



Fitzroy Gasworks Masterplan Transport Review

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|---------------------|----------------------|
| Client // | Development Victoria |
| Office // | VIC |
| Reference // | V126500 |
| Date // | 27/11/17 |

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Quality Record


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Table of Contents

| | |
|--|-----------|
| 1. Introduction | 1 |
| 2. Site Context | 3 |
| 3. Transport Policy | 5 |
| 4. Previous GHD Report | 8 |
| 5. Sustainable Transport Considerations | 13 |
| 6. Car Parking | 15 |
| 7. Traffic Impact & Access Considerations | 20 |
| 8. Loading Facilities | 23 |
| 9. Conclusion | 24 |

Appendices

A: Existing Conditions

Figures

| | | |
|-------------|---|----|
| Figure 1.1: | Urban Village Summary | 1 |
| Figure 1.2: | Ground Floor Plan | 1 |
| Figure 2.1: | Subject Site and its Environs | 3 |
| Figure 2.2: | Land Zoning Map | 4 |
| Figure 3.1: | VicRoads SmartRoads Network Operating Plan | 6 |
| Figure 4.1: | GHD Report – Dimensions of Coach Parking Bay | 9 |
| Figure 4.2: | GHD Report – AM and PM Traffic Volumes at Smith St / Alexandra Pde | 11 |
| Figure 4.3: | SCATS – AM and PM Traffic Volumes at Smith St / Alexandra Pde | 11 |
| Figure 4.4: | GHD Report – AM and PM Traffic Volumes at Smith St / Queens Pde | 11 |
| Figure 4.5: | SCATS – AM and PM Traffic Volumes at Smith St / Queens Pde | 11 |
| Figure 4.6: | GHD Report – AM and PM Traffic Volumes at George St / Alexandra Pde | 11 |
| Figure 4.7: | SCATS – AM and PM Traffic Volumes at George St / Alexandra Pde | 11 |
| Figure 6.1: | Coach Parking Options | 19 |

Tables

| | | |
|------------|--|---|
| Table 1.1: | Development Schedule | 1 |
| Table 4.1: | Development Scenarios as per Table 3.1 of GHD Report | 8 |

| | | |
|------------|---|----|
| Table 4.2: | GHD Empirical Car Parking Requirements | 8 |
| Table 4.3: | GHD Traffic Generation Rates | 10 |
| Table 4.4: | GHD Traffic Generation Summary | 10 |
| Table 5.1: | Statutory Requirement for Bicycle Facilities | 13 |
| Table 6.1: | Statutory Car Parking Requirements | 15 |
| Table 6.2: | Empirical Car Parking Requirements | 17 |
| Table 6.3: | Anticipated Overall Car Parking Demand Parcel A-D | 17 |
| Table 6.4: | Anticipated Overall Car Parking Demand School/Sports Parcel | 18 |
| Table 7.1: | GHD Traffic Generation Rates | 21 |
| Table 7.2: | Summary of trip generation | 21 |
| Table 7.3: | Modifications to Existing Network | 22 |

1. Introduction

Background & Proposal

A master plan is currently being prepared for the development of the Fitzroy Gasworks site in Fitzroy North. The land bounded by Queens Parade to the north, Smith Street to the east, Alexandra Parade to the south and George Street to the west.

The master plan includes the development of an Urban Village including five building parcels. Parcels A – D comprise residential, retail and childcare land uses. An education and recreation precinct (containing sports courts and a school) is proposed on the north-western corner of the site as detailed in Figure 1.1 and Figure 1.2. The mix of land uses is summarised in Table 1.1.

Figure 1.1: Urban Village Summary



Figure 1.2: Ground Floor Plan



Table 1.1: Development Schedule

| Use | Size |
|----------------------|------------------|
| Residential | 1,208 apartments |
| Secondary School | 10,600sqm |
| Indoor Sports Courts | 6 courts |
| Retail / Shops | 4,305sqm |
| Childcare | 120 places |

It is proposed to provide a total of 769 car parking spaces including 649 for residents, retail and childcare and 120 for the sports courts. The car parking spaces will be allocated within the basements of individual buildings to support the associated land uses. Some at grade car parking spaces will be provided for visitors and pick up-drop off.

The vehicle access to each parcel is summarised below:

- Parcel A – via the service lane on Queens Parade
- Parcel B – on the western side of Parcel B, via the proposed internal road
- Parcel C – on the western side of Parcel C, via the proposed internal road
- Parcel D – on the eastern side of Parcel D, via the proposed internal road
- School and Sports Courts – via the proposed internal road off George Street

GTA Consultants was commissioned by Development Victoria in April 2017 to undertake a transport review of the master plan proposal.

Purpose of this Report

The report sets out a review of the anticipated parking, traffic and transport implications of the master plan proposal, including consideration of the:

- i the adequacy of the proposed pedestrian, bicycle and public transport access arrangements to the site
- ii the adequacy of the proposed bicycle parking arrangements in terms of supply (quantum) and layout
- iii the adequacy of the proposed car parking provision
- iv the adequacy of the proposed site layout
- v the adequacy of the proposed arrangements for loading and waste collection
- vi the acceptability of the traffic impacts of the proposed development, including the need for mitigating road works and appropriate vehicular access.

It should be noted that, as the site abuts a Road Zone 1, any future development application for the site would be required to be referred to VicRoads under Clause 52.29 and Clause 66.03 of the Planning Scheme.

References

In preparing this report, reference has been made to the following:

- plans for the proposed development prepared by Development Victoria, revision M, dated August 2017
- Yarra Planning Scheme
- Australian Standard / New Zealand Standard, Parking Facilities (AS2890)
- other documents as nominated.

2. Site Context

Subject Site

The subject site is located at 111 Queens Parade and 433 Smith Street in Fitzroy North. The site of approximately 39,000m² has frontages of:

- 237m to Queens Parade
- 271m to Smith Street
- 193m to Alexandra Parade
- 135m to George Street

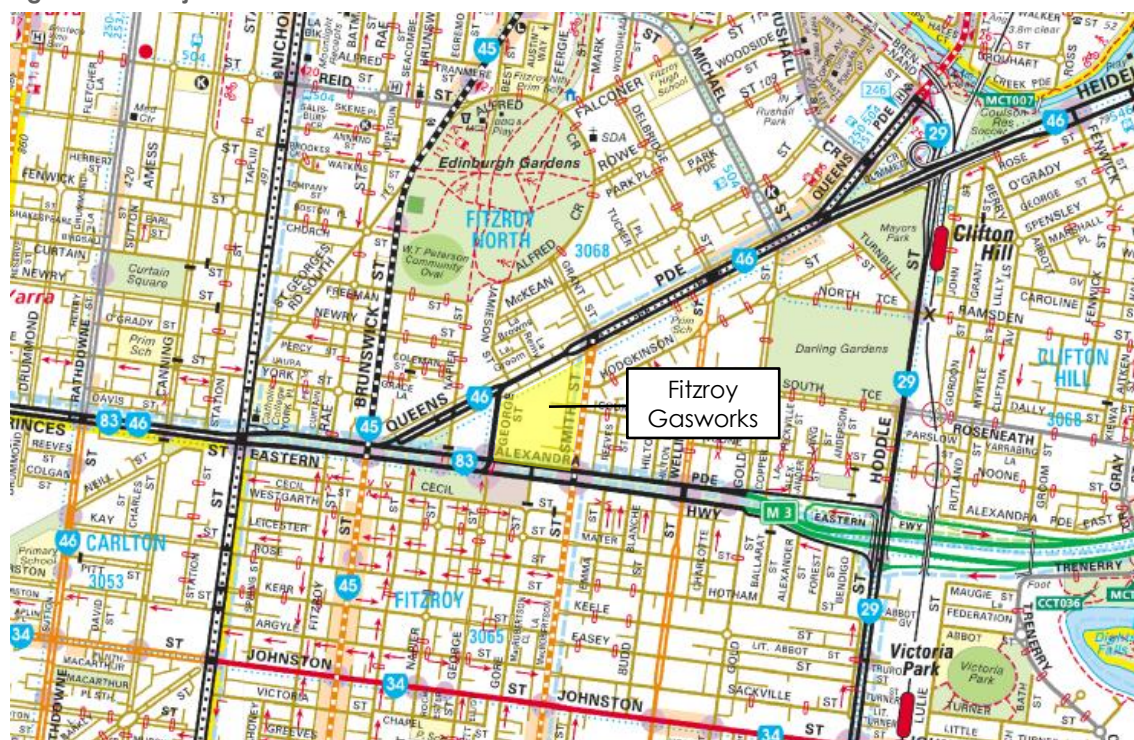
Queens Parade, Alexandra Parade and George Streets are located within a Road Zone Category 1.

