"Crowle Gardens" Development Concept Plan

76 Belmore Street, Ryde

Transport & Accessibility Impact Assessment

9 August 2011

Prepared for

Achieve Australia Limited

Halcrow

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1 Introduction

Halcrow has been commissioned by Achieve Australia Limited to undertake a Transport and Accessibility Impact Assessment of a proposed Concept Plan for the redevelopment of the Achieve Australia site at 76 Belmore Street Ryde.

1.1 Who are Achieve Australia

Achieve Australia supports people with disability to live and work in the community with varying degrees of independence. Services provided by Achieve Australia include;

- accommodation support;
- leaving care;
- younger people in residential aged care;
- specialist support services;
- day services;
- transition to work programs; and
- disability employment services.

Achieve Australia currently owns the site at 76 Belmore Street Ryde and operates an administration centre and residential accommodation services from the site. It is proposed to redevelop the site for residential use.

1.2 The Meadowbank Employment Area

The Achieve Australia site at 76 Belmore Street is located within the Meadowbank Employment Area.

The Meadowbank Employment Area has been identified by the City of Ryde as an area of transition and future urban growth.

The future growth within the Meadowbank Employment Area has been identified through the following planning and policy documents:

- City of Ryde Meadowbank Employment Area Master Plan (Amendment No. 5) Adopted 17 April 2007;

- City of Ryde Development Control Plan Part 4.2 Meadowbank Employment Area – Master Plan
- City of Ryde Centres and Corridors Study (Draft) August 2010.

The proposed site location with the Meadowbank Employment Area and surrounding locality is shown in Figure 1.

The aim of the Meadowbank Employment Area Master Plan is to establish a guiding framework and strategic intent for future development in the Master Plan area and seeks to capitalise on the potential of the area as an emerging focus of change and urban renewal. The Master Plan seeks to create a unique place characterised by a mix of residential, commercial, support retail and light industrial uses.

The Master Plan envisages that "*Meadowbank will evolve as a transit orientated community: a place which optimises its existing public transport network, facilitates access between home and work and reduces reliance on private transport. Distinct, clear and safe pedestrian and cycle access will be encouraged*"[1].

1.3 Achieve Australia Site Redevelopment and the Meadowbank Employment Area Master Plan

Redevelopment of the Achieve Australia site at 76 Belmore Street was envisaged in the Meadowbank Employment Area Master Plan and planned for with regard to traffic and transport.

The Transport Assessment[2] for the Master Plan assessed the existing network capacities and transport implications of future urban growth scenarios for the Meadowbank Employment Area.

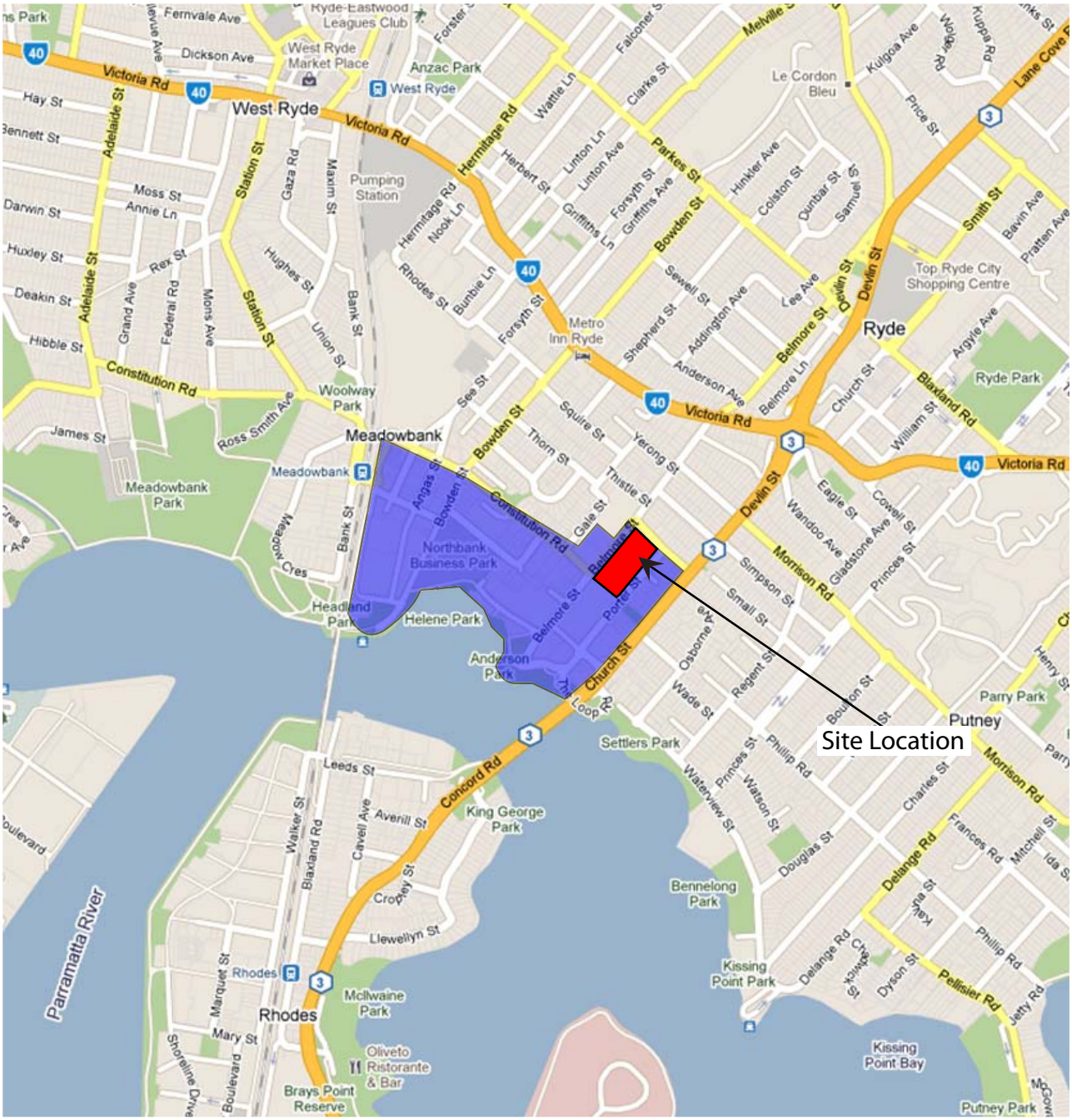
However, Achieve Australia is seeking to undertake a development which will increase the potential residential yield of the site beyond that envisaged in the Meadowbank Employment Area Master Plan DCP 2010.

[1] City of Ryde DCP 2010 Part 4.2 Meadowbank Employment Area – Master Plan
[2] Meadowbank Employment Area – Masteplan Transport Assessment (Urban Horizon, July 2007).

SITE LOCATION

"CROWLE GARDENS" - 76 BELMORE STREET, RYDE

North



Meadowbank Employment Area

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Figure 1

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1.4 Purpose of this Transport Assessment

The purpose of this study is to assess the traffic and transport implications of the proposed redevelopment of the Achieve Australia site (76 Belmore Street) within the context of the future planned growth of the Meadowbank Employment Area and where necessary identify measures to mitigate these implications.

This transport assessment considers what traffic and transport implications will occur as a result as result of development on the Achieve Australia site beyond the development envisaged in the Mater Plan and what transport infrastructure improvements are required beyond those indentified in the Master Plan to accommodate the increased site development potential.

The study has been prepared taking due regard to the traffic and transport related issued identified in the Director General's Requirements (DGRs) dated 16/9/2010.

This report presents the findings of the transport and access assessment in the following sections:

- Section 2 – provides a description of the site and the existing conditions on the surrounding road network;
- Section 3 – provides an overview of future planned development within the Meadowbank Employment area and associated transport infrastructure;
- Section 4 - provides an overview of the proposed Concept Plan application;
- Section 5 – assesses the traffic and transport implications of the development proposal; and
- Section 6 – provides the assessment conclusions.

2 Existing Conditions

2.1 The Site

The proposed development site is described as 76 Belmore Road, Ryde and has an approximately site area of 1.6 hectares.

As shown in Figure 2, the site has three road frontages, namely Belmore Street, Junction Street and Porter Street.

A total of 5 existing vehicle access driveways are provided to the site with at least one driveway on each of the road frontages. The existing driveway locations are shown in Figure 3.

The site uses currently include Achieve Australia administration offices and residential accommodation. Until recently the German International School Sydney operated on the site. The school site is currently vacant.

The Achieve Australia administration and residential accommodation uses generate an existing volume of traffic which has been estimated to be approximately 100 vehicle trips per day. No traffic is currently generated by the vacant German International School site.

2.2 Surrounding Road Network

The road network surrounding the development site is shown in Figure 2.

Church Street is a classified "State Road" running north – south in close proximity to the site. **Victoria Road** to the north of the site is also a "State Road" and runs east-west. Thus there is convenient access to the regional road network to and from the proposed development site.

Junction Street, **Belmore Street**, **Constitution Road** and **Bowden Street** provides a local collector road function connecting the Meadowbank Employment Area to the

SITE LOCATION + SURROUNDING ROAD NETWORK

"CROWLE GARDENS" - 76 BELMORE STREET, RYDE

Figure 2

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EXISTING SITE VEHICLE ACCESS

"CROWLE GARDENS" - 76 BELMORE STREET, RYDE

North

Existing Site Vehicle Access

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Figure 3

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regional road network and to the key nodes within the area namely the Meadowbank railway station and ferry wharf.

These streets typically provide a single traffic lane in each direction with parking permitted intermittently on either side of the road. Additional turning lanes etc are provided at intersections to provide additional intersection capacity. A posted speed limit of 50 km/hr applies to these local access roads. A school zone is also posted along Junction Street and Belmore Street either side of the Junction Street intersection.

Porter Street is a local access road with a sealed road width of 7.5 metres. Parking is generally permitted on both sides of the street.

2.3 Existing Traffic Flows

The RTA's correspondence to the Department of Planning attached to the Director General's Requirements (DGRs) for this project included a number of intersections that the RTA requested be examined as part of the traffic and transport assessment.

As part of the Meadowbank Employment Area Master Plan a transport assessment[3] was undertaken by Urban Horizon (July 2007). This included a number of traffic surveys of existing conditions which were then used to analyse the implications of future development in the area (see Section 3 for further details).

As part of this assessment traffic surveys of existing intersection flows were undertaken to verify the traffic surveys undertaken by Urban Horizon and to obtain data for each of the intersections specified by the RTA in the DGRs.

Traffic surveys were undertaken in October 2010 at the following locations:

- Victoria Road / Belmore Street
- Belmore Street / Junction Street
- Junction Street / Church Street
- Morrison Street / Church Street
- Junction Street / Porter Street

[3] *Meadowbank Employment Area – Masterplan Transport Assessment* prepared by Urban Horizon, July 2007

- Parsonage Street / Porter Street / The Loop Road
- Porter Street / Wells Street

A summary of the survey results are shown in Figure 4 and Figure 5. Details of the traffic survey results are provided in Appendix A.

2.4 Traffic Generation of New Residential Development

In recent years a number of medium density residential developments have been constructed and occupied within the Meadowbank Employment Area.

Traffic surveys were undertaken of several residential developments in order to obtain some site specific traffic generation rates for residential land uses in the Meadowbank Employment Area which will be similar to development proposed for the Achieve Australia site in Belmore Street.

By undertaking site specific surveys, the influence of the locality, population characteristics, proximity to public transport etc on traffic generation rates can be obtained and compared with the more generic rates specified within the RTA Guidelines.

The surveyed sites were:

- 100 – 102 Belmore Street
- Development fronting The Loop Road

In total these developments contain a total of 138 residential units.

The results of the site specific surveys are summarised in Table 2-1. The detailed results are provided in Appendix A.

