# WAVERLEY'S PEOPLE, MOVEMENT AND PLACES

*Where We Go and How We Get There*

# STRATEGY REPORT

FOR

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# EXECUTIVE SUMMARY

## Context

Waverley Council has aspirations for its transport comprising of walking, cycling, public transport, and motor vehicles to be more accessible, efficient, effective, safe, connected and sustainable; to deliver travel and environmental benefits more equitably for all sectors of the community; and to meet Council's long term goals and targets for transport and emissions.

This Strategy Paper, as part of "Waverley's People, Movement and Places: a study on where we go and how we get there" provides recommendations and guidance on how Council can enable people to move within and between the key places that they want to visit. It recommends key priorities and actions that Council can adopt and implement in order to achieve its aspirations.

As background to this work, an "Issues Report" was prepared, which identified relevant state and local government planning frameworks, researched demographic and travel pattern trends and described the structure and function of transport networks. With input from a community intercept survey conducted as part of the study, the Issues Report synthesised the transport challenges facing the Waverley LGA into the future. A sketch planning transport model was also produced for the study.

The Issues Report found that the Waverley LGA has a complex mix of transport demands that include geographical challenges coupled with legacy issues associated with how its land use and transport networks, particularly its road network and on street parking, have evolved.

This Strategy Report provides an overall framework for how Council will achieve its transport goals and objectives. It identifies the priorities for action and describes how these actions will be implemented through signature projects and an implementation plan.

## Key Traffic and Transport Issues

Waverley LGA residents are highly active and mobile, making frequent trips (4.9 trips per weekday compared to the Greater Sydney average of 3.7 trips per weekday); that are short distance (11.0 vehicle kilometres travelled per day compared to 17.2 kilometres for Greater Sydney); and for more social/recreation purposes (31% compared to 25% for Greater Sydney). With a walking mode share of 32%, it is clear that multiple short trips in and around centres are popular. Public transport mode-share at 12% is less than expected for an area with the level of density of Bondi Junction and Bondi Beach, reflecting the long travel times to access major public transport services including by bus. This trend will continue unless bus travel times in key corridors can be made faster than travel times by car.

Key traffic and transport issues facing the Waverley LGA (from the Issues Report) include:

- Topographic constraints and lack of infrastructure limit walking and cycling options for short distance trips. In spite of this, walking is far more popular in the Waverley LGA than it is on average across the Sydney Metropolitan Area.
- An ageing population, including older families with teenagers and more elderly households by 2036 placing changing pressures on the transport system.
- Many local bus services are limited in their effectiveness by traffic congestion, high passenger loads, bus stop congestion with extended stopping times and minimal bus priority measures. These issues affect bus travel speeds and capacity.
- Unreliable public transport leads to a lack of perceived alternative choice and more use of private cars.
- A challenge to "shape" future travel demand through higher-density mixed-use development within key activity centres and along public transport corridors; improved conditions for walking and cycling; and improved reliability of, and access to, public transport services.
- Kerbside road space is used predominantly for car parking including residential permit parking, time-limited parking, or metered parking introducing an opportunity cost compared to higher and better uses such as bus priority, separated bicycle lanes, wider footpaths, seating and vegetation.
- Insufficient local street connectivity including turning bans and one-way schemes has led to the concentration of road traffic on a few key routes, creating pinch points at key intersections.

- High parking demand in and near centres compared to parking supply, particularly on-street, has created large volumes of circulation-related traffic which exacerbates local congestion.
- Poor connectivity of road traffic and bus routes limits the accessibility between northern and southern districts of the LGA, forcing traffic and buses through the most congested areas near Bondi Junction.
- Established neighbourhoods, topographical constraints and high land values limit the potential for new or widened transport corridors.


## Policy Positions

Congestion is a natural consequence of the successful evolution of cities and it is the degree of congestion, both traffic and parking, that is often the most contentious issue. The Waverley LGA is in a situation where additional roads or wider roads are simply not practical.

A more sustainable policy position is to provide a more realistic choice of transport modes to use to satisfy travel needs.

To achieve this policy position, the Waverley LGA needs more competitive public transport, better access to all transport networks, more direct connections and greater equity in accessing parking opportunities. Also, local centres must be better connected while movement within centres should be prioritised on the basis of people movement.

In essence, greater transport choice can be provided by:

- Priority for pedestrians and people riding bicycles within key centres to support the movement of more people.
- More travel time-competitive public transport options with faster travel speeds and greater capacities on key routes.
- Planning and redevelopment that increases mixed use and density along major public transport corridors.
- More direct connections along key desire lines where current permeability is poor.
- Better network connectivity and interchanging across all transport modes where discontinuities occur, reducing over-reliance on a single transport mode.
- Greater equity and more options for accessing limited parking resources.

Transport planning in the Waverley LGA aims to prioritise transport modes in the following order: *pedestrians, bicycles, buses, service vehicles, and then private motor vehicles*. Adopting this hierarchy is essential to achieving the aspirations of the community to create a safer, more equitable and liveable environment.

A key policy context is Waverley Together 3: our community's strategic plan for 2013-2025 and the Environmental Action Plan 3 2012-2020, which includes targets for the year 2020 such as the distance travelled by private car declining by 15% on 2006 levels (from 11km/day to 9.35km/day per resident) and aiming for 40% of total daily distance travelled by residents by public transport, walking or cycling (from 25% in 2006).

Other strategies articulated in the community strategic plan include to 'create vibrant public places' and to 'create vibrant and accessible public spaces through high quality urban design and place making principles.

To achieve these policy positions, the Waverley LGA needs more competitive public transport, better access to all transport networks, more direct connections and greater equity in accessing transport options. Also, local centres must be better connected while movement within centres should be prioritised on the basis of people movement rather than vehicle movement.

## Key Priorities

This strategy provides a larger number of actions for improving the Waverley transport network and it is important to prioritise those actions that have the highest community support, offer a high cost benefit and which balance priorities across all transport modes to provide the greatest short term benefit to the LGA. The twelve (12) signature projects outlined within this document are defined based on this.

The top "rated" signature projects that represent new policy and will have the highest benefit to the community include:

- Cycling Strategies and Car/Bike Share Schemes;
- Bondi Junction Transport Interchange Upgrade;
- Bondi Road corridor strategy; and
- Walking Strategies including school-specific projects.

The actions and strategies for all signature projects are outlined in Table 9.2 of this Strategy Report. It is considered that each project:

- will have a positive impact on Waverley's Transport network; and
- provides high value for money.

## Signature Projects

Twelve signature projects have been identified to respond to the identified issues and challenges, as summarised below.

Signature Projects - Benefits by Mode

| | Key Benefits<br>✓✓ ✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| 1 | Better Streetscapes | ✓✓✓ | ✓ | ✓✓✓ | ✓ | ✓✓ | ✓ | ✓ |
| 2 | Cycling Strategy | ✓ | | ✓✓✓ | ✓ | | ✓ | ✓ |
| 3 | Bondi Junction Transport Interchange | ✓✓✓ | | ✓✓ | ✓✓✓ | | | ✓ |
| 4 | Bondi Road Corridor Strategy | ✓✓ | ✓✓ | ✓✓✓ | ✓✓✓ | ✓✓ | | ✓✓ |
| 5 | Waverley Walking Strategy | ✓✓✓ | ✓✓✓ | ✓✓ | ✓✓ | | | |
| 6 | Smart Cities Mobility Strategy | ✓ | ✓✓ | ✓ | ✓✓✓ | | ✓ | |
| 7 | Schools Active Transport Strategy | ✓✓✓ | | ✓✓ | ✓✓ | | ✓✓ | ✓ |
| 8 | Shared and Electric Vehicles | ✓ | | ✓✓✓ | ✓ | | ✓✓ | ✓ |
| 9 | Charing Cross improvements to streetscapes | ✓✓ | ✓✓ | ✓✓ | ✓✓ | | | |
| 10 | Bondi Junction | ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓ | | ✓✓ |
| 11 | Bondi Beach | ✓✓ | ✓✓ | ✓✓ | ✓✓ | | | ✓✓✓ |
| 12 | Smart Parking Management | ✓ | ✓ | | ✓✓ | | ✓✓ | ✓✓✓ |

The signature projects provide the actions that are expected to make the most significant difference to providing better multi-modal transport choices and access equity for residents, employees and visitors of the Waverley LGA.


## Implementation Plan

This report recommends 95 actions that Council could undertake. An implementation plan is detailed in Chapter 9 which categorises the actions into Short Term (1-2 years), Medium Term (3-5 years) and Long Term (6+ years).

The number of actions by "Location" and by "Mode/Type" are summarised below.

### Number of traffic and transport actions by location and type

| | A: Walking | B: Cycling. | C: Public transport | *D: Service vehicles. (Whole of LGA only)* | D: Private vehicle traffic network. *(Labelled E for Whole of LGA)* | E: Off-street parking. *(Labelled F for Whole of LGA)* | F: On-street parking *(Labelled G for Whole of LGA)* | Total |
|---|---|---|---|---|---|---|---|---|
| Strategy location 1: "Whole of LGA" | 12 | 7 | 8 | *1* | 9 | 6 | 5 | 48 |
| Strategy location 2: Bondi Junction | 2 | 3 | 4 | - | 3 | 3 | 1 | 16 |
| Strategy location 3: Bondi Beach | 5 | 2 | 3 | - | 1 | 1 | 2 | 14 |
| Strategy location 4: Bondi Road corridor | 2 | 2 | 3 | - | 2 | 1 | 1 | 11 |
| Strategy location 5: Charing Cross | 0 | 2 | 2 | - | 2 | 0 | 1 | 7 |
| Total | 21 | 16 | 20 | *1* | 17 | 11 | 10 | 96 |

This strategy is intended to provide a "blueprint" for Waverley Council to initiate more detailed design and feasibility studies and to initiate works to provide more effective transport choice to its residents, employees and visitors. It is recommended that the action plans provided in this report be monitored and reported against annually and updated every 3 years, to ensure that initiatives remain relevant in a rapidly evolving transport system.

# 1. INTRODUCTION

## 1.1 THE NEED FOR THIS STUDY

The Waverley Local Government Area (LGA) is unique when considering its complex transport demands, its land use structure, its geography and its topography. Parking congestion and traffic congestion have been raised by Council as key issues that need to be addressed using the actions recommended by this study.

In addition, Waverley Council (Council) has identified the following aspirations for the transport system:

- for the transport of people and goods into, out of, and throughout the LGA to become more accessible, efficient, effective, safe, connected and sustainable;
- to deliver travel and environmental benefits more equitably to meet the needs of all sectors of the Waverley community; and
- to meet Council's goals and targets for transport and emissions.

Council has also identified the following key outcome areas for the study:

- enable all Waverley residents and visitors to access places more easily on foot, bicycle and public transport;
- manage vehicular access and traffic flows more efficiently and effectively on the road network, including state roads and traffic lights where RMS has authority;
- establish a clear policy direction for parking supply on private and public land in response to rising demand and anticipated development pressures, particularly in Waverley's key activity centres; and
- improve public transport capacity and accessibility through the LGA by helping to remove constraints within key corridors and interchanges and extending local coverage by state or community transport services.

Past transport strategies undertaken for Council have aimed at reducing private vehicle usage by targeting reducing trip lengths and lowering the proportion of trips by private vehicle whilst increasing public and active transport usage. Whilst these targets and their associated strategies have been entirely appropriate and consistent with contemporary transport planning approaches, the specific actions needed to achieve these changes have been limited in terms of detail or their ability to actually be implemented.

What the Waverley LGA needs is specific, tangible actions that can be implemented to better manage the effects of excessive traffic and parking demand to the betterment of local residents and businesses.

This study aims to understand the underlying transport needs of **people** living in, working in or visiting the Waverley LGA, what their motivations for **movement** are and what specific **places** they need to travel to and when. By understanding *where people go and how they get there*, and within a framework of improving environmental sustainability and liveability, this study draws on international best practice and adapts it to the context of the Waverley LGA to recommend works and programmes for Council to prioritise.

The Waverley LGA area the subject of this study is shown in Figure 1.1.


Figure 1.1: Study Area

## 1.2 PURPOSE OF THIS REPORT

This report follows on from the Issues Report which documented all of the current and future traffic and transport issues categorised under "entire LGA", "corridor/centre" and "localised issue".

This report summarises the issues from the first report and then puts forward the transport policy position for balancing current capacity issues with long term transport sustainability needs. This policy position is then related into a series of "goals" which provide the basis for developing the strategies to respond to the identified issues.

A number of signature projects have been identified to address the identified issues whilst aligning with the adopted policy position and goals.

Other strategies that have not been investigated or presented in as much detail as yet are then listed, categorised by their geographic application as follows:

- Tier 1: Applicable to the entire LGA;
- Tier 2: Applicable to a specific centre; and
- Tier 3: Applicable to a specific location (e.g. a single intersection).

These three tiers correspond with key centres defined in the Waverley Development Control Plan DCP 2012 Part E.

It is important to highlight that many of the strategies and actions recommended in this report have not been analysed in detail and that further, more detailed investigations will be needed for some actions prior to their implementation.

The actions derived from each of the strategies have been consolidated into a recommended implementation plan for Council's consideration.

## 1.3 Study Process

This study has been run in two discrete phases, as follows:

- Phase 1, Issues Identification: involving the identification of relevant state and local government planning frameworks, research of demographic and travel pattern trends of Waverley residents, employees and visitors, understanding the structure and function of transport networks and identify LGA-wide and localised issues; and
- Phase 2, Strategy Development and Actions: involving the identification of strategies to address the issues raised in Phase 1 and the specific actions that follow from the strategies. This phase also details the recommended implementation plan for Council to take forward.

An Issues Identification report has previously been prepared and the key issues identified in that report are summarised in Chapter 3.

## 1.4 Strategy Framework

An overarching strategy framework has been used as a means of communicating the study's process as well as ensuring that the actions recommended are consistent with the common goals and priorities defined. The strategy framework is presented in Figure 1.2.

The framework has been used to assess the challenges facing the Waverley LGA and develop the strategies and actions that align with common goals aiming to be achieved.


Figure 1.2: Strategy Framework

# 2. CENTRE AND TRANSPORT SYSTEM HIERARCHIES

## 2.1 TFNSW PLANNING GUIDELINES

Transport for NSW (TfNSW) recommends an approach to the strategic development of transport networks and services that firstly identifies a hierarchy of activity centres and then defines the key transport corridors that connect the centres to each other as well as to their surrounding catchment areas. This process facilitates the identification of the strategic requirements for transport corridors based on "activity centre function, productivity and capacity" (*TfNSW 2013, Integrated Public Transport Service Planning Guidelines: Sydney Metropolitan Area. NSW Government, Sydney*).

A similar approach can be applied at the LGA-level to identify local activity centres and catchment areas that feed the primary centres as well as identifying the key transport corridors at the metropolitan level that influence the LGA. This process enables local strategic transport plans to compliment metropolitan plans.

## 2.2 SYSTEM STRUCTURE

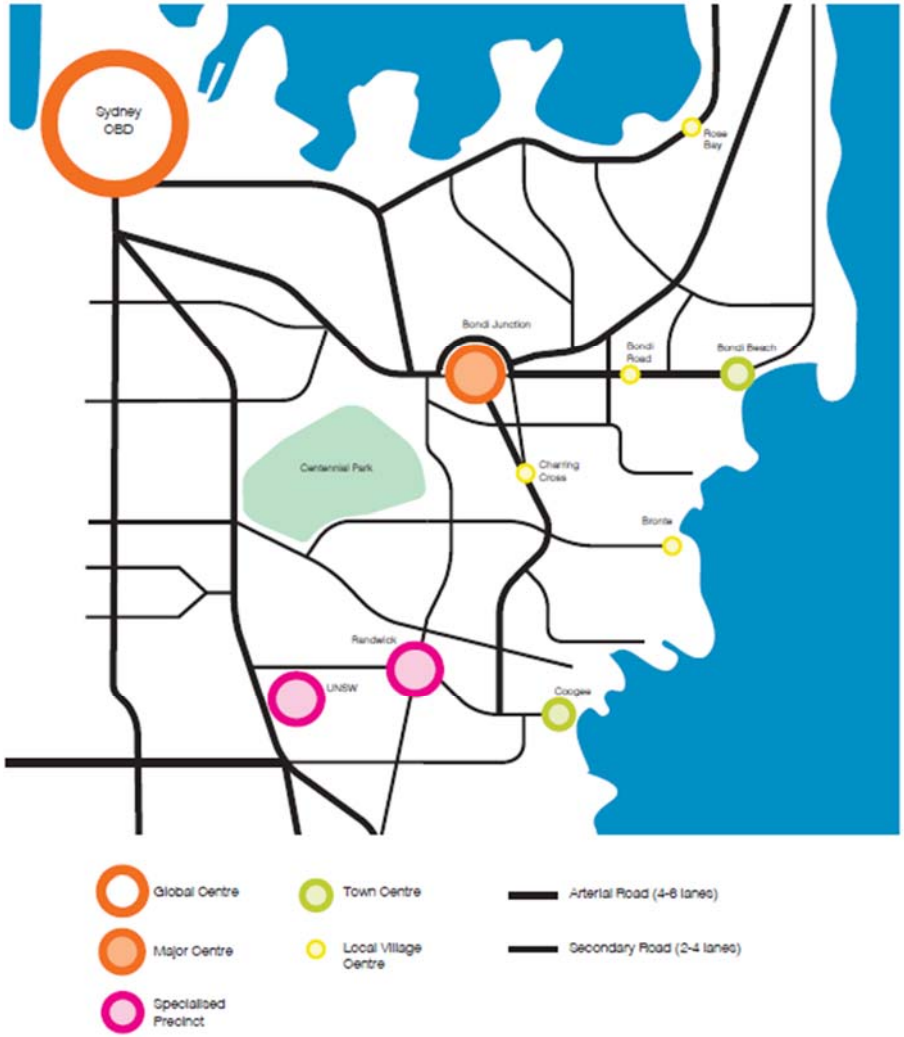
### 2.2.1 Broader Network Structure

Figure 2.1 shows the current road system structure in and surrounding the Waverley LGA in relation to activity centres within the LGA as well as higher order centres surrounding the LGA. This structure is also very similar to the public transport system structure given that buses also run on these connections.

The structure of the Waverley LGA can be described at two levels:

- arterial corridors for moving between destinations within the Waverley LGA and to and from centres in other parts of the Sydney metropolitan area; and
- local connections that provide access primarily for local residents moving between local centres and catchment areas within the LGA.

Within the broader structure of the Sydney Metropolitan Area, Waverley's network is dominated by the radial nature of the Sydney transport system which is directed towards the Sydney CBD, with few significant cross-regional transport links connecting centres at the northern and southern ends of the LGA.




*Source: Figure developed by UTS: ISF*

Figure 2.1: Activity Centre and Transport Corridor Structure

Links from centres within the Waverley LGA to key activity and employment centres to the south in Randwick have an important role to play in the structure of the transport system, however these cross-regional connections have a relatively poor structure, making north-south access difficult.

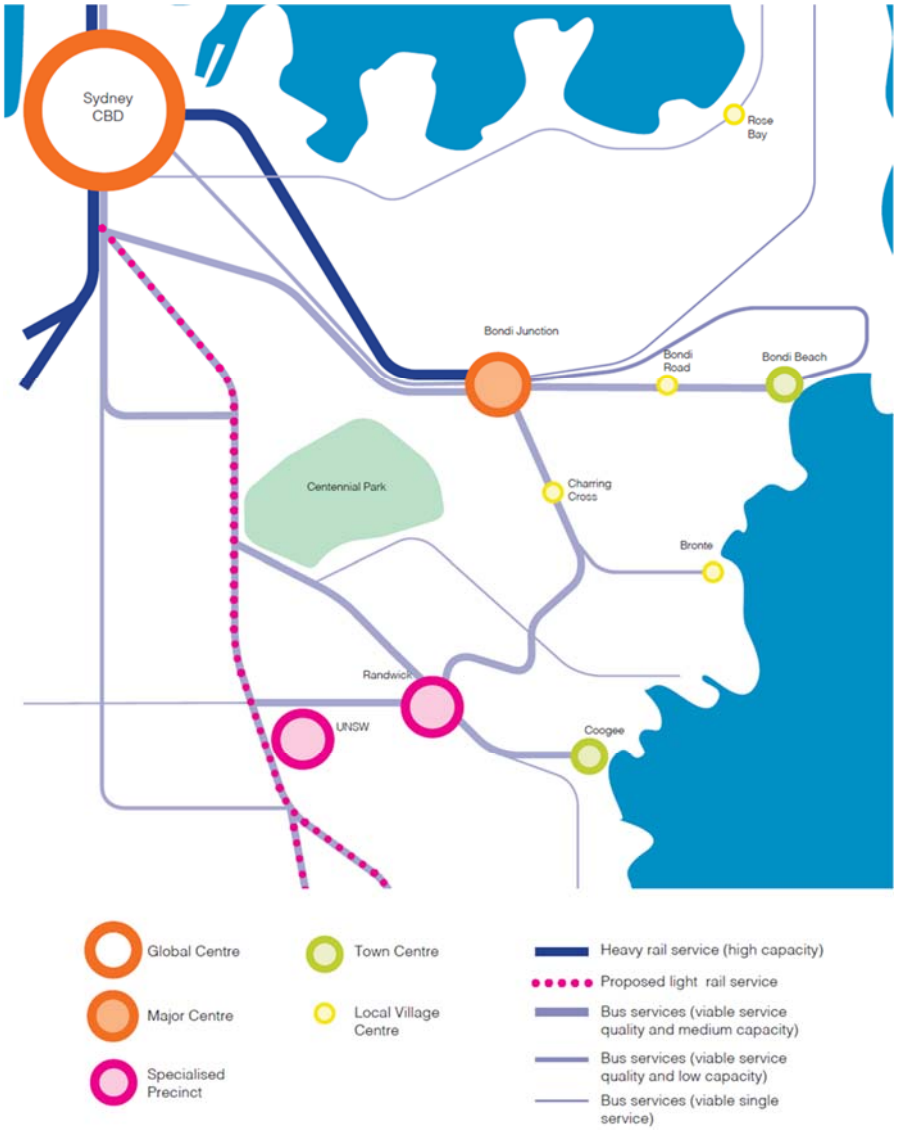
### 2.2.2 Public Transport Services Map

There is a dense network of bus routes which serve the Waverley LGA and surrounding LGAs as shown in Figure 2.2.


*Source: Transport for NSW*

Figure 2.2: Bus Routes

Most services operate between 7am and 10pm at frequencies of 20 minutes or better. Routes with these service levels are viable for multiple-trip types throughout the day and not just for commuting. As with the road network, radial routes dominate the network with few cross-regional options.




*Source: Figure developed by UTS: ISF*

Figure 2.3: Activity Centres and Public Transport Network Structure

There are very few services which connect local residential catchments to local village centres which contributes to localised private motor vehicle congestion and parking within village centres in the Waverley LGA. Also, local public transport does not provide late evening services in many cases that enable people to work late, go out for dinner or evening leisure activities and still use public transport to get home. Services through the middle of the day allow for business trips, school travel, personal trips and leisure travel.

### 2.2.3 Key Centres

The Waverley Development Control Plan DCP 2012, Part E, defines the key centres as:

- Bondi Junction;
- Bondi Beachfront Area;
- Local Village Centres: Hall Street Bondi (town centre), Bondi Road (village), Charing Cross (small village) and Rose Bay (small village); and
- Neighbourhood Centres: Glenayr Avenue, North Bondi, Blake Street, Murriverrie Road, Murray Street Bronte, Bronte Beach, Macpherson Street Bronte and Old South Head Road.

