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InnerWest@40

Investigation in Potential Local Road Speed Limit Reductions

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Sensitivity: General

Executive Summary

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Executive Summary

The NSW State Government's "Towards Zero" plan has liveable and safe communities as a priority focus. The Towards Zero plan is underpinned by the Safe System approach which recognises that safe speeds are a key component to reducing deaths and serious injuries on our roads. Furthermore, the Movement and Place framework enlists reduced vehicle speeds as a tool to enhance amenity and place-based planning outcomes for all road users. Traditionally in NSW, 40km/h speed limit zones have been generally exclusive to School Zones and High Pedestrian Activity Areas (HPAA). However, 40km/h speed limits are increasingly utilised over larger areas in both national and international examples. In response to these changing approaches to road safety, Inner West Council (IWC) implemented an area-wide 40km/h speed limit in Balmain Peninsula which has successfully created a safer environment for vulnerable road users.

Inner West Council (IWC) also developed an Integrated Transport Strategy (ITS) in 2018 which included a recommendation to investigate the feasibility of implementing a 40km/h speed limit on local roads across the Inner West Local Government Area (LGA). IWC engaged Beca Pty Ltd (Beca) in April 2022 to undertake development of the InnerWest@40 study, aimed at providing an evidence-base that supports reduced speed limits within the Inner West LGA.

Investigation and Safety Analysis

A high-level review of existing literature regarding speed limits, road safety and the transport and land use planning context in the Inner West LGA found that road safety is a key priority of national, state and local government policy and strategies. Speed management is a core theme of road safety initiatives including the Safe System approach, as well as the Movement and Place framework to enhance amenity and place-based planning outcomes. Furthermore, lower speeds limit the number and severity of crashes, improve amenity, place-making and environmental outcomes, and can have strong support from the community in areas of high volume of pedestrian, cycling and vehicle activity.

A review of future and existing land uses identified the Inner West to be densely populated with areas of commercial centres, active transport corridors, mass transit stops, and vulnerable user areas. Key insights of the land use and safety analysis were:

- Over 90% of IWC road segments are within 400m of a town centre or commercial zone. More than 97% of all crashes occur within 400m of these areas.
- An analysis of road safety data within the Inner West LGA found that almost 60% of road segments within the Inner West were recorded to have an 85th percentile speed of below 40km/h, as was the general 85th percentile speeds in most suburbs.
- Roads with a 50km/h speed limit were found to have a 38.2km/h recorded 85th percentile speed. This indicates that most of the Inner West's local roads already self-enforce lower speeds, and a 40km/h speed limit would reflect existing environmental conditions.
- Crash severity overall trends with increased vehicle speeds. Road segments with higher crash rates on average tend to record travel speeds much closer to the speed limit. For 50km/h speed limit road segments, those with 1-10 crashes in the past five years had an average 5km/h higher recorded 85th percentile speed than road segments with 0 recorded crashes.
- Analysis indicated that the risk of pedestrian fatality and injury is only sufficiently reduced when 85th percentile travel speeds were recorded near 30km/h, which would be realised at 40km/h speed limits, based on current trends which indicate an 85th percentile speed of 32.4km/h on roads with a posted speed limit of 40km/h.



Impact Review

One key concern of residents and businesses of lowering speed limits is the impact on travel times. Analysis on a sample of routes across the LGA, using a combination of local and state roads indicated minimal impacts on the times taken to complete journeys after a 40km/h speed limit was imposed on local roads. During the weekday peak a maximum 3.66% increase in travel time, 26 seconds, was calculated. During the weekend, a maximum 5.32% increase in travel time, a 37 second increase, was calculated.

The LGA-wide speed reduction strategy has the potential for significant economic benefits in the costs associated with the reduction of road trauma, savings in crash costs, reduced emissions, promotion of active transport and an increase in existing amenity and place-making opportunities. Looking at crash cost savings only, a potential estimate of 30% reduction in all injuries could result in estimated savings of:

- \$7,211,063 per year when local 50km/h streets are converted to 40km/h
- \$29,378,872 per year if the initiative were expanded to all 60km/h classified roads.

Identification and Prioritisation

A Multi-Criteria Assessment (MCA) was developed to inform the prioritisation areas of the InnerWest@40 speed reduction implementation. It was developed in collaboration with Inner West Council, examining current

pedestrian activity generators, future land use, vulnerable road users, near misses and crash data to identify and quantify the risk-prone areas within the Inner West.

The Inner West LGA was then divided into distinct zones and prioritised for staged implementation. The key high priority areas identified were Enmore & Marrickville East, Marrickville & Tempe, and Ashfield & Summer Hill West. These three areas had the largest concentration of highpriority roads due to a confluence of high-significance town centres, pedestrian and cyclist activity, vulnerable users' concentration, active and public transport networks and high crash statistics.

The highest scoring road segments identified by the MCA included:



- Enmore Road
- King Street
- Stanmore Road and Edgeware Road from Enmore/Newtown
- Sydenham Road, Livingstone Road and Buckley Street from Marrickville; and
- Norton Street, Frederick Street and Liverpool Road from Ashfield,

all of which have high concentrations of vehicular, pedestrian, and cyclist crashes in addition to their proximity to significant activity areas.

Action Plan

Critical next steps for successful implementation include collaborating with TfNSW for:

- Community engagement and education, promoting low-speed benefits and addressing concerns about lower speeds, such as delays, congestion, longer travel times, and increased risk of speeding fines.
- Resolve budgeting issues for physical implementation of treatments to identify lower speed zones
- Identify and design infrastructure to safely enforce the new low speeds through additional landscaping, traffic calming and threshold treatments.



1 Introduction

1.1 Background and context

Road safety is a key priority of all levels of government, particularly for vulnerable road users such as pedestrians and cyclists. Traffic speeds are a key factor in road safety, and crash severity for incidents involving pedestrians have been demonstrated to increase sharply between traffic speeds of 30-70km/h. Reduced speed limits, particularly on local roads, have the potential to reduce road trauma as well as improve local amenity and environmental quality for the community. The promotion of places for people is achieved through reduced carbon emissions and noise pollution, improved public spaces and enabling sustainable transport choices, among other benefits.

Inner West Council (Council) intends to reduce speed limits throughout the Inner West Local Government Area (LGA) to improve road safety and place-making outcomes for the community, enhancing liveable and safe communities. This aligns with recommendations from the Integrated Transport Strategy to introduce area-wide speed limits of 40km/h on local roads throughout the LGA, as well as national and state government initiatives.

The state government's "Towards Zero" plan contains liveable and safe communities as a priority area. The Towards Zero plan is underpinned by The Safe System approach, pictured in **Error! Not a valid bookmark selfreference.**, which recognises that safe speeds are a key component to reducing deaths and serious injuries on our roads. In urban areas pedestrians and cyclists are particularly vulnerable, even at relatively low speeds. This requires careful integration of safe speeds around schools, residential neighbourhoods, shopping areas and road crossings.

Transport for NSW (TfNSW) has provided in-principal support for speed limit reductions on local roads throughout the LGA, but an evidence base is required to justify the implementation, as well as an action plan. This requires a comprehensive analysis of speed limits and crash statistics within the LGA to build a robust evidence base and narrative to facilitate the implementation of reduced speed limits. Furthermore, concerns from





community stakeholders such as local businesses will need to be addressed.

1.2 Purpose

40km/h speed limits are typically restricted to high pedestrian activity areas and school zones. This study aims to analyse speed limits and road safety within the Inner West LGA with the view to propose area-wide reduced speed limits, where justified to improve road safety outcomes. Specific objectives include to:

- Provide a rigorous data-driven evidence base to support reduced speed limits within the LGA.
- Present analysis and key findings to facilitate discussions with TfNSW, including an action plan and prioritised list of roads for reduced speed limits.
- Provide a cost-effective approach leveraging efficient data sources to effectively assess the large-scale study area.



2 Literature review

A high-level review of existing literature regarding speed limits, road safety and the transport and land use planning context in the Inner West LGA was undertaken with key findings summarised in the following sections.

2.1 National government

2.1.1 National Road Safety Strategy 2021-30

The National Road Safety Strategy 2021-30 presents the Australian Government's strategy and action plan to improve road safety and achieve reduced fatality targets. The strategy aligns with the Safe System approach and contains a focus on speed management throughout the themes of safe roads, safe vehicles and safe road use. The strategy also integrates a Movement and Place approach and recognises the place-making aspects of reduced speed limits and improvements to road safety.



Figure 2.1: National Road Strategy Themes and Targets

A key action from the strategy is to reduce speed limits to 40km/h or lower in pedestrian and cyclist places, including 30km/h speed limits in high-risk pedestrian and cyclist areas. The strategy highlights the increased risk to vulnerable road users based on traffic speeds particularly between 30-60km/h.



Figure 2.2: National Road Safety Strategy - Pedestrian fatality risk by impact speed



2.2 State government

2.2.1 Greater Sydney Region Plan (Greater Sydney Commission, 2018)

The Greater Sydney Region Plan presents the future planning vision for Greater Sydney, based on a 'metropolis of three cities' – the Eastern Harbour City (CBD and surrounds), Central River City (Parramatta and surrounds) and Western Parkland City (future aerotropolis and surrounds), as shown in Figure 2.3. The vision informs the specific district plans for sub-areas and is consistent with the Future Transport Strategy 2056.



Figure 2.3: Greater Sydney Region Plan - Metropolis of Three Cities

Key directions and outcomes which are relevant to the study include creating cities for people and great places, underpinned by the Movement and Place framework. Place-based planning is a key focus, and safety and accessibility particularly for vulnerable road users are indicated as factors in achieving high quality planning outcomes.

The Greater Sydney Commission has now been renamed the Greater Cities Commission and their strategic remit extends to 6 cities, including regional cities in Central Coast, Illawarra and the Lower Hunter region. However, the Metropolis of Three Cities is still a relevant strategy for the Inner West.



2.2.2 The Six Cities Region Discussion Paper (Greater Cities Commission, 2022)

To realise the vision of the Six Cities Region, the Greater Cities Commission proposed 'Inclusive Places linked to Infrastructure' as one of the six Region Shapers - a set of priorities to frame the 2023 Region Plan. In the vision to create 30-minute cities, it is emphasised to create inclusive and vibrant communities that connects them to quality housing, services, jobs and amenities within a 15-minute walk or cycle in their local centre and neighbourhood. Making active transport and public transport the preferred mode choice is recognised as a measure to improve people's wellbeing, which involves creating cities where it is safe, easy and enjoyable to walk, cycle and utilise wheelchairs or mobility aids.