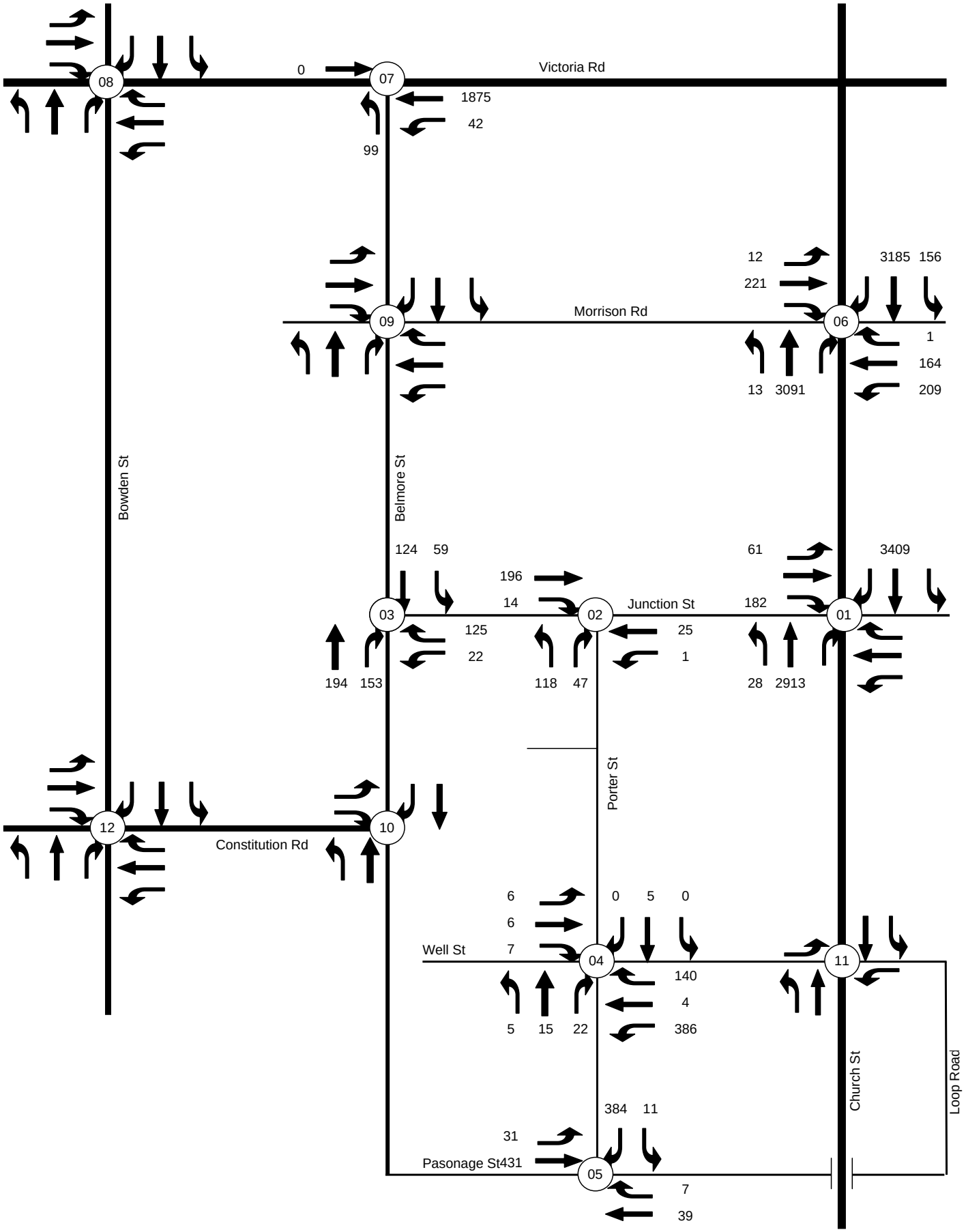

Figure 4

CTLROI - 76 Belmore St, Ryde

2010 Morning Peak Existing Traffic

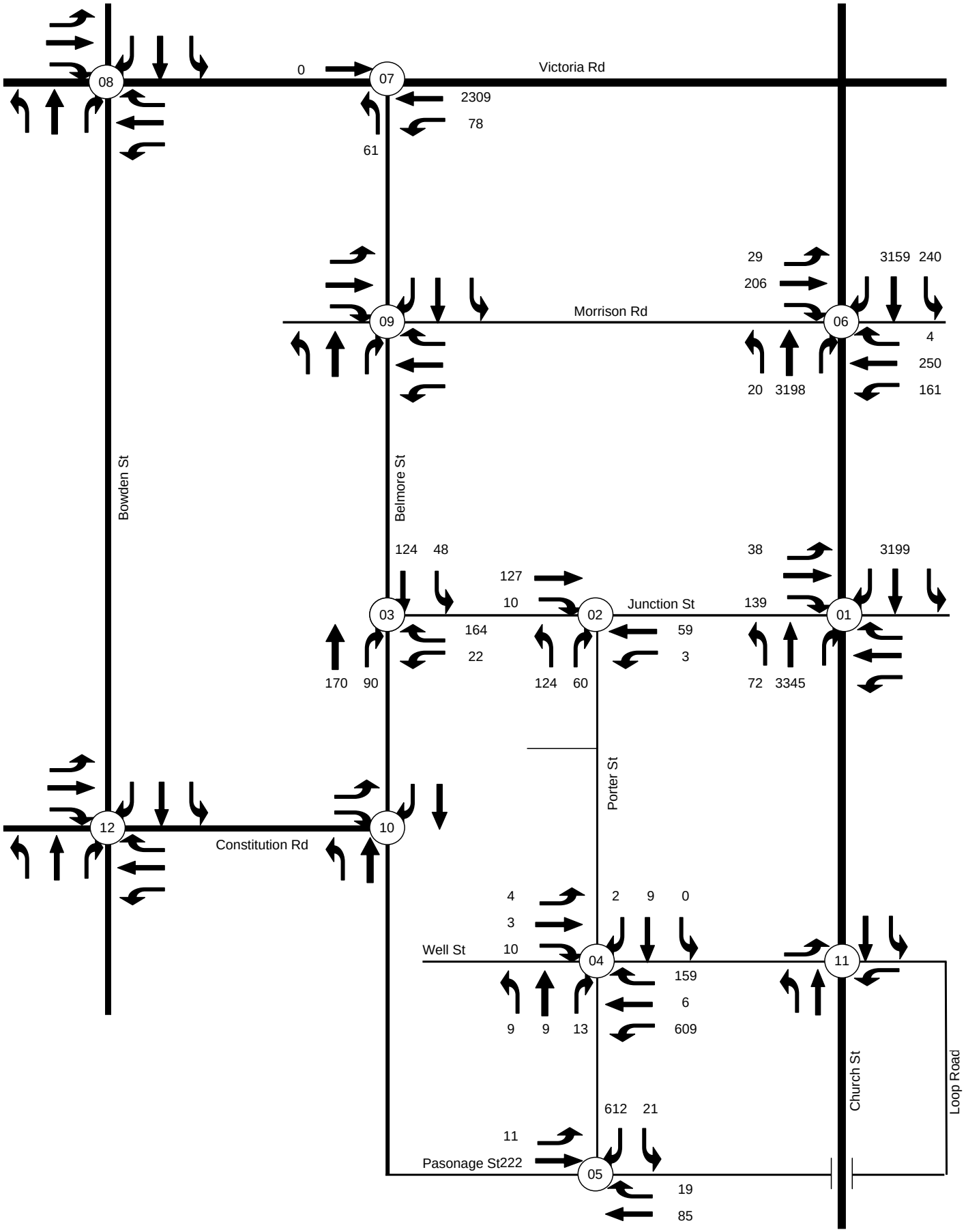

Figure 5

CTLROI - 76 Belmore St, Ryde

2010 Evening Peak Existing Traffic

Table 2-1 Traffic Generation Survey of Medium Density Residential Development in Meadowbank Employment Area

	AM Peak Hour (vehicle trips / hour)	PM Peak Hour (vehicle trips / hour)
Inbound Trips	4	30
Outbound Trips	42	11
Total Trips	46	41
Trip Rate / Unit	0.30 / unit	0.33 / unit

The results in Table 2-1 indicate that traffic generation rates for medium density residential within the Meadowbank Employment Area are lower than the generic RTA rates of 0.4 trips / unit.

It is considered that this lower vehicle trip rate for residential uses is the result of proximity to public transport and to a lesser extent employment and other urban facilities.

These lower rates also reflect the ability of residential development within the Meadowbank Employment Area to achieve a mode shift away from private car trips.

2.5 Public Transport

The site is located within walking distance of Meadowbank railway and ferry stations (approximately 800 metres) and is located in close proximity to a number of bus services.

The site's proximity to train, bus and ferry services is shown in Figure 6.

The bus routes operating within proximity of the site include:

- M41 – Hurstville to Marsfield
- M52 - Parramatta to Circular Quay
- 507 - Meadowbank Station to Sydney CBD via Macquarie University
- 513 - Meadowbank Ferry Wharf to Carlingford Court

PROXIMITY TO PUBLIC TRANSPORT SERVICES

"CROWLE GARDENS" - 76 BELMORE STREET, RYDE

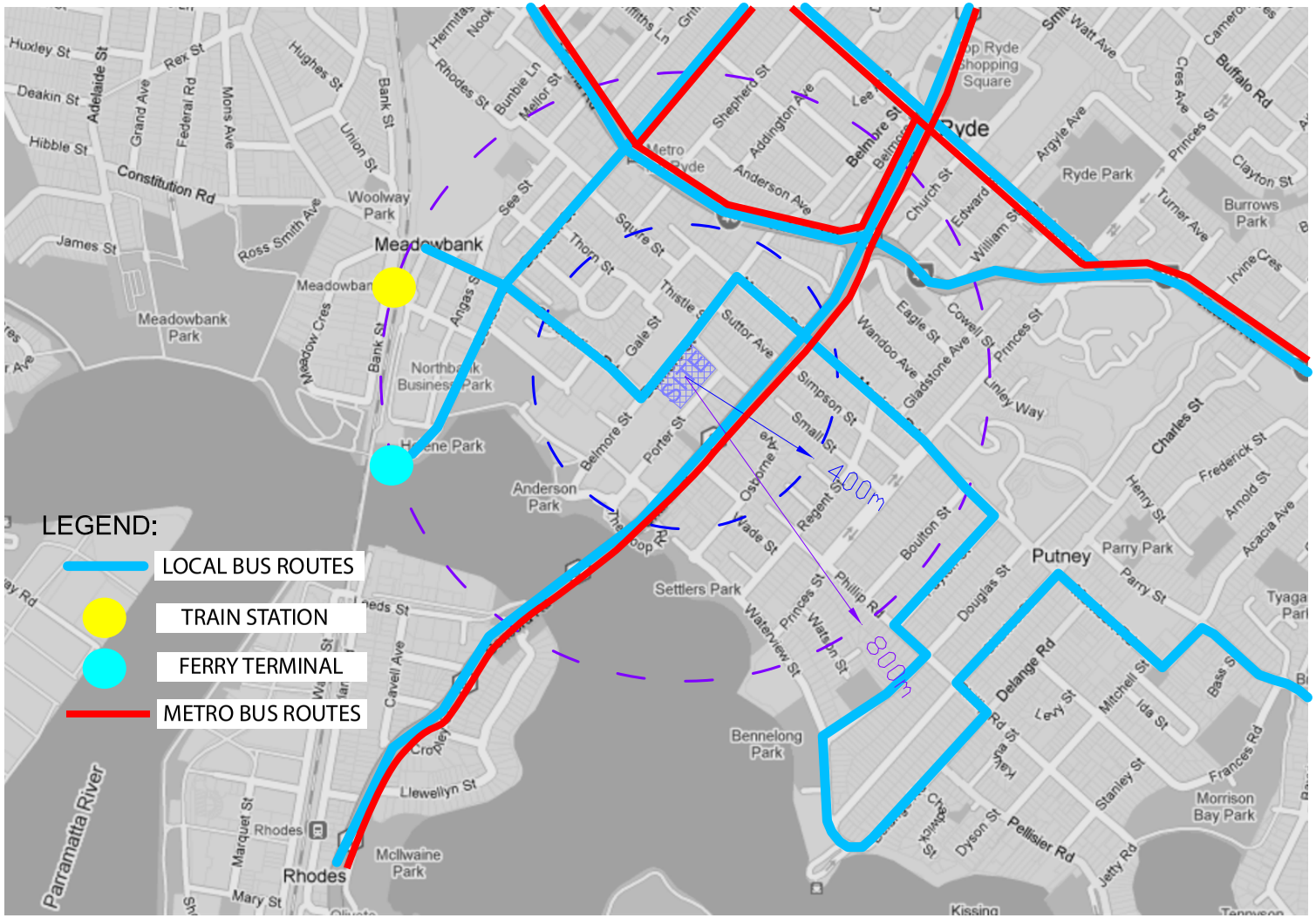

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Figure 6

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- 533 - Chatswood to Olympic Park
- 458 - Burwood Station to Top Ryde Shopping Centre
- 459 - Strathfield Station to Macquarie University
- 534 - West Ryde Station to Chatswood Station
- 520 - Parramatta Station to Sydney CBD via Victoria Road
- 524 - Parramatta Station to Top Ryde Shopping Centre via Victoria Road

The detailed bus route plans are shown in Appendix B.

It is noted that Route No. 507 has a bus stop located adjacent to the site's Belmore Street frontage.

2.6 Pedestrian and Cycle Facilities

The existing bicycle routes in the vicinity of the site as specified in Council's Bike Plan are shown in Figure 7. This shows both shared off road and on road facilities are located along the foreshore with connections to the ferry terminal and railway station.

Pedestrian footpaths are provided along the site's frontage to Belmore Street and Junction Street. These paths connect to Victoria Road and Church Street bus routes as well as to Meadowbank railway station via Constitution Road.

The Meadowbank Employment Area Master Plan also outlines an access structure for the area (see Appendix C). This included the provision of a new pedestrian / cycle access between Belmore Street and Church Street. This pedestrian / cycle link has been constructed.

The provision of this connection has created a pedestrian / cycle link through existing large privately owned blocks of land. It is noted that a pedestrian link between Belmore Street and Porter Street will be created along the site's southern boundary, thus facilitating part of the link set out in the Master Plan.

PEDESTRIAN & CYCLE ROUTES

"CROWLE GARDENS" - 76 BELMORE STREET, RYDE

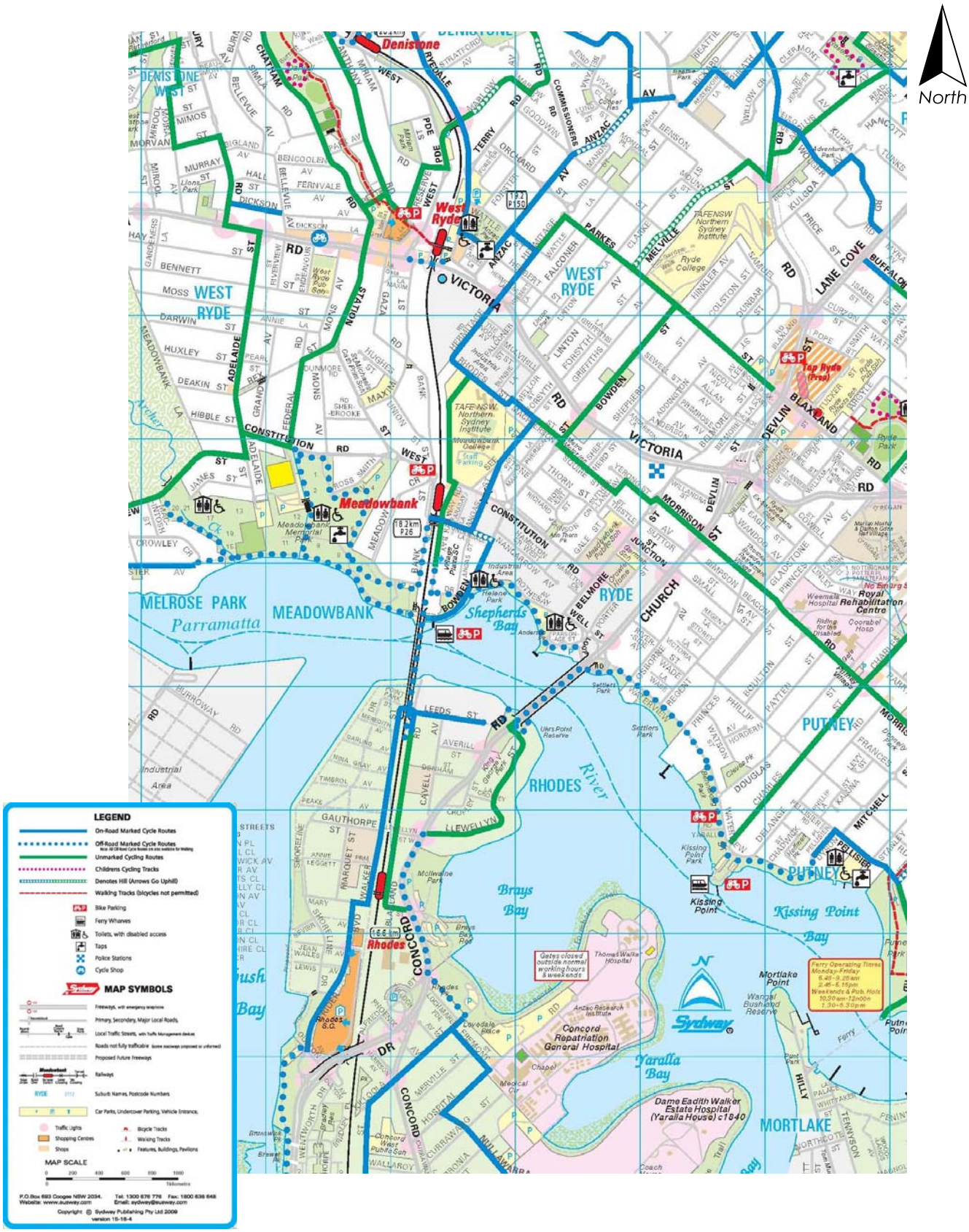

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Figure 7

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3 Future Transport Planning for the Meadowbank Employment Area

3.1 Meadowbank Employment Area Transport Assessment

In 1997, the City of Ryde undertook to develop a master plan for future land use and development in the Meadowbank Employment Area. This master planning process evolved over time with a trend for land use to shift away from employment dominated land uses towards residential uses.

The Master Plan is defined in the City of Ryde DCP 2010 Part 4.2 Meadowbank Employment Area – Master Plan. The objective of the Meadowbank Employment Area Master Plan is to set out the guidelines for future redevelopment of the area.

As part of the Master Plan an assessment of the transport implications of various master development scenarios for the Meadowbank Employment Area was undertaken by Urban Horizon (July 2007)[4].

The purpose of the transport assessment was to:

- Estimate the traffic generation potential of development scenarios;
- Assess the implications of these scenarios on the existing transport infrastructure; and
- Identify transport infrastructure improvements required to accommodate additional development.

The transport assessment considered two master plan scenarios, namely:

- Existing:
  - Commercial: 180,000m2 – 200,000m2
  - Residential: 630 dwellings

[4] *Meadowbank Employment Area – Masterplan Transport Assessment* prepared by Urban Horizon, July 2007

- Scenario 1: Existing controls fully developed
  - Commercial: 200,000 – 250,000m2
  - Residential: 850 – 900 dwellings

- Scenario 2: Revised controls fully developed
  - Commercial: 80,000 – 100,000m2
  - Residential: 1,800 – 2,000 dwellings

In summary, the Master Plan Transport Assessment assessed the implications to the transport network work of increased traffic flows to, from and through the Meadowbank Employment Area as a result of the redevelopment envisaged under the Master Plan planning controls.

