



# PARRAMATTA BIKE PLAN

## VOLUME 3: DETAILED ROUTE DESCRIPTIONS



## Toongabbie to CBD via Westmead and Wentworthville

This route runs along Wentworth Ave; Bridge Rd; Alexandra Ave; and Park Parade (shared path, south) from Toongabbie to Parramatta CBD. It offers a direct, legible route along streets which can accommodate safe, attractive cycling infrastructure. It offers connections to other regional routes to Northmead and through Westmead (including Parramatta CBD via Westmead hospital precinct) and numerous connections to local routes.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Wentworth Avenue</b>	Wentworth Avenue is a one lane each direction street running along the eastern/northern edge of the Blacktown railway line. Its width is generally sufficient for bike lanes, although additional treatments will be required in some intersections.	Wentworth Avenue currently lacks bicycle infrastructure.	A bi-directional separated bike lane running on the southern side of Wentworth Avenue from Toongabbie Railway Station to Bridge Road, Westmead (target width is 3m, no narrower than 2.4m). At railway stations, due to limited space, shared paths may be required. Interim actions until bi-directional bike lane is installed: removal of Audio Tactile Extrusions from the intersection with Bungaree Road; remarking of the intersection with Goodall Street, to accommodate bike lanes; realignment of turning lanes at the intersection with Binalong Road, which currently pose a danger to cyclists. The intersection with Hart Drive requires an upgraded crossing point, including bike lanterns and a more legible connection through improved signage and surface markings.	Wentworth Avenue provides the most direct path to Westmead and onto Parramatta CBD, it is reasonably quiet and of sufficient width for a bike lane. The intersections require reconfiguration due to current safety risks.
<b>Bridge Road</b>	Bridge Road provides a connection to the southern side of the Blacktown railway line, which is necessary to	Bridge Road across the Blacktown railway line currently lacks	A new 4m wide shared path on the east side of Bridge Road, to be built in conjunction with existing plans for rebuilding the bridge.	Bridge Road provides a necessary connection for cyclists heading toward Westmead and the Parramatta CBD. Treatments on the bridge will increase

	continue towards Parramatta CBD. Although generally of sufficient width for a painted bike lane, the bridge across the railway line is too narrow for a bike lane.	bicycle infrastructure.		cyclist safety and the legibility of the route, while the short distance with not cause undue detriment to motorist travel times.
<b>Alexandra Avenue</b>	Alexandra Avenue runs parallel to the Blacktown railway line on the southern side. It is in Cumberland Council, but is currently designated as a bike route between Bridge Street and Hawkesbury Road. It is generally of sufficient width to accommodate a bike lane.	Alexandra Avenue currently lacks bicycle infrastructure.	<p>A bi-directional bike lane on the north side of the street from Bridge Road to Hawkesbury Road.</p> <p>A shared path between Hawkesbury Road and Park Avenue. Running on the northern side from Hawkesbury Road to Hassall Street, then changing to the southern side via a new crossing on the eastern leg of the intersection.</p> <p>(this section is within Cumberland Council)</p>	Parramatta should collaborate with Cumberland to improve this link as it offers benefits to residents of both LGAs by providing safer, direct cycling routes to Westmead and Parramatta CBD.
<b>Park Parade</b>	Park Parade is the eastern extension of Alexandra Avenue. It runs parallel to the Blacktown railway line on the southern side. It carries buses and includes bus lanes. The width of Park Parade is insufficient for a bike lane, but there is ample space on Park Parade's southern edge for an off street shared path.	Park Parade currently lacks bicycle infrastructure.	A bi-directional shared path constructed on the southern edge of Park Parade. This will require a safe transition from the on street bike route in Alexandra Avenue, and a legible crossing at Pitt Street to connect with the shared path along the northern edge of Argyle Street.	A shared path along Park Parade will offer a safe, quick alternative to the current route through Westmead, although signage will still indicate the route though Westmead (described in <i>Rouse Hill to CBD via Westmead</i> ) is an option.
<b>Hawkesbury Road</b>	Hawkesbury Road Alexandra Avenue and the Westmead	No bicycle infrastructure.	This street is currently a potential Light Rail route. Any future Light Rail on Hawkesbury Road should seek to	There is very high latent demand for cycling in this area given its importance as an employment destination,

	Train Station with Westmead Hospital		<p>integrate high quality bicycle infrastructure.</p> <p>New shared path between Alexandra Avenue and Darcy Street on the northern side of the street with a minimum width of 3m.</p>	<p>congestion and car parking issues. The redevelopment of the hospital only heightens the need for improved bicycle infrastructure.</p>
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## Rouse Hill to CBD via Westmead

This route runs from Rouse Hill (Hills Shire) to Parramatta CBD via Westmead, largely along the existing route. This proposed route deviates from the existing route between Ferndale Close and Briens Road, travelling along Ferndale Close, Harris Street, and a new shared path and bridge crossing Toongabbie Creek, rather than along Ferndale Close, Doig Street, Lurgan Street, and a shared path along the North West Transitway and Briens Road. This deviation offers a shorter route, avoids the less legible route through backstreets, the intersection with Hart Drive (Cumberland Highway) and Briens Road (which has a high number of crashes). The proposed route offers a high quality, direct connection between two major destinations in the Greater Parramatta region. It also offers connections to regional routes to Toongabbie, Northmead, and the northern periphery of the City of Parramatta, while also connecting with many local routes.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Old Windsor Road shared path from Rouse Hill to Reynolds Street/Old Windsor Road service lane.</b>	This is a shared path running parallel to the Old Windsor Road, on the northern side of the thoroughfare. At Toongabbie Creek the path crosses under the Old Windsor Road thoroughfare to the western side.	This shared path is of high quality, with sufficient width and bike lanterns at signalised intersections.	No infrastructure improvements are required at this time.	This high quality path offers a safe, direct path from Rouse Hill towards Westmead and Parramatta CBD.
<b>Old Windsor Road southern service lane, Reynolds Street to</b>	Old Windsor Road's southern service lane is a cul-de-sac running for approximately 690 metres, with vehicles entering solely from Reynolds Street while a shared path at Fitzwilliam Road offers a through route for cyclists.	There are currently PS2 symbols painted towards the northern edge of the road space, permitting parking on the southern side of the service	Conversion of PS2 symbols to sharrows by adding chevrons.	This route connects existing, high quality, shared paths, and although in mixed traffic, still offers the safest route for cyclists. Conversion of PS2 symbols to sharrows will solidify this a preferred cycling route.

<b>Fitzwilliam Road</b>	Although narrow, there is housing only on the southern edge.	lane and two-way mixed traffic on the northern side. There are also 'Watch for bike' signs.		
<b>Old Windsor Road shared path from Fitzwilliam Road to Ferndale Close.</b>	This is a shared path running parallel to the Old Windsor Road, on the southern side of the busway. It starts just west of Fitzwilliam Road, ending at Ferndale Close.	This shared path is of high quality, with sufficient width and bike lanterns at signalised intersections.	No infrastructure improvements are required at this time.	This high quality path offers a safe, direct path from Rouse Hill towards Westmead and Parramatta CBD.
<b>Ferndale Close</b>	Ferndale Close is a residential street of sufficient width for bike lanes. It has a signalised crossing with Hart Drive (Cumberland Highway).	Ferndale Close is marked with PS2 symbols between the Old Windsor Road shared path and Doig Street; the current route between Rouse Hill and Parramatta.	Bi-directional separated bike lane on the western side of the street. The intersection with Constitution Road should be raised, with ample signage, to slow cars exiting Constitution Road and highlight priority for cyclists.  Parking would be prohibited on the western side of Ferndale Close, but permitted on the eastern side.	A bi-directional bike lane will improve cycling safety, perceptions of safety, and legibility of the route. It will also create a separated route from Parramatta CBD to Old Windsor Road.
<b>Harris Road</b>	Harris Road is a residential street which connects to Toongabbie Creek and contains a primary school. It is wider near Hart Drive (Cumberland Highway), and a cul-de-sac south of Portadown Road.	Harris Road currently lacks bicycle infrastructure.	Bi-directional separated bike lane on the western side of the street. Harris Road is currently four lanes (two north bound two south bound) at the intersection at Hart Drive (Cumberland Highway), one southbound lane to be removed to create space for bike lanes.	This route creates a more direct path to Mons Road, improving the attractiveness of cycling. A bi-directional bike lane will improve cycling safety, perceptions of safety, and legibility of the route. It will also create a separated route from Parramatta CBD to Old Windsor Road.



