

North Tuncurry Development Project

Traffic Management and Accessibility



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Executive Summary

AECOM has prepared a Traffic Management and Accessibility Plan (TMAP) to support the State Significant Precinct (SSP) Rezoning Proposal and Development Control Plan proposed for the North Tuncurry Development Project (NTDP).

The NTDP involves the rezoning and subdivision of a 615ha site on the mid north coast of NSW which proposes approximately 2,123 dwellings, open space, drainage facilities, a remodelled Tuncurry Golf Course and a B2 local centre incorporating a surf club, beach access, a neighbourhood supermarket and speciality retail, as well as tourist and community facilities. Industrial lands for freight and logistics are further proposed to the north of the NTDP and B5 Business Development land uses of approximately 6.7ha are proposed to the south of the NTDP.

The TMAP evaluates traffic and transport related issues associated with the NTDP, including:

- Traffic generated by the development and consideration of the traffic impacts on the existing road network
- Intersection and mid-block analysis to identify any road network upgrades to ameliorate the impacts of the proposed development
- Access strategy both external and internal ensuring connectivity of the study area to the surrounding road network
- Integration of walking, cycling, public transport and road network linkages to balance the needs of all users.

Two methods of evaluation have been used to understand the potential impacts of the NTDP on the local road network. It is assumed that the NTDP is developed at a rate of 50 lots per year from 2023. A network traffic model has been developed for both assessments and key intersections have been assessed in SIDRA.

- Method 1 is a traffic assessment that assumes the development of external road network upgrades identified for development (up to the year 2050) by Great Lakes Council (the previous council authority in Tuncurry, and now part of MidCoast Council) Schedule of Works included within *Forster District Section 94 Development Contributions Plan 2014* (S94 Plan). This method also assumes full development of the NTDP in 2050 (for modelling purposes). The purpose of this assessment is to determine whether the proposed upgrades will cater for full development of the NTDP.
- Method 2 is an alternate traffic assessment that seeks to estimate the year in which these upgrades are likely to be required (both with and without development of the NTDP).

The Extension of Beach Street from North Street to Northern Parkway is not scheduled until the year 2027 (as per the S94 Plan), however for the purposes of both assessments this connection has been assumed to be developed by 2023, as the NTDP would bring this forward to facilitate development.

Method 1 assumes the following road infrastructure upgrades have been implemented by 2050 (in addition to the Beach Street connection), as identified in the S94 Plan for the Forster District:

- Construction of two additional lanes along The Lakes Way between Grey Gum Road and approximately 250m north of Chapmans Road
- An upgrade to the intersection of The Lakes Way | Grey Gum Road to a roundabout
- An upgrade to the intersection of The Lakes Way | Chapmans Road to a roundabout
- Duplication of the Wallis Lake Bridge.

The summary results emanating from Method 1 are based on the modelling of key intersections and are presented in **Table 1**.

Table 1 Method 1 summary results for 2050 with Development

| Approach | Peak hour | Level of Service (LoS) | Requires additional upgrades |
|---|-----------|------------------------|------------------------------|
| Tuncurry Road New Access Road | AM | B | N/A |
| | PM | A | |
| The Lakes Way Chapmans Road* | AM | A | No |
| | PM | A | |
| The Lakes Way Northern Parkway Grandis Drive* | AM | C | No |
| | PM | B | |
| The Lakes Way Grey Gum Road* | AM | A | No |
| | PM | B | |

* Intersection assumed to be upgraded as part of road network and infrastructure upgrade identified in the S94 Plan.

The results suggest that the intersection upgrades identified in the S94 Plan can accommodate the additional traffic generated by the full development with the exception of providing the proposed roundabout for the new access road that facilitates access to the northern part of the NTDP. Note that this upgrade would be subject to staging and is unlikely to be required until development of the northern area of the NTDP is commenced.

Method 2 assesses the required timing of infrastructure upgrades based on background traffic growth and the NTDP. Traffic modelling has been undertaken for the following scenarios:

- Traffic forecasts without the NTDP
- Traffic forecasts with the NTDP

The results emanating from Method 2 show the estimated timing of road network infrastructure upgrades and are presented in Table 2.

Table 2 Method 2 summary results with development of NTDP

| Schedule of works | S94 Plan estimated start date | Estimated requirement (Method 2) |
|---|-------------------------------|----------------------------------|
| Construction of two additional lanes along The Lakes Way from Grey Gum Road to approximately 250m north of Chapmans Road. | 2021 | 2033-2038 |
| Upgrade to the intersection of The Lakes Way Grey Gum Road to a roundabout | 2017 | 2038-2040 |
| Upgrade to the intersection of The Lakes Way Chapmans Road to a roundabout | 2017 | 2063-2065 |
| Extension of Beach Street from North Street to Northern Parkway | 2027 | 2017/2018 |
| Duplication of the Wallis Lake Bridge | 2025 | 2038 |

Based on the assumptions of this modelling assessment the infrastructure upgrades proposed in the S94 Plan are currently scheduled to occur before capacity is estimated to be reached, suggesting the timing of the infrastructure upgrades in the S94 Plan may be delayed under both scenarios.

Several sustainable travel strategy measures have been proposed to influence travel behaviours which encourage the uptake of sustainable forms of transport such as the use of public transport and walking and cycling facilities wherever possible for all journey purposes.

1.0 Objectives of assessment

The NTDP involves the rezoning and subdivision of a 615ha site on the mid north coast of NSW which proposes approximately 2,123 dwellings, open space, drainage facilities, a remodelled Tuncurry Golf Course and a B2 local centre incorporating a surf club, beach access, a neighbourhood supermarket and speciality retail, as well as tourist and community facilities. Industrial lands for freight and logistics are further proposed to the north of the NTDP.

AECOM had been commissioned by UrbanGrowth NSW in 2015 to prepare a Transport Management and Accessibility Plan (TMAP) supporting the State Significant Precinct (SSP) Rezoning proposal and Development Control Plan proposed for the North Tuncurry Development Project. AECOM was subsequently engaged by Landcom to update the TMAP in 2018 to reflect current baseline traffic conditions and policy context.

1.1 TMAP objectives

The objectives of this TMAP are to address the following items:

- A comprehensive assessment of the transport impact of the NTDP taking all traffic constraints of the site and surrounding locality into consideration.
- Anticipated traffic generation from the NTDP and the distribution of traffic along the surrounding road network system, its impact on existing intersections and surrounding road network including Wallis Lake Bridge with regard to road capacity, level of service, traffic conditions, expected impacts and upgrade requirements.
- Intersection modelling using SIDRA for key intersections likely to be impacted by the NTDP during the AM and PM peak under 2050 traffic conditions with assumed road network upgrades identified in the *Forster District Section 94 Development Contributions Plan, adopted 28 October 2014* (S94 Plan). The S94 Plan is included in **Appendix A**.
- An assessment of the requirements for the timing of road network upgrades as a result of the NTDP.
- Proposed vehicular access from the wider road network and possible future road connections, road upgrades / widening, additional road requirements and any intersection upgrade requirements.
- Proposed pedestrian and cycle access within and to the site that connects to all relevant transport services and key off site locations and measures to promote the use of these modes.
- Identification of appropriate measures to manage the demand for travel to and from the development, in particular to reduce the demand for travel by private car and increase the proportion of travel by public transport, walking and cycling.
- Transport infrastructure required to ameliorate the impacts of the NTDP.
- Changes to bus routes and services in the area to increase the use of public transport.

The approach and requirements of the TMAP have previously been agreed by Roads and Maritime Services (Roads and Maritime) and Great Lakes Council. Great Lakes Council was the previous council authority in Tuncurry, and the Great Lakes region is now part of MidCoast Council.

1.2 Study area

The TMAP considers the impact of the development on the surrounding road network as shown in **Figure 1**. The intersections to be assessed as part of the TMAP, which has previously been agreed with Great Lakes Council (now part of MidCoast Council) and Roads and Maritime include:

- The Lakes Way | Chapmans Road
- The Lakes Way | Northern Parkway | Grandis Drive
- The Lakes Way | Grey Gum Road.

The study also considers the impacts of the development on Wallis Lake Bridge and Beach Street as a result of a proposed extension of Beach Street to connect to the NTDP.

Figure 1 North Tuncurry study area



Source: AECOM, 2014

2.0 Site and project descriptions

This chapter provides background information on the site and the NTDP.

2.1 Background

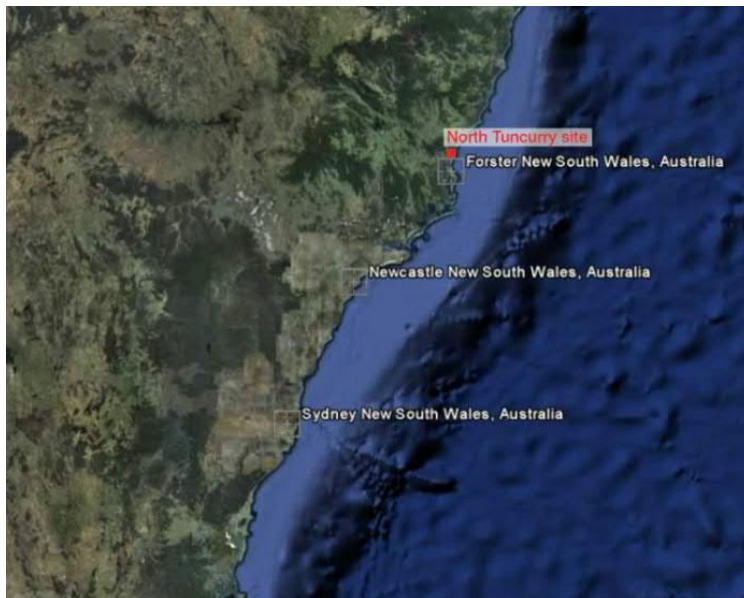
The NTDP site is approximately 615ha of coastal heathland located between the Lakes Way and Nine Mile Beach in the Great Lakes Region, under MidCoast Council Local Government Area (LGA). The site is Crown land under the control of NSW Department of Primary Industry – Crown Lands and Water.

A Project Delivery Agreement (PDA) was signed by NSW Department of Primary Industry – Crown Lands and Water and Landcom, which will facilitate development of the site for a range of land uses including residential, open space, retail and employment. Commencement of the project (including the commencement of planning) was subject to a Native Title Application and any Land Claims under the NSW Aboriginal Land Rights Act 1983. A Land Claim affecting the site has been withdrawn and a native title outcome has been agreed.

2.2 The site

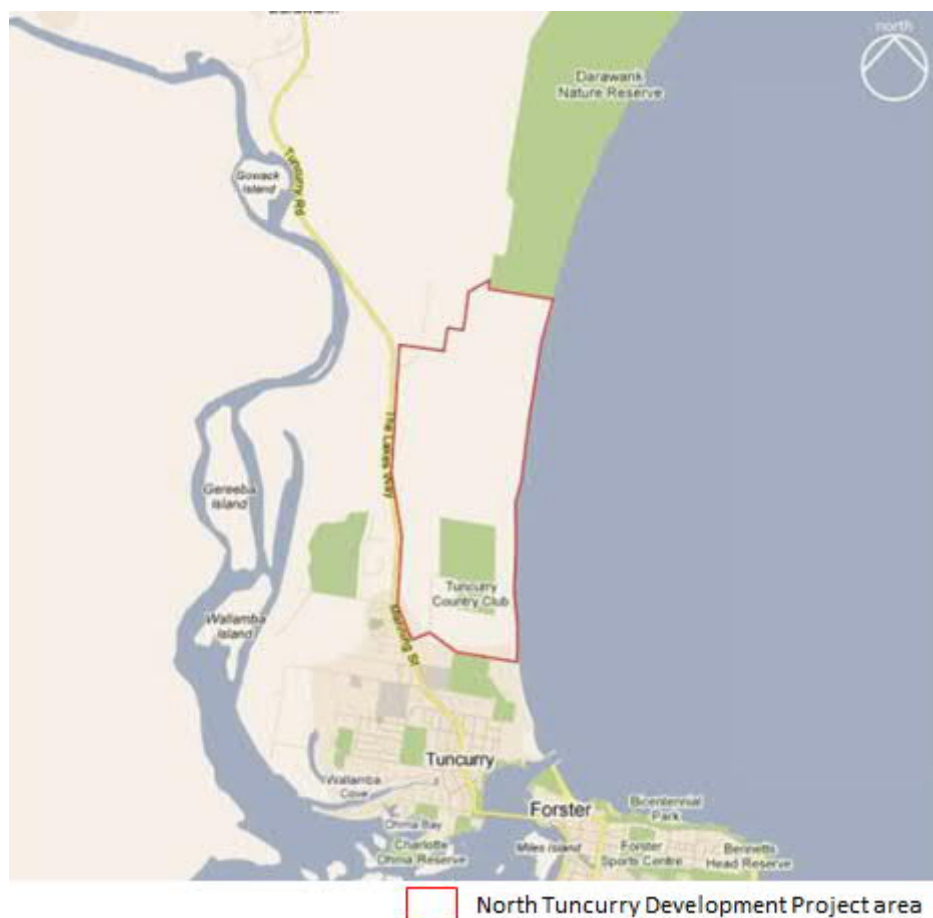
Tuncurry is located in the Great Lakes region, within the MidCoast Council LGA on the entrance to Wallis Lake, approximately 320 kilometres north of Sydney and 160 kilometres north of Newcastle. The site is located on the eastern side of The Lakes Way, directly to the north of, and adjoining, Tuncurry (township). It is an irregular shaped waterfront parcel of land situated on a peninsula that has been created by the Wallamba River to the west. The site enjoys an ocean beach frontage of more than 4.5 kilometres and has a frontage to The Lakes Way and Northern Parkway. **Figure 2** indicates the location of North Tuncurry within the regional context, and **Figure 3** indicates the location of the subject site and its surrounding environs.

Figure 2 North Tuncurry regional context



Source: Allen Jack + Cottier, 2013

Figure 3 The North Tuncurry development project site



Source: JBA Planning, 2013

2.3 Site ownership

The site comprises three allotments. Table 3 summarises the site's legal description and ownership details.

Table 3 Lot details

| Lot | DP | Landowner |
|-----|---------|---|
| 294 | 43110 | Crown (lease to Forster Tuncurry Golf Club) |
| 295 | 43110 | Crown (lease to Forster Tuncurry Golf Club) |
| 331 | 1104340 | Crown Land |

2.4 Site description

The site is low lying (RL 3 - 6 metres AHD) and undulating, due to its coastal location and presence of a dunal system. Existing development includes an 18-hole golf course on the southern portion of the Site, and a 66kV power line running along the western edge of the site (parallel to The Lakes Way). Current road and pedestrian access are via The Lakes Way at the Northern Parkway; however, a number of access roads and tracks traverse the site and provide informal access to and from the beach and golf course located on the site.

The condition of current vegetation on the site varies from exotic pasture with negligible ecological value to areas of good condition vegetation with high recovery potential. The cleared portions of the

site generally coincide with the golf course and contain non-native species. Otherwise, the site is predominantly characterised by re-growth coastal and heath vegetation.

2.5 Site context

The site is located at the northern end of Tuncurry. Existing development and land uses surrounding the site include the Darawank Nature Reserve comprising undeveloped heath and coastal scrub to the north, Nine Mile Beach and the Pacific Ocean to the east, The Lakes Way and low scale residential to the west, and education facilities, low scale residential, playing fields, sports clubs and a cemetery to the south. The site is located approximately 2.0km north of the Tuncurry town centre, 3.7km north of Forster town centre, 160km north of Newcastle CBD and 30km south-east of Taree. The distance to the Pacific Highway is approximately 11km via The Lakes Way and Failford Road.

The site has been earmarked as the priority new land release area to address the regional housing needs of the Mid North Coast Region. Accordingly, the site presents a significant opportunity to provide residential dwellings and retail and employment activities within close proximity to existing infrastructure and established services. The introduction of retail and employment uses can be supported by the proposed residential uses envisaged for the site, which will be a key way of ensuring housing targets can be met by Great Lakes Council (now part of MidCoast Council) in the mid to long term. Given the undersupply of readily available residential land, large sites or land suitable for conversion in the area, the NTDP provides an excellent opportunity to meet a variety of housing typologies in demand.

2.6 The Project

The NTDP is proposing to deliver a mixed-use development that meet's the State Government's objectives to increase housing supply, provide community benefits and create jobs.

The Project specifically incorporates the following components

- The type and location of land uses within the site
- dwelling yield / density (approximately 2,123 dwellings)
- proposed location of retail / commercial / community floor space within the site (approximately 2,292m² of retail uses)
- 6.6ha of freight and logistics on the industrial lands (approximately 12,000m² of Gross Floor Area)
- 6.7ha of business development lands
- identification and location of open space and drainage, environmental conservation lands, and local active and passive recreation facilities
- transport network layout
- utilities (including power, telecommunications and gas), infrastructure strategy, potable water strategy, sewer concept plan and water cycle management plan
- location and dimensions of Bushfire Asset Protection Zones
- appropriate conservation of European and Aboriginal heritage located on the site.

The range of densities will enable a variety of dwelling types to allow for social / demographic diversity and provide a proportion of dwellings at different price points. The Draft Master Plan also contemplates locating retail and other employment generating facilities such as a new golf clubhouse, community centre and surf club to the east of the site, adjacent to the north-eastern corner of the golf course. This ensures that the NTDP will have its own identity with the proposed B2 Local Centre approximately 4.6km by road (via The Lakes Way) from the centre of Tuncurry. Additional employment uses in the northern portion of the site are also proposed, subject to further investigations confirming site suitability.

The NTDP provides the opportunity for the new B2 Local Centre retail facilities to service the convenience needs of the residential population. There is a clear opportunity to provide a high quality and aesthetically pleasing development which connects to and interfaces with a remodelled Tuncurry

Golf Course, a proposed new water management basin (located at the northern boundary of the golf course), the foreshore to the east as well as integrating with a potential coastal leisure route for active travel. The NTDP provides an excellent place-making opportunity on a key, well-located site where demand for additional dwelling stock and mix of residential types is potentially high.

It is proposed to develop the site progressively over several stages. The proposed Master Plan addresses the staging and delivery of the overall development having regard to the progressive delivery of necessary infrastructure, services and facilities; and market demand.

3.0 Strategic context

3.1 State and regional strategic planning policies

3.1.1 State Infrastructure Strategy

| Document | State Infrastructure Strategy 2018 – 2038: Building Momentum |
|-----------------------------|--|
| Organisation | NSW Government – Infrastructure NSW |
| Date | March 2018 |
| Purpose | The State Infrastructure Strategy 2018 – 2038 builds upon the previous State Infrastructure Strategy established by Infrastructure NSW in 2012. The Strategy aims to assess the current state of infrastructure and identify strategic priorities for the next 20 years. The Strategy provides independent advice to the Government on recommended specific infrastructure investments and reforms. It also makes recommendations to the NSW Government on how to fund these recommendations. |
| Content | The strategy identifies infrastructure challenges and presents solutions to address these needs. The strategy aims to meet the needs of a growing population and economy. Strategic directions are given for Greater Sydney, Regional NSW and NSW as a whole. |
| Relevance to North Tuncurry | Several strategic needs and planned projects are identified in the strategy which pertain to the Mid North or the North Coast and may be relevant for North Tuncurry. These include: <ul style="list-style-type: none"> • Safety: despite being home to just over 20 per cent of the state, regional NSW areas represent two thirds of all road fatalities in NSW. The strategy outlines potential infrastructure improvements and policies which will improve safety. • Healthcare and access: 38.5 per cent of the Mid-Coast region is over the age of 60, compared to 27.2 per cent for regional NSW. The population of those over 60 is growing at a faster rate than those under 60. As such, travel needs may change over time, and transport infrastructure and access may need to adapt. |

3.1.2 Future Transport 2056

| Document | Future Transport 2056 – Regional NSW Services and Infrastructure Plan |
|-----------------------------|--|
| Organisation | NSW Government |
| Date | March 2018 |
| Purpose | Future Transport 2056 is an update of the NSW Long Term Transport Master Plan released in December 2012. The plan has been developed in concert with the Greater Sydney Commission's Sydney Region Plan, Infrastructure NSW's State Infrastructure Strategy, and the Department of Planning and Environment's Regional Plans. The plan aims to provide an integrated vision for the state to support growth in the population and the economy. Future Transport 2056 provides a framework to guide investment, policies and network planning to address the current and future transport needs of NSW. |
| Content | Future Transport 2056 outlines a vision and strategic direction for the transport infrastructure across New South Wales. The strategy includes both general direction for large-scale infrastructure projects, as well as area specific improvements. A dedicated Regional NSW Services and Infrastructure Plan is provided as part of the strategy. |
| Relevance to North Tuncurry | Regional transport actions identified which are relevant for North Tuncurry include: <ul style="list-style-type: none"> • Bypasses of regional centres on New England Highway • Faster rail connections between Newcastle and Sydney: • Lower Hunter Freight Corridor Other general regional transport outcomes in the strategy include delivering effective |

| Document | Future Transport 2056 – Regional NSW Services and Infrastructure Plan |
|----------|---|
| | and efficient networks, creating regional investment and jobs and connecting regional cities and centres to ensure regional communities play their role in the larger NSW, Australian and global context. |

3.1.3 Hunter Regional Plan 2036

| Document | Hunter Regional Plan 2036 |
|-----------------------------|---|
| Organisation | NSW Government – Department of Planning and Environment |
| Date | October 2016 |
| Purpose | The Hunter Regional Plan 2036 will guide the NSW Government's land use planning priorities and decisions over the next 20 years. It provides an overarching framework which will guide detailed land use plans, development proposals and infrastructure funding. The plan aims to deliver a vibrant metropolitan city through creating a leading regional economy with a biodiversity rich natural environment and thriving communities and providing greater housing choice and jobs. |
| Content | The Hunter Regional Plan 2036 outlines 27 directions which provide a framework for future projects aimed at achieving the goals set out by the plan. It addresses the unique challenges in the area and provides several actions and priorities aimed at developing the local economies. |
| Relevance to North Tuncurry | The following actions have been identified for the Forster-Tuncurry area: <ul style="list-style-type: none"> • Support the visitor economy by leveraging the natural beauty of the area and enhancing nature-based tourism infrastructure • Provide capacity for long-term employment through education and training, and by capitalising on intra and inter-regional connections. • Provide housing, services and facilities, as well as accessible public spaces for an ageing population. |

3.1.4 Hunter Regional Transport Plan

| Document | Hunter Regional Transport Plan |
|-----------------------------|---|
| Organisation | NSW Government |
| Date | March 2014 |
| Purpose | The Hunter Regional Transport Plan supports the Long-Term Transport Master Plan and provides specific local transport needs and priorities for the Hunter region. The plan aims to improve the customer experience for travel to and from other regions, within the region, within towns and centres, and for visitors. |
| Content | The Hunter Regional Transport Plan outlines specific actions to address the unique challenges of the area to ensure the transport system in the Hunter region meets the needs of the community. The plan provides several actions and projects that will deliver better transport services, ensure effective regulation, and improve transport infrastructure. |
| Relevance to North Tuncurry | The following actions have been identified for the Forster-Tuncurry area: <ul style="list-style-type: none"> • Improve opportunities for walking and cycling – opportunities for Great Lakes Council (now part of MidCoast Council) to seek support for new links through the NSW Government's funding mechanism • Improve public transport services – examine opportunities to better meet the needs of customers • Manage tourism-related travel – opportunity to develop initiatives during the holiday periods |

3.1.5 Mid North Coast Regional Strategy

| Document | Mid North Coast Regional Strategy |
|-----------------------------|---|
| Organisation | NSW Department of Planning and Environment |
| Date | March 2009 |
| Purpose | The Mid North Coast Regional Strategy outlines a planning approach to sustainably balance the region's expected population growth and the housing and employment development which will be required to support this increasing population. |
| Content | The strategy identifies the region's challenges and sets out a vision for the future. It presents a high-level assessment of the existing situation, identifies needs, develops a plan, and proposes actions to address housing, economic development and employment, protection of the natural environment and resources, and regional transport. |
| Relevance to North Tuncurry | <p>The Mid North Coast will need to cater for a minimum housing demand of 59,600 new dwellings by 2031 to accommodate a forecast population increase of 94,000 as well as any anticipated growth beyond this figure arising from increased development pressures in the Region. The following strategic outcomes targeted for the mid north coast should be considered in development planning for North Tuncurry:</p> <ul style="list-style-type: none"> • Ensure that new housing meets the needs of smaller households and an ageing population by encouraging a shift in dwelling mix and type so that 60 per cent of new housing is the traditional detached style and 40 per cent is of multiunit style. • Support the creation of additional service jobs by supplying adequate and well located commercial and industrial floor space within centres. • Build on the employment sectors that are currently successful and maintain the qualities that make the Region desirable to visitors. |

3.1.6 MidCoast 2030: Shared Vision, Shared Responsibility – Community Strategic Plan 2018-2030

| Document | MidCoast 2030: Shared Vision, Shared Responsibility |
|-----------------------------|--|
| Organisation | MidCoast Council |
| Date | 2018 |
| Purpose | MidCoast 2030 expresses the community's ideas, priorities and values and is based on the aspirations, knowledge and feedback of the community aimed to guide decision making and planning. The vision was developed over an extensive community consultation process that spanned 18 months. In addition to community consultation, other key government plans and frameworks were considered in the plan, aiming to set the tone and direction for council planning in the future. |
| Content | <p>The document details five key value areas which guide the structure of the plan. Within these value areas are key objectives and strategies as follows:</p> <ul style="list-style-type: none"> • Unique, diverse and culturally rich communities: providing for all the members of the community • A connected community: using technology and transport to provide safe and easy access to the community • The environment: protecting the natural environment and managing resources wisely • Thriving and growing economy: developing and promoting the region • Strong leadership and shared vision: working in partnership with the community and government to deliver results |
| Relevance to North Tuncurry | The five key value areas and key objectives should guide and be considered for any development in North Tuncurry. |

3.1.7 NSW Bike plan

| Document | NSW Bike plan |
|-----------------------------|---|
| Organisation | NSW Government |
| Date | May 2010 |
| Purpose | <p>The NSW Bike Plan sets out a plan to encourage cycling to increase the share of short trips by bike for all travel purposes and double the use of cycling to get to work. The Bike Plan outlines how the NSW Government will work with local council, communities and businesses to improve cycling and deliver:</p> <ul style="list-style-type: none"> • Improved signage for cyclists; • More bike parking and facilities for cyclists at local centres, workplaces and transport interchanges; and • Resources to shape sustainable, active communities. |
| Content | <p>The NSW Government has identified cycling as an important mode of transport for regional and country NSW. The following strategies have been identified:</p> <ul style="list-style-type: none"> • Promote cycle tourism in country and regional NSW destinations • Encourage recreational bike-riding • Complete sections of the NSW Coastline Cycleway |
| Relevance to North Tuncurry | Complete the missing link of the Coastline cycleway in the Forster – Tuncurry area. |

3.2 Local planning context

3.2.1 Great Lakes Local Environmental Plan (LEP)

| Document | Great Lakes Local Environmental Plan |
|-----------------------------|---|
| Organisation | Great Lakes Council, now within Midcoast Council |
| Date | 2014 |
| Purpose | <p>The Great Lakes LEP provides a land use framework to guide the future use of the land within the area of Great Lakes and provide a basis for the preparation of detailed development control plans. It also serves to protect environmentally sensitive areas and the heritage of the area, improve opportunities for ecologically sustainable development, provide for the cultural needs, and the equitable provision, of services and facilities for the community, to promote public transport patronage and encourage walking and cycling and to facilitate the orderly and sustainable economic development of land.</p> <p>The MidCoast Council aims to have a new LEP for the recently formed council by 2021.</p> |
| Content | The LEP provides guidance on zoning controls, special provisions governing different development aspects and governance for the approval of urban release areas. |
| Relevance to North Tuncurry | Development in North Tuncurry is subject to the Great Lakes LEP. As such the LEP will provide guidance regarding land zoning, subdivision and other special provisions, and requirements regarding urban release areas. |

3.2.2 Forster District Section 94 Development Contributions Plan (S94 Plan)

| Document | Forster District Section 94 Development Contributions Plan |
|--------------|--|
| Organisation | Great Lakes Council, now within MidCoast Council |
| Date | Adopted 28 October 2014 |
| Purpose | The Forster S94 Plan enables contributions to be levied as a condition of consent for development that increases the demand for infrastructure in the Forster District. It applies to development in the area for which the Forster-Tuncurry urban area is the |

| Document | Forster District Section 94 Development Contributions Plan |
|-----------------------------|--|
| | main service centre. |
| Content | The S94 Plan includes a Major Roads Program which addresses the timing and funding for improvements to Forster-Tuncurry Major Roads. The Program includes a Schedule of Works on the Lakes Way, and details Major Roads Contribution Rates and the scheduled development year for each upgrade are based on required funding for the major roads program distributed among the estimated number of trips for which Forster-Tuncurry urban area is the main service centre. Rates are provided for Inner, Middle, and Outer Zones, which are classified as being up to 15km, between 15 and 30km, and over 30km from the Bridge, respectively. Note the schedule and rates have been updated as part of the 2014 (draft) amendment. |
| Relevance to North Tuncurry | The schedule of works provides road network development upgrade assumptions applicable for the modelling assessment used in this TMAP. In addition, North Tuncurry is considered as being in the 'Inner Zone' for trip generation. The contribution rate per additional one-way trip for the Inner Zone is \$634.53 in the S94 Plan amended in 2014. The S94 Plan states that this rate will be indexed on each 1 July in accordance with the change in the All Groups Consumer Price Index, weighted average of 8 capital cities for the year, to the previous December quarter. |

3.2.3 Car Parking Policy

| Document | Car Parking Policy |
|-----------------------------|---|
| Organisation | Great Lakes Council, now within MidCoast Council |
| Date | March 2011 (Date of last revision) |
| Purpose | <p>The Car Parking Policy aims to facilitate the following within Great Lakes Council:</p> <ul style="list-style-type: none"> To promote alternative and active transport for both commuter and recreational transport. To provide an adequate level of on-site parking based upon anticipated occupancy rates and proximity to alternate and active transport, such as walking and cycling. <p>To ensure that parking requirements are met without imposing an undue burden on developers or an additional liability on the present and future ratepayers.</p> |
| Content | The policy requirements which must be carried out by developers to facilitate alternate and active transport. It also details bicycle and car parking requirements by development type. |
| Relevance to North Tuncurry | Development is subject to cycle facility requirements for residential flat buildings as well as, if applicable, requirements for any office, retail, commercial or restaurant developments. |

3.2.4 Great Lakes Bike Plan

| Document | Great Lakes Bike Plan |
|--------------------|---|
| Organisation | Great Lakes Council, now within MidCoast Council |
| Date | 2010 |
| Purpose | The Great Lake Bike Plan outlines the direction Council will take to encourage additional cycling trips in the Great Lakes region. |
| Content | Summarises the review of the 1989 Great Lakes Council Bike Plan and the issues identified and strategy recommended as a result of the review. Presents tasks and actions proposed to carry out the implementation of recommendations. |
| Relevance to North | Actions include the proposed extension of existing bike links in Forster and Tuncurry. It is planned that the existing cycle route running along the western border of the site |

| Document | Great Lakes Bike Plan |
|----------|--|
| Tuncurry | on Tuncurry Road be extended to connect to other existing cycle links in Tuncurry, and to connect to cycle links in Forster. |

3.2.5 MidCoast Council Delivery Program (2018-2021) and Operational Plan (2018-2019)

| Document | MidCoast Council Delivery Program (2018-2021) and Operational Plan (2018-2019) |
|-----------------------------|--|
| Organisation | MidCoast Council |
| Date | 2018 |
| Purpose | The plan aims to deliver results for the community in alignment with the Community Strategic Plan MidCoast 2030. The plan aims to consider the views of the community and to make well informed decisions which will help achieve the community's vision and values identified in the MidCosat 2030 plan. |
| Content | The Delivery Program outlines the focus areas for the Council, while the Operational Plan outlines the one-year actions for 2018-19. They are integrated in one document so the relationship between the Delivery Program and Operational Plan is clear. The overarching plan that forms the framework for the Delivery Program and Operational Plan is the MidCoast Community Strategic Plan MidCoast 2030 - Shared Vision, Shared Responsibility. |
| Relevance to North Tuncurry | <p>Actions affecting the Forster-Tuncurry region include:</p> <ul style="list-style-type: none"> • Develop a strategy for the development of Chapmans Road, Tuncurry • Review existing bike plans to develop a single MidCoast Council Bike Plan • Upgrade amenities at Little Street, Forster • Ensure all major upgrades to existing amenities and all new amenities are accessible for people of all abilities • Develop a Pedestrian Access and Mobility Plan |

4.0 Site analysis

4.1 Existing travel patterns

4.1.1 Background

Travel characteristics for NSW residents travelling to work are gathered from the journey-to-work (JTW) data extracted from the Australian Bureau of Statistics (ABS) 2016 census. The journey-to-work dataset provides details of the origin and destination zones of trips, as well as characteristics of the journey such as mode of travel.