The Transport Assessment's conclusions include that:

- The Master Plan site is well placed to accommodate more intensive residential and / or commercial / industrial development by virtue of the proximity of available train, bus and ferry services;
- The site has multiple access points to the surrounding road network which assists in distributing generated traffic across the network;
- An analysis of mode shares in adjacent areas reaffirms that there is scope to improve the mode share to public transport at the expense of the car. A 10% shift (from 78% car use for journey to work from the Ryde LGA in 2001) is considered achievable.
- The magnitude of the forecast traffic generation is such that no upgrades to the road network are required over and above those already proposed by Ryde Council in its 2005 Meadowbank Employment Area Works Program (see Appendix D).
- Improvements to pedestrian access, amenity and safety will be the key to achieving mode shifts to non-car modes of transport.
- A development scenario with a focus on residential land uses (Scenario 2) is more favourable due to a relatively lower traffic generation potential than a more commercial / industrial land use scenario.

3.2 Traffic Assessment Methodology for Developments in the Meadowbank Employment Area

The development scenarios considered in the Transport Assessment (Urban Horizons, 2007) have been used in the preparation of the *City of Ryde Draft Centres and Corridors Study* (2010). As such the development scenarios considered as part of the Master Plan Transport Assessment represent the current basis for traffic and transport planning within the Master Plan area.

Furthermore, during consultations undertaken with Council officers as part of this transport assessment it was confirmed that Master Plan Transport Assessment (Urban Horizons 2007) represented the known (planned) development potential for the Master Plan area and that the Transport Assessment was to be used as the basis for any assessment of future traffic generation from particular sites within the Master Plan area.

In order to consider the cumulative traffic and transport implications of the proposed development, the assessment needs to consider the existing and future planned development within the Meadowbank Employment Area.

This has been undertaken by assessing the traffic implications of the proposed Achieve Australia site development beyond that which was planned for in the Master Plan.

3.3 Future Transport Planning for the Proposed Development Site (76 Belmore Street)

The Transport Assessment prepared by Urban Horizon (2007) included traffic modelling of future development scenarios for the Meadowbank Employment Area with the associated traffic generation of future redevelopment.

For the site at 76 Belmore Street, this included the potential redevelopment for residential uses with a 9.5 metres building height limit.

This 9.5 metre height limit has been translated by NBRS Architects to be approximately 184 residential units.

Applying the traffic generation rate used in the Urban Horizon Master Plan Transport Assessment (0.4 trips / unit[5].) to the envisaged residential yield equates to a traffic generation of 74 vehicle trips per peak hour.

Therefore it is considered that the conclusions of the Urban Horizon Transport Assessment reflect a development yield on the Achieve Australia site of some 184 residential units and some 74 vehicle trips per peak hour.

[5] Residential Unit Traffic Generation Rate of 0.4 trips / unit / peak hour was used in the Urban Horizon Transport Assessment scenario analysis. This is based on the generic traffic generation rate for medium density residential development as specified by the RTA Guide To Traffic Generating Developments (2002).

4 Overview of Proposed Development Concept

4.1 Site Uses and Development Yields

The proposed Concept Plan for the site includes the following:

- Retention of the existing historical elements of the property namely:
  - Tellaraga House;
  - the Memorial Gardens;
  - Entrance gate and driveway;
- Demolition of remaining on site structures;
- Construction of 5 new residential apartment blocks with a total of 470 apartments with a typical mix of:
  - 225 x 1 bedroom units
  - 225 x 2 bedroom units
  - 20 x 3 bedroom units
- Construction of a single basement parking facility for approximately 584 car parking spaces. Access to basement car parking to be provided via two separate driveways to Porter Street.

It is proposed that Tellaraga House would be utilised as a residents / community facility.

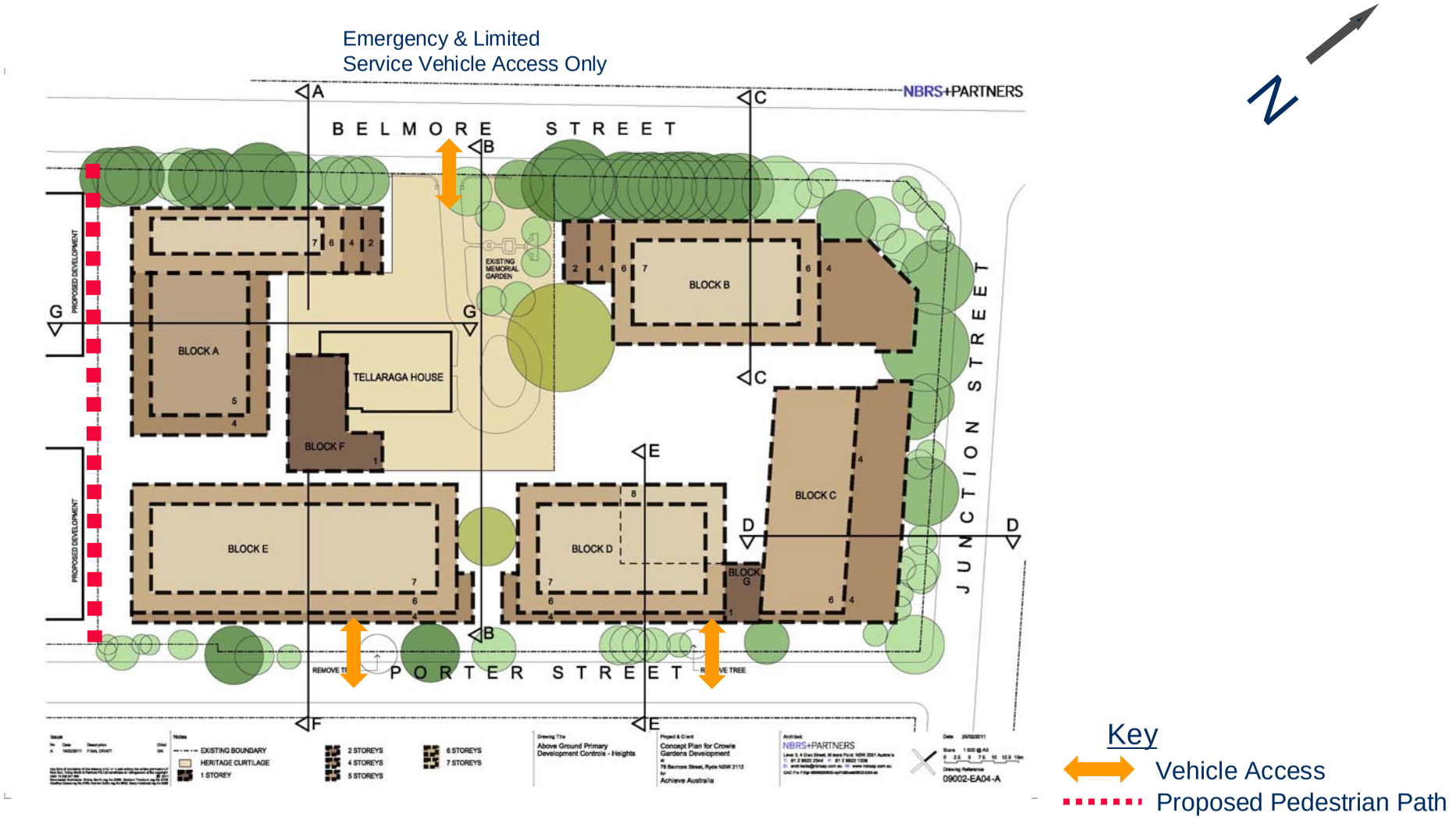
It is also proposed that a proportion of the residential apartments will be retained by Achieve Australia in order to provide housing for intellectually disabled people as per their current services.

A copy of the Concept Plan for the proposed development is provided in Figure 8.

4.2 Traffic Generation

Traffic generation of the proposed development of the site has been estimated based on the residential unit trips rates obtained for existing residential developments along Belmore Street and The Loop Road as presented in Section 2.4.

Figure 8 - Proposed Site Access



Key

Vehicle Access

Proposed Pedestrian Path

The estimated site generated traffic of the proposed concept plan is compared with existing traffic generation of the site and the assumed traffic generation potential of the site as envisaged by the Meadowbank Employment Area Transport Assessment[6].

Table 4-1 - Estimated Traffic Generation of Proposed Development

Development Scenario	Number of Residential Units	Daily Traffic Generation (veh/day) [3]	Peak Hour Traffic Generation (veh/hr)
Existing	n/a	300	30
Proposed Under Meadowbank Employment Area Master Plan [1]	184	740	74
Concept Plan Scheme (Proposed) [2]	470	1410 – 1550	141-155

Notes: 1. Based on trip rate of 0.4 trips / unit

2. Based on surveyed trip rate of 0.30 – 0.33 trips / unit for adjacent sites

3. Daily traffic generation estimated to be 10 x peak traffic as per RTA guidelines

The estimated traffic generation for the proposed Concept Plan scheme does not take into account either:

- The proportion of units to be allocated to housing for intellectually disabled residents. These residents do not typically drive themselves but rely on other modes.
- Reduced parking provision below maximum DCP rates for the Meadowbank Employment Area.

As there is some uncertainty regarding the extent of each of the above factors, the estimates in Table 4.2 have been used in the assessment. As such the estimated traffic is considered to be conservatively high.

[6] Meadowbank Employment Area Masterplan Transport Assessment, Urban Horizon (July 2007)

4.3 Site Access Arrangements

The proposed vehicle and pedestrian access arrangements are shown in Figure 8.

4.3.1 Vehicle Access

It is proposed that the number of vehicle access driveways to the site will be reduced from 5 to 3.

Of the 3 proposed driveways the existing driveway at Belmore Street will be retained to provide emergency and occasional service vehicle access to the site.

Access to the basement car park will be provided only from Porter Street.

4.3.2 Pedestrian Access

As shown in Figure 8 it is proposed to provide numerous pedestrian access points to and from the site. The philosophy to the pedestrian access arrangements is to provide convenient access between the site and the external environment thereby encouraging walking as a mode of travel.

The concept plan is also mindful of the proposed pedestrian access along the southern boundary of the site between Belmore Street and Porter Street. It is proposed to connect the site to the pedestrian link.

5 Traffic and Transport Assessment of Proposed Concept Plan Development

5.1 Strategic Planning Policies

A number of regional strategic planning policies have relevance to the proposed development. These have been identified in the DGR's and there implications to the proposed Concept Plan development at 76 Belmore Street are considered below.

5.1.1 NSW State Plan (2010)

The NSW State Plan 2010 defines the NSW Government's long term plan to deliver the best possible services to the people of NSW and sets targets and measurement tools for service improvements.

It is intended to set a framework for linking the various other NSW Government plans and policies, including the Metropolitan Transport Plan and the Metropolitan Strategy.

Transport-relevant goals include:

- Improved public transport system usage and reliability
- Improved road network
- Improved Road safety
- Increase walking and cycle as a mode of travel

Beneath these goals are a number of transport-relevant priorities with associated targets.

The priorities are:

- Increase the share of commute trips made by public transport
- Increase the proportion of total journeys to work by public transport in the Sydney Metropolitan Regions to 28% by 2016.
- Safer roads
- Cleaner air and progress on greenhouse gas reduction

- Jobs closer to home
- Improve the efficiency of the road network

Consistent with the City of Ryde DCP 2010, the proposed Concept Plan development has provided on-site parking at a constrained parking rate (ie. approximately 10% less than the maximum allowable requirements- see Section 5.2). The constrained on-site parking together with the site being in close proximity to good public transport service will assist with achieving the State Plan's transport policies.

5.1.2 Metropolitan Transport Plan – Connecting the City of Cities

The Metropolitan Transport Plan was released in February 2010 and provides a 25 year vision for the linking of Sydney's land use planning with its transport network. The plan includes a 10 year funding guarantee for essential transport infrastructure and services.

The Metropolitan Transport Plan has been integrated into the Metropolitan Plan to ensure the city's sustainable growth and seeks to help make Sydney a more connected, sustainable city as the population grows over the next 25 years.

The Metropolitan Plan, integrated with the Metropolitan Transport Plan, outlines the government's commits to the delivery of transport solutions that match Sydney's population and employment needs, and supports economic growth.

The plan aims to encourage public transport usage wherever possible.

The Metropolitan Transport Plan includes:

- The $4.5 billion Western Express City Rail Service – a separate dedicated rail track to slash travelling times from Western Sydney to the city.
- Start of work on the $6.75 billion North West rail link from Epping to Rouse Hill.
- A $500 million expansion of the current light rail system with an extension from Lilyfield to Dulwich Hill.
- Improvement to bus services – including 1000 new buses in strategic bus corridors.
- New trains – addition of 626 rail carriages.

- $158 million for cycleway.
- $400 million for commuter car park.
- $225 millions for ferries.
- $536 million for motorway planning, transit corridor reservations and land acquisition.
- $483 million to deliver important freight works in Sydney.
- $21.9 million of State and Federal Funded road projects.

5.1.3 Sydney Metropolitan Strategy 'City of Cities'

The Metropolitan Strategy's transport vision for Sydney is "… neighbourhoods with improved local transport, with walking and cycling facilities and bus services to major centres. People will be able to carry out more of their trips closer to home, reducing the time taken and cost of longer trips".

Transport actions proposed by the Metropolitan Strategy are:

- Improve transport between Sydney's centres
- Improve the existing transport system
- Influence travel choices to encourage more sustainable travel
- Improve transport decision-making, planning, evaluation and funding
- Ensure sufficient port capacity is available to serve Sydney
- Improve the efficiency of all types of freight movements in Sydney
- Connect the regions and economic gateways within the GMR
- Minimise the adverse impacts from freight movements

5.1.4 Draft Inner North Sub Regional Strategy

This draft policy sets key directions for transport namely:

- Improve access to Macquarie Park;
- Integrate transport and land use opportunities;
- Manage traffic and improve key corridors; and
- Manage growth of commercial vehicle movements.

With regard to the Meadowbank Employment Area, the draft Inner Northern Sub Regional Strategy flags Meadowbank railway station for "Easy Access" improvements which facilities improved access for all station users.

5.1.5 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (the SEPP) was introduced to facilitate the delivery of infrastructure across the State by improving regulatory certainty and efficiency. Prior to the SEPP being introduced, planning for infrastructure was regulated through a complex array of local, regional and State statutory planning instruments and overlapping legislation.

The new Infrastructure SEPP provides a consistent planning regime under the Environmental Planning and Assessment Act 1979 (the Act) that outlines the approval process and assessment requirements for infrastructure proposals.

Infrastructure is defined to included hospitals, schools, railways, roads, power and water supplies, and other services necessary to maintain the State's economy and the wellbeing of its communities.

In essence the Infrastructure SEPP establishes the assessment and consultation framework for infrastructure developments, including educational establishments, to be considered under the Part 3A process.

5.1.6 NSW Planning Guidelines for Walking and Cycling

These guidelines aim to assist land-use planners and related professionals to improve consideration of walking and cycling in their work. It is anticipated that improving practice in planning for walking and cycling will create more opportunities for people to live in places with easy walking and cycling access to urban services and public transport. This will help reduce car use and create healthier neighbourhoods and cities.

This planning at a local level, and to some degree regional level, has been undertaken and incorporated into the NSW Bike Plan and the Ryde City Council Bicycle Plan (Map). This strategy was considered as part of the Concept Application traffic and transport assessment.

The integration of on site cycle facilities with the local bicycle network will be considered as part of the Travel Plan to be prepared for the development as discussed in Section 5.4 of this report.

5.1.7 Integrated Land Use and Transport Planning Guidelines

In September 2001, the State Government released the Integrating Land Use and Transport (ILUT) Planning Policy Package. The package provides a framework for State Government agencies, councils and developers to integrate land use and transport planning at the local and regional level.

More specifically, it aims to:

- improve access to housing, jobs and services by walking, cycling and public transport
- increase the choice of available transport and reduce reliance on cars
- encourage people to travel shorter distances and make fewer trips
- support the viable operation of public transport services
- provide for the efficient movement of freight.