### 2.2.4 Local Network Structure

The Waverley LGA has a higher mode share of walking (29%), cycling (5%) and public transport (15%) compared to the Greater Sydney region average (17%, 2% and 12% respectively). As a result, only half of all trips within the Waverley LGA are by car, compared to 70% for the Greater Sydney region.

However, there is the potential to further reduce the reliance on cars for short trips, by improving local walking and cycling networks, and improving the reliability of bus services.

The Waverley LGA is dominated by Bondi Junction and its economic and social links with the Sydney CBD to the west and Bondi Beach to the east are very important. Bondi Junction is a primary activity centre that acts as both a key destination for many trips within and into the Waverley LGA, but also as a key interchange point for people travelling by public transport to key centres like the Sydney CBD and to destinations beyond.

The road network is dominated (generally) by east-west links that focus on Bondi Junction, radiating out to a series of beachside centres where recreational and small-scale local facilities are located, creating corridors with high traffic volumes that often experience heavy congestion.

Strategically, Waverley relies on a small number of key routes to serve a diversity of destinations within the dense fabric of its eastern districts. The network has a fragmented grid structure with few arterial roads which "consolidate" traffic and generate high levels of congestion. This creates challenges and opportunities for the movement of people between places within the Waverley LGA.

The network's performance for people using both private cars and public transport services along east-west corridors is often poor, especially during weekday peak periods and mid-day periods on weekends. Congestion is high and travel speeds are slow. Also, large volumes of road traffic impede public transport services, making them less viable. Bus service frequencies and capacities often struggle to cope with demand, placing greater pressure on private transport and hence on the road network.

The relatively high densities of neighbourhoods could be seen to exacerbate congestion on key transport corridors. However, these densities put many people within easy walking distance of local centres, creating the potential opportunity for greater use of low impact active transport modes (walking and riding bicycles) to access local services reducing pressure on parking resources and road space.

# 3. WHAT ARE THE ISSUES AND WHY?

This section provides a summary of current and emerging traffic and transport issues. A more comprehensive discussion is provided in the *Waverley People, Movement and Places Issues Report*.

## 3.1 LGA-WIDE ISSUES

Key traffic and transport issues facing the Waverley LGA include:

- topographic constraints and lack of infrastructure limit walking and cycling options for short distance trips;
- an ageing population, including older families with teenagers and more elderly households by 2036;
- many local bus services are limited in their effectiveness (travel speed and capacity) by traffic congestion, high passenger loads, bus stop congestion with extended stopping times and minimal bus priority measures;
- unreliable public transport leads to more use of private cars;
- the existing street grid and topography of Waverley will not change significantly in the future. While this sets the scene for future travel demand, there are further measures that can be undertaken to shape this such as:
  - higher-density mixed-use development within key activity centres and along public transport corridors;
  - improved conditions for walking and cycling; and
  - improved reliability of, and access to, public transport services;
- kerbside road space is used predominantly for car parking (e.g. residential permit parking, time-limited parking, or metered parking). There may be higher and better uses (e.g. bus priority, separated bicycle lanes, wider footpaths, seating, vegetation) which need to be considered;
- insufficient local street connectivity (including turning bans and one-way schemes) has led to the concentration of road traffic on a few key routes, creating pinch points at key intersections;
- high parking demand in and near centres compared to supply, particularly on-street, has created high volumes of circulation-related traffic exacerbating local congestion;
- poor connectivity of road traffic and bus routes limits accessibility between northern and southern districts of the LGA, forcing traffic and buses through the most congested areas near Bondi Junction;
- established neighbourhoods and high land values limit the potential for new or widened transport corridors;
- across most of Waverley (with the exception of Dover Heights) the number of cars per household is much less than the Greater Sydney average, and has not increased in the past fifteen years. This suggests that long-term car parking policies of Waverley Council have been successful in limiting the growth in car ownership; and
- some traffic intersections have reached saturation point, where it is difficult to increase the number of vehicles flowing through the intersection. This further demonstrates that shifting to other modes of transport is required.

## 3.2 CENTRE AND CORRIDOR-SPECIFIC ISSUES

Key traffic/transport issues in key centres and along primary corridors include:

- Bondi Junction - forced circulation of traffic through centre streets with turning bans and one-way systems, key intersection pinch points, insufficient bus priority, transport interchange efficiency issues, lack of pedestrian and bicycle priority, poor connectivity and conflicts between pedestrian traffic, people riding bicycles and vehicles around the station;
- Bondi Junction to Bondi Beach Corridor - on-street parking capacity and turbulence-related traffic congestion, bus stops and sides streets impacting through capacity, key pinch points at key pinch points at Denham Street, Wellington/Watson Street and Council Street, reliance on the corridor as part of north-south connectivity conflicting with primary east-west movement, limited pedestrian crossing points but activities on both sides, limited options for safe/convenient cycling for vulnerable bicycle riders and an absence of bus priority;
- Bondi Beach - high parking demand creates circulating traffic congestion, north-south local traffic permeability is limited and Campbell Parade used for circulation, limited off street parking for visitors, insufficient on street parking capacity. Campbell Parade has too many functions with buses, high pedestrian crossing demands, circulating and turning traffic. Event management is critical;

- Northern Corridor and Centres - limited trunk bus route coverage and limited bus priority, difficult to enter/exit Old South Head Road from local streets due to congestion, on-street parking contributes to congestion, lack of sufficient/supporting parallel north-south network, cycling demand affected by topography; and
- Southern Corridor and Centres - cluster of Schools with peak parking and traffic issues, convoluted one-way street systems and limited permeability through residential street networks creating pinch points at key intersections and the absence of bus priority measures. Major roads converge on Bondi Junction and Charing Cross a key pinch point.

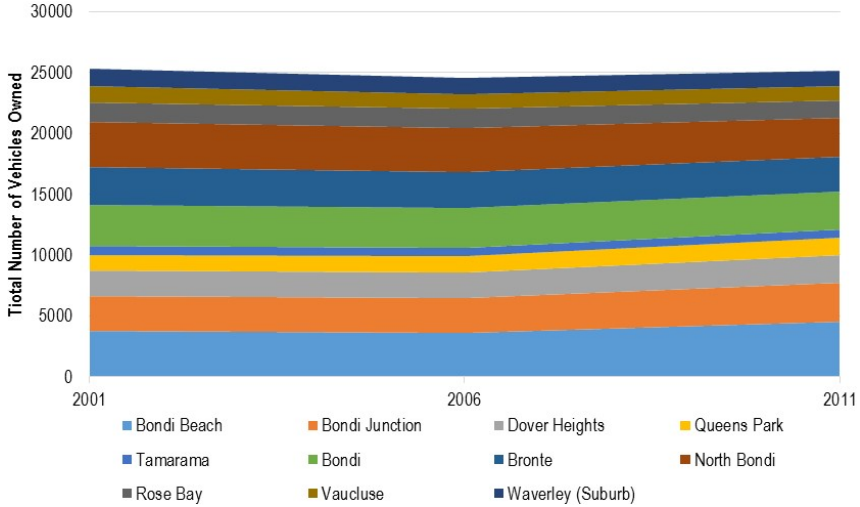
## 3.3 Car Ownership Trends

Figure 3.1 shows the number of cars owned by residents of suburbs within the Waverley LGA from Australian Bureau of Statistics (ABS) household census data. In total, this data suggests that car ownership has remained consistent between 2001 and 2011 with some suburbs showing increases (e.g. Dover Heights) while others have decreased (e.g. North Bondi).

Figure 3.2 shows that for selected suburbs, the average rate of car ownership per household is 'flattening out'.

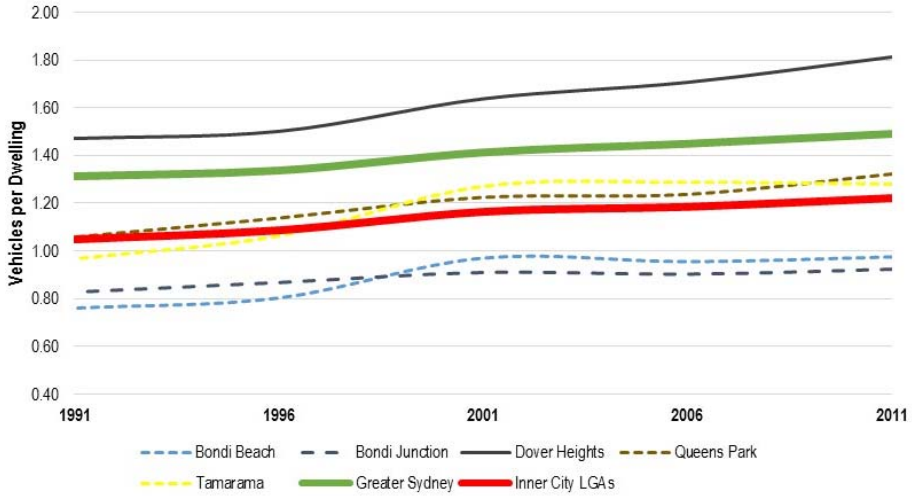
From 2001 to 2011 suburbs such as Tamarama, Bondi Beach and Bondi Junction show no increase in the number of cars owned per dwelling in contrast to suburbs such as Dover Heights and Queens Park, where a significant increase can be seen.

Figure 3.2 includes a trend line for the average household vehicle ownership in similarly-located inner city LGAs (Canada Bay, North Sydney, Inner West and Randwick). Tamarama has a similar profile to these other inner city areas whereas Bondi Junction and Bondi Beach have much lower vehicle ownership per household. Dover Heights is a clear outlier with a much higher vehicles per household than the inner city average and the Greater Sydney average as well as having a faster rate of growth in its vehicles per household.




*Source: ABS 2011 Household Census Data.*
*Note: When calculating the number of vehicles, households labelled as having "3 or more vehicles" were assumed to have a total of 3 vehicles. Include passenger cars and 4WDs.*

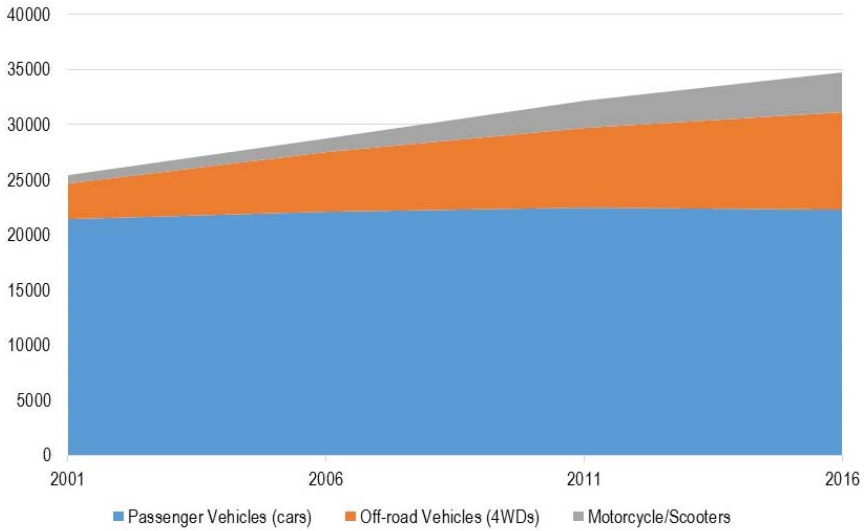
Figure 3.1: Waverley LGA Car Ownership by Suburb




*Source: ABS 2011 Household Census Data.*
*Note 1: The Waverley suburbs graphed were chosen to best show trends across the LGA and provide clear representation of the LGA's northern, central and southern suburbs.*
*Note 2: When calculating the Vehicles per Dwelling rate, households labelled as having "3 or more vehicles" were assumed to have a total of 3 vehicles.*
*Note 3: "Inner City LGAs" is the average of Canada Bay, North Sydney, Inner West and Randwick LGAs.*

Figure 3.2: Average Household Car Ownership Trends by Selected Suburb

The RMS vehicle registration data (Figure 3.3) is slightly different to the ABS household census data as it includes businesses as well as households. The RMS data shows an overall increase in the number of vehicles registered in the Waverley LGA between 2001 and 2016. However, all of this growth has been in 4WDs and in motorcycles/scooters, rather than in cars.




*Source: RMS (2016), business and residential vehicle registrations*

Figure 3.3: Number of Registered Vehicles in Waverley LGA

Waverley's EAP3 document (2006) set a target of reducing the number of 4WD/SUV-sized vehicles across the LGA, and the data suggests this has not been the case to 2016.

It is important to recognise that vehicles registered in Waverley LGA are not necessarily garaged there, or even driven and parked in the LGA. In some cases, businesses with headquarters or postal addresses within the Waverley LGA may register their vehicle there and use them elsewhere. In any case business vehicles would not appear in the ABS household data and this explains the discrepancy between the data sources.

Overall, the car ownership and vehicle registration data provides a general indication of growth in local traffic and parking demand in the Waverley LGA over time. However, this data needs to be considered in a broader context of the influence of household size, household density, business vehicle use, visitor demands and accessibility to alternative transport modes which all affect traffic and parking demands in specific parts of the Waverley LGA. That is, car ownership trends in isolation do not sufficiently describe traffic growth and parking demand trends.

What can be concluded from the data however is that the range of transport options, mixed use development and historically-restrained car parking for new developments in high density areas has resulted in relatively low growth in car ownership in key parts of Waverley; but more could be done.

## 3.4 Other Localised Issues

Other localised issues that have been identified include:

- General: Some footpaths are in a state of disrepair and are lacking facilities for mobility impaired persons (e.g. kerb ramps);
- General: Absence of "safe zone" areas and facilities surrounding Schools;
- General: A number of intersections act as significant "pinch points" introducing delays that are well in excess of their adjacent intersections (examples include: Old South Head Road / Syd Einfeld Drive, Carrington Road / Bronte Road, Old South Head Read / Blair Street / O'Sullivan Road, Bronte Road / Birrell Street and Carrington Road / Birrell Street);
- Bondi Beach key intersections: What are the potential impacts of development on the performance of key intersections such as Campbell Parade / Hall Street and Campbell Parade / Curlewis Street; and
- Bronte Terminus: Pedestrian, bus and traffic conflicts at this location.

## 3.5 Emerging Challenges

NSW Household travel survey data shows that Waverley LGA residents are highly active and mobile, making frequent trips (4.9 trips per weekday compared to the Greater Sydney average of 3.6 trips per weekday); that are short distance (10.8 vehicle kilometres travelled per person compared to 17.5 kilometres for Greater Sydney); and for more social/recreation purposes (30% compared to 25% for Greater Sydney).

With a walking mode share of 29%, it is clear that multiple short trips in and around centres are popular. Public transport mode-share at 15% is less than expected for an area with the level of density of Bondi Junction and Bondi Beach, reflecting the long travel times to access major public transport services including by bus. This trend will continue unless bus travel times in key corridors can be made faster than travel times by car.

Ageing in place is not a trend seen in the past in Waverley (unlike many other places) and the data suggests that there is a level of transience in the population as they age. Higher density areas of Bondi Beach, Bondi Junction, North Bondi and Tamarama have populations with a much younger average age and lower rates of car ownership per household than areas to the north and south such as Dover Heights, Queens Park and Bronte.

An ageing population is however a broader trend and with more elderly in the outer suburbs. An emerging challenge will be the provision of a greater coverage of services to these areas as well as footpaths that overcome excessive grade issues.

The primary redevelopment areas in Waverley are those with the greatest levels of congestion such as Bondi Junction, the Bondi Road corridor, Bondi Beach, Old South Head Road corridor through Dover Heights and Charing Cross Corridor to the south of Bondi Junction. Redevelopment of these corridors could be viewed as emerging congestion exacerbation issues, or, alternatively, as a basis to re-consider public transport provision in these areas given increasing trip densities.

# 4. WHAT IS OUR POLICY POSITION?

## 4.1 PLANNING CONTEXT (WHAT WE NEED TO WORK WITHIN)

There are a number of over-arching studies which this strategy needs to work within and/or be consistent with. These include:

- The NSW Long Term Transport Master Plan (LTTMP);
- Waverley Environment Action Plan 3: 2012-2020 (EAP3);
- Waverley Together 3: Our Community's Strategic Plan (WT3); and
- Waverley Transport Plan 2011 (WTP).

The key elements of each of the above documents relevant to consider when developing improvement strategies for the Waverley LGA are shown in Table 4.1.




Table 4.1: Overarching Strategy Influences

| Source | Element | Influence in this Strategy |
|---|---|---|
| LTTMP | External relationships to Sydney CBD, to Randwick Education and Health Specialisation precinct and to Sydney Airport precinct. | Strengthen transport connections to/from the CBD and to/from the south-west. |
| LTTMP | Connection between the Sydney CBD, Bondi Junction and Bondi Beach defines as "Intermediate transit" (next level down from Mass Transit) defining the need for good all day service frequencies and the primary access to stops being walking. | Infers the need for a public transport spine between Bondi Junction and Bondi Beach that has right of way, high frequencies and redevelopment to increase the proportion of walk access to the corridor's public transport system. |
| WT3 | Emphasis on sustainability in all aspects of the strategic plan | Strategies lean towards sustainability outcomes over short term gains if trade-offs are required. |
| WT3 | L6 Roads – stabilise or reduce vehicle numbers, ensure access to major hubs is direct and create place-based centres which prioritise pedestrians. | Focus is on modal shift for candidate travel markets. More direct movement to major hubs/centres and pedestrians are the focus in centres such as Bondi Junction and Bondi Beach. |
| WT3 | L7 Walking and Cycling – focus on creating safe and accessible walking and cycling links. | Focus on safe facilities for vulnerable users which generally means separated and off road facilities where possible. |
| WT3 | L8 Public transport – improve and augment main routes, improve access to Bondi Junction and implement mass transit between Bondi Junction and Bondi Beach. | Improvements in key corridors to focus on making public transport more time-competitive with the car. |
| WT3 | L9 Parking – Ensure fair access parking services and education/awareness of safe parking practices | Focus on equity in parking access allocation over bias towards specific user groups. Take an objective value for money approach for parking allocation. |
| WTP | Emphasis on sustainable transport through reducing Vehicle Kilometres Travelled by 15% and targeting 40% of person-kilometres travelled by non-car modes. | This suggests more walking trips achieved through consolidation of development around highly accessible centres and corridors and focussing public transport investment on capturing longer distance trips (such as northern, southern and eastern corridors to/from Bondi Junction). |

## 4.2 Traffic and Transport Improvement Policy and Reasoning

In order to balance sustainability objectives with liveability objectives, Waverley's People Movement and Places Strategy aims to:

*"Provide an equal level of transport mode choice for Waverley residents, employees and visitors through effective active transport schemes, more competitive public transport, better access to all transport networks, more direct connections and greater equity in accessing parking opportunities. Local centres are well connected by an overarching network, while networks in centres prioritise on the basis of people movement."*

The underlying premise is that congestion-related issues cannot be "solved" but that they can be better managed through integrated transport strategies that form a land-use transport system where public transport, walking and cycling usage can flourish. There comes a stage in the evolution of cities or centres where providing multiple viable modal alternatives is a far better strategy than focusing efforts on "improving" one particular mode. This is especially the case in mature, medium density areas like Waverley where street grids, land-use activities and built form were developed around walking and public transport before car use became more dominant. In these precincts and neighbourhoods, trips are frequent, often local and cover short distances. These types of trips are well suited to walking and high frequency public transport, but vulnerable to high levels of congestion if undertaken by car.

Waverley, with its diverse trip purposes and patterns and its high levels of congestion, is an area where effective transport choice whether it is modal choice, route choice, time of day choice or parking choice is becoming increasingly important. Where choice is provided, each option has its own costs and benefits which can be managed to achieve desired transport and sustainability outcomes.

Also, the importance of parking in influencing transport and land use policy implementation cannot be understated in an area such as Waverley where parking demand clearly exceeds supply in many locations. Understanding the value of parking to residents, to new development and to businesses is critical in developing an appropriate parking supply and parking management strategy.

In districts like Waverley, congestion can be better managed through an integrated transport and land-use system where public transport, walking and cycling with their higher capacities and lower resource-use and land-take can provide viable options for trips to local centres and longer-distance trips to neighbouring employment hubs like the Sydney CBD.

In order to achieve sustainability objectives and enhance liveability, Waverley's *People Movement and Places* strategy aims to provide more transport choice for Waverley residents, businesses, employees and visitors.

Greater choice can be provided through:

- priority for pedestrians and people riding bicycles over other needs at critical points within key centres to support the movement of more people;
- more travel time-competitive public transport options;
- planning and redevelopment that encourages mixed use at sustainable densities along major public transport corridors to increase the viability of major transport improvements;
- more direct connections along key desire lines where network structure and permeability is poor;
- better network connectivity and interchanging across all transport modes where discontinuities occur, reducing over reliance on a single transport mode; and
- greater equity and options for accessing limited parking resources.

## 4.3 KEY GOALS

Under the traffic and transport improvement policy, the following key goals are targeted in order to provide more travel choices to people in the Waverley LGA:

- prioritise for pedestrians and bicycle riders in centres such a Bondi Junction and Bondi Beach;
- increase the number of trips undertaken by walking and cycling by increasing convenience and safety through provision of appropriate end-of-trip facilities for bicycles and upgrades to key routes, especially to local centres;
- increase the viability of using public transport by increasing the capacity and relative speed of services in primary public transport corridors;
- improve the directness and number of connections within the local road network to support the primary road network, particularly for north-south trips across Waverley;
- reduce the volume of circulating traffic at key centres by providing more off street parking opportunities, ensuring greater equity in parking provision in centres and managing on street parking on a value for money basis;
- reduce the volume of circulating traffic by improving information provided to users about off-street parking availability; and
- encourage redevelopment to occur along high demand corridors.

## 4.4 BONDI ROAD INTERIM ACCESS STRATEGY

On the 5th of November 2013 Waverley Council resolved to:

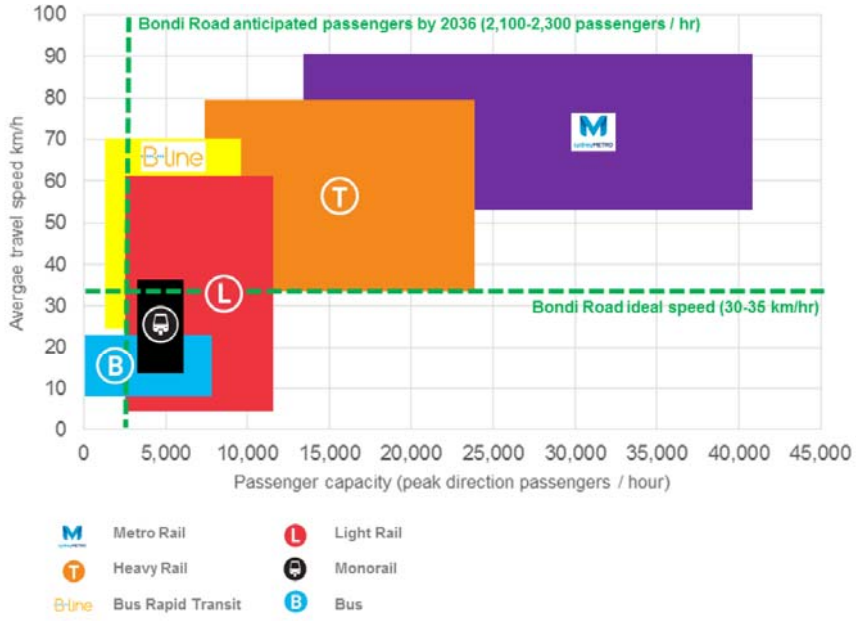
*"Develop an Interim Access Strategy for the Bondi Road corridor to identify short to medium term options to improve public transport efficiency and maximise patronage, given that light rail is a medium to long term proposition. The investigation is to include consideration of a new bus route between Bondi Beach and Edgecliff via the Rose Bay Ferry Wharf and Double Bay and other public transport options to and from Bondi Beach."*

The aim of this strategy was to enhance public transport access in the short and medium term over the period 2016-2025 and in particular to consider the pros and cons of:

- priority travel lanes;
- clearways and bus lanes;
- bus stop locations and intervals (noting that Bondi Road is currently the focus of a separate Transport for NSW study);
- cycle routes;
- pedestrian activity and crossings;
- on street parking and loading areas;
- right turns at intersections;
- site/driveway access;
- traffic lights, coordination and priority lanterns; and
- alternative routes to and from the beach.