In addition, Great Lakes Council, now part of MidCoast Council undertook a Household Travel Survey (HTS) on Thursday 16 August 2012 to assess travel patterns of residents specifically in the Forster–Tuncurry area.

Both sets of data will be used to determine travel patterns in the study area and applied to the proposed development.

4.1.2 Mode split

The North Tuncurry site is largely vacant, therefore surrounding suburbs were analysed to establish mode split, travel patterns and trip destinations in the area. The mode splits for Forster-Tuncurry area are illustrated in **Table 4**.

Table 4 Mode split data in Forster - Tuncurry

| Mode of travel | Car driver | Car passenger | Walk | Bicycle | Motorbike | Bus | Taxi |
|--------------------------------|------------|---------------|-------|---------|-----------|------|------|
| HTS (Work Trips) | 84.1% | 5.6% | 5.6% | 4.0% | 0.8% | 0.0% | 0.0% |
| HTS (All trips) | 62.5% | 17.9% | 13.2% | 2.2% | 0.2% | 3.7% | 0.3% |
| 2016 Census (Travel to Work) * | 64.4% | 4.6% | 6.8% | n/a | n/a | 0.6% | n/a |

*Based on the 2016 Census Quick Stats, method of travel to work
Source: Great Lakes Council, Household Travel Survey Data 2011

Based on the 2012 HTS data, there is a high reliance (approximately 84%) on private vehicles for work trips, while active travel accounts for approximately 10% of work trips. Public transport use is very low in Forster-Tuncurry, particularly for work trips. Non-car modes increase when all trip purposes are considered.

The 2016 Census data also shows a similar high reliance for work trips. Approximately 69 per cent of trips to work use private vehicles. The mode share observed for public transport and active transport are very low (0.6 per cent and 6.8 per cent respectively).

4.1.3 Origin and destination survey

Great Lakes Council undertook an origin and destination (OD) travel survey in 2011 to understand travel patterns in the Forster-Tuncurry area. The results of the OD surveys during the AM and PM Peak hour are presented in Table 5 and **Table 6**. Note that numbers shaded in grey represent eastbound movements on Wallis Lake Bridge originating in Tuncurry, while numbers shaded in blue represent trips over Wallis Lake Bridge with a Tuncurry destination.

Table 5 AM peak OD survey

| Origin/ Destination | North of Tuncurry | Tuncurry | Forster | South of Forster |
|------------------------|----------------------|----------|---------|---------------------|
| North of Tuncurry | | 214 | 432 | 19 |
| Tuncurry | 113 | | 504 | 37 |
| Forster | 272 | 583 | | |
| South of Forster | 19 | 89 | 180 | |

Source: Great Lakes Council, Household Travel Survey Data 2011

Table 6 PM peak OD survey

| Origin/ Destination | North of Tuncurry | Tuncurry | Forster | South of Forster |
|------------------------|----------------------|----------|---------|---------------------|
| North of Tuncurry | | 194 | 365 | 27 |
| Tuncurry | 181 | | 649 | 80 |
| Forster | 370 | 558 | | 129 |
| South of Forster | 23 | 47 | 112 | |

Source: Great Lakes Council, Household Travel Survey Data 2011

In 2016 ABS Census, Tuncurry had a population of 6,186. Using the population of Tuncurry to interpret the peak hour OD surveys, the following patterns were identified:

- Approximately 9% of the total population from Tuncurry crossed the Wallis Lake Bridge eastbound during the AM Peak
- Approximately 10% of the total population from Tuncurry crossed the Wallis Lake Bridge westbound during the PM Peak
- In the AM Peak hour, westbound traffic is the peak direction of travel between Forster and Tuncurry across the Wallis Lake Bridge
- In the PM Peak hour, eastbound traffic is the peak direction of travel between Forster and Tuncurry across the Wallis Lake Bridge.

4.1.4 Vehicle travel

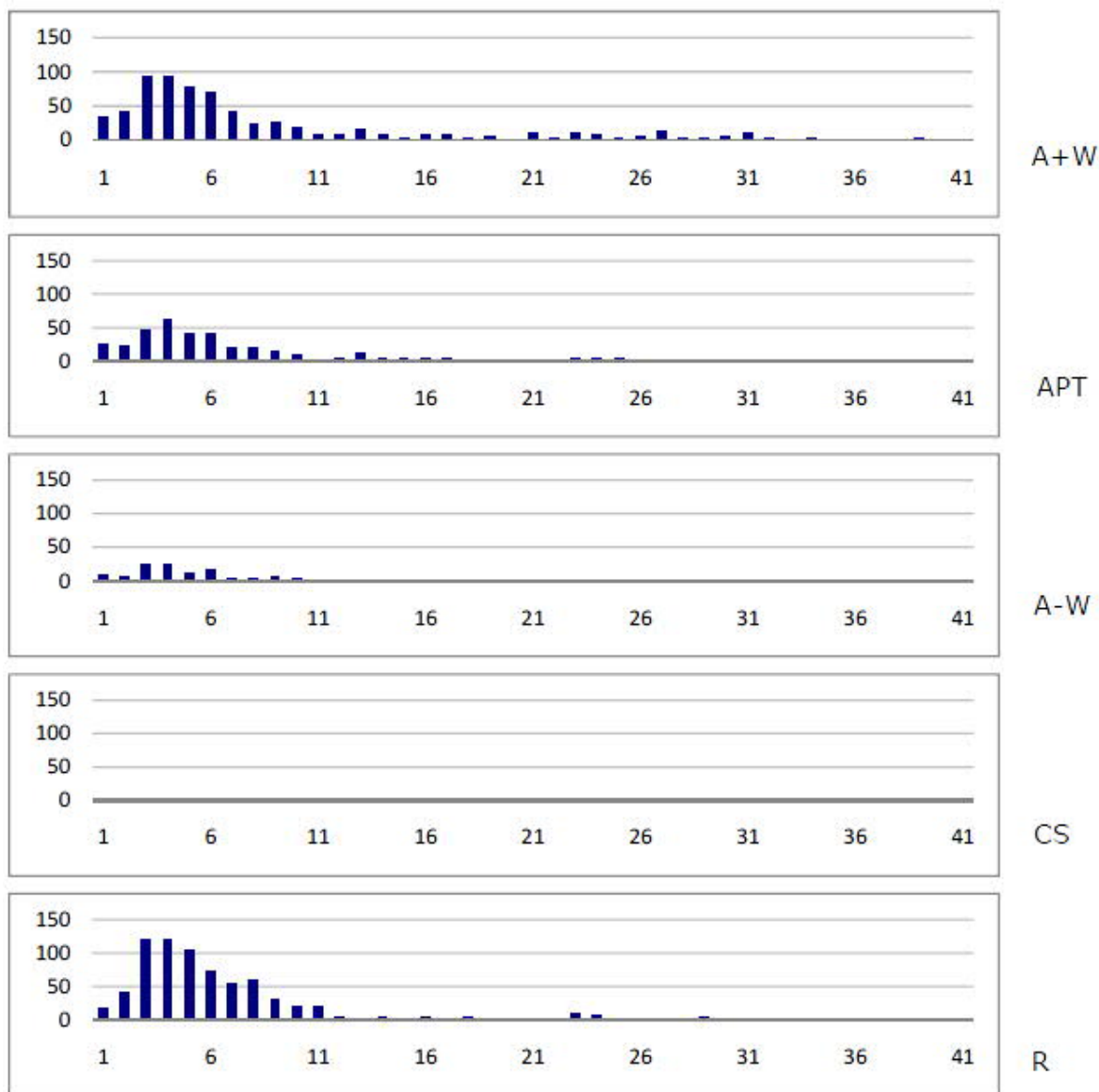
The morning peak hour in Forster-Tuncurry occurs between 8:00-9:00am, while the afternoon peak hour occurs between 3:00-4:00pm. These times are consistent with school travel peaks rather than typical commuter travel peaks (usually 8:00-9:00am and 5:00-6:00pm). This indicates that travel for education purposes plays a particularly strong role in the local area.

The Great Lakes College / TAFE education campus and the golf course are the only land uses accessible from the Northern Parkway. As minimal vehicle trips were observed accessing the golf course during weekday peak hours it can be assumed that data collected at the signalised intersection linking the Northern Parkway to The Lakes Way provides a reasonable estimate of vehicle trip generation for the education campus.

Traffic survey results indicate that the Northern Parkway generates approximately 414 vehicle movements (approximately 268 inbound) during the AM peak hour and 215 vehicle movements (approximately 159 outbound vehicle trips) during the PM peak hour. An estimated 122 vehicles park on site each day, while the remaining peak hour trips can be accounted for by buses and pick up / drop off.

The Household Travel Survey estimated the kilometres travelled for car driver trips based on an uncongested traffic network, with results grouped into person classifications as shown in **Figure 4**. Analysis of the results shows that the majority of car driver trips were less than 5 minutes.

Figure 4 HTS trip length



Source: Great Lakes Council, 2012

Horizontal axis represents trip length in minutes
 Vertical axis represents the number of trips

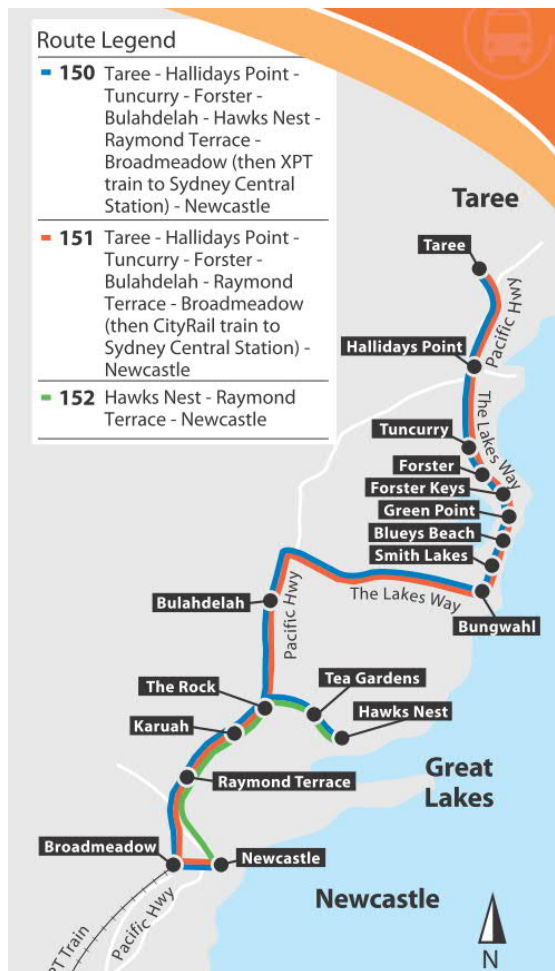
A+W – Adults who work full time;
 APT – Adults working part time or casual;
 A-W – Adults who don't work;
 CS – Child who attends secondary school;
 R – Retired

4.2 Existing public transport provision

4.2.1 Coach services linking to Taree railway station

The nearest train station to the North Tuncurry site is Taree Railway Station, which is approximately 30 kilometres north of the site. Busways operates coach services between Taree Railway Station and Newcastle via Broadmeadow Railway Station and Tuncurry. At present, the coach stop in Tuncurry is located at Beach Street, between Manning Street and Parkes Street. The existing coach network is shown in **Figure 5** and the frequencies of the coach services are shown in **Table 7**.

Figure 5 Existing coach network



Source: Busways, 2018

Table 7 Frequency of coach services in Tuncurry

| Route description | Number of services | |
|--------------------|--------------------|---------|
| | Weekday | Weekend |
| Taree to Newcastle | 3 | 2 |
| Newcastle to Taree | 3 | 2 |

Source: Busways, 2018

4.2.2 Regional and local bus services

Forster Coaches operates a number of school bus routes and six regular bus routes in the area. The regular bus services that operate in Tuncurry and Forster are:

- Route 303: Stockland – Forster – Tuncurry via Cape Hawke Hospital and Legacy Village
- Route 304: Stockland – Forster – Tuncurry via Club Forster, Bowling Clubs and Cape Hawke Hospital
- Route 305: Stockland – Forster via One Mile and Forster Golf Club
- Route 306: Stockland – Forster Keys via Lakes Estate and Golden Ponds Resort
- Route 307: Coomba Park – Forster via Smiths Lake, Pacific Palms and Green Point
- Route 308: Gloucester – Forster via Nabiac and Failford.

The nearest bus corridor to North Tuncurry is Manning Street (The Lakes Way). Route 304 and 308 operate on this corridor. The buses that operate in Tuncurry are shown in **Figure 6**. Other bus routes outlined above and not shown in **Figure 6** operate in Forster.

Figure 6 Existing local bus network (operated by Forster Coaches)



Source: Forster Coaches, 2013

The frequency of public bus services in Tuncurry and Forster is relatively limited. This is reflected in the low public transport mode-share for the area. Service frequencies are shown in **Table 8**.

Table 8 Frequencies of bus services in Tuncurry and Forster

| Route | Description | Weekday – number of services | | | Weekend |
|-------|--|------------------------------|-----------------------|----------------------|---------|
| | | AM Peak (6am-9am) | Off Peak (9am-3pm) | PM Peak (3pm-6pm) | |
| 303 | Stockland – Forster – Tuncurry via Cape Hawke Hospital and Legacy Village | 2 | 5 | 1 | 3 |
| 304 | Stockland – Forster – Tuncurry via Club Forster, Bowling Clubs and Cape Hawke Hospital | 1 | 4 | 2 | 3 |
| 305 | Stockland – Forster via One Mile and Forster Golf Club | - | 4 | 1 | 2 |
| 306 | Stockland – Forster Keys via Lakes Estate and Golden Ponds Resort | 2 | 4 | 1 | 3 |
| 307 | Coomba Park – Foster via Smiths Lake, Pacific Palms and Green Point | 1 | 1 | 1 | 1 |
| 308 | Gloucester – Foster via Nabiac and Failford | 1 | - | 1 | - |

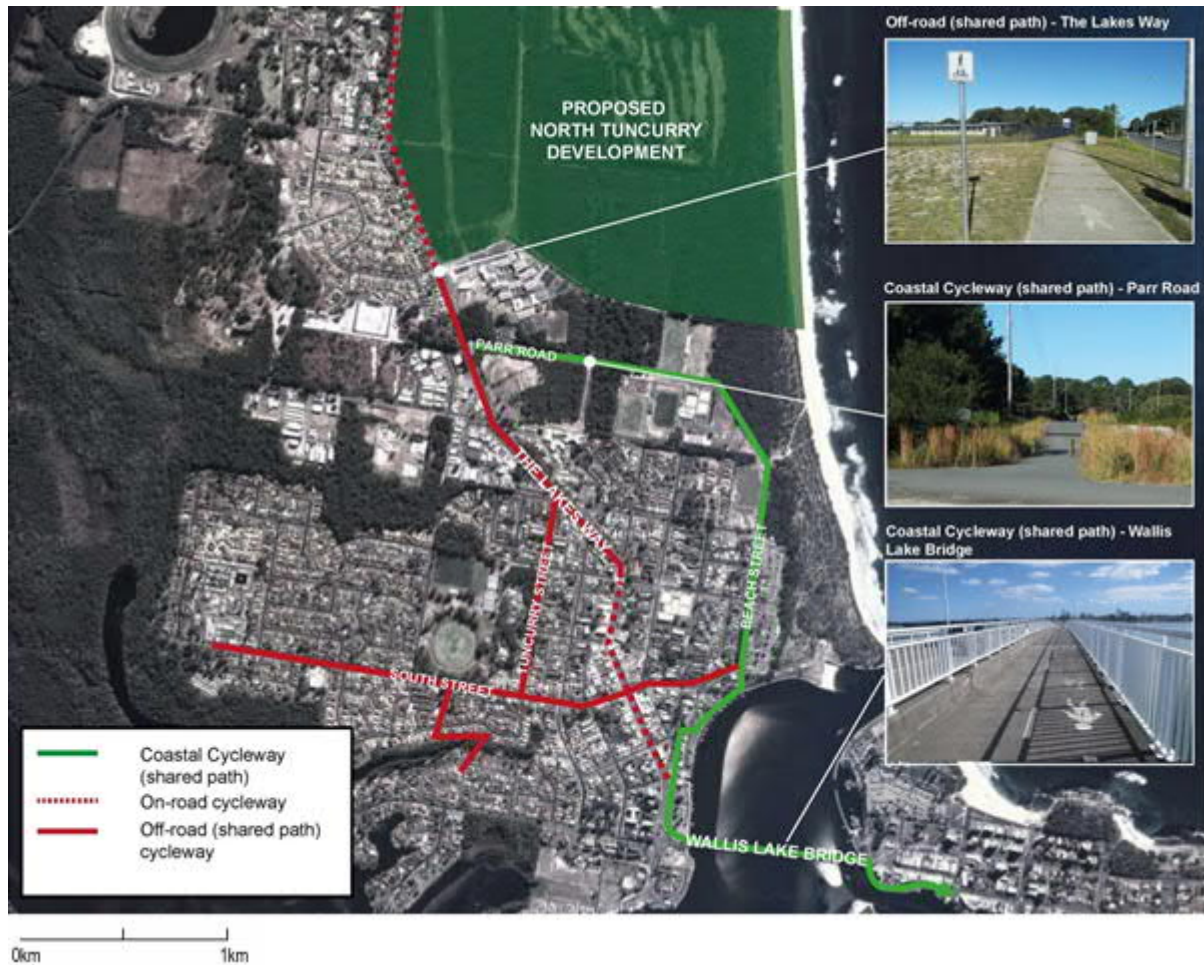
4.3 Existing active transport provision

4.3.1 Cycling routes and facilities

There are several cycling facilities in the study area which include on-road and off-road cycle routes, as shown in **Figure 7**. The Coastal Cycleway, an off-road shared path traverses through Tuncurry, providing links between the education campus, North Tuncurry Sports Complex, Nine Mile Beach and the Tuncurry Town Centre. The cycleway continues along Wallis Lake Bridge providing links to Forster.

The cycle route along the eastern side of Manning Street is mainly an off-road cycle route; however, this becomes an on-road route within the Tuncurry town centre. Additionally, off-road cycle routes along South Street and Tuncurry Street provide connections to the sport fields to the east and Tuncurry Public School.

Figure 7 Tuncurry and Forster cycle route map



Source: AECOM, 2013

4.3.2 Pedestrian routes and facilities

There are currently limited pedestrian facilities in proximity to the study area. However, several off-road shared paths are provided along Manning Street (The Lakes Way) and along the Coastal Cycleway.

Great Lakes Council Bike Plan 2010 outlines the strategy for a pedestrian and cycling wayfinding system along key walking and cycling routes to encourage active travel in the area. Signage provides route information such as distances to key destinations, maps and directions. Examples of wayfinding signs provided in Forster Waterside are shown in **Figure 8**. The pedestrian route map previously prepared for Tuncurry and Foster is shown in **Figure 9**.

Figure 8 Wayfinding signage



Source: AECOM, 2013

Figure 9 Tuncurry and Forster pedestrian route map



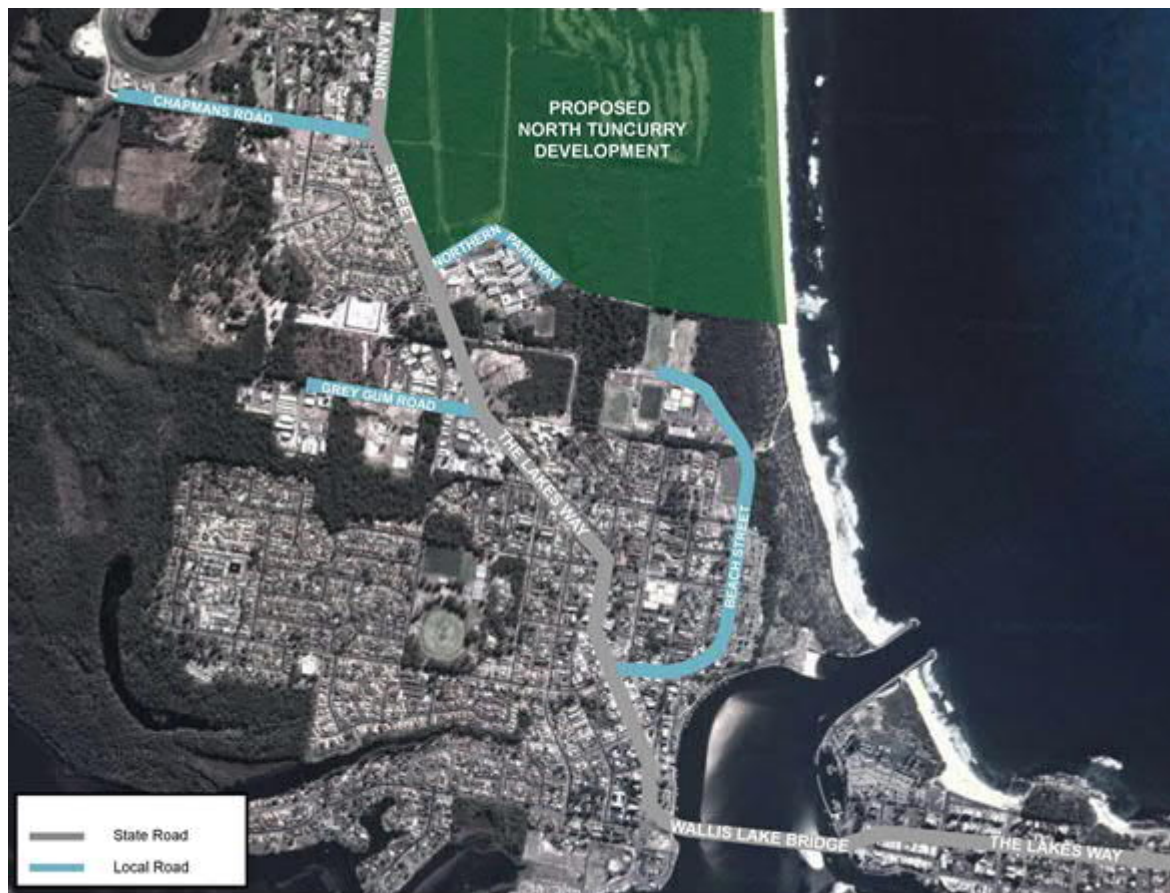
Source: Great Lakes Council, 2013

4.4 Existing road infrastructure

4.4.1 Road network

The key strategic road in the vicinity of the proposed North Tuncurry development site is The Lakes Way (Manning Street). Other key roads within the study area include Chapmans Road, Northern Parkway, Grey Gum Road and Beach Street. The major road network surrounding the study area is shown in **Figure 10**.

Figure 10 Road network



Source: AECOM, 2013

The Lakes Way / Manning Street

The Lakes Way is classified as a state road, providing inter-regional links between Bulahdelah, Smiths Lake, Forster, Tuncurry, Hallidays Point and Rainbow Flat. The Lakes Way provides Tuncurry and Forster with connections to the Pacific Motorway to the north and south and is the only north/south route to the east of the Pacific Highway. Through Tuncurry, The Lakes Way is known as both Manning Street and Tuncurry Road. It functions as the main road corridor for both Tuncurry and Forster. Through Tuncurry, the road is generally divided, with two lanes in each direction and a speed limit of 50km/h. Restricted on-street parking is provided within the town centre. The Lakes Way changes into a two-lane undivided road with a speed limit of 100km/h as it passes north of the town.

Beach Street

Beach Street is the most easterly road in Tuncurry and provides access to Nine Mile Beach, Tuncurry Beach Holiday Park and the Memorial Sports Club. Beach Street has one lane in each direction with a 50km/h speed limit. The wide carriageway allows for unrestricted on-street parking, which is permitted on both sides of the road. Great Lakes Council has a proposal to extend Beach Street to the north so that it can link with the Northern Parkway.

Northern Parkway

Northern Parkway is a local road providing access to The Great Lakes Joint Education Campus and borders the southern boundary of the site. The undivided two-lane road does not have a sign posted speed limit however there is a school zone outside the Education Campus.

Northern Parkway intersects with Manning Road (The Lakes Way) at a signalised intersection and provides access to Tuncurry Golf Course.

Grey Gum Road

Grey Gum Road is a local road providing access to the industrial precinct of Tuncurry. It links with The Lakes Way at a priority intersection.

Chapmans Road

Chapmans Road is a local road providing access to residential property in the north-west of Tuncurry. The two-lane undivided road also provides access to The Jockey Club and Tuncurry Lakeside Resort.

4.5 Existing traffic conditions and road network performance

Traffic count surveys were undertaken by TTM Consulting during the morning (7 – 9am) and afternoon (3 – 5pm) peak periods on Tuesday 11 December 2018 at the following intersections:

- The Lakes Way | Chapmans Road
- The Lakes Way | Northern Parkway | Grandis Drive
- The Lakes Way | Grey Gum Road

The location of the intersections is shown in **Figure 11**.

Mid-block counts were undertaken on the Wallis Lake Bridge to assess the current capacity of the bridge. Similarly, mid-block counts were undertaken at two locations along Beach Street and one location along The Lakes Way (Manning Street) between Chapmans Road and The Northern Parkway.

Figure 11 Traffic count survey locations



Source: AECOM, 2018

Analysis of the traffic surveys showed that the AM peak hour occurred between 8:00am and 9:00am and that the PM peak hour was between 3:00pm and 4:00pm. This is consistent with the Household Travel Survey.

Table 9 shows the midblock traffic flows at each location alongside the estimated road capacity. Capacity of the two-lane two-way configuration of Manning Street, Beach Street and Wallis Lake Bridge has been based on the Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis.