It is noted that the major centres mentioned in the ILUT package are now superseded by the strategic centres identified in the Government's Metropolitan Strategy. Reference to the Metropolitan Strategy is provided in this report.

Notwithstanding the above, the principles of managing transport demand and providing transport choices have been considered as part of the Concept Application. The implementation of a Travel Plan will embody the principles set out in the ILUT policy.

5.1.8 NSW Bikeplan NSW Government (2010)

The NSW BikePlan builds on the Metropolitan Transport Plan's $158 million commitment to cycling infrastructure.

The NSW BikePlan will encourage more bike-riding by:

- creating connecting cycling networks;
- making bike-riding safe for all;
- planning cycling-friendly;

- neighbourhoods;
- growing jobs in cycling; and
- getting organisations working together to support bike-riding.

With regard to Ryde, the NSW BikePlan will utilise the existing links in and around Meadowbank and the foreshore with missing links constructed to join to adjacent existing facilities namely:

- Olympic Park;
- Macquarie Park; and
- Huntley Point (pedestrian and cycle bridge)

5.1.9 RTA's Guide to Traffic Generating Development

While not explicitly stated in this report, the traffic assessment undertaken of the Concept Application has been undertaken in accordance with the RTA guidelines, including the use of traffic generation principles, road network operation assessment standards and local amenity measures.

5.1.10 Comment on Strategic Context

Many of the underlying themes of the plans and strategies have relevance to the proposed Concept Plan for 76 Belmore Street and the Meadowbank Employment Area. Current State policies provide a good framework to support local strategies to improve the level of accessibility and sustainable transport.

A list of objectives has been developed for the assessment of the proposed Concept Plan which aim to support the State and local transport strategies.

i. Objectives

The objectives for achieving sustainable travel for the Concept Plan would include:

- Reduce the rate of growth of car based trips;
- Support and improve sustainable transport facilities for future residents with access to public transport, walking and cycling facilities;
- At the same time ensure that appropriate provisions are made for car parking and for traffic travelling to and from the centre to minimise the impacts to surrounding residents.

ii. Considerations

The Concept Plan site has a number of advantages in relation to the achievement of above objectives, namely:

- Close proximity to rail, bus and ferry services providing good walkable access to public transport;
- Introduction of a car parking policy which provides on site parking at less than the maximum allowable under the DCP requirements.

5.2 Car Parking

5.2.1 Car Parking Provisions

The City of Ryde's DCP 2010 identifies the Meadowbank Employment Area as a transit orientated community where train, ferry, walking and cycling will become key forms of transport for residents and workers.

In line with this objective, the DCP specifies maximum parking rates for development within the Meadowbank Employment Area.

The applicable parking rates for residential development on the proposed development site are summarised in Table 5-1.

Table 5-1 - Maximum Allowable DCP Parking Provisions for Residential Uses

Unit Types	Concept Plan No. of Units	DCP Parking Rate (Maximum)	Maximum No. Car Spaces
1 Bedroom Unit	225	1.0 spaces / unit	225
2 Bedroom Unit	225	1.4 spaces / unit	315
3 Bedroom Unit	20	1.6 spaces / unit	32
Visitor Parking	-	1 space / 4 units	118
Maximum Allowable			690 spaces
Proposed Parking Spaces (approx.)			584 spaces

As shown in Table 5-1 it is proposed to provide less parking than the maximum allowable parking rates specified in the DCP.

Thus the proposed car parking provisions are consistent with the DCPs objective of developing a transit orientated community within the Meadowbank Employment Area.

Furthermore the parking provisions are consistent with the Department of Planning and Department of Transports support for reduced parking provisions as stated in the DGRs.

Notwithstanding the above, the proposed parking provision is considered to reflect parking demands of the proposed Concept Plan development.

5.2.2 Vehicle Access to Car Parking

In accordance with the DCP controls, car parking for the proposed development will be provided below ground in a basement parking facility.

Vehicle access to the basement car parking facility will be provided via Porter Street which is a lower order road than the site's other road frontages namely Junction Street and Belmore Road.

The provision of vehicle access via Porter Street is consistent with Porter Street's function as a local access road and will reduce potential conflicts associated with vehicles turning into and out of the site to the relatively higher traffic carrying roads of Junction Street and Belmore Street.

The location of the proposed vehicle access driveways have been selected as they would provide satisfactory sight distances along Porter Street for both vehicles and pedestrians.

It is noted that southern driveway access to the car park has been set away from the proposed through site pedestrian / cycle link between Porter Street and Belmore Street to reduce the potential conflicts between vehicles, pedestrians and cyclists at the site vehicle access.

5.3 Road Network Implications

5.3.1 Traffic Impact Assessment Methodology

As described in Section 3 of this report, the transport planning for the Meadowbank Employment Area has included an assessment of additional future traffic generated by the proposed development site and other sites in the Meadowbank Employment Area.

These future flows are summarised in Figure 9 and Figure 10.

The traffic assessment presented in this report relates to the implications associated with traffic generated by the proposed Concept Plan over and above that envisaged in the Meadowbank Employment Area Transport Assessment.

The additional traffic generated by the Concept Plan development has been added to the forecasted future road network flows assessed in the Meadowbank Employment Area Transport Assessment[7]

5.3.2 Additional Future Traffic Generation Estimates and Distribution

The estimated site generated traffic flows have been presented in Table 4.1 above. Based on this table it is estimated that the peak hour site generated traffic flows will increase from 74 to 141-155 vehicles trips per hour.

Thus the Concept Plan development for the site has the potential to increase traffic flows on the surrounding road network in the order of 66 – 81 vehicle trips per hour.

These additional traffic flows have been added to the future road network flows as shown in Figure 9 and Figure 10 using the ABS Journey to Work (JTW) data for the relevant Travel Zones surrounding the site.

The JTW data indicated the following distribution of trips:

- To the east: 12%
- To the north: 26%
- To the west: 27%
- To the south: 35%

[7] Meadowbank Employment Area Masterplan Transport Assessment, Urban Horizon (July 2007)

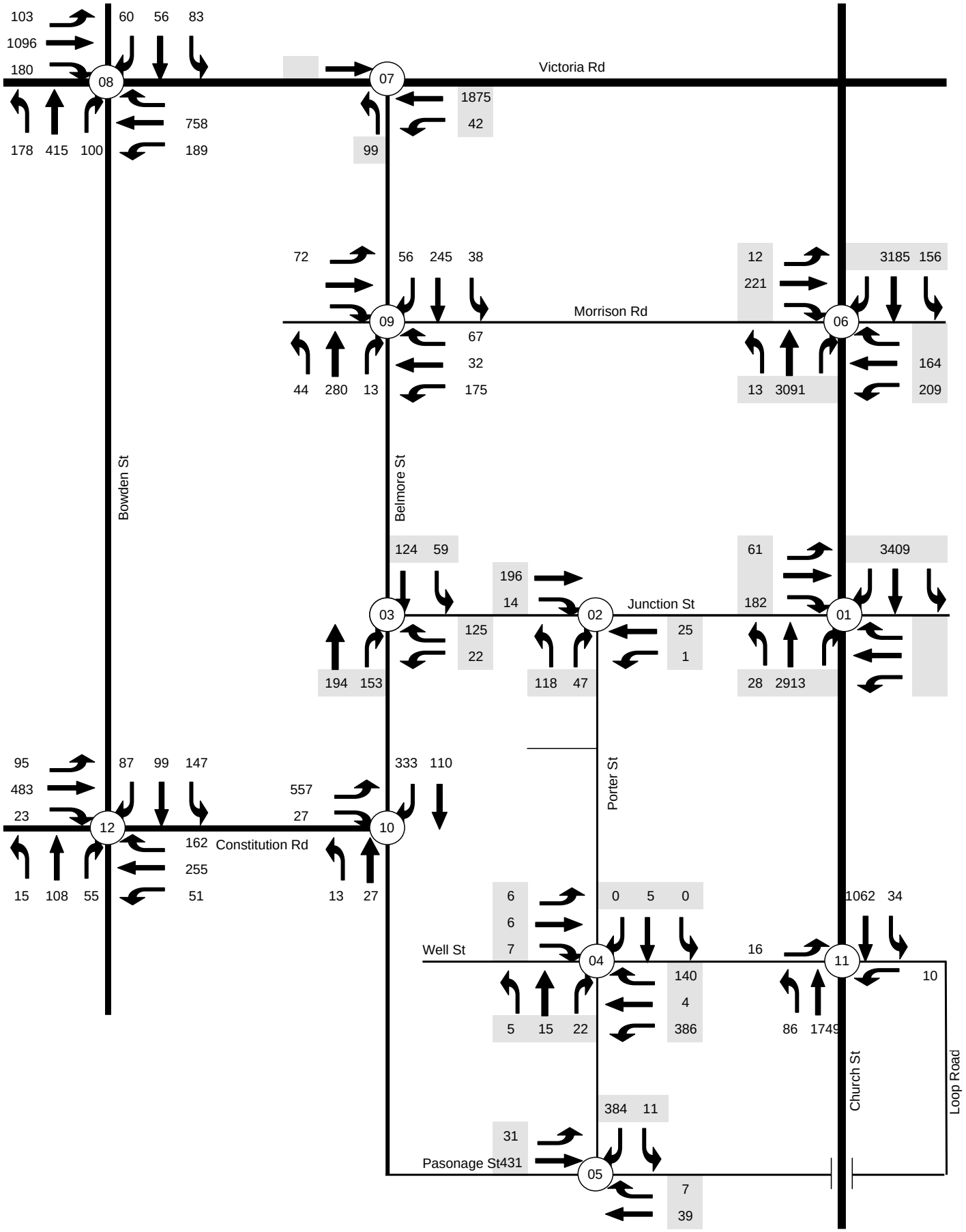


Figure 9

CTLROI - 76 Belmore St, Ryde

Future Base Morning Peak Traffic (Urban Horizon)

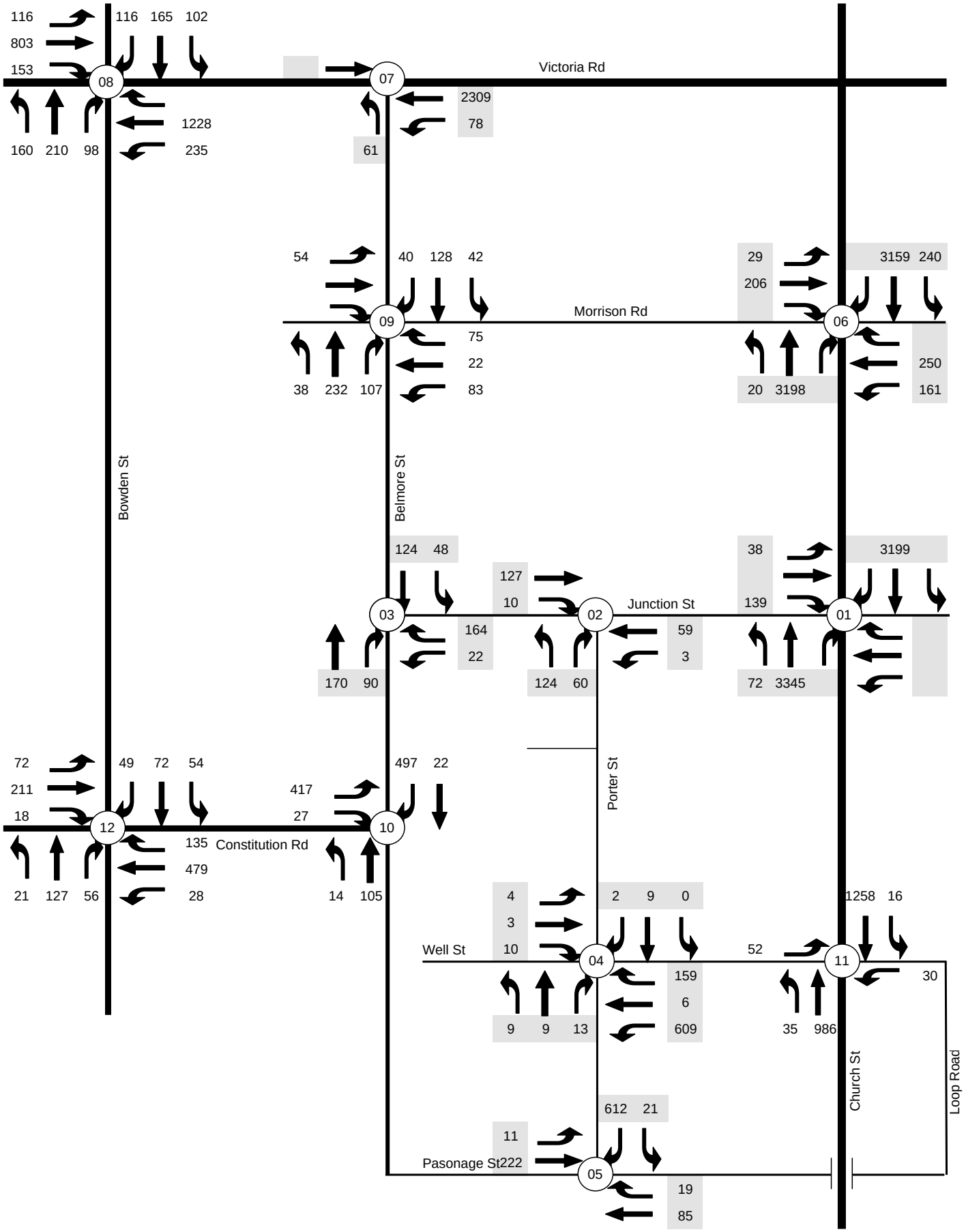


Figure 10

CTLROI - 76 Belmore St, Ryde

Future Base Evening Peak Traffic (Urban Horizon)

The distribution of additional Concept Plan development traffic flows to the surrounding road network is shown in Figure 11 and Figure 12.

5.3.3 Road Network Operation

The operation of future road network with and without the additional Concept Plan traffic generation has been assessed using the SIDRA intersection modelling software.

SIDRA determines the average delay that vehicles encounter, the degree of saturation of the intersection, and the level of service. SIDRA provides analysis of the operating conditions which can be compared to the performance criteria set out in Table 5-2.

Table 5-2 – Level of Service Criteria

Level of Service	Average Delay per Vehicle (secs/veh)	Signals & Roundabouts	Give Way & Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & Spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Extra capacity required	Extreme delay, traffic signals or other major treatment required

Adapted from RTA Guide to Traffic Generating Developments, 2002.

The results of the SIDRA analysis are presented in Table 5-3 and Table 5-4. It is noted that not all intersections analysed as part of this traffic assessment were analysed and reported in the Meadowbank Employment Area Transport Assessment.

The SIDRA analysis indicates no significant change to future intersection operation as a result of the proposed Concept Plan development.