2.2.3 Eastern City District Plan (Greater Sydney Commission, 2018)

The Eastern City District Plan presents the planning vision for the Eastern Harbour City in alignment with the Greater Sydney Region Plan. The plan identifies key infrastructure projects relevant to Inner West in line with the Future Transport Strategy 2056, including the Sydney Metro, WestConnex and bus links to the eastern suburbs.



Figure 2.4: Eastern City District Plan - Structure Plan

The plan includes a planning priority of creating and renewing great places and local centres, including actions to use a place-based planning approach recognising and balancing the dual function of streets as places for people and movement, and prioritising a people-friendly public realm and open spaces as a central organising design principle.

The plan acknowledges the need for better amenity and safer conditions for pedestrians, and the design of low-speed traffic environments in local streets to encourage safe walking and cycling.

2.2.4 Future Transport Strategy (Transport for NSW, 2022)

The Future Transport Strategy, a recent update on Future Transport 2056 which was first introduced in 2018, presents the NSW Government's strategy for transport projects, technologies and programs to improve sustainable transport outcomes. The strategy integrates the Movement and Place framework to enhance liveability in our communities. The Future Transport Strategy also promotes road safety as integral to how we



plan our cities, including a vision for 'safe speeds', so the investigation of implementing 40kph speed zones has a direct link to that strategic intent.



Figure 2.5 presents the Vision and Outcomes which the Future Transport Strategy aims to achieve.

Figure 2.5: Future Transport Strategy - Vison and Outcomes

Key major multi-modal transport networks and infrastructure projects relevant to Inner West Council, which were identified in Future Transport Strategy, include:

- The Sydney Metro City & Southwest, as well as East-West lines.
- Rapid bus links from the Inner West to the Eastern suburbs.
- Public transport improvements on Victoria Road and Parramatta Road.
- WestConnex links including the M4 extension, M5 duplication, M4-M5 connection and interchanges at Rozelle and St Peters.
- Sydney Gateway road upgrades.
- Duplication of the Port Botany Freight Line.
- Improved walking and cycling links.

The strategy acknowledges reduced traffic speeds as a key safety measure, as well as the integration of a Movement and Place approach into speed zone decisions and the alignment of speed limits with road function and surrounding land uses.

2.2.5 Practitioner's Guide to Movement and Place (Government Architect NSW & Transport for NSW, 2020)

The Practitioner's Guide to Movement and Place provides guidelines for consistent place-based planning and the application of the NSW Government's Movement and Place framework. The guide steps out the typical process for the application of the Movement and Place framework and facilitates the integration of place-making outcomes within studies. The guide assists in understanding the place qualities of an area/road as well as movement functions, which can be used to classify road environments and evaluate performance against built environment indicators.





Figure 2.6: Movement and Place framework

Key built environment indicators relevant to the study include the Safe System assessment, casualty crash rate, safe speed for the environment, walking and cycling attractiveness and mix of land uses.

2.2.6 Road Safety Action Plan 2026 (Transport for NSW, 2022)

The Road Safety Action Plan sets key objectives and initiatives for improving road safety in NSW. The document highlights the protection of vulnerable road users as a key challenge and identifies speed as a key factor in crashes (a factor in approximately 41% of road deaths).

It is well researched that the risk of fatality increases with speed. For a pedestrian crash with a vehicle the 10% survival chance at 50km/h, increases to 60% at 40km/h, and to 90% at 30km/h.

The strategy identifies the importance of setting speed limits appropriate for the type of road and road users in line with the Safe System approach, as well as improving safety through the use of 30km/h and 40km/h high pedestrian activity areas and shared zones.

In monitoring the progress of the plan, 'Share of urban roads with safe speed limits of 40 km/h or below' is a key safety performance indicator of the Safe Roads and Streets objective.



Figure 2.7: Centre for Road Safety - Pedestrian Fatality Risk from Speed

2.2.7 NSW Speed Zoning Guidelines (Roads and Traffic Authority NSW, 2011)

These guidelines provide a state-wide point of reference to ensure that speed limits are set to balance road safety with mobility needs, are sensitive to changes in road conditions, incorporate community views and integrate speed zone policy. As well as providing practical guidance for setting and implementing speed limits, the document indicates that speeding is the single biggest factor in road fatalities in NSW, and clearly identifies a relationship between vehicle speeds and crash severity. Benefits of lower speed limits are recognised, not just to road safety but also in terms of the environmental impact of traffic, including noise, vibration and emissions.

The guidelines also state the need to consider the impact on travel times but indicate that reduced speed limits have smaller impacts on travel times than typically expected and are outweighed by safety benefits.

2.2.8 40 km/h speed limits in high volume pedestrian areas (Roads and Traffic Authority NSW)

This document presents a guide to identifying and implementing 40 km/h speed limits in high volume pedestrian areas. It presents flowcharts for the identification of High Pedestrian Activity Areas (HPAAs) and appropriate treatment options, as well as the subsequent implementation process, required engineering works, public education and funding.



Figure 2.8: HPAA Criteria Guide - Roads and Traffic Authority

HPAAs have traditionally been assigned 40km/h speed limits, however in recent years 30km/h speed limits have been increasingly assigned to HPAAs (e.g. in Manly and Liverpool) to reflect the improved safety outcomes for vulnerable road users in these areas.

Furthermore, region-wide speed reductions have already been implemented in Australia, such as:

- Nationally: 40km/h speed limit zones CBD-wide in Sydney, Melbourne, Brisbane and Hobart.
- Victoria: 40km/h local speed limit in the municipality of the City of Yarra, since 2006.
- South Australia: 40km/h residential speed limit in the City of Unley since 1999, and the City of Charles Stuart since 2017.



2.3 Local government

2.3.1 Inner West Community Strategic Plan (CSP)

The CSP presents a future vision for the Local Government Area (LGA), including long-term goals, strategies and desired outcomes. The plan contains an emphasis on safe, sustainable, healthy and liveable outcomes for the community, as well as mobility and ease of access.

Key strategic outcomes relevant to the study include:

- Public spaces are high-quality, welcoming and enjoyable places, seamlessly connected with their surroundings.
- People are walking, cycling and moving around Inner West with ease.
- Urban hubs and main streets are distinct and enjoyable places to shop, eat, socialise and be entertained.

2.3.2 Inner West Local Strategic Planning Statement (LSPS)

The LSPS provides the land use planning framework for the LGA, linking the region and district plans with the CSP and setting out actions to achieve the vision for the community. The LSPS guides the development of the Local Environmental Plan, Development Control Plan and Development Contributions Plan. The LSPS introduces six themes and emphasises a place-based planning approach using the Movement and Place framework.

Key planning priorities relevant to the study include:

- PP6 Plan for high quality, accessible and sustainable housing growth in appropriate locations integrated with infrastructure provision and with respect for place, local character and heritage significance.
- PP7 Provide for a rich diversity of functional, safe and enjoyable urban spaces connected with and enhanced by their surroundings.



Figure 2.9: Inner West CSP vision



Figure 2.10: Inner West LSPS themes

• PP8 - Provide improved and accessible sustainable transport infrastructure.

The LSPS also includes a structure plan for the LGA, outlining existing and future infrastructure such as public transport lines, future Sydney Metro stations and key land uses, and proposes several ideas for transport projects for potential delivery in collaboration with the state government.

2.3.3 Inner West Integrated Transport Strategy 2020 (ITS)

The Inner West ITS provides a strategy and actions to achieve the visions of the CSP and LSPS by addressing transport needs of the LGA, and establishes a transport vision, values, priorities and principles. The ITS focuses on sustainable transport and prioritises active and public transport over private vehicle



modes. It also indicates a focus on improving safety by targeting 40km/h vehicle speeds throughout the LGA, as well as revitalising main streets to support sustainable travel and local businesses.

The ITS presents the concept of 'InnerWest@40', proposing to adopt area-wide 40km/h speed limits on local roads to improve road safety, particularly for pedestrians and cyclists. Benefits of slower speeds are identified, including reductions in crash likelihood and severity, improved amenity, reduced fuel consumption and emissions, and reduced noise pollution. The strategy also notes how reduced speed limits do not necessarily increase travel times significantly.

2.3.4 Inner West Pedestrian Access & Mobility Plan 2021 (PAMP)

The Inner West PAMP defines the pedestrian route hierarchy and provides a strategy for improved pedestrian infrastructure within the Inner West LGA. The PAMP included an audit of existing pedestrian facilities to identify deficiencies and recommendations to address these to improve safety, accessibility and ease of movement.

The PAMP also reviewed publicly available crash data and found that:

- The centres of Ashfield, Dulwich Hill, Marrickville and Newtown contained the bulk of pedestrian crashes within the LGA (approximately 68%).
- The majority of pedestrian crashes occurred on 15 streets in the LGA, composed of main roads such as the Princes Highway, Enmore Road and the Great Western Highway.
- Most pedestrian crashes were a 'near side' or 'far side' crash and resulted in an injury or fatality.
- Crash clusters were identified on major roads such as Marrickville Road, Illawarra Road and the



Figure 2.11: Inner West ITS vision



Figure 2.12: Inner West PAMP - sample route hierarchy

Hume Highway and were likely attributed to high traffic and pedestrian volumes.

2.4 Other guidelines, research and reports

2.4.1 Austroads Research Report AP-R587-19 – Road Risk Assessment, Case Studies and Engagement Guidance for Speed Management (Austroads, 2019)

This research report highlights that inappropriate or excessive speed is a major road safety issue in Australia, and effective speed management is critical to reducing road trauma. The report explores the application of the Infrastructure Risk Rating (IRR) to assess road safety risk as an input to speed limit setting, identifies case studies of good practice in speed management and presents research on stakeholder consultation and engagement to support speed management.

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Various approaches to speed limit setting are discussed, and it is concluded that the Safe System approach of setting speed limits according to the function and characteristics of the road is best practice. The report presents safe and appropriate speeds for roads given functions and features.

The case studies included the NSW High Pedestrian Activity Areas Program which highlighted that HPAAs had experienced almost double the reduction in crashes compared to non-treated areas. One barrier to implementation of HPAAs indicated was the cost of traffic calming associated with the 40km/h speed limit required.