Table 9 Midblock analysis

| Section | Northbound/ Westbound | | | Southbound/ Eastbound | | |
|--|-----------------------|----------|-----------|-----------------------|----------|-----------|
| | Volume | Capacity | V/C ratio | Volume | Capacity | V/C ratio |
| AM Peak | | | | | | |
| The Lakes Way (Manning Street) | | | | | | |
| North of Chapmans Road | 529 | 1,200 | 44% | 856 | 1,200 | 71% |
| Between Chapmans Road and Northern Parkway | 587 | 1,000 | 59% | 861 | 1,000 | 86% |
| Between Northern Parkway and Grey Gum Road | 744 | 1,000 | 74% | 970 | 1,000 | 97% |
| South of Grey Gum Road | 798 | 1,000 | 80% | 1019 | 1,000 | 102% |
| Beach Street | | | | | | |
| North of North Street | 15 | 300* | 5% | 16 | 300 | 5% |
| East of Wharf Street | 72 | 500* | 14% | 80 | 500 | 16% |
| Wallis Lake Bridge | | | | | | |
| Bridge | 1088 | 1,400 | 78% | 1097 | 1,400 | 78% |
| PM Peak | | | | | | |
| The Lakes Way (Manning Street) | | | | | | |
| North of Chapmans Road | 760 | 1,200 | 63% | 612 | 1,200 | 51% |
| Between Chapmans Road and Northern Parkway | 802 | 1,000 | 80% | 627 | 1,000 | 63% |
| Between Northern Parkway and Grey Gum Road | 862 | 1,000 | 86% | 785 | 1,000 | 79% |
| South of Grey Gum Road | 861 | 1,000 | 86% | 842 | 1,000 | 84% |
| Beach Street | | | | | | |
| North of North Street | 31 | 300* | 10% | 29 | 300 | 10% |
| East of Wharf Street | 78 | 500* | 16% | 92 | 500 | 18% |
| Wallis Lake Bridge | | | | | | |
| Bridge | 1140 | 1,400 | 81% | 1129 | 1,400 | 81% |

*The capacity along Beach Street has been based on the environmental capacity of residential streets, Roads and Maritime Guide to Traffic Generating Developments
Source: AECOM, 2018

Midblock analysis of the traffic data shows there is currently spare capacity along the majority of The Lakes Way (Manning Street) corridor in the vicinity of the site, as well as on Wallis Lake Bridge and Beach Street during typical weekday peak hours.

In the morning peak, the midblock analysis shows that Manning Street south of Grey Gum Road reaches capacity. Through travel speed is used to characterise vehicular LoS along a section of the road, and lower speeds indicate that delays along the link will increase when a link reaches capacity. However, this does not impact upon the capacity of the road network as the performance of the nearby intersection will be the key driver for overall network capacity.

4.5.1 Existing Intersection performance

Intersection performance was assessed using the SIDRA Intersection 8.0 modelling software. SIDRA output data used in this study includes:

- Degree of Saturation (DoS) – a measure of the ratio between traffic volumes and capacity of the intersection. As DoS approaches 1.0, both queue length and delays increase. Satisfactory operations usually occur with a DoS range between 0.7-0.8 or below
- Average Delay – average duration (in seconds) for a vehicle waiting at an intersection
- Level of Service (LoS) – a measure of the overall performance of the intersection (refer to **Table 10**).

Table 10 Level of Service criteria for intersections

| Level of service | Average delay (secs/ veh) | Traffic signals and roundabouts | Give way and stop signs |
|------------------|---------------------------|---|---|
| A | Less than 14 | Good operation | Good operation |
| B | 15 to 28 | Good with acceptable delays and spare capacity | Acceptable delays and spare capacity |
| C | 29 to 42 | Satisfactory | Satisfactory, but accident study required |
| D | 43 to 56 | Operating near capacity | Near capacity and accident study required |
| E | 57 to 70 | At capacity; at signals incidents will cause excessive delays | At capacity; requires other control mode |
| F | >70 | Roundabouts require other control mode | At capacity; requires other control mode |

Source: Guide to Trip Generating Development, Roads Maritime 2004

Level of service is one of the basic performance parameters used to describe the operation of an intersection. The levels of service range from A (indicating good intersection operation) to F (indicating over saturated conditions with long delays and queues). At signalised and roundabout intersections, the LoS criteria are related to average intersection delay (seconds per vehicle). At priority-controlled intersections, the LoS is based on the average delay (seconds per vehicle) for the worst movement.

The Lakes Way | Chapmans Road

The intersection of The Lakes Way (Manning Street) / Chapmans Road is a seagull intersection, with a dedicated right turn bay on the northern approach and merge lane for the eastbound right turn movement, as shown in **Figure 12**.

Figure 12 The Lakes Way | Chapmans Road intersection layout

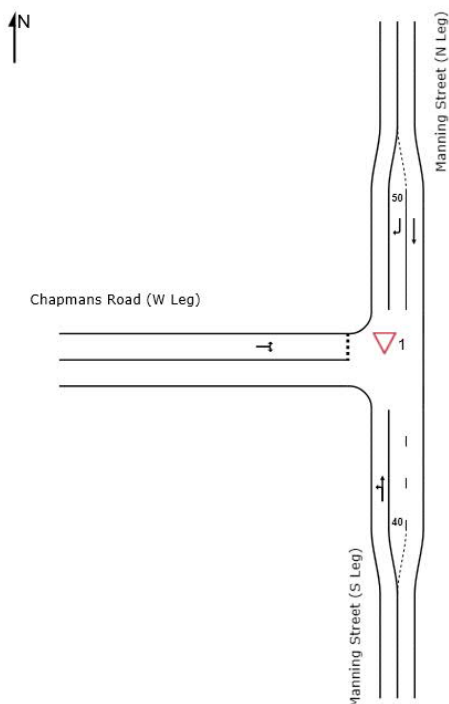


Table 11 Existing intersection performance of The Lakes Way | Chapmans Road

| Approach | Veh/h | LoS | DoS | 95% Back of Queue (m) | Average Delay (s) |
|-----------------------|-------|-----|--------|-----------------------|-------------------|
| AM Peak | | | | | |
| The Lakes Way (S Leg) | 580 | A | 0.262 | 0.0 | 0.6 |
| The Lakes Way (N Leg) | 845 | A | 0.422 | 0.3 | 0.3 |
| Chapmans Road (W Leg) | 43 | A | 0.066 | 0.6 | 9.3 |
| Total | 1468 | NA | 0.422 | 0.6 | 0.7 |
| PM Peak | | | | | |
| The Lakes Way (S Leg) | 797 | A | 0.377 | 0.0 | 0.4 |
| The Lakes Way (N Leg) | 585 | A | 0.291 | 0.4 | 0.4 |
| Chapmans Road (W Leg) | 58 | B | 0.1106 | 1.0 | 12.5 |
| Total | 1440 | NA | 0.377 | 1.0 | 0.9 |

Source: AECOM, 2018

In the AM Peak, the intersection of The Lakes Way | Chapmans Road performs well, with Chapmans Road exhibiting the highest average delay of 9.3 seconds. In the PM Peak the intersection also performs well, with Chapmans Road exhibiting the highest average delay of 12.5 seconds.

The Lakes Way | Northern Parkway | Grandis Drive

The intersection of The Lakes Way | Northern Parkway| Grandis Drive is configured as a signalised intersection. A right turn bay is provided on both Lakes Way approaches. Both the Grandis Drive and Northern Parkway approach have two entry lanes and one exit lane, whereas the Northern Parkway has a dedicated left turn lane. The intersection layout is shown in **Figure 13**.

Figure 13 The Lakes Way | Northern Parkway | Grandis Drive intersection layout

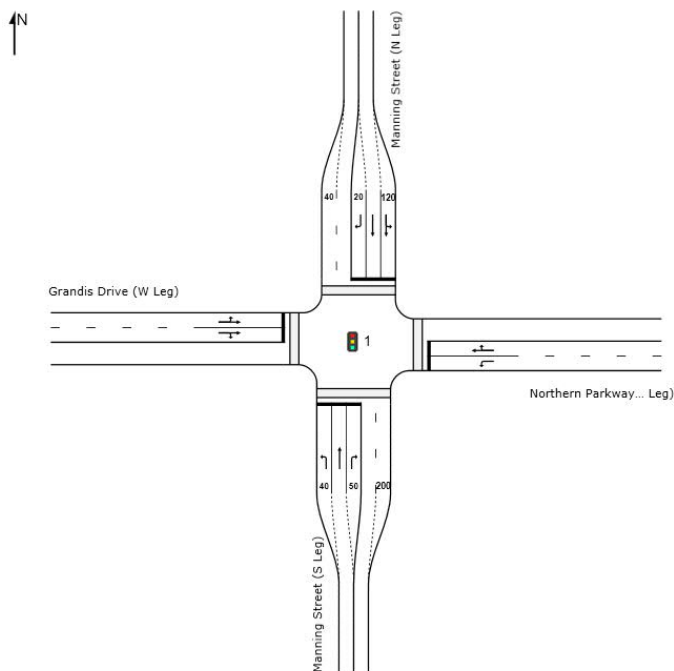


Table 12 Road Existing intersection performance of The Lakes Way | Northern Parkway | Grandis Drive

| Approach | Veh/h | LoS | DoS | 95% Back of Queue (m) | Average Delay (s) |
|--------------------------|-------|-----|-------|-----------------------|-------------------|
| AM Peak | | | | | |
| The Lakes Way (S Leg) | 738 | A | 0.454 | 52.8 | 9.6 |
| Northern Parkway (E Leg) | 146 | B | 0.162 | 15.2 | 22.6 |
| The Lakes Way (N Leg) | 850 | B | 0.537 | 62.3 | 21.4 |
| Grandis Drive (W Leg) | 127 | C | 0.457 | 18.6 | 40.1 |
| Total | 1861 | B | 0.537 | 62.3 | 18.1 |
| PM Peak | | | | | |
| The Lakes Way (S Leg) | 862 | A | 0.707 | 82.2 | 10.8 |
| Northern Parkway (E Leg) | 159 | B | 0.160 | 12.6 | 24.6 |
| The Lakes Way (N Leg) | 606 | B | 0.347 | 33.8 | 14.9 |
| Grandis Drive (W Leg) | 63 | C | 0.202 | 8.1 | 33.6 |
| Total | 1690 | A | 0.707 | 82.2 | 14.4 |

Source: AECOM, 2018

The signalised intersection of The Lakes Way | Northern Parking | Grandis Drive operates satisfactorily, with Grandis Drive experiencing the highest average delay of 40.1 seconds.

In the PM Peak the intersection performs satisfactorily, with Grandis Drive experiencing the highest average delay of 33.6 seconds.

The Lakes Way | Grey Gum Road

The intersection of The Lakes Way | Grey Gum Road is configured as a seagull intersection, with a dedicated southbound right turn bay and a northbound left turn slip lane. Grey Gum Road has a wide carriageway which allows parking on both sides of the road and one lane of through traffic in both directions. The intersection layout is shown in **Figure 14**.

Figure 14 The Lakes Way | Grey Gum Road intersection layout

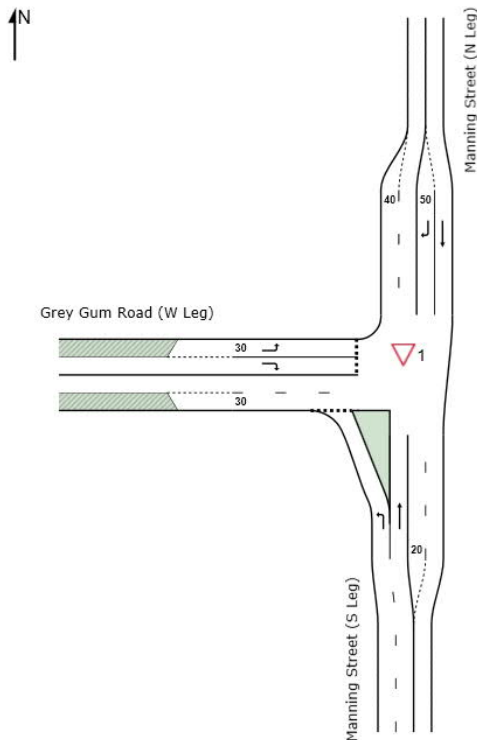


Table 13 Existing intersection performance of The Lakes Way | Grey Gum Road

| Approach | Veh/h | LoS | DoS | 95% Back of Queue (m) | Average Delay (s) |
|-----------------------|-------|-----|-------|-----------------------|-------------------|
| AM Peak | | | | | |
| The Lakes Way (S Leg) | 797 | A | 0.378 | 1.0 | 0.5 |
| The Lakes Way (N Leg) | 967 | A | 0.504 | 0.4 | 0.3 |
| Grey Gum Road (W Leg) | 71 | B | 0.476 | 5.6 | 30.9 |
| Total | 1835 | NA | 0.504 | 5.6 | 1.7 |
| PM Peak | | | | | |
| The Lakes Way (S Leg) | 861 | A | 0.423 | 0.7 | 0.4 |
| The Lakes Way (N Leg) | 764 | A | 0.393 | 0.7 | 0.4 |
| Grey Gum Road (W Leg) | 148 | B | 0.564 | 6.3 | 27.4 |
| Total | 1773 | NA | 0.564 | 6.3 | 2.3 |

Source: AECOM, 2018

In the AM peak, the intersection of The Lakes Way | Grey Gum Road currently performs well, with Grey Gum Road exhibiting the highest average delay of 30.9 seconds.

In the PM Peak, the intersection also performs well, with Grey Gum Road exhibiting the highest average delay of 27.4 seconds.

5.0 Future context

This section summarises the expected growth in the Forster – Tuncurry area and the potential increase in traffic as a result of regional and surrounding development as well as the planned provision of transport infrastructure upgrades.

5.1 Road network upgrades

5.1.1 Manning Street and Point Road intersection upgrade

Roads and Maritime is proposing to upgrade the intersection of Manning Street and Point Road to a roundabout, with the aim of improving the overall safety and operation of the intersection. Between July 2011 and June 2016, there were 15 reported crashes at the intersection which resulted in five injuries. Furthermore, surveys carried out in December 2017 under peak holiday conditions indicated there was extensive queuing on Manning Street.

Planning and investigations were conducted in 2017, and traffic modelling indicated during normal peak hour or peak holiday conditions the roundabout design would be effective in managing traffic flows. Construction was set to commence in May 2018, however Roads and Maritime has since postponed the upgrade works due to backlash from the local community. The project is currently under review by Roads and Maritime.

5.1.2 S94 Plan

MidCoast Council has not indicated any plans for major road network upgrades in Tuncurry in the 2018/19 Capital Works Program. However, the S94 Plan identifies several of potential future road infrastructure upgrades in the vicinity of the study area. These upgrades include:

- Construction of two additional lanes along The Lakes Way (Manning Street) between Grey Gum Road and approximately 250m north of Chapmans Road
- An upgrade to the intersection of The Lakes Way | Grey Gum Road to a roundabout
- An upgrade to the intersection of The Lakes Way | Chapmans Road to a roundabout
- Extension of Beach Street from North Street to Northern Parkway
- Duplication of the Wallis Lake Bridge.

These upgrades were previously identified by Great Lakes Council, now part of MidCoast Council, to plan for the potential infrastructure required to cater for development growth in Forster and Tuncurry accounting for the regional context. The estimated start dates scheduled for these infrastructure upgrades (outlined in **Table 14**) are based on the S94 Plan.

Table 14 Schedule of Works (S94 Plan, adopted on 28 October 2014)

| Schedule of works | Type | Estimated start date (S94) |
|---|--------------------------|----------------------------|
| Construction of two additional lanes along The Lakes Way (Manning Street) from Grey Gum Road to approximately 250m north of Chapmans Road | Road network improvement | 2021 |
| Upgrade to the intersection of The Lakes Way Grey Gum Road to a roundabout | Intersection improvement | 2017 ¹ * |
| Upgrade to the intersection of The Lakes Way Chapmans Road to a roundabout | Intersection improvement | 2017 ¹ * |
| Extension of Beach Street from North Street to Northern Parkway | Road network improvement | 2027 ** |
| Duplication of the Wallis Lake Bridge | Road network improvement | 2025 |

Source: Great Lakes Council, 2014

*Discussions with Council in 2015 suggested that these upgrades will be associated with surrounding development at Leo Street and Chapmans Road.

**Proposed to be brought forward should the NTDP proceed.

¹The intersection improvements have not yet commenced. The estimated start date is to be confirmed.

Figure 15 Road network and intersection improvements identified in the S94 Plan (for Tuncurry)



0km 1km
Source: Great Lakes Council, 2013

Refer to **Appendix A** for the full schedule of works identified in the S94 Plan.

5.2 Cycle network upgrades

MidCoast Council is aiming to encourage the use of alternative transport options through the provision of a safe, accessible and connected cycling network. As part of the 2018-2021 Delivery Program strategies, Council is planning to review the existing bike plans and develop a single MidCoast Council Bike Plan.

Great Lakes Council, previously the Council authority for Tuncurry, developed a Bike Plan which has identified several potential bicycle routes providing better connectivity to key destinations within Tuncurry.

As shown in **Figure 16** , proposed strategic cycle routes include:

- On road cycle route along Grey Gum Road to South Street with off road tracks
- On road cycle route from South Street to Point Road with off road tracks
- On road cycle route along Taree Street
- On road cycle route along Point Road
- Extension of the cycle network along The Lakes Way (Manning Street) north towards Chapmans Road, with the vision of ultimately linking to Hallidays Point.

Figure 16 Existing and proposed bicycles routes



Source: AECOM, 2013

5.3 Future development

5.3.1 Other development sites

Forecast.id has used several land development and infill assumptions as part of their population and household forecasts where an additional 1,249 dwellings are expected to be developed by 2036.

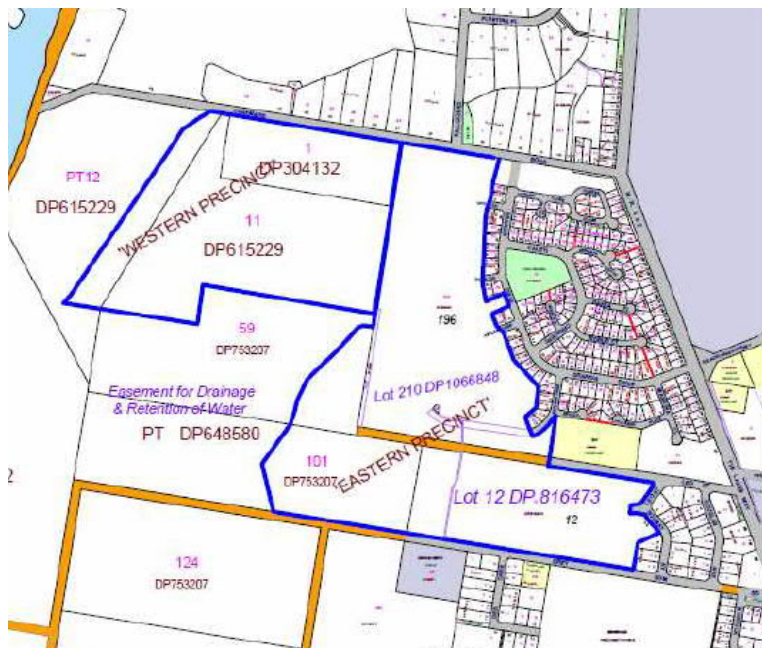
Table 15 Residential developments

| Area | Assumed residential development | Additional dwellings by 2036 |
|--|---|------------------------------|
| Tuncurry* | Crystal Waters Estate Chapmans Road Leo Street Housing NSW Senior Living Units Point Road North Tuncurry Small sites Low level of infill development | 875 |
| Nabiac – Failford – Darawank – Rural North | Glider Avenue Rural Residential Nabiac Street Cowper Street & Martin Street Failford Precinct Robertson Street & Dibbs Street Showgrounds Lane and Pacific Highway Small sites Low level of infill development | 324 |

*The Forecast.id dwelling estimates for 2031 were higher than the currently available estimates for 2036. As such, the additional dwellings by 2036 for Tuncurry were based on the 2031 estimates (being 625 dwellings) with an additional 50 dwellings per year for the NTDP between 2031 - 2036.

Two new developments are proposed in the vicinity of the North Tuncurry development site, west of The Lakes Way as shown in **Figure 17**. Based on the Great Lakes Development Control Plan (2014), the Eastern Precinct proposes approximately 300 residential lots south of Chapmans Road and approximately 50 industrial lots north of Grey Gum Road and south of Leo Street. The Western Precinct proposes an additional 125 residential lots.

Figure 17 Proposed future developments



Source: Great Lakes Council, 2009

5.3.2 Background traffic growth

The historical annual average daily traffic (AADT) growth patterns at a selected RMS survey location in the vicinity of North Tuncurry is presented in **Table 16**. The average annual growth rate is obtained from the annual growth rate as summarised in **Table 17**.

Table 16 Historical AADT growth trends in the vicinity of North Tuncurry

| ID | Location | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-------|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 09923 | The Lakes Way, at Wallis Lake Bridge | 21,135 | 21,267 | 21,440 | 21,245 | 21,449 | 21,904 | 21,297 | 22,759 | 22,526 | 24,387 | 23,027 |

*- Station 09.923 is a permanent count station and the AADT shown is in vehicles.
Source: Roads and Maritime, 2018

Table 17 Average annual growth rate

| 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 | 2016-2017 | 2017-2018 | Average |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|
| 0.6% | 0.8% | -0.9% | 1.0% | 2.1% | -2.8% | 6.9% | -1.0% | 8.3% | -5.6% | 0.9% |

A comparison of the historical annual average daily traffic (AADT) taken from the Roads and Maritime permanent count station between 2008 and 2018 indicates that a background traffic growth of 0.9 per cent has occurred during this period. Furthermore, a meeting with RMS was held on the 10th of May 2013, where the year of assessment and the rate of future background traffic growth of 0.9% was agreed (opening year and full development assumed at 2026). Therefore, for the purposes of this assessment the expected background traffic growth is assumed to be 0.9 per cent.

Based on this assumption, **Table 18** presents the future midblock forecasts without the NTDP or the road infrastructure upgrades.

Table 18 Future base traffic forecasts without NTDP

| Section | Direction | Capacity | 2050 | | | |
|--|-----------|----------|---------|-----------|---------|-----------|
| | | | AM Peak | V/C ratio | PM Peak | V/C ratio |
| The Lakes Way/ Manning Street | | | | | | |
| North of Chapmans Road | NB | 1,200 | 658 | 55% | 828 | 69% |
| | SB | | 907 | 76% | 721 | 60% |
| Between Chapmans Road and Northern Parkway | NB | 1,000 | 667 | 67% | 1029 | 103% |
| | SB | | 1097 | 110% | 718 | 72% |
| Between Northern Parkway and Grey Gum Road | NB | 1,000 | 838 | 84% | 1226 | 123% |
| | SB | | 1354 | 135% | 906 | 91% |
| South of Grey Gum Road | NB | 1,000 | 880 | 88% | 1286 | 129% |
| | SB | | 1471 | 147% | 964 | 96% |
| Beach Street | | | | | | |
| North of North Street | NB | 300 | 16 | 5% | 32 | 11% |
| | SB | | 17 | 6% | 30 | 10% |
| East of Wharf Street | NB | 500 | 84 | 17% | 96 | 19% |
| | SB | | 75 | 15% | 82 | 16% |
| Wallis Lake Bridge | | | | | | |
| Bridge | WB | 1,400 | 1138 | 81% | 1192 | 85% |
| | EB | | 1147 | 82% | 1181 | 84% |

Background traffic forecast for sections along The Lakes Way/ Manning Street indicate the existing two-lane carriageway experiences capacity constraints resulting from the additional traffic in 2050, with The Lakes Way south of the Northern Parkway operating at capacity in 2050. Beach Street is not forecast to have capacity constraints in 2050.

The additional future year background traffic is expected to cause additional pressure on the existing two-lane configuration of the Wallis Lake Bridge, however still within the practical capacity of the bridge.

5.4 Future base intersection performance no development

In order to understand the operational performance of the surrounding localised road network with 2050 traffic forecasts, an analysis was undertaken for the following intersections during typical AM and PM peak periods:

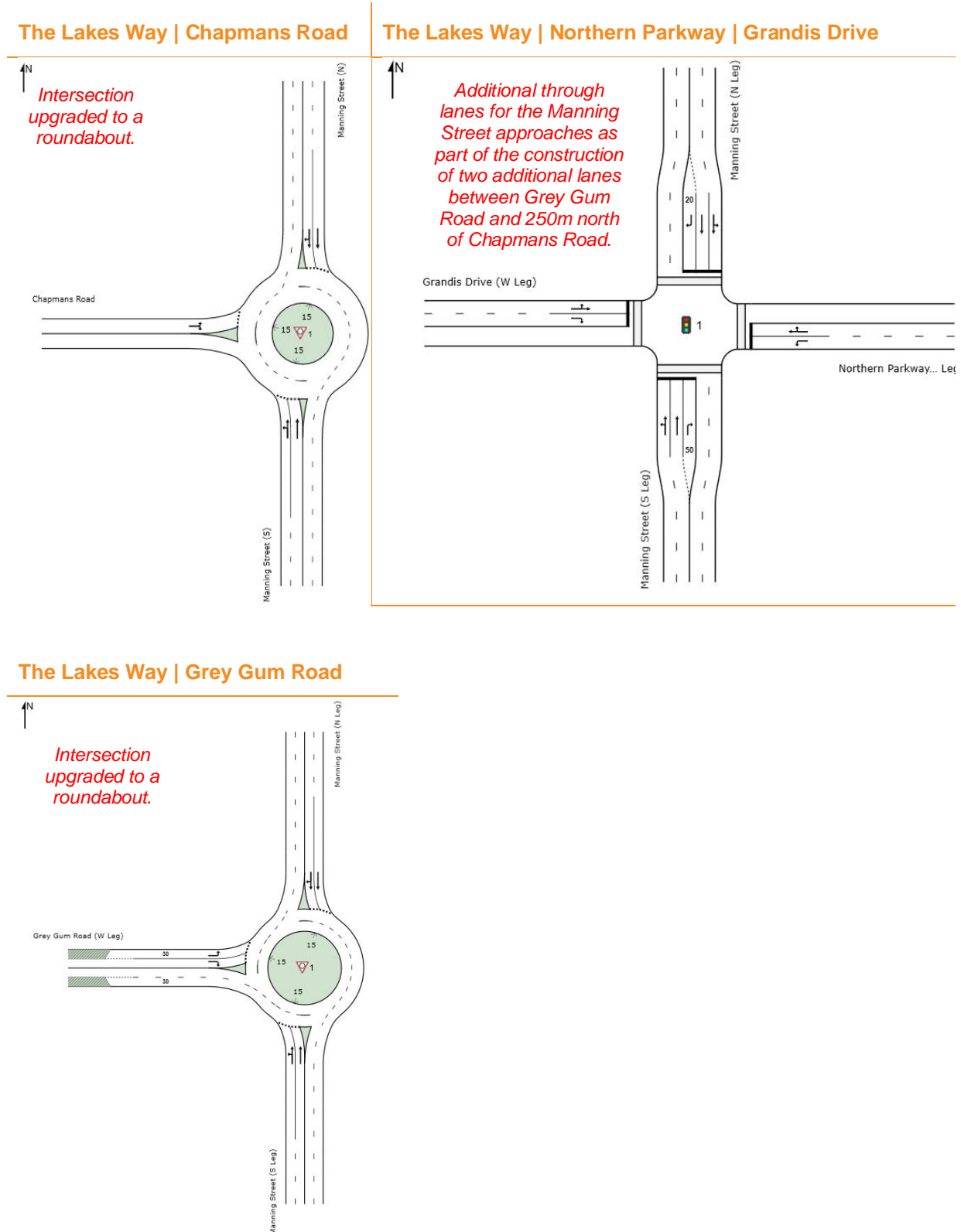
- The Lakes Way | Chapmans Road
- The Lakes Way | Northern Parkway | Grandis Drive
- The Lakes Way | Grey Gum Road

Given that the background traffic growth for 2050 is largely attributed to development at Chapmans Road and Leo Street, the 2050 assessment has assumed the road network and intersection improvements identified in **Section 5.1** have been delivered by 2050.

5.4.1 2050 intersection performance

The 2050 future base intersection turning movements have been modelled and assessed with the road network and intersection upgrades identified in the S94 Plan. The geometric layout of the upgraded intersections is shown in **Figure 18**.

Figure 18 Intersection upgrades



A summary of the intersection performance under 2050 AM and PM peak hour base forecast traffic demand (without development) is presented in Table 19.

Table 19 2050 AM and PM peak hour intersection performance

| Approach | Peak hour | Veh/ hr | LoS | DoS | 95% Back of Queue (m) | Average Delay (s) |
|---|-----------|---------|-----|-------|-----------------------|-------------------|
| 2026 without development | | | | | | |
| The Lakes Way Chapmans Road* | AM | 225 | A | 0.319 | 3.3 | 8.8 |
| | PM | 77 | A | 0.135 | 1.4 | 9.1 |
| The Lakes Way Northern Parkway Grandis Drive* | AM | 2364 | B | 0.764 | 96.7 | 23.8 |
| | PM | 2211 | A | 0.513 | 56.9 | 14.2 |
| The Lakes Way Grey Gum Road* | AM | 157 | A | 0.190 | 2.6 | 10.4 |
| | PM | 119 | B | 0.271 | 5.7 | 19.0 |

* Intersection upgraded as part of road network and infrastructure upgrade identified in the S94 Plan.

