248	0.824	10.4	E	66.2
4	Harry Scanes Avenue/ Tathra Road (roundabout upgrade)	978	0.446	6.6	B	29.7
5	Boundary Road/ Tathra Road	805	0.345	2.3	C	24.7
6	Boundary Road/ Princes Highway	1,145	0.448	6.6	B	70.1
7	East Street/ Tarraganda Lane	892	0.482	6.0	B	23.6

2025 Summer + SERH + Expansion + 'Other', PM Peak

No.	Intersection	Intersection volume (veh/hr)	Degree of saturation (DoS)	Average delay (s)	Level of service of worst approach (LoS)	Queue length of worst approach (m)
1	Howard Avenue/ Tathra Road	731	0.231	0.4	A	0.5
2	Kerrisons Lane/ Tathra Road	835	0.245	3.6	B	8.1
3	Kerrisons Lane/ Princes Highway	1,110	0.377	4.5	B	2.0
4	Harry Scanes Avenue/ Tathra Road (roundabout upgrade)	928	0.317	7.3	A	17.7
5	Boundary Road/ Tathra Road	781	0.288	2.7	B	20.5
6	Boundary Road/ Princes Highway	1,075	0.318	5.5	F	28.9
7	East Street/ Tarraganda Lane	844	0.340	5.7	B	2.1