A number of recommended actions outlined in Section 6 of this report address many of the transport issues listed above. Signature Project 3 and Signature Project 4 in particular, specifically address a number of items related to Council resolution.

Figure 4.1 shows the various transport options for the Bondi Road corridor that were explored by WSP/Parsons Brinckerhoff in the *Bondi Road Corridor Transport Strategy Report (2016)*. It compares the typical capacity range and travel speed of different modes – bus, rapid transit bus, light rail, heavy rail and metro rail. It anticipated that, by the year 2036, the number of passengers on Bondi Road would reach around 2,100 – 2,300 passengers travelling in the peak direction at peak demand times, based on current land use and a 40% uplift in public transport patronage. This illustrates the need to provide a much improved bus system in the short term, and a rapid bus transit system solution in the long term. However, it should be noted that this does not justify investment in one public transport mode over another as many elements can impact the feasibility of transport solutions.




*Source: adapted from Transit Capacity and Quality Service Manual (TRB 2003)*

Figure E1.1 Typical travel speed and capacity ranges for proposed transit modes

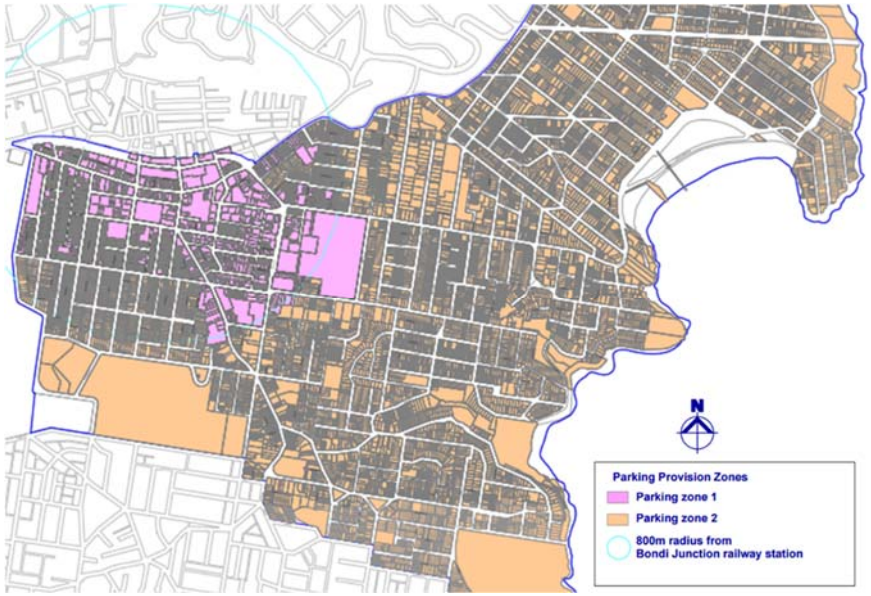
Figure 4.1: Public Transport Passenger Capacity by Type

## 4.5 Parking Rates for New Development

In many parts of the Waverley LGA, parking demand exceeds supply and finding a parking space can generate a lot of circulating traffic. Historically, a lot of resident-based parking has been on-street with many dwellings not having garages, or where garages are available, they may have been used/converted for other purposes.

Prior to recent amendments in the Waverley DCP there were four parking zones (Zone A, B, C and Bondi Junction). The areas that have had the lowest growth in car ownership over the past two decades (Bondi Junction, Bondi Beach) correlate with the parking zones called 'Bondi Junction' and 'Zone A', which had zero minimum parking requirements for new developments. The areas that experienced medium growth in car ownership (Tamarama, Queens Park) were marked as 'Zone B', which had relatively low minimum rates for car parking in new developments. The areas that experienced the highest growth in car ownership (e.g. Dover Heights) were marked 'Zone C' which had higher minimum requirements for car parking in new developments.

In 2015 the Waverley DCP was amended significantly with respect to minimum car parking requirements for new residential developments. It created just two parking zones: Zone 1 and Zone 2 (see Figure 4.2). Zone 1 applies to Bondi Junction and requires a minimum of 0.5-1.5 parking spaces per dwelling. Zone 2 applies to the remainder of the Waverley LGA and requires a minimum of 0.5-2.0 parking spaces per dwelling.




*Source: Waverley Council DCP*

Figure 4.2: Waverley Parking Zones

The multi-unit residential parking rates defined within the Waverley DCP for "Parking Zone 1" are currently set at levels that are above Roads and Maritime Services' guidelines for high density development in metropolitan areas. The proximity of Zone 1 to a high level of public transport service (regional buses and trains), as well as the area's definition as a "Strategic Centre" in the NSW transport planning document "A Plan for Growing Sydney", suggest the current rates for Zone 1 need to be reconsidered.

Setting 'maximum' rates with a zero minimum for Zone 1 better aligns with the NSW Department of Planning and Environment' Technical Note on car parking requirements in SEPP 65, that states: *"Those centres defined in 'A Plan for Growing Sydney' as a CBD, Regional City Centre or Strategic Centre should apply the Metropolitan Regional Centre (CBD) rates of the RMS Guide to Traffic Generating Developments (GTTGD), while the remaining Sydney centres serviced by railway or light rail stations should be classified as a Metropolitan Subregional Centre for the purposes of the GTTGD."* Bondi Junction is currently classified as a Strategic Centre.

It should be noted that when developing new parking rates for Zone 1, those recommended within the GTTGD were written in 2002 for the whole of NSW and are based, in part, on data from 1981. Since then, more contemporary planning and parking management approaches have considered restraining parking supply as a key mechanism in sending the right "signals" to the market that living in transit-orientated, high density areas requires a different attitude to car ownership and usage.

It is suggested that car parking rates for multi-unit residential developments in "Parking Zone 1" be set to 'maximum' rates, with zero minimum car parking requirements for new developments to further constrain growth in private vehicles in this congested area.

Parking Zone 2 currently requires a higher rate of car parking provision for new residential developments with the rates not appearing to have a basis in the GTTGD for either medium or high density dwellings. Changing the minimum parking rate for Zone 2 to zero (currently set at 0.5 per dwelling) would allow for a greater diversity of building type, increased housing affordability, and greater market choice.

Based on the car ownership data, should light rail or bus priority be implemented from Bondi Junction to Bondi Beach, then the Bondi Beach area and the Bondi Road Corridor (approx. 800m either side) should be considered for inclusion in Parking Zone 1 as well.

Other factors to take into consideration when developing policies around parking rate changes include:

- the introduction of autonomous vehicles;
- the increasing use of ride share schemes;
- the use of more technology based parking systems;
- demographic changes and behaviour change;
- trends towards a greater emphasis in public health outcomes; and
- reducing sedentary lifestyles.

Flexibility in re-using parking spaces for other purposes, as parking needs change in the future should be a key consideration in setting parking policy. Also, customers' vehicles are like to generate a need for more drop-off and pick-up space and parking policy needs to contemplate whether this should be on-site or fronting the site.

## 4.6 Parking Fees as a Transport Funding Source

The NSW Office of State Revenue outlined that the existing 1,600 leviable car parking spaces in Bondi Junction alone contribute a total $1.1 million per annum to the NSW Parking Space Levy. The rate currently increases at CPI and was $840 per space from 1 July 2016.

The amount raised is held in the "Public Transport Fund" and must be used to finance projects that "provide public transport to, from, and within leviable districts" as well as real-time info, and other related activities. Hypothecated over a 20-year period total contributions from Bondi Junction would equate to around $22 million in today's dollars.

Integrating this policy into Waverley's People Movement and Places strategies would assist in providing a basis for a State funding contribution towards major projects in the LGA, such as upgrading the Bondi Junction Interchange.

## 4.7 Car Share and Ride Share

Car Share and Ride Share are two modern transport modes on the rise across the globe, particularly within Sydney. Both modes utilise online mobile and web applications to connect users.

Specifically, Car Share involves multiple persons using a 'share vehicle', where users book the use of a nearby vehicle for a certain time period before returning it to an allocated location where another user can access the vehicle (e.g. GoGet or Hertz 24/7). Ride Share involves connecting potential passengers and drivers bound for a similar location (e.g. Uber or CarNextDoor).

Car Share and Ride Share offer convenience. They are cost-effective, and environmentally friendly, reduce traffic in congested areas and provide an accessible 'on-demand' transport option for those bound to locations where public transport is not accessible.

Current parking management in Waverley has evolved without consideration of the value of kerbside space in densely populated areas. Kerbside space is a valuable asset. Bus stops, loading zones and taxi ranks are often provided in the most accessible locations ensuring space is utilised in the most efficient manner. Car Share and Ride Share zones have emerged in Sydney and in other cities around Australia as an efficient use of kerbside space.

Waverley has an existing Car Share Policy that aims "to increase use of sustainable transport and reduce greenhouse gas emissions" and outlines that bays be "dedicated bays allocated where demand for service is high".


Currently, Waverley has 80 car share pods operating across the LGA equating to approximately 1 pod for every 900 residents. By comparison, City of Sydney provides approximately 1 pod for every 320 residents and Inner West Council approximately 1 pod every 860 residents. Considering Waverley's demographic and current kerbside space priorities, the LGA has the capacity to expand on its existing Car/Ride Share to better align with similar areas and become a leader in the use of these options.

# 5. SIGNATURE PROJECTS

The following section discusses the twelve (12) signature transport projects recommended for the Waverley LGA. The 12 projects are as follows:

1. Better Streetscapes
2. Cycling Strategy
3. Bondi Junction Transport Interchange
4. Bondi Road Corridor Strategy
5. Waverley Walking Strategy
6. Smart Cities Mobility Strategy
7. Schools Active Transport Strategy
8. Shared and Electric Vehicles
9. Charing Cross-improvements to streetscapes
10. Bondi Junction
11. Bondi Beach
12. Smart Parking Management

## 5.1 BETTER STREETSCAPES

| Key Benefits | | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| ✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | | | | | | | | |
| 1 | LGA-Wide Improvements (LG) | ✓✓✓ | ✓ | ✓✓✓ | ✓ | ✓✓ | ✓ | ✓ |


Purpose and Description:

Waverley has a widespread mix of transport demands and challenges, creating the need for strategies that cover all corners of the LGA. When considering an overall framework for how Council can achieve its transport objectives it is important to ensure that the "smaller", localised challenges are not lost in consideration of "big picture" items. Smaller, localised improvements can in many cases provide high value for relatively low cost, can be quick to implement and can be more easily staged. LGA-Wide Improvements are aimed at improving transport access opportunities for a large proportion of residents, employees and visitors to Waverley.

When undertaking improvements on such a large geographical scale, across many transport modes and locations it is important to present actions in order of implementation priority. Actions for LGA-wide improvements have been prioritised by mode, as follows:

1. Walking (i.e. pedestrian connections, footpath quality; etc)
2. Cycling (i.e. cycle path connectivity, path quality; geography, etc);
3. Public transport (i.e. available information, service availability and efficiency, bus stop quality; etc);
4. Service vehicles (i.e. kerbside space availability, access; etc);
5. Private vehicle traffic network (i.e. traffic pinch points, pavement improvements; etc);
6. Off-street parking (i.e. parking availability, policy planning, etc); and
7. On-street parking (i.e. parking availability, policy planning, etc).

Benefits:

A city-wide improvement program will provide a comprehensive action plan for the "smaller" improvements that can have a cumulative positive impact on the entire road network. The range of proposed actions will improve liveability, land use value and tourism, provide greater connectivity for residents and visitors across all transport modes throughout the LGA and encourage growing interest in alternate modes of transport (i.e. cycling or bus) by separating and prioritising modes to improve travel times and convenience.

Limitations:

Due to the broad scope of proposed improvements it is difficult to identify case by case limitations for each action. Many of the detailed actions/improvements can only be undertaken as part of redevelopment as land values make creating extra space for transport space costly. Existing kerbside permits and parking schemes will take time to change and there is limited road corridor space and challenging across the LGA.

Recommendations:

- Improvements to cycling, footpaths and road can be undertaken in conjunction with other roadworks to reduce cost.
- Improve connectivity and seperation of transport modes through new links and prioritising transport modes based on their location.
- Improve pedestrian and cyclist accessibility and mobility;
- Reduce the cost of projects by undertaking actions in conjunction with others (a collaborative action plan over stand-alone projects);
- Develop policies to encourage reduced private vehicle mode share and manage kerbside space to balance the needs of businesses and residents;
- Investigate value for money, targeted improvements at intersection pinch points and
- Develop policies to improve the flexibility of future use of on-site parking.

## 5.2 CYCLING STRATEGY


| Key Benefits<br>✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| 2 | Cycling Strategy (CY) | ✓ | | ✓✓✓ | ✓ | | ✓ | ✓ |

### Purpose and Description:

Waverley has a high mode share of active transport users when compared to greater Sydney. When considering the much higher number of recreational trips people take each day throughout Waverley compared to other parts of Greater Sydney and the increasing levels of traffic congestion, it is expected that even more people will be walking and riding bicycles in the future.

As such there is a need to provide high quality, separated bicycle infrastructure on key routes between local regional centres such as: Sydney CBD, Bondi Junction, Bondi Beach, Rose Bay Ferry Wharf, UNSW and the Hospitals campus, Centennial Park and Coogee Beach. Examples of high quality, separated bicycle routes exist all over the world, particularly in Europe where "bicycle superhighways" cater for large numbers of bicycle riders. Bicycle "superhighways" are large bicycle-only roads similar to a vehicle highway, with designated off and on ramp points and lanes for overtaking.

The *Waverley Bike Plan 2013* acknowledges the necessity of providing a comprehensive cycle network and has outlined six key cycle routes that are either currently under development or require linking sections. While the formation of bicycle superhighways in Waverley is considered a long term goal, facilities can be established as part of the routes outlined in the *Waverley Bike Plan* with capacity to expand. This type of staged implementation would require working with surrounding Councils, and the State Government, to plan and build regional routes.

Missing cycle links within the current Waverley network are the most immediate task in building towards a comprehensive cycle network. As part of this strategy the implementation of missing cycle links outlined in the Waverley Bike Plan should attempt to include these facilities. When implementing missing links consideration should be given to cycle routes adjacent and outside of the study area, such as the RMS/TfNSW "*Principle Bike Network and Inner City Regional Bike Network*".

Infrastructure Australia's priority project list includes the Inner Sydney Active Transport Network, which provides $175 million for regional cycling routes within the inner Sydney area.

### Benefits:

This type of cycle infrastructure encourages bicycle usage reducing the need to use motorised private or public transport modes to travel to/from and within Waverley. The multi-speed nature of these routes allows for bicycle riders of all levels to use the route. A scheme such as this can be created in stages as a long term infrastructure plan that incrementally encourages more bicycle riders as the project extends "piece by piece". Cycling superhighways would need to be implemented as part of a comprehensive network strategy working in conjunction with supporting cycling facilities.

### Limitations:

The physical space needed for these full superhighways can be as wide as roadways. Terrain and geography would also need to be considered when choosing routes as would the location of key interchange points.

It is often difficult to quantify the value for money proposition of these facilities and innovative methodologies are needed to allow these projects to compete with road projects for limited funding.

### Recommendations:

- Progressing construction of the missing links identified in the Waverley Bike Plan 2013 consideration of the potential for bicycle superhighways in the long term for these links and new links; and
- Review potential for additional bike superhighways in long term connecting adjacent Council areas, including any expansion of the existing council. For example, investigate Curlewis Street/Birringa Road as a separated bike superhighway consistent with the Waverley Bike Plan, RMS/TfNSW Principle Bike Network and Inner City Regional Bike Network.

## 5.3 BONDI JUNCTION TRANSPORT INTERCHANGE


| Key Benefits | | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| ✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | | | | | | | | |
| 3 | Bondi Junction Transport Interchange (BT) | ✓✓✓ | | ✓✓ | ✓✓✓ | | | ✓ |

Description:

Around 80,000 passengers "tag on" and off at Bondi Junction interchange every weekday. Of these, around 25% transfer to another transport mode. The remaining 60,000 passengers enter or exit the interchange on foot, to continue the remainder of their journey by car (from a nearby car parking facility or kiss-and-ride), by bicycle, on foot, or another bus service outside the interchange. There is an estimated current demand for at least 600 bicycle parking bays (2% mode share for 30,000 people arriving at the station on a weekday).

Considering the scale of movement, the Bondi Junction interchange needs to function as efficiently as possible and provide customers clear guidance on alternative modes to interchange to/from. The form of the interchange is inefficient for both bus movement and people movement between stops/stations platforms and to/from surrounding areas.

Council has undertaken preparatory work for the redevelopment of Rowe Street between Oxford Street pedestrian mall and Grosvenor Lane, adjacent to the existing Bondi Junction interchange, which should be integrated into future design options. The redevelopment of Rowe Street will reinstate the direct pedestrian connection between the mall and the train concourse. Options that present themselves include activation of Grosvenor Lane as a pedestrian space and the installation of a large bicycle parking and servicing facility.

Each car parking space in Bondi Junction contributes $840 per annum (indexed to the consumer price index) to the NSW Parking Space Levy, unless it is exempt for particular uses. Bondi Junction contributes an estimated $1.1 million per annum to the total $105 million collected annually by the Office of State Revenue. Hypothecated over a 20-year period, the Bondi Junction contribution equates to around $22 million. There is a strong case for this contribution to be used towards improving the Bondi Junction transport interchange including upgrades to pedestrian access, bicycle parking, real time information, and bus operations.

Benefits:

Upgrading the Bondi Junction interchange will improve integration and connectivity between various transport modes. Improvements to the efficiency and effectiveness of the interchange will encourage greater use of alternative transport modes. By improving what is essentially the "gateway" to and from Waverley, any transport changes would be expected to effectively "flow-on" throughout the local network (i.e. improved cycle-train interchange increases people riding to the train station).

Limitations:

Limitations for redevelopment of the Bondi Junction interchange mostly surround physical constraints and the high concentration of commercial developments that may be impacted as a result. Constructions cost and construction cost risk are also key limitations

Recommendations:

- Encourage TfNSW and Sydney Buses to work collaboratively with Council to undertake a master plan for the redevelopment of Bondi Junction rail/bus interchange; and
- Investigate integrating improvements with existing and planned Bondi Junction works.

## 5.4 BONDI ROAD CORRIDOR STRATEGY


### Purpose and Description:

The Bondi Road Corridor is heavily patronised by bus passengers and the TfNSW Long Term Transport Master Plan has recognised the corridor as a major transit route. A Bondi Road Corridor Transport Strategy has been prepared by *Parsons Brinckerhoff for Waverley Council (2016)* which explored options for Light Rail or bus rapid transit along the corridor and recommended a bus rapid transit system. In the short term, an Interim Access Strategy was proposed to provide bus priority improvements.

The limited on-street and off-street parking availability along and adjacent to Bondi Road is an issue for both developments on the side streets tangential to Bondi Road and current bus travel times can be significantly longer than cars. When considering insufficient bus capacity in peak times to accommodate all of the demand and the absence of nearby roads to use for private vehicle circulation more traffic is pushed to use Bondi Road. Furthermore, there is no direct, continuous east-west cycling route in the corridor outside of Bondi Road which is challenging for most bicycle riders.

The scheme involves:

- creation of a rear laneway behind the commercial or mixed use buildings fronting Bondi Road (as they re-develop) for access, circulation and bicycles; and
- car stackers or conventional multi-story car parks straddling or next to the laneways that can be used by commercial developments or nearby residents (shared or allocated usage). This strategy would require further investigation and testing against floor-space ratios, height restrictions and other planning controls in the area.

### Benefits:

A right of way for public transport in this corridor will significantly improve the competitiveness of public transport compared to private vehicles. In addition, it will significantly improve travel time reliability and remove the need to wait for another vehicle due to overcrowding. The roadside concept assists with mitigating the impacts of any parking removal. It also provides a continuous cycling route either side of Bondi Road for improving the amenity of cycling between Bondi Junction and Bondi Beach. Traffic can also use the lane-way to circulate to/from parking locally, rather than be required to circulate via Bondi Road.

Improving reliability of services, connections to trains and express buses will increase the ability of public transport to attract additional modal share. The concept would likely be implemented in sections as redevelopment occurs.

### Limitations:

Bondi Road is a very constrained corridor with a high traffic demand. Reallocation of existing space will impact the existing private vehicle traffic demands, without a reasonable, proximate alternative route and a number of measures would only be possible as part of redevelopment. There will likely be a broader re-routing of traffic, with quite dispersive potential impacts. Other key constraints include the Bondi Road/Council Street intersection and entry into Bondi Junction which is contorted. Fundamentally, this will need a long term masterplan that takes into consideration all road users and the amenity of the streetscape for the people using outdoor cafes, seating, shops and residences.

### Recommendations:

- Further assessment and design to create a long term corridor master plan. In the short term, an Interim Access Strategy would be adopted to provide bus priority improvements that are consistent with the long term concept; and
- Work collaboratively with TfNSW, RMS and Sydney Buses to develop a concept plan of a long term bus priority measures.

## 5.5 WAVERLEY WALKING STRATEGY


| Key Benefits | | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| ✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | | | | | | | | |
| 5 | Waverley Walking Strategy (WS) | ✓✓✓ | ✓✓✓ | ✓✓ | ✓✓ | | | |

### Purpose and Description:

Waverley has a walking mode share of 29% which is 12% more than Greater Sydney. To cater for this demand there is a clear need for safe and connected pedestrian networks. The majority of pedestrian activity occurs within the centres of Bondi Beach and Bondi Junction however the pedestrian accessibility to these and other local centres is important in encouraging more residents and visitors to walk. It is important to understand which areas have the potential for mode share increase and where walkability or challenging topography of the LGA may be an issue.

A walking strategy for the LGA would involve identifying major pedestrian generators and key desire lines across the LGA. The barriers or missing links near generators and along the key desire lines would then be established (through a GIS study of topography, cadastre and land ownership). In conjunction with this, walkability audits of existing pedestrian facilities will facilitate an upgrade program to be created. There would also be significant benefit in capitalising on a strong walking culture in the LGA with further education and marketing plans accordingly.

### Benefits:

Pedestrian connections and facilities are improved encouraging greater walkability throughout Waverley. By providing a more attractive and convenient alternative for short trips, increased walking assists in easing traffic congestion, particularly within key centres. Better walking access to buses and trains also promotes multi-modal trips across the LGA and to/from the other parts of Greater Sydney.