<b>New shared bridge across Toongabbie Creek, between Harris Street and Briens Road.</b>	This is currently green space, with no crossing of Toongabbie Creek.	None.	A new shared walking and cycling path and bridge from the end of Harris Street across the Toongabbie Creek to Briens Road.	This bridge and path would facilitate a more direct and safe route between the Old Windsor Road shared path and Mons Road shared path. Briens Road presents a danger to cyclists, with five accidents resulting in injury reported in the last five years. The intersection at Hart Road (Cumberland Highway) is difficult and time consuming to navigate.
<b>Briens Road</b>	Briens Road is a busy arterial road, with heavy traffic including trucks. It is faced by industrial and commercial estates, the driveways of which create interface issues and danger for cyclists using the shared path.	Briens Road contains a shared path on the northern edge, running between Mons Road and the North West Transitway.	A shared path west of Mons Road, to connect to the proposed bridge and shared path across Toongabbie Creek. Remediations to the existing shared path are covered in the description of the local network.	This shared path would facilitate a more direct and safe route between the Old Windsor Road shared path and Mons Road shared path. Briens Road presents a danger to cyclists, with five accidents resulting in injury reported in the last five years. The intersection at Hart Road (Cumberland Highway) is difficult and time consuming to navigate.
<b>Mons Road</b>	Mons Road is a busway closed to through traffic.	Mons Road has a shared path on the western side from Briens Road, across Toongabbie Creek, with it changing to the east side approximately 180 metres north of Darcy Street. The transition is facilitated by a signalised crossing.	The shared path should be extended on the eastern side of Mons Road, with the transition from east to west moved to at the start of the busway.	The transition is currently a signalised intersection, which needlessly requires cyclists wait for the green crossing lantern, even when there are no cars. Additionally, there are driveways on the western side of Mons Road, which the shared path crosses; these would be avoided if the shared path were on the eastern side.

<b>Darcy Road</b>	Darcy Road is a major road, with a dedicated cycle path and busway.	Darcy Road has a high quality dedicated cycling only path on the eastern edge. This separates cyclists from all pedestrians and motor vehicles. All signalised crossings contain bike lanterns.	No infrastructure improvements are required at this time.	This high quality path offers a safe, direct path towards Westmead and Parramatta CBD.
<b>Queens Road</b>	Queens Road is a reasonably quiet, residential street. The built form is primarily multi-dwelling units.	Queens Road currently contains PS2 symbols. Council is in the planning stages of a bi-directional separated bike path.	The bi-directional bike path. The intersection with Hawkesbury Road should be modified, in conjunction with light rail, so light rail vehicles and cyclists have right of way above private motor vehicles.	Queens Road is a desirable route, connecting directly to Parramatta Park and the Westmead Hospital Precinct. Giving priority to cyclists will increase attractiveness and raise awareness of cyclists amongst motorists.
<b>Parramatta Park</b>	Parramatta Park contains a clockwise loop road, with vehicle speeds limited to 30km/h and connections at multiple points.	The clockwise loop road has adjacent painted bike lanes and multiple connections to neighbouring streets and shared paths.	For the southern half of the loop to be modified to allow two-way separated bike lanes (either as one-way pairs, or bi-directional).	Construction of a direct path will shorten journey times, increasing relative attractiveness of cycling through Parramatta Park. As Parramatta Park is not governed by City of Parramatta, Council will need to collaborate with the Parramatta Park Trust to ensure the best outcomes for cycling through Parramatta Park.



## Northmead to CBD

This route offers a fast, direct route to Parramatta CBD for those in the north of the City of Parramatta. A continuous shared path on the eastern side of Windsor Road will increase the attractiveness of cycling compared to existing conditions by removing the need to change from shared path to road (unprotected) and then to a path on the other side. The shared path is proposed for the east side of the road to offer better connections to Pennant Hills Road (shared path), North Rocks Road (on road lane), a proposed shared path along Darling Mills Creek, and other local connections in Northmead. Further, all regional and local connections into this route from the west are at controlled crossing points, whereas those from the east are generally not. This has been an important factor in placing the shared path on the east.

NB: this route description ends at the junction of Church Street, Pennant Hills Road and Albert Street, offering multiple connections to other destinations and into the CBD.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Windsor Road</b>	Windsor Road is a major arterial road, carrying heavy fast moving traffic. It varies in width between four lanes and seven lanes, with bus lanes. It also utilises a 'tidal' traffic lane system, where lanes change direction based on time of day.	Windsor Road currently has small discontinuous sections of shared path in the southern section.	A continuous shared path on the eastern side of Windsor Road.	Windsor Road is of insufficient width for a dedicated bike lane without removing traffic lanes, while the speed and traffic makes it unsuitable for cycling in mixed traffic. A shared path along the eastern side will offer a continuous, safe, direct route for cyclists. The eastern side of Windsor Road is wider, while all local routes connecting from the west are at signalised intersections, increasing permeability.
<b>Church Street</b>	Church Street, north of Albert Street, is a major arterial road, carrying heavy, fast moving traffic. It varies in width between four lanes and seven lanes, with bus lanes.	Church Street currently has a shared path on the eastern side between Pennant Hills Road and By Street, and on both sides of the road between North	A continuous shared path on the eastern side of Church Street, north of Albert Street.	Church Road is of insufficient width for a dedicated bike lane without removing traffic lanes, while the speed and traffic makes it unsuitable for riding in mixed traffic. A shared path along the eastern side will offer a continuous, safe, direct route for cyclists. The eastern side of Church Street already contains substantial sections of shared path,

		Rocks Road and Bourke Street.		further, the eastern side will integrate better with local routes at non-controlled intersections, increasing permeability.
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## North Rocks to CBD

This route offers a direct route from North Rocks to Parramatta CBD, with local route connections to Westmead and Carlingford. Painted bike lanes will improve cycling safety, perceptions of safety, and legibility of the route. The shared path sections increase safety while maintaining connectivity. Although difficult to navigate, the shared path connections between North Rocks Road and New North Rocks Road offer the best outcomes for cyclist from a safety and legibility perspective.

NB: this route description ends at the junction of Church Street, Pennant Hills Road and Albert Street, offering multiple connections to other destinations and into the CBD.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>North Rocks Road</b>	North Rocks Road has one parking lane and one travel lane in each direction. It carries moderate traffic and is of sufficient width for bike lanes. South of James Ruse Drive, there is no parking, with all road space utilised by travel lanes.	The parking lanes are wide, with PS2 symbols, which are sometimes partially covered by parked cars. There are shared paths on both sides of North Rocks Road between James Ruse Drive and Church Street, but neither run the entire length.	Painted on street bike lanes adjacent to the parking bays north of James Ruse Drive.  Shared paths on both sides of North Rocks Road between Church Street and just north of James Ruse Drive.  Closure of the slip lane from North Rocks Road into Loyalty Road.	North Rocks Road is the most direct and legible route from North Rocks into Parramatta CBD, and also offers connections into Westmead via local routes.  On street painted bike lanes will offer the best outcome for cyclists north of James Ruse Drive, while south of James Ruse Drive off street shared paths on both sides of the street will offer protection and connectivity with on road lanes and the shared path along Church Street.  The current slip lane from North Rocks Road into Loyalty Road poses a safety risk to cyclists. Its closure would increase

				safety, whilst not unduly impacting overall trip times for motor vehicles, which are able to use the intersection approximately 60 metres north.
<b>New North Rocks Road</b>	New North Rocks Road contains one parking lane and one travel lane in each direction. It carries moderate traffic and is of sufficient width for bike lanes.	The parking lanes are wide, with PS2 symbols, which are sometimes partially covered by parked cars.	Painted on street bike lanes adjacent to the parking bays for the length of New North Rocks Road.	A painted bike lane will improve cycling safety, perceptions of safety, and legibility of the route.

## Lake Parramatta to CBD

This route is largely unchanged, as it offers the most direct, legible connection from Parramatta CBD to Lake Parramatta. It also offers connections to regional routes to Northmead, and North Rocks and numerous local routes.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Lake Parramatta access road</b>	No parking or lane markings, this path is not wide enough for dedicated bike lanes.	This road currently lacks bicycle infrastructure.	Sharrows.	Sharrows will increase awareness and legitimise cycling along the road. Recommend 30km/h speed limit.
<b>Lackey Street</b>	No parking or lane markings, Lackey Street is not wide enough for dedicated bike lanes.	Lackey Street currently lacks bicycle infrastructure.	Sharrows.	Sharrows will increase awareness and legitimise cycling along the road.
<b>Bourke Street</b>	Bourke Street is a primarily a residential street with one lane each way and parking permitted. It has no lane markings, but is of sufficient width for cycling lanes.	Bourke Street currently lacks bicycle infrastructure.	Painted bike lanes.	A painted bike lane will improve cycling safety, perceptions of safety, and legibility of the route.

<b>Iron Street</b>	Iron Street is a primarily residential street with one lane each way and parking permitted. It has no lane markings, but is of sufficient width for cycling lanes.	Iron Street currently lacks bicycle infrastructure.	Painted bike lanes with no painted centre line.	Space may be insufficient for dedicated cycle lanes and moving traffic lanes in both directions, however, by removing the centre line the road space becomes 'elastic', with cars moving to the space in the road they need to in order to either pass a bike or oncoming vehicle. A painted bike lane will improve cycling safety, perceptions of safety, and legibility of the route.
<b>Castle Street</b>	Castle Street is a primarily residential street with one lane each way and parking permitted. It has some lane markings, but is of sufficient width for cycling lanes.	Iron Street currently lacks bicycle infrastructure.	Painted bike lanes with no painted centre line.	Space may, in places, be insufficient for dedicated cycle lanes and moving traffic lanes in both directions, however, by removing the centre line the road space becomes 'elastic', with cars moving to the space in the road they need to either pass a bike or oncoming vehicle. A painted bike lane will improve cycling safety, perceptions of safety, and legibility of the route.
<b>Pennant Hills Road</b>	Pennant Hills road is two lanes each way with no parking and heavy, fast moving traffic.	A shared path runs on the northern side of the road, between Church Street and Castle Street.	No infrastructure improvements are required at this time.	The shared path offers the safest outcome for cyclists, by separating them from traffic. Further, the northern side offers the best connectivity with regional and local routes, by ensuring all crossings of major roads are at signalised intersections.