The site is located within a Public Use Zone 1 (Service & Utility) and Public Use Zone 6 (Local Government) and is currently occupied by the City of Yarra's Operations Depot and Silver Top Taxi School. Part of the site remains unused.

The surrounding properties include a mix of residential, industrial, commercial and recreational land uses.

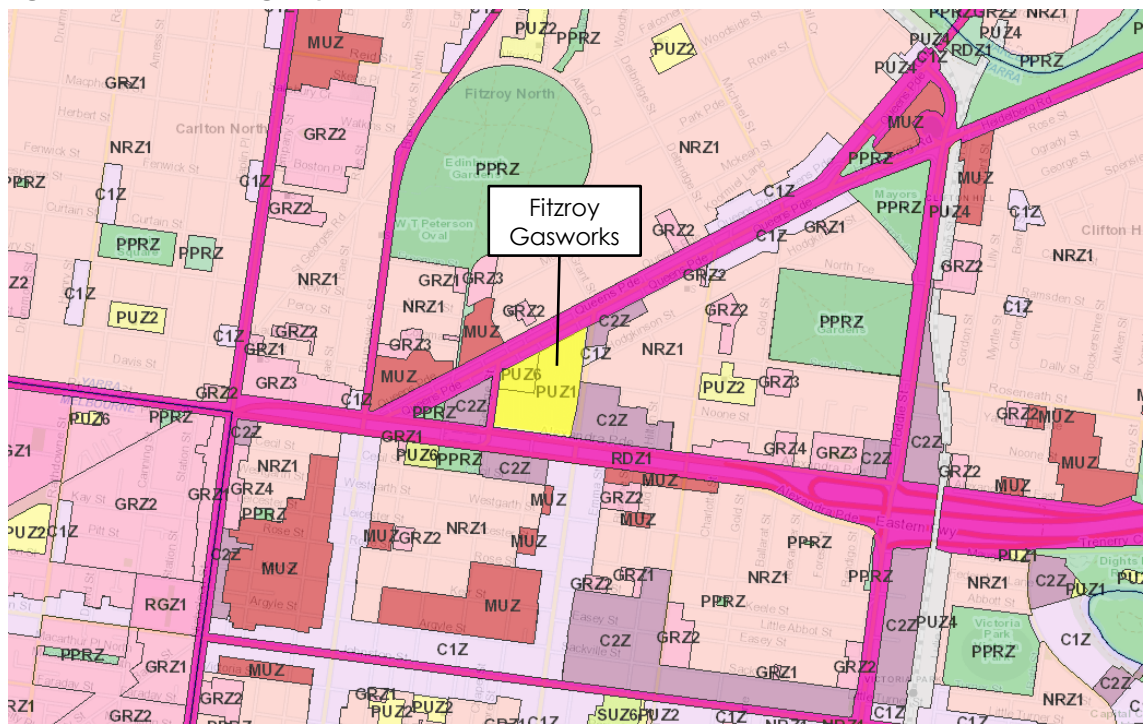
The location of the subject site and the surrounding environs is shown in Figure 2.1, and the land zoning is shown in Figure 2.2.

Figure 2.1: Subject Site and its Environs



(Reproduced with Permission from Melway Publishing Pty Ltd)

Figure 2.2: Land Zoning Map



(Reproduced from VicPlan web site: <http://mapshare.maps.vic.gov.au/vicplan/>)

3. Transport Policy

Strategic Context

There are a number of key State Government policy documents applicable to the subject land which provide guidance on appropriate land use and development. Those that are relevant in the context of transport planning include:

- Plan Melbourne
- SmartRoads Policy
- Transport Integration Act (2010)
- Inner Melbourne Action Plan 2016-2026

Clause 18 of the Yarra Planning Scheme is designed to reflect the intent of State Government guidance and contains objectives and strategies in relation to Transport which are relevant to this development, including, but not limited to:

- Create a safe and sustainable transport system by integrating land-use and transport.
- Plan or regulate new uses or development of land near an existing or proposed transport route to avoid detriment to, and where possible enhance the service, safety and amenity desirable for that transport route in the short and long terms.
- Encourage higher land use densities and mixed-use developments near railway stations, major bus terminals, transport interchanges, tramways and principal bus routes.
- Pedestrian and cyclists access to public transport should be facilitated and safeguarded.
- Promote the use of sustainable personal transport.
- Integrate planning for cycling with land use and development planning and encourage as alternative modes of travel.
- Achieve greater use of public transport by increasing densities, maximising the use of existing infrastructure and improving the viability of the public transport operation.

Clause 21.06 Transport of the Yarra Planning Scheme also conveys a strong message around the promotion of alternate transport options to the private car.

"Yarra needs to reduce car dependence by promoting walking, cycling and public transport use as viable and preferable alternatives. This is also a key message of Melbourne 2030 and fundamental to the health and well being of the community."

SmartRoads Policy

SmartRoads is a VicRoads policy which sets 'modal' priorities on the road network and underpins many of the strategies significant to the operational directions that support broader strategies around land use and transport.

The VicRoads SmartRoads Network Operating Plan for the area surrounding the subject site has been reproduced in Figure 3.1.