The key intersections assessed along The Lakes Way (Manning Street) operate well at a LoS B or better during the 2050 AM and PM peak period.

The intersection analysis shows an improvement in the LoS for the intersection of The Lakes Way | Chapmans Road and The Lakes Way | Grey Gum Road as part of the upgrade of the two intersections from a give way layout to a roundabout.

At the intersection of The Lakes Way | Northern Parkway | Grandis Drive, it is recommended that a dedicated right turn lane is marked on the Grandis Drive approach due to the high number of right turn movements experienced during the AM and PM peak.

6.0 Proposed development

This section summarises the proposed NTDP (including B2 local centre) Master plan. It also describes the proposed road hierarchy and how the NTDP will be accessed. Proposed bus, cycle and pedestrian networks are also detailed as well as summaries of road cross sections to be used within the NTDP and parking provision.

6.1 Master plan

The current North Tuncurry master plan proposes a total of approximately 2,123 residential dwellings comprising of both low and medium densities, to accommodate an expected population of 4,500 residents. These dwellings surround the remodelled Tuncurry Golf Course and are bordered by Nine Mile Beach to the east and The Lakes Way in the west. Medium density dwellings are proposed in proximity to the B2 Local Centre. The NTDP proposed Master Plan is shown in **Figure 19**.

The master plan offers the following key elements:

- Residential flat buildings in proximity to the proposed B2 Local Centre Zone and in a smaller precinct to the south
- Water management basins and Ephemeral Zones
- A remodelled Tuncurry Golf Course integrated into the development
- A new re-positioned golf clubhouse to form part of the proposed B2 local centre
- Medium density housing in proximity to the proposed B2 local centre
- A looped road network for future bus routes
- Development of walking and cycling corridors that expand on existing coastal infrastructure in Forster-Tuncurry
- Three external access points at the Northern Parkway, Beach Street and a new northern access
- Integration of a new surf club, community centre and beach access with the proposed B2 Local Centre
- Business and Industrial areas to provide employment opportunities
- Parks and open spaces

A main feature of the proposed Master Plan is the addition of water management basins and ephemeral zones, mostly surrounding the remodelled Tuncurry Golf Course. These water management basins are necessary from a drainage perspective and have been integrated into the proposed Master Plan with consideration given to their potential as barriers for transport and access. The location of these water management basins and ephemeral zones means they do not substantially intersect or cut across the site, acting to minimise the impacts on the transport network and the requirement of bridge infrastructure.

A local centre including a surf club and village green are proposed in the eastern part of the site in addition to a new golf clubhouse. The B2 Local Centre is designed to function as a 'community hub' with cafés, a supermarket and beach access. The B2 Local Centre Master Plan is shown in **Figure 20**.

6.6ha of Industrial lands for freight and logistics are proposed to the north of the B2 local centre and will encompass approximately 12,000m² of Gross Floor Area.

Retail land uses of approximately 2,292m² are proposed within the B2 local centre.

6.7ha of B5 Business Development land is proposed within the NTDP, however the land use and the yield for this use has not yet been determined.

Figure 19 North Tuncurry development project proposed Master Plan



Source: Roberts Day, 2018

Figure 20 B2 local centre



Source: Roberts Day, 2014

6.2 Road hierarchy and site access arrangements

6.2.1 Site access

Access to the development is provided at three locations (as shown in **Figure 21**), to the north-west, south-west and south-east of the site as described below.

The following access points are provided:

- The existing intersection of The Lakes Way | Northern Parkway | Grandis Drive
- The Lakes Way approximately 1.2 km north of Chapmans Road (New Access Road)
- Beach Street extension

The main intersection for access to the site is proposed to be provided approximately 1.2km north of Chapmans Road, connecting to the north-west of the site via a new roundabout. This access will provide the most direct route for those within the site to connect to the Pacific Highway. It is also likely to be utilised by residents in the north of the site as the primary connection to Forster and Tuncurry. This access also provides the most direct connection to the proposed B2 Local Centre from The Lakes Way.

The existing road access via the Northern Parkway will provide a connection to the south west of the site and will act as the main access for the initial stages of the development (to be located to the south of the site). This access can be utilised without the need for an intersection upgrade however development of the NTDP should consider the access requirements of the existing Joint Education Campus and its proximity in relation to planned NTDP intersections to ensure that road user conflicts are minimised. Any issues would be addressed at a detailed design stage.

Figure 21 North Tuncurry access points



Source: Roberts Day, 2018, modified by AECOM, 2019

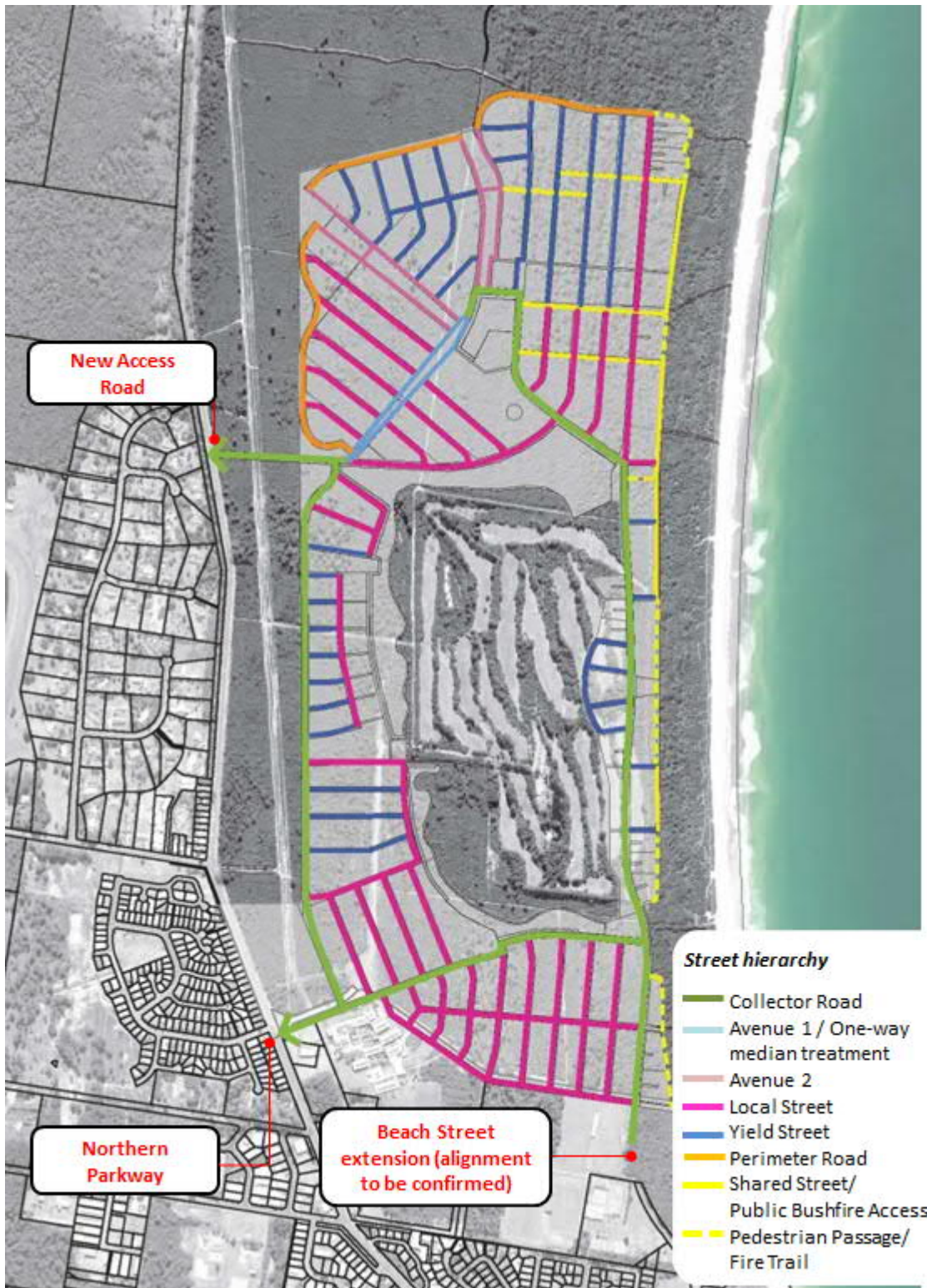
Beach Street is proposed to be extended northwards to connect with the site, enabling a continuous coastal access route as an alternative to The Lakes Way. This route is proposed to be extended during the initial stage of the NTDP prior to development of the new main access from The Lakes Way, as development of the site is proposed to begin in the south. Ultimately the Beach Street access will provide a coastal connection between the proposed B2 Local Centre and existing centres in Tuncurry and Forster. This access will also function as a key part of a walking and cycling link between the B2 local centre and existing coastal cycleway. Beach Street could also potentially be used for buses (including school buses) to reduce pressure on the Northern Parkway and school turnaround facilities.

6.2.2 Street hierarchy

The internal road network features a collector road loop facilitating east-west and north-south movements within the development. The collector road loop provides linkages to key destination points including the B2 Local Centre and allows residents of the site access to bus services that are also proposed to operate along the route. Collector Roads also connect to the three site access intersections along The Lakes Way and to Beach Street. The connection to Beach Street is proposed to provide an alternative route for north-south movements between the development and Tuncurry/Forster. The remainder of the site will be serviced by lower order roads that provide access to residences, with varying cross sections as shown in **Section 6.2.3**. Shared roads are proposed for beach access areas to facilitate walking and cycling in coastal areas. The proposed Road Hierarchy is shown in **Figure 22**.

It is proposed to reduce the kerb radii to 3.5 metres throughout the site (with the exception of bus routes). Reduced kerb radii will require motorists to reduce their speed on corners, while improving sight distances and providing larger pedestrian waiting areas at corners. The removal of truncated or splayed corner lots has further been proposed to promote safety, walkability and improved social interaction throughout the site.

Figure 22 Street hierarchy



Source: Roberts Day, 2015, modified by AECOM, 2015

6.2.3 Proposed road cross sections

Table 20 Proposed road cross sections

| Street type | Road reserve | Carriageway | Verge | Parking | Footpath/ shared path | Bus capable |
|--|--------------|------------------------------------|-------------|-------------|--------------------------|-------------|
| Collector Street | 19.4m | 7.0m | 3.6m | 4.6m | 3.0m | ● |
| Collector Street with attached garden | 32.3m | 7.0m | 3.6m | 4.6m | 4.5m | ● |
| Avenue 1 | 23.3m | 7.0m | 7.6m | 4.6m | 1.5m | |
| Avenue 1* | 23.3m | 7.0m | 6.7m | 5.5m | 1.5m | ● |
| Avenue 2 | 45.3m | 11.0m | 7.6m | 4.6m | 1.5m | |
| Bushfire Perimeter Road | 18.1m | 8.0m | 7.8m | 2.3m | N/A | |
| Local Street | 16.4m | 5.5m | 3.6 | 4.6m | 1.5m | |
| Local Street water/park edge | 15.7m | 5.5m | 5.8 | 2.3m | 5.5 | |
| Local Street within infiltration zone | 17.6m | 5.5m | 4.8m | 4.6m | 1.5m | |
| Yield Street | 13.5m | 3.0m | 3.6m | 4.2m | 1.5m | |
| Yield Street within infiltration zone | 14.1m | 3.0m | 4.2 | 4.2m | 1.5m | |
| Shared Street / Public Bushfire Access | 9.7m | 5.5m | 4.2m | N/A | N/A | |
| Pedestrian Passage/ Fire Trail | 7.5m | (4.1m for emergency vehicles only) | N/A | N/A | 4.1m | |

*at bus stops (to allow 3.2m wide bus parking and assuming bus stops are staggered)

Note that proposed road cross sections vary across the site with different road reserves for each road type depending on their location. This is largely due to the wider medians and flared verges required in some locations to meet flooding and drainage requirements, to provide a desirable pedestrian environment and contribute to the legibility of the project, particularly where direct connections to the foreshore have been established. The carriageways, parking and footpaths/shared paths are generally consistent.

6.3 Public transport network

The internal road network proposed in the Master Plan has been designed to accommodate bus movements within the North Tuncurry development. Avenue 1 and all proposed collector roads have been designed to be bus capable (as shown in **Figure 23**), providing the potential for a bus circuit within the proposed development. This would not only serve residents and visitors to the B2 Local Centre, but potentially improve the existing bus operations at the Joint Education Campus and improve access to the sporting fields and nearby beaches. Operating buses on the collector road network ensures the majority of the development is within a 400m walking catchment.

The provision of a bus route through the development would be beneficial for local residents, particularly given the aging demographic of Tuncurry which is likely to see increased demand for public transport. Bus Services along the collector road loop will also help to facilitate access to the B2 Local Centre.

During the initial stages of the proposed development and to encourage the use of public transport, it is recommended that a short-term bus route is to be provided by diverting the existing 304 bus route to loop through the southern part of the development via Northern Parkway and Beach Street.

Figure 23 shows the potential diversion of the existing 304 bus routes as well as the bus circuit proposed for ultimate development. Potential bus stops have also been shown and have been located in order to maximise the proportion of residences located within 400m of a bus stop.

Figure 23 Bus capable road and short-term bus route



Source: Roberts Day, 2015 modified by AECOM, 2015

6.4 Walking and cycling facilities

A comprehensive active travel network is proposed for the site which will link the B2 local centre, schools, and residential neighbourhoods with key strategic corridors, leisure routes and onward destinations. The proposed cycle network will be based on the use of off-road shared paths.

Cycle / pedestrian routes are proposed alongside the dunal system, parks and waterways, contributing to an extensive leisure based active travel network. Where these routes are not available, such as to the west of the NTDP, collector roads will have dedicated shared path bicycle facilities. In addition, local streets adjacent to water and park edges, Fire trails and shared streets / bushfire roads will provide beach access and cycle friendly routes throughout the NTDP.

The proposed cycling connections are designed to create a continuous network of facilities removing obstacles and barriers to cycling, both physical and perceived. This includes ensuring connections between the existing cycle network on Manning Street and Beach Street as well as possible future infrastructure on The Lakes Way. The proposed future cycle network is shown in **Figure 24**.

All proposed roads throughout the NTDP will have dedicated pedestrian footpaths to create a comprehensive network following proposed road alignments.

The proposed road grid network and block sizes will also work to facilitate pedestrian permeability and be conducive to encouraging walking trips. As the network has been designed around a linear grid structure the regular cross streets with pedestrian footpaths, and block sizes will encourage pedestrian activity, and achieve a high level of permeability.

Figure 24 Proposed cycle network



Source: Context, 2015, modified by AECOM, 2015

6.5 Car parking

On street car parking will be available on both sides of the road throughout the site with the exception of bushfire perimeter roads, pedestrian passages, shared streets and local streets adjacent to water/parks. Off street car parking will be provided as part of the proposed B2 Local Centre development allowing parking for access to the surf club, community centre, beach, supermarket, golf course, village green and speciality retail. Parking provision has been determined based on preliminary floor space estimate and is consistent with the recommendations in the *Roads Maritime Guide to Traffic Generating Development*. This includes the following public parking provisions:

- 50 spaces for a supermarket (42 spaces/1,000m² GLFA)
- 32 spaces for speciality retail (45 spaces/1,000m² GLFA)
- 100 spaces for beach, surf club and community centre access (based on similar developments)
- 150 spaces for the golf course (based on existing use and consultation with the golf club)

Note that the above parking provision for the B2 Local Centre is preliminary only and does not include residential parking or on-street parking provision.

Figure 25 B2 local centre parking provisions



Source: Roberts Day, 2014, modified by AECOM, 2014

7.0 Sustainable Travel Measures to Reduce Car Dependency

A number of Sustainable Transport and Travel Demand Management strategies have been identified for North Tuncurry to influence travel behaviours which encourage the uptake of sustainable forms of transport, i.e. non-car modes, wherever possible and to reduce the need to travel and hence reduce overall transport and travel demand and the impacts of new development.

7.1 Introduction

A Sustainable Travel Strategy (STS) for North Tuncurry is designed to encourage the use of public transport and walking and cycling facilities wherever possible for all journey purposes. Where the alternatives to the car are not viable, options to encourage car sharing can be promoted to minimise the need for single occupancy vehicle travel. The benefits of similar strategies are now widely understood and include:

- Reducing air and noise pollution and other types of negative environmental impact
- Improving fitness, health and wellbeing due to increased physical activity
- Reducing traffic congestion and associated road network delays and costs
- Reducing the need for costly road infrastructure upgrades (which research has shown only serves to attract additional vehicle traffic, necessitating future highway upgrades)
- Helping residents save money by reducing their need to own and operate motor vehicles
- Improving travel options, particularly for non-drivers or non-car owners
- Reducing the need for parking provisions and maximising land opportunity for other uses
- Supporting strategic land use planning objectives, such as reduced urban sprawl
- Improving local environmental quality and community cohesion.

The role of the STS for the North Tuncurry development is to encourage local trips by bus, bicycle and walking wherever possible and longer distance trips by bus, by making these modes viable and realistic alternatives. This is facilitated through the design of the built form of the North Tuncurry development to accommodate public transport penetration into the residential area which link to neighbourhood / retail shops and the town centres of Tuncurry and Foster. It is also facilitated through good quality, highly permeable pedestrian and bicycle networks throughout the development, including crossing facilities where appropriate and end-of-trip facilities such as bicycle parking.

7.2 Proposed sustainable travel measures

The proposed sustainable travel measures include a range of different types of initiatives which together reinforce the principles and objectives of the sustainable travel strategy. These measures include:

- Travel behaviour measures – initiatives to encourage sustainable travel
- Service measures – service delivery standards to maximise the potential uptake of sustainable modes
- Infrastructure measures – provision of infrastructure designed to facilities sustainable travel

Table 21 Sustainable travel measures

| Item | Travel measures |
|--|--|
| Household Travel Behaviour Measures | |
| 1 | Household Information Packs (HIPs) for each household |
| 2 | One-week free public transport start up discount ticket |
| 3 | Discount voucher for purchasing bike (with local bike shop) |
| Public Transport Measures | |
| 4 | Integration of public transport services |
| 5 | Bus service coverage |
| 6 | Timing of bus services and developing staging – early ‘Start up’ buses |
| 7 | Good quality bus stops with coverage throughout North Tuncurry |
| Bicycle Measures | |
| 8 | Dedicated high quality cycle routes with good connections to the surrounding network and major land uses |
| 9 | Secure, weatherproof bicycle parking at key locations |
| 10 | Bicycle User Group |
| 11 | Promotion of bicycle initiatives |
| Pedestrian Measures | |
| 12 | Highly permeable and safe pedestrian network |
| 13 | Pedestrian facilities connecting to bus stops |
| Parking Restraint Measures | |
| 15 | Co-sharing parking provision |
| Travel Demand Management Measures | |
| 16 | Car sharing schemes such as GoGet (subject to agreement with operator) |
| 17 | Sustainable home deliveries of groceries |

The implementation of the proposed STS measures listed above should result in a reduction of car dependency for the future residents of the NTDP, with improved mode shifts towards public transport and walking and cycling modes.

8.0 Traffic Impact Assessment (Method 1)

The proposed North Tuncurry development will result in an increase in vehicular trips and an increase in the use of the road network in the vicinity of the site in 2050. Demand for travel within the localised road network has been determined through the development of a spreadsheet model and assessed through SIDRA intersection modelling.

8.1 Introduction

Two methods of evaluation have been used to understand the potential impacts of the NTDP on the local road network. Method 1 assesses the likely impacts of the NTDP (for the future year 2050) to determine whether scheduled road network upgrades are sufficient to cater for full development.

Assessment for the future year 2050 also assumes the ultimate development of North Tuncurry. Assessing full development in 2050 ensures that a “worst case scenario” is assumed. Previous discussions with Great Lakes Council and Roads and Maritime identified the initial development year 2026 for assessment during typical AM and PM peak periods. However, given the current construction timeline, it is assumed that a full development year at 2050 is considered more realistic. In addition, the likely low impacts resulting from the relatively slow/staggered nature of development (in line with existing regional growth rates) means that an initial development year has not been assessed in detail. Such an assessment would likely show no change to the Level of Service at intersections. Note that the holiday peak period does not form part of the scope of this study (previously agreed with Great Lakes Council and Roads and Maritime).

Table 22 North Tuncurry future year assessment assumptions

| Assessment | Year | No. of dwellings |
|----------------------|------|------------------|
| Ultimate Development | 2050 | 2,123 |

8.2 Trip generation

8.2.1 Residential use

Roads and Maritime *Guide to Traffic Generating Developments* provides guidance to assess the traffic impacts of land use developments. Roads and Maritime has surveyed five regional areas within NSW in 2010, which resulted in the following:

- Daily vehicle trips of 7.4 per dwelling
- Weekday average morning peak hour vehicle trips of 0.71 per dwelling
- Weekday average evening peak hour vehicle trips of 0.78 per dwelling.

However, the Household Travel Survey undertaken by Great Lakes Council (now MidCoast Council) in 2012 showed the Foster – Tuncurry area had an average of 7.1 trips per dwelling. Based on the lower daily vehicle trip rate, it is recommended a lower peak hour trip rate is to be used as part of the traffic impact assessment. It is recommended a trip peak hour rate of 0.68 per dwelling in the AM peak and 0.75 per dwelling during the PM peak is applied.

Taking into consideration a portion of traffic generated will be contained within the development due to the B2 Local Centre, community facilities and open spaces, it is proposed 15 per cent is used to account for internal trips.

It is recommended a peak hour trip rate of 0.58 trips during the AM peak and 0.64 trips during the PM peak is applied to assess the traffic impacts of the development on the external surrounding road network. A summary of the trips generated at ultimate development is shown in **Table 23**.

Table 23 North Tuncurry trip generation

| Development | No. of dwellings | AM Trip rate | AM veh. trips | PM Trip rate | PM veh. trips |
|-----------------------------|------------------|--------------|---------------|--------------|---------------|
| 2050 - Ultimate Development | 2,123 | 0.58 | 1,231 | 0.64 | 1,359 |

It should be noted that the impacts / influence on potential mode shifts from car travel as a result of the proposed sustainable travel strategies have not been reflected in the RMS trip rate and therefore the impact assessment has considered a worst-case scenario in terms of car trips generated by the development and impacts on the surrounding road network.

8.2.2 Industrial use

6.6ha of industrial lands for freight and logistics are proposed to the north of the B2 local centre and encompasses approximately 12,000m² of Gross Floor Area. Roads and Maritime guidelines provide guidance to assess the traffic impacts of land use developments. Roads and Maritime has surveyed seven of Business parks and industrial estates within regional areas in NSW in 2012, which resulted in the following:

- Daily vehicle trips of 7.83 per 100 m² of GFA
- Weekday average morning peak hour vehicle trips of 0.70 per 100 m² of GFA
- Weekday average evening peak hour vehicle trips of 0.78 per 100 m² of GFA.

It is recommended that the weekday average peak hour trip rates are applied to assess the traffic impacts of the development on the external surrounding road network. A summary of the trips generated at ultimate development is shown in **Table 24**.

Table 24 Industrial lands trip generation

| Development | GFA in estate m ² (occupied) | AM Trip rate | AM veh. trips | PM Trip rate | PM veh. trips |
|-----------------------------|---|--------------|---------------|--------------|---------------|
| 2050 - Ultimate Development | 12,000 | 0.70 | 84 | 0.78 | 94 |

8.2.3 Retail land use

Retail uses are proposed to be built within the B2 local centre and consist of approximately 2,292m². Roads and Maritime provides guidance to assess the traffic impacts of land use developments. Roads and Maritime has conducted extensive surveys of retail developments and divided the floor area into retail categories. Given the size of the proposed retail land use, it is assumed that the retail area will be provided as specialty shops. The survey resulted in the following rates:

- Thursday peak hour generation rate of 4.6 vehicle trips per 100m² GLFA.

As such, it is recommended a peak hour trip rate of 4.6 trips per 100 m² of GLFA during peak is applied to assess the traffic impacts of the development on the external surrounding road network. A conversion rate of 90% is adopted between GFA and GLFA. The trips generated at ultimate development are shown in **Table 25**.

Table 25 Retail use lands trip generation

| Development | GFA in estate m ² (occupied) | GLFA (m ²) | Trip rate | Peak hour veh. trips |
|-----------------------------|---|------------------------|---------------------------|----------------------|
| 2050 - Ultimate Development | 2,292 | 2,063 | 4.6 per 100m ² | 95 |

The retail use generates around 95 vehicle trips during peak hour on a typical weekday. Given the proposed size of the retail use and its location within the B2 local centre, it is logical to assume that the retail use would predominantly service residents within the NTDP. In addition, the proposed residential trip rates assume a 15 per cent reduction of the generated traffic to account for internal trips. This represents around 212 trips during the morning peak and 234 trips during the evening peak, which more than encompasses the retail generated traffic. As such, it is considered that very few external trips will be attracted as a result of the proposed retail use, and therefore they have not been considered in the modelling assessment.

8.2.4 B5 Business Development land use

The NTDP contains 6.7ha of B5 Business Development land to the south of the site close to the intersection of The Northern Parkway / Grandis Drive. This zoning accommodates a range of

employment generating land uses including offices, warehouses and retail premises (including those with large floor areas), health care and educational establishments. This land use therefore provides a natural extension to the existing school, TAFE and other institutional uses immediately to the south of the NTDP. At this stage, the land use and development yield for the B5 Business Development land have not yet been determined. However, it is unlikely to be made up of retail uses due to the B2 Local Centre and existing Tuncurry shopping precinct providing sufficient retail uses.

The traffic generation from this land has not been considered as part of this assessment due to the land use and development yields being unknown. Traffic generation rates vary considerably between some land uses, and it is not appropriate to make assumptions that may either over or under estimate the likely traffic generation, and therefore potential traffic impacts.

The development proposed on this land will however be subject to MidCoast Council’s development application (DA) process and as such, a traffic impact assessment would be prepared to support this application. This will allow the traffic impacts to be accurately assessed, and appropriate mitigation measures proposed.

8.3 Trip distribution and assignment

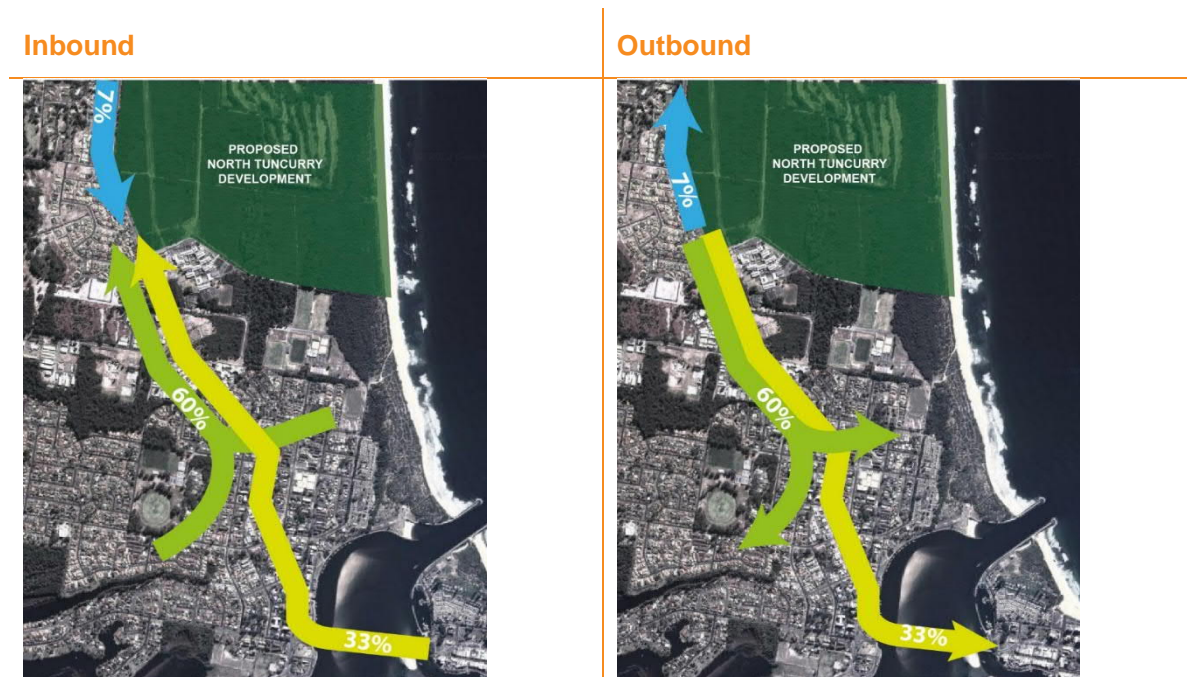
8.3.1 Residential use

Analysis of the Origin and Destination survey undertaken by Great Lakes Council was used to determine travel patterns for the Tuncurry area. The following travel patterns were identified during the AM peak:

- 33 per cent of outbound trips would continue along Wallis Lake Bridge
- 7 per cent of outbound trips were headed northbound
- 60 per cent of outbound trips would remain within Tuncurry.

It was assumed the same proportion of trips occurred in the opposite direction (inbound) during the AM peak. For the PM peak it will be assumed a similar travel pattern occurs. **Figure 26** shows the proportion of inbound and outbound trips to be applied to the trips generated by the North Tuncurry development.