## Carlingford to CBD

This route offers a direct, safe, legible route between Carlingford and Parramatta CBD. It is the only traversable route in the corridor between Pennant Hills Road and Kissing Point Road, which are both unsuitable for bike lanes due to their heavy, fast moving traffic and lack of road space. To make this route safe and attractive for cyclists, some parking will need to be removed. This route connects for multiple regional routes radiating from Carlingford and the Carlingford railway corridor (future light rail), which will see significant localised development in the medium term. It also connects to many local routes and will act as a spine into Parramatta CBD.

NB: this route description ends at the intersection of Webb Street and Isabella Street.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Pennant Hills Road</b>	Pennant Hills Road is between four and five lanes, with heavy, fast moving traffic in both directions. All road space is currently utilised as traffic lanes, with insufficient space to add bike lanes without removing traffic lanes.	There is a shared path from Coleman Avenue to Charles Street, although it swaps from the north to south at Adderton Road.	Shared path on both sides, between Coleman Avenue and Jenkins Road.  Shared path on South side between Jenkins Road and Charles Street.  Installation of bike lanterns at controlled intersections between Pennant Hills Road and: Coleman Avenue; Jenkins Road; and Adderton Road.	Pennant Hills Road is unsuitable for on street bike lanes without removing traffic lanes. Shared paths offer the best outcomes for cyclists with regards to safety and connectivity. Having shared paths on both sides increases connectivity with regional routes to Northmead and Epping, and numerous local routes.
<b>Charles Street</b>	Charles Street is a primarily residential street with one lane each way and parking permitted. It has no lane markings, and is of sufficient width for advisory cycling lanes.	Charles Street currently lacks bicycle infrastructure.	Advisory bike lanes with no painted centre line.	Charles Street offers the most direct route Parramatta CBD and regional routes following the Carlingford Railway Line.
<b>Telopea Street</b>	Telopea Street is a primarily residential street with one lane each way and parking permitted. It has no lane markings, and is not of	Telopea Street currently lacks bicycle infrastructure north of Wilkinson Lane.	Sharrows.	Telopea Street offers the most direct route Parramatta CBD and regional routes following the Carlingford Railway Line. Sharrows offer the best opportunity to facilitate cycling by increasing

	sufficient width for cycling lanes.			awareness and legitimise cycling along the road.
<b>Wilkinson Lane</b>	Wilkinson Lane is a primarily residential street with one lane each way and parking permitted. It has no lane markings, and is not of sufficient width for cycling lanes.	Wilkinson Lane has PS2 symbols.	Conversion of PS2 symbols to sharrows though the addition of chevrons.	Wilkinson Lane offers the most direct route Parramatta CBD. Sharrows offer the best opportunity to facilitate cycling by increasing awareness and legitimise cycling along the road.
<b>Tintern Avenue</b>	Tintern Avenue is a primarily residential street with one lane each way and parking permitted. It has centre lane markings, and is not of sufficient width for cycling lanes and parking on both sides.	Tintern Avenue has PS2 symbols, with direction arrows indicating the regional route.	Removal of parking, to be replaced by dedicated bike lanes between Wilkinson Lane and Wesley Street.	Tintern Avenue offers the most direct route between Carlingford and Parramatta CBD and to Carlingford Railway line local and regional routes. The section of road is only 55 metres and involves two intersections in short succession. Although some parking may be lost, the benefits to cycling safety, perceptions of safety, and legibility of the route outweighs these losses.
<b>Wesley Street</b>	Wesley Street is a primarily residential street with one lane each way and parking permitted. It has centre lane markings, and is not of sufficient width for cycling lanes and parking on both sides.	Wesley Street has PS2 symbols.	For straight sections: Removal of parking from one side of the street and installation of painted bike lanes with no centre line. For curves and approaches to curves: Removal of parking from one side and installation of bike lanes (maintaining the bike lane adjacent to parking at 1.4m) with a centre line.	Wesley Street offers an unparalleled, direct route between Carlingford and Parramatta CBD. The current PS2 symbols offer little protection, while the curves and parked cars through curves pose safety risks to all road users.
<b>York Street</b>	York Street is a primarily residential street with one lane each way and parking permitted. It has centre lane markings, and is not of	York Street has PS2 symbols.	For straight sections: Removal of parking from one side of the street and installation of painted bike lanes with no centre line.	York Street offers an unparalleled, direct route between Carlingford and Parramatta CBD. The current PS2 symbols offer little protection, while the curves



	sufficient width for cycling lanes and parking on both sides.		For curves and approaches to curves: Removal of parking from one side and installation of bike lanes (maintaining the bike lane adjacent to parking at 1.4m) with a centre line.	and parking cars through curves pose safety risks to all road users.
<b>Bettington Road</b>	Bettington Road is one lane each way with unrestricted parking. It has a marked centre line and fast moving traffic. It is not of sufficient width for cycling lanes and parking.	Bettington Road has PS2 symbols.	Painted bike advisory lanes, with 2m parking bays and the remaining lane space painted with PS2 and dashed line. In future, investigation of parking requirements and bike lane utilisation should be undertaken determining the possibility of removing parking from one or both sides of the street to provide space for dedicated or separated bike lanes.	Bettington Road offers an unparalleled, direct route between Carlingford and Parramatta CBD. Painted advisory lanes will legitimise cycling, encouraging cars to drive towards the centre of the road and provide ample space when passing, without affecting parking availability.
<b>Belmore Street East</b>	Belmore Street East is one lane each way with unrestricted parking. It has a marked centre line and fast moving traffic. It is not always of sufficient width for cycling lanes and parking.	Belmore Street East has PS2 symbols, but they are occasionally very close to the centre line.	Painted bike advisory lanes, with 2m parking bays and the remaining lane space painted with PS2 and dashed line. In future, investigation of parking requirements and bike lane utilisation should be undertaken determining the possibility of removing parking from one or both sides of the street to provide space for dedicated or separated bike lanes.	Bettington Road offers an unparalleled, direct route between Carlingford and Parramatta CBD. Painted advisory lanes will legitimise cycling, encouraging cars to drive towards the centre of the road and provide ample space when passing, without affecting parking availability. Additionally, the proximity to a primary school increases the need to make cycling safe and attractive for children and parents.
<b>Webb Street</b>	Webb Street is one lane each way with unrestricted parking. It has a marked centre line and fast moving traffic. It is not of sufficient width for cycling lanes and	Webb Street has PS2 symbols, but they are occasionally very close to the centre line.	Between Belmore Street East and Gladstone Street, restriction of parking to the east side of the street and installation of bike lanes.  Between Gladstone Street and Isabella Street, restriction of parking to the west	Webb Street offers an unparalleled, direct route between Carlingford and Parramatta CBD. The current PS2 symbols offer little protection

	parking on both sides of the road.		side of the street and installation of bike lanes with no centre line.	
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## Carlingford to SOP Region via Ermington

This route offers a direct, safe, legible route between Carlingford and Sydney Olympic Park Region via Ermington. It is mostly direct, following existing routes and infrastructure where possible. Spurway Street is narrow in parts, necessitating sharrows and the removal of parking, but offers the most direct route, and runs through the middle of a residential area which has a high propensity for cycling. It links in with the Parramatta Valley Cycleway and a number of other regional routes, increasing the number of destinations which can be cycled to, linking the network together. Improvements may be necessary in the future, to enable connection with cycling facilities on the Silverwater Road Bridge.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Telopea Street</b>	Telopea Street is a primarily residential street with one lane each way and parking permitted. It has no lane markings, and is not of sufficient width for cycling lanes.	Telopea Street has PS2 symbols south of Wilkinson Lane.	Sharrows.	Telopea Street offers an important North- South connection and links directly with train stations/new light rail line and from a macro perspective, connects the North Eastern portion of the LGA with the South (SOP and Ermington).
<b>Adderton Road</b>	Adderton Road is dealt with in the Carlingford to UWS section.	NA	NA	NA
<b>Railway line crossing at Telopea Station</b>	There is currently a level crossing point for pedestrians and cyclists just south of Telopea Station.	The level crossing is accessible via ramps from both sides, with a signalised pedestrian crossing across Adderton Road and a shared path connecting to	Installation of bike lanterns at signalised crossing.  Maintain or improve pedestrian/cyclist access across the line following conversion to light rail.	This point offers the first crossing point on the Carlingford Line south of Carlingford Station, it is important to permeability and active transport access. The bike lanterns will link up existing shared paths on both sides of Adderton Road.