Figure 3.1: VicRoads SmartRoads Network Operating Plan

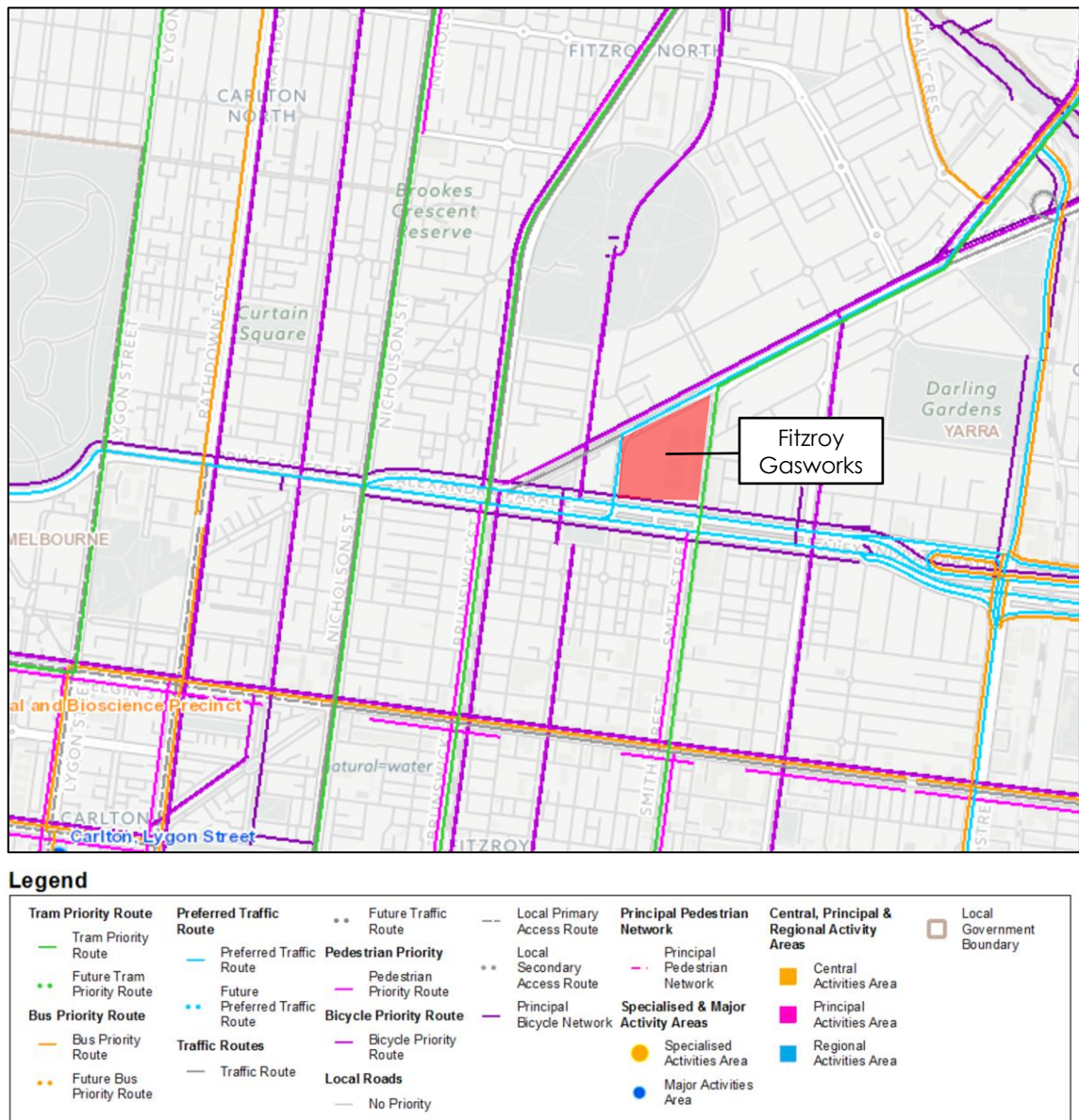


Figure 3.1 illustrates the following priorities for the surrounding road network:

- Queens Parade – Bus priority route and preferred traffic route
- Alexandra Parade – Bus priority route and preferred traffic route
- Smith Street – Tram priority route
- George Street – Preferred traffic route

Based on VicRoads' website, road use priority routes (for buses and trams) have been identified to ensure:

"Trams and buses are given priority on key public transport routes that link activity centres during morning and afternoon peak periods."

Transport Policy Discussion

Encouraging the use of public transport and walking and cycling as modes of transport is central to achieving the above objectives.

The site is easily accessible by public transport, and is within walking distance of the strip shopping located along both Smith Street and Brunswick Street.

There are on-road cycle lanes along the nearby roads of Napier Street, Queens Parade, Wellington Street and Brunswick Street, with Napier Street, Wellington Street and Brunswick Streets all being designated on the Principal Bicycle Network (PBN).

The proposed development must capitalise on these opportunities to encourage the use of public transport, cycling, and walking and not encouraging an abundance of car parking within this area, and in turn an over use of motor vehicles.

4. Previous GHD Report

GHD was engaged by Places Victoria to prepare a Traffic and Access Study for the Fitzroy Gasworks Site in November 2015. GTA have reviewed the report to determine how the revised proposal differs, and whether there are any inconsistencies with traffic and transport considerations.

Scenarios

The GHD report noted three development scenarios, as identified in Table 4.1.

Table 4.1: Development Scenarios as per Table 3.1 of GHD Report

| Land Use | Scenario 1 | Scenario 2 | Scenario 3 | Revised Masterplan |
|------------------|-----------------|-----------------|-----------------|------------------------|
| Residential | 1,169 dwellings | 1,374 dwellings | 1,674 dwellings | 1,208 dwellings |
| Commercial | 610sqm | 2,298sqm | 2,298sqm | Nil |
| Retail | 7,925sqm | 4,841sqm | 4,841sqm | 4,305sqm |
| Sport | 6 courts | 6 courts | 6 courts | 6 courts |
| Secondary School | Nil | Nil | Nil | 10,600sqm |
| Childcare | Nil | Nil | Nil | 120 places |
| Parking | 1,852 spaces | 1,994 spaces | 2,299 spaces | 769 spaces |

The revised masterplan assessed in this report differs in the removal of commercial land use, with the addition of a secondary school and childcare.

Another notable difference is the significant reduction in proposed car parking spaces.

Car Parking Rates

The GHD study adopted statutory car parking rates for the commercial and retail uses, and empirical rates for the residential and sports uses.

Table 4.2 identifies the car parking rates used in their assessment of the site.

Table 4.2: GHD Empirical Car Parking Requirements

| Land Use | Rate |
|---------------------|----------------------------------|
| Residential | 0.8 to one or more bed dwellings |
| Residential Visitor | 1 to every 10 dwellings |
| Commercial | 3.5 per 100sqm |
| Retail | 4 per 100sqm |
| Sport | 35 spaces per court |

Bicycle Parking and Associated Facilities

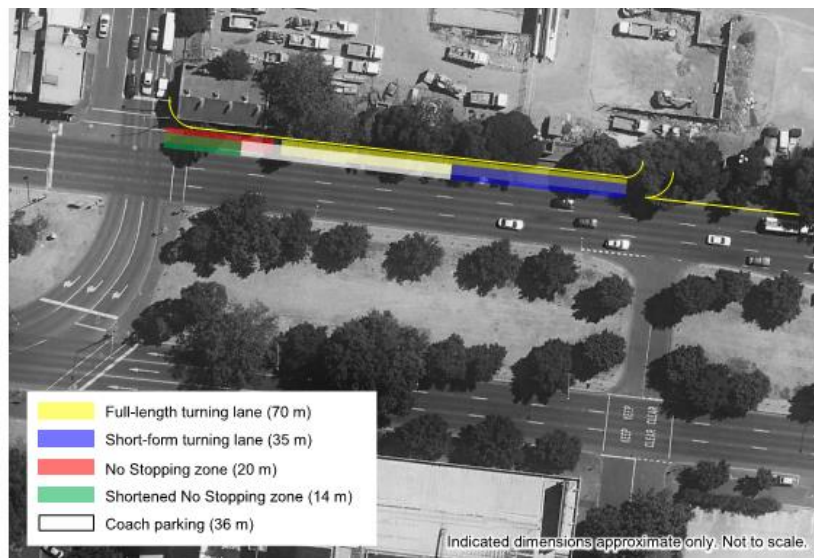
The GHD report considered the provision of statutory bicycle parking spaces, with the addition of six showers and changing rooms to be provided for use by employees.

Coach Parking

Coach parking was considered within the GHD report, with the proposed drop-off, pick-up and lay over to be provided on Alexandra Parade.

It was proposed to provide a total of 36m of coach parking, allowing for two coach vehicles to park. The location of the coach parking was to be as shown in Figure 4.1, and is within the deceleration lane on the approach to the site access on Alexandra Parade.

Figure 4.1: GHD Report – Dimensions of Coach Parking Bay



Vehicle Access Provisions

The GHD report identified the following access points after discussions with VicRoads:

- i Left-in access on Alexandra Parade
 - Most likely opposite Gore Street.
 - It would need turning / deceleration lane to reduce impacts on through traffic.
- ii Left-in / left-out access on Queens Parade
 - Would be supported (on the existing service road).
- iii Left-in access on George Street
 - should also have turning/ deceleration lane to reduce impacts on through traffic. Turning volumes are high enough to warrant full length (70 metres), though the max length possible is 65 metres.
- iv Signalised access on Smith Street
 - VicRoads would prefer main all-movements access to be on Smith Street (the only local road fronting the site).
 - A signalised intersection is appropriate only for Smith Street.

Internal Access Provisions

- The report identifies that most internal roads are for pedestrian use only, and access points are for immediate movement into driveways.
- Access for delivery trucks servicing the proposed supermarket is to be via the main access from Smith Street. Turntables will be required.

Traffic Assessment

Traffic Generation

The following traffic generation rates were adopted in the GHD report:

Table 4.3: GHD Traffic Generation Rates

| Land Use | Rate | |
|--------------------|--------------------------|--------------------------|
| | AM | PM |
| Residential | 0.19 trips per dwelling | 0.15 trips per dwelling |
| Commercial | 1.6 trips per 100sqm | 1.2 trips per 100sqm |
| Retail Supermarket | 2 trips per 100sqm NFA | 2 trips per 100sqm NFA |
| Retail Speciality | 3.5 trips per 100sqm NFA | 3.5 trips per 100sqm NFA |
| Sport Centre | None | 50 trips per court |

A total of three options were considered for the development, with their associated traffic generation identified in Table 4.4.