2.4.2 Evaluation of 40km/h Speed Limits (Transport for NSW, 2018)

This report provides an evaluation of the HPAA program to assess the effects on road safety and community amenity. The key road safety findings of implementation of HPAAs found that:

- A 38% reduction in casualty crashes was observed, compared to a 20% reduction on comparable roads with higher speed limits.
- A 33% reduction in serious casualty crashes was observed, compared to a 4% reduction on comparable roads with higher speed limits.
- A 46% reduction in serious pedestrian casualty crashes was observed, compared to a 19% reduction on comparable roads with higher speed limits.
- A 13-16% reduction in casualty crashes within 3-5 years of implementation of HPAA zones.

HPAA zones were therefore deemed to be effective in reducing crashes.

Other key findings included that:

- A community survey indicated strong support for 40km/h zones on busy roads with high numbers of pedestrians.
- Physical engineering treatments are needed to support reduced speed limits.
- The great majority of urban pedestrian road trauma occurs outside 40 km/h speed zones, and the expanded coverage of 40km/h HPAA zones would generate further road safety benefits.
- 2.4.3 Austroads Research Report AP-R272/05 Balance between Harm Reduction and Mobility in Setting Speed Limits: A Feasibility Study

This research report presents a comprehensive paper discussing the relationship between traffic speeds and crashes, the role of speed limits in road safety, aspects of setting speed limits and applications in Australasia. Key findings include the following:

- A strong relationship between traffic speeds and both the number and severity of crash incidents was found.
- Different approaches to setting speed limits are discussed, acknowledging trade-offs between safety and mobility, however these tend to be consistent on the implementation of 30km/h speed zones in urban areas with vulnerable road users.
- Australasian speed zones are amongst the highest in the world, and reductions would significantly reduce road trauma.
- Surveys of communities in Australia have shown that the public perceives speeding as an issue and a key factor in crashes, and support for reduced speed limits increases after implementation.
- 2.4.4 Safe-Street Neighbourhoods: the role of lower speed limits 2019 Update WA & NSW (van den Dool et al., 2019)

The Safe-Street Neighbourhoods update provides an investigation into the role of lower speed limits (particularly 30km/h zones) in local streets, including evidence to address potential opposition. The update discusses benefits and impacts of reduced speed limits including road safety outcomes and travel time



impacts and presents several case studies within Australia and internationally to demonstrate outcomes in practice.

Key findings include:

- 30km/h speed limits could potentially reduce transport casualties by 7% every year
- Community concerns regarding increased travel times due to reduced speed limits have no significant evidence base.
- Implementations of 30km/h speed limits in Perth, WA have resulted in negligible increases in travel times.
- Trials of 30km/h speed zones have resulted in significant improvements in road safety for pedestrians and tend to gain community support over time.

2.4.5 Walking and cycling: the economic benefits (Transport for London, 2019)

In absence of added infrastructure, reduced speed limits facilitate safer access to town centres from the wider network. Transport for London investigated the economic benefits of increased accessibility for cyclists and pedestrians to public realms which include:

- People who walk and cycle take up to two times more trips to high streets than drivers each month.
- High street walking, cycling and public realm investments can increase retail sales by up to 30%.
- People who walk to high streets spend up to 40% more than drivers.

2.4.6 International Lower Speed Limits (various)

Internationally, the Australasia region has one of the highest speed limits in the world. Conversely, much of Europe is in the process of converting to 20mph/30kph nominal speed limits in select cities as well as nation-wide. These includes countries such as the Netherlands, Spain, Wales, Scotland, England, Belgium and Germany.

2.5 Summary of literature review

Overall, the key findings of the literature review included the following:

- Road safety is a key priority of national, state and local government policy and strategies, and objectives to improve road safety, particularly for pedestrians and cyclists, are well aligned.
- Speed management is a core theme of road safety initiatives including the Safe System approach, as well as the Movement and Place framework to enhance amenity and place-based planning outcomes.
- Prioritisation of active and public transport, places for people and improved amenity are strategic priorities for Inner West which align with state government plans.
- Lower speed limits (e.g. from 50km/h to 40km/h) reduce the number and severity of crashes. High Pedestrian Activity Areas implemented in Sydney have been demonstrated to achieve improved road safety outcomes.
- Reduced speed limits can improve amenity, place-making and environmental outcomes, and can have strong support from the community in high volume areas.



3 Existing and Future Conditions

3.1 Land use

3.1.1 Current Land Use

The Inner West is densely populated by commercial centres, and consists of many pedestrian activity areas, including small neighbourhood centres, local centres, and shops along various enterprise corridors.

- 59 Schools
- 6 Private and Public Hospitals

- Neighbourhood Centres
- Enterprise Corridors
- Local Centres

16 Light Rail Stops 23 Train Stations



Figure 3.1: Eastern City District Centres (ECDP, 2018)



The 2018 Eastern City District Plan (ECDP), highlights six high-significance Local Centres with a 400m walking catchment affecting the Inner West:

- Leichhardt, Norton Street
- Leichhardt Marketplace, Marion Street
- Marrickville Metro, Smidmore Street
- Rozelle, Darling Street
- Balmain, Darling Street
- Five Dock, Great North Road

The ECDP also further identified four centres with a mass transit stop, within an 800m walking catchment:

- Ashfield Station
- Summer Hill Station
- Newtown Station
- Marrickville Station

The ten identified city centres also shown in Figure 3.1 serve as key existing pedestrian and vehicle trip attractors within the Inner West Boundary.

3.1.2 Future Growth and Development Areas

In addition, the Inner West's 2020 Integrated Transport Strategy (ITS) identifies two key corridors as targets of current urban renewal projects and key areas of growth.

Sydenham to Bankstown Urban Renewal Corridor Strategy

Along with the construction of the 30km long Sydney Metro City & Southwest, shown in Figure 3.2, the NSW State Government's Sydenham to Bankstown Urban Renewal Corridor Strategy is projected to promote major growth in the Sydenham Station, Marrickville Station and Dulwich Hill Station precincts through additional housing, jobs and infrastructure. Particularly, the ITS (shown in Figure 3.10) identifies the Dulwich Hill and Marrickville station precincts as the prominent urban renewal areas.

Parramatta Road Corridor Urban Transformation Strategy



Figure 3.2: Sydney Metro City & Southwest project location (Sydney Metro 2018)

The Parramatta Road Corridor Urban Transformation

Strategy (PRCUTS) is the NSW Government's 30-year plan to establish the framework for land use and infrastructure planning along the Parramatta Road Corridor. Through rezoning, it seeks to revitalise the corridor's full 20-kilometre length, providing more efficient and reliable public transport, diverse housing and a productive business environment. Implementation of the PRCUTS is addressed by the Inner West's 2020 Local Strategic Planning Statement, where the section in Inner West specifically affects Kings Bay (west of Ashfield), Taverners Hill, Leichhardt and Camperdown in the east.

3.1.3 Sydney Green Grid

The 2018 Eastern City's Green Grid Plan, shown in Figure 3.3, identified three critical corridors within the Inner West as green grid opportunities to provide high quality green spaces that attracts and supports walking, cycling and community access to open spaces – including place-making and urban tree canopy lining streets and neighbourhoods.





Figure 3.3: Eastern City Green Grid Opportunities (2018 Eastern City District Plan)

The Inner West GreenWay

The GreenWay is an environmental and active travel corridor linking the Cooks River at Earlwood with the Parramatta River at Iron Cove (Figure 3.4). For much of its route, it follows the alignment of the former Long Cove Creek (Hawthorne Canal). It also follows the route of the light rail corridor via Dulwich Hill, Summer Hill, Lewisham, Haberfield and Lilyfield. It links two well established shared paths – the Bay Run around Iron Cove at its northern end, and the Cooks River shared path at its southern end.

The Greater Sydney Commission has identified the GreenWay as the number one of the priority Green Grid corridor project in the ECDP.





Figure 3.4: Inner West GreenWay map (InnerWest NSW Gov 2022, and GreenWay Masterplan 2018)

Cooks River Open Space Corridor

The Cooks River Open Space Corridor is a regionally significant parkland corridor, and the open space corridor plan aims to restore the natural river systems of the Cooks River while creating spaces and linkages that support the diversity of the adjacent neighbourhoods including Strathfield, Sydney Olympic Park, Campsie, Canterbury, Dulwich Hill, Marrickville and Wolli Creek. This is a priority Green Grid project for both the Eastern City and South districts.



Figure 3.5: Cooks River & Sydenham-Bankstown Corridor Plan (Canterbury Bankstown Council 2022)



Sydenham to Bankstown Open Space Corridor

The Sydenham to Bankstown Urban Renewal Corridor will also become an opportunity to expand the Sydney Green Grid utilising the surplus rail easement land. The rail line and its local streets will be transformed into an active walking, cycling and open space corridor connecting the Cooks River, Wolli Creek Regional Park, The GreenWay and Salt Pan Creek open space corridor, as well as the wider open space network.

3.1.4 Inner West Key Land Use Attractions

Figure 3.6 collates the discussed key areas of growth, pedestrian activity areas and vulnerable road users.

The areas were mapped based off land-use zoning by the Inner West Council. 'Commercial Centre B' refers to the area-significant local centres with a 400m walking catchment, while 'Commercial Centre A' refers to the area-significant local centres that include a mass-transit stop with an 800m walking catchment.





Figure 3.6: Inner West Key Area Attractors

It is observed that within the Inner West, Leichhardt, Ashfield, Marrickville and Enmore are suburbs with the physically largest commercial areas and potential pedestrian attractors. The entire length of Parramatta Road within the Inner West serves as a key arterial connection, as a corridor of commercial activity and a gateway to Leichhardt commercial centre.

The larger schools of the Inner West are mostly based south of Parramatta Road, while the two largest hospitals of the Inner West, and a third to the west of the IWC border, are congregated in Ashfield and Summer Hill.

Therefore, due to the three neighbouring hospitals, abundance of schools, and large commercial areas while also housing two mass-transit stops which serve as key connections to these attractors, the Ashfield and Summer Hill area encompasses a significant area of vulnerable road users.

Dulwich Hill, although home to two mass-transit stops, has its main commercial centre disconnected from the train station and is most accessible from Dulwich Grove light rail stop.

Once complete, the GreenWay and the Sydenham to Bankstown open space corridor, in combination with the existing light and heavy rail services, and the future metro service, will serve as vital links for pedestrians and cyclists' connectivity in an attractable, low-stress and place-making manner that is accessible to vulnerable, less confident cyclists. It will link connections to Marrickville commercial centre, Marrickville Metro and Enmore-Newtown's commercial centre and may see a reduced reliance on private vehicles and an increase in vulnerable user activity.