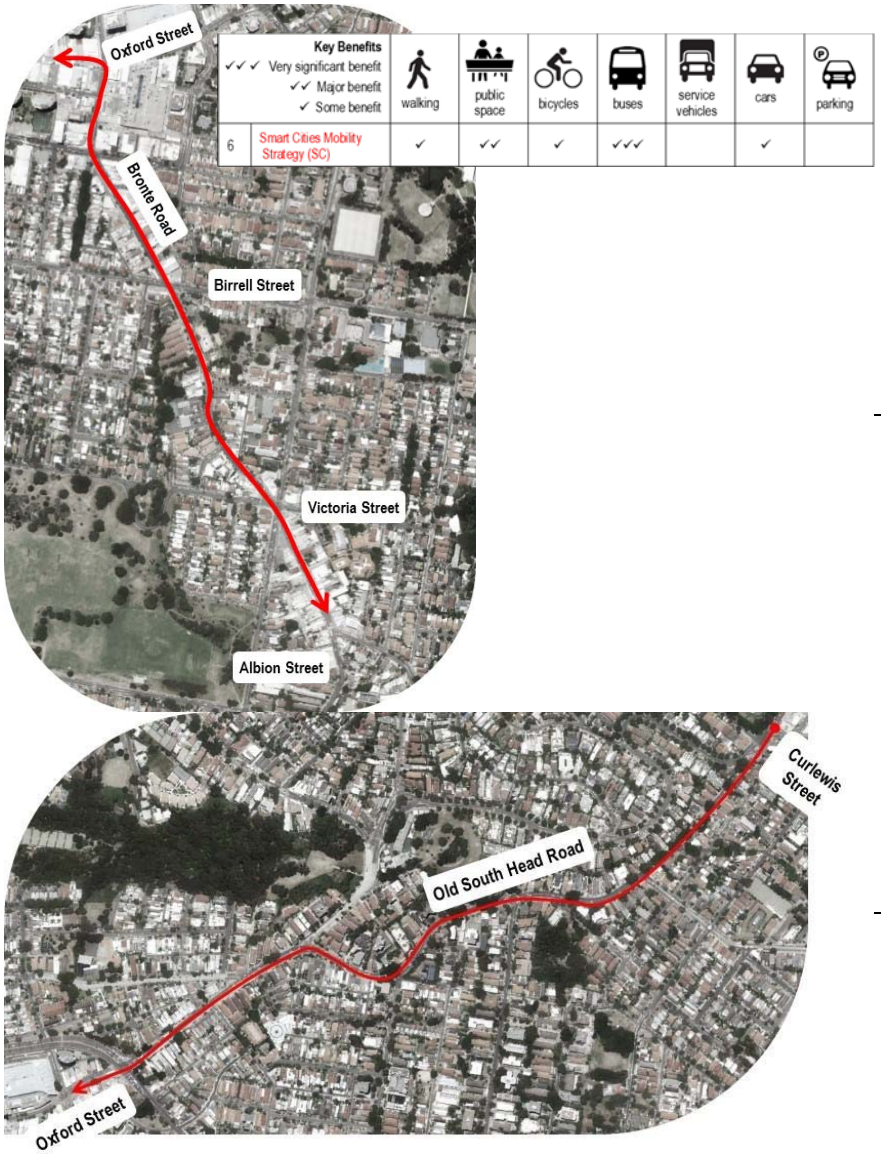
### Limitations:

Barriers such as highly trafficked roads, narrow road reserves and footpaths, existing buildings without pedestrian connections and the land topography (i.e. cliffs and valleys) poses challenges in some areas. Waverley's topography may also present an issue to encouraging people to walk as it becomes steep and difficult in some areas.

### Recommendations:

- Identify the key pedestrian generators, activity areas and desire lines and map these. Undertake a GIS study of topography, cadastre and land ownership to identify walking barriers and missing links. Audit existing pedestrian facility conditions and connectivity to generate specific actions to undertake, including through PAMPs; and
- Identify key trip purposes where walking has the potential to attract increased modal share and establish education and marketing plans accordingly.

## 5.6 SMART CITIES MOBILITY STRATEGY




| Key Benefits | | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| ✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | | | | | | | | |
| 6 | Smart Cities Mobility Strategy (SC) | ✓ | ✓✓ | ✓ | ✓✓✓ | | ✓ | |

### Purpose and Description:

Public Transport will be key in creating a 'Smart Cities' mobility strategy for Waverley. Currently, transport routes (i.e. Old South Head Road and Bronte Road) have large volumes of buses with substantial passenger volumes to Bondi Junction and beyond. Bus travel times on some corridors are significantly longer than car travel times for equivalent trips, in particular the Bronte Road through Charing Cross which then heads towards Bondi Junction is heavily congested in peak periods. With slower travel speeds and the need to pass through residential streets and stop multiple times, door-to-door bus travel times can be more than twice those of the same trip made by car. To ensure that buses are more time-competitive with private vehicles (door-to-door) travel times must become faster and more reliable, in addition the availability of cheap parking at key destinations is also reducing public transport travel times relative to cars and as such this is an important improvement that must be made to the Waverley transport system.

In conjunction with real-time information and management, a scheme might involve sections of bus priority at intersections along key roads. For example, Bronte Road is wide enough for bus lanes north of Victoria Street, albeit with on street parking impacts, and South of Victoria Street, the significance of parking to businesses increases and both reducing traffic volumes and introducing intersection-based bus jumps are the most effective means of improving bus travel times. Investigations into schemes and bus capacities are likely to require collaboration with RMS and adjacent Councils to provide a comprehensive, effective strategy.

### Benefits:

Corridor travel times that are faster and more reliable than car will encourage more people to catch the bus for shopping and recreation in Bondi Junction and for trips beyond Bondi Junction to other parts of Sydney. If bus priority schemes were introduced (either queue-jumps at intersections or preferably full-length peak period bus lanes) this infrastructure would then need to be maximised through focussing high frequency bus services into these corridors increasing the likelihood of buses being used for the high volume of passengers moving between Bondi Junction and the north or south of Waverley.

### Limitations:

Physical constraints along this corridor are due to road width and space availability, in particular in busy commercial areas such as on approach to Bondi Junction.

Reallocating lane space to buses has the potential to produce higher levels of congestion and impacts on the Victoria Street intersection near Charing Cross will require traffic to be further encouraged to use alternative routes (Charing Cross projects - Section 5.9). Along Old South Head Road there will be some peak period traffic impacts that could be mitigated through targeted intersection widening, promotion of alternative routes, or through accepting the trade-off for increased transport choice being some additional peak period delay for traffic.

It is noted that Council currently has streetscaping plans that redesign the east side of Bronte Road between Ebley Street and Birrell Street. This concept includes kerb "buildouts" which could be an acceptable interim measure before implementing bus priority.

### Recommendations:

- Work collaboratively with TfNSW, RMS, Sydney Buses and Woollahra Council to develop concept plans, such as:
  - integrating works required for a 7am-9am inbound bus lane on Bronte Road from Victoria Street to Ebley Street;
  - bus priority treatments along Old South Head Road (Curlewis Street to Syd Einfeld Drive), including any land requirements and intersection modifications and consideration of AM peak clearway conditions as an interim option; and
  - integrated real-time passenger information systems.

## 5.7 SCHOOLS ACTIVE TRANSPORT STRATEGY


| Key Benefits<br>✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| 7 | Schools Active Transport Strategy (SA) | ✓✓✓ | | ✓✓ | ✓✓ | | ✓✓ | ✓ |

Purpose and Description:

A cluster of Schools exists within the local suburb of Waverley, south-east of Bondi Junction and identified in the adjacent figure. The Schools are centred around Church Street, which spans between Bronte Road and Carrington Road. There currently exists only two signalised pedestrian crossings at each end of Church Street.

During peak drop off and pick up times, large volumes of traffic are generated, heavily impacting surrounding streets. This daily influx of concentrated traffic slows buses on Bronte Road, blocks the movement of vehicles on Carrington Road and Bronte Road and reduces road safety for pedestrians and bicycle riders accessing the Schools and nearby precincts.

It is understood that the War Memorial Hospital site (identified on the adjacent figure) is likely to be redeveloped in the near future. As part of this redevelopment, there is an opportunity to provide a centralised drop-off and pick-up zone for the surrounding Schools near Church Street. This would then allow "pick-up exclusion" zones for other streets around the individual Schools.

The State Government NSW Centre for Road Safety "Drop-off and Pick-up Initiative" is outlined at http://roadsafety.transport.nsw.gov.au/stayingsafe/Schools/dropoff_pickup. Whilst the policy states that drop off zones should be on the same side of the road as the Schools, in this situation there are existing signalised pedestrian crossings which could be used to provide safe access, though this may involve an investigation into impacts of increase usage at these crossing points. Designated drop off facilities would be offset by exclusion zones to improve safety and traffic flows in the immediate area surrounding schools.

Benefits:

Providing a centralised pick-up and drop-off location for parents reduces the impact of this traffic on surrounding streets. Providing only one destination for parents also means that less traffic circulation looking for parking will occur and Schools in the area can present children and parents with a clear management plan, creating a safer and more efficient road environment in the area.

Limitations:

Consideration will be needed as to how the site could be used outside of the relatively short Schools pick-up drop-off times. Education around any parking management plans will also be important. Further, the directing of traffic to one central point may exacerbate intersection pinch points on Birrell Street and Church Street and some local intersection upgrades may be required.

Recommendations:

- Initiate discussions with the owners of the Hospital and adjacent Schools for the potential of a "shared" parking area and design safe walking routes between this area and each surrounding School; and
- Investigate opportunities to work with all Schools in LGA to improve active travel access and behaviour change.

## 5.8 SHARED AND ELECTRIC VEHICLES


| Key Benefits | | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| ✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | | | | | | | | |
| 8 | Shared and Electric Vehicles (SE) | ✓ | | ✓✓✓ | ✓ | | ✓✓ | ✓ |

*Potential start-up scheme: Bondi Beach, Bondi Road, Bondi Junction*


*Existing Car Share Pod Locations – Waverley LGA*

### Purpose and Description:

The Waverley LGA includes a lot of recreational travel and a lot of "casual" travel associated with visitors to Bondi Beach and Bondi Junction. In addition, many parts of the LGA contain steep terrain which discourages bicycle usage for casual or employee bicycle riders who do not wish to overexert themselves on the way to meetings or work as well as those who are not as capable when it comes to cycling (such as the elderly).

The use of E-bikes around the world have been shown to provide opportunities to encourage cycling (to work and recreationally). Expanding Waverley's bike-share scheme to include E-bikes would assist riders on adverse grades, or even on flat grades if needed and would take down one more barrier to cycling. The E-bike scheme in Milan, Italy provides a good example of simple electric bikes that supplement standard bikes for users that prefer this assistance.

Based on community feedback and the high number of recreational trips in Waverley, the LGA is also well positioned to expand on its existing Car Share schemes by allocating more kerbside space to car share pods and encouraging people to utilise these modes over owning private vehicles that demand kerbside space.

Initial scheme expansions in Waverley would most logically occur in Bondi Beach, Bondi Road and Bondi Junction; the highest areas of activity for a range of trip purposes. It is recommended that a Bondi Road corridor cycle route be developed as part of the bike share scheme so it would be suitable for occasional users who would not be comfortable riding in mixed traffic along Bondi Road. A connection to Rose Bay Ferry Wharf would also be a logical extension of the scheme due to its relatively flat route.

Based on community surveys and feedback the majority of residents utilising 'Car Share are those in the Bondi Beach and Dover Heights areas of Waverley, as such additional car share pods should be focused in these areas.

It should be noted that the City of Sydney and Randwick Council also have bike and car share schemes/policies and it would be beneficial to integrate Waverley's scheme with these (and other schemes in the south-east). Furthermore, a number of Council's are preparing for the rapid uptake of electric cars and the need for charging stations in publicly accessible locations.

### Benefits:

Waverley would benefit greatly from expanding sharing schemes due to its already high modal share for active transport use and its high number of trips that are undertaken for recreational purposes and tourism, as well as the relatively short distance trips taken in Waverley. The addition of E-bikes or E-Cars simply broadens the range of this type of schemes appeal to more everyday users travelling to work and School.

As part of Bondi Junction and Bondi Beach redevelopment in the future new bicycle parking facilities may include "bike share" points and key cycle routes could include bicycle charging locations for E-bikes.

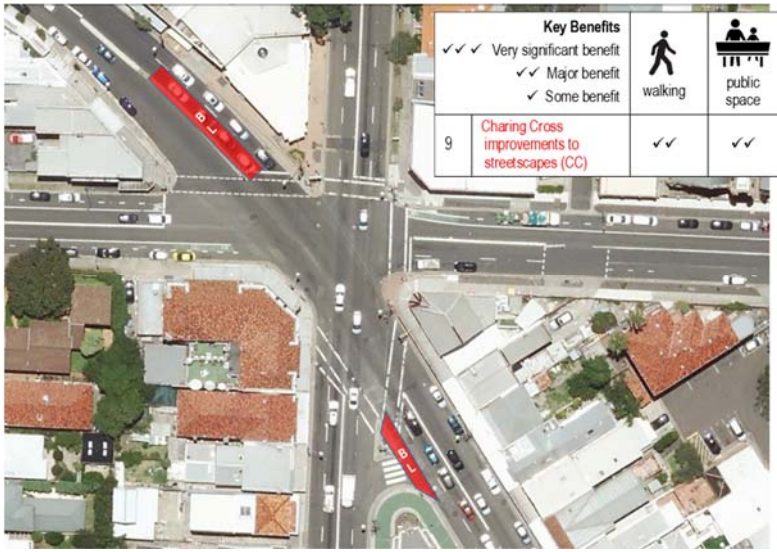
### Limitations:

Bicycle routes along the constrained Bondi Road corridor would be difficult to implement and in some locations could only be achieved with redevelopment. Some bicycle schemes around Australia, while successful, have had issues with helmet availability and management.

### Recommendations:

- Investigate and develop a business case for including e-bikes in the existing bike share scheme (Bondi Beach to Bondi Junction and Rose Bay) in partnership with neighbouring Councils.
- Investigate the feasibility of increasing car share schemes, such as extending the GoGet scheme and adapting it specifically to the unique needs of Waverley.
- Support the roll out of electric vehicles and install charging points at high profile locations (bike and car).

## 5.9 CHARING CROSS - IMPROVEMENTS TO STREETSCAPES

| Key Benefits<br>✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| 9 | Charing Cross improvements to streetscapes (CC) | ✓✓ | ✓✓ | ✓✓ | ✓✓ | | | |

Description:

Charing Cross is a key southern centre within Waverley located on Bronte Road between the Carrington Road intersection and the Albion Street intersection. High through traffic volumes conflict with its centralised commercial nature impacting local traffic movements and causing significant congestion. Two projects are proposed to "reprioritise" the centre to align with active and public transport modes as well as discourage through traffic, including a High Pedestrian Activity Area (HPAA) scheme through the commercial centre and bus priority at the Carrington Road intersection.

The HPAA scheme would involve streetscaping and reprioritising lanes to encourage low speeds, local only traffic, high pedestrian and cycle movements and greater bus efficiency (with bus priority lanes). A scheme such as this may be implemented over time after considerable consultation with local residents.

In addition to the HPAA scheme opening up the pedestrian route with redevelopment (as shown in the figure above) would improve the permeability between Queens Park and the centre.

Short bus lanes/jumps will also assist in prioritising bus movements ahead of general traffic.

Benefits:

The projects reinforce Charing Cross as a local centre by reprioritising for pedestrians, bicycle riders and buses and reducing conflicts between local and through traffic while increasing public transport accessibility and efficiency through the centre.

Reprioritisation of modes to make pedestrians and cyclists a higher priority creates a safer road environment and aligns with Waverley's increasing active transport mode trends.

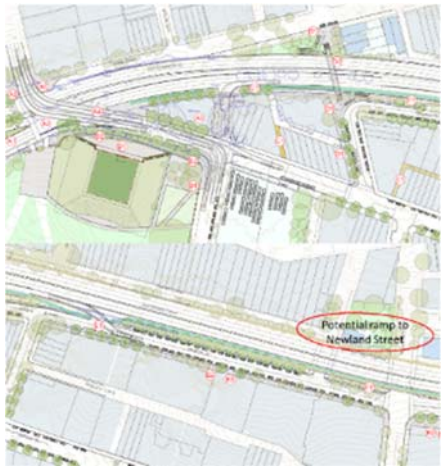
Limitations:

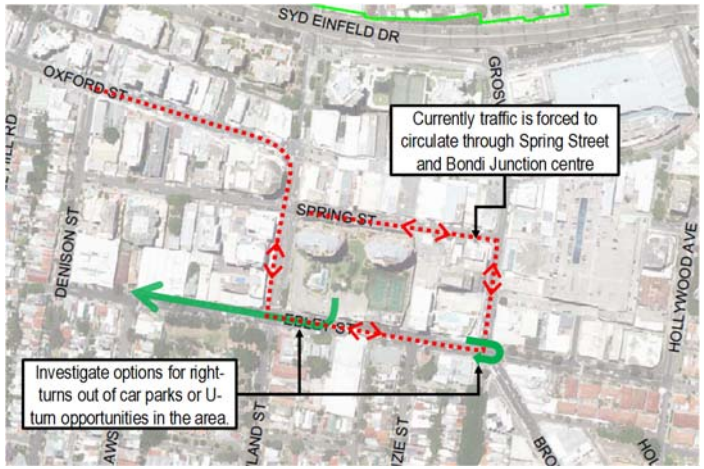
Changes this significant will inevitably affect some local residents and the scheme should be investigated in more detail including an extensive consultation process. Also, there are a number of physical constraints in relation to the proposed HPAA scheme and potential lane changes would need to be investigated further given the limited road widths in the centre.

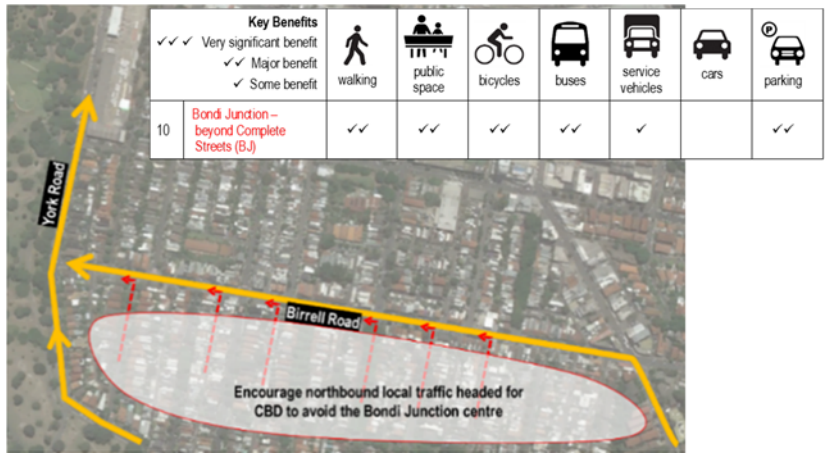
Recommendations:

- Document pedestrian paths through laneways and redevelopment sites in development controls;
- Analyse, design and seek approval from RMS for bus priority measures at the Charing Cross intersection; and
- Investigate options to direct/prioritise "through traffic" onto Carrington Road rather than Bronte Road.

## 5.10 BONDI JUNCTION – BEYOND COMPLETE STREETS




### Syd Einfeld Drive Ramps:

Currently access to Bondi Junction via Syd Einfeld Drive only exists at two points at either end (east and west). Given that a large proportion of traffic on Syd Einfeld Drive is actually destined for Bondi Junction, what current limitations do is create heavy turning movements at the eastern and western ends of Bondi Junction (causing queues to extend out of turn pockets), whilst ensuring that Syd Einfeld Drive is under-utilised. Although Syd Einfeld Drive is designed to take a much larger volume of traffic (currently 37,500 vehicles per day on a six lane carriageway) it is limited by the traffic signals at each end.

Notwithstanding concerns raised by RMS regarding compromising capacity, this improvement better balances demands and capacity by making better use of Syd Einfeld Drive and directing traffic more efficiently to the major car parks within Bondi Junction. The signalised intersections at each end of Syd Einfeld Drive should also be reconfigured, and an improved pedestrian overpass provided over Syd Einfeld Drive.

### Better Car Park Accessibility:

The mix of one-way streets and no right turns in and out of local streets and major access points causes those entering and leaving the Bondi Junction centre to circulate through central streets generating more congestion than necessary. For example, prohibited right turns out of centre car parks currently forces all traffic to circulate on Bronte Road and Spring Street in order to travel westwards. As such these vehicles add to centre congestion conflicting with pedestrians and public transport within the centre.

Allowing right turns out of some major car parks and/or providing U-turn facilities in strategic locations will allow traffic to avoid the major pedestrian conflict areas and reduce the circulation of traffic in the centre. Although this may increase traffic levels on streets such as Ebley Street the reduction of traffic on roads such as Bronte Road and Spring Street would allow for more pedestrian, cycle and bus priority measures.

Signage within Westfield car parks to encourage patrons parking to use particular exits to head towards to CBD or Bondi Beach would also reduce external circulation.

This project aims at prioritising active and public transport through the centre and reduce through-traffic travelling through the centre of Bondi Junction. A scheme such as "Complete Streets" provides a hierarchy and framework for streets and areas that guides these priorities within the centre.

### Bypassing Bondi Junction:

The aim of this project is to reduce unnecessary traffic circulating with in Bondi Junction to access car parking. The existing road network points traffic from the south, from areas such as Coogee, Clovelly and Bronte heading north (or vice versa), to flow directly towards Bondi Junction. A large volume of traffic from areas to the south of Waverley, such as Randwick, Kingsford and Coogee is "through traffic" bound for the Sydney CBD and other areas. Vehicles travelling from Woollahra heading south (or vice versa) often take Newland Street which traverses directly through the centre of Bondi Junction and around the perimeter of Queens Park. The conflict with pedestrians is particularly apparent on Spring Street.

The addition of this traffic through Bondi Junction increases congestion in local streets conflicting with traffic legitimately wanting to stop in Bondi Junction, as well as pedestrians, bicycle riders and buses in the area.

Encouraging through traffic to avoid the centre of Bondi Junction is a worthy objective and additional signage and reprioritisation of movements at the Birrell Street/York Street intersection to favour the bypass movement would assist in achieving this. Reconfigure the Bronte Road southern approach to Birrell Street to a dedicated left turns and shared left-through movements, while banning right turns. Restricting through traffic along Bronte Road north of Birrell Street through lane narrowing and streetscaping would also support this strategy.

### Recommendations:

- Continue negotiations with RMS to implement the scheme.

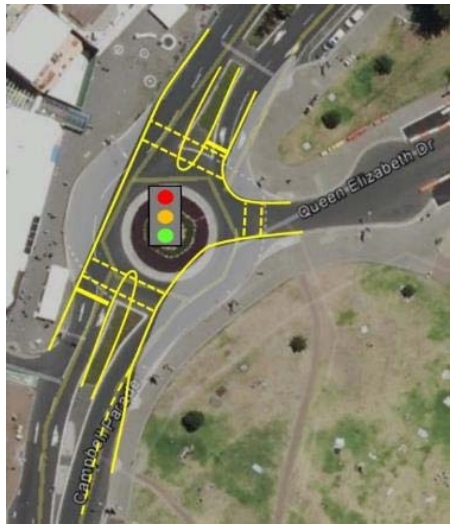
### Recommendations:

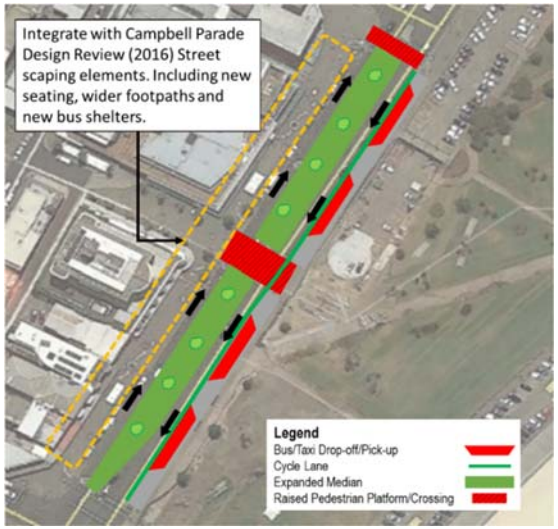
- Model and assess the impacts and benefits of the scheme and generate a concept plan and business case for its implementation.