Table 4.4: GHD Traffic Generation Summary

| Land Use | Traffic Generation | | | | | |
|--------------|--------------------|------------|------------|------------|------------|------------|
| | AM | | | PM | | |
| | Option 1 | Option 2 | Option 3 | Option 1 | Option 2 | Option 3 |
| Residential | 228 | 261 | 318 | 180 | 206 | 251 |
| Commercial | 10 | 36 | 36 | 7 | 28 | 28 |
| Retail | 201 | 115 | 115 | 382 | 295 | 295 |
| Sport Centre | - | - | - | 300 | 300 | 300 |
| Total | 439 | 412 | 469 | 869 | 829 | 874 |

Existing Traffic Conditions

GTA have reviewed the existing volumes presented in the GHD report with the more recent SCATS data to confirm that existing conditions have not changed drastically since the report was released.

The following sections demonstrate that the current volumes at the surrounding intersections are generally less than those presented in the GHD report. As such the data used in the GHD report is and consequently the impacts and mitigation measures for their proposed scenarios are considered to be relevant.

Smith Street / Alexandra Parade

Figure 4.2: GHD Report – AM and PM Traffic Volumes at Smith St / Alexandra Pde

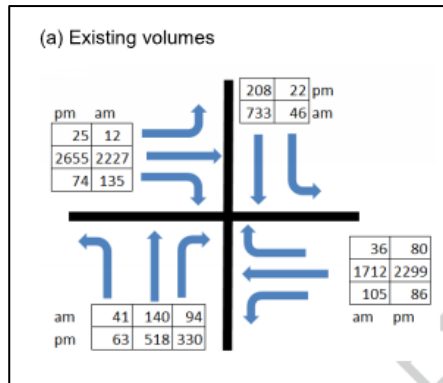
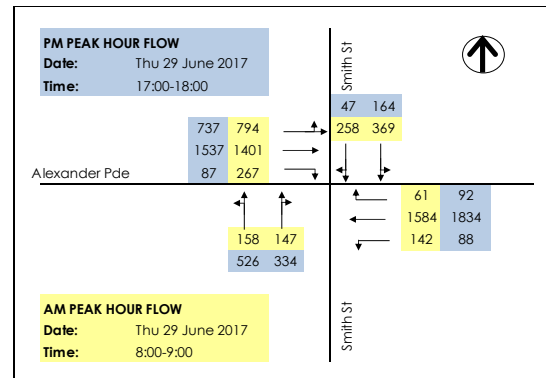


Figure 4.3: SCATS – AM and PM Traffic Volumes at Smith St / Alexandra Pde



Smith Street / Queens Parade

Figure 4.4: GHD Report – AM and PM Traffic Volumes at Smith St / Queens Pde

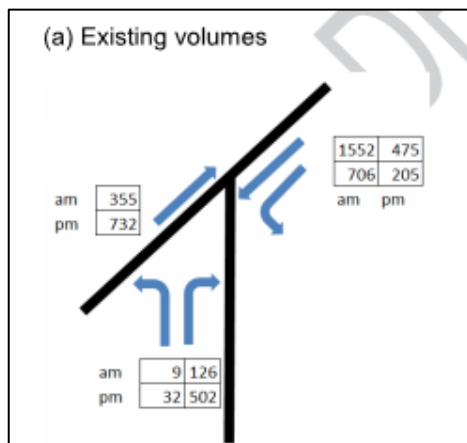
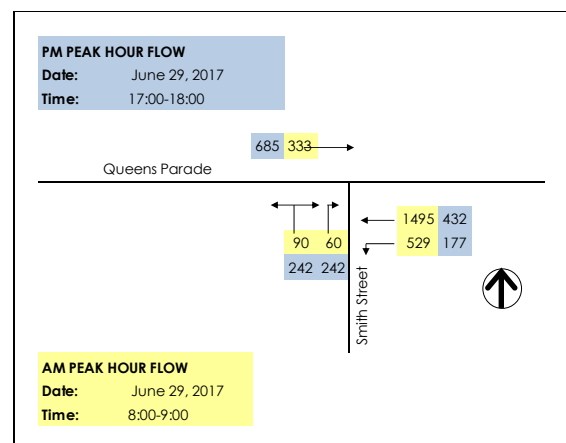


Figure 4.5: SCATS – AM and PM Traffic Volumes at Smith St / Queens Pde



George Street / Alexandra Parade

Figure 4.6: GHD Report – AM and PM Traffic Volumes at George St / Alexandra Pde

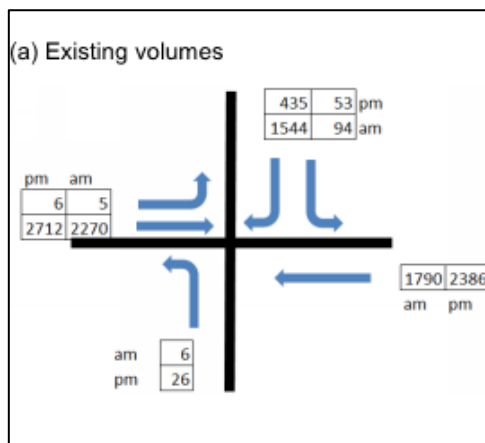
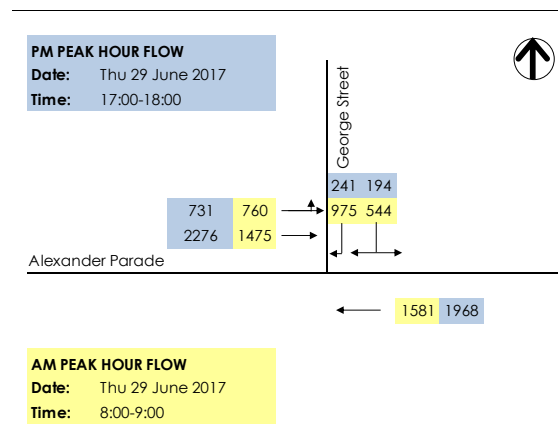


Figure 4.7: SCATS – AM and PM Traffic Volumes at George St / Alexandra Pde



Traffic Impact & Mitigating Works

While the GHD review did not undertake intersection analysis, they did identify qualitative traffic impacts that are reproduced below:

- *"Volumes at the Smith Street/Alexandra Parade intersection are expected to increase, particularly for the north-to-east run.*
- *The increase in volumes is likely to extend queuing on Smith Street, but is unlikely to have a significant adverse impact on the operation of the intersection.*
- *The increase in volumes at the Smith Street/Queens Parade intersection is considered to be manageable."*

In addition to these impacts, the proposed signalisation of the site access point on Smith Street would impact the tram travel times. In order to mitigate against these travel time increases, additional width on Smith Street was suggested in order to provide a dedicated central tram reserve. This modification would include DDA compliant tram stops near the development, since the development would increase the local catchment.

5. Sustainable Transport Considerations

Walking & Cycling Networks

The subject site is well integrated with public pedestrian and cycling infrastructure. As detailed in Section 2, the site is situated within close proximity to established cycling and walking routes.

Footpaths are located on both sides of the surrounding roads and pedestrian crossings exist at the intersections of three signalised intersections adjacent to the site, which allow pedestrians to easily travel to and from the site. The internal network of walking paths allows for access to all land parcels and all external roads. Key pedestrian connections include:

- Access to George Street via the proposed vehicle access with footpaths.
- Access to George Street at the intersection of George Street/Alexandra Parade via a dedicated pedestrian path.
- Access to Alexandra Parade via the proposed vehicle access with footpaths.
- Access to Smith Street via a dedicated pedestrian path
- Access to Smith Street via the proposed vehicle access with footpaths.
- Access to Queens Parade via a dedicated pedestrian path.

Dedicated cycling lanes exist on Queens Parade and Smith Street adjacent to the site, which connect to established cycling corridors within the broader network. It is anticipated that cyclists will be able to use the internal access roads which will be low speeds to allow for mixed use traffic. Cyclists will likely have to dismount to travel through the pedestrian friendly areas.

Bicycle Parking & Associated Facilities

The statutory parking rates are identified in Clause 52.34 of the Yarra Planning Scheme, and are set out in Table 5.1.