3.2 Transport networks

The Inner West is connected by a variety of multi-model networks including a substantial road network, bus routes, heavy and light rail corridors, ferries and cycleways.

3.2.1 Road

In NSW, roads are classified according to two systems:

• **Functional Hierarchy** – Motorway, Primary, Arterial, Sub-Arterial, Distributor, Local. These dictate the functional classification of roads in relation to expected traffic speeds and volumes.

 Administrative Classification – State, Regional, Local. State roads are managed by the State Government and consists of the main Motorways, primary, and arterial roads. Regional Roads, funded by the state government, are managed by the local government council which mainly consists of sub-arterial and distributor roads. Local Roads are also under council jurisdiction, and largely consists of functional local roads and some distributor roads.

The Inner West road network consists of 51 distinct state roads, 48 regional roads, and 1011 local roads shown in Figure 3.7. In terms of road hierarchy, state and regional roads generally make up most of the arterial and distributor roads which are functionally designed to carry a substantial majority of traffic. Out of the local roads, 44 of are classified as distributor roads which is also shown.





Figure 3.7: Inner West Road Network



Many of the high traffic classified roads such as the A22 Hume Highway/ Parramatta Road and A34 New Canterbury Road travel directly through the Inner West town centres and high pedestrian activity areas. Connectivity to other regions via state roads is generally effective, however it is noted that traffic from areas south of the Cook's River such as Earlwood would more likely burden the regional roads Wardell Road and Illawarra Road for north-south connectivity.

3.2.2 Public transport

Public transport within the Inner West is provided by bus, rail and light rail services as shown in Figure 3.8. Ferry services are also available from the Balmain Peninsula.

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Buses

The Inner West is well serviced by buses along its classified roads. The 2021 Inner West Pedestrian Access and Mobility Plan identified the following key bus services summarised in Table 3.1:

Table 3.1: Key Bus Routes servicing the Inner West

Bus Service	Destination 1	Destination 2
308	Marrickville	City
348	Wolli Creek	Bondi Junction
352, 355	Marrickville	Bondi Junction
412, 413	Campsie	City
418	Bondi Junction	Burwood
422	Kogarah	City
423, 426	Kingsgrove and Dulwich Hill	City
425	Tempe	Dulwich Hill
428, 428X	Canterbury	City
445	Balmain East Wharf	Campsie
461N, 461X	Burwood	City
480, 483	Strathfield	City
438N, 438X	Abbotsford	City
437	Five Dock	City

Trains

Heavy rail operates four train lines servicing the Inner West from West and South-West Sydney to and from the eastern city loop. They are detailed in Table 3.2 as follows:

Table 3.2: Train Lines servicing the Inner West

Train Line	Serviced Stations within the Inner West Suburbs
T2 Inner West & Leppington Line	Ashfield, Summer Hill, Lewisham, Petersham, Stanmore, Newtown
T3 Bankstown Line	Dulwich Hill, Marrickville, Sydenham
T4 Eastern Suburbs & Illawarra Line	Tempe, Sydenham
T8 Airport & South Line	Sydenham

Light Rail

The L1 Dulwich Hill Line Light Rail service provides north-south connectivity within the Inner West, running from Dulwich Hill to Pyrmont via Leichardt. The Light Rail stations within the Inner West are:

- Dulwich Hill
- Dulwich Grove
- Arlington
- Waratah Mills
- Lewisham West
- Taverners Hill
- Marion
- Hawthorne
- Leichhardt North
- Lilyfield
- Rozelle Bay



Ferry

Within the Inner West's Balmain Peninsula is contains three ferry wharfs at Birchgrove, Balmain, and Balmain East. The ferry services operating through these wharfs are as follows:

Table 3.3: Ferries servicing the Inner West

Ferry Service	Serviced Wharfs
F3 Parramatta River (Sydney Ferries)	Birchgrove, Balmain East
F4 Pyrmont Bay (Sydney Ferries)	Balmain East
F8 Cockatoo Island (Sydney Ferries)	Balmain
CCLC Lane Cove (Private Ferry)	Birchgrove, Balmain East

3.2.3 Cycling

The Inner West Draft cycling network expansion, shown in Figure 3.9: Inner West 2022 Draft Cycling Strategy network expansion routes

, seeks to link local centres, key train stations and other attractors and to also provide through links to support local and regional cycling journeys. The Inner West Draft Cycling Strategy identifies the following priority routes in its network expansion:

Table 3.4: Inner West Priority Cycling Routes

Priority East – West Routes	Priority North – South Routes
Lilyfield Road, LGA-wide	Iron Cove to Cooks River (Greenway);
Parramatta Road, LGA-wide	Johnston Street. Annadale
Victoria Road, LGA-wide	Livingstone Road, Marrickville
Railway Terrace, Lewisham – Trafalgar Street, Petersham	Carrington Rd – Myrtle St – Victoria Rd – Meeks Rd - Marrickville Rd, Marrickville, Sydenhan
Elizabeth Street – Grosvenor Crescent, Ashfield, Summer Hill	Darling Street between Victoria Rd and Curtis Road, Balmain
Croydon Road, Croydon	Ramsay Street, Haberfield
Marion St – Leichhardt St – Styles St – Collins St, Leichhardt, Annandale	Queen Street, Ashfield; between Liverpool Rd and LGA boundary
Arthur St, Ashfield, between LGA western boundary and Queen St	



Figure 3.9: Inner West 2022 Draft Cycling Strategy network expansion routes



Many of the new priority cycling routes traverse through classified roads, mixing cycle and vehicular traffic on existing 50 – 60kph speed limits such as Parramatta Road and Victoria Road.

There are very little existing physically separated bicycle lanes within the Inner West LGA, which causes a significantly higher risk of cyclist conflicts along these high-speed roads. The lack of either low-speed zones and segregation between cyclists and vehicles, as outlined by the Cycleway Design Toolbox (TfNSW, 2020), poses a significant barrier to inexperienced and timid riders in a form of high traffic stress and a real or perceived serious risk of injury or fatality.

3.2.4 Future transport projects

The 2020 Integrated Transport Strategy identified several major transport projects impacting Inner West.

The WestConnex Motorway tunnel project, particularly the M4-M5 link and Rozelle Interchange may redirect above-ground traffic from the north of the Inner West LGA. This will present place-making opportunities such as parklands active transport facilities and enable the revitalisation of Parramatta Road as part of the PRCUTS.

The Sydney South-West Metro will also free up capacity on the T2 Inner West Line, as trains will no longer have to share tracks with the Bankstown Line when converging toward the city stations, enabling more train services to run on this line and carry more capacity for Inner West passengers to and from the city. The proposed cycleway beside the Metro line will also promote increased active transport connectivity within the rail corridor. The proposed West Metro between Parramatta and Sydney CBD Station via Five Dock and the Bays Precinct may attract some passengers from the T1 train line. It is also proposed to pass under Inner West with no stations between Five Dock and the Bays Precinct.

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Figure 3.10: Inner West 2020 Integrated Transport Strategy - Key planning transport projects



3.3 Speed limits

3.3.1 Current Speed Limits

The current nominal speed limit within the Inner West is the national standard of 50km/h.

Motorways running through the Inner West LGA typically have speed limits above 60km/h, such as the A4 City West Link at 70km/h and the M4 underground motorway at 80km/h.

Most state roads within the Inner West post a 60km/h speed limit, as well as a select number of regional roads. Some state roads have reduced speed limits such as Old Canterbury Road at 50km/h and Enmore Road and King Street at 40km/h as of 2021.

Regional Roads within the Inner West are typically posted with a 50km/h speed limit. Roads posted with a 60km/h speed limit include Frazer Street, Marrickville Road, Victoria Road, Crystal Street, Edgeware Road and part of Enmore Road.





Figure 3.11: Inner West Speed Limits, including school zones



Currently, the only 40km/h speed limit roads lie within the Balmain Peninsula, School Zones and HPAAs (shown in green in Figure 3.10). Along HPAAs, the 40km/h protection generally only covers a single main strip of road and does not extend into its abutting connections. The existing permanent low speed zones within the Inner West LGA are identified as:

- 1. Balmain peninsula
- 2. Leichhardt town centre, along Norton Street
- 3. Booth Street town centre, Annandale
- 4. Styles Street, Leichhardt
- 5. Marrickville town centre, along Marrickville Road & Illawarra Road
- 6. Dulwich Hill town centre, along Marrickville Road
- 7. Newtown town centre, along Enmore Road & King Street
- 8. Summer Hill town centre, along Lackey Street and Smith Street
- 9. Pyrmont Bridge Road
- 3.3.2 Recent Speed Limit Reductions on State Roads

In recent years, several state roads within the Inner West have been rezoned to lower speeds in response to safety concerns.

Frederick Street

Frederick Street in Ashfield is a state road that has one lane of travel in each direction connecting two arterial roads, A22 Hume Highway and A44 Parramatta Road. It experiences a moderately high volume of traffic throughout the day.

As a result of a fatal pedestrian crash along a marked pedestrian crossing, in April 2022, Transport for NSW received a petition from local residents with 1,600 signatures requesting the intersection at Frederick Street and John Street be signalised.



Figure 3.12: Frederick Street Speed Reduction (source: Frederick Street Ashfield safety upgrade - Consultation Report December 2022)

As a result of a road safety review and community consultation, TfNSW has decided to reduce the speed limit on Frederick Street and Milton Street, between Parramatta Road and Georges River Road from 60km/h

to 50km/h. The speed reduction has been acknowledged by TfNSW to improve road safety for all road users, reduce the level of noise experienced by adjacent properties, and will increase safe crossing opportunities across Frederick Street.

Enmore Road & King Street

As part of the TfNSW's Newtown Speed Zone project, the 50km/h speed limit state roads including Enmore Road, King Street, Erskineville Road, and part of the 60km/h Princes Highway have had their speed limits reduced to 40km/h. The speed zone recommendation was based on crash history, traffic characteristics and roadside environment.

Key benefits recognised by TfNSW include improved road safety, improved pedestrian safety, safer access and enjoyment of the urban village atmosphere and local amenities, and reduced crash incidents.