Figure 26 Trip distribution



Source: AECOM, 2013

As described in Section 6.2, the site has three available access points to the surrounding road network, two along The Lakes Way and the other via a Beach Street extension. The assignment of the trips generated by the development has been distributed to the three intersections based on their origin and destination and the likelihood of using the intersections. In the initial stages of development trips generated will utilise the Northern Parkway and Beach Street connection to access the development. By 2026, a new access road is proposed to be provided 1.2km north of Chapmans Road.

During the AM peak, it is assumed 90 per cent of the development trips are outbound trips and 10 per cent are inbound trips. During the PM peak, it is assumed 80 per cent were inbound trips and 20 per cent were outbound trips.

Table 26 North Tuncurry ultimate development trips

| 2050 | New Access Road (north of Chapmans Road) | | Northern Parkway | | Beach Street extension | |
|------|--|----------|------------------|----------|------------------------|----------|
| | Inbound | Outbound | Inbound | Outbound | Inbound | Outbound |
| AM | 57 | 514 | 42 | 381 | 31 | 278 |
| PM | 504 | 126 | 310 | 77 | 273 | 68 |

8.3.2 Industrial use

Further to the above, the following travel patterns were assumed for the industrial land use during the AM peak:

- 50 per cent of inbound trips would approach the site from the north
- 50 per cent of inbound trips would approach the site from the south.

It was assumed the same proportion of trips occurred in the opposite direction (outbound) during the AM peak. For the PM peak, it will be assumed a similar travel pattern occurs.

The industrial land use is located to the north of the B2 local centre and will be accessed via a separate access point. As such, only the portion of traffic heading southbound on The Lakes Way will have an impact on the study intersections.

During the AM peak, it is assumed 30 per cent of the development trips are outbound trips and 70 per cent are inbound trips. During the PM peak, it is assumed the same proportion of trips occur in the opposite direction (70 per cent outbound trips and 30 per cent inbound trips).

Table 27 Industrial development trips

| 2050 | Vehicle trips | Inbound | Outbound | Heading to/ approaching from the south | |
|------|---------------|---------|----------|--|----------|
| | | | | Inbound | Outbound |
| AM | 84 | 59 | 25 | 30 | 13 |
| PM | 94 | 28 | 66 | 14 | 33 |

8.4 Future year traffic forecast (Method 1)

In Section 5.1, a number of road infrastructure upgrades have been identified in close proximity to the site, which includes:

- Construction of two additional lanes along The Lakes Way (Manning Street) between Grey Gum Road and approximately 250m north of Chapmans Road
- An upgrade to the intersection of The Lakes Way | Grey Gum Road to a roundabout
- An upgrade to the intersection of The Lakes Way | Chapmans Road to a roundabout
- Extension of Beach Street from North Street to Northern Parkway (this is forecast to be commenced in 2027 however is assumed to be brought forward to 2023 with development of the NTDP).

- Duplication of the Wallis Lake Bridge.

Traffic generated as a result of the initial stages of the North Tuncurry development is expected to be low and therefore is likely to have a minor impact on the road network, with no change to the Level of Service at intersections. As such, no upgrades are likely to be required along the road corridors assessed in order to facilitate the initial stages of development. Note this assumes that access will be facilitated through the existing intersection of The Lakes Way / The Northern Parkway and the proposed Beach Street extension.

The 2050 traffic assessment has assumed the proposed road infrastructure upgrades have been implemented by 2050, including the Beach Street connection and new access onto The Lakes Way.

The additional trips generated by the North Tuncurry development and the proposed industrial development have been incorporated into the spreadsheet model. **Table 28** presents the 2050 base traffic forecasts along the main road corridors of the study area.

Table 28 2050 future traffic forecast with development

| Section | Direction | Capacity | AM Peak (veh/hr) | | PM Peak (veh/hr) | |
|--|-----------|----------|------------------|-----------|------------------|-----------|
| | | | without NTDP | with NTDP | without NTDP | with NTDP |
| The Lakes Way/ Manning Street | | | | | | |
| North of New Access Road | NB | 1,200 | 658 | 733 | 828 | 847 |
| | SB | | 907 | 916 | 721 | 795 |
| Between New Access Road and Chapmans Road | NB | 1,200 | 658 | 784 | 828 | 1295 |
| | SB | | 907 | 1367 | 721 | 852 |
| Between Chapmans Road and Northern Parkway | NB | 2,000 | 667 | 737 | 1029 | 1471 |
| | SB | | 1097 | 1542 | 718 | 846 |
| Between Northern Parkway and Grey Gum Road | NB | 2,000 | 838 | 919 | 1226 | 1925 |
| | SB | | 1354 | 2043 | 906 | 1085 |
| South of Grey Gum Road | NB | 2,000 | 880 | 958 | 1286 | 1939 |
| | SB | | 1471 | 2148 | 964 | 1140 |
| Beach Street | | | | | | |
| North of North Street | NB | 500* | 16 | 28 | 32 | 145 |
| | SB | | 17 | 132 | 30 | 59 |
| East of Wharf Street | EB | 500 | 84 | 96 | 96 | 209 |
| | WB | | 75 | 190 | 82 | 110 |
| Wallis Lake Bridge | | | | | | |
| Bridge | WB | 2,800 | 1138 | 1147 | 1192 | 1276 |
| | EB | | 1147 | 1233 | 1181 | 1202 |

* the provision of the Beach Street connection as part of the NTDP increases the capacity along Beach Street (north of North Street)

In 2050, the construction of two additional lanes along The Lakes Way (Manning Street) between Grey Gum Road and approximately 250m north of Chapmans Road and the duplication of Wallis Lake Bridge will be able to cope with the forecast traffic volumes. However, The Lakes Way starts experiencing capacity constraints south of New Access Road in the southbound direction during the morning peak and in the northbound direction during the evening peak. As such, road upgrades may be required by 2050 as further studies are required to assess the relationship between road upgrades needed at the midblock level and intersection upgrades.

The forecast traffic along Wallis Lake Bridge during the 2050 peak hour periods indicates the existing two-lane configuration of the bridge nears capacity. The traffic volume in the peak direction approaches 1,400 veh/h contributed by a combination of background traffic growth and the additional traffic generated by the ultimate development of the NTDP.

8.5 North Tuncurry development intersection performance (Method 1)

Traffic generated by the North Tuncurry development has been modelled and assessed in SIDRA for the year 2050 during typical AM and PM peak periods to determine the impacts on intersection turning movements.

The traffic assessment assumes a dedicated right turn lane on the Grandis Drive approach at the intersection of The Lakes Way | Northern Parkway | Grandis Drive, as recommended in **Section 5.4.1**.

8.5.1 Initial development stages

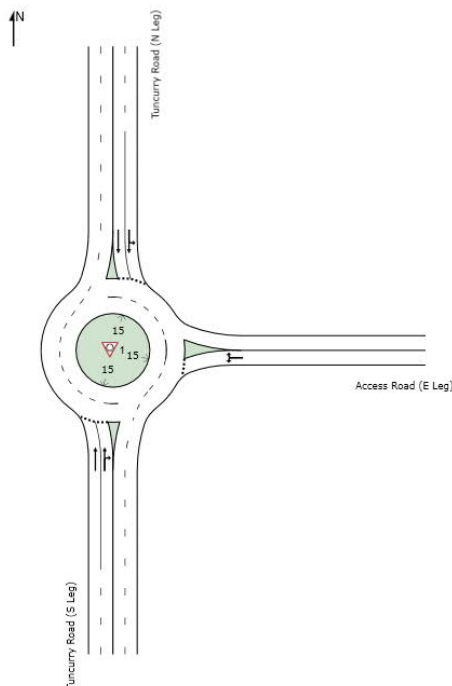
The initial stages of development are not anticipated to impact on intersection performance. Trip generation is expected to be low due to the likely slow pace of development (estimated to be in the order of 50 dwellings per year). Therefore, initial traffic impacts are expected to be similar to the base case scenario (without development). Sensitivity testing shows that intersections operate at the same LoS as the base case scenario, with only a marginal increase to delays and queue lengths.

8.5.2 2050 traffic impact assessment

The traffic generated by the full development of North Tuncurry (including the industrial development) has been added to the road network to assess the performance of key intersections during the peak hours in 2050. A new intersection providing a connection between the NTDP and Tuncurry Road (The Lakes Way) has also been assessed.

A roundabout has been assessed for the new intersection of Tuncurry Road | New Access Road providing a connection to the northern region of the North Tuncurry development. The geometric layout is shown in **Figure 27**.

Figure 27 Tuncurry Road | New Access Road intersection layout



A summary of the intersection performance for the 2050 peak hour traffic flows are provided in **Table 29**.

Table 29 2050 AM and PM peak intersection performance summary

| Approach | Peak hour | Veh/h | LoS | DoS | 95% Back of Queue (m) | Average Delay (s) |
|---|-----------|-------|-----|-------|-----------------------|-------------------|
| 2050 with Ultimate development | | | | | | |
| Tuncurry Road New Access Road | AM | 57 | B | 0.705 | 14.6 | 16.2 |
| | PM | 14 | A | 0.178 | 2.2 | 11.3 |
| The Lakes Way Chapmans Road* | AM | 50 | A | 0.553 | 12.6 | 9.0 |
| | PM | 78 | A | 0.181 | 2.3 | 10.6 |
| The Lakes Way Northern Parkway Grandis Drive* | AM | 3251 | C | 0.859 | 167.3 | 31.2 |
| | PM | 3189 | B | 0.796 | 124.4 | 20.8 |
| The Lakes Way Grey Gum Road* | AM | 50 | A | 0.553 | 12.6 | 9.0 |
| | PM | 119 | B | 0.313 | 4.4 | 17.0 |

* Intersection upgraded as part of road network and infrastructure upgrade identified in the S94 Plan.

Intersection modelling indicates the intersection upgrades identified in the S94 Plan are able to accommodate the additional traffic generated by the full development of North Tuncurry. The SIDRA modelling shows no additional upgrades are required with the intersections operating at LoS C or better and with spare capacity. The proposed roundabout intersection of Tuncurry Road | New Access Road operates at a LoS B or better during the AM and PM peak.

It should be noted that traffic generation resulting from the B5 Business Development land uses have been omitted from the assessment as the land use and the development yield have not yet been determined. However, given the network in 2050 is performing well, this proposed use is expected to have limited impact on the overall network performance given the road network performance modelled suggests that there is additional capacity within the network.

Notwithstanding the above, additional traffic studies will be undertaken once the proposed land uses have been established to assess the likely traffic impacts. This assessment will be submitted as part of Council's DA process.

8.5.2.1 The Lakes Way | Midge Orchid Road

The intersection of The Lakes Way (Manning Street) / Midge Orchid Road is a seagull intersection, with a dedicated right turn bay on the southern approach and merge lane for the westbound right turn movement. The intersection will be providing the main access to the industrial lands for vehicles approaching the site from the north.

Given the low traffic volumes generated by the industrial site (43 trips in the morning peak and 47 trips in the evening peak), the site is expected to have limited impact on the overall performance of The Lakes Way/ Midge Orchid Road and is not likely to result in a change to intersection level of service. At this stage, it is concluded that SIDRA Intersection modelling does not need to be undertaken for this intersection. However, further studies might be undertaken before the site is developed.

9.0 Traffic Impact Assessment (Method 2)

Background traffic growth and traffic generated by the proposed NTDP will contribute to the requirement for road network infrastructure improvements. The year of upgrade for each piece of infrastructure has been estimated through the development of a spreadsheet model and assessed through SIDRA intersection modelling.

9.1 Introduction

Two methods of evaluation have been used to understand the potential impacts of the NTDP on the local road network. Method 2 assesses the impacts of background traffic growth and the proposed NTDP on the timing of intersection upgrades and estimates the year in which these are likely to be required. This excludes the Beach Street extension (which has previously been assumed to be developed by 2018; however, given current construction timing, it is assumed that the extension will be constructed by 2023) to facilitate the initial stages of development (if the NTDP is to proceed). Note that the holiday peak period does not form part of the scope of this study (previously agreed with Great Lakes Council and Roads and Maritime). It is also noted that the industrial use does not form part of this assessment due to the relatively low generated traffic volumes.

9.2 Trip generation and Trip distribution

Trip generation and trip distribution is based on the same principles identified in **Section 8.2**. However rather than assuming full development in 2050, development of the NTDP has been estimated to show an additional 50 residential lots per year from 2023 (with the resulting full development not anticipated until approximately 2065). This is a more realistic assumption for NTDP growth in comparison to Method 1.

9.3 Future year traffic forecast (Method 2)

The Great Lakes Council have identified several potential road infrastructure upgrades under their S94 Plan.

Infrastructure upgrades in the vicinity of the study area include:

- Construction of two additional lanes along The Lakes Way (Manning Street) between Grey Gum Road and approximately 250m north of Chapmans Road
- An upgrade to the intersection of The Lakes Way | Grey Gum Road to a roundabout
- An upgrade to the intersection of The Lakes Way | Chapmans Road to a roundabout
- Extension of Beach Street from North Street to Northern Parkway
- Duplication of the Wallis Lake Bridge.

To assist in estimating any potential impact on the proposed timing of these infrastructure upgrades, traffic modelling has been undertaken for the following scenarios:

- Traffic forecasts without the NTDP
- Traffic forecasts with the NTDP

The following assumptions were used as part of the analysis:

- The NTDP is developed at a rate of 50 lots per year from 2023
- The Beach Street connection is provided by 2023
- The new access road intersection and connection to The Lakes Way from the north of the site opens in 2038 to coincide with the estimated release of lots in the northern third of the site.
- The future Leo Street and Chapman Street development is developed at a rate of 21 lots per year between 2021 and 2040, which is equivalent to a background growth of 0.9 per cent per year
- A 0.9 per cent background traffic growth has been applied post 2040 (note that this growth rate has been assumed for both the NTDP as well as other developments).

- The AM peak trip rate is 0.58 with 10 per cent being inbound trips and 90 per cent outbound
- The PM peak trip rate is 0.64 with 80 per cent being inbound trips and 20 per cent outbound
- The same trip distribution and assignment used in the Traffic Impact Assessment has been applied

A spreadsheet model was developed for the future year of 2023, 2028, 2033, 2038, 2043, 2048, 2053, 2058, 2063 and 2065.

9.4 North Tuncurry road network upgrade timing requirements (Method 2)

Intersection modelling indicates that the timing of the infrastructure upgrades identified in the S94 Plan can be delayed under both scenarios (as per the assumptions outlined above, this excludes the extension of Beach Street which is assumed to be provided by 2023 to facilitate the early stages of NTDP development).

Table 26 presents the traffic modelling results and timing of the proposed infrastructure upgrades.

Table 30 Timing of Road Network Infrastructure Upgrades

| Schedule of works | S94 Plan Estimated start date | Without NTDP | With NTDP | Lot Threshold |
|---|-------------------------------|--------------|-----------|---------------|
| Construction of two additional lanes along The Lakes Way (Manning Street) from Grey Gum Road to approximately 250m north of Chapmans Road | 2021 | 2040-2043 | 2033-2038 | 550-800 |
| Upgrade to the intersection of The Lakes Way Grey Gum Road to a roundabout | 2017 | 2040 - 2043 | 2038-2040 | 800-900 |
| Upgrade to the intersection of The Lakes Way Chapmans Road to a roundabout | 2017 | 2065 | 2063-2065 | 2050-2123 |
| Extension of Beach Street from North Street to Northern Parkway | 2027 | | 2023* | |
| Duplication of the Wallis Lake Bridge | 2025 | 2048 | 2038 | 800 |

*To be developed in conjunction with initial stages of the NTDP

Based on the assumptions of this modelling assessment the infrastructure upgrades proposed in the S94 Plan are scheduled to occur before capacity is estimated to be reached, suggesting the timing of the infrastructure upgrades in the S94 Plan may be delayed under both scenarios.

The signalised intersection of The Lakes Way | Northern Parkway | Grandis Drive may require further upgrade to the existing layout post 2048. This timeframe remains within the NTDP release window (based on 50 lots per year, development is estimated to conclude in approximately 2060). However, the upgrade may not be required if the staging of development or the distribution of traffic through the access points to the NTDP are altered. Note that an upgrade of this intersection has not been identified as part of the S94 Plan.

An estimated lot development threshold has also been provided in **Table 26**. Should development not proceed at the estimated rate of 50 lots per year, road network infrastructure would likely need to be upgraded at whichever occurred first, the year or the lot threshold.

Note, the S94 Plan does not indicate how the estimated start date was determined. The following provides possible reasons for the difference in the timing of the proposed upgrades:

- Assumptions on the timing of future developments and future traffic forecasts

- The proposed upgrades at the intersection of The Lakes Way | Grey Gum Road and The Lakes Way | Chapmans Road in 2017 could be due to the requirement of having the upgrade in place prior to the opening year of the future Leo Street and Chapmans Road development.

10.0 Conclusions and Recommendations

This section summarises the outcomes of the study. The most important outcome is that with full development of the NTDP no additional road network upgrades are required other than those previously identified for upgrade by Council and the new northern access roundabout. In addition, the infrastructure upgrades proposed in the S94 Plan are scheduled to occur before capacity is estimated to be reached, therefore the timing of the infrastructure upgrades are able to be delayed both with and without development of the NTDP.

10.1 Conclusions and recommendations

To understand the impacts of the development on the local road network a spreadsheet model has been developed and key intersections were assessed in SIDRA.

Method 1 assesses the likely impacts of the NTDP for the future year of 2050 (Ultimate Development). For the full development of the NTDP, a total of 1,231 and 1,359 trips are expected during the AM and PM peak in 2050. The proposed industrial development, located to the north of the NTDP, is expected to generate 84 and 94 trips during the AM and PM peak. Further to the above, given the size and the location of the retail use, it is expected that the proposed retail development will not generate new trips.

The traffic generation resulting from the B5 Business Development land uses have been omitted from the assessment given the land use and the development yields have not yet been determined. However, any proposed development on this land will be subject to the MidCoast Council DA process and a separate traffic impact assessment detailing the impacts of this use will be prepared. It is further noted that given the proposed on-site uses, it is not likely that this proposed use will be retail; it will however act as an ancillary use within the proposed NTDP.

The 2050 traffic assessment assumes the following road infrastructure upgrades have been implemented, as identified in the S94 Plan for the Forster District:

- Construction of two additional lanes along The Lakes Way (Manning Street) between Grey Gum Road and approximately 250m north of Chapmans Road
- An upgrade to the intersection of The Lakes Way | Grey Gum Road to a roundabout
- An upgrade to the intersection of The Lakes Way | Chapmans Road to a roundabout
- Extension of Beach Street from North Street to Northern Parkway (scheduled for 2027 but assumed to be developed in 2023 to facilitate the initial stage of the NTDP).
- Duplication of the Wallis Lake Bridge.

Assuming the proposed infrastructure upgrades have been implemented, no additional upgrades are required with the exception of providing the proposed roundabout for the new intersection providing access to the northern region of the NTDP.

Method 2 assesses the required timing of infrastructure upgrades based on background traffic growth and the NTDP.

Based on the assumptions of this modelling assessment the infrastructure upgrades proposed in the S94 Plan are scheduled to occur before capacity is estimated to be reached, therefore the timing of the infrastructure upgrades in the S94 Plan can be delayed under both scenarios.

The implementation of the proposed STS measures listed in **Section 7.2** should result in a reduction of car dependency for the future residents of the NTDP, with improved mode shifts towards public transport and walking and cycling modes.

11.0 References

Austrroads Inc. 2009. *Austrroads Guide to Traffic Management Part 3: Traffic Studies and Analysis*.

Great Lakes Council. 2009 (draft amended March 2014). *Forster District Section 94 Development Contributions Plan*

Roads and Maritime Services, 2002. Guide to Traffic Generating Development

Appendix A

Forster District S94 Plan



Section 94 Development Contributions Plan

Forster District

Adopted 28 October 2014

Summary Schedules

These are provided as summary tables only. Details are contained within the plan.

Summary Schedule of Contributions at 2014-15 (Dec 2013 CPI =104.8)

| | Forster, Tuncurry, Green Point, Failford | South Forster Northern Catchment | Pacific Palms, Smiths Lake, Nabiac | Bungwahl, Coomba Park |
|-----------------------------------|--|----------------------------------|------------------------------------|-----------------------|
| Major Roads \$ per "one-way" trip | \$651.95 | \$651.95 | \$488.96 | \$325.98 |
| Aquatic Centre \$/person | \$295.51 | \$295.51 | \$295.51 | \$295.51 |
| Surf Life Saving \$/person | \$78.95 | \$78.95 | \$78.95 | \$78.95 |
| South Forster Drainage \$/person | | \$2,857.74 | | |
| Library Facilities \$/person | \$488.99 | \$488.99 | \$488.99 | \$488.99 |
| Open Space \$/person | \$1,413.23 | \$1,413.23 | \$1,413.23 | \$1,413.23 |
| Community Facilities \$/person | \$533.76 | \$533.76 | \$533.76 | \$533.76 |

Motor Vehicle (MV) and Bicycle (Bike) Parking Contributions where the developer is unable to provide parking as required by Council policy in CBD's and surrounding Zone B4 areas:

Forster - MV: \$17,946.49, Bike: Rail- \$1,081.91 or Enclosure - \$2,162.78

Tuncurry - MV: \$13,560.30, Bike: Rail- \$1,081.91 or Enclosure - \$2,162.78

Summary Schedule of Works (based on 2009-10 using CPI = 166.0 except where indicated)

(Costs shown are net of grants)

| Facility | Works | Cost Summary | Timing/ Thresholds |
|---|----------------------------------|--------------|--------------------|
| Forster Tuncurry Major Roads (updated in 2012 based on CPI = 174.0) | Wallis Lake Bridge duplication | \$11,995,000 | 2022 |
| | Improvements to road network | \$10,245,800 | 2015-2025 |
| | Improvements to intersections | \$12,381,800 | 2012-2026 |
| | Traffic Studies | \$97,800 | 2015 |
| | Present Value of borrowing costs | \$6,020,820 | 2012 |
| Aquatic Centre (updated in 2012 based on CPI = 174.0) | Recoupment of construction cost | \$1,450,805 | 2009-2031 |
| | Enhancement works | \$2,845,455 | 2012-2031 |
| Surf Life Saving | Equipment | \$200,000 | 2009-2031 |
| | Building | \$1,200,000 | 2009-2031 |
| South Forster Drainage | Northern Catchment | \$3,225,000 | 2009-2016 |
| Forster District Library | Building program | \$6,300,000 | 2010-2021 |
| | Present Value of borrowing costs | \$2,230,000 | 2010-2031 |
| Forster District Open Space | Foreshore Development | \$8,404,000 | 2009-2031 |
| | Sports Fields | \$8,780,000 | 2009-2031 |
| | Linkages | \$1,770,000 | 2009-2031 |
| | General Park Improvements | \$3,044,000 | 2009-2031 |
| | Land Acquisition Program | \$7,850,000 | 2009-2031 |
| Community Facilities | Community Facility | \$6,400,000 | 2009-2031 |
| | Present Value of Borrowing Costs | \$2,305,000 | 2009-2031 |
| Forster Parking(CPI = 102.0) | Acquisition and development | \$3,074,238 | 2006-2017 |
| Tuncurry Parking(CPI = 102.0) | Acquisition and development | \$2,771,567 | 2006-2017 |

The above amounts include Council's apportioned liability in respect of benefit to existing population, as follows:

| | | | |
|-----------------------------|-------------------|-------------|-----------|
| Forster District Open Space | Council Liability | \$6,800,500 | 2009-2031 |
|-----------------------------|-------------------|-------------|-----------|

**FORSTER DISTRICT
S94 CONTRIBUTIONS PLAN**

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| 1. "S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary" Amended Map | |
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| 3. "S94 Plan: Forster Car Parking - Great Lakes 2013 Catchment Boundary" Amended Map | |
| 4. "S94 Plan: Tuncurry Car Parking - Great Lakes 2013 Catchment Boundary" Amended Map | |
| 5. "Non-Residential Developments S94 'One-Way' Trips Table" – 18 November 2013 | |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

1 Forster District Plan

1.1 Purpose of the Forster District Plan

The purpose of this plan is to enable contributions to be levied as a condition of consent for development that increases the demand for infrastructure in the Forster District.

1.2 Land to which the Forster District Plan Applies

This plan applies to development in the area for which the Forster-Tuncurry urban area is the main service centre. It is defined in "**S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary**" Amended Map in Section 14 - Appendices.

1.3 History of the Forster District Plan

| Event | Date |
|--|---|
| First Exhibited by Council First Adopted by Council: Plan first became effective: | 1 May 2002 to 31 May 2002 25 June 2002 11 July 2002 |
| Revisions: | |
| Amended to change occupancy rates to those shown in Council's "Standard Schedule for S94 Plans." | Exhibited 9 July 2003 Adopted by Council resolution 26 August 2003 |
| Revise population forecasts Add Forster District Major Roads (consequently repeals South Forster Roads and Drainage, Town of Forster Roads & Drainage, Nth Tuncurry Release Area) Revise Aquatic Centre & Surf Life Saving | Exhibited (Advertised in Great Lakes Advocate and Nota): 8 March 2006 Adopted by Council 23 May 2006 Effective Date (Advertised in Advocate and Nota): 31 May 2006 |
| Add Library Facility | Exhibited (Advertised in Great Lakes Advocate and Nota): 5 July 2006 Adopted by Council 22 August 2006 Effective Date (Advertised): 31 August 2006 |
| Add Forster Car Parking and Tuncurry Car Parking | Exhibited (Advertised in Great Lakes Advocate and Nota): 4 Oct 2006 Adopted by Council 28 November 2006 Effective Date (Advertised): 6 December 2006 |
| Forster District Nov 07 Contributions defined for tourist accommodation and added for smaller units. (Section 12.1) | Exhibited (Advertised in Great Lakes Advocate and Nota): 19 September 2007 Adopted by Council: 30 October 2007 Effective: 8 November 2007 |
| Add Open Space Add Community Facilities Revise generally Repeal Forster Tuncurry Neighbourhood Space Plan (1993) Repeal Pacific Palm O S Plan (1993) | Exhibited (Advertised in Great Lakes Advocate and Nota): 18 March 2009 Adopted by Council: 9 June 2009 Effective Date (Advertised): 1 July 2009 |
| Indexed Contribution Rates for 2014-15, Updated Works Program for Roads, Tuncurry Parking and Aquatic Centre, Amended Proposed Extension of Community Facilities, Added Bicycle Parking, Amend Non-Residential Trips Related Contributions, Updated CBD and South Forster Drainage Catchment Maps, Costs and Contributions for Car Parking in Forster and Tuncurry, Amended Plan Catchment Maps, Application of S94 Credits and Amendments for Approval of S94 Concessions/Discounts/Variations | Conditionally Approved by Council: 25 Mar 2014 Advertised and Exhibited: 31Mar - 30 Apr 2014 Adopted by Council 28 Oct 2014 Effective Date (Advertised): 1 Jan 2015# |

This plan will apply to all development consents issued on or after the most recent effective date.

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

2 Development Forecasts

2.1 Residential Development

Future residential development

This is based on the following reports issued by Council's Strategic Planning Branch.

- The Forster Tuncurry Conservation and Development Strategy (2003)
- The Rural Living Strategy (2004)
- The Forster Tuncurry Land Use Study (2005) with respect to medium and high density zones

Household size

The gross population generated by all future development is estimated by applying an average household size of 2.1 to each dwelling. This is based on the average household size for Great Lakes at the 2006 census being 2.2 persons, and assuming a 5% permanent vacancy rate. The contributions payable depend on population generated according to dwelling size (ranges from 1.0 to 2.4 persons/ dwelling) and the weighted average of all these is also 2.1 persons/ dwelling.

Although household size has declined steadily over the past 60 years, it does not follow that the trend will continue. No further decline is predicted in this contributions plan. This plan will however be reviewed periodically to take account of future population data.

Gross Population

Contributions are payable equally on developments intended for tourism and for residential use. Because the Forster District is a holiday destination, many dwellings are occupied for less than the whole year. On census night 2006, only 77% of Forster-Tuncurry houses and flats were occupied.

This means that the gross population represented by contributions paid is greater than the residential population.

This gross population, that could only occur if all dwellings were occupied, is fairly close to the average population in January, when visitor population is at its peak.