Table 5.1: Statutory Requirement for Bicycle Facilities

| Use | Size | Statutory Rate | |
|--------------------------------------|------------------|--|--|
| | | Employee/ Resident | Visitor/Shopper/ Student |
| Dwelling | 1,208 apartments | 1 to each 5 dwellings | 1 to each 10 dwellings |
| Secondary School | 10,600 sqm | 1 to each 20 employees | 1 to each 5 pupils |
| Minor sports and recreation facility | 6 courts | 1 per 4 employees | 1 to each 200 sqm of net floor area |
| Retail (shop) | 4,305 sqm | 1 to each 600 sqm of leasable floor area if the leasable floor area exceeds 1000 sqm | 1 to each 500 sqm of leasable floor area if the leasable floor area exceeds 1000 sqm |
| Childcare | 120 children | NA | NA |

It is recommended that statutory bicycle parking rates are provided as a minimum for all uses within the development.

It is also recognised that the City of Yarra desire higher bicycle parking provisions for dwellings, particularly in circumstances where car parking is provided at a rate less than one spaces per dwelling.

In this regard it is understood that a provision in the order of 1 bicycle parking space per dwelling is likely to be sought by Council.

The location of bicycle parking spaces should be distributed accordingly to the uses and accessibility from the surrounding cycle networks. Desirably cycle parking should be located at ground level or at a minimum be easily accessed (appropriate ramp grades and widths separated from car movements) if located above or below ground.

In addition to the requirement for bicycle parking, it is suggested that change rooms/showers are provided in accordance with Statutory Planning requirements for staff within the precinct. Ideally, they would be located within the associated building to ensure they are adequately accessible.

Public Transport Network

The subject site is well served by public transport with tram and bus routes fronting the sites boundaries. Several other tram and bus routes are located within a 15-minute walk of the site, while Clifton Hill and Victoria Park Railway Stations are approximately 15 and 18 minutes walk from the site, respectively.

It has been recommended in the GHD report that a dedicated tram reserve is created on Smith Street in the centre of the road near the proposed signalised intersection. Given that the signalised intersection is still being proposed, this recommendation is still relevant and should be considered.

6. Car Parking

Statutory Car Parking Requirements

Statutory requirements for the provision of car parking are set out in Clause 52.06 of the Yarra Planning Scheme, with parking rates specified in Table 1 to Clause 52.06-5. An assessment of the statutory parking requirements for the development proposal is set out in Table 6.1.

Table 6.1: Statutory Car Parking Requirements

| Description | Use | Size | Statutory Parking Rate | Statutory Parking Requirement |
|------------------|------------------------|--|--|-------------------------------|
| Apartments | Dwelling (Residents) | 1,208 dwellings (372 x one-bedroom + 609 x two-bedroom + 227 x three-bedroom) | 1 space per one or two-bedroom dwelling 2 spaces per three or more-bedroom dwelling | 1,435 spaces |
| | Dwelling (Visitors) | 1,208 dwellings | 1 space per five dwellings | 241 spaces |
| Sports Courts | Leisure and recreation | 6 courts | NA | NA |
| Secondary School | School | 10,600 sqm 60 employees | 1.2 per employee | 72 spaces |
| Retail | Shop | 4,305 sqm | 4 spaces per 100sqm of leasable floor area | 172 spaces |
| Childcare Centre | Childcare Centre | 120 children | 0.22 spaces per child | 26 spaces |
| Total | | | | 1,946 spaces |

The above assessment anticipates the development proposal has statutory requirement of 1,946 spaces, for those uses where a parking rate is nominated in the Scheme.

In this instance, the proposed on-site parking provision of 769 car spaces does not meet the statutory requirement and a permit will be required to be sought to reduce this requirement.

Car Parking Demand Assessment

The proposed masterplan is not considering providing car parking in accordance with statutory requirements. The combination of excellent public transport availability, convenience of pedestrian and cyclist access to the site and the nature of the development land uses means that there is a good case for reducing the car parking supply.

- **Public Transport Availability:** The subject site is accessible by adjoining public transport facilities, including train, tram and bus services. The subject sites exposure to public transport opportunities is high and as a consequence a proportion of all users could be expected to utilise these services in lieu of private car use.
- **Convenience of Pedestrian and Cyclist Access to the Site:** A review of active travel infrastructure provisions in the vicinity of the site, including an established path network and well-developed bicycle network, indicates that walking and cycling are genuine alternatives for visitors and will contribute to a lower than standard car parking rate for visitors.
- **Mixed Use Development:** The development incorporates a diverse mix of uses, and it is expected that some sharing of these land uses will occur. For example, it is likely that the majority of the children attending the child care centre will come from the local catchment. The retail land uses will also likely service the residential dwellings situated in their buildings, or at least from the surrounding areas.

Car Parking Requirements

Consideration of the likely car parking demand for each of the proposed land uses is presented below.

Residential Car Parking Demand

Residential car parking demand rates have been sourced from the 2016 Census by the Australian Bureau of Statistics (ABS). Data has been sourced within the suburb of Fitzroy and Fitzroy North for car ownership levels for flats and apartments¹:

- One-bedroom dwelling: 0.58 vehicles per dwelling
- Two-bedroom dwelling: 0.86 vehicles per dwelling
- Three-bedroom dwelling: 1.15 vehicles per dwelling.

Residential Visitor Car Parking Demand

Based on empirical research collected at similar medium density style housing in South Yarra, Richmond and Abbotsford, a residential visitor parking rate of between 0.06 and 0.10 spaces per dwelling is considered to be appropriate for the proposal. A rate of 0.08 spaces per dwelling has been applied as the mid-point of these rates.

Retail Car Parking Demand

Given the location of the site and the mix of surrounding land uses, it is not anticipated that any significant car parking demand will be generated by shop visitors. As such, the development will only need to cater for staff car parking spaces, which make up approximately 20% of the total car parking demand for uses of this nature. Based on empirical research collected at similar uses², a retail parking rate of 3.5 car spaces per 100sqm is considered to be appropriate for the proposal. Applying the rate of 20% staff car parking, this will equate to a rate of 0.7 car spaces per 100sqm.

Sports Courts Car Parking Demand

There is no statutory parking requirement for the provision of sports courts within the Yarra Planning Scheme.

Based on empirical research collected at similar uses³, a sports court parking rate of 26 car spaces per court for the weekday peak period and 20 car spaces per court for the weekend period is considered to be appropriate for the proposal.

The data collected from similar sports courts around Melbourne was not focussed on inner city courts, and rather on those in the suburbs. Given this site's excellent accessibility to public transport and active travel, it is reasonable to assume a slightly lower rate of car parking. As such the weekend rate of 20 car spaces per court has been adopted for the weekday rate.

Secondary School Parking Demand

Empirical research collected at similar uses⁴ suggest a school parking rate of 0.92 spaces per employee is considered to be appropriate for the proposal.

¹ Note that In order to ensure that individuals aren't able to be identified using census data, the ABS deliberately introduces random errors into some data sets. (see <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2901.0Chapter38202011>) To minimise the potential impact of random errors the data used in this analysis has been rounded up and only quoted to one decimal place.

² This data includes surveys from some 70 shopping strips around Melbourne

³ This data includes surveys from six basketball/netball/mixed use courts around Melbourne

⁴ This data includes parking demand rates for four schools of similar size in Hawthorn (Scotch College and MLC), Essendon (Lowther Hall) and Kew (Ruyton Girl's School).

Child Care Centre

It has been assumed that the childcare centre will primarily service the precinct or the surrounding residents. Notwithstanding, it is proposed that a section of parking spaces within the Queens Parade service road be designated as short stay parking (5-10 minute zones during the morning and afternoon periods) to provide drop-off and pick-up capabilities for the site. No car parking is proposed to be allocated to parents within the basement, however some parking should be provided to staff. Based on empirical research collected at similar uses⁵, a child care centre long term car parking rate of 0.14 spaces per child is considered appropriate for the proposal.

Summary

The empirical car parking demands are summarised in Table 6.2.