Figure 3.13: Newtown Speed Zone Project extents


4 Safety analysis

4.1 Data collection

To identify the trends in vehicle speeds in the Inner West, a range of private, and public-source data was collated, including:

- NSW Open Data Hub:
 - Road Segment Data
 - NSW Crash Data (2016 2020)
 - Sydney Public Transport Network
- Inner West Council:
 - Cycling Routes
 - Land Use Zoning
- Compass IOT:
 - Near Miss Data (2020-2022)
 - Vehicle Speed Data (month of March 2022)

Limitations to the data collected include:

- NSW Open Data Hub
 - The latest crash data set at the time of analysis was only available up to the five-year period of 2016 2020.
- Inner West Council:
 - The updated Cycling Strategy Routes at the time of analysis was in a draft format and was indicatively converted into a GIS compatible format.
 - Beyond land use zones, there is limited information on areas of vulnerable users such as aged-care facilities, local playgrounds and childcare centres.
- Compass IOT:
 - Compass IOT utilises Cloud Connected Vehicles to generate and process data. As such, the speed and near miss data is limited to vehicles produced from 2014 onward, for a range of partnered vehicle manufacturers.
 - Vehicle speed data was derived from the time a vehicle took to travel an entire segment, and not the instantaneous top speed achieved.
 - A further limitation of this is that start-stop traffic and sudden brief accelerations to high speeds would be captured as low speeds overall. However, this could be considered as unusual aggressive driver behaviour and not a product of the road environment.
 - Compass IOT integrates Open Street Map into their backend, and as such, the vehicle speed data was bound to Open Street Map's road segment line geometries, which differs from the NSW Open Data's road segment data.

4.2 Data analysis

The following section aims to identify the relationship between traffic speeds and vehicle behaviour and safety outcomes.

4.2.1 Speeds

With Compass IOT, 85th percentile speeds were recorded for the month of March 2022 for all road segments within the Inner West boundary, shown in Figure 4.1. The 85th percentile speed is defined as the speed at or below which 85 percent of all vehicles are observed to travel under free-flowing conditions past a monitored point when their speed choice is not constrained by vehicles in front of them.

A comparison of the 85th percentile speeds and previous speed tube data is provided in Appendix C.





Figure 4.1: Recorded 85th Percentile Speeds in the Inner West



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77.1







Figure 4.2: Distribution of Road Segments with 85th percentile speeds below 40km/h



As shown in the map and in Figure 4.2, 59.4% of the local road segments in the Inner West were recorded to already travel at or below 40km/h. This indicates that for the majority of the roads in the Inner West, resignposting the local speed limit to 40km/h is a correction which reflects the existing environmental conditions which self-enforce lower speeds. This results in an average 85th percentile speed of 38.2km/h on roads with a 50kmh speed limit as shown in Figure 4.3. Despite the 10kph difference between a posted 40km/h zone and 50km/h zone, there is only 5.8kph increase in recorded travel speeds. This indicates that journey times could be less negatively impacted by speed zone reductions at the local road level, which is discussed in section 5.3.

90.0

Recorded 85th percentile speeds were averaged across the Inner West suburbs as shown in Figure 4.4. Even when excluding the three suburbs in the Balmain Peninsula, the majority of suburbs in the Inner West are already traversing below 40kph on the average road segment, which could be attributed to traffic congestion, short roads limiting the ability of vehicles to sustain the 50km/h speed limit, or general pedestrian, road and environmental conditions.



Figure 4.4: 85th Percentile Speeds of Inner West suburbs



4.2.2 Crashes & Near Misses

Near Misses are data points where connected vehicles experience statistically significant G-forces via violent braking, swerving, or a combination of both. Near Misses exclude real crash events and are intended to supplement crash data as proactive indicators of potentially high-risk intersections or road alignments across the transport network.

The near miss data generally correlates well with crash statistics for the Inner West, although there are a few local roads which have been shown to have near misses but no or few recorded crashes.

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Figure 4.5: Recorded Near Misses within the Inner West



The following figures display the 2016-2020 recorded crash datapoints within the Inner West LGA. Figure 4.6 shows all 2708 vehicular crashes, while Figure 4.7 shows the 479 crashes affecting pedestrian and cyclists, which comprises of 17.6% of all crashes within this period.



Figure 4.6: Recorded Crashes within the Inner West (2016-2020)





Figure 4.7: Recorded Pedestrian and Cyclist Crashes within the Inner West (2016-2020)



4.2.3 Crash Location Vicinities

Crashes within the Inner West LGA were mapped against various catchments of potential vulnerable users, shown in Figure 4.8..



Figure 4.8: Inner West Crashes in relation to Commercial Zones



The Inner West has a dense distribution of commercial areas, where 90.30% of IWC road segments are within 400m of a commercial zone. As a result, 97.27% of all crashes occur within 400m of a commercial zone and 97.86% of pedestrian crashes occur within 400m of a commercial zone.



Figure 4.9: Inner West Crashes in relation to School Zones



From the 2016-2020 crash statistics, 7.87% of all crashes occurred within a school zone. Of all crashes that occur within a school zone, 18.31% of which occurred while the school zone was active.



Shown in Figure 4.10, for pedestrian-related crashes near the active school zone times at 8:00am-10:00am and 2:00pm-4:00pm, 14.1% occurred within a school zone. For crashes occurring within 400m of a school, this significantly increases to a total of 75.0%.

This high proportion may be attributed to a larger catchment size, but it indicates that the lower-speed zone is of insufficient area, and it is warranted to extend the area of protection to vulnerable users to truly provide effective coverage.



4.2.4 Speed and Crashes

Crash history of road segments were analysed in relation to its 85th percentile speed data. Figure 4.11 displays a comparison of measured speeds in relation to the posted speed limit across roads with varying recorded crash history.



Figure 4.11: Road Segment crash history and vehicle speeds

There is a correlation where, on average, road segments with a higher number of crashes tend to have vehicles travelling closer to the speed limit. This is most evident looking at roads with a 50km/h speed limit where there are significant speed differences of 5km/h on roads with low crash rates and roads with higher crash rates.





Figure 4.12: Crash Severity in relation to 85th percentile speeds

Figure 4.12 compares the measured 85th percentile speed on roads in the Inner West against crash severity. Injury-causing accidents increase with the increase in 85th percentile vehicle speeds, which is clear by the steady decrease in non-injury crashes. Furthermore, there are zero fatalities caused by crashes travelling along road segments with recorded speeds of ~30km/h, which are typically seen on roads with a 40km/h posted speed limit.

Because of the 2014 red-tape reduction initiative by NSW Police, non-injury and/or non-hazard-causing crashes are no longer recorded and attended by police, which may have skewed the crash data which was obtained for the period of 2016-2020 onward, where a much larger percentage of non-injury crashes may have been expected at lower speed road segments.



Figure 4.13: Pedestrian Crash severity in relation to 85th percentile speeds

Filtering on Pedestrian crashes for recorded speeds in Figure 4.13, there are zero non-injury accidents reported and for clarity, are hence not displayed. The share of minor injury decreases by 12.54% and the risk of moderate injury increases by 12.97% on roads where vehicles are travelling more than 30km/h. As previously mentioned, there are also zero pedestrian fatalities reported on roads where vehicles were recorded with a near 30km/h 85th percentile speed. This could suggest that the risk of non-minor injury would



only be sufficiently reduced when vehicle speeds are reduced to as low as 30km/h which, as was previously shown in Figure 4.3, is mostly experienced in 40km/h speed limit zones.

5 Potential Benefits and Impacts

5.1 Road Safety Impacts

A 2010 Austroads technical report AP-T151/10 - Road Safety Engineering Risk Assessment Part 6: Crash Reduction Factors details the following summarised crash reduction factors for speed reductions.

Table 5.1: AP-T151/10 Summarised estimated crash reduction for each issue

Issue ref	Issue	Environment type	% Reduction	Confidence
1	Speed – change in speed	60 to 50km/h	20%	Medium
2	limit and change in speed	All reductions in speed limit	15%	Medium
3	Speed – change in operating speed	Change in operating speed and effect on safety	$1 - \left(\frac{Speeda}{Speedb}\right)^2$	Medium

The technical report provides further details into issue #3 from Table 5.1, finding that the results of the literature examined supports the Power model developed by Nilsson (2004) as cited in AP-T151-10.

The Power Model is described as follows:

$$1 - \left(\frac{Speeda}{Speedb}\right)^{Sev}$$

Where:

Speeda = mean speed after

Speedb = mean speed before.

Sev is a constant based on the crash severity as follows in Table 5.2.

Table 5.2: Mutually exclusive severity values for Nilsson's Power Model

Severity	Sev value
Fatalities	4.5
Seriously injured	3
Moderately injured	2.25*
Slightly injured	1.5
All injuries	2.7
Fatal accidents	3.6
Serious accidents	2.4
Moderate accidents	1.8*
Slight accidents	1.2
All accidents	2
Property only	1

* Moderate severity values are not specified and thus linearly interpolated

As per Issue 1 & 2 of Table 5.1, AP-T151/10 generalises an overall 20% reduction in crashes for a speed limit reduction from 60km/h to 50km/h, and a 15% crash reduction for all other speed reductions. In absence of 20km/h speed reduction parameters, where recommended posted speeds are reduced from 60km/h to 40km/h, the relation between speed limit reductions and travel speed reductions were generalised to be linear.



Existing mean speeds across different speed limits were extracted for posted 50km/h and 60km/h roads from the CIOT data. Sensitivity testing was conducted to determine an estimated post-speed limit reduction in travel speed utilising the general *Sev* constant of 2 as stated in previously Table 5.2. The results are shown below in Table 5.3.

Original Speed Limit	Measured Mean Speed	New Speed Limit	Crash Reduction % Target	Calculated Travel Speed Reduction	New Mean Speed
50 km/h	25.1	40 km/h	15%	-2.0 km/h	23.1 km/h
60 km/h	35.3	50 km/h	20%	-3.8 km/h	31.5 km/h
60 km/h	35.3	40 km/h	-	-7.6 km/h	27.7 km/h

Table 5.3: Estimated Travel Speed Reductions from Reduced Speed Limits, calculated from

The new mean speeds were applied to Nilsson's Power Model and the following high level crash reduction figures were produced:

Speed Reduction of 50km/h roads

Table 5.4 and Table 5.5 outline the calculated crash reduction impacts of speed reductions on local 50km/h roads. The benefits of which will be realised in the reduction of the posted 50km/h speed limit down to 40km/h.