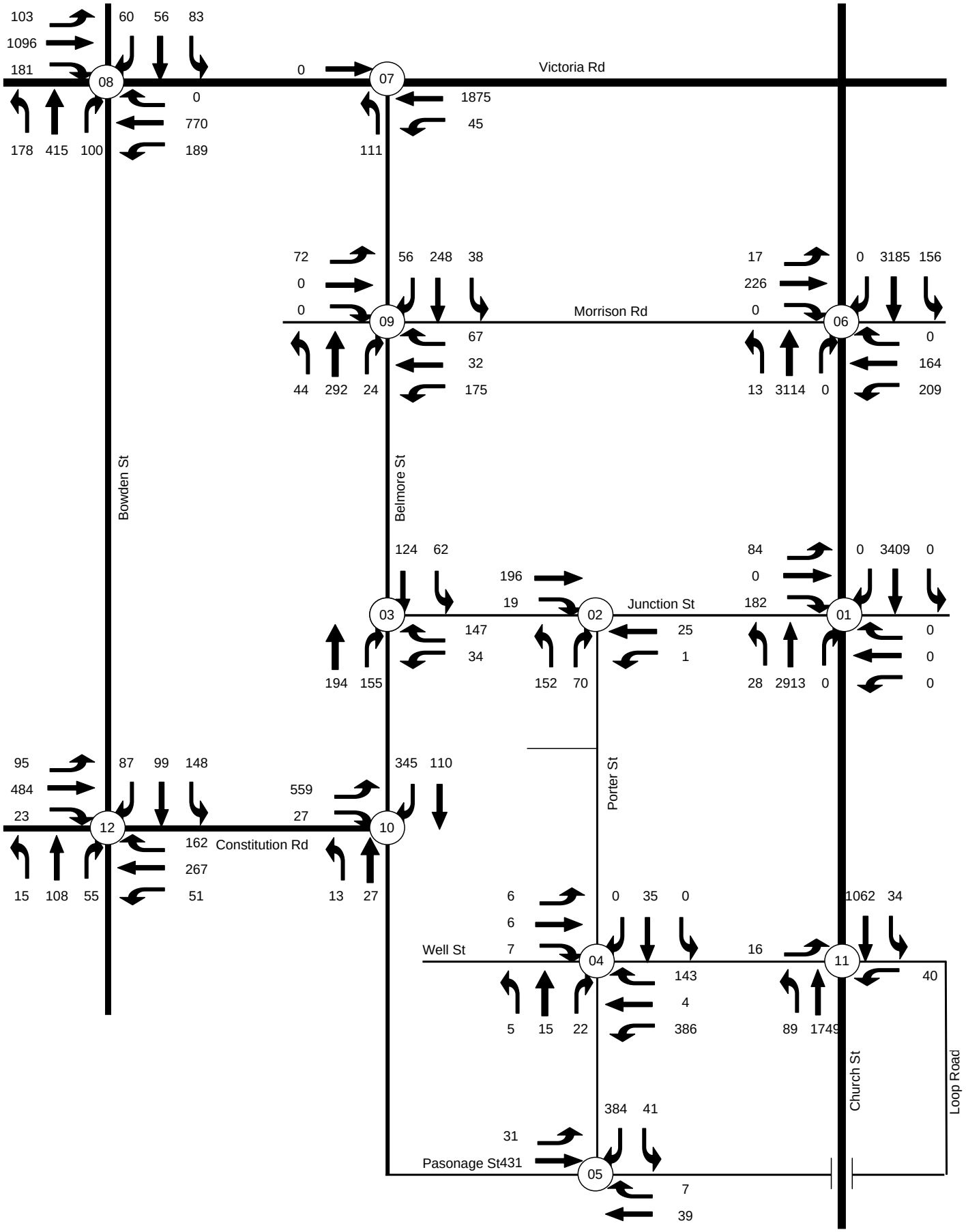


Figure 11

CTLROI - 76 Belmore St, Ryde

Future Urban Horizon Plus Extra Morning Peak Traffic

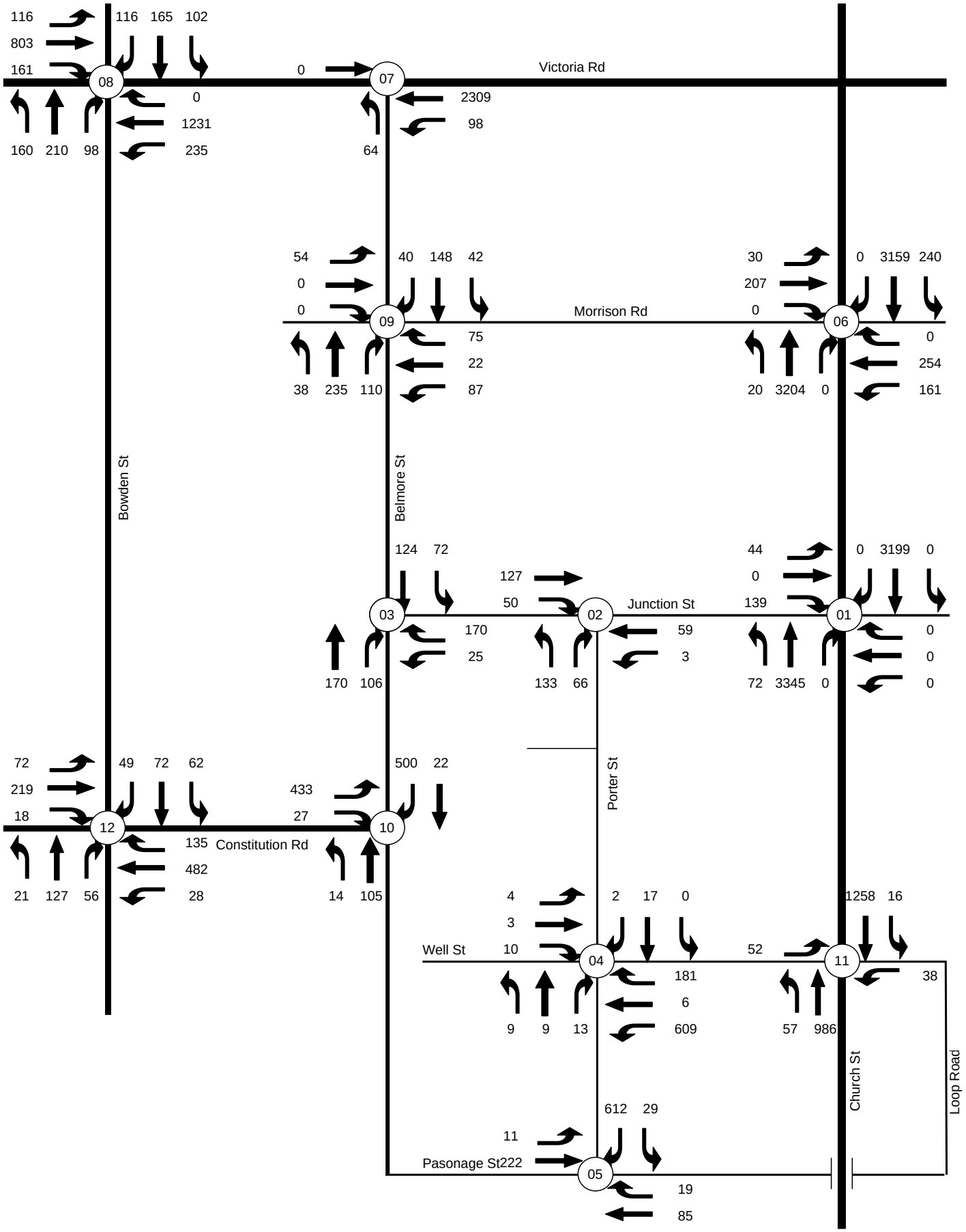


Figure 12

CTLROI - 76 Belmore St, Ryde

Future Urban Horizon Plus Extra Evening Peak Traffic

However changes in Level of Service were recorded at the following locations:

- Victoria Road / Bowden Street: LoS C to LoS D
- Constitution Road / Bowden Road : LoS A to LoS B

As outlined in Table 5.2 Level of Service D is considered to be an acceptable operating situation and as such the analysed intersections are predicted to continue to operate satisfactorily with a 470 dwelling yield on the Achieve Australia site.

Notwithstanding the above, all intersections in the surrounding road network would continue to operate at similar levels to those for the Meadowbank Employment Area development scenario with the additional traffic generated by the Concept Plan development.

Table 5-3 Future Intersection Operation - Meadowbank Employment Area Proposed Traffic Flows (ie. 184 Units)

Intersection	Control	AM Peak			PM Peak		
		LoS	Av. Delay	DoS	LoS	Av. Delay	DoS
Victoria Rd x Bowden St	Signals	C	31.9	0.81	C	30.5	0.80
Belmore St x Morrison Rd	Roundabout	A	8.5	0.24	A	8.3	0.18
Constitution Rd x Belmore St	Signals	B	15.5	0.71	B	17.2	1.00
Constitution Rd x Bowden St	Roundabout	A	10.8	0.66	A	10.9	0.51

Table 5-4 Future Intersection Operation - Proposed Concept Plan Traffic Flows (ie. 470 Units)

Intersection	Control	AM Peak			PM Peak		
		LoS	Av. Delay	DoS	LoS	Av. Delay	DoS
Junction St x Church St	Signals	B	16.3	0.88	B	16.5	0.89
Junction St x Porter St	Giveway	A	9.1	0.19	A	9.2	0.18
Belmore St x Junction St	Signals	B	19.9	0.39	B	20.3	0.43
Well St x Porter St	Roundabout	A	7.8	0.39	A	10.0	0.55
The Loop x The Parsonage St	Roundabout	A	13.6	0.52	A	12.2	0.62
Morrison Rd x Church St	Signals	B	17.2	0.87	B	18.9	0.88
Victoria Rd x Belmore St	Giveway	B	20.2	0.36	C	29.7	0.46
Victoria Rd x Bowden St	Signals	D	46.5	1.00	D	50.4	1.00
Belmore St x Morrison Rd	Roundabout	A	12.5	0.25	A	11.8	0.28
Belmore St x Yerong St	Giveway	A	9.4	0.23	A	9.1	0.18
Constitution Rd x Belmore St	Signals	B	25.0	1.00	B	25.0	1.00
Church St x Well St	Giveway	C	34.9	0.33	B	14.6	0.18
Church St x The Loop	Giveway	A	12.8	0.20	B	14.7	0.24
Constitution Rd x Bowden St	Roundabout	B	16.6	0.65	B	16.2	0.55

5.4 Public Transport

As noted in Section 2.5 the proposed development site and the Meadowbank Employment Area is well positioned within close proximity to a range of good public transport options, namely rail, bus and ferry services.

It is not considered necessary to provide additional public services to accommodate the site development but rather provide improved accessibility to these services and better information about such service to encourage increased use.

When combined with a reduced on site parking provision policy such as proposed, it is considered that the objectives of the DCP and other State planning policies to achieve a shift to public transport modes of travel are realistic and achievable.

It is envisaged that as part of any project applications or development applications for the site, that site specific Travel Plans would be prepared as part of the application.

Measures to be considered as part of travel plan measure would include:

- Walking:
  - Promotion of safe local walking routes including the provision of route maps
  - Improvements to (and maintenance of) the walking network and signage
  - Showers, changing facilities and lockers for storing clothes
  - On site security

- Cycling:
  - Improvements to (and maintenance of) the cycle network
  - Provision of cycle route maps and improvements to signage
  - Secure, well lit, covered cycle storage include pumps
  - Showers, changing facilities and lockers
  - Formation of a bicycle users group (BUG)
  - Pool bikes

- Public Transport:
  - Provision of clear public transport information (available direct from the local operator or the council)
  - Collaboration with local public transport providers to improve services, negotiate discounts and trial initiatives

- Car Sharing:
  - Introduction of a car sharing scheme
  - Consideration of joining hantscarshare.com
  - Provision of emergency ride home facility for car sharers

- Car Park management:
  - Review of car parking policy and introduce a management strategy
  - Review of the issuing of car park permits to ensure a fair system, based on agreed criteria e.g. operational need
  - Allocate priority parking space to car sharers

- Marketing and promotion:
  - Provision of information to all occupants, residents, visitors and staff on how to access the site by means other than the car through a variety of methods, including personal travel planning, notice boards, newsletters
  - Information packs for new residents
  - Hold events
  - Focus groups
  - Use of intranet/internet to disseminate information
  - Introduction of a personalised journey planning scheme

5.5 Pedestrian and Cyclist Facilities

Currently the site and its southern neighbours create a large privately owned block of land which restricts pedestrian access along the Constitution Road alignment in a east west direction between the Meadowbank Employment Area and Church Street.

It is proposed that a pedestrian link between the proposed site and its southern neighbour would be provided along the site's southern boundary between Belmore Street and Porter Street. When constructed, this link will connect to the already constructed pedestrian / cycle path between Church Street and Porter Street thus creating an east-west pedestrian and cycle access between Constitution Road and Church

This will provide local benefits to the Meadowbank Employment Area by improving pedestrian access to the Church Street bus stops and links to the local and regional cycle network.

6 Conclusions

This transport and access assessment report has considered the transport implications associated with the proposed Concept Plan for the redevelopment of the site at 76 Belmore Street Ryde.

The site is currently utilised by Achieve Australia for the provision of accommodation and administration service for intellectually disabled people.

The Concept Plan development seeks approval to development a residential apartment development providing 470 units.

Redevelopment of the Concept Plan site has been envisaged as part of the transport planning for the Meadowbank Employment Area. However the proposed Concept Plan seeks to increase the envisage apartment yield from approximately 184 units to 470 units.

The traffic assessment undertaken of the proposed development has concluded that the existing transport infrastructure as envisaged as part of the Meadowbank Employment Area urban renewal development can adequately accommodate the additional traffic generation of the site.

Notwithstanding the above, the proposed Concept Plan seeks to utilise the site's close proximity to good public transport services to achieve strategic and local transport objectives of reducing dependency upon the private motor vehicle mode of travel. This can be achieved through the reduced /constrained on site parking provisions which are proposed to be approximately 15% lower than the maximum allowable rates specified by the City of Ryde DCP 2010 for the Meadowbank Employment Area.

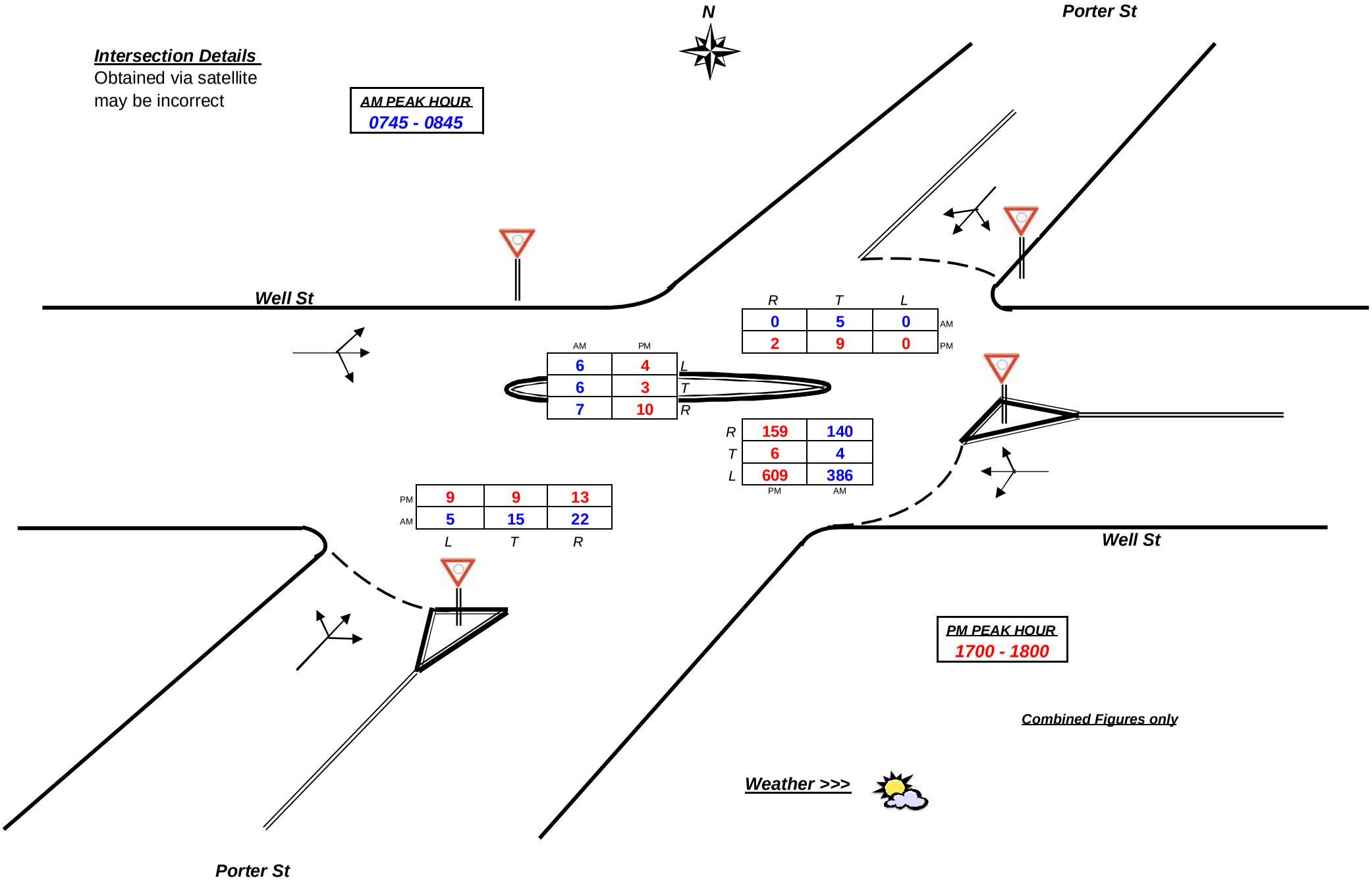
Appendix A Traffic Survey Results

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Halcrow
Job No/Name : 3342 MEADOWBANK Traffic Counts
Day/Date : Thursday 28th October 2010