Estimates of Leivable Population

| Count of Private Dwellings | 1996 | 2001 | 2006 | 2008 est | vacant lots with dwelling potential | total dwellings levies paid | New leivable dwellings | Total future dwellings (2041) |
|---|---------------|---------------|---------------|---------------|-------------------------------------|-----------------------------|------------------------|-------------------------------|
| Forster-Tuncurry | 9,060 | 9,898 | 10,715 | 11,100 | 396 | 11,496 | 8,011 | 19,507 |
| Pacific Palms | 623 | 720 | 911 | 950 | 147 | 1,097 | 36 | 1,133 |
| Smiths Lake | 484 | 562 | 663 | 700 | 360 | 1,060 | 49 | 1,109 |
| Coomba Park | 230 | 247 | 311 | 330 | 389 | 719 | 0 | 719 |
| Green Point | 217 | 244 | 267 | 280 | 48 | 328 | 28 | 356 |
| Nabiac | 195 | 216 | 232 | 240 | 61 | 301 | 140 | 441 |
| Darawank, Failford | 263 | 284 | 364 | 380 | 83 | 463 | 40 | 503 |
| Bungwahl, Tarbuck Bay | 263 | 292 | 321 | 340 | 78 | 418 | 0 | 418 |
| Coomba Rural CD1092408 | 117 | 154 | 162 | 170 | 18 | 188 | 4 | 192 |
| Nabiac Rural CD1091607 | 104 | 135 | 151 | 160 | 33 | 193 | 0 | 193 |
| Wallis Lake, Booti Booti CD1092401 | 33 | 29 | 61 | 70 | 5 | 75 | 0 | 75 |
| SUB-TOTAL | 11,589 | 12,781 | 14,158 | 14,720 | 1,618 | 16,338 | 8,308 | 24,646 |
| Allowance for dwellings not counted at census | 1,200 | 1,400 | 1,600 | 1,700 | | 1,700 | 300 | 2,000 |
| Allowance for dwellings not included above | | | | | | 0 | 200 | 200 |
| TOTALS | 12,789 | 14,181 | 15,758 | 16,420 | 1,618 | 18,038 | 8,808 | 26,846 |
| Gross population at 2.1/dwelling | | | | 34,482 | 3,398 | 37,880 | 18,497 | 56,377 |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

2.2 Non-Residential Development

| | Estimated Existing floor area sq m | Estimated Future floor area sq m | Estimated additional trips |
|-----------------------------------|------------------------------------|----------------------------------|----------------------------|
| Retail | 80,000 | 20,000 | 2,000 |
| Commercial | 50,000 | 20,000 | 400 |
| Industrial | 80,000 | 20,000 | 200 |
| Sub-Total Non-Residential | 210,000 | 60,000 | 2,600 |
| Other (now includes Special Uses) | Unknown | 26,000 | 2,600 |
| Total Non-Residential | 210,000+ | 86,000 | 5,200 |

Note: As a consequence of our recent Economic Development studies, detailed travel demand modelling and Council's desire to change the apportionment of "one-way" trips to closer reflect actual "Non-Residential" Developments' travel demand, we have herein removed the counting of "one-way" trips that can now be justifiably apportioned to the residential developments within the Great Lakes Council area. Accordingly the above table has been modified to include a relatively large "Special Uses" component and it now better reflects the "one-way" trips that are considered to be directly attributable to the listed types of "Non-Residential" developments.

2.3 New Traffic Generated

The updated RMS Guide to Traffic Generating Developments is used to estimate traffic generated by a development. The traffic is expressed as a number of daily "one-way" trips so that a return trip counts as two trips.

The following table is an estimated projection of future traffic generated up to 2041.

| Development type | units | Number | Total trips |
|-----------------------------------|-----------|--------|---------------|
| Residential dwellings | Dwellings | 8,808 | 61,656 |
| Motel units | Units | 1,000 | 3,000 |
| Non-Residential | Sq metres | 60,000 | 2,600 |
| Other N-R (includes Special Uses) | Sq metres | 26,000 | 2,600 |
| Total | | | 69,856 |

Notes:

1. The above table was modified in November 2013 when amendments were made to this Plan subsequent to a thorough 3-year internal to GLC re-assessment/update of the Non-Residential and Residential "one-way" trips' apportionment for this Plan which included changes to S94 Plans Major Roads Contributions' Apportionment, detailed travel demand modelling and the adoption of a new S94 Contributions Assessment policy.
2. The total figure in the above table is only the aggregate of all "one-way" trips generated and is used in deriving an equitable sharing of infrastructure cost among all generators. It is not a figure that can be used in traffic engineering since, in many cases, it includes both ends of the same trip.

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

3 Major Roads Plan

3.1 Purpose of the Major Roads Plan

This plan is to enable funding for improvements to Forster-Tuncurry Major Roads so that, as further development and consequent increases in motor, pedestrian and cycle traffic occur, Council will be in a position to increase the capacity of the major roads and intersections.

3.2 Land to which the Major Roads Plan Applies

The Major Roads plan covers all the Forster District as defined in "**S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary**" Amended Map in Section 14 - Appendices. Residents of this catchment access most of their business, shopping, educational, entertainment and sporting requirements in Forster-Tuncurry.

3.3 Effect of Development on Major Roads

As development occurs anywhere in the Forster District, the traffic on the Forster-Tuncurry major road network increases because Forster-Tuncurry is a service centre for the surrounding district.

The network is at present, that is, March 2014, still considered to be adequate, so any increase in traffic will result in a need for upgrade. Accordingly there is no need for any Council apportionment or Council Contribution for this plan to succeed and this assumption results in all the plan's listed roads improvements being funded by the various developments that occur during the projected life of this plan.

3.4 History of Major Roads Plans in the Forster District

The **2006** Plan repealed the North Tuncurry Roads, South Forster Roads and the Town of Forster Roads plans and created the Forster District major Roads Plan.

It included the derivations of the amounts to be transferred from the repealed accounts

| | |
|---|------------------|
| Amount transferred from repealed North Tuncurry Roads Plan - 31 May 2006 | \$27,348 |
| Amount transferred from repealed Town of Forster Roads Plan - 31 May 2006 | \$50,404 |
| Amount transferred from repealed South Forster Roads Plan - 31 May 2006 | \$486,823 |
| Amount collected June 2006 including interest earned | \$17,749 |
| Amount spent Traffic Study GHD | \$92,679 |
| Balance at 30 June 2006 | \$489,645 |
| Amount collected 2006-07 including interest earned | \$543,772 |
| Amount spent roundabout Manning St/ Wallis St Tuncurry | \$502,566 |
| Balance at 30 June 2007 | \$530,851 |
| Amount collected 2007-08 including interest earned | \$133,719 |
| Spent 2007-08 | -\$149,349 |
| Further transfer from Town of Forster Roads | \$999 |
| Balance at 30 June 2008 | \$516,220 |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

3.5 Major Roads Program

3.5.1 Schedule of Works

The works are on the Lakes Way and its major feeders.

| | Location | Scope of work | Estimate (2011 values) | Start Date |
|---------------------------------|---|--|---------------------------|---------------|
| Road Network Improvement | | | | |
| R1 | Tuncurry Rd from 250m N of Chapmans Rd to Grey Gum Rd | Construct 2 additional lanes 1.3km length | \$1,467,200 | 2021 |
| R2 | Beach St extension North St to Northern Parkway | Construct 1.6km of 9m carriageway | \$1,896,500 | 2027 |
| R3 | Wallis Lake Bridge incl approaches | duplication, total cost \$23,910,000 | \$11,955,000 | 2025 |
| R4 | The Lakes Way Kularoo Dr to Breese Pde | Construct 2 additional lanes 1.0km length | \$391,300 | 2018 |
| R5 | The Lakes Way Breese Pde to Cape Hawke Dr | Construct 2 additional lanes 1.4km length | \$2,323,600 | 2022 |
| R6 | The Lakes Way Cape Hawke Dr to Southern Parkway | Construct 2 additional lanes 1.5km length | \$1,467,200 | 2028 |
| R7 | Southern Parkway Breese Pde to Cape Hawke Dr | Road Connection 330m part construction | \$745,000 | Done |
| R8 | Southern Parkway Cape Hawke to The Lakes Way | Land Acquisition and construction of centre travel lanes | \$1,700,000 | 2026 |
| R9 | The Lakes Way Southern Parkway to Sweet Pea Road | Construct improved alignment (Needed for new developments) | \$1,000,000 | 2027 |
| Intersection Improvement | | | | |
| I1 | Manning St/ Grey Gum Rd | Roundabout | \$608,600 | 2017 |
| I2 | Manning St/ Chapmans Road | Roundabout | \$1,100,000 | 2017 |
| I4 | Manning St/ Kent St | Intersection Treatment | \$30,000 | Done |
| I6 | Off-Manning St improvements | Local Area Traffic Management Scheme | \$2,934,400 | 2016 |
| I7 | Head St/ Beach St | Traffic signals | \$608,600 | 2029 |
| I8 | Beach St/Wallis Street/Memorial Drive | Local Area Traffic Management Scheme | \$429,300 | 2020 |
| I9 | Wharf Street / Beach Street | Local Area Traffic Management Scheme | \$304,300 | 2018 |
| I10 | Head St/ West St | Intersection Treatment | \$918,400 | 2020 |
| I11 | Macintosh St/Strand St | Intersection Treatment | \$244,500 | 2015 |
| I12 | Macintosh St/ South St | Intersection Treatment | \$244,500 | 2015 |
| I13 | Macintosh St/ Kularoo Dr | Traffic signals | \$608,600 | 2023 |
| I14 | The Lakes Way/ Bright St | Roundabout | \$733,600 | 2018 |
| I15 | The Lakes Way/ Goldens Rd | Roundabout | \$733,600 | 2022 |
| I16 | Cape Hawke Dr/ Southern Parkway | Roundabout | \$733,600 | 2022 |
| I17 | The Lakes Way/ Southern Parkway | Roundabout | \$856,400 | 2024 |
| I18 | Kularoo Dr/Boundary St | Roundabout | \$489,100 | 2014 |
| I19 | The Lakes Way /Breese Pde | Property purchase | \$304,300 | 2016 |
| I20 | The Lakes Way / Sweet Pea Road | Intersection Treatment | \$500,000 | 2027 |
| Traffic Studies | | | | |
| T1 | GHD study April 2005 | reimburse general account | \$92,679 | Done |
| T2 | Traffic engineering design software | | \$0 | Done |
| T3 | Detailed study for Bridge duplication | | \$97,800 | 2018 |
| Total works value | | | \$35,518,079 | |

Note: With respect to the bridge duplication, only 50% of the estimated \$23,910,000 cost is being recovered through contributions, it being Council's expectation that the balance will be funded by RMS/Government grants. It is reiterated here that there is no need for any Council contributions towards the funding of the bridge's major upgrade as it was and still is quite adequate for the traffic generated by the existing population at the start and subsequent review points for this plan.

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

3.5.2 Annual Account Forecast

| Annual Account Forecast (Amounts are in \$,000) | |
|---|---------------|
| Inflation rate | 4% |
| Interest rate on credit balance | 5% |
| Interest rate on debit balance | 8% |
| Total contribution 2011 values (Estimate) | 40,741 |

| | income, 2011 values | expenditure 2011 values | income, indexed | expenditure, indexed | net income indexed | interest | balance end |
|-------|---------------------------|----------------------------|--------------------|-------------------------|-----------------------|----------|-------------|
| Total | 40,741 | -35,518 | 79,897 | -50,398 | 29,499 | -30,140 | -641 |

3.6 Major Roads Contribution Rates

Grant Funds

Except in the case of the major duplication of the bridge already mentioned in 3.5 above, it is not expected that grant funds will be available to support the remainder of the major roads program. Therefore a 2011-indexed amount of \$40,741,000 will need to be raised from contributions.

Proportional Distribution

In deriving a rate for contributions, the net amount required is shared by future development in proportion to the estimated daily traffic generated by each development. The aggregate of these daily traffic estimates will of course be higher than actual traffic since the same trip can be shared by two developments. This does not mean there is double-counting in the formula. The total sum being collected is fixed. Traffic generated is simply a measure of apportionment.

It should be clearly understood that Council, via its then current Section 94 Plans, has the authority and responsibility to establish and/or change the actual apportionment of any specific S94 Plans' Contributions as it determines based on NSW Councils' Approved Section 94 practices, Council's Strategic Plans, Objectives and Policies in place at that time.

With respect to geographical apportionment, no attempt is made to differentiate between various parts of Forster-Tuncurry. However Council is of the opinion that, as the more outlying areas will visit Forster-Tuncurry less frequently, the contributions should be proportionately less.

A fair apportionment is considered to be as follows:

| | | |
|------------------------|--|------|
| Up to 15km from Bridge | Forster, Tuncurry, Green Point, Failford | 100% |
| 15-30km from Bridge | Pacific Palms, Smiths Lake, Nabiac | 75% |
| Over 30km from Bridge | Bungwahl, Coomba Park | 50% |

Calculation of rate

The number of additional "one-way" trips (see chapter 2) is **69,856**.

The estimated spread of trips among the zones is estimated as follows;

Inner zone 90% of trips
Middle zone 7% of trips
Outer zone 3% of trips

The equivalent number of inner zone trips is therefore

$$\begin{aligned} & (90\% + 75\% \times 7\% + 50\% \times 3\%) \times 69,856 \\ & = 96.75\% \times 69,856 \\ & = \mathbf{67,586} \end{aligned}$$

The contribution rate for inner zone is therefore $\$40,741,000 / \mathbf{67,586} = \602.80

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

The rate for various localities shall be as follows, per additional "one-way" trip:

| | | |
|-------------------------------------|--|----------|
| Inner Zone (Up to 15km from Bridge) | Forster, Tuncurry, Green Point, Failford | \$602.80 |
| Middle Zone (15-30km from Bridge) | Pacific Palms, Smiths Lake, Nabiac | \$452.10 |
| Outer Zone (Over 30km from Bridge) | Coomba Park, Bungwahl | \$301.40 |

The above rate is applicable to the 2011-12 (using CPI = 96.9/174.0).

The rate will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

The CPI value for December quarter 2012 is 102.0 thereby giving the following contribution rates per "one-way" trip for 2013-14:

| | | |
|-------------------------------------|--|----------|
| Inner Zone (Up to 15km from Bridge) | Forster, Tuncurry, Green Point, Failford | \$634.53 |
| Middle Zone (15-30km from Bridge) | Pacific Palms, Smiths Lake, Nabiac | \$475.90 |
| Outer Zone (Over 30km from Bridge) | Coomba Park, Bungwahl | \$317.27 |

4 Aquatic Centre Plan

4.1 Purpose of the Aquatic Centre Plan

This plan aims to recoup expenditure by Great Lakes Council on the Forster Aquatic Centre, and to undertake enhancement during the life of the plan.

4.2 Land to which the Aquatic Centre Plan applies

The facility is patronised by residents in the Forster District, being the area shown on "**S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary**" Amended Map in Section 14 - Appendices.

4.3 Effect of Development on the Aquatic Centre

As the population grows in the Forster district the demand for the facility will increase and the need for enhancement will increase. Contributions will be levied on new development in the district and will cover that portion of the costs attributable to new population, with the remainder being met by Council in proportion to the number of residents existing at the time of provision of the facility.

4.4 History of the Aquatic Centre Plan

The **Forster Aquatic Centre (FAC)**, also known as the **Great Lakes Aquatic and Leisure Centre** is situated on Lake Street. It contains an indoor heated swimming pool, gymnasium, change rooms, meeting and other indoor facilities. The FAC adjoins a major outdoor sporting venue that includes playing fields, an oval and courts.

The FAC was opened in 1991.

The first contributions plan was in 1993 as a component of each of various Open Space Plans. It sought to recover the \$1,450,000 borrowed to fund Council's contribution to the construction of the centre. In addition, Council had used other sources of funds, including sport and recreation grants and community fund raising revenue to construct the FAC. However amounts from those other sources cannot be recovered under s94.

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

The first contribution rate was derived by dividing \$1,450,000 by 60,000 persons (\$24.16) then applying a discount to the more distant localities. The 1993 contributions were Forster-Tuncurry \$24.16 per person, Green Point \$18.12 Nabiac \$12.08 Pacific Palms \$12.08. The total amount collected from 1993 to 2001 was \$109,364.

The 2002 Plan

The 2002 contributions plan took the construction of the centre out of the Open Space plans and placed it in the Forster District Plan. The plan aimed to recoup the interest component of the construction cost as well as the principal amount. The aim also was to collect the amount by 2031 being estimated end of the economic life of the centre.

Other new elements in the 2002 plan were enhancements to the centre and the finance charge for the enhancements.

The contributions for 2002-2003 were derived as follows:

Recoupment Of Construction Cost

| | |
|--|---------------------------|
| Principal amount of loans | \$1,450,000 |
| Interest on loans | \$1,260,889 |
| Paid from Council reserves | \$620,000 |
| Total amount expended by Council | \$3,331,389 |
| Council's apportioned liability (1991 population divided by 2031 population) (16,880/38,034 = 44.38%) | \$1,478,532 |
| Balance to be recouped at 1991 | \$1,852,857 |
| Amount foregone through under-collection 1993-2001. Result of over-estimating growth and not including interest. Rate should have been \$87.59, not \$24.16. | -\$348,523 |
| Amount collected 1993-2001 including interest | -\$109,364 |
| Total amount to be collected at 2001 | \$1,394,970 |
| Population change 2001 – 2031 (assumed "capital life" of 40 years) | 15,910 |
| Contribution to be collected from 2002 | \$87.68 per person |

Enhancement of Aquatic Centre

According to the 2002 plan:

"Some features of the FAC were designed or constructed to minimise capital cost. Council has identified three enhancements it wishes to provide to increase the use and enjoyment of the FAC:

- *Internal lining of the sports hall (presently unlined Colorbond) to improve user comfort and allow a greater range of indoor sport activities to be held;*
- *Shade cover for outdoor seating areas to improve user comfort and safety;*
- *Extension of the upstairs gymnasium over the sports hall to increase floorspace and provide user benefits."*

| | |
|---|--------------------------|
| Lining | \$136,092 |
| Shade cover | \$16,883 |
| Gym extension | \$206,200 |
| Total | \$359,175 |
| Population 2031 | 38,034 |
| Population 2001 | 22,124 |
| Council's apportioned liability (2001 population divided by 2031 population) (22,124/38,034 = 58.17%) | \$208,927 |
| Balance to be collected at 2001 | \$150,248 |
| Population change 2001 – 2031 | 15,910 |
| Contribution to be collected | \$9.44 per person |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

Enhancement Finance Charge

| | |
|-------------------------------|--------------------------|
| Finance charge | \$96,365 |
| Population 2031 | 38,034 |
| Population 2001 | 22,124 |
| Population change 2001 – 2031 | 15,910 |
| Contribution to be collected | \$6.06 per person |

Summary of Rates

| | |
|----------------------------|-----------------|
| Construction | \$87.68 |
| Enhancement | \$9.44 |
| Enhancement finance charge | \$6.06 |
| Total | \$103.18 |

The May 2006 Plan combined the three contributions into a single rate of \$108.25 per person

4.5 Aquatic Centre Program and Contribution Rates

Review from 1 July 2011- 30 June 2013

Recoupment of Construction Cost

Recoupment progress since 2002 plan

| Financial Year | CPI previous Dec qtr | indexed amount at 1 July | recouped during year | Outstanding at 30 June |
|----------------|----------------------|--------------------------|----------------------|------------------------|
| 2003 | 135.4 | | | \$1,394,970 |
| 2004 | 139.5 | \$1,437,211 | \$54,126 | \$1,383,085 |
| 2005 | 142.8 | \$1,415,803 | \$65,000 | \$1,350,803 |
| 2006 | 146.5 | \$1,385,803 | \$22,545 | \$1,363,258 |
| 2007 | 150.6 | \$1,401,411 | Nil | \$1,401,411 |
| 2008 | 155.5 | \$1,447,008 | Nil | \$1,447,008 |
| 2009 | 160.1 | \$1,489,813 | Nil | \$1,489,813 |
| 2010 | 166.0 | \$1,544,715 | Nil | \$1,544,715 |
| 2011 | 94.3/169.5 | \$1,577,284 | \$164,000 | \$1,413,284 |
| 2012 | 96.9/174.0 | \$1,450,805 | Nil | \$1,450,805 |
| 2013 | 99.8 | \$1,494,224 | Nil | \$1,494,224 |
| 2014 | 102.0 | \$1,527,163 | TBA | TBA |

Council Apportioned Liability

Council's liability was estimated in the 2002 plan at \$208,927 in 2002 values, and has been discharged by expenditure on various enhancements to the Centre, including car parking and air-conditioning, as follows:

| Financial Year | CPI previous Dec qtr | indexed amount at 1 July | Paid during year | Outstanding at 30 June |
|----------------|----------------------|--------------------------|------------------|------------------------|
| 1993-2003 | | | | \$182,090 |
| 2003 | 135.4 | \$208,927 | \$4,000 | \$204,927 |
| 2004 | 139.5 | \$211,132 | Nil | \$211,132 |
| 2005 | 142.8 | \$216,127 | Nil | \$216,127 |
| 2006 | 146.5 | \$221,727 | Nil | \$221,727 |
| 2007 | 150.6 | \$227,932 | Nil | \$227,932 |
| 2008 | 155.5 | \$235,348 | Nil | \$235,348 |
| 2009 | 160.1 | \$242,310 | Nil | \$242,310 |
| 2010 | 166.0 | \$251,240 | Nil | \$251,240 |
| 2011 | 94.3/169.5 | \$256,537 | \$256,537 | Nil |
| 2012 | 96.9/174.0 | Nil | Nil | Nil |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

| | | | | |
|------|-------|-----|-----|-----|
| 2013 | 99.8 | Nil | Nil | Nil |
| 2014 | 102.0 | Nil | Nil | Nil |

Program and Calculation of Rates (Using 2011 Values)

| | |
|---|--------------------|
| Recoupment to be transferred to Council (as at 1/7/2011) | \$1,450,805 |
| Council remaining liability | Nil |
| Building Extensions/Enhancements undertaken in 2011-12 to cater for increased demand (S94 Portion = 41.83% x \$2,535,155) | 1,060,455 |
| Remaining Ventilation of Sports Hall | \$35,000 |
| Car Park Lighting | \$100,000 |
| Staff accommodation | \$200,000 |
| Additional equipment | \$100,000 |
| Additional Program Pool, Related Equipment & Building to House | \$1,000,000 |
| Enlargement of Kiosk, Crèche and Change Room Facilities | \$250,000 |
| Unscheduled enhancement works | \$100,000 |
| Less balance held | -\$6,543 |
| Total Contributions required | \$4,289,717 |
| Contribution per person (15,700 based on growth 2011 to 2041) | \$273.23 |

Note: Population Growth of 15,700 based on adjusted Forecasts from ".id - Great Lakes Council Population Forecasts – 2031"

The above rate is applicable to 2011-12 using CPI = 96.9/174.0).

The rate will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

The CPI value for December quarter 2012 is 102.0 thereby giving the following contribution rates per person for 2013-14: \$287.61

5 Surf Life Saving Plan

5.1 Purpose of the Surf Life Saving Plan

This plan is to enable funding for improvements to surf life saving (SLS) facilities as required for the expanding population.

Surf Life Saving Clubs are largely volunteer-run organisations that patrol certain beaches to protect public safety. They also assist other groups during coastal emergencies. To provide needed expertise in surf rescue, clubs practise extensively and organise competitions with other clubs.

Surf Life Saving Clubs are organised under Surf Life Saving NSW Incorporated. The State organisation and local councils provide a portion of their capital funding, but some expenses are met by voluntary fund raising.

Council has an obligation under State legislation to ensure safety of users of public beaches. This Plan considers that such an obligation requires Council, among other things, to provide facilities to surf life saving clubs located on public land, and equates to the provision of a public facility or amenity that can be recovered under s94.

There are three Surf Life Saving Clubs in the Forster District:

1. Forster Surf Life Saving Club, which is presently located on the headland at the end of North Street at Forster Main Beach;
2. Cape Hawke Surf Life Saving Club, which is located at the southern end of One Mile Beach, Forster;
3. Pacific Palms Surf Life Saving Club, which is located on Lakeside Crescent at Elizabeth Beach;

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

5.2 Land to which the Surf Life Saving Plan applies

The catchment area contributing to the three SLS clubs is the Forster District as shown in "**S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary**" Amended Map in Section 14 - Appendices.

5.3 Effect of Development on Surf Life Saving Facilities

The need for Surf Life Saving Equipment has grown over the years, in direct proportion to increasing patronage and also to greater community expectation of safety at major beaches. Council anticipates that future residents will expect a life saving service equivalent at least to the present standard. The incoming population will be similar in age structure and mobility to the existing population, and is therefore likely to benefit from life saving services.

Council therefore expects that the incoming population will require a similar provision of surf life saving services as the existing population. The increased demand on each Club caused by the incoming population can be partly satisfied by extending the provision of capital equipment and facilities needed to provide surf life saving services.

5.4 History of Surf Life Saving Plans in the Forster District

The first contributions plan for surf life saving facilities in the Forster District commenced on 11 July 2002. The Plan was based on the following information:

Existing Major Capital Equipment

| Facility | Forster | Cape Hawke | Pacific Palms |
|-----------------|---------|------------|---------------|
| IRBs | 3 | 4 | 2 |
| Rescue PWC | 0 | 0 | 0 |
| Rescue Vehicles | 1 | 1 | 1 |

Forecast needs to 2011

| Facility | Forster | Cape Hawke | Pacific Palms |
|-----------------------------|---------|------------|---------------|
| Admin Equipment (bundle) | 3 | 2 | 3 |
| Add'l IRB | 1 | 1 | 1 |
| Rescue PWC | 1 | 1 | 1 |
| Add'l 4 x 4 Rescue Vehicles | 1 | 1 | 1 |

Forster and Cape Hawke SLSCs

| | 2002 plan | 2006 revision |
|------------------------------|-----------|---------------|
| Total Cost | \$126,000 | \$142,000 |
| Population at 2001 | 18,500 | 18,522 |
| Est pop Dec 2005 | | 20,190 |
| Population at 2011 | 22,800 | 22,023 |
| Population increase | 4,300 | 2,733 |
| Contribution rate per person | \$29.30 | \$26.39 |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

Pacific Palms SLSC

| | 2002 plan | 2006 revision |
|------------------------------|-----------|---------------|
| Total Cost | \$65,000 | \$74,000 |
| Population at 2001 | 2,100 | 2,440 |
| Est pop Dec 2005 | | 2,966 |
| Population at 2011 | 3,000 | 3,418 |
| Population increase | 900 | 452 |
| Contribution rate per person | \$72.22 | \$110.72 |

At 30/6/2008, no purchases had been made and the status of the accounts was as follows:

| | |
|---|-----------------|
| Forster and Cape Hawke - amount collected including interest earned | \$53,540 |
| Pacific Palms- amount collected including interest earned | \$27,483 |
| Total available | \$81,023 |

5.5 Surf Life Saving Facilities Program and Contribution Rates

This revision of the plan aims to extend the catchment to the whole district, extend the program to 2041 and apply a single contribution rate to meet the needs of all three clubs.

Existing equipment in the 3 clubs has an estimated replacement value of \$400,000 and includes the following items:

| Facility | Existing Number | | |
|---------------|-----------------|------------|---------------|
| | Forster | Cape Hawke | Pacific Palms |
| IRB, complete | 2 | 4 | 4 |
| Jet Ski | | 2 | 1 |
| 4WD | 1 | 1 | 1 |
| Rhino (ATV) | | 1 | 1 |
| Tractor | | 1 | |

As the district population, and the workload of the clubs, are expected to increase by 50% during the life of the plan, an allowance is made for \$200,000 of additional purchases. The actual items to be purchased will depend on available equipment and needs at the time.

In addition to the capital equipment requirement, some enhancement of facilities will be required as follows:

| | |
|--|--------------------|
| New club building at Forster (part cost) | \$800,000 |
| Extension to building at Cape Hawke | \$300,000 |
| Site improvement at Pacific Palms | \$100,000 |
| Total | \$1,200,000 |

Contributions are calculated as follows:

| | |
|---|--------------------|
| Equipment | \$200,000 |
| Buildings | \$1,200,000 |
| Total | \$1,400,000 |
| Amount collected | -\$81,023 |
| Contributions required | \$1,318,977 |
| Estimated contributing population (see chapter 2) | 18,497 |
| Contribution rate per person | \$69.61 |

The above rate is applicable to the year 2009-10 (using CPI = 92.4/166.0).

The rate will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

The CPI value for December quarter 2012 is 102.0 thereby giving the following contribution rates per person for 2013-14: \$76.84.

6 South Forster Drainage Plan

6.1 Purpose of the South Forster Drainage Plan

This plan aims to fund major drainage works in South Forster.

6.2 Land to which the South Forster Drainage Plan applies

This plan applies only to developments whose stormwater drains into the South Forster catchments shown in "S94 Plan: Forster District - Stormwater Catchment Great Lakes 2013 Catchment Boundary" Map in Section 14 - Appendices.

6.3 Effect of Development on South Forster Drainage

As development occurs in the catchment, with the resultant increase in impervious areas, the natural drainage system is placed under stress. Accordingly the need for remedial works is in proportion to the land areas developed.

6.4 History of the South Forster Drainage Plan

Town of Forster Plan – account 929 – adopted 4/5/94 and **South Forster Plan** – account 925 – adopted 4/5/94 were based on the GHD drainage strategy report presented to Council on 28 July 1992.