Table 5.4: Crash Reductions of reduced nominal speeds from 50km/h to 40km/h

Crash Severity	Average Number of Crashes per year (50km/h Roads) (2016 – 2020)	% Reduction in Crashes	Savings in crashes (per year)
Fatal	0.8	26%	0.2
Serious Injury	45.4	18%	8.2
Moderate Injury	60.2	14%	8.4
Minor/Other Injury	41.0	9%	3.9
Non-casualty (towaway)	70.0	8%	5.6
Total	217.4	12%	26.2

Table 5.5: Injury Reductions of reduced nominal speeds from 50km/h to 40km/h

Injury Severity	Average Number of Injuries per year (50km/h Roads) (2016 – 2020)	% Reduction in Injuries	Savings in Injuries (per year)
Fatal	0.8	31%	0.2
Serious Injury	46.6	22%	10.3
Moderate Injury	68.6	17%	11.7
Minor/Other Injury	57.4	12%	6.7
Total	173.4	17%	28.9

Speed Reduction of 60km/h roads

As for state and regional roads,



Table 5.6 and Table 5.7 outline the calculated crash reduction impacts of speed reductions from 60km/h to 40km/h along classified roads. The larger 20km/h speed reduction would consequently produce much greater reductions in crashes and injuries.

Crash Severity	Average Number of Crashes per year (60km/h Roads) (2016 – 2020)	% Reduction in Crashes	Savings in Crashes (per year)
Fatal	1.6	58%	0.9
Serious Injury	43.4	44%	19.1
Moderate Injury	81.2	35%	28.7
Minor/Other Injury	77.2	25%	19.4
Non-casualty (towaway)	62.8	21%	13.5
Total	266.2	31%	81.6

Table 5.6: Crash Reductions of reduced posted speeds from 60km/h to 40km/h

Table 5.7: Injury Reductions of reduced posted speeds from 60km/h to 40km/h

Injury Severity	Average Number of Injuries per year (60km/h Roads) (2016 – 2020)	% Reduction in Crashes	Savings in Injuries (per year)
Fatal	1.8	66%	1.2
Serious Injury	46.4	52%	23.9
Moderate Injury	93.8	42%	39.4
Minor/Other Injury	101.4	30%	30.9
Total	243.4	39%	95.4

The tables calculate a very significant reduction in injuries and crashes from both posted speed limits of 50km/h and 60km/h. Potentially, a combined average of 417 injuries a year may be reduced to 293 a year (overall reduction of 30%), and a combined average of 2.6 fatalities a year may be reduced to 1.2 fatalities a year. It is evident that the Inner West LGA-wide speed reduction strategy would be a key contributor to the Towards Zero initiative.

5.2 Potential crash cost benefit

Significant crash cost benefits may be realised from the InnerWest@40 speed reduction. As a high-level estimate, Table 5.8 presents the potential cost savings should the above reductions in crash numbers and severity be realised. Crash costs were extracted from the 2022 Transport for NSW Economic Parameter Values inclusive WTP costs per crash.

Crash Severity	Average Number of Crashes per year (50km/h Roads) (2016 – 2020)	Savings in Crashes from reducing 50km/h to 40km/h (per year)	Average Crash Cost	Crash Cost savings (per year)
Fatal	0.8	0.2	\$8,195,127	\$1,694,007
Serious Injury	45.4	8.2	\$534,378	\$4,383,514
Moderate	60.2	8.4	\$89,901	\$751,354
Injury*				
Minor/Other	41	3.9	\$82,621	\$321,263
Injury				
Non-casualty	70	5.6	\$10,923	\$60,925
(towaway)				
Total	217.4	26.2		\$7,211,063
Crash Severity	Average Number of	Savings in Crashes from	Average Crash	Crash Cost
	Crashes per year (60km/h	reducing 60km/h to 40km/h	Cost	savings
	Roads)	(per year)		(per year)
	(2016 – 2020)			
Fatal	1.6	0.9	\$8,195,127	\$7,623,118
Serious Injury	43.4	19.1	\$534,378	\$10,213,605

Table 5.8: Cost benefit of crash reductions from 40km/h speed reductions



Moderate Injury*	81.2	28.7	\$89,901	\$2,576,801
Minor/Other	77.2	19.4	\$82,621	\$1,606,904
Injury				
Non-casualty	62.8	13.5	\$10,923	\$147,381
(towaway)				
Total	266.2	81.6		\$22,167,809
Grand Total	483.8	175.39	-	\$29,378,872

From reducing speeds to 40km/h on local 50km/h streets alone, the Inner West may experience an estimated \$7,211,063 per year in savings from crash and injury costs. If the initiative were expanded to all 60km/h classified roads there could be an additional estimated \$22,167,809 in savings, amounting to a total of \$29,378,872 per year in savings within the Inner West from reductions in road trauma and property damage.

5.3 Travel Time Impacts

The speed limit reduction is expected to have a minimal impact on the overall vehicle travel times during both peak and off-peak periods as delays to driving mostly occur while vehicles are at intersections, undertaking turning manoeuvres and due to congestion and parking.

Route analysis was performed in ArcGIS where the maximum vehicle speed was limited to 40km/h during the morning peak hour and the weekend morning off-peak. The traffic data utilised in the ArcGIS analysis is sourced from the 'HERE' traffic and gps location data platform.

Routes were arbitrarily chosen across the Inner West, covering a mix of suburbs and between areas of significance, where train stations were used as abstract destinations to represent the general suburb. The results are shown in Figure 5.1 and detailed in Table 5.9 and Table 5.10.

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Peak Hour Route Travel Times							
Route	Start	End	Route Distance (km)	Travel Duration Peak	Travel Duration Peak @40km/hr	Additional travel time @ 40km/hr	Percentage Increase
1	Leichhardt North Light Rail Station	Dulwich Hill Train Station	4.76	11min 02sec	11min 03sec	1 sec	0.15%
2	Ashfield Train Station	Newtown Train Station	5.65	13min 46sec	13min 48sec	2 sec	0.24%
3	Rozelle Bay Light Rail Station	Marrickville Metro, Marrickville	5.00	11min 38sec	11min 40sec	2 sec	0.29%
4	688 Darling St, Rozelle	Trinity Grammar School, Summer Hill	6.50	11min 51sec	12min 17sec	26 sec	3.66%
5	217 Ramsay St, Haberfield	Sydenham Train Station	5.95	15min 33sec	15min 40sec	7 sec	0.75%
6	20 Cove St, Birchgrove	8 Cary St, Marrickville South	10.93	24min 38sec	25min 04sec	16 sec	1.08%

Table 5.9: Peak Hour Travel Time impacts of a 40km/h speed limit

Table 5.10: Off-Peak Hour Travel Time impacts of 40km/h speed limit

Weekend Off Peak Route Travel Times							
Route	Start	End	Route Distance (km)	Travel Duration	Travel Duration @ 40km/hr	Additional travel time @ 40km/hr	Percentage Increase
1	Leichhardt North Light Rail Station	Dulwich Hill Train Station	4.76	09min 53sec	09min 58sec	5 sec	0.84%
2	Ashfield Train Station	Newtown Train Station	5.65	11min 45sec	11min 55sec	10 sec	1.42%
3	Rozelle Bay Light Rail Station	Marrickville Metro, Marrickville	5.00	11min 04sec	11min 13sec	9 sec	1.36%
4	688 Darling St, Rozelle	Trinity Grammar School, Summer Hill	6.50	11min 35sec	12min 12sec	37 sec	5.32%
5	217 Ramsay St, Haberfield	Sydenham Train Station	5.95	13min 23sec	13min 35sec	13 sec	1.62%
6	20 Cove St, Birchgrove	8 Cary St, Marrickville South	10.93	22min 37sec	23min 13sec	36 sec	2.65%

During the peak hour, a maximum 40km/h travel speed on the worst affected route #4 resulted in a 3.66% increase in travel time, amounting to an absolute increase in travel time of just 26 seconds. For the longest analysed route #6 from Birchgrove to Marrickville south, the 10.93km trip only resulted in a 16 second travel time increase for the user. Other routes analysed had almost negligible increases in travel times of less than 1%.

During the weekend off peak period, the worst affected route #4 experienced a 5.32% increase in travel time, resulting in only a 37 second increase, while the longest route #6 experienced a 36 second increase in travel time. Even during off-peak periods, there is generally an insignificant increase in travel times of less than 40 seconds, and less than 10 seconds for the shorter routes.

This supports the consensus of low-speed studies that the major contribution to travel time is congestion and stop-start manoeuvres, which is especially relevant during the peak hour analysis.



6 Proposed lower speed limits

6.1 Proposed speed limits

With the introduction of speed reductions, it is important for speed zoning to be consistent, predictable and legible. Current speed limit inconsistencies across the Inner West LGA makes it difficult for all road users to navigate, creates unnecessary acceleration and deceleration, and is more difficult to legally adhere to. Speed limit consistencies also contributes to the need for additional road signs, speed treatments, and creates inconsistent streetscapes which impacts visual clutter.

This study investigated the potential for reducing posted speed limits across the entire Inner West LGA. However, reflecting that responsibility for the roads is shared between Inner West Council and TfNSW, the following strategy to apply lower posted speeds is proposed:

- All Local Roads, which are managed and maintained by Council, are nominated to have a posted speed of 40km/h
- All Regional Roads, which are funded by TfNSW but managed and maintained by Council, are nominated to have a posted speed of 50km/h, with further reduction to 40km/h to be proposed in the long term.
- All State Roads, managed and maintained by TfNSW, are to remain at their existing speed limits.
- School zones and existing 40km/h areas will retain their signage to maintain road user vigilance in these areas.

The rationale for this approach is that as Council has responsibility for Local and Regional Roads, it has the ability to monitor impacts of this change and to enact and changes required to address any network performance issues which may emerge. These roads are also within Council's remit in terms of serving the Inner West community and implementing their Integrated Transport Strategy.

For State Roads, they serve a different function to Local and Regional Roads, largely facilitating through movement across the LGA, therefore any changes to speeds along these roads has a more pronounced network impact across Greater Sydney.

Existing 40km/h zones, which could become part of a much wider 40km/h zone, do need special attention due to the increased activity amongst vulnerable roads users, particularly at school arrival and departure times.

Part of the safe system approach and setting safe speeds involves matching the speed zoning to the road conditions, thus reflecting the road safety risk to the road users. Consistently zoning all local roads with a 40km/h speed limit will also fill current 50km/h gaps between existing 40km/h corridors such as on Styles Street between Norton Street and Mackenzie Street, and on Booth Street between Nelson Street and Wigram Road.

Due to the scale and extent of the Inner West LGA, the uncertain impact of implementing large scale lower speed zones and the potential for community and stakeholder concerns, a staged implementation approach of lower speed zones could be adopted. This is discussed further in Section 7 of this report.