Table 6.2: Empirical Car Parking Requirements

| Description | Use | Size | Empirical Parking Rate |
|------------------|------------------------|--|--|
| Apartments | Dwelling (Residents) | 1,208 dwellings (372 x one-bedroom + 609 x two-bedroom + 227 x three-bedroom) | 0.58 spaces per one-bedroom dwelling, 0.86 spaces per two-bedroom dwelling 1.15 spaces per three-bedroom dwelling |
| | Dwelling (Visitors) | 1,208 dwellings | 0.08 spaces per dwelling |
| Sports Courts | Leisure and recreation | 6 courts | 20 spaces per court |
| Secondary School | School | 10,600 sqm 60 employees | 0.92 per employee |
| Retail | Shop | 4,305 sqm | 20% of 3.5 spaces per 100sqm of leasable floor area |
| Childcare Centre | Childcare Centre | 120 children | 0.14 spaces per child |

Allocation

It is important to consider the parking associated with each parcel independently of one another, to ensure that allocation occurs between car parking spaces and land uses in the same building.

Residential/Retail – Parcel A-D

Table 6.3 presents a summary of the car parking demand likely to be generated by all land uses within Parcel A-D.

Table 6.3: Anticipated Overall Car Parking Demand Parcel A-D

| Parcel | Parking Duration | Residential | Retail | Childcare Centre | Car Parking Demand | Car Parking Supply |
|--------|------------------|-------------|-----------|------------------|--------------------|--------------------|
| A | Long-term | 238 | 19 | 17 | 274 | |
| | Short-term | 23 | 0 | 0 | 23 | |
| | Sub-total | 261 | 19 | 17 | 297 | 161 |
| B | Long-term | 243 | 4 | - | 247 | |
| | Short-term | 22 | 0 | - | 22 | |
| | Sub-total | 265 | 4 | - | 269 | 167 |
| C | Long-term | 242 | 1 | - | 243 | |
| | Short-term | 23 | 0 | - | 23 | |
| | Sub-total | 265 | 1 | - | 266 | 159 |
| D | Long-term | 279 | 6 | - | 285 | |

⁵ This data includes surveys from 11 child care centres around Melbourne

| | | | | | | |
|--------------|------------------|--------------|-----------|-----------|--------------|------------|
| | Short-term | 28 | 0 | - | 28 | |
| | Sub-total | 307 | 6 | - | 313 | 162 |
| Total Demand | | 1,098 | 30 | 17 | 1,145 | |
| Total Supply | | 602 | 30 | 17 | 649 | |

In this instance, the proposed on-site parking provision of 649 car spaces associated with parcels A-D does not meet the likely peak car parking demand.

It is suggested that all staff car parking spaces associated with the retail and childcare are provided as per Table 6.3, with the remaining spaces given to the residential dwellings. This will equate to 602 car parking spaces for 1,098 dwellings, a rate of 0.55 car parking spaces per dwelling.

A reduced car parking provision to that specified in the Planning Scheme is considered appropriate for the following reasons:

- The site has excellent accessibility to public and active travel facilities including the future provision of a tram superstop along the sites frontage on Smith Street.
- The reduced provision assists to support state and local transport policy and seek to reduce reliance on the private motor vehicle.s
- ABS data suggests that the surrounding suburbs have car ownership rates lower than one car space per dwelling (for one and two-bedroom apartments).
- The provision of car share vehicles within the site and allowance for ride share pick up and drop off spaces is recommended in this report and further supports a reduction in the car parking rate.

On this basis a provision of 0.55 car parking spaces per dwelling could be considered to be an appropriate response.

School/Sports

Table 6.4 identifies the demand for the school/sports site.

Table 6.4: Anticipated Overall Car Parking Demand School/Sports Parcel

| Parking Time Period | Sports | School | Car Parking Demand | Car Parking Supply |
|------------------------|--------|--------|--------------------|--------------------|
| Weekday Afternoon Peak | - | 55 | 55 | 120 |
| Weekday Evening Peak | 120 | - | 120 | 120 |
| Weekend Peak | 120 | - | 120 | 120 |

In this instance, the proposed on-site parking provision of 120 car spaces meets the likely car parking demand expected for the sports court. It is understood that the Department of Education and Training do not want car parking associated with the school, and therefore the car parking spaces will be allocated to the sports facility with no car parking spaces provided for the school. However, it is noted that the sports courts are generally for after work and weekend competitions, while the school demand is during the weekday day. As such, it is suggested that sharing of car parking spaces is utilised between the school and the sports courts.

This assessment is however made on the basis of assumption that the sports courts will function to serve the school during weekday periods. Should external court use occur during the weekday periods a parking shortfall would be likely to occur.

Disabled Car Parking

Disabled parking will be provided in accordance with statutory requirements.

Car Share

It is recommended that a car share bay could be provided within each of the basement car parks for Parcel A to D for use by the residents. The provision of these car share pods should be investigated further. Given the low provision of car parking for the residential land use, a share car pod will allow for those residents without a car to have access to one when they need.

Ride Share / Taxi

The use of ride share services and taxi's is something that should be considered for this development given the relatively low provision of car parking spaces for the residential dwellings. It is suggested that some short term waiting bays / pick up drop off bays are provided within the Queens Road service road as well as within the proposed internal road. This will ensure that taxi's and Uber's do not block the surrounding road network while waiting for their passenger, and prevent unsafe crossing of roads by passengers.

Coach Parking

The previous report by GHD considered coach parking on Alexandra Parade in order to provide access to the sports facility in the south west quadrant of the site. Given that the sports facility is now proposed in the north-west quadrant, the coach parking on Alexandra Parade is not considered the best solution. GTA recommend that coach parking be provided in the service road on Queens Parade.

Figure 6.1: Coach Parking Options



7. Traffic Impact & Access Considerations

Traffic Generation

The traffic generation for the various uses in the masterplan are presented below, with a high-level review of the transport impact and access considerations.

Residential

The residential traffic generation rate has been sourced from the 2013 update to the RTA Guide. This guide identifies AM and PM traffic generation rates for high density flat dwellings, noting that they all were close to public transport, greater than six storeys and almost exclusively residential in nature.

This site is well serviced by public transport, with the Parcels A, B, C and D being mostly residential with heights over 6 storeys. As such, the rate of 0.15 and 0.12 trips per car spaces in the AM and PM peak hour were adopted.

It is noted that the GHD report identified a traffic generation rate based on the number of dwellings, however for the purpose of this assessment a rate base on the number of car parking spaces is considered more suitable. This is due to the significant number of dwellings that will be provided without a car park, and therefore using a per dwelling rate would not be an accurate representation of the likely traffic generation for the site.

Retail

It is estimated that the shop use will generate one vehicle movement per staff car space in each peak hour (representing a staff member arriving to and departing from work) and four vehicle movements per car space over an entire day.

Sports Centre

The rate of 50 trips per court in the PM peak hour period has been adopted from the GHD report. No traffic is anticipated during the AM peak hour period. This is based from surveys they undertook themselves, and is considered reasonable.

Secondary School

It is estimated that the secondary school will generate one vehicle movement per staff car space in each peak hour (representing a staff member arriving to and departing from work) and four vehicle movements per car space over an entire day.

Child Care Centre

It is estimated that the child care use will generate one vehicle movement per staff car space in each peak hour (representing a staff member arriving to and departing from work) and four vehicle movements per car space over an entire day.

Summary

The trip rates that have been adopted are summarised in Table 7.1, with a summary of the total traffic generation identified in

Table 7.2.

Table 7.1: GHD Traffic Generation Rates

| Land Use | GHD Rate | | GTA Rate | |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | AM | PM | AM | PM |
| Residential | 0.19 trips per dwelling | 0.15 trips per dwelling | 0.15 trips per car space | 0.12 trips per car space |
| Commercial | 1.6 trips per 100sqm | 1.2 trips per 100sqm | NA | NA |
| Retail Supermarket | 2 trips per 100sqm NFA | 2 trips per 100sqm NFA | NA | NA |
| Retail Speciality | 3.5 trips per 100sqm NFA | 3.5 trips per 100sqm NFA | 1 per staff car space | 1 per staff car space |
| Sport Centre | None | 50 trips per court | None | 50 trips per court |
| School | NA | NA | 1 per staff car space | 1 per staff car space |
| Child Care | NA | NA | 1 per staff car space | 1 per staff car space |

Table 7.2: Summary of trip generation

| Land use | | AM peak trips | PM peak trips |
|-------------------|------------------------|---------------|---------------|
| Residential | 602 car parking spaces | 90 | 72 |
| Retail | 30 car parking spaces | 30 | 30 |
| Sports Centre | 6 courts | 0 | 180 |
| Secondary School | 55 car parking spaces | 55 | 55 |
| Child Care Centre | 17 car parking spaces | 17 | 17 |
| Total | | 192 | 360 |

Table 7.2 identifies that the proposal will generate in the order of 192 and 360 vehicle trips in the AM and PM peak hours respectively.