		Sturt Street on the eastern side.		Future development of the Carlingford Line to light rail offers a rare chance to improve active transport access in the Telopea area.
<b>Sturt Street</b>	Sturt Street is a primarily residential street of varying width. In sections it contains parking and no lane markings. In other sections, it contains lane marking and no parking, to allow dedicated turning lanes. It also has traffic refuge islands and a zebra crossing (with associated traffic blisters)	Sturt Street generally lacks bicycle infrastructure, containing a few PS2 symbols.	<p>Shared path from Telopea Station to Benaud Place: painted bike lanes to right of parking bays with no centre line. Restriction on parking around pedestrian refuge to allow for painted bike lanes.</p> <p>Benaud Place to Evans Road: Restriction of all parking, and installation of a painted bike lane. Modification of zebra crossing traffic blisters to allow sufficient space for a bike and travel lane side-by-side; or, for a cycle lane to pass on the footpath side of the blister.</p> <p>Evans Road to Kissing Point Road: painted bike lanes to right of parking bays. For 50 metres south of Evans Road, removal of all parking and line markings indicating two dedicated cycle lanes; two motor vehicle lanes; one motor vehicle turning lane, Sturt Street north-westbound into Evans Road northbound. For 50 metres north of Kissing Point Road, removal of all parking and line markings indicating two dedicated cycle lanes which transition to shared paths 10 metres north of Kissing Point Road; one motor vehicle lane</p>	Sturt Street offers a direct route from the Carlingford Line to Ermington and onto Sydney Olympic Park. It also provides one of the few signalised crossings of Kissing Point Road which can be made suitable for cycling.

			north bound from Kissing Point Road; and two motor vehicle turning lanes south bound from Sturt Street into Kissing Point Road east and west.	
<b>Kissing Point Road</b>	Kissing Point Road is a major road, with three motor vehicle lanes in each direction.	Kissing Point Road currently lacks bicycle infrastructure.	Shared paths on both sides of road, connecting to on street bike lanes in Sturt Street and Kirby Street.  Installation of bike lanterns at signalised intersections with Sturt Street and Kirby Street.	Facilitating cycling along this section of Kissing Point Road is crucial to linking up Sturt Street and Kirby Street, providing a direct route from Carlingford region to Sydney Olympic Park Region.
<b>Kirby Street</b>	Kirby Street is a largely residential street, with two-way traffic, parking of both sides of the road and a solid centre line. It is not of sufficient width for dedicated bike lanes.	Kirby Street has some PS2 symbols in the parking lanes.	Removal of parking 50 metres south of Kissing Point Road and installation of dedicated cycle lanes which transition to shared paths 10 metres south of Kissing Point Road.  Lowering of the speed limit to 40kmh and installation of sharrows north of Paul Street to 50 metres south of Kissing Point Road.	Kirby Street offers a direct route from the Carlingford Line to Ermington and onto Sydney Olympic Park. It also provides one of the few signalised crossings of Kissing Point Road which can be made suitable for cycling.
<b>Paul Street</b>	Paul Street is a narrow residential street with a solid centre line. It is not of sufficient width for dedicated bike lanes.	Paul Street has PS2 symbols, with arrows indication direction of bike route.	Conversion of PS2 logos to sharrows.	Sharrows offer the best opportunity to facilitate cycling by increasing awareness and legitimise cycling along the road.
<b>Ronald Avenue</b>	Ronald Avenue is a narrow residential street with parking and no centre line. It is not of sufficient width for dedicated bike lanes.	Ronald Avenue has PS2 symbols, with arrows indicating direction of bike route.	Conversion of PS2 logos to sharrows.	Sharrows offer the best opportunity to facilitate cycling by increasing awareness and legitimise cycling along the road.

<b>Dorahy Street</b>	Dorahy Street is a narrow residential street with parking and no centre line. It is not of sufficient width for dedicated bike lanes.	Dorahy Street has PS2 symbols, with arrows indication direction of bike route.	Conversion of PS2 logos to sharrows.	Sharrows offer the best opportunity to facilitate cycling by increasing awareness and legitimise cycling along the road.
<b>Spurway Street (Dorahy Street)</b>	Spurway Street is a narrow, dead-end residential street with parking and no centre line. It is not of sufficient width for dedicated bike lanes.	Spurway Street has PS2 symbols, with arrows indication direction of bike route.	Conversion of PS2 logos to sharrows.	Sharrows offer the best opportunity to facilitate cycling by increasing awareness and legitimise cycling along the road.
<b>Offroad path under Silverwater Road to Spurway Street</b>	This path offers pedestrian and cyclist access under Silverwater Road, connection the northern and southern sections of Spurway Street and Bennetts Road East.	The shared path is narrow, with a poorer surface and lacks signage indicating it is a shared path.	Widening of the shared path, improving the surface.  Installation of shared path signs.	This path offers an unparalleled connection bridging Silverwater Road.
<b>Spurway Street</b>	Spurway Street is a moderately trafficked, primarily residential street. It is of varying width, with parking permitted in some sections, but forbidden in others. It is sometimes of sufficient width for bike lanes, sometimes not.	Spurway Street contains some faded PS2 symbols.	This section of Spurway was highlighted within the road safety audit conducted as part of the Bike Plan as an area of <i>High</i> road safety risk. This safety issue can be mitigated by reducing the number of motor vehicle movements on Spurway (to primarily those accessing properties on Spurway). This may be achieved by closing Spurway to through traffic (buses excepted) between Coffey and Tristram Streets.  Advisory bike lanes.	Spurway Street offers the most direct alternative to Silverwater Road, offering a cycling friendly connection between Telopea and Ermington. There are no other routes as direct and legible as Spurway Street. Although this may lead to a small loss of parking, the increase in safety, perceptions of safety, and attractiveness of cycling outweigh these potential losses. Sharrows have only been suggested where space is insufficient for advisory bike lanes.

<b>Broadoaks Street</b>	Broadoaks Street is a residential street with parking permitted and no lane markings.	Broadoaks Street currently lacks bicycle infrastructure.	Sharrows with no other road markings.  Widening the connection between Broadoaks Street/Arista Way and the Parramatta Valley Cycleway and designating the path a shared path.	Sharrows offer the best opportunity to facilitate cycling by increasing awareness and legitimise cycling along the road.  Improving and formalising the connection from Broadoaks Street to the Parramatta Valley Cycleway will improve attractiveness, safety, and permeability of this route.
<b>PVC</b>	See PVC Section			
<b>Silverwater Bridge</b>	Silverwater Road bridge over the Parramatta River carries two lanes in each direction of motor vehicles, with ~2m wide separated walking/cycling paths on both sides.	A shared path connects the Parramatta Valley Cycleway to the Silverwater Bridge on the eastern side, while on the western a shared path connects to the bridge and to Fallon Street/John Street. The eastern side is preferred for this route. The bridge shared paths on both sides are rather narrow.	No infrastructure improvements are required at this time.  In future, consideration should be given to hanging a 4m+ shared path on the side of the bridge. This would give additional capacity and make passing easier (the current width will make two bikes passing difficult).	Silverwater Road bridge offers a safe, separated crossing of the Parramatta River. The eastern side is preferable as it offers a wider, more direct connection to the Parramatta Valley Cycleway and a simpler connection to Newington Road on the Silverwater side of the Parramatta River.  However, the width of the paths may not be sufficient in future if bike and pedestrian movements across the bridge increase.
<b>Clyde Street</b>	Clyde Street, east of Silverwater Road connects to bus only T-Way and provides the only connection to a parking lot/boat jetty on the Parramatta River.	There is a bike lane eastbound, and a shared path westbound.	Installation of Give Way signs providing access from the shared path on the eastern side of Silverwater bridge to the bike lanes in Clyde Street.  Installation of a separated bike lane.	Clyde Street offers a public/active transport only path through Silverwater. However, the bike paths are insufficient, especially on the southern side, where it ends abruptly.



<b>Newington Road</b>	Newington Road provides access to industrial workplaces, the Parramatta River, and Wilson Park. It carries trucks and buses, and is of a sufficient width for bike lanes.	Newington Road currently has a poor quality, discontinuous shared path on the western side.	Separated one-way pairs.  Alteration of driveway mouths on western side of Newington Road to slow exiting vehicle speeds and increase awareness of cyclists.	Newington Road provides a necessary link between Clyde Street and Holker Street. Separated bike lanes will increase safety, perceptions of safety, and attractiveness of cycling.
<b>Holker Street</b>	See Holker Street Section			

## Carlingford to UWS

This route offers a direct, safe, legible route between Carlingford and the University of Western Sydney. It largely follows the railway line, but deviates between Telopea and Dundas. This deviation is necessary to utilise signalised crossings at Kissing Point Road, increasing safety and attractiveness. If the conversion of the Carlingford Line to Light Rail includes a parallel shared path, that should replace this route as the prime regional route from Carlingford to the University of Western Sydney.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Adderton Road</b>	Adderton Road is a primarily residential street. It varies in width, having a mild pinch point when crossing the Carlingford Line. It has two-way traffic and parking with a painted centre line.	Has PS2 symbols and shared paths on both sides of road at Telopea Railway Station, but is otherwise lacking cycling infrastructure.	Telopea Street to Leamington Road: painted bike lanes, this will necessitate the removal of a dedicated left turn lane from Adderton Road northbound to Telopea Street westbound.  Leamington Road to Manson Street: sharrows and 40kmh speed limit.  Manson Street to Kissing Point Road: painted bike lanes.	Adderton Road offers the most direct and legible route from Telopea to Dundas. It is superior to Leamington Road as it has a signalised crossing at Kissing Point Road, permitting a safer crossing of a six-lane, busy road.