### Recommendations:

- Re-configure the Bronte Road/Birrell Street and Birrell Street/York Road intersections and lower speeds on Bronte Road north of Birrell via streetscaping.

## 5.11 BONDI BEACH – BEYOND COMPLETE STREETS





| Key Benefits | | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| ✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | | | | | | | | |
| 11 | Bondi Beach – beyond Complete Streets (BB) | ✓✓ | ✓✓ | ✓✓ | ✓✓ | | | ✓✓✓ |

### Campbell Parade/Queen Elizabeth Drive:

Car parking user surveys and observations indicate high numbers of pedestrian and bicycle rider crossing movements at this location. This wide roundabout provides insufficient gaps for pedestrians to cross and is confusing for both bicycles riders and general traffic at conflict points. Signalising the intersection (whilst retaining its U-turn functions) would be effective in this location to create vehicle platoons (and gaps for pedestrians), calm traffic speeds as well as providing a formal crossing opportunity for pedestrians.

A project similar to this was presented in the Bondi Park and Beach Plan of Management (2013), which included replacing the roundabout with a signalised traffic intersection.

It is noted that Council expressed concern with this concept in December 2016 in relation to the Campbell Parade Urban Design Review including U-turns, bus stop locations and pedestrian access. Notwithstanding these concerns, it deserves further consideration.

### Campbell Parade Upgrade:

Campbell Parade is two lanes each way with intermittent parking/bus stopping zones in both directions and a pedestrian barrier running along its median. Given the limited supporting road network surrounding Campbell Parade, it is heavily trafficked by both through traffic and circulating traffic. However, this location should be seen as one where priority is provided for pedestrians, bicycles, buses then cars. Modal prioritisation should be allocated for streets in the area, similar to the Bondi Junction Complete Streets concept, with active and public transport in particular prioritised along Campbell Parade.

The measures suggested include, the removal of one traffic lane in either direction, widening of footpaths and medians, adding more taxi and bus zones and the removal of the central pedestrian fence. This would allow pedestrians to cross mid-block if they chose to between the gaps created by adjacent traffic lights, if sequenced appropriately. The above measures could readily be integrated with the streetscaping recommendations in the Campbell Parade Design Review (2016).

### Bondi Beach Off Street Car Parking:

The majority of Bondi Beach car parking is located within the Queen Elizabeth Drive car park that stretches across the entire Bondi Beach frontage. Traffic circulates through the car park, on Campbell Parade and in other local streets while hunting for an available space. Circulating traffic increases congestion levels and reduces pedestrian amenity in this prime pedestrian area.

Removing the existing Elizabeth Drive car parks and identifying alternative options, such as those outlined previously in the Bondi Beach parking studies would significantly reduce traffic vs pedestrian conflicts in this area. Allowing for clearer separation between modes and between the bays available to permit holders and bays available to non-permit holders would provide fairer access for all. These measures have the ability to work in with the dynamic parking management signature project also being proposed.

The removal of all car parking across the centre of Bondi Beach frees up space for recreation and provides a better beachside amenity for the area where pedestrians are not in conflict with vehicles. The addition of a bike hub for major events at Bondi Beach may be a suitable alternative use of some of this space at these locations.

### Recommendations:

- Re-configure intersection as traffic signals.

### Recommendations:

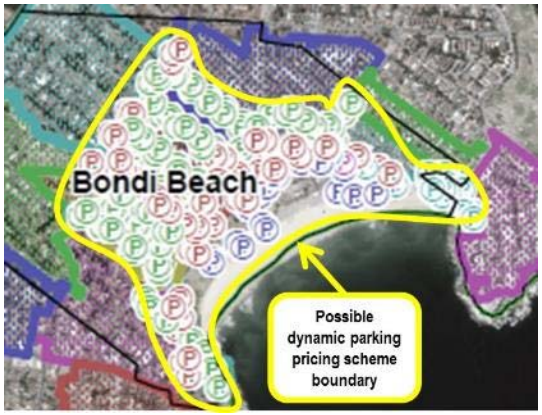
- Prepare a Campbell Parade concept plan founded on one mid-block lane each way.

### Recommendations:

- Detailed parking study and business case to relocated parking.

## 5.12 SMART PARKING MANAGEMENT

*Example: San Francisco (SFPark)*




*Potential application: Bondi Beach*

| | Key Benefits<br>✓✓✓ Very significant benefit<br>✓✓ Major benefit<br>✓ Some benefit | walking | public space | bicycles | buses | service vehicles | cars | parking |
|---|---|---|---|---|---|---|---|---|
| 12 | Smart Parking Management (SP) | ✓ | ✓ | | ✓✓ | | ✓✓ | ✓✓✓ |

Purpose and Description:

Parking space is a limited resource, particularly in areas where demand exceeds supply, as is the case in many parts of Waverley at specific times of the day or on specific days of the week. This was demonstrated in the car parking user survey's undertaken as part of the Waverley People Movement Places Issues Report. Also, the highest demand for parking is closest to the key destinations, such as beaches, shops, restaurants etc. Searching for parking when demand exceeds supply can lead to excessive traffic circulation and congestion, affecting other modes of transport as well as the general amenity of the area.

Dynamic parking pricing and management seeks to overcome many of these issues by:

- identifying where parking is over-utilised and where it is under-utilised;
- encouraging customers to use the under-utilised areas through making it cheaper than the more heavily used areas with signage directing them to these locations; and
- setting prices that send the right triggers to all potential users as to the value of the spaces that they are occupying.

The scheme would be most applicable in Bondi Beach and in Bondi Junction given the limited amount of uncontrolled off street parking in these areas plus the fact that different parking areas have different levels of demand at different times of the day, days of the week and weeks of the year; which is ideally suited to dynamic parking management.

The price-setting rationale would not aim to generate significantly more revenue than is currently generated but to develop a neutral revenue-change position; after accounting for implementation and management costs of the system. The system also incorporates automated over-stay detection methods to maximise the efficiency of the deployment of inspector resources.

The integration of parking permits into the scheme would pose a challenge that would need to be investigated further.

Benefits:

The benefits of the system mostly relate to better utilisation of parking space and greater equity in the use of the most demanded spaces. The dynamic nature of the scheme means that as parking policies change, or development occurs over time, the pricing mechanisms can also be modified on a street-section by street-section basis.

Whilst a dynamic pricing scheme does not appear beneficial for Bondi Junction as well, an electronic, dynamic, parking availability signage scheme would have significant benefits.

Limitations:

Integration of both beach and residential parking permits for local residents could present difficulties as permit users are not sensitive to the changes in pricing and hence are not responsive to management measures. There may be a need to segregate permit and "non-permit" spaces to overcome this issue. Another limitation may be the systems initial expense of installation and removal/upgrade of existing parking metres.

Recommendations:

- Undertake a pre-feasibility study leading to market sounding and business case for a dynamic parking scheme in Bondi Beach (possibly in conjunction with Signature Project 11).

# 6. STRATEGIES AND ACTIONS FOR THE WHOLE LGA

This section outlines strategies and actions that are of significance to the entire Waverley LGA as referenced under Signature Project 1. These actions are aimed at improving transport access opportunities for a large proportion of residents, employees and visitors to Waverley. Most of the actions in this section will require some form of collaboration and coordination with state government or surrounding Councils because of their scale and jurisdictional issues.

Actions are presented in order of implementation priority as follows:

- Walking;
- Cycling;
- Public transport;
- Service vehicles;
- Private vehicle traffic network;
- Off-street parking; and
- On-street parking.

The following table summarises the locations, strategies and actions that are applicable to specific areas within the LGA as well as some example locations of broader (network-wide) strategies. Action reference numbers have also been included.

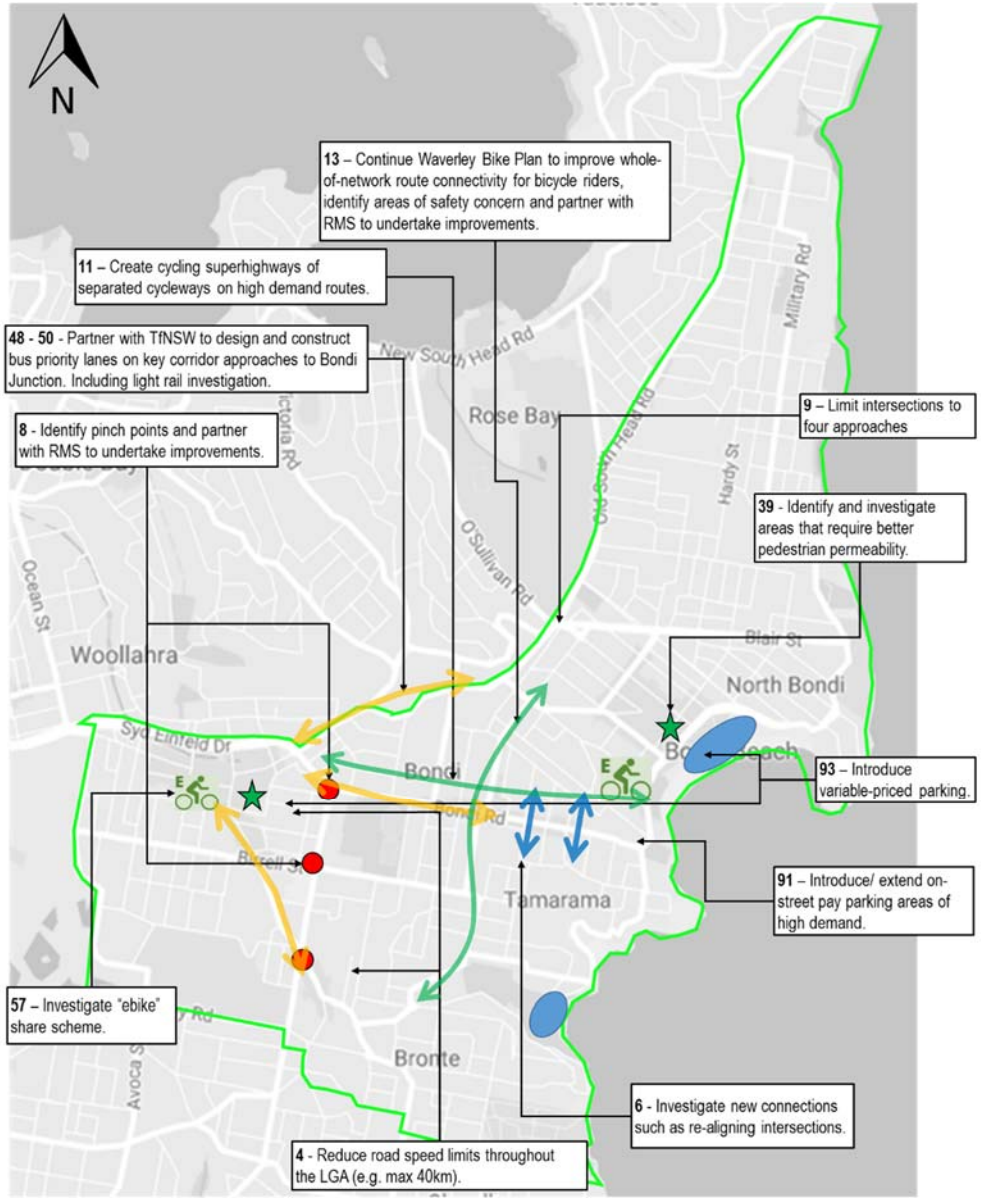


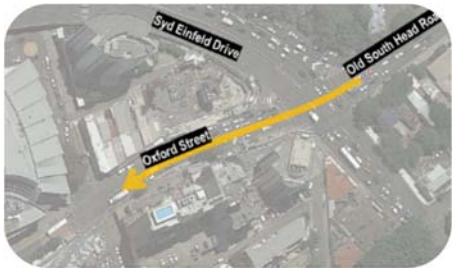

Figure 6.1: Whole of LGA Actions Summary Map

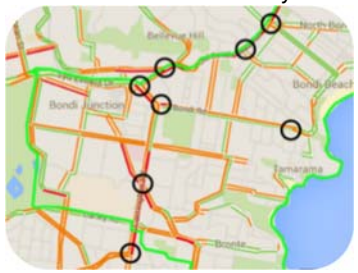
| TOPIC | OUTCOMES SOUGHT | KEY ISSUES IDENTIFIED | OPPORTUNITIES | ACTIONS |
|---|---|---|---|---|
| Walking  | Increase mode share of walking for short trips. | Walking routes are difficult to navigate and are not well connected due to topography, lack of through-streets, lack of crossing opportunities on major roads and intersections.<br><br>Higher motor vehicle use is encouraged by lack of pedestrian priority.<br><br>  | Increasing the "walk score" of localities improves liveability and value (e.g. Bondi Junction is 16th in Sydney out of 93 sites). | 1 - Commit to developing a transport hierarchy that places walking, cycling and public transport at the top.<br><br>2 - "Crowdsource" community input on problem areas and potential solutions (e.g. with www.crowdspot.com.au).<br><br>34 - Prepare a Walking Strategy for the whole LGA and identify the key locations and routes within the LGA. This would include an audit of existing conditions, a GIS study of topography, cadastre and land ownership, a strategy for improving walkability, and specific actions to undertake e.g. through PAMPs (Pedestrian Access and Mobility Plans).<br><br>35 - Collate a database of pedestrian and bicycle counts; and ensure pedestrian and bicycle counts are included in all traffic studies undertaken.<br><br>52 - Develop improvement program for pedestrian and cycling access to schools and encourage Businesses, Schools and Council employees to walk or ride to work/School. |
| | Good access for whole community (elderly, prams, wheelchairs). | Footpaths are difficult to use in many places particularly for mobility impaired and those with prams (e.g. lack of kerb ramps, trip hazards, driveways).<br><br>  | Improving access for wheelchairs, mobility scooters, prams.<br><br>Improvements are low cost compared to other modes.<br><br>The Coastal Walk attracts millions of visitors every year. | 3 - Ensure all footpath and road works undertaken by Council improve pedestrian access and amenity. Create a set of standardised streetscape treatments to be applied to capital works and maintenance projects throughout the LGA, based on best practice streetscape design.<br><br>36 - Improve pedestrian access (for people walking using prams or wheelchairs) along the Coastal Walk including to Bronte Beach, through Bronte cutting, Notts Avenue, Waverley Cemetery and to nearby bus stops. |
| | Improve road safety by including better facilities to | Conflict issues between modes due to high traffic volumes in highly pedestrianised zones throughout the LGA. | Greater connectivity can be achieved throughout the LGA (e.g. cul-de-sacs, | 4 - Review and reduce road speed limits throughout the LGA (e.g. max 30/40km/h). |

| TOPIC | OUTCOMES SOUGHT | KEY ISSUES IDENTIFIED | OPPORTUNITIES | ACTIONS |
|---|---|---|---|---|
| | physically separate transport modes. |  | site through-links, parks, strategic land acquisitions, developer agreements). | 37 - Ensure crossing points are provided on all sides of all intersections (e.g. roundabouts and signalised intersections) and crossing points and refuges are located mid-block at regular intervals on busier roads. Reduce the width of roadways at intersections and add raised pedestrian crossings particularly along the edges of major roads, near Schools and shops, near major bus stops, and at difficult intersections.<br><br>38 - Negotiate with RMS increased pedestrian crossing times within traffic light cycles (including 'scramble movements where feasible) at major intersections and along main pedestrian routes.<br><br>39 - Identify and investigate areas that require better pedestrian permeability with new links including and through small parks in Waverley. |
| | Improve community health and wellbeing, and social cohesion. | Many streets are unpleasant to walk along, due to loud traffic noise, lack of vegetation/shade, narrow footpaths, or hazards. | Council can undertake improvements to footpath facilities' quality and accessibility in conjunction with other roadworks at relatively low cost. | 40 - Review pedestrian access to bus stops, especially for people with impaired mobility and with prams, and consider bus stop consolidation. |
| Cycling<br>  | Increase mode share of cycling for short /medium trips.<br><br>Improve community health and wellbeing, and social cohesion.<br>  | People on bicycles are not prioritised compared to motor vehicles, resulting in higher motor vehicle use than necessary.<br><br>Community perception of lack of safety discourages cycling. Community is not aware of safe cycle routes. | Opportunity to achieve greater connectivity throughout the LGA (e.g. cul-de-sacs, site through-links, parks, strategic land acquisitions, developer agreements).<br><br>Council can undertake improvements to cycling facilities' quality and accessibility in conjunction with other roadworks at relatively low cost.<br><br>Cycling is good for tourism and retail. There is growing interest and uptake of cycling in Australia and the inner Sydney area. | 11 - Investigate options for a network of "Cycling Superhighways".<br><br>12 - Continue to implement Waverley Bike Plan 2013. Re-assess the whole LGA and identify the key locations and routes within the LGA. This would include an audit of existing conditions, a GIS study of topography, cadastre and land ownership, a strategy for improving rideability, and specific actions in addition to those in the Waverley Bike Plan.<br><br>13 - Develop new Waverley Bike Plan including:<br>▪ mapping priority routes across LGA, connecting key origins and destinations, for each transport mode to clarify where mode separation is feasible; in particular, identify continuous cycling routes separated from private vehicle traffic;<br>▪ ensuring all footpath and road works undertaken by Council improve bicycle rider access and amenity and identify areas that require better pedestrian and cycle permeability; and |

| TOPIC | OUTCOMES SOUGHT | KEY ISSUES IDENTIFIED | OPPORTUNITIES | ACTIONS |
|---|---|---|---|---|
| | | | | ▪ investigate possibilities for new cycle links. |
| | Improve road safety. | The current network forces all modes of traffic including cycling to share arterial routes with no separation or prioritisation.<br><br>Minimal clearly defined off-road cycle route in strategic locations to promote cycling as a travel mode for work and recreation. | Greater traffic permeability would be created by increasing the number of north-south oriented connections.<br><br>Separating and prioritising modes improves travel times and convenience for all modes. | 14 - Undertake cycle path and route repair program to ensure cyclist safety (i.e. repairing longitudinal cracks).<br><br>16 - Work with adjacent Councils to develop separated cycleways on regional routes, including the Inner Sydney Regional Active Transport Network. |
| | Increase cycling participation amongst women, older riders and families.<br><br>Improve localised cycling network accessibility. | Lack of connected, completed network for cycling safely, comfortably and conveniently. Potential routes are difficult to navigate and are not completed, due to topography, major roads, lack of through-streets, lack of crossing opportunities on major roads and intersections, lack of continuous back road opportunities. Key centres within Waverley are not connected by continuous safe cycle routes.<br><br>Lack of bicycle parking. | Improving access for bicycles also improves access for wheelchairs, mobility scooters, prams increasing usage for short trips.<br><br>Opportunity to improve attractiveness of cycling between major local centres with redevelopment including strategic off-road cycle routes.<br><br>Electric assist bicycles, and bike-share systems, are growing in popularity globally and can reduce demand for parking. | 15 - Install bicycle parking, in line with *Waverley Bike Plan* recommendations (secure parking, street parking) at shops, Schools, businesses, strata buildings, beaches, parks and bus stops. |
| | Overcome adverse terrain for bicycle riders across the LGA. | Adverse terrain for bicycle riders across the LGA. Such as steep inclines. | Opportunities to encourage cycling (to work and recreationally) through various bike schemes and improved cycle parking availability in major hubs.<br><br>Secure bicycle parking at Bondi Junction Interchange could improve the attractiveness of both cycling and public transport modes. | 57 - Investigate expanding bike-share schemes to work with 'dockless' operations and investigate electric-assist share bicycles (e-bikes).<br><br>  |
| Public Transport | Increase mode share of public transport.<br><br>Improve bus routes and stop accessibility for all users. | Bus routes may not be along the most effective route. Some bus stops are poorly located (difficult to access, too close together or too far apart). | Already very high use of public transport; with many bus routes and regular services. This can be further leveraged through improved access, more services and greater reliability (e.g. prioritised lanes, and bus-first signals at | 43 - Prepare a "Smart Cities" proposal for future 'Mobility as Service' across the LGA.<br><br>44 - Investigate with TfNSW options for real time information and wayfinding to be provided to public transport and bus stops. |

| TOPIC | OUTCOMES SOUGHT | KEY ISSUES IDENTIFIED | OPPORTUNITIES | ACTIONS |
|---|---|---|---|---|
|  | | Poor bus stop amenity such as way-finding, lack of shelter (especially summer shading), poor/no information, and no route signage.<br>  | intersections), increasing the competitiveness of public transport. | 46 - Ensure pedestrian legibility and accessibility, better customer convenience, and clearer interchangeability between public transport services. Review bus stop amenity for provisions particularly summer shading, and travel information. |
| | Efficient, reliable bus services. Including better connections between local centres and cross-LGA services.<br>Easy and convenient access to public transport for people of all abilities.<br>Bus routes serve trips within the LGA, especially with better north-south connections. | Numerous inefficient local bus routes travelling between local centres in Waverley, due to the large number of services that have to pass through Bondi Junction and minimal direct "local centre to local centre" services.<br>The current network forces all modes of travel to share arterial routes, with no mode separation or prioritisation.<br>There are limited direct north-south bus routes, with most passing through Bondi Junction. This reduces the directness of routes and significantly increases travel times compared to cars.<br>Limited bus routes connecting Bondi Beach and Edgecliff Station via Rose Bay Wharf causes increase travel time and multi-stop transfers to travel between Rose Bay Wharf and Bondi Beach. | Changes to fare structures will reduce cost of bus/ train journeys (by $2 per fare). Improved access to Greater Sydney can be achieved via Bondi Junction Interchange.<br>Opportunities to provide improved links for localised bus services. (i.e. Bondi Beach to Rose Bay via O'Sullivan and Curlewis Street; North-South Link from Dover Heights to Charing Cross; and bus priority extended from Old South Head into Oxford Street southbound).<br>Improve the directness of public transport connections.<br>Discussions with TfNSW to consider new routes improving links between Rose Bay Wharf and Bondi Beach improving public transport network connectivity and improving travel times. | 47 - Lead investigations and partner with TfNSW to determine main trip generators and suitable locations for more direct bus routes or bus priority lanes (i.e. between Rose Bay Wharf and Bondi Beach).<br>  <br>44 - Investigate and develop an On-Demand Bus Pilot and queue management program in partnership with TfNSW. |
| | A clear public transport network with key priority spines.<br>Public transport travel times competitive with private vehicle times. | Travel times for public transport need to reduce to provide a more realistic choice of mode for travellers. Buses are delayed by traffic, causing both unreliability and increased travel times. | Higher capacity public transport less affected by traffic congestion will provide a more reliable alternative for many trips.<br>Connections between the northern and southern areas in Waverley can be improved for all modes of transport. | 48 - Develop Old South Head Road (Bondi Junction to Curlewis Street) bus priority scheme.<br>49 - Develop Bronte Road Bus Priority Scheme and improve pedestrian access to major bus stops (e.g. St Catherine's School). |