By way of comparison the traffic generation identified in the GHD report was in the order of 450 and 850 vehicle trips in the AM and PM peak hour respectively. The new proposal therefore is generating approximately half of the vehicle trips when compared to these volumes.

Given the same access considerations, the site could be expected to have a lesser impact on the surrounding road network when compared to the GHD report.

It is noted that the access considerations have changed somewhat, and this is explored in further detail below.

Access Considerations

The site now includes a through lane between Alexandra Parade and Smith Street, rather than separate access points on each road. This allows for vehicles to choose their entrance and exit approach, rather than being forced into a specific location. As such, it is likely that the traffic impacts on the surrounding road network will be reduced, as these vehicles will have a better choice of access point. For example, if these vehicles were travelling eastbound to access the parcels on Smith Street, they can now turn left into the access on Alexandra Parade, and avoid the intersection of Alexandra Parade/Smith Street.

Table 9.1 presents a summary of the modifications to the existing road network as identified in the GHD report, with details of their relevance to the new masterplan.

Table 7.3: Modifications to Existing Network

| Modifications to Existing Network | Details |
|--|---|
| Queens Parade Access Point | The access point to Queens Parade is proposed to be via the service lane. No changes were recommended to the service lane under the previous assessment. |
| George Street Access Point | <p>The access point to George Street is being considered as a left in/left out arrangement, consistent with that presented in the previous assessment. The GHD report identified a requirement for a 70m deceleration lane given the high volumes using this access (although only 65m of space is available).</p> <p>Given the reduced traffic generation for this site in comparison to that presented in the GHD report, a reduction in the length of the deceleration lane could be investigated.</p> |
| Alexandra Parade Access Point | The access point to Alexandra Parade is being considered as a left in/left out arrangement, consistent with that presented in the previous assessment. The GHD report identified a requirement for a short-form deceleration lane of 35m. |
| Smith Street Access Point | <p>It is understood that the access point on Smith Street is proposed to be retained as an all-movements signalised access point as per that presented in the GHD report.</p> <p>From an access strategy point of view this is an ideal approach. However, given the significant reduction in traffic volumes expected for the site as well as the provision of an internal link road, further detailed investigation could be undertaken to understand the requirements for the signalised access point on Smith Street.</p> |
| Smith Street Widening | The installation of a signalised intersection on Smith Street will still impact the operation of trams along this road. It is still recommended that Smith Street is widened in the area of the intersection to allow for a dedicated tram reserve. |
| DDA Tram Stops | The installation of the DDA compliant tram stop is considered even more relevant in this proposal given the higher reliance on public transport due to the reduced car parking provision. |
| Smith Street/Alexandra Parade Upgrades | The new masterplan proposal generates approximately half the traffic as that identified in the GHD report. As such the traffic impacts to the surrounding network will be less, and may not warrant any upgrades to the Smith Street/Alexandra Parade intersection. A detailed intersection analysis is recommended in the preparation of a transport impact assessment. |

8. Loading Facilities

Loading and waste collection for individual parcels will be made available either through the proposed access network, or within the car parking basements.

There are current waste collection vehicles that are 6.4m long and 2.2m high that are able to be accommodated in standard basement car parks. As such, it is likely that waste for each building parcel will be collected from the basement.

Loading can occur similarly, or provision for short term loading bays could be made within the internal road network.

It is recommended that during detailed design stages that suitable waste collection and loading facilities be provided within the site to serve all land uses.

9. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

- i The provision of 769 car parking spaces is considered appropriate given the proximity to public transport and nearby facilities that are accessible by active travel.
- ii It is proposed to provide bicycle parking in accordance with statutory requirements.
- iii The provision of loading and waste collection will be within the basements or along the internal road network. All loading vehicles must enter and exit the site in a forward direction.
- iv The traffic generation for the site is expected to be in the order of 192 and 360 vehicle movements in the AM and PM peak hour period respectively. This represents approximately half the volumes identified in the GHD report. As such, the impact on the surrounding road network will likely be less than that identified in the GHD report.
- v Intersection modelling should be undertaken to identify the exact impacts and the required mitigating measures at all site access points and surrounding intersections.
- vi Coach parking for the sports courts is recommended within Queens Parade service road.
- vii The provision of car share pods within the basements is recommended and should be investigated.
- viii The allowance for ride share waiting bays should be considered.
- ix Pick-up and drop-off bays for the childcare centre is recommended along the Queens Parade service road.

Appendix A

Existing Conditions

Road Network

The abutting road network is summarised in Table A.1.

Table A.1: Road Network Summary

| Road | Classification | Carriageway | Road Reservation | Cyclist Provisions | Pedestrian Provision | Parking |
|------------------|-----------------------|--|------------------|--|---|--|
| Queens Parade | Primary Arterial Road | Main carriageway – 4 traffic lanes. Service lanes provided on both sides of the roadway with median separators to main carriageway. | 65m | Cycle lanes provided on main carriageway | Pedestrian paths provided on both sides of the road | Within service road |
| Alexandra Parade | Primary Arterial Road | 6-lane carriageway with central median. | 60m | No provision along site frontage | Pedestrian paths provided on both sides of the road | Kerb side parking provided |
| George Street | Primary Arterial Road | 4-lane carriageway (1 northbound and 3 southbound) | 19m | No provision along site frontage | Pedestrian paths provided on both sides of the road | Kerb side parking provided on west |
| Smith Street | Major Road | 4-lane carriageway with central lanes shared with trams | 19m | No provision along site frontage | Pedestrian paths provided on both sides of the road | Kerb side parking permitted subject to clearways |

Surrounding Intersections

Key intersections in the vicinity of the site include:

- Queens Parade / Smith Street (signalised T-intersection)
- Queens Parade / George Street (un-signalised T-intersection)
- Alexandra Parade / George Street (signalised X-intersection)
- Alexandra Parade / Smith Street (signalised X-intersection).