<b>Kissing Point Road</b>	Kissing Point Road is a major road, with three motor vehicle lanes in each direction.	Kissing Point Road currently lacks bicycle infrastructure.	Shared paths on both sides of road, connecting to on street bike lanes in Adderton Road and Park Road.  Installation of bike lanterns at signalised intersections with Adderton Road and Park Road.	Facilitating cycling along this section of Kissing Point Road is crucial to linking up Adderton Road and Park Road, providing a direct route adjacent to the Carlingford Line.
<b>Park Road</b>	Park Road is a largely residential street, with two-way traffic, parking of both sides of the road and a solid centre line.	Park Road has some PS2 symbols between Calder Road and Bennetts Road West, but otherwise lacks cycling infrastructure.	Removal of parking 50 metres south of Kissing Point Road and installation of dedicated cycle lanes which transition to shared paths 10 metres south of Kissing Point Road.  Kissing Point Road to Bennetts Road West: painted bike lanes, with the removal of painted median. Modification of traffic blisters at Bennetts Road West to allow side-by-side bike and motor traffic lanes, or allow bikes to pass on the left side of the traffic blisters.  Bennetts Road West to Calder Street: removal of second lane in each direction and installation of bike lanes.	Park Road offers a direct route from the Telopea to Dundas. It also provides one of the few signalised crossings of Kissing Point Road which can be made suitable for cycling.  Removing the small section of two-lane each way traffic will have little effect on traffic flows, as traffic is only one-lane each way either side of the aforementioned section, but will increase safety, perceptions of safety, and attractiveness of cycling.
<b>Calder Road</b>	Calder Road is a primarily residential street with two-way traffic and parking. It has some road markings, but largely lacks a centre line.	Calder Road has faded PS2 symbols towards to centre of the road.	Painted bike lanes with no centre line.  Modification of traffic blisters at Dundas Primary School zebra crossing and Station Street shopping strip to allow side-by-side bike and motor traffic lanes, or allow bikes to pass on the left side of the traffic blisters.	Calder Road offers a direct connection through Dundas.

<b>Dudley Street</b>	Dudley Street is residential on the eastern side, with the Carlingford Railway line running along the western side.	Dudley Street has PS2 symbols in both the parking lanes and towards the centre of the road.	Restriction of parking to only the western side of the road, installation of painted bike lanes and no centre line.	Dudley Street offers a direct connection between Dundas Rydalmere.
<b>Brodie Street</b>	Brodie Street is a primarily used for light industrial and other commercial uses. It varies in width and has parking permitted along most of its length. Due to the presence of industry, it has a number of truck movements.	Brodie Street currently lacks bicycle infrastructure.	27 Brodie Street to Alan Street: removal of parking from east side of Brodie Street, installation of painted bike lanes (current 'Mail Zone' sign to be retained, with bike lane running through it).	<p>The nature of this section of street necessitates bicycle infrastructure with greater separation than would typically be necessary in a purely residential street. This is compounded by the curviness of Brodie Street, which impacts upon visibility.</p> <p>It is acceptable to have mail trucks parking over the bike lane as this will only occur once a day, for no more than 15 minutes, while the lane will be available to cyclists for the remainder of the day.</p>
<b>PVC to WSU</b>	This section is described in the PCV Section of this document.			

## Carlingford to Epping

This route is an established route between Carlingford and Epping. It offers a safer, quieter alternative to Carlingford Road, which is heavily trafficked with no surplus space for the installation of bike lanes. Mild infrastructure improvements to this route will make it very high quality and attractive to current and 'potential' cyclists, providing a quality connection between Carlingford and Epping, and the regional routes both are linked to.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Pennant Hills Road</b>	Pennant Hills Road is between four and five lanes, with heavy, fast moving traffic in both directions. All road space is currently utilised as traffic lanes, with insufficient space to add bike lanes without removing traffic lanes.	There is a shared path from Coleman Avenue to Keeler Street.	<p>Place 'Watch for bikes' signs at the drive way exit from 346-362 Pennant Hills Road. Also place 'Warning: Driveway Ahead' signs on the shared path.</p> <p>Complete gap in shared path on the south side of the road at the intersection with Marsden Road, where the shared path ends ~10 metres before the intersection.</p> <p>Installation of bike lanterns at controlled intersections between Pennant Hills Road and Coleman Avenue.</p>	<p>Pennant Hills Road is unsuitable for on street bike lanes without removing traffic lanes. Shared paths offer the best outcomes for cyclists with regards to safety and connectivity. Having shared paths on both sides increases connectivity with regional routes to Northmead, Sydney Olympic Park, Ermington, Parramatta CBD, and numerous local routes.</p> <p>The proposed infrastructure fills in gaps in the route, while also increasing safety.</p>
<b>Keeler Street</b>	Keeler Street is a two-way street with parking on both sides (in places) and no centre line markings. It is residential, with a large number of apartment blocks built at the western end, on the northern side of the street. It varies in width, but is generally not wide enough for bike lanes and parking on both sides of the street.	Keeler Street has PS2 symbols, largely in the parking lanes and faded.	Parking restricted to northern side of the street only and installation of bike lanes. No median centre line. Lowering of the speed limit to 40kmh.	Keeler Street is an established bike route between Carlingford and Epping, offering a safer, legible, alternative to Carlingford Road, which, due to traffic and lane allocations, is unsuitable for cycling.

<b>Pennant Parade</b>	Pennant Parade is a residential street with two-way traffic and parking permitted.	Pennant Parade has PS2 symbols against the kerb.	Reconfiguration per Kent Street (see below for description for Kent Street).	Pennant Parade is an established bike route between Carlingford and Epping, offering a safer, legible, alternative to Carlingford Road, which, due to traffic and lane allocations, is unsuitable for cycling.
<b>Willoughby Street</b>	Willoughby Street is a residential street with two-way traffic and parking permitted. It has no painted centre line.	Willoughby Street has PS2 symbols against the kerb.	<p>Painted bike lanes with no centre median line.</p> <p>Removal of roundabouts at Hermington Street, with give way signs installed facing Hermington Street.</p> <p>Modification of traffic blisters at Loftus Square pedestrian refuge to allow side-by-side bike and motor traffic lanes, or allow bikes to pass on the left side of the traffic blisters.</p>	<p>Willoughby Street is an established bike route between Carlingford and Epping, offering a safer, legible, alternative to Carlingford Road, which, due to traffic and lane allocations, is unsuitable for cycling.</p> <p>The roundabouts and traffic blisters currently pose an unacceptable and unnecessary risk to cyclists.</p>
<b>Ryde Street</b>	Ryde Street is a residential street with two-way travel, and parking forbidden.	Ryde Street has PS2 symbols with direction arrows against the kerb.	Reconfiguration per Kent Street (see below for description for Kent Street).	Ryde Street is an established bike route between Carlingford and Epping, offering a safer, legible alternative to Carlingford Road, which, due to traffic and lane allocations, is unsuitable for cycling.
<b>Boronia Avenue</b>	Boronia Avenue is a residential street with two-way traffic and parking permitted. It has a painted centre line and planter boxes in the kerbside parking lane.	Boronia Avenue currently lacks bicycle infrastructure.	<p>Painted bike lanes with no centre line (lane markings for the parking bays should be 2 metres from the kerb, pulling cars further in from the street than the planter boxes, this will help provide a buffer on the door side to offset the narrow bike lane).</p> <p>Sharrows on the approaches to the roundabout with Midson Street, as</p>	Boronia Avenue is an established bike route between Carlingford and Epping, offering a safer, legible alternative to Carlingford Road, which, due to traffic and lane allocations, is unsuitable for cycling.

			there is insufficient width for a car to safety past a bike).	
<b>Kent Street</b>	Kent Street is a primarily residential street which provides a right-of-way through route between Boronia Avenue and Bridge Street. Recent remarkings have altered right-of-way, removed parking, and introduced 'buffers', but failed to include bike lanes.	Kent Street currently lacks bicycle infrastructure.	Conversion of the kerb side painted buffers to bike lanes. Installation of painted bike lanes with a green surface treatment to curves into and out of Kent Street into Boronia Avenue and Bridge Street.	Kent Street is an established bike route between Carlingford and Epping, offering a safer, legible, alternative to Carlingford Road, which, due to traffic and lane allocations, is unsuitable for cycling.
<b>Bridge Street</b>	Willoughby Street is a residential street with two-way traffic and parking permitted. It has no painted centre line.	Bridge Street currently lacks bicycle infrastructure.	<p>Painted bike lanes with no centre median line.</p> <p>Modification of traffic blisters at KU Isobel Pulsford Preschool zebra crossing to allow side-by-side bike and motor traffic lanes, or allow bikes to pass on the left side of the traffic blisters.</p> <p>Sharrows on the approaches to the roundabout with Rawson Street.</p>	<p>Bridge Street is an established bike route between Carlingford and Epping, offering a safer, legible alternative to Carlingford Road, which, due to traffic and lane allocations, is unsuitable for cycling.</p> <p>The roundabouts and traffic blisters currently pose an unacceptable and unnecessary risk to cyclists.</p>
<b>Rawson Street</b>	Rawson Street is a primarily commercial and retail strip, with two-way traffic and parking on both sides.	Rawson Street currently lacks bicycle infrastructure.	<p>Painted bike lanes with no centre line.</p> <p>Modification of traffic blisters at the zebra crossings to allow side-by-side bike and motor traffic lanes, or allow bikes to pass on the left side of the traffic blisters.</p>	<p>Rawson Street is an attractive proposition for cycling between Carlingford and Epping, offering a safer, legible alternative to Carlingford Road, which, due to traffic and lane allocations, is unsuitable for cycling.</p> <p>The traffic blisters currently pose an unacceptable and unnecessary risk to cyclists.</p>