Intersection Details
Obtained via satellite
may be incorrect

AM PEAK HOUR
0745 - 0845



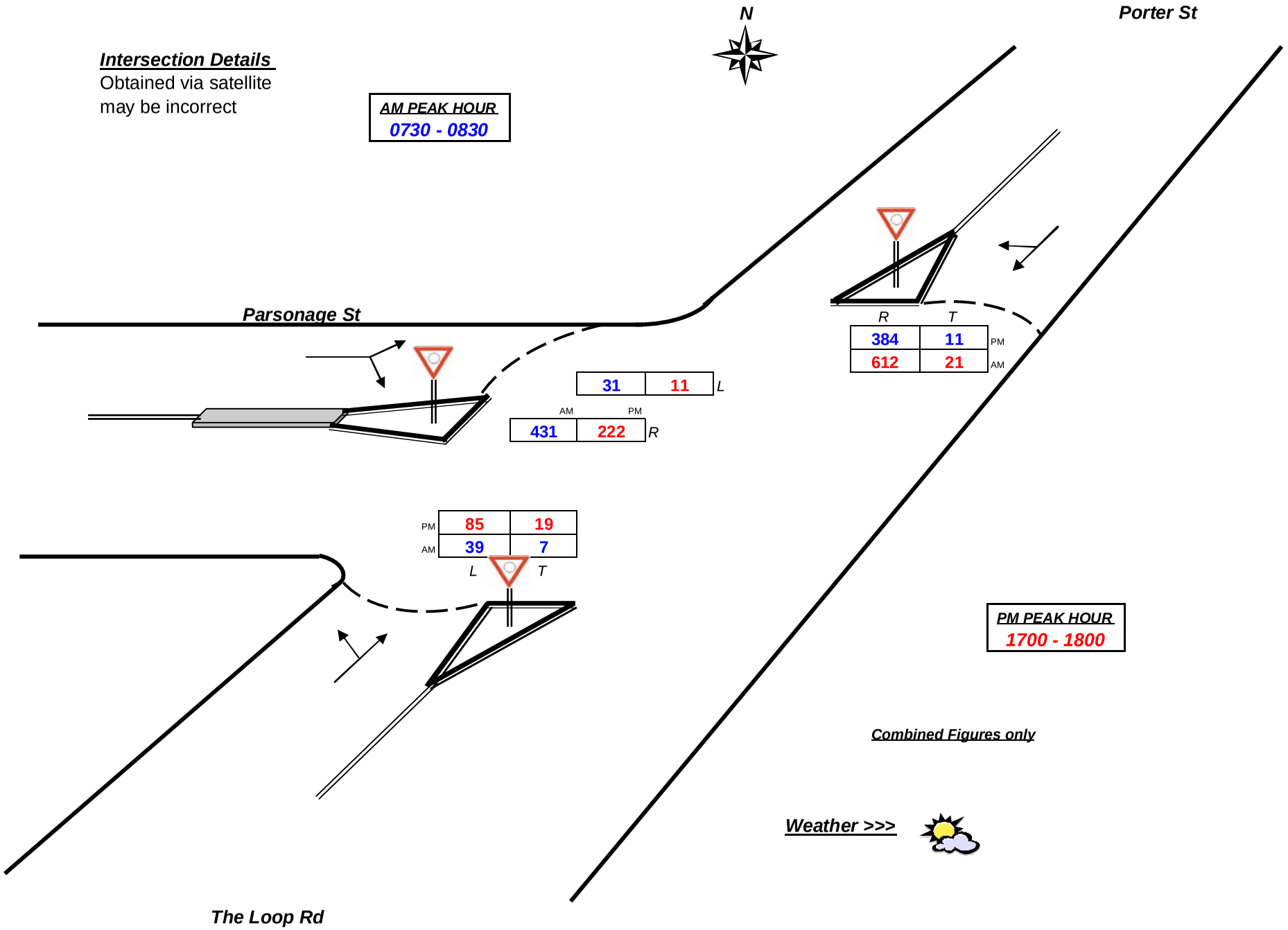
PM PEAK HOUR
1700 - 1800

Combined Figures only

Weather >>>

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Halcrow
Job No/Name : 3342 MEADOWBANK Traffic Counts
Day/Date : Thursday 28th October 2010



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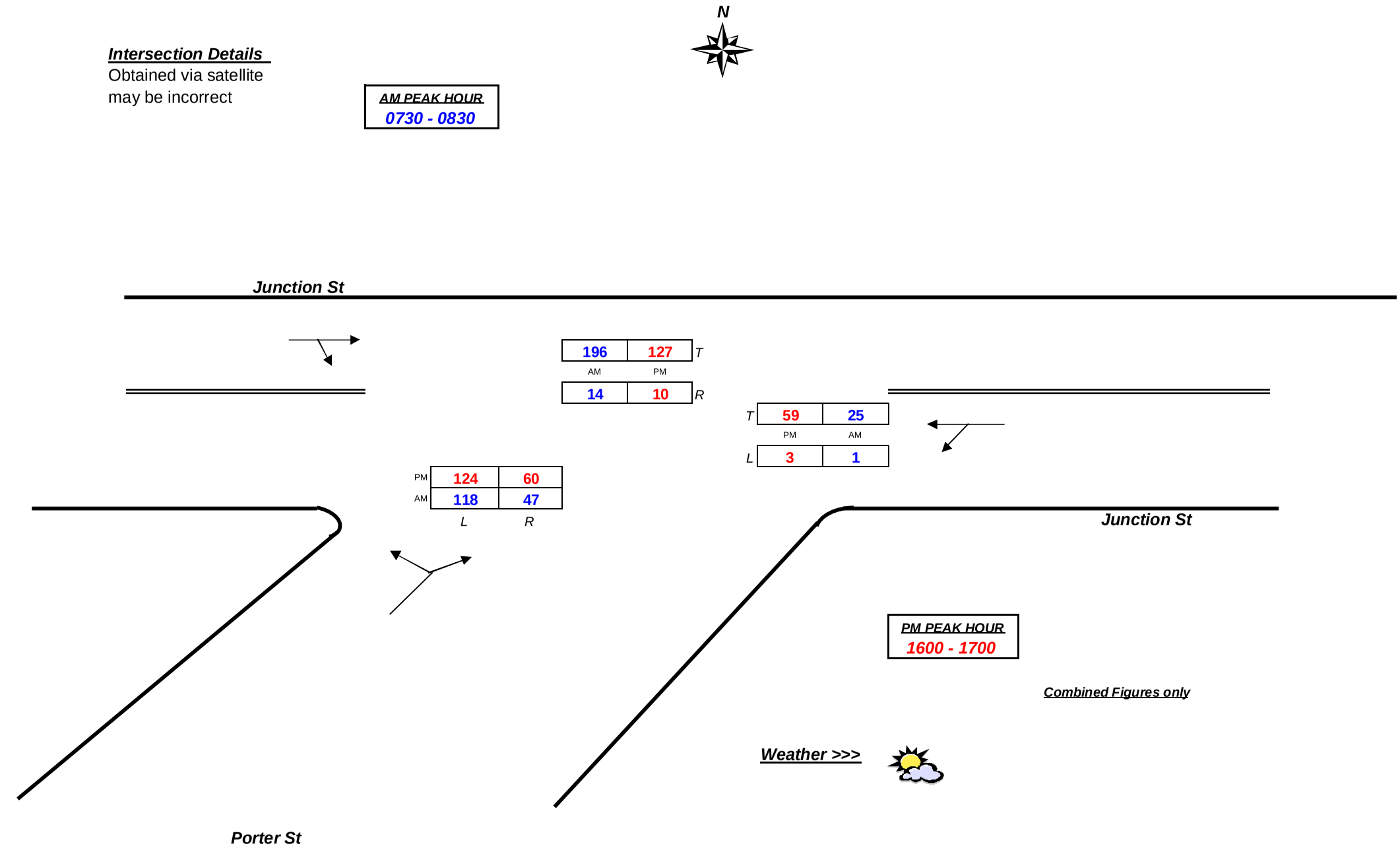
Client : Halcrow
Job No/Name : 3342 MEADOWBANK Traffic Counts
Day/Date : Thursday 28th October 2010

Intersection Details
Obtained via satellite
may be incorrect

AM PEAK HOUR
0730 - 0830



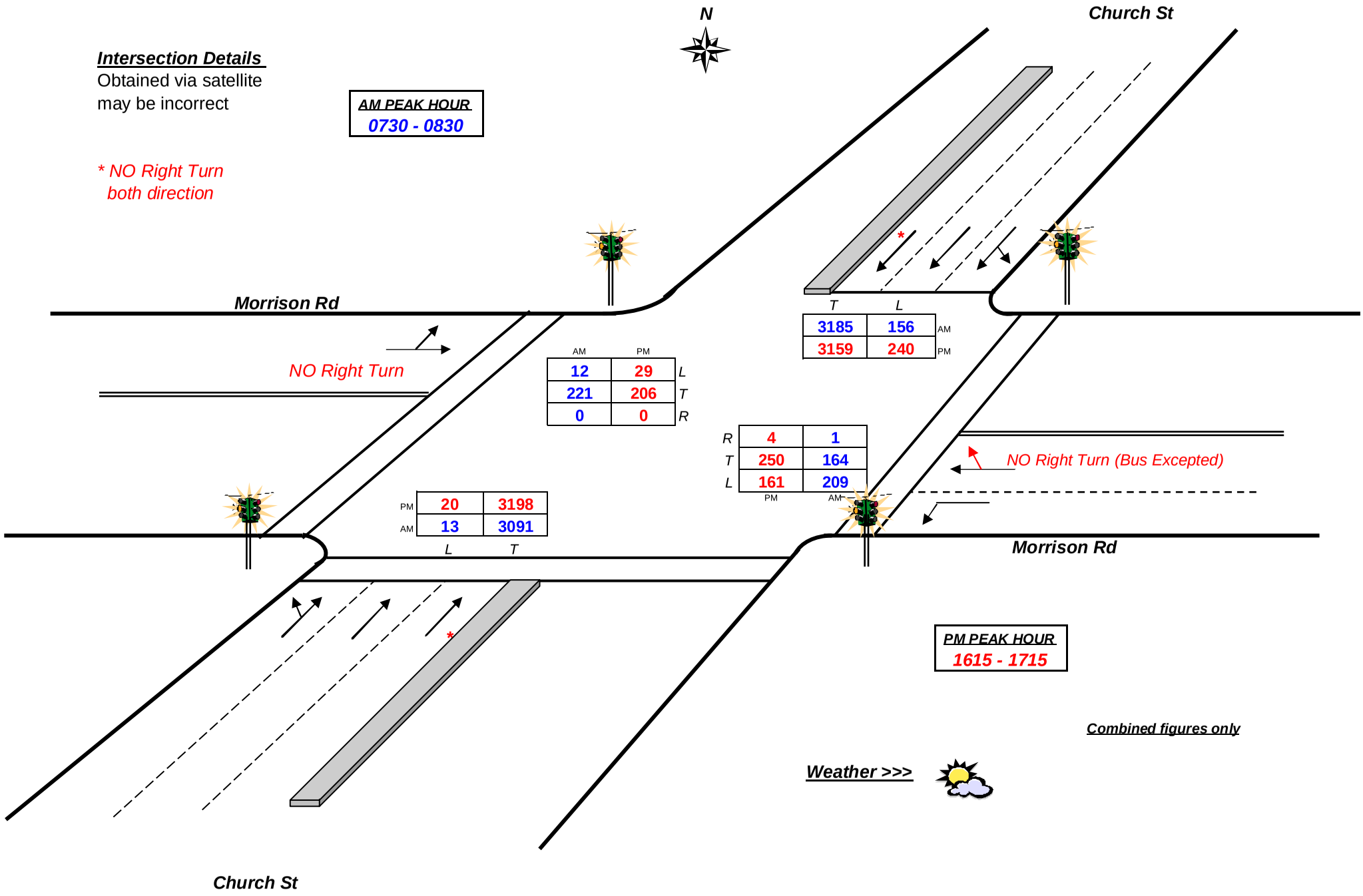
PM PEAK HOUR
1600 - 1700

Combined Figures only

Weather >>>

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Halcrow
Job No/Name : 3342 MEADOWBANK Traffic Counts
Day/Date : Thursday 28th October 2010