The schedule of works using estimates by GHD was as follows:

| | GHD estimate | Adopted works | developable area (ha) | Contribution \$/ha | adopted contribution \$/ha | Indexed contribution 2005-06 |
|---------------------------------|--------------------|--------------------|-----------------------|--------------------|----------------------------|------------------------------|
| Northern Catchment K leg | | | | | | |
| K1 Ponds | 204000 | | | | | |
| K2 Ponds | 414000 | | | | | |
| GPTs (3) | 110000 | | | | | |
| channel 1150m | 280000 | | | | | |
| culverts (4) | 270000 | | | | | |
| Estimated land cost | 70000 | | | | | |
| Total cost K leg | \$1,348,000 | \$1,348,000 | 50 | \$26,960 | \$26,858 | \$29,019 |
| Northern Catchment L leg | | | | | | |
| L1 Pond | 700800 | | | | | |
| GPTs (1) | 100000 | | | | | |
| channels 1400m | 1015000 | | | | | |
| culverts (1) | 410000 | | | | | |
| Estimated land cost | 58000 | | | | | |
| Total cost L leg | \$2,283,800 | \$2,283,000 | 85 | \$26,859 | \$26,858 | \$29,019 |
| Central Catchment | | | | | | |
| Upstream retarding basin | 295920 | | | | | |
| Downstream control pond | 1716000 | | | | | |
| GPTs (2) | 280000 | | | | | |
| channels 3600m | 2036200 | | | | | |
| culverts (7) | 741900 | | | | | |
| land cost | 921000 | | | | | |
| Total Central Catchment | \$5,991,020 | \$6,063,000 | 155 | \$39,116 | \$39,116 | \$42,310 |
| Southern Catchment | | | | | | |
| channels | 1520400 | | | | | |
| land cost | 22500 | | | | | |
| Total Southern Catchment | \$1,542,900 | \$854,500 | 35 | \$24,414 | \$24,414 | \$25,357 |

Present situation

At present drainage works and development are substantially complete in the Northern Catchment "K Leg."

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

| | |
|---|-------------|
| Contributions collected including interest (excluding non-cash contributions) | \$1,187,055 |
| Amount spent (Keylim, Lulbrunt, Davglade) | \$ 607,647 |
| Amount held in fund | \$ 579,408 |

6.5 Revised South Forster Drainage Program and Contribution Rates

Northern Catchment

The work required consists of:

(a) completion of K leg works comprised of:

| | |
|---|------------------|
| Water Quality Treatment System | \$115,000 |
| Channel Widening Downstream of Southern Parkway | \$150,000 |
| | \$265,000 |

(b) elements of the recommendations in "Review of Stormwater Management Strategy for L Leg Catchment South Forster" by WBM Pty Ltd and dated 13-09-06.

Costs of the adopted elements are as follows (WBM Table 5-1):

| | |
|---------------------|--------------------|
| 3.9ha wetland | \$1,773,000 |
| Pond A | \$391,000 |
| Golden Pond upgrade | \$210,000 |
| GPTs | \$86,000 |
| Total | \$2,460,000 |

Central and Southern Catchments

Council no longer proposes to levy contributions for major drainage in these two catchments. Each development will need to provide its own facilities to ensure unaltered volumes and quality of discharge.

Calculation of Rates Northern Catchment

| | |
|--|-------------|
| Estimated cost of works | \$2,725,000 |
| Estimated land cost | \$500,000 |
| Less amount held | -\$579,408 |
| Contributions required | \$2,645,592 |
| Estimated population in 33ha new development | 990 |
| Estimated population increase from redevelopment | 60 |
| Total contributing population | 1,050 |
| Contribution rate per person | \$2,519.61 |

The above rate is applicable to the year 2009-10 (using CPI = 92.4/166.0).

The rate will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

The CPI value for December quarter 2012 is 102.0 thereby giving the following contribution rates per person for 2013-14:

\$2,781.39.

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

7 Forster District Library Plan

7.1 Purpose of Plan

This plan aims to provide funding for the expansion of library facilities in the Forster District to meet the additional demand of the population growth to the estimated capacity development of the district.

7.2 Land to which plan applies

The library facilities are patronised by residents in the Forster District, being the area shown on "**S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary**" Amended Map in Section 14 - Appendices. Contributions will be payable for any residential development.

7.3 Effect of Development on Library Facilities

The NSW State Library sets the standards for libraries in New South Wales. Floor space requirements are calculated using a recommended Bookstock rate of 2 items per capita. Therefore the library facilities needed will increase in proportion to the population served. Consequently it is intended that all residential development will be liable for contributions.

7.4 History of Forster Library Plans

The Forster Library section 94 plan commenced on 6 January 2000 and was included in the "Great Lakes Wide" plan. It aimed to collect \$2,419,633 being the amount needed for expansion of the library from its present 770 sq m to the calculated 2016 requirement of 1,428 sq m.

The plan was revised in 2006 to fund, over a longer period, the Forster District Library facilities required for the assessed ultimate population of the catchment.

There have been no firm decisions on forward planning since the 2006 plan. Therefore this new revision maintains the 2006 plan, but adjusts cost estimates. The contribution rate is virtually unchanged.

7.5 Proposed Extension of Facilities

7.5.1 Floor Areas

The existing floor area in the Forster Library is 770 sq m.

Using the State Library formulas for floor space requirements, the growth in library facilities is calculated in the following table:

| year | | 2006 | | | | 2041 approx | | | |
|------------------------------|-----|--------------|---------|-----------|-----------|--------------|---------|-----------|-----------|
| Resident population | | 25500 | | | | 45030 | | | |
| bookstock per capita | | 2 | | | | 2 | | | |
| bookstock | | 51000 | | | | 90060 | | | |
| | | number | | | | number | | | |
| | | number of | on | items per | sq metres | number of | on | items per | sq metres |
| | | items | shelves | sq metre | reqd | items | shelves | sq metre | reqd |
| per cent of bookstock | | (70%) | | | | (70%) | | | |
| books | 85% | 43350 | 30345 | 100 | 303 | 76550 | 53590 | 100 | 536 |
| magazines | 5% | 2550 | 1785 | 110 | 16 | 4500 | 3150 | 110 | 32 |
| non-print | 10% | 5100 | 3570 | 100 | 36 | 9010 | 6310 | 100 | 63 |
| terminals | | 14 | 14 | 0.2 | 70 | 25 | 25 | 0.2 | 125 |
| Net Bookstock Area (sq m) | | | | | | 425 | | | |
| | | | | | | 756 | | | |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

| Relative Area Factors | | | | |
|--------------------------|--|------|--|------|
| Collection | | 100% | | 100% |
| Study | | 15% | | 15% |
| Browsing | | 5% | | 5% |
| Catalogues | | 10% | | 10% |
| Service Desk | | 15% | | 15% |
| Staff Work area | | 15% | | 15% |
| Storage Areas | | 5% | | 5% |
| Foyer | | 10% | | 10% |
| Toilets | | 5% | | 5% |
| Plant and Equipment | | 5% | | 5% |
| Children's Story Telling | | 5% | | 10% |
| Young Adult Area | | 5% | | 10% |
| Central Work Area | | 5% | | 5% |
| Central Community Office | | 5% | | 5% |
| Meeting Room | | | | 10% |
| Local History Collection | | | | 15% |
| Audio Visual Collection | | | | 20% |
| Coffee | | | | 10% |
| Vending | | | | 5% |
| Total RAF (B) | | 205% | | 275% |
| Floor space reqd (A x B) | | 870 | | 2080 |

Note: In the above table certain additional features are included that are not presently in the library facility but are considered necessary for the larger population, as follows:

Provision of a Meeting Room

Council would, in the future, seek to provide a meeting room where people congregate or study individually in privacy. After hours access could be provided and would benefit the Great Lakes community.

Genealogy/Local History Collection

The Great Lakes Library Service houses a Genealogical collection but shelf and equipment space is limited. As the population increases, there is a need to accommodate more genealogical material and a greater range of technological access. This expanded service should be provided in a room dedicated to genealogical resources. It would be integrated with a developing local history collection.

Multipurpose Training and Audiovisual Room

As the population grows, provision should be made for a separate room where training can be conducted. This training could cover a wide range of subject areas. It may be conducted by Library staff or members of the public who are experts in the training topic. Technology, include Internet access, should be an integral part of this room.

Coffee Facility

Increasingly modern libraries provide some form of access to food and drinks. This requires dedicated space to do so. This has been incorporated into the new facility.

7.5.2 Options

There are five options for increasing the floor area from 770 sq m to 2080 sq m.

1. Expand the present Forster library to say 1500 sq m (adequate to 2021) then develop a branch library of 580 sq m in the district.
2. On a new site, build a library of say 1500 sq m and develop the existing building as a branch library.
3. Expand the present Forster library to 2080 sq m.

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

In the event of the existing library building being required for Council office building expansion:

4. On a new site, build a library of say 1500 sq m receive a credit to the library fund on the sale of the existing 770 sq m building and then develop a branch library on a new site of 580 sq m.
5. On a new site, build a library of 2080 sq m, receive a credit to the library fund on the sale of the existing 770 sq m building.

7.5.3 Costs

When an option has been decided, a detailed estimate will be done. For the purposes of this plan the estimated cost of option 1 is used, which at 2008 is as follows:

| | |
|---|--------------------|
| Extensions to Forster Library | \$3,400,000 |
| Purchase land for branch library | \$600,000 |
| Construct Branch Library | \$2,500,000 |
| Loan Costs. Assume 20yr loan of \$5.8m, 8% interest rate, 4% discount rate | \$2,230,000 |
| Total Cost | \$6,500,000 |

7.6 Derivation of contribution rates

| | |
|---|-------------|
| Capital Cost (2008 values) | \$8,730,000 |
| Grants | -\$200,000 |
| Amount collected to 30/6/2008 | -\$555,275 |
| Future contributions required | \$7,974,725 |
| Estimated contributing population (see chapter 2) | 18,497 |
| Contribution rate per person | \$431.14 |

The above rate is applicable to the year 2009-10 (using CPI = 92.4/166.0).

The rate will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

The CPI value for December quarter 2012 is 102.0 thereby giving the following contribution rates per person for 2013-14: \$475.93.

8 Forster District Open Space Plan

8.1 Purpose of the Forster District Open Space Plan

This plan is to enable funding for improvements to Forster District open space facilities so that, as further development and consequent increases in demand for facilities occur, Council will be in a position to fund the necessary work.

8.2 Land to which the Forster District Open Space Plan Applies

This plan applies to residential development in the whole of the Forster District as shown on "**S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary**" Amended Map in Section 14 - Appendices.

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

8.3 Effect of Development on Forster District Open Space Facilities

This plan mainly covers facilities that all persons in the district might use, for example the sports fields and beachside and lakeside facilities. It also includes the provision of local areas such as playgrounds that only those within a certain radius might use. All such local areas in the district are covered in the plan. This measure avoids a multitude of local plans and is in accordance with the Department of Planning's practice note "Principles underlying Development Contributions" which states: "a development contributions plan may contain a number of local playgrounds that will provide for the demand and all may not be in close proximity to every person that makes a contribution."

Overall the area of open space in the district is adequate or better. However the population in the district has grown by over 70% in the past 20 years and is expected to grow another 50% in the next 33 years. See chapter 2.

Clearly improvements and extensions to the open space assets will be needed as development progresses.

8.4 History of Forster District Open Space Plans

Neighbourhood Open Space Forster Tuncurry (1993)

This plan provided separately for acquisition and embellishment.

Embellishment

The embellishment plan was based on a cost of \$38,250 for each 450 persons, giving a contribution rate of \$85 a person. After indexation the 2008-09 contribution rate is \$112.65.

Status at 30 June 2008:

| | |
|--|-------------|
| Amount collected including interest earned | \$1,138,382 |
| Amount spent | \$1,970,500 |
| Amount available | -\$832,119 |

Acquisition

The acquisition plan was based on 28.3 square metres per person at a cost of \$8.50 a square metre, giving a contribution of \$240.55 a person. After indexation the 2008-09 rate is \$845.86 a person.

Status at 30 June 2008:

| | |
|--|-------------|
| Amount collected including interest earned | \$1,435,873 |
| Amount spent | \$68,952 |
| Amount available | \$1,366,921 |

Pacific Palms Open Space Plan (1993)

This plan provided separately for acquisition and embellishment.

Embellishment

The embellishment plan was based on a cost of \$2,800 for each 33 persons, giving a contribution rate of \$85 a person. After indexation the 2008-09 rate is \$112.65.

Status at 30 June 2008:

| | |
|--|----------|
| Amount collected including interest earned | \$73,773 |
| Amount spent | \$9,293 |
| Amount available | \$64,480 |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

Acquisition

The acquisition plan was based on 28.3 square metres per person at a cost of \$8.50 a square metre, giving a contribution of \$240.55 a person. After indexation for land costs the 2008-09 rate is \$1,101.73 a person.

Status at 30 June 2008:

| | |
|--|-----------|
| Amount collected including interest earned | \$205,085 |
| Amount spent | \$0 |
| Amount available | \$205,085 |

The above two plans will be repealed with the adoption of this revision of the Forster District Plan.

The balances (\$804,367 at 30 June 2008) will be transferred to Forster District Open Space plan and will form part of the contribution of the existing population to the works program.

8.5 Program of Works

The following program represents the needs of the district in its fully developed state, for the expected population around 2041 (see Chapter 2).

Foreshore Development

The development of the foreshores surrounding the Wallis Lake system and our beach environments is an important component in providing recreation opportunities for the Forster District community. The ongoing development of these areas is paramount in ensuring appropriate facilities are available for the immediate and surrounding communities as well as visitors to the area.

Foreshore development is seen as the single most important facet of the Great Lakes recreation open space network. The focus on developing various areas of the foreshore is to lift and enhance the existing high use areas in order to meet growing community demands. Specific areas have been identified as priority locations in order to provide direction for any future enhancement. Other foreshore locations within the Forster District Plan will also need improvements as opportunities arise.

Many of the identified foreshores also play an important role in offering aesthetic qualities to the area and are focal points for community activities. For these reasons alone the foreshore areas are recognised as being significant for the community.

Keys areas and proposed type of development have been identified as follows:

| Project | Attributable to New Population | | | | | | | Attributable to New and Existing Population | | | | | | |
|--------------------|--------------------------------|-----------------------|-------------------|-------------------|------------------|----------------|----------|---|---------------------------|-------------------|---------|------------|-------------|----------------|
| | Facilities to be provided | | | | | | | Estimated Cost | Facilities to be provided | | | | | Estimated Cost |
| | SHARED PATHWAYS | BOAT RAMP DEVELOPMENT | WHARVES & JETTIES | VIEWING PLATFORMS | PUBLIC AMENITIES | PARK FURNITURE | LIGHTING | | BOAT RAMP DEVELOPMENT | WHARVES & JETTIES | SIGNAGE | PROMENADES | CAR PARKING | |
| Point Road | X | X | X | | X | X | X | \$525,000 | | | X | X | X | \$315,000 |
| Little Street | X | | X | X | X | X | X | \$575,000 | X | | X | X | X | \$670,000 |
| Forster Main Beach | X | | | | X | X | X | \$675,000 | | | X | X | X | \$2,335,000 |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

| | | | | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|--------------------|---|---|---|--|---|---|--------------------|
| Breckenridge Channel | X | | | X | | X | X | \$250,000 | | X | X | | | X | \$685,000 |
| Pebble Beach / Tanks | X | | | | X | X | X | \$300,000 | | | X | | | X | \$145,000 |
| One Mile Beach | | | | | X | X | X | \$110,000 | | | X | | | X | \$80,000 |
| Smiths Lake | X | X | X | | X | X | X | \$260,000 | | | X | | X | X | \$77,000 |
| Seal Rocks | X | X | | X | X | X | | \$195,000 | | | X | | X | X | \$70,000 |
| Coomba Park | X | X | X | | X | X | X | \$142,000 | | | X | | X | X | \$50,000 |
| Tarbuck Bay | X | X | | | X | X | | \$95,000 | | | X | | X | X | \$39,000 |
| Green Point | X | X | X | | X | X | X | \$147,000 | | | X | | X | X | \$60,000 |
| Blueys Beach | X | | | X | X | X | X | \$132,000 | | | X | | X | X | \$30,000 |
| Boomerang Beach | X | | | X | X | X | X | \$187,000 | | | X | | X | X | \$40,000 |
| Lake Development Various | X | | X | X | | X | | \$100,000 | X | | X | | X | X | \$115,000 |
| TOTALS | | | | | | | | \$3,693,000 | | | | | | | \$4,711,000 |

Sports Field Development

Sporting facilities are an important community asset of any Council's open space network. Demand for facilities will steadily grow as the population expands. It is not just the availability of these resources that is important but also the quality of the facilities on offer. Each council area should have a hierarchy of sporting venues to allow all sporting codes access to premier facilities for the highest grades being played.

To facilitate the growing active recreation needs of the community the following locations have been identified as requiring the most attention.

| Sports fields | Attributable to New Population | | | | | | | | | | Attributable to New and Existing Population | | | | | | | | |
|----------------|--------------------------------|---------------|------------|---------|------------------|-------------|-----------------|------------------|----------------|----------------------|---|----------------|---------------|------------|---------|------------------|----------------|-------------|--------------------|
| | Facilities to be provided | | | | | | | | | | Facilities to be provided | | | | | | Estimated Cost | | |
| | FIELD DEVELOPMENT | FLOODLIGHTING | IRRIGATION | SIGNAGE | COURT FACILITIES | CAR PARKING | SHARED PATHWAYS | PUBLIC AMENITIES | PARK FURNITURE | BEAUTIFICATION WORKS | GRANDSTAND | Estimated Cost | FLOODLIGHTING | IRRIGATION | SIGNAGE | COURT FACILITIES | | CAR PARKING | SHARED PATHWAYS |
| South Street | X | | | | | | X | X | | | \$725,000 | X | X | | X | X | X | X | \$375,000 |
| North Tuncurry | X | | | | | | X | X | | X | \$1,525,000 | X | X | | | X | X | X | \$245,000 |
| Lake Street | X | | | | | | X | X | | | \$260,000 | X | X | | X | X | X | X | \$400,000 |
| Boronia Park | | | | | | | X | X | | | \$30,000 | X | X | | X | X | X | X | \$500,000 |
| South Forster | X | X | X | X | X | X | X | X | X | X | \$1,723,000 | | | | | | | | \$0 |
| Smiths Lake | X | | | | X | | X | X | | | \$635,000 | X | X | X | | X | X | X | \$318,000 |
| Pacific Palms | | | | | X | | X | X | | | \$210,000 | X | X | X | | X | X | X | \$278,000 |
| Coomba Park | X | | | | | | X | X | | | \$760,000 | X | X | X | | X | X | X | \$293,000 |
| Nabiac | | | | | X | | X | X | | | \$285,000 | X | X | X | | X | X | X | \$218,000 |
| TOTALS | | | | | | | | | | | \$6,153,000 | | | | | | | | \$2,627,000 |

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Linkages Program

The Forster District lends itself to having the ocean join the lake through a series of environmental and pedestrian linkages. A number of natural corridors already exist however enhancements are necessary to ensure access and appropriate use. In order to provide these desired outcomes, existing facilities require improvements and new linkages need to be created. The Forster Tuncurry Foreshore trail already exists in a natural condition however opportunities exist to create and enhance these linkages throughout the area.

The principal routes include:

1. Northern linkages along the foreshore and north toward north Tuncurry
2. Southern areas including a link between Booti Booti National Park and Wallis Lake
3. Eastern linkage along the foreshores
4. Western lake linkage including Pipers creek.

| Project | Attributable to New and Existing Population | | | | | | | Estimated Cost |
|----------------|---|------------|---------|-------------|-------------------|----------------|-------|--------------------|
| | Facilities to be provided | | | | | | | |
| | SHARED PATHWAYS | BOARDWALKS | SIGNAGE | CAR PARKING | VIEWING PLATFORMS | PARK FURNITURE | WORKS | |
| Northern Areas | X | X | X | X | X | X | X | \$405,000 |
| Southern Areas | X | X | X | X | X | X | X | \$480,000 |
| Eastern Areas | X | X | X | X | X | X | X | \$290,000 |
| Western Areas | X | X | X | X | X | X | X | \$415,000 |
| Minor Linkages | X | X | X | | | X | X | \$180,000 |
| TOTAL | | | | | | | | \$1,770,000 |

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

General Park Improvements

In providing recreation open space for the community there is no tried and true method of predicting need as trends changes and demographics alter. Consequently the improvements to parklands can deviate from predicted needs over time. This deviation can include but are not limited to skate park facilities, hard courts, performance space, swimming pools and other special needs. Therefore provisions need to be made to ensure these facilities are made available for the community to enjoy or improve existing facilities to meet growing needs where and when identified.

| Locality | Attributable to New Population | | | | | | | Attributable to New and Existing Population | | | | | | Estimated Cost | | | |
|---------------|--------------------------------|-------------|---------------|-------|----------|----------|----------------|---|--------------------|-------------|---------------|---------|----------------------|----------------|-----------------|-----------------|--------------------|
| | Facilities to be provided | | | | | | | Facilities to be provided | | | | | | | | | |
| | PLAYGROUNDS | SKATE PARKS | SWIMMING POOL | BBQ'S | SHELTERS | LIGHTING | PARK FURNITURE | PERFORMANCE SPACES | Estimated Cost | SKATE PARKS | SWIMMING POOL | SIGNAGE | BEAUTIFICATION WORKS | | BIKE FACILITIES | LEASH FEE AREAS | PERFORMANCE SPACES |
| Forster | X | X | X | | X | X | X | X | \$770,000 | | | X | X | | X | | \$35,000 |
| Tuncurry | X | | X | X | X | X | X | | \$395,000 | | | X | X | X | X | X | \$175,000 |
| Nabiac | X | | | | | X | X | | \$300,000 | X | X | X | X | | X | | \$695,000 |
| Green Point | X | | | X | X | X | X | | \$85,000 | | | X | X | | X | | \$24,000 |
| Coomba Park | | X | X | | | X | X | | \$165,000 | | | X | X | | X | | \$18,000 |
| Smiths Lake | X | X | | X | X | | X | | \$182,000 | | | X | X | X | X | | \$73,000 |
| Pacific Palms | X | | | | | | X | | \$40,000 | | | X | X | | X | | \$15,000 |
| Tarback Bay | X | | | X | X | | X | | \$65,000 | | | X | X | | | | \$7,000 |
| TOTALS | | | | | | | | | \$2,002,000 | | | | | | | | \$1,042,000 |

Land Acquisition

The provision of 28.3 sq m of open space per person has been a generally accepted standard for many years, and is adopted in this plan.

The leviable future population is estimated at 18,497 persons in the period 2008-2041, so that funds will be required for the acquisition of 52.3ha of land.

This land is expected to be part of the following programs

The notional purchase program is:

| | |
|--------------------------------|-------------|
| Lakeside land Forster | 4ha |
| Identified land South Forster | 5ha |
| Unidentified land all areas | 43.3ha |
| Total purchase program | 52.3ha |
| Estimated cost at \$150,000/ha | \$7,850,000 |

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8.6 Program Summary

| | Attributable to New Population | Attributable to New and Existing Population |
|---------------------------|--------------------------------|---|
| Foreshore Development | \$3,693,000 | \$4,711,000 |
| Sports Fields | \$6,153,000 | \$2,627,000 |
| Linkages | \$0 | \$1,770,000 |
| General Park Improvements | \$2,002,000 | \$1,042,000 |
| Land Acquisition Program | \$7,850,000 | |
| Totals | \$19,698,000 | \$10,150,000 |

8.7 Apportionment and Calculation of Contribution Rates

| | Developer liability | Council liability |
|--|-------------------------|--------------------|
| Projects Attributable to New Population | \$19,698,000 | |
| Projects Attributable to New and Existing Population | | |
| Extg gross pop 37,880 (67%) (includes persons paid on vacant lots) | | \$6,800,500 |
| New gross pop 18,497 (33%) | \$3,349,500 | |
| Funds held by Council (paid by existing pop) | | -\$804,367 |
| Totals | \$23,047,500 (A) | \$5,996,133 |

| | |
|------------------------------|------------------|
| New gross population | 18,497 (B) |
| Contribution rate per person | \$1,246.01 (A/B) |

The above rate is applicable to the year 2009-10 (using CPI = 92.4/166.0).

The rate will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

The CPI value for December quarter 2012 is 102.0 thereby giving the following contribution rates per person for 2013-14: \$1,375.47

Credit for Works in Kind

Developments which provide open space area and/or embellishment may be allowed to pay a reduced amount in recognition of the works in kind. The amounts of reduction will generally be in proportion to the value of land and works provided.

As an "indicative" example, the acquisition component (\$7.85m) is 34% of the total contribution. Local parks amount to 25% of all open space. Therefore a discount of about 9% is allowable in a subdivision where the land for local parks is being provided.

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

9 Forster District Community Facilities Plan

9.1 Purpose of Plan

This plan aims to provide funding for the expansion of community facilities in the Forster District to meet the additional demand of the population growth to the estimated capacity development of the district.

9.2 Land to which plan applies

The community facilities will be patronised by residents in the Forster District, being the area shown on "**S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary**" Amended Map in Section 14 - Appendices. Contributions will be payable for any residential development, including tourist development.

9.3 Effect of Development on the need for Community Facilities

It is expected that the size of community facilities needed will increase in proportion to the population served. Consequently it is intended that all residential and tourist development will be liable for contributions.

9.4 Existing Community Facilities

The following facilities are currently in the Forster district:

| | | |
|----------------------------------|---------------|-------|
| Public Hall | Bungwahl | 307 |
| Community Hall | Coomba Park | 294 |
| Arts and Crafts Centre | Forster | 573 |
| Community/Senior Citizens Centre | Forster | 756 |
| Forster Keys Hall | Forster | 45 |
| C.W.A. & Neighbourhood Centre | Forster | 178 |
| School of Arts Hall | Forster | 440 |
| Visitors Information Centre | Forster | 250 |
| Community Hall | Green Point | 47 |
| Public Hall | Nabiac | 564 |
| Visitors Information Centre | Pacific Palms | 57 |
| Community Hall | Pacific Palms | 341 |
| Adult Education Building | Tuncurry | 70 |
| Youth Centre | Tuncurry | 119 |
| Memorial Hall | Tuncurry | 512 |
| Total | | 4,553 |

9.5 Proposed Extension of Facilities

The gross population is expected to increase from 37,880 (estimated in 2008) to 56,377 in 2041 (see chapter 2), an increase of 49%. However it would be fair to say that there will be an increasing fraction of this number that will be permanents. If this fraction were to increase from the present estimated 75% to 80% then a permanent population increase of 59% would ensue.

On this basis an increase in floor area of 59%, being approximately 2,700 sq m would be justifiably fundable by contributions.

A number of options are being considered for new facilities:

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There are new community facilities planned for South Forster and North Tuncurry to provide for expected population growth in these areas. Land has been identified for this purpose at South Forster and preliminary design work considered. It is expected that this design and construction will incorporate new facilities to support the provision of enhanced Aged and Disability services provision, as well as general use community facilities. It is expected that the works at South Forster will precede any works on the Tuncurry side of the bridge.

The future of the School of Arts site in Forster is material to these considerations. When that is resolved, Council decisions can be made on new Community facilities; where they are situated and whether there should be more than one new facility. There is potential for the relocation of Aged and Disability services provision within the redevelopment of that site; thus impacting on the timing and design of the planned building at South Forster.

The capital cost of the facilities would only be marginally affected by these decisions, and there is no reason why contributions should not be levied on new development.

9.6 Derivation of contribution rates

| | |
|--|--------------------|
| Building (2,700 sq m) | \$5,000,000 |
| Equipment and furnishing | \$500,000 |
| Site Works | \$600,000 |
| Land | \$300,000 |
| Present value of borrowing costs \$6m loan over 20 years interest rate 8% discount rate 4% | \$2,305,000 |
| Total | \$8,705,000 |
| Estimated contributing population (see chapter 2) | 18,497 |
| Contribution rate per person | \$470.61 |

The above rate is applicable to the year 2009-10 (using CPI = 92.4/166.0).

The rate will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

The CPI value for December quarter 2012 is 102.0 thereby giving the following contribution rates per person for 2013-14: \$519.50.

10 Forster Parking Plan

10.1 Purpose of the Forster Parking Plan

This plan is to enable provision of public parking spaces for business and commercial developments in those cases where it is not practicable for the developer to provide sufficient spaces on site.

10.2 Land to which the Forster Parking Plan applies

The Forster parking plan will be applied to developments within or near the Forster commercial zone as defined in "S94 Plan: Forster Car Parking - Great Lakes 2013 Catchment Boundary" Amended Map in Section 14 - Appendices.

10.3 Effect of Development on Forster Parking

The need for car parking in the central area is related to the amount of commercial activity in the Forster business district. Consequently new commercial development will be required to provide parking for both vehicles and / or bicycles in accordance with Council's code at the time of development consent. Where it is

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not practicable to provide all the parking on-site, then contributions will be payable to enable Council to increase the amount of public parking accordingly.

10.4 History of the Forster Parking Plan

The previous "Forster CBD Car Parking" Plan was effective from 16 December 1998. It was amended on 26 August 2003 with respect to the method of land cost indexation.

The 1998 works program was as follows:

| Item | Estimated Cost |
|---|---------------------|
| Parking area Memorial Drive | |
| Construct 29 spaces | \$26,500 |
| Parking area 9 Wallis St | |
| Purchase price | \$541,415 |
| Construct 42 spaces | \$120,000 |
| Less funds held in plan | -\$238,415 |
| Less rental income from flats | -\$1,836.54 |
| Total estimated cost (1998) | \$447,663.56 |
| Contribution per space (71 spaces) | \$6,305.12 |

The plan was amended again in 2006. At that time the works in the 1998 plan had all been completed. The amended plan was as follows:

| Item | Estimated Cost | Timelines |
|---|--------------------|------------------|
| Parking area Town Park (Area A) | | |
| Construct 58 spaces | \$200,000 | 2006-2007 |
| Parking Area Forster Beach (Area B) | | |
| Two-storey parking for net increase of 80 spaces and improved footpath to CBD | \$1,600,000 | 2011-2012 |
| New site to be determined (Area C) | | |
| Property purchase and development of 38 spaces | \$1,550,000 | 2016-2017 |
| Increase unrestricted parking on periphery | \$100,000 | 2006-2016 |
| Total estimated cost | \$3,450,000 | |
| Contribution per space (176 spaces) | \$19,602 | |

At 1 July 2008, the Town Park Area had been completed and the Car Park at 9 Wallis St had been sold. The car park account was reimbursed \$846,745 being the acquisition and construction costs (\$694,225) indexed to 2006-07 values.