<b>Shared zone to station (between 56 and 54a Rawson Street)</b>	The western half of this street is one-way (eastbound) which is also marked as a shared zone, creating ambiguity as to whether two-way cycling is permitted. The eastern half is a pedestrianised area.	This area currently lacks specified bicycle infrastructure.	Shared zone and shared path signs which legitimise two-way cycling along this lane.	This lane is an attractive proposition for cycling between Carlingford and Epping Station, offering a safer, legible, alternative to Carlingford Road and Beecroft Road, which, due to traffic and lane allocations, are unsuitable for cycling.
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## Epping to Macquarie Park/Uni

This route connects Epping to Ryde Council's route to Macquarie University and Macquarie Park. Collaboration with Ryde Council should be undertaken to strengthen this link from both LGAs, increasing the active transport options. Macquarie Park is a major employment destination for people residing in the City of Parramatta.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Bridge Street (Rawson to Beecroft) (on road painted bike lane)</b>	Bridge Street is a primarily commercial street, with two-way traffic and parking on both sides of the street.	Bridge Street currently lacks bicycle infrastructure.	Painted bike lanes. This will necessitate the removal of parking from one side of the street.  Sharrows at the approaches to the roundabout with Rawson Street.	Bridge Road, Beecroft Road, and Epping Road form the most direct, legible route from Epping towards Macquarie University and Macquarie Park. This route avoids the awkward intersection between Pembroke Street and Epping Road.
<b>Beecroft Road (shared path on south across railway line bridge)</b>	This section of Beecroft Road crosses the railway line, the bridge is five lanes with footpaths on both sides.	This section of Beecroft Road currently lacks bicycle infrastructure.	Designation of the southern footpath as a shared path.	Bridge Road, Beecroft Road, and Epping Road form the most direct, legible route from Epping towards Macquarie University and Macquarie Park. This route avoids the awkward intersection between Pembroke Street and Epping Road.

<b>Epping Road shared path</b>	Epping Road is four to five lanes, with heavy, fast moving traffic.	<p>Epping Road contains a shared path on the eastern side, connecting two sections of Pembroke Street.</p> <p>There is no bike infrastructure along Epping Road between Beecroft Road and Pembroke Street.</p>	<p>Designation of the southern footpath as a shared zone.</p> <p>Installation of bike and pedestrian lanterns at the intersection with Essex Street.</p> <p>This shared path should be widened to a minimum of 3m for its whole length.</p>	This shared path offers a crucial link, connecting Pembroke Street and offers the most direct, legible route towards Macquarie University and Macquarie Park from Epping (and in turn, Parramatta).
<b>Pembroke Street</b>	This section of Pembroke Street is (past Stanley Road) a no through road section of street. It is narrow and lightly trafficked.	Pembroke Street contains PS2 symbols.	<p>Sharrows between Epping Road and Stanley Road.</p> <p>Conversion of Pembroke Street, east of Stanley Road, to a (10kph) shared zone (PS2 symbols maintained).</p>	Pembroke Street offers the most direct, legible route towards Macquarie University and Macquarie Park from Epping (and in turn, Parramatta). The width and traffic flows on this section of street allow the infrastructure proposals without undue burden on motorists, while increasing safety, perceptions of safety, and attractiveness for cycling.
<b>Epping Road shared path</b>	A shared path linking Pembroke Street to Epping Road, then crossing Terrys Creek into Ryde Council.	Shared path.	No infrastructure improvements are required at this time.	This shared path offers a crucial link, connecting Pembroke Street to Pembroke Road in Ryde. It offers the most direct, legible route towards Macquarie University and Macquarie Park from Epping (and in turn, Parramatta).

## Melrose Park to CBD via Ermington and WSU

This route connects Melrose Park to the CBD, via Ermington and the University of Western Sydney. It offers a quick, direct, legible alternative to the Parramatta Valley Cycleway for commuter cyclists who travel at higher speeds. This is intended to help ameliorate conflict between pedestrians and faster moving cyclist on the Parramatta Valley Cycleway. It requires major infrastructure upgrades in the future, which could be financed through Section 94 contributions, while alternative routes will suffice in the interim. Thomas Street is an especially important part of this route, as it is a major connector of regional and local routes.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Hope Street</b>	Hope Street is a street of mixed uses. It has two-way traffic and parking on both sides, without a centre line.	Hope Street has PS2 symbols to the right of the parking area.	<p>Stage 1) Painted advisory bike lane, with no centre line.</p> <p>Painted bike lane with parking bans 15 metres either side of the pedestrian refuge crossing west of Waratah Street.</p> <p>Sharrows on approaches to roundabout with Hughes Avenue.</p> <p>Stage 2) In conjunction with Melrose Park redevelopment, Hope Street should be modified to include physically separated bike lanes in each direction.</p>	Hope Street offers a direct, attractive alternative to the Parramatta Valley Cycleway to commuter cyclist.
<b>Atkins Road</b>	Atkins Road is residential street with two-way traffic and parking permitted. It is too narrow to accommodate bike lanes and parking.	Atkins Road has PS2 symbols.	Removal of parking between Hope Street and Boronia Street, separated bike lane with no centre line.	Atkins Road offers a direct, attractive alternative to the Parramatta Valley Cycleway to commuter cyclist. It also offers a connection to a local route to Parramatta Valley Cycleway.
<b>Boronia Street</b>	Boronia Street is residential street with two-way traffic and parking permitted. It has no centre line.	Boronia Street currently lacks bicycle infrastructure.	Separated bike lane. See design options for George St. One-way pairs preferred.	Boronia Street offers a direct, attractive alternative to the Parramatta Valley Cycleway to commuter cyclist.

	There is a >10 metre high pressure gas easement on the northern side of the street.		There is a high pressure gas main easement on the north side of the road, this should be investigated for future utilisation as a minimum 4m wide shared path separated from all traffic. Any design should consider how cyclists, pedestrians and cars using driveways would interact. This could be funded with Section 94 contributions.	
<b>New off road path through parks from Boronia Street to South Street</b>	This is an easement which has electricity lines running through it, and a public park: Ken Newman Park.	There is currently a lack of bicycle infrastructure.	An off road separated cycling only path. This could be funded with Section 94 contributions. In the interim, an alternative route along Spurway Street, Tristram Street, Hilder Road, Coffey Street, River Road should be signposted, with sharrows or bike lanes possibly installed.	A path along this green space will significantly increase the legibility of this route, increasing its attractiveness.
<b>South Street</b>	<p>Between River Road and John Street, South Street is a residential street with two-way traffic and parking permitted, with painted parking bays and a solid centre line.</p> <p>There is a &gt;10 metre high pressure gas easement on the northern side of the street.</p> <p>Between John Street and Clyde Street, South Street is primarily commercial and</p>	South Street currently lacks bicycle infrastructure. There is a pedestrian bridge across Silverwater Road, which has an elevator cyclists can use.	<p>Separated bike lane. See design options for George St. One-way pairs preferred.</p> <p>In future, when cycling rates are increased, the elevators at Silverwater Road will become insufficient, ramps should be added, or a new, active transport underpass of no less than 4 metre be installed. This could be funded with Section 94 contributions.</p> <p>There is a high pressure gas main easement on the north side of the road, east of John Street, this should be investigated for future utilisation as a</p>	South Street offers a direct, attractive alternative to the Parramatta Valley Cycleway to commuter cyclist. The road width, and usage by trucks, makes separated bike lanes an advisable solution as they offer the highest level of protection.

	light industry. with two-way traffic and parking permitted, with painted parking bays and a solid centre line.		minimum 4m wide shared path separated from all traffic. Any design should consider how cyclists, pedestrians and cars using driveways would interact. This could be funded with Section 94 contributions.	
<b>PVC</b>	This section is described in the PCV Section of this document.			
<b>Thomas Street</b>	Thomas Street is two-way with parking on both sides. It has seen a cluster of road traffic injuries (reported to police) over the previous five years.	Thomas Street has PS2 symbols.	Separated bike lane and a reduction of the speed limit to 40kmh. See design options for George St. One-way pairs preferred.  Road closure at James Ruse Drive to eliminate through traffic to and from James Ruse Drive.	Thomas Street offers a direct, attractive alternative to University of Western Sydney and a number of key regional routes to Carlingford, while also offering an alternative to the Parramatta Valley Cycleway to commuter cyclist. It also offers a connection to a number of local routes.

## Parramatta Valley Cycleway

Existing route. Extend west along Parramatta River and Darling Mills Creek (on east side). Add Escarpment Boardwalk between weir (Parramatta Wharf) and PVC east of MacArthur St. Extend along Subiaco Creek between Parramatta River and South Street.

## SOP Region

Three routes internal to the Sydney Olympic Park Region: Newington to SOP; SOP to Wentworth Point; Wentworth Point to Newington, will be based around strengthening existing routes. Hill Road between the M4 and Sydney Olympic Park Ferry Wharf as a south west to north east route (shared path on north west side of the street) will be improved, especially with regard to connectivity with the street network. Holker Road and Australia Ave between Duck River and Homebush Bay Drive will provide the north west to south east route. Bennelong Bridge provides a quality regional connection to Rhodes, however, connection along Footbridge Boulevard Rhodes currently lacks clear guidance on cycling, it is proposed to be sharrows.