| TOPIC | OUTCOMES SOUGHT | KEY ISSUES IDENTIFIED | OPPORTUNITIES | ACTIONS |
|---|---|---|---|---|
| | | Limited road capacity for public transport along key corridors.<br>  | Concentrating land use development within activity centres and along public transport corridors can land use development can increase the percentage of residents with good public transport accessibility. | 50 - Partnering with TfNSW to investigate Bondi Junction to Bondi Beach light rail or bus priority scheme, and extension of heavy rail or Metro through eastern suburbs from Martin Place to Bondi Junction with additional connections at Bondi Beach, Randwick, Green Square / Airport. |
| Service vehicles<br>  | Ensure goods vehicles, service vehicles and emergency vehicles have reasonable, efficient access to undertake their required activities.<br>Minimise negative impacts of vehicle movements, and driveways. | There are many conflicting demands for road space and parking.<br>Access for goods vehicles, service vehicles and emergency vehicles is important to ensure that businesses and community services can operate efficiently and effectively. | Technology is allowing kerbside space to be more reactively allocated for different purposes at different times of the day and service delivery can be managed with access times outside of peak hours particularly in the more constrained centres of Bondi Junction and Bondi Beach. | 5 - Audit and identify all kerbside allocation for service vehicles and rationalise spaces were possible.<br>  |
| Private vehicle traffic network<br>  | Reduce mode share of private motor vehicles.<br>Reduce the need to use private motor vehicles, particularly for short trips by providing more realistic alternatives to use instead. | Traffic congestion is an outcome of a high reliance on motor vehicles. It can be partly contained through demand management (e.g. providing other transport options) and improving supply (e.g. addressing bottlenecks/ pinch points) but cannot be removed all together.<br>Heavy reliance on private motor vehicles causes problems for the whole community. It creates traffic congestion, delays public transport, reduces equitable access for people/services most in need, increases sedentary lifestyle behaviour, causes road safety hazards and creates pollution. | Residents travel fewer kilometres by car than in other parts of Sydney. This trend should be leveraged to further reduce car ownership and usage.<br>The increasing popularity of car share schemes and driverless vehicles will continue to lower rates of private vehicle ownership and usage. | 51 - Research how disruptive technologies, autonomous vehicles and increasing vehicle-sharing will change traffic and parking needs in Waverley.<br>59 - Investigate "next generation" sharing schemes for cars/ motorbikes/ electric bikes etc. and how Council can accelerate innovation and change.<br>84 - Continue to constrain the growth in private vehicles by capping the supply of parking in Bondi Junction and Bondi Beach in tandem with improvements to other modes.<br>56 - Provide support for additional public secondary schools to reduce transport demand at existing schools. |

| TOPIC | OUTCOMES SOUGHT | KEY ISSUES IDENTIFIED | OPPORTUNITIES | ACTIONS |
|---|---|---|---|---|
| | Road access is prioritised for the highest and best uses (e.g. bus services, emergency access). | Current networks typically force all modes of transport to share the same routes, with limited mode separation or prioritisation. The current traffic network has limited permeability in most areas.<br>  | Policies that improve options for other transport modes (walking, cycling, public transport) and limit supply (parking, travel lanes) can help reduce overall demand for private vehicle usage.<br>Development of more north-south routes/connections encourages local traffic to avoid major arterial routes and reduces conflicts with through traffic, at key intersections. | 6 - Review existing one-way streets, cul-de-sacs, slip lanes, etc. to identify where changes will improve permeability and thereby reduce traffic conflicts.<br>7 - Develop a logical functional road hierarchy in accordance with Austroads Guide to Road Design Part 2 – Table 2.3: Urban road functional classification and access management strategy also considering where other transport modes need priority.<br>10 - Investigate locations to implement Local Area Traffic Management (LATM) schemes to ensure road treatments align with hierarchy, traffic use and speed. |
| | Traffic flows consistently through the network without specific pinch points constraining traffic. | Traffic congestion issues are exacerbated by a number of pinch points across the traffic network. Some traffic intersections have reached saturation point, where it is difficult to increase the number of vehicles flowing through the intersection.<br>These locations are where delays are far more significant than other locations, creating a "bottleneck" which generates inconsistent levels of service across the network. | Reducing the number of approaches at large intersections and relocating some turning movements would improve the capacity of some existing pinch point intersections across Waverley.<br>  | 8 - Identify and map congestion pinch points and areas of safety concern. Lead investigations and partner with RMS to undertake improvements as part of critical pinch point investigations and infrastructure planning.<br>9 - Remove or realign intersection approaches to ensure no more than four approaches to every intersection in Waverley to better prioritise available green time to key movements and for pedestrian safety. |
| Off-street parking<br>  | Manage on-street traffic congestion. | Restricted off-street parking supply encourages on-street parking. Residential parking permits, further add to restricted availability of on-street parking.<br>Waverley's centres have evolved with at grade or on-street parking. The value of land now makes additional off street parking very expensive to create and on-street space is full. | There is lower car ownership than Greater Sydney across Waverley.<br>There are existing off-street car parks that are underutilised and existing technologies exist to direct drivers to these locations.<br>New development particularly commercial/retail development can | 60 - Audit off-street car parking availability and policies to determine where there are underutilised parking bays; and how these can be better used (e.g. leasing, storage, car share).<br>87 - Encourage new car parking to be convertible to other purposes in the future (e.g. self-storage, bike parking, share cars).<br>88 - Consider shared off-street parking facilities (potentially as car stackers) at the interface of the retail and residential areas |

| TOPIC | OUTCOMES SOUGHT | KEY ISSUES IDENTIFIED | OPPORTUNITIES | ACTIONS |
|---|---|---|---|---|
| | | Including off-street parking in development increases the cost of providing and purchasing housing. | provide public off-street parking where desirable (e.g. Bondi Beach).<br><br>Off-street parking can be converted to other purposes (e.g. self-storage, bike parking) when no longer needed as the centre evolves and more "walk by" trade is available to replace "drive in" trade. | along Bondi Road as redevelopment occurs. Associated with the development of a rear laneway strategy.<br><br>89 - Continue policies that limit off-street parking in new developments (through DCPs) and further restrain the availability of on-street parking permits in locations where alternative travel modes are feasible. Modify planning policies to disconnect the provision of car parking from apartment purchases in new developments so that those who don't need a car space do not have to pay for one.<br><br>90 - Investigate and develop an E-permit system for on-street and off-street car parking, including a review of current parking pricing policies.<br><br>60 - Support and roll out the installation of public electric vehicle (car and bicycle) charging points, particularly in areas of medium-high density residential and commercial development and/or shared vehicles, starting in high profile public locations. |
| On-street parking<br><br>  | Reduce the need (demand) for on-street parking. | There are many demands for the street space taken by on-street parking:<br><br>- Parking for existing nearby residents (long term permits), people running errands (e.g. shopping, School drop off), and visitors to the area.<br><br>- Traffic-related uses (bus priority, improved traffic flow, road safety improvements, cycle paths, widened footpaths).<br><br>- Other uses (vegetation, trees, public space, al fresco dining). | Council amalgamations provide an opportunity to review parking policies; particularly beach parking permits.<br><br>  | 91 - Introduce/extend on-street pay parking and permits in areas of high demand to ensure turnover of parking.<br><br>92 - Investigate how to re-direct pay-parking income directly back to the local community in which it is charged. |

| TOPIC | OUTCOMES SOUGHT | KEY ISSUES IDENTIFIED | OPPORTUNITIES | ACTIONS |
|---|---|---|---|---|
| | Reserve/improve on-street parking for the highest and best uses (e.g. bus priority, emergency access, loading for businesses, wider footpaths, separated cycleways or landscaping). | Parking permits for residents are relatively cheap and the permit mechanism is not sending appropriate signals on the value of street space being occupied, contrary to Council's long term aim of reducing vehicle ownership and vehicle usage. | Share cars can take up to nine privately owned vehicles off the street, and are increasing in popularity.<br><br>Bike share schemes can also reduce demand for on-street car parking.<br><br>Prioritise key on-street uses for various demand zones (i.e. bus zones in centres, on-street parking permits in residential only). | 93 - Review the availability of beach and residential parking permits and consider methods to introduce "market price" or e-permits for beach parking. Continue to provide limited concessions where appropriate (on-duty beach patrol officers, carers, pensioners, electric cars).<br><br>58 - Develop Car Share policy that actively encourages the number and availability of parking for share cars throughout the LGA.<br><br>83 - Investigate and locate ranks for taxi and car share in the most convenient locations at appropriate times. |

# 7. DETAILED ACTION PLANS

This chapter sets out detailed action plans of significance for key centres in the Waverley LGA, with actions referenced as per the 12 signature projects outlined in Section 5. The actions outlined aim to improve transport choice for residents, employees and visitors to each centre. Some initiatives may require state government assistance because of jurisdictional or funding issues.

Figure 7.1 provides an overview of the locations of each centre "zone" within Waverley that contains actions specific to its local area. Summaries of each centre's action plans are in following sections.

- Section 7.1 - Bondi Junction;
- Section 7.2 - Bondi Beach;
- Section 7.3 - Bondi Road; and
- Section 7.4 – Charing Cross.

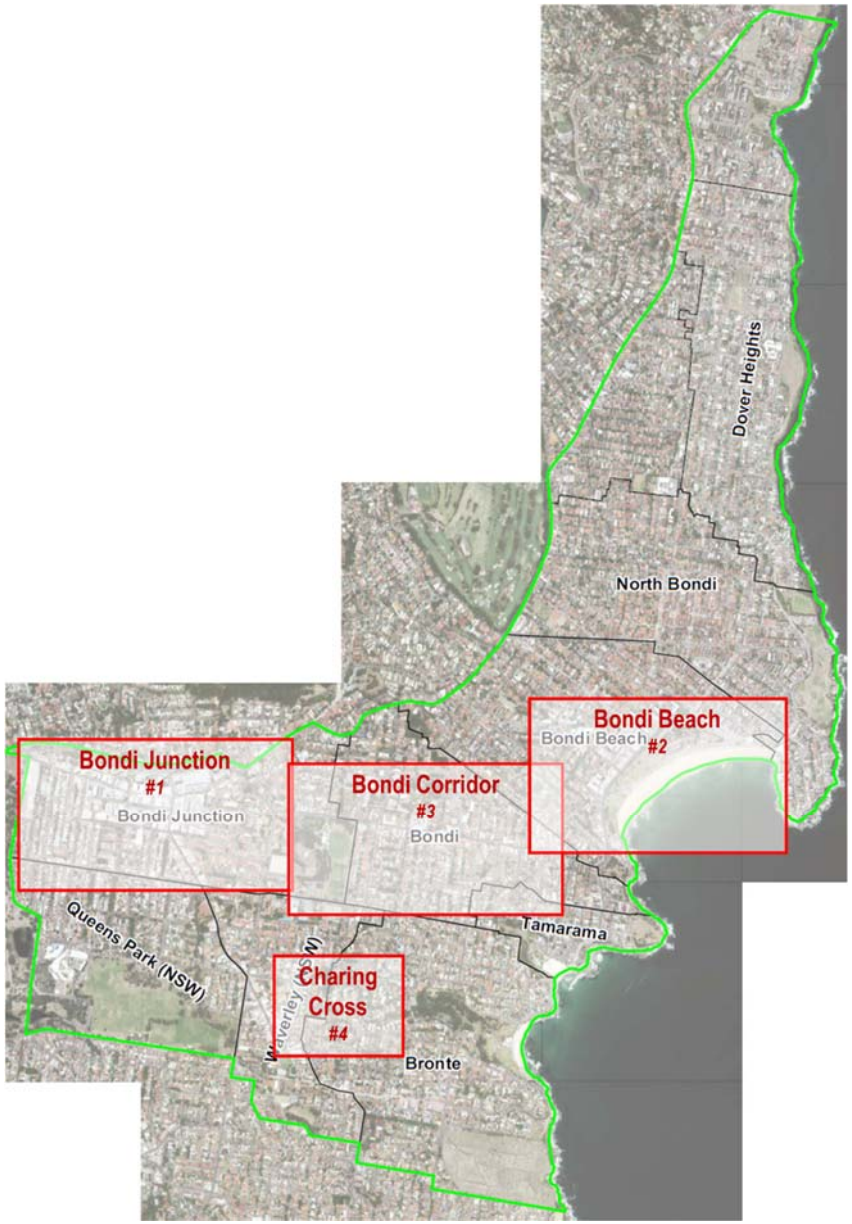



Figure 7.1: Centre Zone Strategies - Location Map

## 7.1 BONDI JUNCTION

Figure 7.2 below displays actions within Bondi Junction that are applied to specific locations.

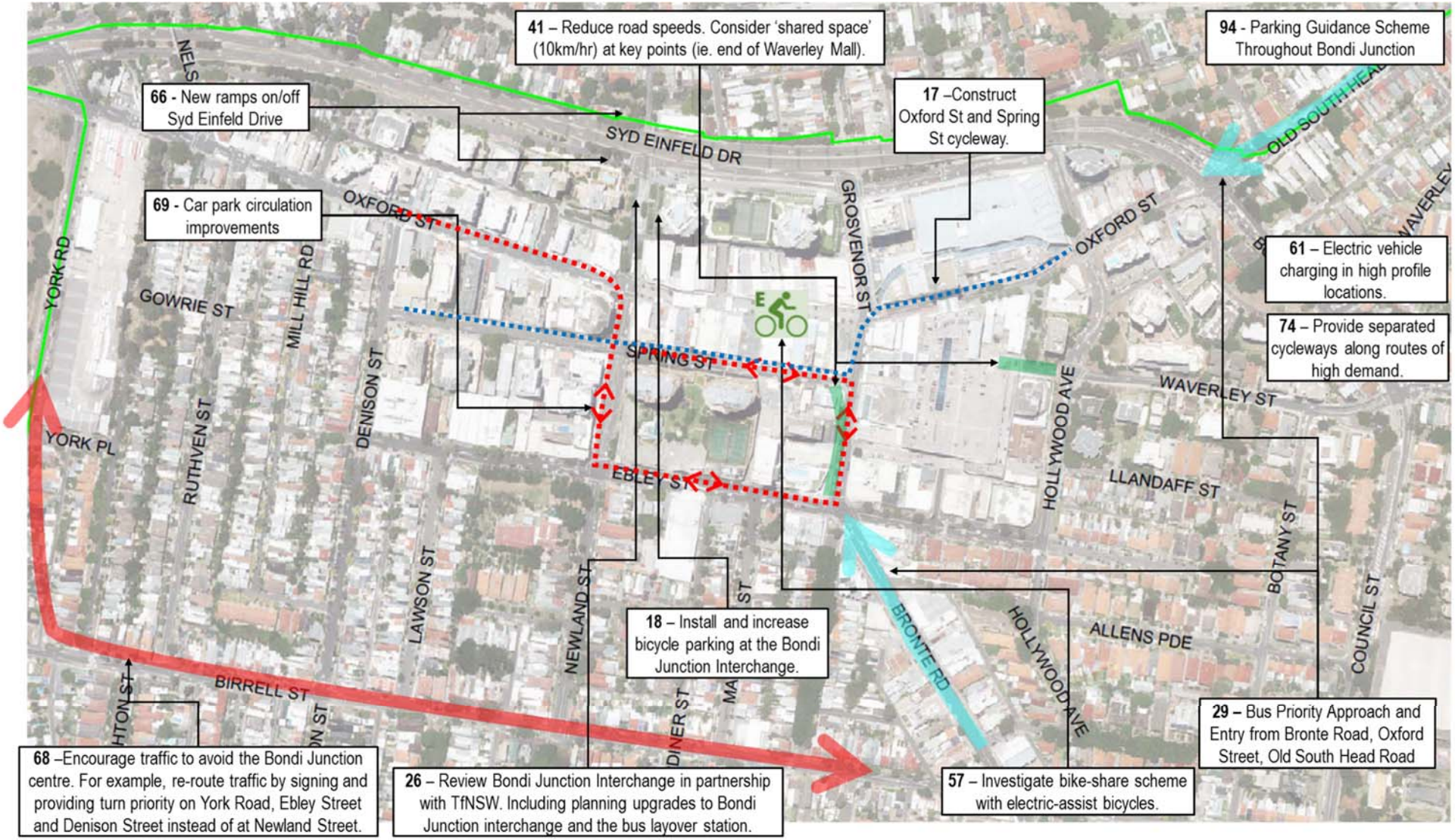



Figure 7.2: Bondi Junction Actions Map

The following table outlines key issues, opportunities and actions identified for the Bondi Junction area.

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTIONS – BONDI JUNCTION |
|---|---|---|---|
| 2A | Walking  | Routes are difficult to navigate and are not well connected due to topography, major roads and lack of crossing opportunities on major roads and intersections.<br><br>Insufficient time allocated for pedestrians to cross at signalised intersections.<br>  <br><br>Lack of space for pedestrians on footpaths.<br><br>Pedestrian routes are not legible or signed. | 41 - Reduce road speeds throughout Bondi Junction – e.g. maximum 30km/hr and consider "shared space" (10km/hr) at key points (e.g. Waverley Street).<br><br>27 - Implement pedestrian and cyclist connection revitalisation between Rowe Street and Grafton Street in Bondi Junction. |
| 2B | Cycling  | Routes are not well connected due to topography, major roads, lack of through-streets, lack of crossing opportunities on major roads and intersections.<br><br>Lack of connected, completed network for cycling safely, comfortably and conveniently.<br><br>Bondi Junction has very high mode share of bicycle riding, and therefore requires separated, high quality cycle paths.<br><br>Lack of bicycle parking at key locations. | 30 - Install additional cycle parking throughout the Bondi Junction Interchange to cater for more than 700 bicycles.<br><br>17 - Construct Oxford Street and Spring Street cycleway through Bondi Junction.<br><br>42 - Provide signage along key pedestrian and cycle routes, especially way finding to Bondi Junction Interchange. Signage provision should be in line with the Waverley Bike Plan 2013.<br>  <br><br>18 - Install better bicycle access to Bondi Junction Interchange and aim for a substantial increase in secure bicycle parking facilities commensurate with potential demand. |

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTIONS – BONDI JUNCTION |
|---|---|---|---|
| 2C | Public Transport  | Some bus stops poorly located (difficult to access, too close or too far apart).<br><br>Poor legibility for pedestrian access to transport interchange especially for infrequent travellers.<br><br>Poor legibility for infrequent travellers arriving by train to change to bus route to Bondi Beach.<br><br>Bus/train interchange is poorly designed with pedestrian conflicts at the exit/entry on Grosvenor Street. Very poor connection between the street level, the bus concourse and the train station for pedestrians especially the mobility impaired. Limited facilities for bicycle parking or kiss+ride. | 26 - Lead investigations and partner with TfNSW to plan an overhaul of Bondi Junction interchange and the bus layover station on Oxford Street including approaches and pedestrian interfaces. Aim to ensure maximum pedestrian accessibility, customer convenience and operation of bus services (in partnership with TfNSW, Sydney Buses and RMS). Investigate improvements to pedestrian and public transport accessibility in the area.<br><br>28 - Improve the kiss+ride facilities at Bondi Junction. |
| | | Lack of bus priority on major routes when entering Bondi Junction area. Particularly leading into Bondi Junction interchange and connecting to the "Bus Only" route on Oxford Street.<br><br>Limited or unclear Public Transport information available to the public regarding to bus stop locations. Exacerbated by a lack of bus stops in some areas.<br><br>  | 29 - Investigate bus priority options along all approaches to Bondi Junction Station, including Old South Head Road, Bronte Road and Oxford Street.<br><br>  |
| 2D | Private vehicles traffic network  | Pinch point intersections at each end of Syd Einfeld Drive limit access and causes this route to be underutilised.<br><br>Syd Einfeld Drive has a freeway road environment inconsistent with adjoining roads and areas. | 66 - Continue negotiating with RMS regarding on and off ramps off Syd Einfeld Drive at Newland Street providing direct access to Bondi Junction for bus routes and/or general traffic. The intersections at each of Syd Einfeld Drive should be reconfigured (i.e. at the intersection with Old South Head Road and at the intersection with York/Ocean/Oxford Street). The pedestrian overpass over Syd Einfeld should also be improved. |

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTIONS – BONDI JUNCTION |
|---|---|---|---|
| | | Heavy reliance on motor vehicles resulting in congestion. However, the local area itself has a much lower car ownership than Greater Sydney, and there has been no net increase in car ownership for more than a decade.<br><br>Northbound traffic from south of Bondi Junction headed for the CBD often "rat runs" through the Bondi Junction centre creating conflict between local traffic and through traffic within Bondi Junction.<br><br>Through traffic is directed close to the commercial centre creating conflicts and increasing congestion.<br><br>There is a lack of a clear alternative route that is fast and efficient past the Bondi Junction centre (from south to west).<br><br>A low level of service at the Avoca Street/Darley Road/York Road intersection due to high levels of congestion in peak periods creates conflict between buses, local traffic and through traffic.<br><br>Northbound traffic from southern areas, such as Randwick, must travel through the Bondi Junction centre when travelling towards the west, adding to congestion within the centre and at major intersections surrounding it. | 67 - Continue to implement "*Complete Streets*" in Bondi Junction.<br><br>68 - Investigate and implement strategies/methods of encouraging traffic to avoid the Bondi Junction centre. For example, re-route traffic by signing and providing turn priority of Ebley Street and Denison Street instead of at Newland Street and reviewing Bronte Road/Birrell Street usage. |
| 2E | Off-street parking<br>  | Lack of right turn options out of major off-street car parking stations (especially Eastgate) creates congestion points, and directs traffic circuitously through the centre increasing distances to be travelled, and therefore congestion. | 69 - Investigate and identify opportunities for right-turn and U-turn implementation for vehicles exiting Car Parks within the centre. |
| | | Circulating vehicles cause additional congestion and conflict with other modes of transport.<br><br>When entering Bondi Junction there is confusion regarding parking availability in the centre, particularly around the station. | 94 - Investigate a dynamic car parking guidance scheme. This may include "app" based and/or variable message sign methods.<br><br>85 - Reinstate DCP 'zero minimum' and capped maximum car parking rates for new developments. |
| 2F | On-street parking<br>  | Absence of an on-street parking hierarchy considering parking duration and purpose to provide a basis for allocating durations of stay, vehicle-types allowed and pricing. | 70 - Develop a parking hierarchy for on-street parking space in Bondi Junction and audit existing parking types against the hierarchy. |

## 7.2 BONDI BEACH

Figure 7.3 below displays actions within Bondi Junction that are applied to specific locations.