Sustainable Transport Infrastructure

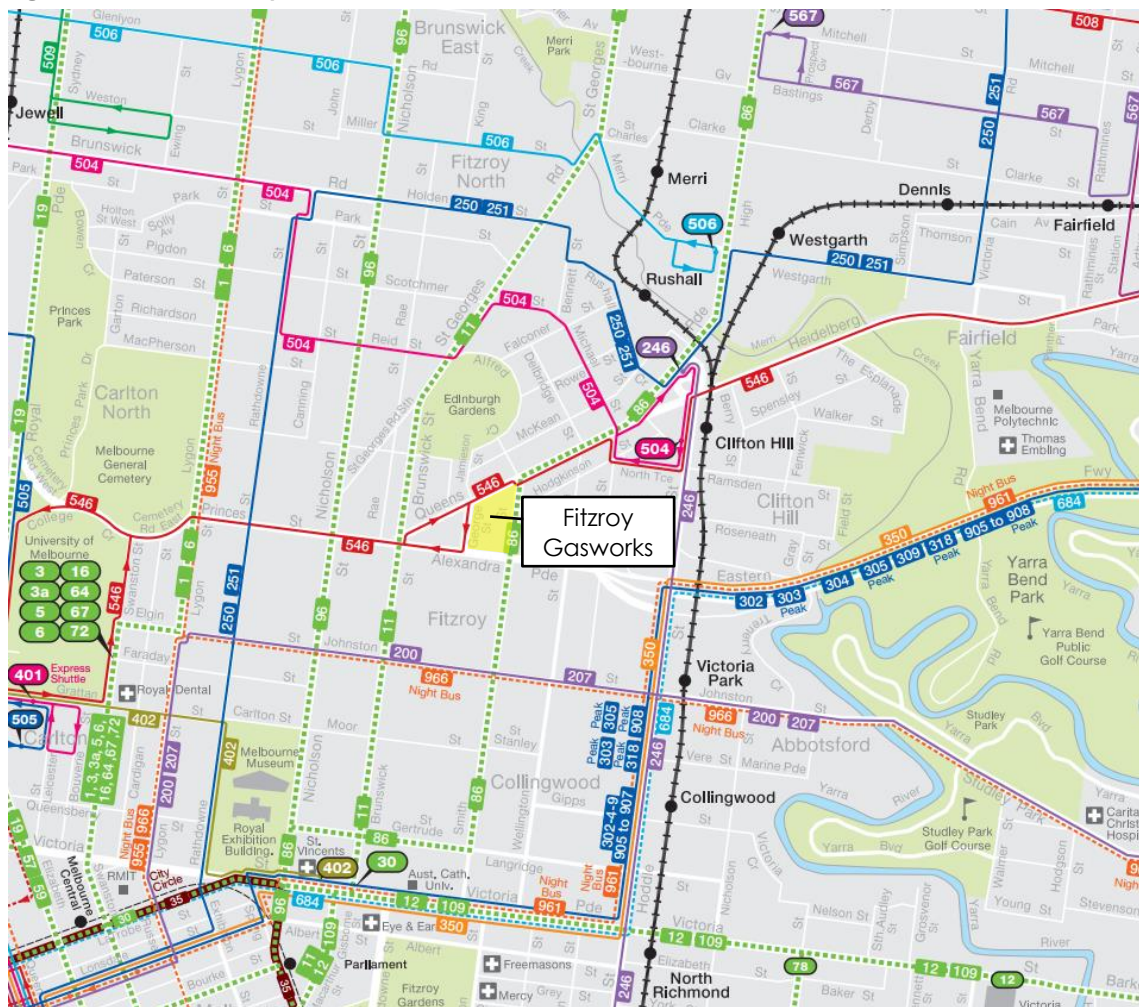
Public Transport

The subject site is well served by public transport with tram and bus routes fronting the sites boundaries. Several other tram and bus routes are located within a 15-minute walk of the site. Clifton Hill and Victoria Park Railway Stations are approximately 15 and 18-minute walks from the site, respectively.

Table A.2: Public Transport Services near the Site

| Mode | Line/Route | Route | Frequency |
|-----------|--------------|---|---|
| Train | South Morang | South Morang to the CBD | Every 5 – 20 minutes |
| | Hurstbridge | Hurstbridge to the CBD | Every 4 – 15 minutes |
| Bus | 546 | Heidelberg via Clifton Hill | Every 30 minutes |
| | 504 | Moonee Ponds via East Brunswick | Every 30 minutes |
| | 200 | City (Lonsdale Street) via Kew Junction | Every 30 minutes |
| Night Bus | 966 | City – Kew – Doncaster Road – Box Hill | Every 30 minutes (between 1:30am and 5:30am Saturday & Sunday only) |
| Tram | 11 | West Preston – Victoria Harbour Docklands | Every 5 – 10 minutes |
| | 86 | Bundoora RMIT – Waterfront City Docklands | Every 5 – 15 minutes |
| | 96 | East Brunswick – St Kilda Beach | Every 6 – 15 minutes |

Figure A.1: Public Transport Services near the Site



Pedestrian Infrastructure

Pedestrian footpaths are located on both sides of each street bordering the site. Signalised pedestrian crossings are provided at the following intersections adjacent to the site:

- Smith Street / Alexandra Parade
- Smith Street / Queens Parade
- George Street / Alexandra Parade intersections.

Cycling Infrastructure

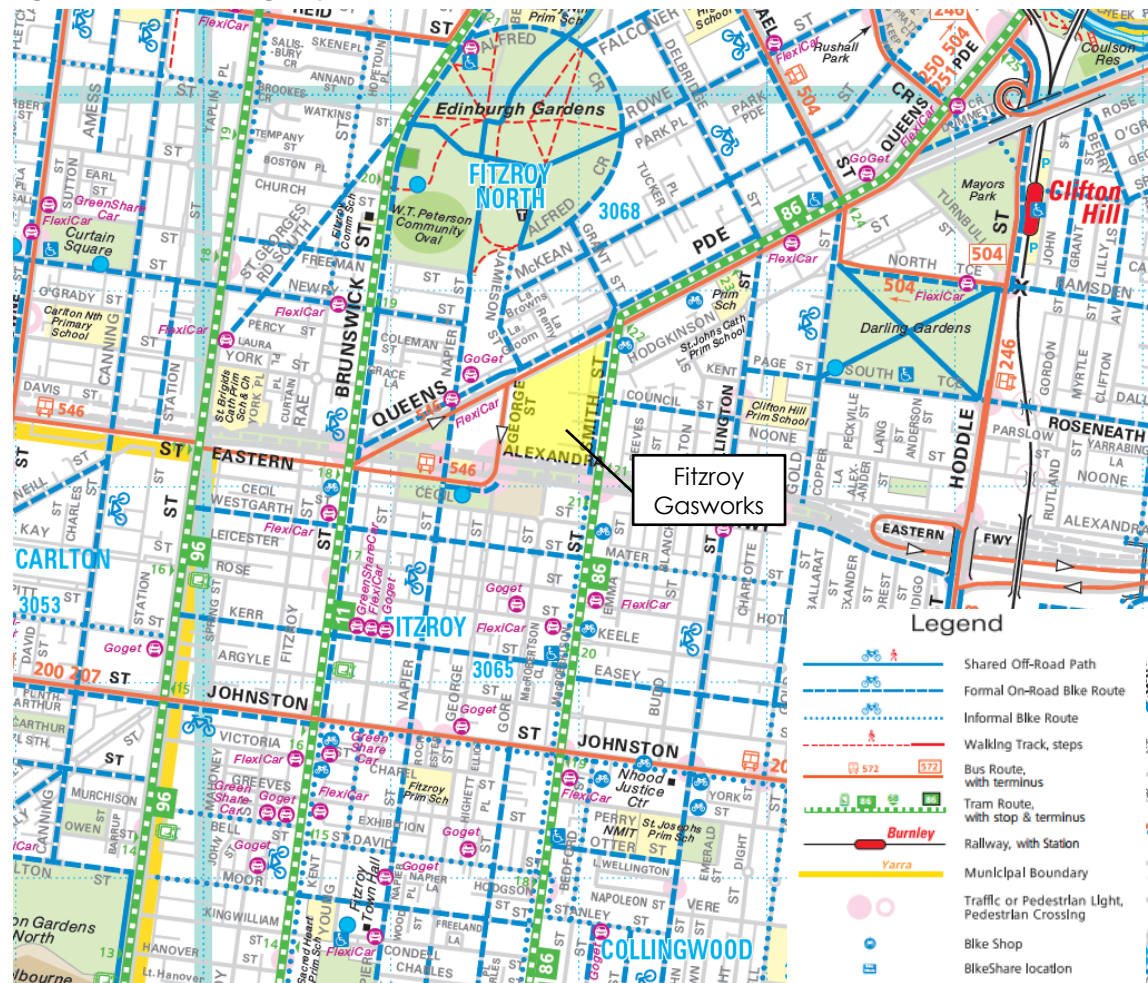
The Fitzroy Gasworks site is located near many established cycle routes. Formal on-road cycling lanes connecting to the CBD exist on Brunswick Street, Johnston Street, Napier Street and Wellington Street.

The closest bicycle stores to the site are 99 Bikes and The Famous Melbourne Bicycle Store, both located on Queens Parade.

The Principal Bicycle Network (PBN) and Bicycle Priority Routes (BPRs) in the vicinity of the site are shown in Figure A.2⁶.

⁶ Further information regarding the PBN and BPRs is available at <https://www.vicroads.vic.gov.au/traffic-and-road-use/cycling/bicycle-network-planning>

Figure A.2: Surrounding Bicycle Network



Local Car Sharing Services

There are local car sharing services available within the vicinity of the subject site.

The addresses of the nearby car sharing pods are as follows:

- Flexicar:
 - Intersection of Queens Parade and Napier Street, Fitzroy North
- Goget:
 - Queens Parade near Grant Street, Fitzroy North
 - Queens Parade near Napier Street, Fitzroy North

Melbourne

A Level 25, 55 Collins Street
PO Box 24055
MELBOURNE VIC 3000
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E melbourne@gta.com.au

Sydney

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WEST CHATSWOOD NSW 1515
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E sydney@gta.com.au

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