Carter Street and Rod Laver Drive (Sarah Durack Avenue to M4) acts as an extension of the M4 shared path.

## SOP Region to CBD (via M4)

Existing M4 route, with an easterly extension. The M4 currently ends in Newington, just north of the M4 Motorway at Haslams Creek. A new shared path would be constructed along the gas pipe easement that runs from the M4 and Haslams Creek with separated bike lanes installed along Carter Street, connecting the existing M4 shared path to on street bike lanes at Edwin Flack Ave and Sarah Durack Ave. This would require a new bridge across Haslams Creek.

## SOP Region to CBD (via Parramatta River)

Bennelong Parkway; Hill Road (shared path on west); River Walk (the existing river front path between Sydney Olympic Park Ferry Wharf and Silverwater Park; new bridge across Duck River; new Parramatta River shared path through Rosehill and Camellia to Gasworks Bridge.

## Duck River

This route follows Duck River from the M4 Motorway shared path to the Parramatta River. It runs along the eastern side of the river. While primarily off road, there is a short section utilising roads.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>River Street (Duck River to Shaft Street)</b>	River Street is an industrial street with two-way traffic and parking on both sides. It is effectively cul-de-saced by Duck River.	River Street currently lacks bicycle infrastructure.	Separated bi-directional bike lane on the southern side of the street.	Provides a direct, high quality connection between the SOP area to the M4 cycleway, Granville and an alternative method of accessing the Parramatta CBD.
<b>Shaft Street (River Street to Holker Street)</b>	Shaft Street is a narrow side street, in an industrial area. It has two-way traffic with parking prohibited on both sides of the street.	Shaft Street currently lacks bicycle infrastructure.	Separated bi-directional bike lane on the western side of the street. This may require the conversion of Shaft Street to one-way traffic for motor vehicles.	Provides a direct, high quality connection between the SOP area to the M4 cycleway, Granville and an alternative method of accessing the Parramatta CBD.



<b>Holker Street (Duck River to Shaft Street)</b>	Holker Street is an industrial street with two-way traffic and parking on both sides. It is effectively cul-de-saced by Duck River.	Holker Street currently lacks bicycle infrastructure.	Separated bi-directional bike lane on the northern side of the street. Special consideration will need to be given to the driveway access at the western end of Holker Street.	Provides a direct, high quality connection between the SOP area to the M4 cycleway, Granville and an alternative method of accessing the Parramatta CBD.
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## Toongabbie to Northmead

This route connects Toongabbie to Northmead. It offers a convenient, direct, and largely separated journey. It utilises existing, high quality infrastructure in Parramatta's west, building on previous efforts. Further, it offers many connections to other key regional and local routes, allowing cyclists to continue to Rouse Hill, Westmead, Carlingford, Epping, and along the M2 Alternative route.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Cooyong Crescent</b>	Cooyong Crescent is a quiet residential back street. It has two-way traffic, parking on both sides of the road and no centre line.	Cooyong Crescent currently lacks bicycle infrastructure.	Sharrows.	Cooyong Crescent is the most direct connection from Toongabbie towards Old Windsor Road and then onto Northmead. The low traffic levels make sharrows a suitable treatment.
<b>New shared path through park between Cooyong Crescent, Pendle Creek and Fitzwilliam Road</b>	This path would go through Ron Hill Park, a small neighbourhood park.	Ron Hill Park currently lacks bicycle infrastructure.	A shared path of at least 3 metres.	A shared path through Ron Hill Park offers the most direct, protected, route towards an existing off road shared path. There is currently an informal 'goat track' demonstrating this is an existing desire line.

<b>Shared path on east side of Pendle Creek</b>	This shared path runs alongside Pendle Creek from Fitzwilliam Road to Old Windsor Road.	The shared path is of high quality and without any crossings.	No infrastructure improvements are required to this path at this time. However, there are two bollards on this path, or connections to it, at Tucks Road and 9 Chanel Street which have poor visibility. Line markings leading up to these bollards and reflective tape would increase visibility and safety.	This high quality shared path offers a direct, safe, convenient connection from Toongabbie to Northmead, via Old Windsor Road.
<b>Old Windsor Road shared path</b>	This section is described in Rouse Hill to CBD via Westmead.			
<b>Toongabbie Creek, between Old Windsor Road at 25 Goliath Ave</b>	This is an open green space surrounding Toongabbie Creek.	None.	Shared path.	This provides a direct, off road, connection east of Old Windsor Road. In the interim, Goliath Avenue offers a suitable alternative.
<b>Shared path between Goliath Avenue and Oakes Road</b>	This shared path connects Barnetts Road to Goliath Avenue.	Shared path.	Reconfiguring of the roundabout at Oakes Road and Barnetts Road to offer a more direct connection between the shared path and Barnetts Road.	The path itself is of high quality, but its connection to Barnetts Road through the roundabout is inconvenient and unsafe.
<b>Barnetts Road</b>	Barnetts Road is a residential street with two-way traffic, parking on both sides, and painted bike lanes.	Painted bike lane in both directions the whole length.	No infrastructure improvements are required at this time.	This bike lane offers protection and legitimacy to cyclists. It should be considered a high quality cycling asset and emulated elsewhere.

<b>Reilleys Road</b>	Reilleys Road is a residential street with two-way traffic, parking on both sides.	Reilleys Road currently lacks bicycle infrastructure.	Painted bike lane.	Reilleys Road offers an unparalleled connection to Windsor Road and Northmead, via Moxhams Road.
<b>Moxhams Road</b>	Moxhams Road is a primarily residential street with two-way traffic and parking on both sides in sections. It crosses Northmead Gully via a narrow bridge.	Moxhams Road currently has some PS2 symbols and a short section of bike lane east of Northmead Gully in the eastbound lane, and west of Northmead Gully in the westbound lane.	<p>Between Reilleys Road and Cliff Ave: restriction of parking to solely the southern side of the road and painted bike lanes.</p> <p>Cliff Ave to Northmead Gully Bridge: removal of all parking and painted bike lanes (with buffers, where space permits).</p> <p>Across the Northmead Gully Bridge: sharrows, with 'Watch for Cyclist' signs on approach and a 40kmh speed limit.</p> <p>Northmead Gully Bridge to Allambie Avenue: removal of all parking and painted bike lanes (with buffers, where space permits).</p> <p>Allambie Avenue to Kleins Road: restriction of parking to solely the southern side of the road, installation of painted bike lanes.</p> <p>Kleins Road to Windsor Road: painted bike lanes with no centre line.</p> <p>Modification of traffic blisters at the zebra crossing at Northmead Public</p>	Reilleys Road offers and unparalleled connection to Windsor Road and Northmead from southern Winston Hills. The narrow and winding nature of Moxhams Road across Northmead Gully necessitates heavy restrictions on parking and provisions for high quality cycle lanes to increase visibility and safety.

			School to allow side-by-side bike and motor traffic lanes, or allow bikes to pass on the left side of the traffic blisters.	
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## Northmead to Epping

This route connects Northmead to Epping. It offers a direct, safe route.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Windsor Road, Hills Shire</b>	Windsor Road in Hills Shire is a multilane major road.	It is marked as having a shared path on the east side of the street.	On-road dedicated bicycle lane.	Windsor Road, Cook Street, Park Road and Renown Road offer the most direct route from Northmead to North Rocks
<b>Cook Street, Hills Shire</b>	Cook Street is a primarily residential street. It may be able to accommodate on road lanes, but currently lacks cycling infrastructure.	No bicycle infrastructure.	On-road dedicated bicycle lane. The width of the street may necessitate the removal of kerbside car parking from one side of the street.	Windsor Road, Cook Street, Park Road and Renown Road offer the most direct route from Northmead to North Rocks
<b>Park Road, Hills Shire</b>	Park Road is a primarily residential street. It may be able to accommodate on road lanes, but currently lacks cycling infrastructure.	No bicycle infrastructure.	On-road dedicated bicycle lane. The width of the street may necessitate the removal of kerbside car parking from one side of the street.	Windsor Road, Cook Street, Park Road and Renown Road offer the most direct route from Northmead to North Rocks
<b>Renown Road, Hills Shire</b>	Renown Road is a primarily residential street. Its width and traffic volumes may render Renown Road unsuitable for on road cycling lanes without a reduction in motor vehicle lanes or parking. A shared path on the southern side of the road may offer a solution.	No bicycle infrastructure.	A shared path on the southern side of the street, with additional treatments to increase awareness of passing cyclists by motorists entering/exiting driveways may offer the best outcome. Should a shared path not be possible, the removal of car parking from one side of the street	Windsor Road, Cook Street, Park Road and Renown Road offer the most direct route from Northmead to North Rocks