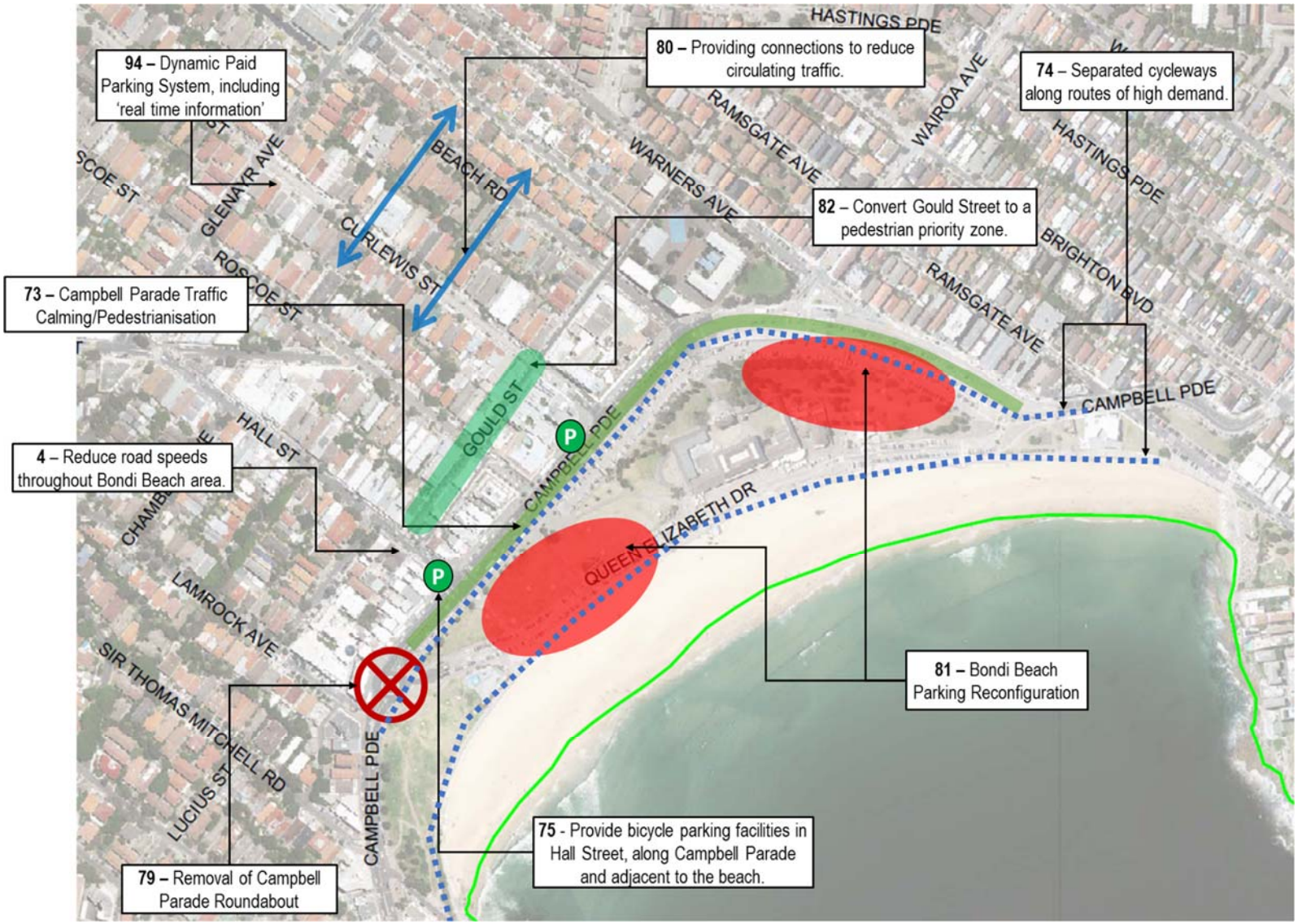



Figure 7.3: Bondi Beach Actions Map

The following table outlines key issues, opportunities and actions identified for the Bondi Beach area. It is important to note that some actions are only possible as part of any future redevelopment of the Bondi Beach area.

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTION AREAS – BONDI BEACH |
|---|---|---|---|
| 3A | Walking  | Takes too long for pedestrians to cross Campbell Parade.<br>Insufficient space for pedestrians on footpaths.<br>Campbell Parade is highly exposed to morning sun in summer making it unpleasant for shopping, cafes, and waiting for public transport. | 71 - Ensure pedestrian crossing points on all sides of all intersections on Campbell Parade.<br>72 - Widen footpaths along Campbell Parade and directly adjacent streets, including median widening on Campbell Parade. Completed in conjunction with Action 73 and Action 79. Provide landscape and shade treatments including tree planting.<br>82 - Convert Gould Street to a pedestrian priority zone, continuing existing pedestrian links and as a sheltered connection to Hall Street. |
| | | Poor pedestrian connectivity between Bondi commercial area and the Bondi Beach, major attractors (i.e. Beach and Shops) in Bondi Beach.<br>Millions of people a year use the Coastal Walk. There is only limited access for prams and wheelchairs. | 73 - Implement a Campbell Parade "Traffic Calming and Pedestrianisation" scheme:<br>▪ Reduce Campbell Parade to 1 lane in each direction for general traffic, plus 1 lane for bus priority and a separated cycleway;<br>▪ Increase pedestrian connectivity by removing the Campbell Parade pedestrian fence, widening the median and installing raised crossing points; and<br>▪ Provide more allocated bus and taxi zones along Campbell Parade using the space created. |
| | | The high traffic volumes entering Bondi Beach conflicts with the high pedestrian volumes, particularly at the Campbell Parade roundabout.<br>The current intersections at entry points to Bondi Beach creates a consistent traffic flow along Campbell Parade limiting opportunities for pedestrians attempting to cross. | 79 - Investigate removal of the Campbell Parade southern roundabout and implementing a signalised intersection in its place (with U-turn provisions in a wide central median). |
| 3B | Cycling  | Bondi Beach has very high mode share of bicycle riding, and would benefit from separated, high quality cycle paths along key routes. | 74 - Provide separated cycleways along routes of high demand (e.g. Campbell Parade) and to key locations nearby (e.g. Rose Bay wharf, Bondi Junction, coastal ride). |
| | | Lack of bicycle parking at key locations. | 75 - Provide bicycle parking facilities in Hall Street, along Campbell Parade and adjacent to the beach. |
| 3C | Public Transport  | Some bus stops poorly located (difficult to access, too close or too far apart).<br>Appropriate bus stops difficult to find for infrequent users – hard to know which routes use which stops.<br>Bus stops in Campbell Parade are exposed to hot summer sun and wind. | 76 - Lead investigations and partner with TfNSW to improve bus priority lanes and review bus stop locations including Campbell Parade bus operations and amenity (e.g. shading). |
| | | Buses caught in traffic, reducing reliability and increasing travel times.<br>Tourist buses in conflict with public transport buses at bus stop locations causing delays. | 77 - Allocate tourist bus stops away from public bus stops. |
| | | Limited bus/taxi zones for pick-up and drop-off. | 78 - Review location and operations of North Bondi bus terminus. |

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTION AREAS – BONDI BEACH |
|---|---|---|---|
| | | Limited or unclear Public Transport information regarding bus stop locations. Exacerbated by a lack of bus stops in some areas.<br>Lack of direct and efficient bus route connection between major public transport nodes Bondi Beach and Rose Bay Ferry Wharf. | |
| 3D | Private vehicles traffic network  | Heavy traffic at times for through movements as well as for parking access on weekends and summer days.<br>Poor north-south connectivity across all modes of transport through Bondi Beach Basin due to one-way streets and constrained areas causing conflicts and forcing traffic to circulate on arterial routes. | 80 - Identify strategic opportunities to reduce circulating traffic (e.g. searching for parking) through the Bondi Beach basin.<br>  |
| 3E | Off-street parking  | Inefficient traffic circulation when looking for car spaces increases congestion levels. Circulating traffic also causes conflicts with active transport in the key pedestrian zones around Campbell Parade and Hall Street. | 81 - Investigate the potential for alternative off-street car parking stations and to remove the Queen Elizabeth Drive/Campbell Parade parking on the beach. |

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTION AREAS – BONDI BEACH |
|---|---|---|---|
| 3F | On-street parking  | Parking space is not seen as a limited resource, but should be. As a limited resource it should be priced and managed such that its utilisation is maximised. | 95 - Undertake a feasibility study for a variable priced on-demand parking scheme with parking availability guidance information as part of the scheme.<br>61 - Install electric vehicle charging at high profile locations (e.g. Bondi beachfront). |

## 7.3 BONDI ROAD CORRIDOR

Figure 7.4 below displays actions within Bondi Road Corridor that are applied to specific locations.

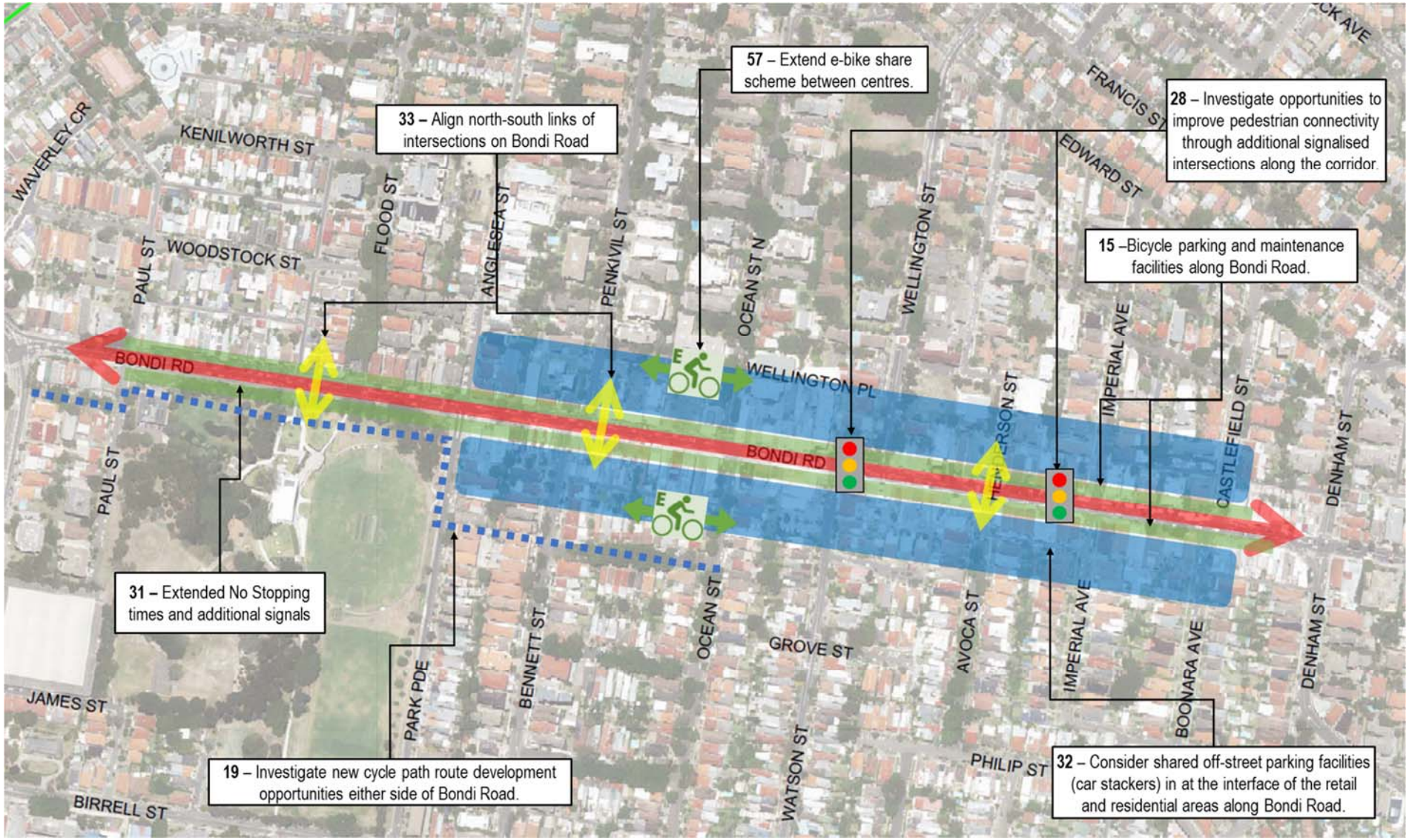



Figure 7.4: Bondi Road Corridor Actions Map

The following table outlines key issues, opportunities and actions identified for the Bondi Road corridor area.

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTION AREAS – BONDI ROAD CORRIDOR |
|---|---|---|---|
| 4A | Walking  | Lack of pedestrian facilities along the Bondi Road Corridor including narrow footpaths and the limited number of crossing locations for the high number of pedestrians in the area. | 28 - Improve east-west and north-south pedestrian access along and across Bondi Road, for example by widening footpaths, and reviewing pedestrian crossings and signalised intersections. Where smaller streets meet Bondi Road, install raised pedestrian crossings.   |
| | | Lack of connectivity to and through the Bondi Road Corridor for pedestrians encourages higher motor vehicle usage.<br><br>Existing available walking routes are not well connected due to topography, major roads, lack of through-streets and lack of crossing opportunities at major roads and intersections. | 29 - Remove left-turn slip lane at the intersection of Denham Street and Bondi Road. Replace with outdoor seating, vegetation, shade and upgraded bus stop. |
| 4B | Cycling  | Bondi Road lanes are narrow with high volumes of motor traffic and buses making cycling difficult. | 19 - Investigate new cycle path development opportunities either side of Bondi Road (including potentially through private property/development sites as redevelopment occurs).<br><br>20 - Investigate installing a separated cycle lane along Bondi Road (e.g. 1-way uphill only, 1-way both directions or bi-directional.) |

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTION AREAS – BONDI ROAD CORRIDOR |
|---|---|---|---|
| 4C | Public Transport  | Buses caught in traffic, reducing reliability and increasing travel times.<br><br>High demand for travel along this route is not catered for with high capacity public transport. | 26 - Continue investigations in partnership with TfNSW of alternative high-capacity public transport between Bondi Junction and Bondi Beach, such as a driverless shuttle system or bus priority measures.<br><br>27 - Investigate the implementation of a dedicated bus transit lane as part of a *Dynamic Lane Management* system along Bondi Road. Where Intelligent Transport Systems (ITS) are used to create "peak traffic direction" bus transit lane as a third lane during peak traffic times. The *Bondi Road Corridor Transport Strategy (Parsons Brinckerhoff - 2016)* provides some initial detail on the benefits and issues surrounding this strategy.<br><br>30 - Investigate dedicated bus priority lanes and the consolidation of bus stops along the Bondi Road Corridor. |
| 4D | Private vehicles traffic network  | There is a current lack of clear north-south connectivity between local streets.<br><br>North-south routes do not align across Bondi Road, forcing traffic to "dog leg" or circulate within the local network to travel north or south. This encourages vehicles to take small side streets in order to cross over or turn right at Bondi Road where traffic lights are already provided. | 33 - Investigate opportunities for north-south route realignments at intersections, e.g. include intersection realignment with redevelopment along Bondi Road at key intersection locations. Alternatively, change the operations of signalised intersections to better manage safety and flow of traffic, buses and pedestrians, taking into consideration the whole network of streets around Bondi Road.<br><br>  |

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTION AREAS – BONDI ROAD CORRIDOR |
|---|---|---|---|
| | | Increasingly high levels of congestion during peaks is extending the peak traffic times outside typical peak time periods, with traffic affected before or after clearway periods.<br><br>High levels of congestion along Bondi Road during weekend peak periods. | 31 - Extend "No Stopping" times to 7am – 10am and 4pm – 7pm weekdays, and introduce 10am – 2pm "No Stopping" on weekends in summer.<br><br>  |
| 4E | Off-street parking | Restricted and limited availability of off-street parking encourages on-street parking particularly outside of peak "No Stopping" zone times. | 32 - Investigate the conceptual corridor redevelopment layout (i.e. rear laneway strategy in the Bondi Road Corridor) on either side of the Bondi Road corridor. Including shared off-street parking facilities (potentially as car stackers) at the interface of the retail and residential areas, and identifying locations of bicycle parking and maintenance facilities at the front and to the rear of shops. |
| 4F | On-street parking | There is currently limited on-street and off-street parking availability along the Bondi Road corridor compared to parking demand.<br><br>This is a conflict between residential and commercial traffic and parking demands near Bondi Road.<br><br>Unrestricted parking in nearby streets makes it difficult to manage parking and use street space in order to meet other transport priorities. | 96 - Extend timed parking restrictions throughout the whole area near the Bondi Road corridor (may require extension of residential parking permit schemes or similar). |

## 7.4 CHARING CROSS

Figure 7.5 below displays actions within Charing Cross that are applied to specific locations.

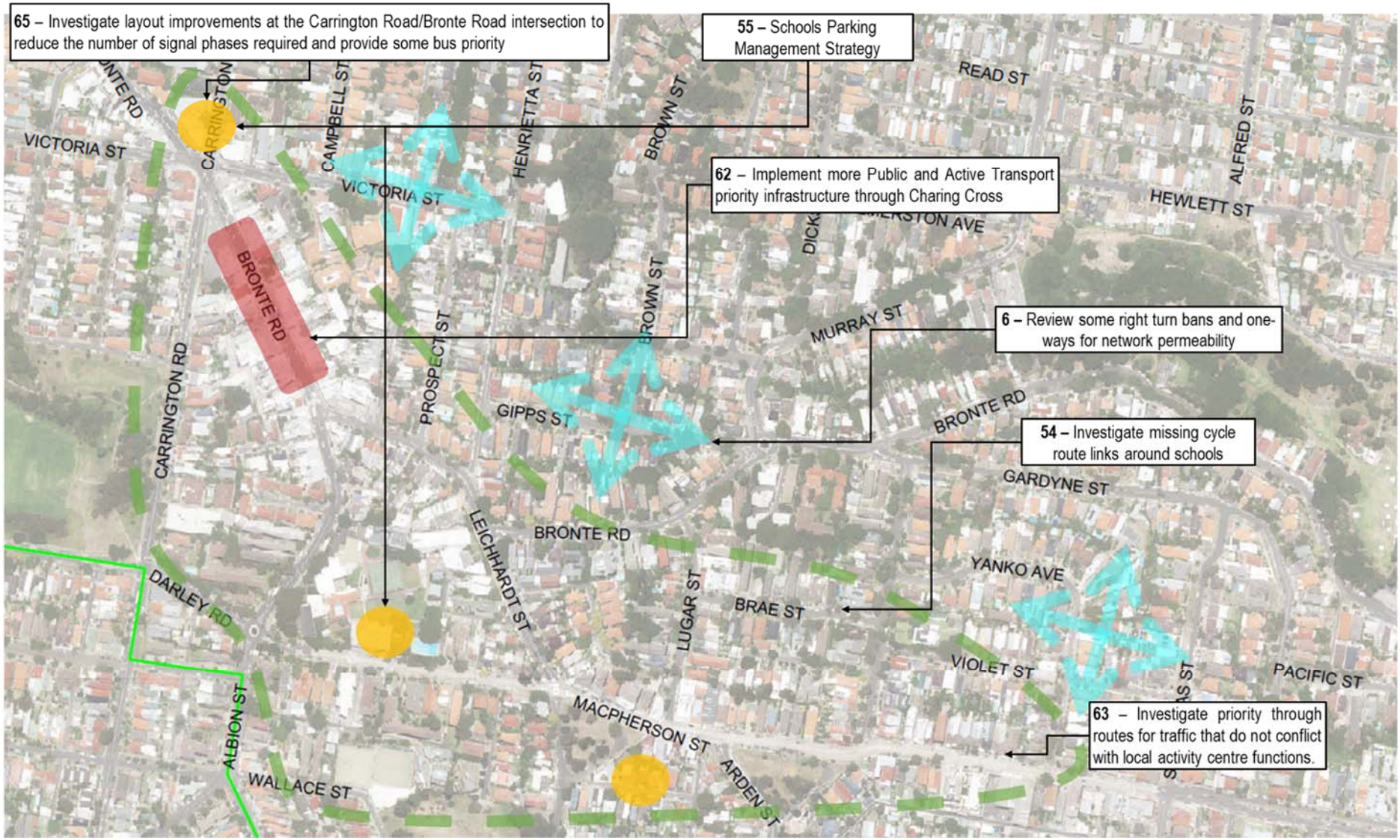



Figure 7.5: Charing Cross Actions Map

The following table outlines key issues, opportunities and actions identified for the Charing Cross area.

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTION AREAS – SOUTHERN CLUSTERS |
|---|---|---|---|
| 5A | Walking  | High levels of through traffic in Charing Cross makes it difficult to access the area on foot, and reduces amenity. | 37 - Ensure crossing points are provided on all sides of all intersections (e.g. roundabouts and signalised intersections) and crossing points and refuges are located mid-block at regular intervals on busier roads. Reduce the width of roadways at intersections and add raised pedestrian crossings particularly along the edges of major roads, near Schools and shops, near major bus stops, and at difficult intersections. |
| 5B | Cycling  | Limited safe access routes for children riding and walking to School.<br>The cluster of Schools increases traffic during School drop off and pick up times, but also provides an opportunity to improve active travel and public transport for School.  | 53 - Provide information and promote walking and cycling to School.<br>54 - Investigate improved connections and routes for cycling and walking to Schools, including with any new development opportunities. |
| 5C | Public Transport  | High levels of traffic using Charing Cross causes congestion and conflict between transport modes. This creates an environment that does not align with its local centre function that should promote public transport and active transport use.<br>A large volume of buses traverse through Charing Cross connecting Bondi Junction with Randwick, Bronte, Clovelly, Coogee and the Airport. Buses should be prioritised along this key route. | 62 - Prioritise and investigate Public and Active Transport infrastructure through Charing Cross and along Bronte Road.<br>65 - Investigate transport priorities at the intersection of Carrington Road / Bronte Road to improve road safety for all users. |

| # | TOPIC | KEY ISSUES IDENTIFIED | ACTION AREAS – SOUTHERN CLUSTERS |
|---|---|---|---|
| 5D | Private vehicles traffic network  | Lack of local network permeability forces traffic to circulate on major arterial roads encouraging high congestion levels or arterial roads and their approaches.<br><br>Circulating traffic and lack of local street permeability also causes conflicts between local and through traffic movements at major intersections.<br><br>The Birrell Street/Carrington Road intersection near Charing Cross has a poor level of service. Also, through traffic using Bronte Road conflicts with local traffic causing high levels of congestion in peak periods. | 63 - Investigate priority through routes and guiding traffic movements to Carrington Road to avoid conflict with local activity centre functions and Bronte Road.<br><br>64 - Provide traffic calming measures along Bronte Road through the shopping strip. |
| 5E | Off-street parking  | Limited off-street parking in Charing Cross. | 55 - Investigate managed pick-up procedures (such as queue management areas and call-up procedures, possibly assisted by technology) at Schools surrounding Church Street, Waverley. Facilitate a Schools traffic working group to develop other strategies such as staggered times, shuttle buses, remote parking, "walking bus" programs, etc. |
| 5F | On-street parking  | High levels of parking demand and corresponding traffic congestion surrounds local Schools during peak pick-up and drop-off times. This is a particular issue during the PM "pick-up" times as parents park on-street or circulate within the network surrounding Schools for extended periods of time.<br><br>This creates major conflicts between School-based traffic, local traffic and through traffic in the areas surrounding each School. | |

# 8. COMMUNITY FEEDBACK

## 8.1 PURPOSE AND PROCESS

The Waverley People Movement Places Strategy Report (Version 12) was presented for exhibition and community feedback between the 9th May 2017 and the 16th June 2017. Six (6) transport questions were asked as part of an online questionnaire with a total of 273 responses received, including from residents and business representatives from the Waverley LGA and surrounds. The questions included:

1. *Do you walk or ride a bicycle for recreation or transport?*
2. *What would help you to walk or ride a bicycle more often?*
3. *How often do you use public transport?*
4. *What would help you to use public transport more often?*
5. *Have you ever used a car share (e.g. GoGet, CarNextDoor) or bike?*
6. *Would you consider using the car less if there were better public transport options in your area?*
7. *There are twelve Signature Projects recommended in the report. Please identify which projects you think Council should pursue as the top three priorities.*

A further "open ended" question: "How else can we improve transport and access in your area?" was posed at the bottom of the questionnaire.

## 8.2 SURVEY RESULTS

Key results from the survey were:

- 257 out of the 273 respondents indicated they cycle for recreation or transport purposes;
- the largest number of positive responses related to cycling strategies with 21% of respondents indicating a desire for separated cycleways. Improving pedestrian infrastructure across the LGA was also a highly ranked;


- 79% of respondents have used bike share or car share;
- 77% of respondents used public transport more than once a week;
- 78% of all respondents indicated they would use public transport more if better options were available; and
- The top scoring Signature Projects were the Cycling Strategy, Bondi Junction Interchange, Bike Share Scheme and the Bondi Road Corridor Upgrade.