R.O.A.R. DATA
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Client : Halcrow
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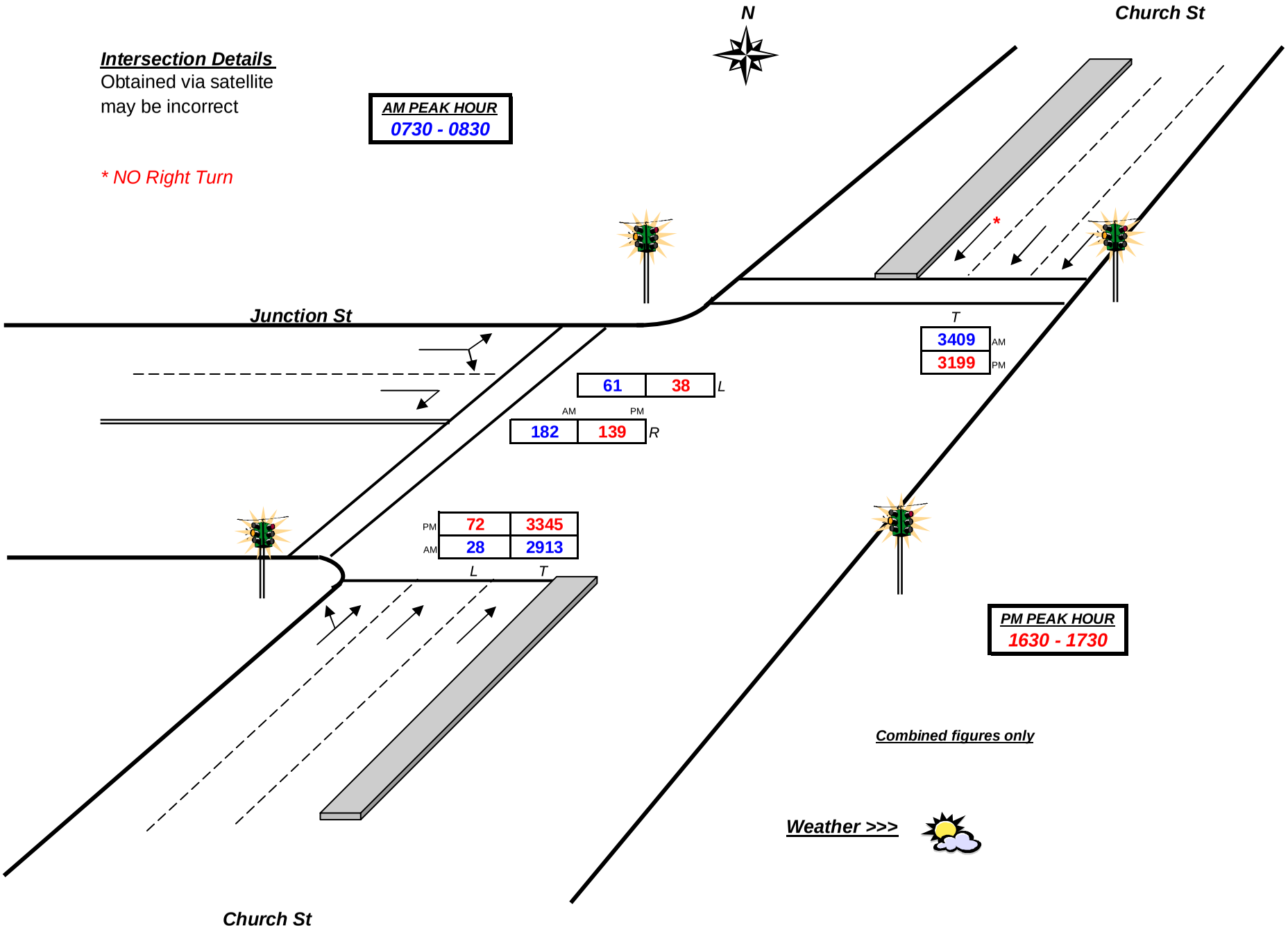
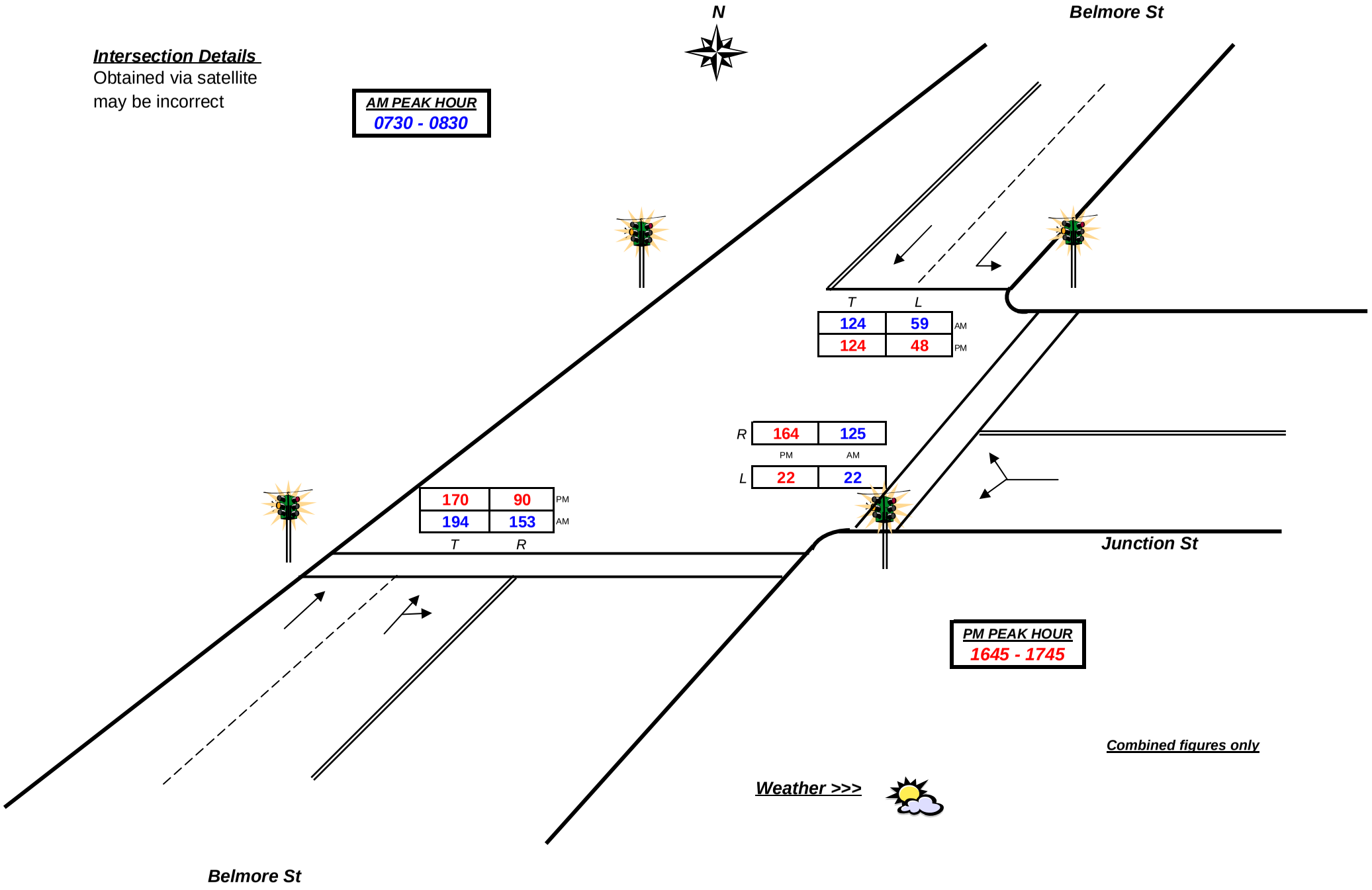


R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Halcrow
Job No/Name : 3342 MEADOWBANK Traffic Counts
Day/Date : Thursday 28th October 2010

Intersection Details
Obtained via satellite
may be incorrect

AM PEAK HOUR
0730 - 0830



PM PEAK HOUR
1645 - 1745

Combined figures only

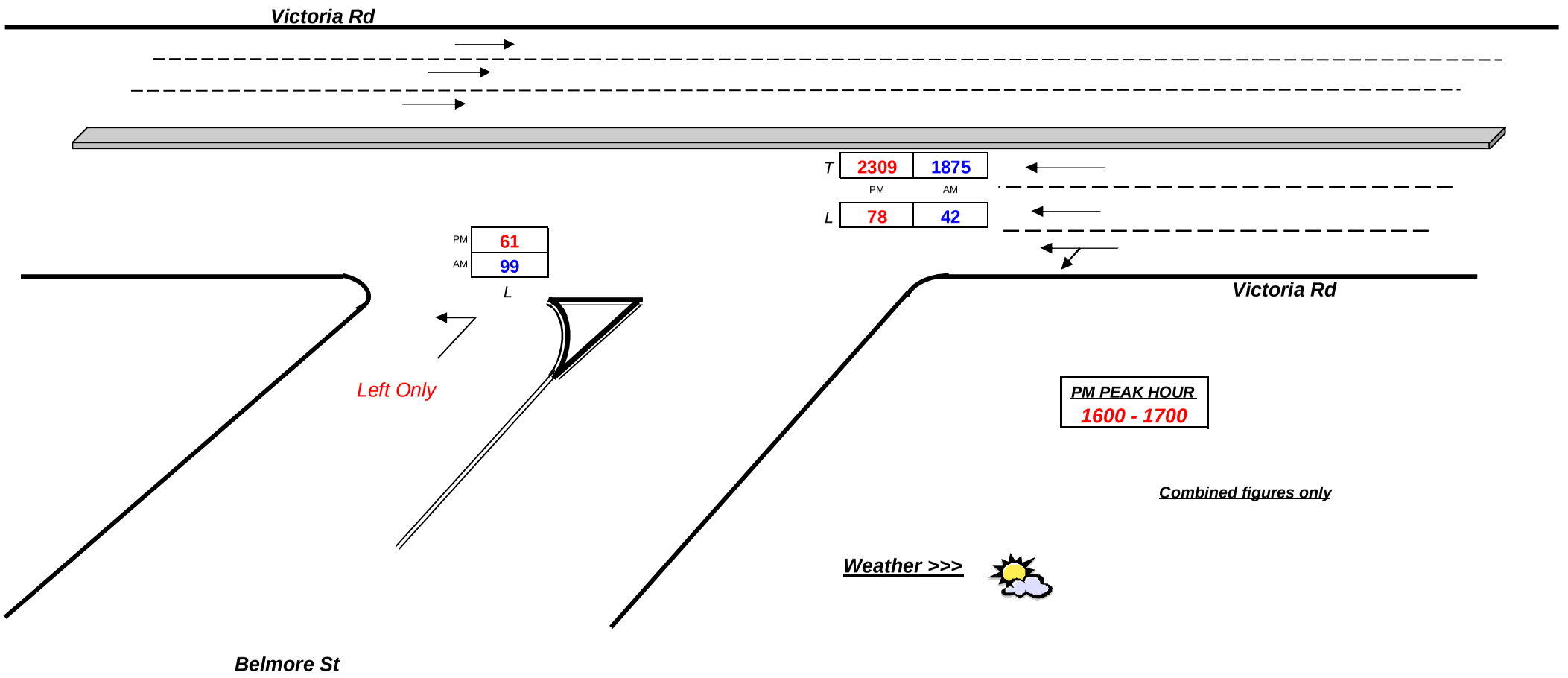
Weather >>>

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Halcrow
Job No/Name : 3342 MEADOWBANK Traffic Counts
Day/Date : Thursday 28th October 2010

Intersection Details
Obtained via satellite
may be incorrect

AM PEAK HOUR
0715 - 0815



PM PEAK HOUR
1600 - 1700

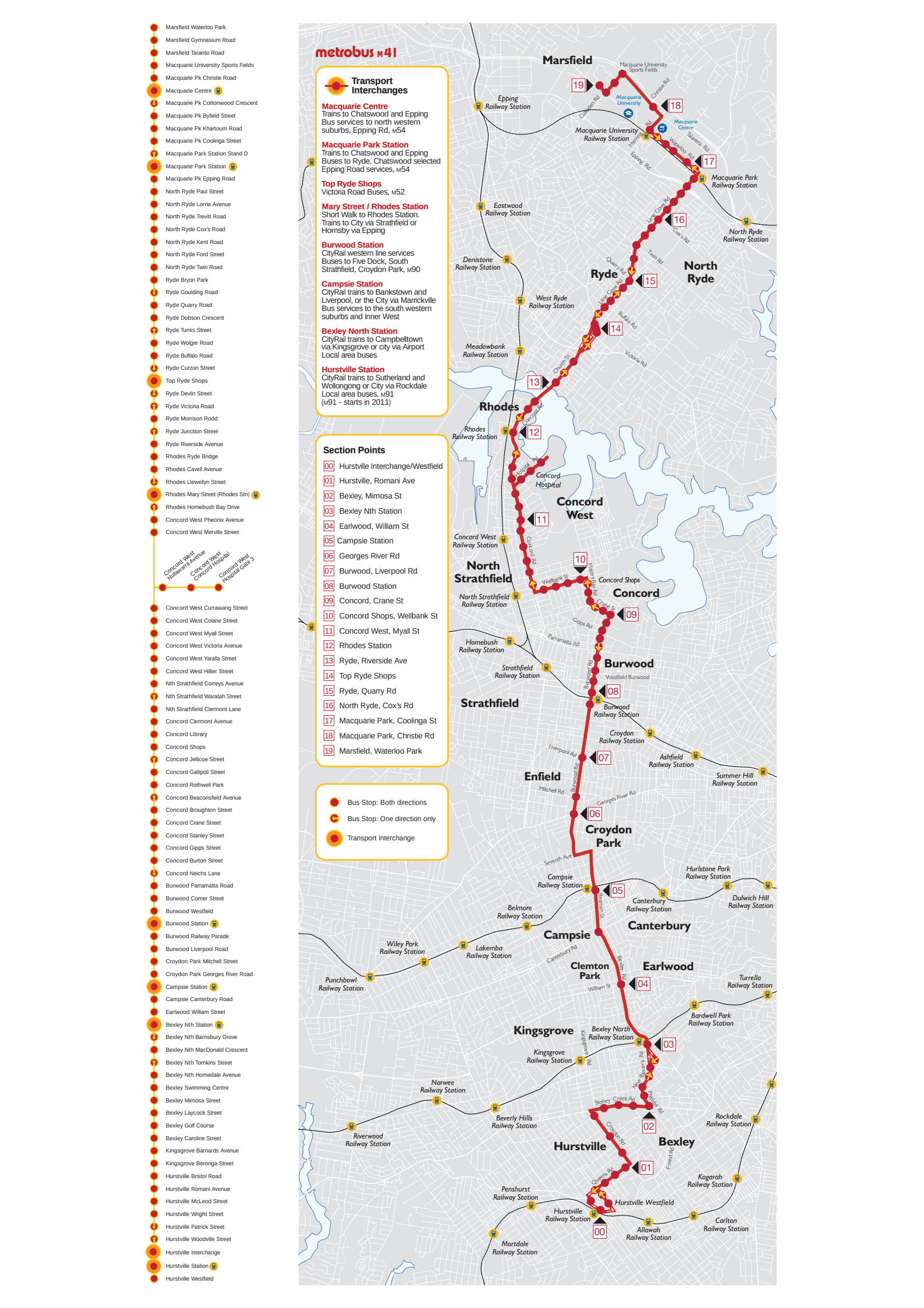
Combined figures only

Weather >>>

Appendix B Bus Route Plans

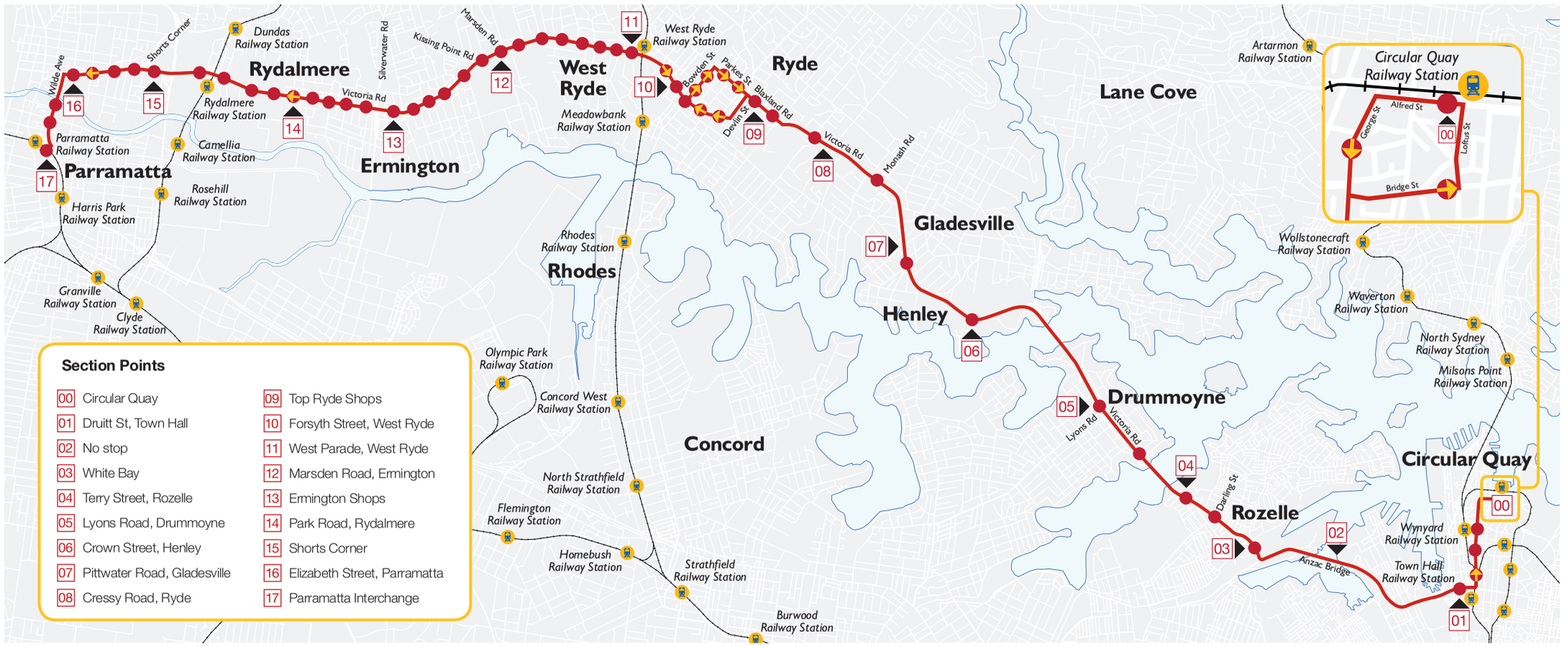
Source: www.131500.com.au


Eastwood Station
X15 543
515 551
521
541
Denistone East
297 PREPAY 286
East
X18 PREPAY
Denistone
Denistone Railway Station
Denistone West
West Ryde
West Ryde Station
501 534
523 543
Ryde
458
500
X00 PREPAY
Ryde
524
North Ryde
East Ryde
X06 PREPAY
Sager Place
Lane Cove West
Mars Rd
285
258
Boronia Park
Lane Cove West
251
252
Bus Depot
287
510
X00 X18 PREPAY
Gladesville
536 538
Meadowbank
Meadowbank Railway Station
Meadowbank Wharf
513
Sydney Olympic Park Wharf
401
Rhodes
Rhodes Railway Station
Putney
458
459
Concord Hospital
460
Homebush Bay
Melrose Park
Street Legend:
1. Sam Johnson Wy
2. Orion Rd
3. Sirius Rd