			and a lowering of speed limit to no more than 50km/h may be required.	
<b>Barclay Road</b>	Barclay Road is a primarily residential street with two lanes in each direction and no parking. It is heavily trafficked with a 60kph speed limit.	Barclay Road currently has a shared path on the southern side of the street.	<p>Shared path on south side of the road for its entire length, and on the northern side between Tiernan Avenue and North Rocks Road.</p> <p>Bike lanterns at every crossing (currently missing).</p> <p>Pavement markings and potentially vertical sign posts at all driveways to increase the awareness of cyclists by drivers, as this issue presents the highest crash risk. A letter drop to households along this shared path, alerting them to the increased presence of cyclists along the shared path, in addition to an 'in car' reminder may be a useful way of reducing the risk of collision.</p>	The speed and volumes of traffic on Barclay road make cycling without a protected bike lane an unattractive prospect. The shared path offers higher levels of protection to cyclists, providing measures are taken to reduce motorists failing to yield to bicyclists on this shared path.
<b>North Rocks Road</b>	North Rocks Road is a primarily residential street with two lanes in each direction and no parking. It is heavily trafficked with a 60kph speed limit.	North Rocks Road, east of Barclay Road, currently lacks bicycle infrastructure.	<p>Shared path on south side of the road between Barclay Road and Pennant Hills Road and on the northern side of the road between Pennant Hills Road and Pennant Parade. Bike lanterns at every crossing.</p> <p>Pavement markings and potentially vertical sign posts at all driveways to increase the awareness of cyclists by drivers, as this issue presents the highest crash risk. A letter drop to</p>	The speed and volumes of traffic on Barclay road make cycling without a protected bike lane an unattractive prospect. The shared path offers higher levels of protection to cyclists, providing measures are taken to reduce motorists failing to yield to bicyclists on this shared path.

			households along this shared path, alerting them to the increased presence of cyclists along the shared path, in addition to an 'in car' reminder may be a useful way of reducing the risk of collision.	
<b>Pennant Parade</b>	Pennant Parade is a primarily residential street with two-way traffic, parking on both sides, and a solid centre line.	Pennant Parade currently lacks bicycle infrastructure.	Painted bike advisory lanes, with 2m parking bays and the remaining lane space painted with PS2 and dashed line. In future, investigation of parking requirements and bike lane utilisation should be undertaken determining the possibility of removing parking from one side of the street to provide space for dedicated or separated bike lanes.	Painted advisory lanes will legitimise cycling (relative to current conditions), encouraging cars to drive towards the centre of the road and provide ample space when passing, without affecting parking availability.
<b>Ray Road</b>	Ray Road is a primarily residential street with two-way traffic, parking on both sides, and a solid centre line.	Ray Road has some PS2 symbols.	<p>Painted bike advisory lanes, with 2m parking bays and the remaining lane space painted with PS2 and dashed line. In future, investigation of parking requirements and bike lane utilisation should be undertaken determining the possibility of removing parking from one side of the street to provide space for dedicated or separated bike lanes.</p> <p>Reconfiguration of curve at Kandy Avenue to permit for painted cycle lanes in both directions.</p> <p>Modification of traffic calming planter boxes at curves, speed</p>	<p>Painted advisory lanes will legitimise cycling, encouraging cars to drive towards the centre of the road and provide ample space when passing, without affecting parking availability.</p> <p>The planter boxes create pinch points which needlessly force cyclists into moving traffic lanes, decreasing safety. Their modification will still have a traffic calming effect, without the risks to safety.</p>

			humps, and other locations to allow to allow side-by-side bike and motor traffic lanes, or allow bikes to pass on the left side of the planter boxes.	
<b>Rawson Street</b>	Rawson Street is a primarily commercial and retail strip, with two-way traffic and parking on both sides.	Rawson Street currently lacks bicycle infrastructure.	Painted bike lanes with no centre line.	Rawson Street is an attractive proposition for cycling to Epping from the north or M2.

## Northmead to Carlingford

This route branches off the Northmead to Epping Route at North Rocks Road, providing a direct connection into Carlingford from the north. Although it requires a restriction in traffic lanes along Jenkins Road, the improvements to cycling attractiveness in the area will be significant. Further, as the reductions in travel lanes are placed away from intersections, delays to motor vehicle traffic are unlikely.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Northmead to Epping route to Jenkins Road</b>	As described in Northmead to Epping route			
<b>Jenkins Road</b>	Jenkins Road is a primarily residential street. Between North Rocks Road and Woodstock Road it is two lanes north bound and one lane southbound, with parking on the eastern side. Between Woodstock Road and Baker Street it is two-way, with one lane in each direction and kerbside parking on both sides. Between Baker Street and Moseley Street it is two lanes in each direction without parking. Between Moseley Street and Pennant Hills Road it is two lanes southbound, one lane north bound, with parking on the western side of the road.	Jenkins Road currently lacks bicycle infrastructure.	Whole length to become one lane each direction, with parking permitted on one side and painted bike lanes. For 50 metres before signalised intersections parking restricted should be introduced, to allow for centre turning lanes.	Jenkins Road is the only north-south alternative to Pennant Hills Road (which is unsuitable for cycling due to heavy, fast moving traffic volumes), and provides an unparalleled connection to Carlingford from North Rocks, West Pennant Hills, the M2 Motorway and surrounds.



## Alternative to M2

This route is designed as a safe alternative to the M2 Motorway, where cyclists ride in the emergency stopping lane mixing with 100kph motor vehicles. Cycling without any vertical separation with heavy volumes of motor vehicles within a 100km/h conflicts with the Safe Systems Approach and is not recommended. Furthermore, it acts as a barrier to the *'interested but concerned'* potential riders this Bike Plan seeks to encourage to cycle. The route follows as close to the M2 Motorway as possible, but also aims to deliver a quick, direct, and legible alternative. This route also connects to many other regional and local routes, allowing access to many parts of Parramatta from the north of the LGA. It should be noted that there is currently no way to cross Pennant Hills Road, along Murray Farm Road, but shared paths run along Pennant Hills Road ~180m south of the intersection to a pedestrian crossing. Although not ideal, this arrangement will suffice until a signalised crossing point is installed.

Street	Description	Current infrastructure	Proposed infrastructure	Justification
<b>Caroline Chisholm Drive</b>	Caroline Chisholm Drive is a primarily residential street. It has one lane in each direction and kerbside parking. Between Hilary Street and Kilian Street there is a painted median of approximately 1.5 metres. There are numerous planter boxes in the parking lanes.	Caroline Chisholm Drive has PS2 symbols, but many are in the parking bays, in front of planter boxes.	Removal of painted median strip and installation of painted bike lanes.  Many of the planter boxes may need to be cut back marginally to fit bike lanes.	Caroline Chisholm Drive is a current bike route and provides the most direct route parallel to the M2 Motorway.
<b>Junction Road</b>	Junction Road is a primarily residential street, running parallel to the M2 Motorway. It has housing on its southern side, and the M2 Motorway on its northern. It has two-way traffic and parking on both sides.	Junction Road has some PS2 symbols.	Painted bike lanes.	Junction Road offers the closest parallel route to the M2 Motorway.
<b>Windsor Road</b>	Windsor Road is a major road, carrying multiple lanes of heavy, fast moving traffic.	Windsor Road currently has a shared path on the	Extend the existing shared path on western side of road south to Ventura Road.	Connection into existing infrastructure on Windsor Road will boost the cohesion of the bicycle network and allow people to

		western side of the road from the M2 Motorway to (possibly) Russell Street, with a connecting path to Junction Road.		safety connect with other parts of the network, particularly the routes and destinations that intersect with Windsor Road.
<b>Northmead to Epping route to New North Rocks Road</b>	As described in Northmead to Epping route			
<b>Path between North Rocks Road and Jennie Place</b>	Laneway closed to motor vehicles.	Shared path.	No infrastructure improvements are required to this path at this time. However, there is a bollard on this path which has poor visibility. Line markings leading up to the bollard and reflective tape would increase visibility and safety.	Enhance safety and reduce risk of collision with stationary object.
<b>Jennie Place</b>	Jennie Place is a short residential cul-de-sac	Jennie Place has PS2 symbols with directional arrows indicating the route.	Sharrows.	The residential and closed nature of the street make sharrows an acceptable outcome.
<b>Haines Avenue</b>	Haines Avenue is a primarily residential street with two-way traffic and parking on both sides.	Haines Avenue has PS2 symbols.	Restrict parking to one side of the street and installation of painted bike lanes with no centre line.	Haines Avenue offers the quickest, most direct parallel route to the M2 Motorway and is already a bike route. The infrastructure recommendations will enhance safety for existing cyclists and encourage potential cyclists begin cycling.
<b>Murray Farm Road</b>	Murray Farm Road is a primarily residential street with two-way traffic and parking on both sides.	Murray Farm Road has PS2 symbols.	Restriction of parking to one side of the street and installation of painted bike lanes with no centre line.	Murray Farm Road offers the quickest, most direct alternative to the M2 Motorway and is already a bike route. The infrastructure recommendations will

				enhance safety for existing cyclists and encourage potential cyclists begin cycling.
<b>Midson Road</b>	Midson Road is a primarily residential street with two-way traffic and parking on both sides.	Midson Road currently lacks bicycle infrastructure.	Restriction of parking to one side of the street and installation of painted bike lanes with a solid centre line.	Midson Road offers the quickest, most direct alternative to the M2 Motorway via Epping.
<b>Northmead to Epping route</b>	As described in Northmead to Epping route			
<b>Epping to Macquarie Park/Uni route</b>	As described in Epping to Macquarie Park/Uni route			