The largest number of respondents resided in the Bondi Beach and Dover Heights areas with most respondents working within the Sydney CBD. A number of respondents reside outside of the Waverley LGA indicating the relevance of this strategy to those that work within the LGA.

A number of respondents provided detailed supplementary written responses. A selection of key statements which reflected the thrust of these comments include:

- "we need a network of seperated bike lans to make cycling safe linking the beaches with Bondi Junction";
- "car share is a great way to reduce car ownership and I use it";
- "buses are inconsistant and full";
- "my kids cannot walk safely to school because there are too many roads with no crossings"; and
- "reduce street parking in high use/traffic roads if it is not resident parking and provide more public transport and bike lanes".

## 8.3 CONCLUSION/SUMMARY

As a result of community feed-back the following changes and additions have been included within the final version of the Waverley People Movement Places Strategy:

- re-prioritisation of strategies and their actions. The order of Signature Projects within the report now relate directly to the order of priority identified by respondents;
- the addition of Car/Ride Share as a signature project; and
- expansion of Bike Share and Electric Vehicle strategy details.

# 9. IMPLEMENTATION PLAN

## 9.1 TIMING CATEGORIES

The tables in this section outlines the recommended overall timing for signature projects and detailed actions under the categories of "Investigation/Feasibility" and "Project Implementation". Timing has been allocated using the following categories:

| | |
|---|---|
| S – Short term | (1-2 years) |
| M – Medium term | (3-5 years) |
| L – Long term | (6+ years) |

Ordinarily, transport strategies have time frames of 1 – 20 years for action implementation. Much shorter timeframes have been recommended in this report given that the need for the recommended items is current/imminent. When determining the recommended timing for each signature project or action, a number of factors were considered including:

- whether or not land acquisitions may be required;
- the scale of the project or action;
- how high or low the cost of the project may be;
- stakeholders involved and depth to which they may need to be consulted in the process (i.e. Community consultation);
- whether surrounding Councils or TfNSW may be involved; and
- existing plans, projects and policies that are currently be under investigation or development at the time of this report.

## 9.2 SIGNATURE PROJECTS

Table 9.1: Signature Projects Implementation Timing

| # | Signature Projects | Number of Actions | Investigation/Feasibility | Project Implementation |
|---|---|---|---|---|
| 1 | Better Streetscapes | 10 | S | S |
| 2 | Cycling Strategy | 10 | M | L |
| 3 | Bondi Junction Transport Interchange | 5 | S | M |
| 4 | Bondi Road Corridor Strategy | 8 | S | L |
| 5 | Waverley Walking Strategy | 9 | S | M |
| 6 | Smart Cities Mobility Strategy | 9 | S | M |
| 7 | Schools Active Transport Strategy | 5 | S | M |
| 8 | Shared and Electric Vehicles | 5 | S | M |
| 9 | Charing Cross improvements to streetscapes | 4 | S | L |
| 10 | Bondi Junction | 5 | M | M |
| 11 | Bondi Beach | 12 | M | M |
| 12 | Smart Parking Management | 14 | S | L |

S – Short term (1-2 years)

M – Medium term (3-5 years)

L – Long term (6+ years)

## 9.3 WAVERLEY LGA ACTIONS

Table 9.2: Actions Implementation and Timing

| Signature Project | # | Actions | Investigation / Feasibility | Project Implementation | Action Type | Location |
|---|---|---|---|---|---|---|
| LGA Wide Improvements | 1 | Commit to developing a transport hierarchy that places walking, cycling and public transport at the top. | N/A | S | Procedure | LGA |
| | 2 | "Crowdsource" community input on problem areas and potential solutions (e.g. with www.crowdspot.com.au). | N/A | S | Study/ Research | LGA |
| | 3 | Ensure all footpath and road works undertaken by Council improve pedestrian access and amenity. Create a set of standardised streetscape treatments to be applied to capital works and maintenance projects throughout the LGA, based on best practice streetscape design. | N/A | S | Procedure | LGA |
| | 4 | Review and reduce road speed limits throughout the LGA (e.g. max 30/40km/h). | S | M | Partner | LGA |
| | 5 | Audit and identify all kerbside allocation for service vehicles and rationalise spaces were possible. | M | M | Study/ Research | LGA |
| | 6 | Review existing one-way streets, cul-de-sacs, slip lanes, etc. to identify where changes will improve permeability and thereby reduce traffic conflicts. | S | S | Procedure | LGA |
| | 7 | Develop a logical functional road hierarchy in accordance with Austroads Guide to Road Design Part 2 – Table 2.3: Urban road functional classification and access management strategy also considering where other transport modes need priority. | S | M | Study/ Research | LGA |
| | 8 | Identify and map congestion pinch points and areas of safety concern. Lead investigations and partner with RMS to undertake improvements as part of critical pinch point investigations and infrastructure planning. | M | L | Study/ Research | LGA |
| | 9 | Remove or realign intersection approaches to ensure no more than four approaches to every intersection in Waverley to better prioritise available green time to key movements and for pedestrian safety. | M | L | Study/ Research | LGA |
| | 10 | Investigate locations to implement Local Area Traffic Management (LATM) schemes to ensure road treatments align with hierarchy, traffic use and speed. | S | M | Procedure | LGA |
| Cycling Strategies | 11 | Investigate options for a network of "Cycling Superhighways". | N/A | S | Policy | LGA |
| | 12 | Continue to implement Waverley Bike Plan 2013. Re-assess the whole LGA and identify the key locations and routes within the LGA. This would include an audit of existing conditions, a GIS study of topography, cadastre and land ownership, a strategy for improving rideability, and specific actions in addition to those in the Waverley Bike Plan. | S | S | Build | LGA |

| Signature Project | # | Actions | Investigation / Feasibility | Project Implementation | Action Type | Location |
|---|---|---|---|---|---|---|
| Cycling Strategies | 13 | Develop new Waverley Bike Plan including:<br>▪ mapping priority routes across LGA, connecting key origins and destinations, for each transport mode to clarify where mode separation is feasible; in particular, identify continuous cycling routes separated from private vehicle traffic;<br>▪ ensuring all footpath and road works undertaken by Council improve bicycle rider access and amenity and identify areas that require better pedestrian and cycle permeability; and<br>▪ investigate possibilities for new cycle links. | N/A | S | Study/ Research | LGA |
| | 14 | Undertake cycle path and route repair program to ensure cyclist safety (i.e. repairing longitudinal cracks) | S | S | Build | LGA |
| | 15 | Install bicycle parking, in line with Waverley Bike Plan recommendations (secure parking, street parking) at shops, Schools, businesses, strata buildings, beaches, parks and bus stops. | M | M | Build | LGA |
| | 16 | Work with adjacent Councils to develop separated cycleways on regional routes, including the Inner Sydney Regional Active Transport Network. | S | L | Study/ Research | LGA |
| | 17 | Construct Oxford Street and Spring Street cycleway through Bondi Junction. | S | S | Build | BJ |
| | 18 | Install better bicycle access to Bondi Junction Interchange and aim for a substantial increase in secure bicycle parking facilities commensurate with potential demand. | S | M | Partner | BJ |
| | 19 | Investigate new cycle path development opportunities either side of Bondi Road (including potentially through private property/development sites as redevelopment occurs). | S | L | Design | BR |
| | 20 | Investigate installing a separated cycle lane along Bondi Road (e.g. 1-way uphill only, 1-way both directions or bi-directional.) | S | M | Design | BR |
| Bondi Junction Transport Interchange | 21 | Lead investigations and partner with TfNSW to plan an overhaul of Bondi Junction interchange and the bus layover station on Oxford Street including approaches and pedestrian interfaces. Aim to ensure maximum pedestrian accessibility, customer convenience and operation of bus services (in partnership with TfNSW, Sydney Buses and RMS). Investigate improvements to pedestrian and public transport accessibility in the area. | S | L | Partner | BJ |
| | 22 | Implement pedestrian and cyclist connection revitalisation between Rowe Street and Grafton Street in Bondi Junction. | S | M | Procedure | BJ |
| | 23 | Improve the kiss+ride facilities at Bondi Junction. | S | M/L | Partner | BJ |
| | 24 | Investigate bus priority options along all approaches to Bondi Junction Station, including Old South Head Road, Bronte Road and Oxford Street. | S | M/L | Partner | BJ |

| Signature Project | # | Actions | Investigation / Feasibility | Project Implementation | Action Type | Location |
|---|---|---|---|---|---|---|
| | 25 | Install additional cycle parking throughout the Bondi Junction Interchange to cater for more than 700 bicycles. | S | M | Partner | BJ |
| Bondi Road Corridor Strategy | 26 | Continue investigations in partnership with TfNSW of alternative high-capacity public transport between Bondi Junction and Bondi Beach, such as a driverless shuttle system or bus priority measures. | S | L | Partner | BR |
| | 27 | Investigate the implementation of a dedicated bus transit lane as part of a Dynamic Lane Management system along Bondi Road and Old South Head Road. Where Intelligent Transport Systems (ITS) are used to create "peak traffic direction" bus transit lane as a third lane during peak traffic times. The Bondi Road Corridor Transport Strategy (Parsons Brinckerhoff - 2016) provides some initial detail on the benefits and issues surrounding this strategy. | S | S | Study/ Research | BR |
| | 28 | Improve east-west and north-south pedestrian access along and across Bondi Road, for example by widening footpaths, and reviewing pedestrian crossings and signalised intersections. Where smaller streets meet Bondi Road, install raised pedestrian crossings. | S | M | Design | BR |
| | 29 | Remove left-turn slip lane at the intersection of Denham Street and Bondi Road. Replace with outdoor seating, vegetation, shade and upgraded bus stop. | S | M | Design | BR |
| | 30 | Investigate dedicated bus priority lanes and the consolidation of bus stops along the Bondi Road Corridor. | S | S | Partner | BR |
| | 31 | Extend "No Stopping" times to 7am – 10am and 4pm – 7pm weekdays, and introduce 10am – 2pm "No Stopping" on weekends in summer. | S | M | Procedure | BR |
| | 32 | Investigate the conceptual corridor redevelopment layout (i.e. rear laneway strategy in the Bondi Road Corridor) on either side of the Bondi Road corridor. Including shared off-street parking facilities (potentially as car stackers) at the interface of the retail and residential areas, and identifying locations of bicycle parking and maintenance facilities at the front and to the rear of shops. | M | L | Design | BR |
| | 33 | Investigate opportunities for north-south route realignments at intersections, e.g. include intersection realignment with redevelopment along Bondi Road at key intersection locations. Alternatively, change the operations of signalised intersections to better manage safety and flow of traffic, buses and pedestrians, taking into consideration the whole network of streets around Bondi Road. | M | L | Design | BR |
| Walking Strategy | 34 | Prepare a Walking Strategy for the whole LGA and identify the key locations and routes within the LGA. This would include an audit of existing conditions, a GIS study of topography, cadastre and land ownership, a strategy for improving walkability, and specific actions to undertake e.g. through PAMPs (Pedestrian Access and Mobility Plans). | S | S | Study /Research | LGA |

| Signature Project | # | Actions | Investigation / Feasibility | Project Implementation | Action Type | Location |
|---|---|---|---|---|---|---|
| Waverley Walking Strategy | 35 | Collate a database of pedestrian and bicycle counts; and ensure pedestrian and bicycle counts are included in all traffic studies undertaken. | N/A | S | Procedure | LGA |
| | 36 | Improve pedestrian access (for people walking using prams or wheelchairs) along the Coastal Walk including to Bronte Beach, through Bronte cutting, Notts Avenue, Waverley Cemetery and to nearby bus stops. | N/A | S | Design | LGA |
| | 37 | Ensure crossing points are provided on all sides of all intersections (e.g. roundabouts and signalised intersections) and crossing points and refuges are located mid-block at regular intervals on busier roads. Reduce the width of roadways at intersections and add raised pedestrian crossings particularly along the edges of major roads, near Schools and shops, near major bus stops, and at difficult intersections. | M | M | Partner | LGA |
| | 38 | Negotiate with RMS increased pedestrian crossing times within traffic light cycles, and 'scramble movements where feasible, at major intersections and along main pedestrian routes. | S | M | Partner | LGA |
| | 39 | Identify and investigate areas that require better pedestrian permeability with new links including and through small parks in Waverley. | S | L | Study/ Research | LGA |
| | 40 | Review pedestrian access to bus stops, especially for people with impaired mobility and with prams, and consider bus stop consolidation. | N/A | S | Study/ Research | LGA |
| | 41 | Reduce road speeds throughout Bondi Junction – e.g. maximum 30km/hr and consider "shared space" (10km/hr) at key points (e.g. Waverley Street). | M | L | Partner | BJ |
| | 42 | Provide signage along key pedestrian and cycle routes, especially way finding to Bondi Junction Interchange. Signage provision should be in line with the Waverley Bike Plan 2013. | S | M | Design | BJ |
| Smart Cities Mobility Strategy | 43 | Prepare a "Smart Cities" proposal for future 'Mobility As Service' across the LGA. | S | L | Partner | LGA |
| | 44 | Investigate and develop an On-Demand Bus Pilot and queue management program in partnership with TfNSW. | S | L | Partner | LGA |
| | 45 | Investigate with TfNSW options for real time information and wayfinding to be provided to public transport and bus stops. | S | M | Design | LGA |
| | 46 | Ensure pedestrian legibility and accessibility, better customer convenience, and clearer interchangeability between public transport services. Review bus stop amenity for provisions particularly summer shading, and travel information. | M | L | Education | LGA |
| | 47 | Lead investigations and partner with TfNSW to determine main trip generators and suitable locations for more direct bus routes or bus priority lanes (i.e. between Rose Bay Wharf and Bondi Beach). | M | M | Study/ Research | LGA |

| Signature Project | # | Actions | Investigation / Feasibility | Project Implementation | Action Type | Location |
|---|---|---|---|---|---|---|
| Smart Cities Mobility Strategy | 48 | Develop Old South Head Road (Bondi Junction to Curlewis Street) bus priority scheme. | S | M | Partner | LGA |
| | 49 | Develop Bronte Road Bus Priority Scheme and improve pedestrian access to major bus stops (e.g. St Catherine's School). | S | L | Partner | LGA |
| | 50 | Partnering with TfNSW to investigate Bondi Junction to Bondi Beach light rail or bus priority scheme, and extension of heavy rail or Metro through eastern suburbs from Martin Place to Bondi Junction with additional connections at Bondi Beach, Randwick, Green Square / Airport. | M | L | Study/ Research | LGA |
| | 51 | Research how disruptive technologies, autonomous vehicles and increasing vehicle-sharing will change traffic and parking needs in Waverley. | S | L | Study/ Research | LGA |
| Schools Active Transport Strategy | 52 | Develop improvement program for pedestrian and cycling access to schools and encourage Businesses, Schools and Council employees to walk or ride to work/School. | N/A | S | Build | LGA |
| | 53 | Provide information and promote walking and cycling to School | S | S | Education | CC |
| | 54 | Investigate improved connections and routes for cycling and walking to Schools, including with any new development opportunities. | S | L | Design | CC |
| | 55 | Investigate managed pick-up procedures (such as queue management areas and call-up procedures, possibly assisted by technology) at Schools surrounding Church Street, Waverley. Facilitate a Schools traffic working group to develop other strategies such as staggered times, shuttle buses, remote parking, "walking bus" programs etc. | S | M | Study/ Research | CC |
| | 56 | Provide support for additional public secondary schools to reduce transport demand at existing schools. | M | L | Policy | CC |
| Shared and Electric Vehicles | 57 | Investigate expanding bike-share schemes to work with 'dockless' operations and investigate electric-assist share bicycles (e-bikes). | S | L | Procedure | LGA |
| | 58 | Develop Car Share policy that actively encourages the number and availability of parking for share cars throughout the LGA. | S | S | Policy | LGA |
| | 59 | Investigate "next generation" sharing schemes for cars/ motorbikes/ electric bikes etc. and how Council can accelerate innovation and change. | S/M | L | Study/ Research | LGA |
| | 60 | Support and roll out the installation of public electric vehicle (car, bicycle and scooter) charging points, installed on-street and off-street, starting in high profile public locations. | S | M | Procedure | LGA |
| | 61 | Install electric vehicle charging at high profile locations (e.g. Bondi beachfront). | M | M | Build | BB |

| Signature Project | # | Actions | Investigation / Feasibility | Project Implementation | Action Type | Location |
|---|---|---|---|---|---|---|
| Charing Cross Improvements | 62 | Prioritise and investigate Public and Active Transport infrastructure through Charing Cross and along Bronte Road. | S | L | Partner | CC |
| | 63 | Investigate priority through routes and guiding traffic movements to Carrington Road to avoid conflict with local activity centre functions and Bronte Road. | M | M | Partner | CC |
| | 64 | Provide traffic calming measures along Bronte Road through the shopping strip. | L | L | Design | CC |
| | 65 | Investigate transport priorities at the intersection of Carrington Road / Bronte Road to improve road safety for all users. | M | L | Design | CC |
| Bondi Junction | 66 | Continue negotiating with RMS regarding on and off ramps off Syd Einfeld Drive at Newland Street providing direct access to Bondi Junction for bus routes and/or general traffic. The intersections at each of Syd Einfeld Drive should be reconfigured (i.e. at the intersection with Old South Head Road and at the intersection with York/Ocean/Oxford Street). | M | L | Design | BJ |
| | 67 | Continue to implement Complete Streets Bondi Junction | S | L | Design | BJ |
| | 68 | Investigate and implement strategies/methods of encouraging traffic to avoid the Bondi Junction centre. For example, re-route traffic by signing and providing turn priority of Ebley Street and Denison Street instead of at Newland Street and reviewing Bronte Road/Birrell Street usage. | S | L | Study/ Research | BJ |
| | 69 | Investigate and identify opportunities for right-turn and U-turn implementation for vehicles exiting Car Parks within the centre. | S | M | Study/ Research | BJ |
| | 70 | Develop a parking hierarchy for on-street parking space in Bondi Junction and audit existing parking types against the hierarchy. | M | M | Study/ Research | BJ |
| Bondi Beach | 71 | Ensure pedestrian crossing points on all sides of all intersections on Campbell Parade. | N/A | S | Design | BB |
| | 72 | Widen footpaths along Campbell Parade and directly adjacent streets, including median widening on Campbell Parade. Completed in conjunction with Action 73 and Action 79. Provide landscape and shade treatments including tree planting. | S | M/L | Design | BB |
| | 73 | Implement a Campbell Parade "Traffic Calming and Pedestrianisation" scheme:<br>▪ Reduce Campbell Parade to 1 lane in each direction for general traffic, plus 1 lane for bus priority and a separated cycleway;<br>▪ Increase pedestrian connectivity by removing the Campbell Parade pedestrian fence, widening the median and installing raised crossing points; and<br>▪ Provide more allocated bus and taxi zones along Campbell Parade using the space created. | M | M/L | Design | BB |

| Signature Project | # | Actions | Investigation / Feasibility | Project Implementation | Action Type | Location |
|---|---|---|---|---|---|---|
| Bondi Beach | 71 | Provide separated cycleways along routes of high demand (e.g. Campbell Parade) and to key locations nearby (e.g. Rose Bay wharf, Bondi Junction, coastal ride). | S | L | Design | BB |
| | 75 | Provide bicycle parking facilities in Hall Street, along Campbell Parade and adjacent to the beach. | S | M | Design | BB |
| | 76 | Lead investigations and partner with TfNSW to improve bus priority lanes and review bus stop locations including Campbell Parade bus operations and amenity (e.g. shading). | S | M | Design | BB |
| | 77 | Allocate tourist bus stops away from public bus stops. | S | M | Design | BB |
| | 78 | Review location and operations of North Bondi bus terminus. | M | M | Design | BB |
| | 79 | Investigate removal of the Campbell Parade southern roundabout and implementing a signalised intersection in its place (with U-turn provisions in a wide central median). | S | M | Design | BB |
| | 80 | Identify strategic opportunities to reduce circulating traffic (e.g. searching for parking) through the Bondi Beach basin. | S | L | Study/ Research | BB |
| | 81 | Investigate the potential for alternative off-street car parking stations and to remove the Queen Elizabeth Drive/Campbell Parade parking on the beach. | M | L | Study/ Research | BB |
| | 82 | Convert Gould Street to a pedestrian priority zone, continuing existing pedestrian links and as a sheltered connection to Hall Street. | S | M | Design | BB |
| Smart Parking Management | 83 | Investigate and locate ranks for taxi and car share in the most convenient locations at appropriate times. | M | M | Study/ Research | LGA |
| | 84 | Continue to constrain the growth in private vehicles by capping the supply of parking in Bondi Junction and Bondi Beach in tandem with improvements to other modes. | N/A | M/L | Procedure | LGA |
| | 85 | Reinstate DCP 'zero minimum' and capped maximum car parking rates for new developments. | S | L | Procedure | BJ |
| | 86 | Audit off-street car parking availability and policies to determine where there are underutilised parking bays; and how these can be better used (e.g. leasing, storage, car share). | S | M | Study/ Research | LGA |
| | 87 | Encourage new car parking to be convertible to other purposes in the future (e.g. self-storage, bike parking, share cars). | N/A | L | Procedure | LGA |

| Signature Project | # | Actions | Investigation / Feasibility | Project Implementation | Action Type | Location |
|---|---|---|---|---|---|---|
| Smart Parking Management | 88 | Consider shared off-street parking facilities (potentially as car stackers) at the interface of the retail and residential areas along Bondi Road as redevelopment occurs. Associated with the development of a rear laneway strategy. | M | L | Policy | LGA |
| | 89 | Continue policies that limit off-street parking in new developments (through DCPs) and further restrain the availability of on-street parking permits in locations where alternative travel modes are feasible. Modify planning policies to disconnect the provision of car parking from apartment purchases in new developments so that those who don't need a car space do not have to pay for one. | N/A | S | Procedure | LGA |
| | 90 | Investigate and develop an E-permit system for on-street and off-street car parking, including a review of current parking pricing policies. | S | M | Study/ Research | LGA |
| | 91 | Introduce/extend on-street pay parking and permits in areas of high demand to ensure turnover of parking. | N/A | S | Procedure | LGA |
| | 92 | Investigate how to re-direct pay-parking income directly back to the local community in which it is charged. | S | M | Study/ Research | LGA |
| | 93 | Review the availability of beach and residential parking permits and consider methods to introduce "market price" or e-permits for beach parking. Continue to provide limited concessions where appropriate (on-duty beach patrol officers, carers, pensioners, electric cars). | S | S | Procedure | LGA |
| | 94 | Investigate a dynamic car parking guidance and "real time information" schemes for car parking availability and alternative transport modes. This may include "app" based, variable message sign methods or online information that allows people to better plan their trips. | S | L | Procedure | BJ |
| | 95 | Undertake a feasibility study for a variable priced on-demand parking scheme with parking availability guidance information as part of the scheme. | S | L | Study/ Research | BB |
| | 96 | Extend timed parking restrictions throughout the whole area near the Bondi Road corridor (may require extension of residential parking permit schemes or similar). | M | L | Procedure | BR |

## 9.4 WHERE TO FROM HERE

This strategy is intended to provide a "blueprint" for Waverley Council to initiate more detailed design and feasibility studies and to initiate works to provide more effective transport choice to its residents, employees and visitors. It is recommended that the action plans provided in this report be monitored, reported against annually and updated every three years, to ensure that initiatives remain relevant in a rapidly evolving transport system.