Marsfield Waterloo Park
Marsfield Gymnasium Road
Marsfield Taranto Road
Macquarie University Sports Fields
Macquarie Pk Christie Road
Macquarie Centre
Macquarie Pk Cottonwood Crescent
Macquarie Pk Byfield Street
Macquarie Pk Khartoum Road
Macquarie Pk Coolinga Street
Macquarie Park Station Stand D
Macquarie Park Station
Macquarie Pk Epping Road
North Ryde Paul Street
North Ryde Lorna Avenue
North Ryde Trevitt Road
North Ryde Cox's Road
North Ryde Kent Road
North Ryde Ford Street
North Ryde Twin Road
Ryde Bryon Park
Ryde Goulding Road
Ryde Quarry Road
Ryde Dobson Crescent
Ryde Tunks Street
Ryde Wolger Road
Ryde Buffalo Road
Ryde Curzon Street
Top Ryde Shops
Ryde Devlin Street
Ryde Victoria Road
Ryde Morrison Rodd
Ryde Junction Street
Ryde Riverside Avenue
Rhodes Ryde Bridge
Rhodes Cavell Avenue
Rhodes Llewellyn Street
Rhodes Mary Street (Rhodes Stn)
Rhodes Homebush Bay Drive
Concord West Pheonix Avenue
Concord West Merville Street
Concord West Nullawarra Avenue
Concord West Concord Hospital
Concord West Hospital Gate 3
Concord West Currawang Street
Concord West Colane Street
Concord West Myall Street
Concord West Victoria Avenue
Concord West Yaralla Street
Concord West Hillier Street
Nth Strathfield Correys Avenue
Nth Strathfield Waratah Street
Nth Strathfield Clermont Lane
Concord Clermont Avenue
Concord Library
Concord Shops
Concord Jellicoe Street
Concord Gallipoli Street
Concord Rothwell Park
Concord Beaconsfield Avenue
Concord Broughton Street
Concord Crane Street
Concord Stanley Street
Concord Gipps Street
Concord Burton Street
Concord Neichs Lane
Burwood Parramatta Road
Burwood Comer Street
Burwood Westfield
Burwood Station
Burwood Railway Parade
Burwood Liverpool Road
Croydon Park Mitchell Street
Croydon Park Georges River Road
Campsie Station
Campsie Canterbury Road
Earlwood William Street
Bexley Nth Station
Bexley Nth Barnsbury Grove
Bexley Nth MacDonald Crescent
Bexley Nth Tomkins Street
Bexley Nth Homedale Avenue
Bexley Swimming Centre
Bexley Mimosa Street
Bexley Laycock Street
Bexley Golf Course
Bexley Caroline Street
Kingsgrove Barnards Avenue
Kingsgrove Beronga Street
Hurstville Bristol Road
Hurstville Romani Avenue
Hurstville McLeod Street
Hurstville Wright Street
Hurstville Patrick Street
Hurstville Woodville Street
Hurstville Interchange
Hurstville Station
Hurstville Westfield
metrobus M41
Transport Interchanges
Macquarie Centre
Trains to Chatswood and Epping
Bus services to north western suburbs, Epping Rd, M54
Macquarie Park Station
Trains to Chatswood and Epping
Buses to Ryde, Chatswood selected Epping Road services, M54
Top Ryde Shops
Victoria Road Buses, M52
Mary Street / Rhodes Station
Short Walk to Rhodes Station.
Trains to City via Strathfield or Hornsby via Epping
Burwood Station
CityRail western line services
Buses to Five Dock, South Strathfield, Croydon Park, M90
Campsie Station
CityRail trains to Bankstown and Liverpool, or the City via Marrickville
Bus services to the south western suburbs and Inner West
Bexley North Station
CityRail trains to Campbelltown via Kingsgrove or city via Airport
Local area buses
Hurstville Station
CityRail trains to Sutherland and Wollongong or City via Rockdale
Local area buses, M91
(M91 - starts in 2011)
Section Points
00 Hurstville Interchange/Westfield
01 Hurstville, Romani Ave
02 Bexley, Mimosa St
03 Bexley Nth Station
04 Earlwood, William St
05 Campsie Station
06 Georges River Rd
07 Burwood, Liverpool Rd
08 Burwood Station
09 Concord, Crane St
10 Concord Shops, Wellbank St
11 Concord West, Myall St
12 Rhodes Station
13 Ryde, Riverside Ave
14 Top Ryde Shops
15 Ryde, Quarry Rd
16 North Ryde, Cox's Rd
17 Macquarie Park, Coolinga St
18 Macquarie Park, Christie Rd
19 Marsfield, Waterloo Park
Bus Stop: Both directions
Bus Stop: One direction only
Transport Interchange
Marsfield
Macquarie University Sports Fields
Epping Railway Station
Macquarie University
Macquarie University Railway Station
Macquarie Centre
Macquarie Park Railway Station
Eastwood Railway Station
North Ryde Railway Station
Denistone Railway Station
Ryde
North Ryde
West Ryde Railway Station
Meadowbank Railway Station
Rhodes
Rhodes Railway Station
Concord Hospital
Concord West
Concord West Railway Station
North Strathfield
North Strathfield Railway Station
Concord Shops
Concord
Homebush Railway Station
Strathfield Railway Station
Burwood
Westfield Burwood
Strathfield
Burwood Railway Station
Croydon Railway Station
Ashfield Railway Station
Summer Hill Railway Station
Enfield
Croydon Park
Hurlstone Park Railway Station
Campsie Railway Station
Canterbury Railway Station
Dulwich Hill Railway Station
Belmore Railway Station
Canterbury
Campsie
Wiley Park Railway Station
Lakemba Railway Station
Punchbowl Railway Station
Clemton Park
Earlwood
Turrella Railway Station
Bardwell Park Railway Station
Kingsgrove
Bexley North Railway Station
Kingsgrove Railway Station
Narwee Railway Station
Beverly Hills Railway Station
Riverwood Railway Station
Stoney Creek Rd
Rockdale Railway Station
Hurstville
Bexley
Penshurst Railway Station
Hurstville Westfield
Hurstville Railway Station
Kogarah Railway Station
Carlton Railway Station
Allawah Railway Station
Mortdale Railway Station

Here are a few of the many places accessible on Metrobus M52

- **Parramatta Interchange** - CityRail trains, local bus services, Westfield Shopping Centre, historical sites, cafés and restaurants.
- **UWS Parramatta** - UWS Parramatta Campus.
- **Bridge Street Rydalmere** - Rydalmere Station.
- **Ermington Shops** - Shopping centre.
- **West Ryde Shops** - Short walk to West Ryde Station for northern line trains, and West Ryde shopping centre.
- **Top Ryde** - for Top Ryde City Shopping Centre and interchange for local bus services.
- **Massey Street** - Gladesville shopping centre.
- **Lyons Road** - Shopping and interchange to Lyons Road Buses.
- **Birkenhead Point** - Birkenhead Point shopping centre, Birkenhead Point ferry wharf.
- **Darling Street, Rozelle** - Cafés, restaurants, buses to Balmain.
- **Druitt St/QVB** - Access to Town Hall Station, QVB, the Galeries Victoria and other shops. George Street buses to western and inner western suburbs. Park Street for Metrobus 10-40. Castlereagh Street for buses to southern and western (Newtown) suburbs. Elizabeth Street for eastern buses.
- **Wynyard** - CityRail trains, north shore line, western lines and city circle.
- **Circular Quay** - Ferry services and cruises, short walk to the Opera House and The Rocks.



Appendix C Meadowbank Employment Area DCP Access Structure

Source: City of Ryde Development Control Plan 2010
Part 4.2 Meadowbank Employment Area – Master Plan.

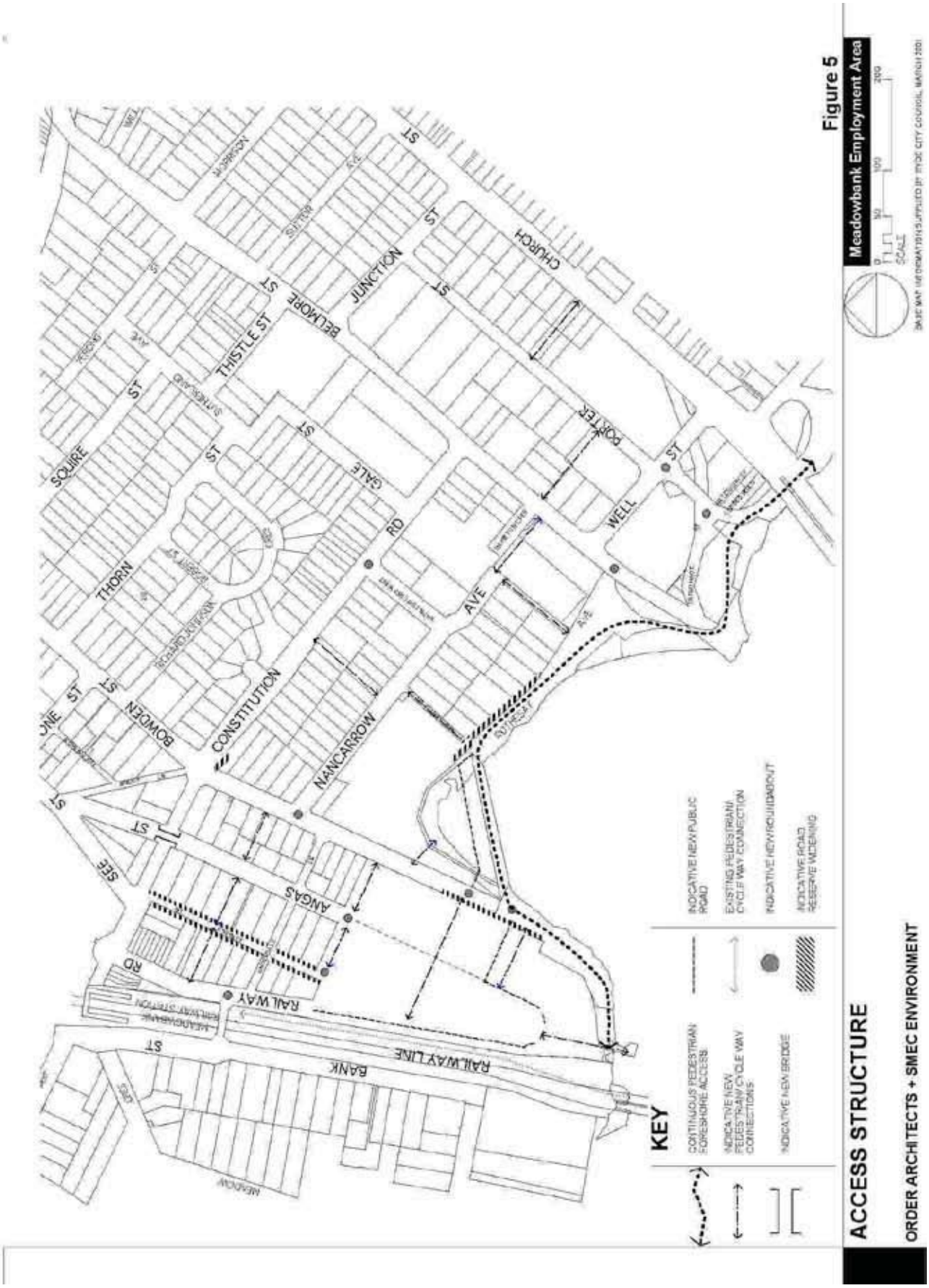


Figure 5
Meadowbank Employment Area
ACCESS STRUCTURE
ORDER ARCHITECTS + SMEC ENVIRONMENT
KEY
CONTINUOUS PEDESTRIAN FORESHORE ACCESS
INDICATIVE NEW PEDESTRIAN/ CYCLE WAY CONNECTIONS
INDICATIVE NEW BRIDGE
INDICATIVE NEW PUBLIC ROAD
EXISTING PEDESTRIAN/ CYCLE WAY CONNECTION
INDICATIVE NEW ROUNDABOUT
INDICATIVE ROAD RESERVE WIDENING
RAILWAY LINE
BANK ST
RAILWAY
ANGAS
CONSTITUTION
NANCARROW
BOWDEN ST
THORN
SQUIRE
THISTLE ST
BELMORE
JUNCTION
CHURCH
POTTER
WELL
GALE
AVE
RD

Appendix D Meadowbank Employment Area Proposed Traffic Facilities – Works Program (2005)

Source: Meadowbank Employment Area – Master Plan Transport Assessment, Urban Horizon (July 2010)

MEADOWBANK EMPLOYMENT AREA

Proposed Traffic Facilities.

(1) BOWDEN STREET

East side between Constitution Road and existing cycleway, parking, kerb and gutter and road shoulder construction.

(2) UNDERDALE LANE

Resurfacing, reconstruct kerb and gutter and construct footpath paving along both sides.

(3) FARADAY LANE

Widen from 7.62m to 9.4m, reconstruct kerb and gutter, resurface and construct footpath paving along both sides.

(4) RAILWAY ROAD

(a) Construct a roundabout at the railway bridge.
(b) Construct pedestrian signals (RTA approval required) at the intersection of Constitution Road.

(5) CONSTITUTION ROAD

(a) Construct 2-lane bridge (11m x 25m) over Constitution Road and Angas Street.
(b) Construct roundabout at See Street.
(c) Construct traffic signals (with RTA approval) at Bowden Street intersection.
(d) Widen parking lanes on the southern side on either side of Hamilton Crescent West.

(6) ANGAS STREET

(a) Construct roundabout at See Street.
(b) Provide additional parking, footpath paving and resurface road between See Street and proposed bridge over Constitution Road.

(7) NANCARROW AVENUE

Road widening to at least 11m measured kerb-to-kerb, involving kerb and gutter reconstruction and drainage reconstruction.

(8) HAMILTON CRESCENT WEST

Construction of footpaths, kerb and gutter and road shoulders.

(9) PORTER STREET

Extension of drainage only.

(10) ROTHESAY AVENUE

- Road widening.
- Bikeway and footpath.
- Roundabout at Belmore Street.
- Roundabout at Bowden Street.

(11) SMORGON SITE

33% contribution for the extension of Rothesay Avenue to Bowden Street.

(12) OTHER TRAFFIC FACILITIES BY DEVELOPERS.

- Roundabout – Porter Street / Wells Street
- Roundabout – The Loop Road / Parsonage Street
- Roundabout – Parsonage Road / Belmore Street.