In addition to enforcement via signposting, threshold treatment, traffic-calming and landscaping will need to be considered to increase conformity with the new speed limits. Although costly, this is of particular importance to safely integrate lower speeds near state roads and along high-traffic regional roads. Implementation would require extensive consultation over perennial timeframes.

The proposed speed limits on an LGA-wide basis are mapped below in Figure 6.1.





Figure 6.1: InnerWest@40 Proposed speed change

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6.2 Further Speed Limit Considerations

Beyond the scope horizon of InnerWest@40, additional speed reductions should be considered and further investigated to truly realise the researched benefits of low speeds and achieve the 'Towards Zero' vision.

- State Roads are corridors which involve both high speeds, high traffic volumes, and high crash rates. Speed reductions for State Roads from 60km/h to 50km/h could be investigated as a long-term consideration. As discussed in Section 3.3.2, TfNSW has actively reduced the speed limit of high-risk state roads in recent years and further strides for additional speed limit reductions along other state roads are recommended.
- Victoria Road, between Terry Street and Robert Street, will undergo a transformation to become a more place-focussed and less movement-focussed corridor as a result of the underground bypass as part of the Rozelle Interchange. There is an opportunity to reduce its speed limit from 60km/h to 50km/h to facilitate this transformation and encourage a better place-based outcome for Victoria Road.
- The City West Link is currently inconsistently zoned with a 70km/h speed limit through Lilyfield but lowered to a 60km/h speed limit outside of the Inner West boundary. There is opportunity to consider consistently zoning the City West Link with a 60km/h speed limit in interest of better road safety, street predictability, and to limit the speed disparity between its abutting lower speed roads.
- A formalised 20km/h speed limit for rear access lanes may be considered in the long term. This facilitates
 a safe environment for mixed pedestrian, cyclist, and vehicle movements in narrow roads where there are
 deficiencies in pedestrian provisions, as identified by the pedestrian route audit conducted by the Inner
 West Pedestrian Access Mobility Plan.

7 Prioritisation for Implementation

7.1 Aim

To inform a staged rollout of the 40km/h speed limit, road segments were scored based on a multi criteria assessment (MCA) for prioritisation of the IW@40 strategy. These scored road segments were then mapped, and zones within the Inner West LGA will be assessed as short, medium, or long-term priority areas.

The MCA aimed to capture priority roads based on criteria including:

- Level of pedestrian and cycle activity using existing and future land uses (as discussed in section 3)
- Proximity of amenities used by residents including vulnerable road users, such as commercial centres, green space, schools, hospitals, etc
- Indicative safety risk, based on concentration of crashes and near misses.

Commercial areas are land zones categorised as 'Enterprise Corridor', 'Local Centre' or 'Neighbourhood Centre'. The high-significance areas outlined by the ECDP and ITS have been extracted and assigned points. Scores for the other remaining commercial areas and public transit stations have also been assigned.

Schools, hospitals were similarly extracted from land zoning as well as the cycle routes to assess the catchment of vulnerable users.

Furthermore, the Sydney Green Grid is a network of high-quality green space that connects town centres, public transport hubs, and major residential areas. Prioritising areas around the green grid facilitates safety of pedestrian and cyclist journeys to and from the green corridors, improving connectivity and ease of accessibility.

7.2 Multi Criteria Assessment Parameters

Table 7.1 and Table 7.2 detail the parameters of the Multi Criteria Assessment. For each road segment, the points were then summed to give a final score, which is mapped in the following section.

Parameter	Value	Points
Recorded crashes along a	Fatal crashes	10
road segment (per crash)	Serious injury crashes	8
	Pedestrian crashes	10
	Cyclist crashes	10
	Major injury crashes	6
	Minor injury crashes	2
	Other crashes	1
Near Misses (each)	Near Miss	1
Pedestrian activity generators	Commercial	see Table 7.2
Cycle Route	Primary Route	6
	Local Route (higher priority)	4
	Local Route	2
	Other	1

Table 7.1: Multi Criteria Assessment Parameters

Parameter	Value	Points
Proximity to vulnerable	< 400m	10
road users (schools &	Within 400-800m	5
nospitals)	Within 800-1,200m	2
	Over 1,200m	0

Table 7.2: Multi Criteria Assessment Parameters of High Significance Areas

Parameter	Value Points			
		<400m	<800m	<1200m
Eastern City District Plan				
Local Centre identified by	Ashfield Station	20	10	5
the ECDP with a mass	Summer Hill Station			
transit stop, and an 800m	Newtown Station			
	Marrickville Station			
Local Centre identified by	Leichhardt, Norton Street	10	5	2
the ECDP, with a 400m	Leichhardt Marketplace, Marion Street			
waiking catchment.	Marrickville Metro, Smidmore Street			
	Rozelle, Darling Street			
	Balmain, Darling Street			
	Five Dock, Great North Road			
Other Commercial Zones				
Other Urban Renewal Areas	Dulwich Hill Commercial Centre	10	5	2
Other Train & Light Rail Stations	All stations within the Inner West boundary	6	4	2
Other Commercial Centres	Enterprise Corridors	6	4	2
	Local Centres	6	4	2
	Neighbourhood Centres	4	2	1
Green Grid Zones				
Bankstown to Sydenham Open Space Corridor	Entire Rail Corridor within the Inner West boundary	10	5	2
nner West Greenway Greenway, from Leichhardt North to Dulwich Hill Station, and to the Cooks River.		10	5	2
Cooks River Open Space Corridor	Entire Cooks River public recreational zone within the Inner West boundary	10	5	2

7.3 Results of the Multi Criteria Assessment

The results of the MCA are mapped below in Figure 7.1. Both detailed road segment scoring and a heatmap visualisation were produced.

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Figure 7.1: Inner west MCA Results



From the results, three major clusters can be observed:

- Ashfield & Summer Hill
- Marrickville
- Enmore & Newtown

These areas encompass major areas of high pedestrian activity, vulnerable users, and areas of high significance as discussed in Section 3.1, while are also scenes of high traffic accidents and injury.

Ashfield & Summer Hill

Primary pedestrian activity areas within this area are the Ashfield and Summer Hill commercial centres which border their associated mass transit stops. Also within this area cluster are vulnerable user attractors - Summer Hill Public School, St Patrick's Catholic Primary School, Ashfield Public School, and The Sydney Private Hospital. The zone also covers the intersection of the light rail and the T1 & T2 train line, where public transit users traverse within the area to crossover from north-south to east-west connections and vice versa. The Ashfield and Summer Hill area will also be centrally located within the GreenWay and will be a key western access point to its green space and active transport area.

Notable risk-prone road segments highlighted by the scoring include Carlton Crescent, Queen Street, Holden Street and Norton Street, all of which have had a significant history of vehicle crashes and were sites of at least one pedestrian crash.

Marrickville

In the south of the Inner West, Marrickville's high-significance commercial centre is a key area of urban renewal and centred on its mass-transit stop. It will also be a major access point to the Sydenham-Bankstown open space corridor which runs along the T3 line that currently services Marrickville Station. The south side of Marrickville also leads towards the Cooks River green grid corridor. Also, within the Marrickville area cluster are many schools including Marrickville High School, Marrickville Public School, and Marrickville West Primary School.

Notable risk-prone road segments highlighted by the scoring include Warren Road, Marrickville Road, Illawarra Road, Carrington Road, Victoria Road, and Livingstone Road all of which have had a significant history of vehicle crashes, with the latter three being identified as Priority Cycling Routes by the draft Inner West Cycling Strategy.

Enmore & Newtown

The commercial centre stretching from Enmore, through Newtown and to St Peters is a high-significance pedestrian activity area adjacent to the latter two suburb's mass transit stops. The south-east residential area has immediate access to Marrickville Metro and is subject to rat running to and from the eastern boundary. Schools near this cluster area include Camdenville Public School, Newtown Public School, Newtown High School of the Performing Arts, and TAFE NSW - Design Centre Enmore.

Notable risk-prone road segments highlighted by the scoring include Enmore Road, King Street, Stanmore Road, Edgeware Road and Alice Street which were among the highest scoring roads in the entire Inner West.

Highest Scoring Road Segments

A sample of the highest scoring road segments and which suburb the particular segment lies in is shown in Table 7.3. Most of the top road segments experience a significant number of traffic volumes & crashes and lie within the three major clusters discussed above. Notably, Enmore Road and King Street were targets for speed reductions as part of the 2021 Newtown 40km/h High Pedestrian Activity Area installation.



Road Name	Suburb	Prioritisation Score	Num Crashes within Suburb Segment	Num Pedestrian & Cyclist Crashes	85 th Percentile Speed
Enmore Road	Newtown	278.00	25	11	40km/h
King Street	Newtown	240.00	24	7	38km/h
Stanmore Road	Enmore	205.00	15	8	39km/h
Sydenham Road	Marrickville	199.00	24	3	49km/h
Edgeware Road	Newtown	196.00	14	6	38km/h
Livingstone Road	Marrickville	174.00	14	3	47km/h
Buckley Street	Marrickville	166.00	9	6	49km/h
Norton Street	Ashfield	163.00	17	2	45km/h
Princes Highway	St Peters	157.00	13	4	58km/h
Frederick Street	Ashfield	155.00	15	3	49km/h
Liverpool Road	Ashfield	149.00	11	4	43km/h

Table 7.3: Highest priority scoring road segments from the MCA analysis

7.4 Recommended approach for implementation

As part of the recommended staged roll-out of the InnerWest@40 project, the Inner West LGA was split into 10 areas to be zoned with 40km/h speed limits.

The boundaries were determined using State Roads, as they provide distinct demarcations to clearly zone the separate areas during the staged implementation and would not be subject to the proposed speed reduction. Furthermore, in contrast to a midblock change in speed limit, utilising state roads as boundaries which have differentiating speed limits removes the need to remove newly posted signs once installed if an adjacent area is sign posted to 40km/h afterwards.

Based on the priority scoring, the ten areas were then categorised into four priorities as follows:

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- Priority A
- Priority B
- Priority C
- Priority D

The ten areas, shown in Figure 7.2 are described as follows:

- Area 1 Haberfield
- Area 2 Rozelle-Lilyfield
- Area 3 Balmain (existing 40km/h zone)
- Area 4 Leichhardt-Annandale
- Area 5 Stanmore-Petersham
- Area 6 Enmore and Marrickville West

- Area 8 Dulwhich Hill South and Marrickville
 East
- Area 9 Dulwich Hill North and Lewisham
- Area 10 Ashfield and Summer Hill West
- Area 10 Outer Ashfield*
- Area 10 Canterbury-Bankstown**

• Area 7 Marrickville and Tempe

Where Area 10 was further split into the main Ashfield & Summer Hill West area, and:

- *Outer Ashfield An area bordering Burwood Council via local roads that is split from the main zone by the state roads Frederick Street and Milton Street which may have its speed-reduction implemented at a separate date for simplicity of implementation.
- **Canterbury-Bankstown An area outside of the Inner West boundary but may benefit as an additional area of implementation. It would utilise Milton Street, King Street (Ashbury), and Canterbury Road as classified road borders to maintain a consistent application and establish a clearer boundary to the 40km/h speed reduction precinct.



Figure 7.2: Inner West Priority Implementation Areas



The three 'Priority A' areas captures the three priority clusters previously discussed in Section 7.3. Other areas of high risk and within close vicinity of pedestrian attractions such as Dulwich Hill were matched with 'Priority B', while lower risk areas ended up matching with a Priority C and D. Table 7.4 shows the distribution of safety outcomes between the four categories.

Priority Area	Share of Roads	Share of Total Crashes	Share of Pedestrian & Cyclist Crashes	Share of Near Misses	Share of cumulative priority scoring	Roads within Area with an 85^{th} Percentile Seed ≤ 40 km/h
А	31.8%	41.6%	45.5%	43.8%	38.8%	52.5%
В	24.4%	23.1%	23.3%	18.3%	26.7%	63.4%
С	26.6%	23.2%	21.2%	25.1%	21.4%	51.7%
D	17.1%	12.1%	10.1%	12.7%	13.1%	33.3%

Table 7.4: Share of Safety Outcomes of Priority Areas

For Priority A areas, implementing the speed reduction strategy at these zones which make up only 31.8% of the Inner West's road segments will cover the area responsible for 41.6% of all crashes, 45.5% of all vulnerable user crashes, and 43.8% of near misses within the Inner West. The initial rollout of 40km/h areas here will be of great efficiency in achieving safety outcomes for the Inner West.

Notably for Priority B areas, while hosting a fair share of vehicle and vulnerable user crashes, a 63.4% majority of its road segments recorded an 85th percentile speed of less than 40km/h. This suggests that especially for these areas, the majority of the roads are subject to simple alignment of speed limits to match existing speed conditions.

It is recommended to implement the speed zoning changes in order of priority. For ease of implementation and to avoid inconsistent speed zones in the interim, Area 9 and Area 10 of Dulwich Hill may be bundled with the rollout implementation of Priority A.

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8 Stakeholder consultation

8.1 External consultation

A stakeholder consultation workshop was hosted, involving participating stakeholders from Inner West Council and TfNSW.

The workshop involved a presentation on:

- Study methodology
- Data analysis (including crash, near miss, speed and land use)
- Insights arising from the analysis
- The study's Multi-Criteria Assessment process

Key Outcomes from the Workshop included:

- Strategy:
- State Roads are not considered for 40km/h speed reductions by TfNSW due to the difficulty in implementation and ability to gain compliance.
- 40km/h zoning will remain as the focus of the InnerWest@40 initiative, with 30km/h not being considered at this stage by TfNSW.
- The InnerWest@40 strategy could be aligned to other key works/projects on the network such as the Community Strategic Plan, Integrated Transport Strategy, Pedestrian Access Mobility Plan, and Cycling Strategy.
- Results of the Analysis:
- Travel speeds, crash rates, crash severity, and vulnerable user involvement are primary building blocks of the evidence base.
- 85th percentile traffic speed data may be verified with sample tube counts at key locations.
- The results of the MCA generally reflect stakeholders' experience of the local area. The levels of vulnerable user activity and susceptibility to road incidents broadly aligns with stakeholder expectations.
- Newtown, Marrickville, and Ashfield are critical centres with high levels of pedestrian volumes which could benefit from further speed reductions to a 30km/h limit.
- Prioritisation and Implementation:
- Speed Limits are required to be well communicated across different road environments to avoid driver confusion.
- Boundaries for lower speed zones should be as simple as possible for people to understand, which will aid with compliance. Geographical areas and major roads would aid in communicating these boundaries to the public.
- Boundaries are to establish large and consistently speed zoned areas to avoid frequent changes in speed limits.
- In the final implementation of the speed reduction, treatments should include a full range of options not only signage but also traffic calming, landscaping and threshold treatments. This will allow for the safe integration of low speeds along high-traffic roads and near state roads which will have different speed limits.


9 Action plan

9.1 Action plan

Table 9.1Table 9.1presents an indicative action plan to identify all necessary actions required to implement the InnerWest@40 proposal.

Table 9.1: InnerWest@40 Action Plan

ID	Action	Rationale	Responsibility
P1	Develop Strategy for prioritised and staged implementation of lower speed zones	A staged implementation could help proof of concept, get more community support. Spreads funding for project over a longer period of time, efficiently targets key areas upfront.	Council
P2	Communication and consultation with community and key stakeholders on proposition.	Overcome resistance, educate the community on the benefits of lower speed zones, debunk myths associated with lower speeds such as concerns with travel times, delays, congestion and revenue-raising.	Council/ TfNSW
P3	Identification of available sources of funding and discussions with key stakeholders	Ensure funding is available to implement the project. A partial contribution could be extracted from existing council budgets but discussions with stakeholders may be required to externally source much of the design and implementation costs.	Council/ TfNSW
P4	Further investigation into key locations for infrastructure	Investigations into key road areas in need of threshold treatments and traffic calming in addition to signposting and line-marking. In particular, regional and local distributor roads may require supplementary treatments to help conformance with new lower speeds along the road corridor as well as near intersections to higher-speed State Roads. Identify barriers to implementation such as existing utilities, physical and environmental barriers, visibility, and conflicts with proposed sign posting locations.	Council
P5	Develop inventory of existing signs and infrastructure	Develop a database of existing infrastructure which may require removal or amendment to the new speed zones. This will enable accurate detailed costing for planning and development of the business case.	Council
P6	Development of designs for identified key locations for new traffic calming	Detailed designs of important thresholds, traffic calming, road narrowing, and landscaping will ensure compliance of the 40km/h speed reduction. These designs would feed into detailed costing.	Council
P7	Detailed Cost estimates for implementation of lower speed zones	Detailed cost estimates enable development of an accurate business case and application for funding	Council



P8	Develop Business case	Identification of quantified scheme benefits and provides evidence-based justification for releasing funds from stakeholders.	Council
P9	Application for funding to implement changes	To augment Council budgets to fulfil the implementation by tapping into external funding sources.	Council / TfNSW
P10	Implementation of staged roll out of speed zones	Delivery of Speed Reduction Zoning, carrying out the Inner West's ITS vision to enhance amenity, promote active transport and improve community safety.	Council / TfNSW
P11	Monitoring and evaluation activities post-implementation to measure effectiveness and adherence to lower speed zoning	Gauge the effectiveness of the implementation and enable improved future implementation of other priority zones based on lessons learned. Survey community reaction and feedback to measure benefits and possible changes in levels of support.	Council / TfNSW
P12	Investigation of further speed reductions opportunities	Evaluate positive impacts and community sentiments of speed reductions and look for additional opportunities to implement additional speed reductions. These areas may include State Road sections which pass through residential zones, and further speed reductions to 30km/h as implemented by Manly Council in areas of significant pedestrian attraction and mixed traffic.	Council / TfNSW

10 Implementation and Costs

High level capital cost estimates were performed to inform the implementation of the 40km/h speed reduction staged rollout. As per TfNSW consultation, this solely includes the cost to enforce a 40km/h speed limit via minimal sign posting and line marking. Detailed traffic calming and threshold treatment should be further considered at a later stage.

Required sign posting infrastructure was referenced from the speed zoning guidelines and the existing implementation in the area wide 40km/h zone in the Balmain Peninsula and quantities were calculated on ArcGIS. Due to the lack of information of the speed sign inventory, replacement of existing sign posting infrastructure was not included. The full assumptions may be found in the Basis of Estimate in Appendix B.

For the estimation, four categories of sign posting were identified:

1. Inner West Boundary Signposting

40km/h signs are posted where non-state roads from outside the Inner West adjoin the Inner West boundary to indicate the 40kph LGA-wide local traffic area. The nominal speed limit is required on the other side of the post to indicate the non-Inner West speed limit.

2. Different Speed Junction Signposting

Where all 40km/h roads abut a state road with a different speed limit, a 'gateway' 40km/h sign is posted at the junction on the left side of the minor road. Similar to the Balmain Peninsula, additional signage reflecting the state road's speed limit is not posted.

3. Same Speed Junction Signposting



Figure 10.1: Sample boundary 40km/h signage

A 40km/h sign is posted on a local distributor road where it

abuts a regional road. Both roads would carry the speed limit of 40km/h. To prevent potential road user confusion with the speed limit when turning onto wider and higher capacity distributor roads.

4. Repeater Signs

Repeater signs are posted at indicatively 300m intervals onto regional and local distributor roads to remind road users of the 40km/h speed limit.

Additionally, road pavement marking of the 40km/h speed limit is to be implemented under the following circumstance:

1. Essential Boundary and Junction Road Pavement Marking

At the point of change in speed zone areas, the 40km/h speed limit would be indicated on the road surface. The NSW speed zoning guidelines indicates that this is applicable to all sealed roads that carry substantial traffic volumes. As a highlevel estimate, this pavement marking is applied to all regional and distributor roads which abut a state road, and all roads which cross the Inner West boundary.



Figure 10.2: Sample 40km/h pavement marking

2. Essential Repeater Road Pavement Marking



40km/h speed limit pavement markings are also implemented in conjunction with repeater signs along regional roads. This improves compliance with the new speed limit along these roads which would have higher traffic volumes and historically carry a higher risk in crash safety.

3. Optional Road Pavement Marking

Additional 40km/h speed limit pavement markings may also be implemented where all local roads abut a state road due to the point of change in speed zone area. This is not an explicit requirement under NSW speed zoning guidelines.

The indicative sign posting locations are shown in Figure 10.3. Furthermore, it was assumed that each end of any existing 40km/h zone would contain signposting or pavement marking to indicate the end of the 40km/h zone such as HPAAs or specific stretches of road. Replacement of such 'end 40' and '50' signs or '50' speed limit pavement markings have been indicatively factored into this high-level estimate.



Figure 10.3: Indicative 40km/h sign posting locations