At 1 July 2008, the amount in the account was \$1,074,478.

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The program and resulting Contribution for 2009 was as follows:

| Item | Estimated Cost | Timelines |
|---|----------------|-----------|
| Parking area Town Park (Area A) | | |
| Construct 58 spaces actual cost \$204,238 in 06-07, indexed to 08-09 | | |
| Completed, actual cost \$204,238 in 06-07, indexed to 08-09 | \$217,000 | complete |
| Parking Area Forster Beach (Area B) | | |
| Two-storey parking for net increase of 80 spaces and improved footpath to CBD | \$1,750,000 | 2011-2012 |
| | | |
| New site to be determined (Area C) | | |
| Property purchase and development of 38 spaces | \$1,550,000 | 2016-2017 |
| | | |
| Increase unrestricted parking on periphery | \$150,000 | 2008-2016 |
| | | |
| Total estimated cost | \$3,667,000 | |
| | | |
| Contribution per space (176 spaces) | \$20,835 | |

10.5 Forster Parking Program and Contribution Rates

The Program in 2013-14 which includes some amendments to timelines, land acquisition costs and construction costs is as follows:

| Vehicle Parking | Estimated Cost | Timelines |
|---|-----------------|-----------|
| Parking area Town Park (Area A) | | |
| Construct 58 spaces estimated cost \$200,000 in 06-07 | | |
| Completed, actual cost \$204,238 in 06-07 | \$204,238 | Completed |
| Parking Area Forster Beach (Area B) | | |
| Two-storey parking for net increase of 80 spaces and improved footpath to CBD | \$1,825,000 | 2015-2016 |
| | | |
| New site to be determined (Area C) | | |
| Property purchase and development of 38 spaces | \$895,000 | 2016-2017 |
| | | |
| Increase unrestricted parking on periphery | \$150,000 | 2008-2016 |
| | | |
| Total estimated cost | \$3,074,238 | |
| | | |
| Contribution per vehicle space (176 spaces) | \$17,467 | |

The above Vehicle Parking contribution rate is applicable to the year 2013-14 (using CPI = 102.0).

The rate will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities. The CPI value for December quarter 2012 is 102.0.

| Bicycle Parking for Development Type | Contribution |
|--------------------------------------|------------------------------|
| Class 2 Bicycle Enclosure | \$2,105 per enclosure |
| Class 3 Bicycle Rail | \$1,053 per rail |

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The above Bicycle Parking contribution rate from 2013-14 (based on CPI = 102.0) will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

The CPI value for December quarter 2012 is 102.0.

11 Tuncurry Parking Plan

11.1 Purpose of the Tuncurry Parking Plan

This plan is to enable provision of public parking spaces for business and commercial developments in those cases where it is not practicable for the developer to provide sufficient spaces on site.

11.2 Land to which the Tuncurry Parking Plan applies

The Tuncurry parking plan will be applied to developments within or near the Tuncurry commercial zone as defined in "**S94 Plan: Tuncurry Car Parking - Great Lakes 2013 Catchment Boundary**" Amended Map in Section 14 - Appendices.

11.3 Effect of Development on Tuncurry Parking

The need for car parking in the central area is related to the amount of commercial activity in the Tuncurry business district. Consequently new commercial development will be required to provide parking for both vehicles and / or bicycles in accordance with Council's code at the time of development consent. Where it is not practicable to provide all the parking on-site, then contributions will be payable to enable Council to increase the amount of public parking accordingly.

11.4 History of the Tuncurry Parking Plan

The first Tuncurry Parking Plan was effective from 1 July 1993. It was amended on 26 August 2003 with respect to the method of land cost indexation.

The 1993 works program was as follows:

| Item | Estimated Cost |
|---|----------------|
| Parking area between Lake and South Sts (70 spaces) | |
| Develop lot 6 sec 7 for 70 spaces | \$149,100 |
| Acquire and construct footpath through 92 Manning St | \$30,000 |
| Parking area between South and Kent Sts (additional 70 spaces) | |
| Recoup purchase cost of 17 Peel St and 7 Kent St | \$226,550 |
| Purchase 3 and 5 Kent St | \$270,000 |
| Car park construction | \$150,000 |
| Future parking areas (60 spaces) | |
| At northern perimeter of plan area | \$304,000 |
| Further area | \$304,000 |
| Total cost | \$1,433,650 |
| Contribution per space (200 spaces) (plan figure) | \$7,167.75 |

In the 2006 revision, the "future" parking of 60 spaces at unspecified location was dropped from the plan.

The 2009 plan sought to further expand the existing areas to provide an estimated 210 spaces with a schedule of works as follows:

| Item | Estimated Cost | Timelines |
|------|----------------|-----------|
| | | |

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| | | |
|--|--------------------|-----------|
| Area between Lake and South Sts (70 spaces) (Area A) | | |
| Develop lot 6 sec 7 for 70 spaces | \$300,000 | 2013 |
| Widen laneway and construct footpath | \$150,000 | 2013 |
| Area between South and Kent Sts (additional 140 spaces, total 210) (Area B) | | |
| Recoupment of acquisition cost 21 Peel St purchased 21/1/84 at \$79,000. CPI increase 138% | \$188,000 | |
| Recoupment of acquisition cost 17 Peel St purchased 17/3/91 at \$85,000. CPI increase 55% | \$132,000 | |
| Recoupment of acquisition cost 7 Kent St purchased 23/9/92 at \$115,000 CPI increase 52% | \$175,000 | |
| Recoupment of acquisition cost, part 23 Peel St 2008-09 | \$95,000 | |
| Acquisition of 3 Kent St, 5 Kent St and 23 Peel St | \$1,000,000 | 2009-2019 |
| Car Park Construction | \$900,000 | 2016-2020 |
| Amenities building | \$100,000 | 2018 |
| Landscaping | \$100,000 | 2020 |
| Increase unrestricted parking on periphery | \$200,000 | 2010-2020 |
| | | |
| Total | \$3,340,000 | |
| | | |
| Contribution per space (210) | \$15,904 | |

11.5 Tuncurry Parking Program and Contribution Rates

The Program in 2013-14 confirms the completion of most of the expansion of the existing areas to provide an estimated 210 spaces with amendments to the schedule of works, timelines, land acquisition costs and construction costs for recoupment of costs purposes as follows:

| Vehicle Parking | Estimated Cost | Timelines |
|--|--------------------|-----------|
| Area between Lake and South Sts (70 spaces) (Area A) | | |
| Develop lot 6 sec 7 for 70 spaces | \$220,000 | Completed |
| Widen laneway and construct footpath | \$150,000 | Completed |
| Area between South and Kent Sts (additional 140 spaces, total 210) (Area B) | | |
| Recoupment of acquisition cost of 21 Peel St purchased 1983-84 at \$79,000. | \$79,000 | Completed |
| Recoupment of acquisition cost of 17 Peel St purchased 1990-91 at \$85,000. | \$85,000 | Completed |
| Recoupment of acquisition cost of 7 Kent St purchased 1992-93 at \$111,000. | \$111,000 | Completed |
| Recoupment of acquisition cost of 23 Peel St purchased 2007-10 at \$484,059. | \$484,059 | Completed |
| Recoupment of acquisition cost of 3 Kent St and 5 Kent St in 2010-11 at \$742,508 | \$742,508 | Completed |
| Recoupment of Car Park Construction Costs | \$500,000 | WIP |
| Amenities building | \$100,000 | 2018 |
| Landscaping | \$100,000 | 2020 |
| Increase unrestricted parking on periphery | \$200,000 | 2014-2020 |
| | | |
| Total | \$2,771,567 | |
| | | |
| Contribution per vehicle space (210) | \$13,198 | |

The above Vehicle Parking contribution rate is applicable to the year 2013-14 (using CPI = 102.0).

The rate will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

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The CPI value for December quarter 2012 is 102.0.

| Bicycle Parking for Development Type | Contribution |
|--------------------------------------|------------------------------|
| Class 2 Bicycle Enclosure | \$2,105 per enclosure |
| Class 3 Bicycle Rail | \$1,053 per rail |

The above Bicycle Parking contribution rate (based on CPI = 102.0) will be indexed on each 1 July thereafter in accordance with the change in the CPI for the year to the previous December quarter. The CPI is the All Groups Consumer Price Index, weighted average of 8 capital cities.

The CPI value for December quarter 2012 is 102.0.

12 Payment of Contributions

12.1 Application of Contributions to Various Developments

Contributions are payable according to population increase and, in some areas, traffic increase expressed in additional "one-way" trips.

Single Dwellings

Each lot that has a dwelling entitlement is assumed to have paid all development contributions with respect to a single dwelling.

Therefore no contributions are payable when a single dwelling is built on a single lot.

Additional Dwelling Units

When more than one dwelling is to occupy one lot then contributions will be payable in accordance with Table 12.1 below.

Credit will be allowed as an offset against the population or traffic generated by the development. The amount of credit in the case of a vacant single lot will be the amount for a single dwelling. Where approved residential development is to be demolished the amount of credit will be that applicable to the existing development.

Table 12.1 - Number of Additional Trips for Residential Development

| | Persons | Additional Trips |
|--|---------|------------------|
| Lot or single house or dual occupation (i.e. additional house on lot) | 2.4 | 9 |
| Multi-unit developments: | | |
| 3 or more bedrooms | 2.2 | 5 |
| 2 bedroom | 1.8 | 5 |
| 1 bedroom | 1.3 | 5 |
| Bed-sitter | 1.0 | 5 |
| Other developments: | | |
| Motel room | 1.0 | 3 |
| Caravan Park Site | 1.0 | 3 |
| Dormitory bed in hostel | 0.5 | 1.5 |
| Bed and Breakfast in existing house | 0.0-2.0 | Nil |

Motel room includes a room in a hotel, hostel, guest house, boarding house and the like

The additional trips are additional "one-way" trips generated. A "return trip" is therefore counted as two trips.

Non-Residential Developments

Non-residential developments will pay contributions according to the extra traffic generated that is not already counted as part of trips attributed to a levy on residential developments. As a guiding principle, non-residential developments are levied for the number of additional "one-way" trips that

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are generated. A "return trip" to a development is therefore counted as two movements. Council estimates that of all trips that a development generates, 20% have not been attributed to a levy on residential development. As such, the major road contribution for a non-residential development will be charged for 0.4 one way trips per vehicle accessing the site per day.

Non-residential developments are encouraged to undertake a detailed Traffic Impact Assessment in accordance with Austroads guidelines to determine the estimated number of vehicles accessing a development per day.

In the absence of a Traffic Impact Assessment, Council will use the "one-way" trip rates contained in the latest version of the Council's "**Non-Residential**" **Developments S94 "One-Way" Trips Table** (available from Council's website or offices) to estimate the number of additional "one-way" trips that a non-residential development generates. (Refer to Appendix 14.5 of this Plan for the now current Trips Table)

12.2 Timing of Payments

The contributions must be paid prior to the issue of a construction certificate, subdivision certificate or complying development certificate, depending on which respective certificate applies.

Where any payment is made after the end of the financial year in which the consent was issued the amount payable will be changed in accordance with the CPI (All Groups Consumer Price Index, weighted average of 8 capital cities.) The CPI for the time of consent is that which applies to the December quarter prior to the financial year of consent. The CPI at time of payment is that which applies to the December quarter prior to the financial year of payment.

Indices for the years from 2002-03 are as follows.

| Index Date Dec Qtr | For Financial Year | CPI |
|--------------------|--------------------|------------|
| 2001 | 2002-2003 | 75.4/135.4 |
| 2002 | 2003-2004 | 77.6/139.5 |
| 2003 | 2004-2005 | 79.5/142.8 |
| 2004 | 2005-2006 | 81.5/146.5 |
| 2005 | 2006-2007 | 83.8/150.6 |
| 2006 | 2007-2008 | 86.6/155.5 |
| 2007 | 2008-2009 | 89.1/160.1 |
| 2008 | 2009-2010 | 92.4/166.0 |
| 2009 | 2010-2011 | 94.3/169.5 |
| 2010 | 2011-2012 | 96.9/174.0 |
| 2011 | 2012-2013 | 99.8/179.4 |
| 2012 | 2013-2014 | 102.0 |
| 2013 | 2014-2015 | 104.8 |

12.3 Pooling of Contributions

This plan expressly authorises monetary contributions paid for different purposes to be pooled and applied (progressively or otherwise) for those purposes.

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12.4 Concessions/Discounts/Exemptions/Variations/Credits to Contributions

The following points are taken directly from the Section 94 Practice Notes issued by the NSW Department of Planning (now known as NSW Planning and Infrastructure) in November 2005 and these are still required to be followed by all NSW Councils in the preparation, development and amendment of their Section 94 Development Contributions Plans.

12.4.1 What are the mandatory conditions for Section 94 Contributions to apply?

"Section 94B(1) of the *EP&A Act* requires that a contribution can be imposed only if a development contributions plan so authorises the council. Further, the contribution can only be imposed if it is in accordance with that contributions plan."

12.4.2 What other options are available to fund drainage and stormwater infrastructure?

"Council can require developers to undertake works or to pay part of the whole cost of these works using the combined authority under s64 of the *Local Government Act 1993* and Division 2, Part 3 of the *Water Supply Authorities Act 1987*. Guidelines issued by the former Department of Land and Water Conservation also note that stormwater and drainage services may be levied under these Acts and, consequently, can also be excluded from Section 94 contributions if a council wishes."

12.4.3 What are valid adjustments to S94 Contributions for a development?

"There are essentially two ways that a section 94 (s94) contribution can be adjusted:

- adjustment of the **contribution rate** specified in a s94 development contributions plan
- adjustment of the amount payable under a condition of **development consent** between the time of the granting of consent and payment."

12.4.4 What exemptions may be considered?

"A council may elect to exempt particular types of development or class of development from the payment of development contributions on the basis of strategic planning, economic or social purposes.

While it is not possible to foresee every scenario, permitting the possibility of future requests for exemption being decided on their merits is reasonable – subject to some criteria being specified in advance to ensure equity. Council's policy on exemptions must be stated in the development contributions plan and, as far as possible, be specific about the types of facilities to be exempted. Alternatively, a council may state the criteria that will be used to determine an exemption or exclusion."

12.4.5 Implications of exemption of section 94 contributions

"Where exemptions are granted (or development is to be covered by a s94A plan), council should not factor this exempt development into the assessment of demand for the purposes of a s94 development contributions plan. Where the exempted development will create future demand, and the council intends to cater for this demand through provision of facilities (e.g. through the application of s94A levies), it must specify the amount of apportionment that will be applied to the development which is exempted."

12.4.6 Discounting contributions

"Discounting means reducing the calculated contribution rate in order to achieve a specific planning, social, economic or environmental purpose. It is extremely important for a council to consider the implications which discounting, and the consequent reduction in contributions, may have for the existing and/or the new community. Implications could include the delay in the provision of an identified facility or the provision of a facility of a lesser standard or capacity. Another implication is the creation of precedent. Where discounting has been actively employed, perhaps to encourage development, it is often difficult to shift the policy or defend a new policy in the face of past actions. Discounting should be used judiciously as it effectively means that existing ratepayers are subsidising future development. Council and the community must be made fully aware of the financial implications of discounting practices".

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12.4.7 Credits for non-residential development

"For commercial and industrial development, credits are more complicated, as the same development may have differing implications such as higher (or lower) levels of traffic generation. Councils will need to assess these on a case by case basis. In all cases, council should have a specific policy on credits in their s94 development contributions plan. These will need to be documented and the implication for the s94 development contributions plan assessed particularly if the credit is large."

Note: For further information on these matters please refer to a current copy of "Policy For Section 94 Development Contributions Assessment" available from Administration offices and/or website of Great Lakes Council.

13 References

1. Forster Tuncurry Conservation and Development Strategy Strategic Planning Branch - Great Lakes Council - 2003
2. Forster Tuncurry Medium and High Density Yield Projections strategic Planning Branch - Great Lakes Council - 2005
3. Forster Tuncurry Major Roads Study - GHD April 2005
4. Great Lakes Rural Living Strategy – Great Lakes Council - 2004
5. Forster Tuncurry Employment Lands Implementation Strategy - 2008
6. .id - Great Lakes Council Population Forecasts – 2031 (as at 1 July 2013)
7. RMS - Guide to Traffic Generating Developments – 2001 (As Amended)
8. Traffic Engineer's Internal Memo Regarding Non-Residential Trip Rates - Great Lakes Council – 15 March 2013
9. Policy for Section 94 Development Contributions Assessment – Great Lakes Council – 25 March 2014
10. NSW Planning & Environment (NSWPE) - Development Contributions Practice Notes - July 2005 (updated December 2006)

Note: The specific set of NSWPE Development Contributions Practice Notes mentioned in item 13.10 above was referred to as a guide for the current amendments to this Plan because all the S94 Development Contributions resulting from this Plan are well below the current Cap of \$20,000 per residential lot so therefore the IPART-developed "2014 Practice Notes" do not apply to this Plan.

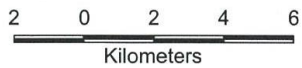
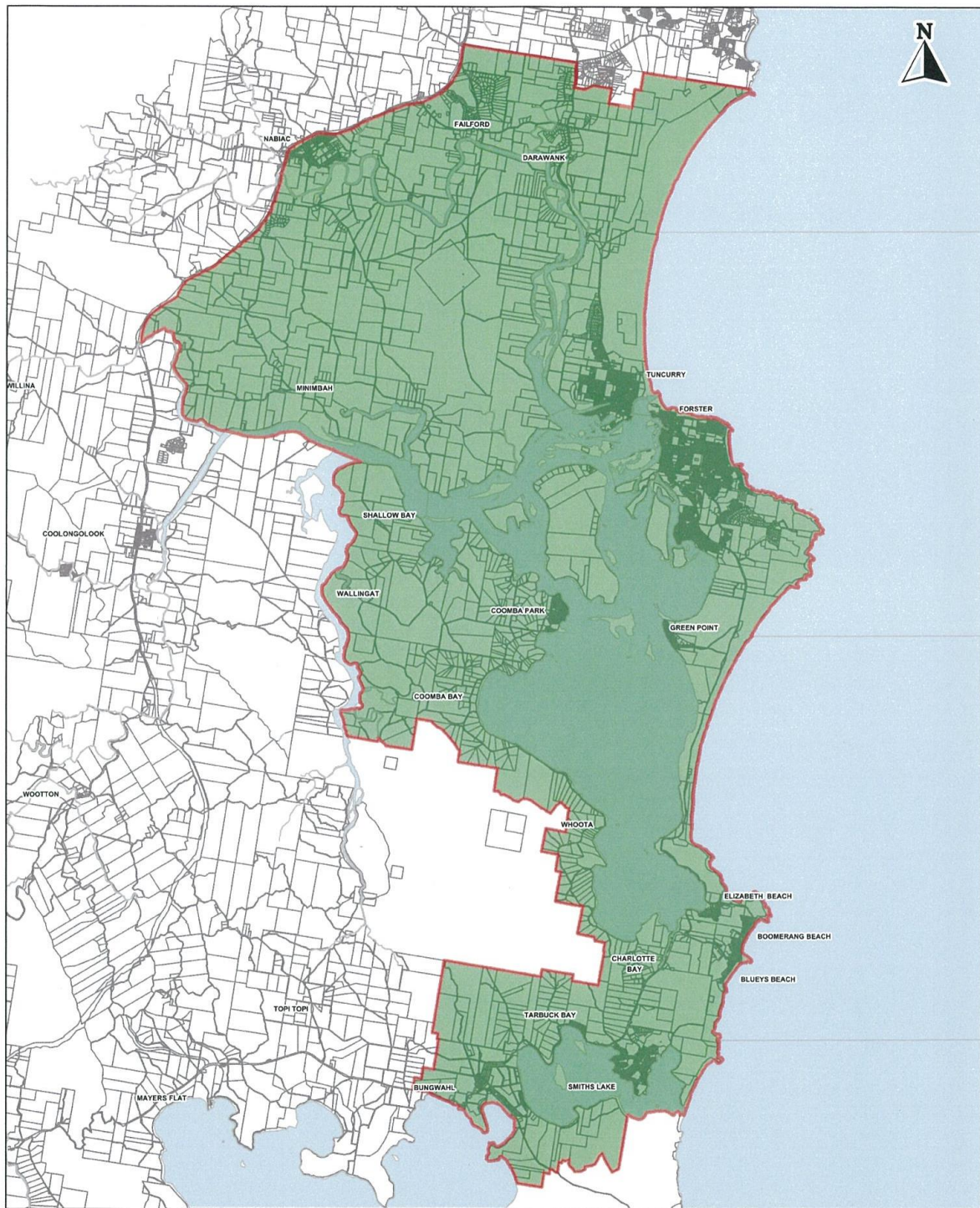
**FORSTER DISTRICT
S94 CONTRIBUTIONS PLAN**

14 Appendices

1. "S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary" Amended Map
2. "S94 Plan: Forster District - Stormwater Catchment Great Lakes 2013 Catchment Boundary" Map
3. "S94 Plan: Forster Car Parking - Great Lakes 2013 Catchment Boundary" Amended Map
4. "S94 Plan: Tuncurry Car Parking - Great Lakes 2013 Catchment Boundary" Amended Map
5. "Non-Residential" Developments S94 "One-Way" Trips Table – 18 November 2013

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

1. "S94 Plan: Forster District – Great Lakes 2013 Catchment Boundary" Amended Map



Legend

Forster District Section 94 Boundary Plan

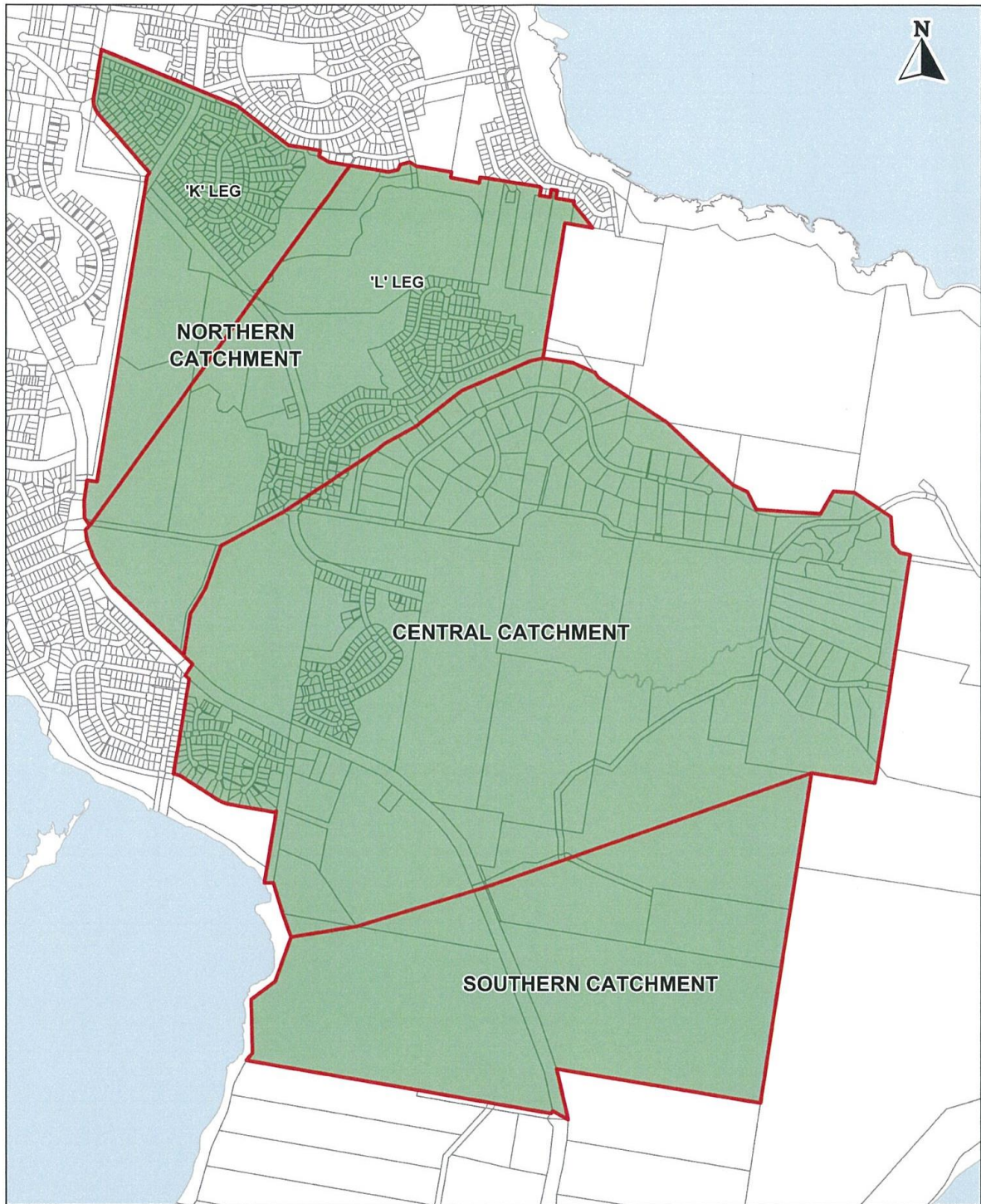
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FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

2. "S94 Plan: Forster District - Stormwater Catchment Great Lakes 2013 Catchment Boundary" Map



250 0 250 500 750 Legend

Meters

Forster District Stormwater Catchment Section 94 Boundary Plan

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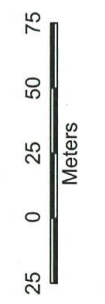


FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

3. "S94 Plan: Forster Car Parking - Great Lakes 2013 Catchment Boundary" Amended Map



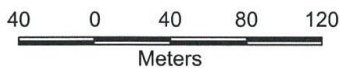
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- Legend**
- Forster Car Parking
 - Section 94 Plan Boundary
 - Cadastral

FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

4. "S94 Plan: Tuncurry Car Parking - Great Lakes 2013 Catchment Boundary" Amended Map



Legend
 Tuncurry Car Parking Section 94 Boundary Plan Cadastre

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FORSTER DISTRICT S94 CONTRIBUTIONS PLAN

5. "Non-Residential" Developments S94 "One-Way" Trips Table – 18 November 2013

| Land Use | Size of Development | Average Daily Vehicle Trips (ADVT) To Be Used |
|---|---------------------|--|
| Office and Commercial | | |
| Commercial Premises (except those below) | All sizes | 2 / 100m2 GLFA |
| Medical Consulting Rooms | All sizes | 0.4 / staff + 0.3 / Appointment |
| Child Care Centres | All sizes | 0.4 / Child |
| Retail | | |
| Retail Shops/Shopping Centres | 0-10,000 m2 | 24 / 100m2 GLFA |
| | 10,001-20,000 | 16 / 100m2 GLFA |
| | 20,001-30,000 | 13 / 100m2 GLFA |
| | 30,001-40,000+ | 10 / 100m2 GLFA |
| Bulky Goods | All sizes | 3.6 / 100m2 GLFA |
| Major Hardware / Building Supplies | All sizes | 6.8 / 100m2 GLFA |
| Markets | All sizes | 3.6 / stall |
| Restaurants | All sizes | 12 / 100m2 GLFA |
| Drive-In Takeaway Food Outlets | All sizes | 8 / 100m2 GLFA |
| Recreation and Tourist Facilities | | |
| Multi-Sports Centres | All sizes | 12 / 100m2 GLFA |
| Squash Courts | All sizes | 0.8 / Court |
| Tennis Courts | All sizes | 1.8 / Court |
| Bowling Greens | All sizes | 12 / Bowling Green |
| Gymnasiums | All sizes | 9 / 100m2 GLFA |
| Caravan Parks | All sizes | 1 / Tenanted Site + 0.4 / Casual Site |
| Marinas | All sizes | 0.5 per fixed berth + 0.3 per swing mooring |
| Boat Ramps | All sizes | 0.2 / Boat Trailer Parking Space |
| Licensed Clubs / Hotels / Taverns | All sizes | 8 / 100m2 GLFA |
| Industrial | | |
| Road Transport Depots | All sizes | 1 / 100m2 GLFA |
| Truck Fuel Stops | All sizes | 24 / 100m2 GLFA |
| Factories | All sizes | 1 / 100m2 GLFA |
| Warehouses | All sizes | 0.8 / 100m2 GLFA |
| Plant Nurseries | All sizes | 10 / 100m2 GLFA |
| Other | | |
| Seasonal Usage of Facility | All sizes | See Note 3 below |
| Default Trips for Non-Specified Development | All sizes | 0.4 one-way trips per vehicle accessing the site per day |
| Notes: | | |
| 1. Other Developments Not Shown Above - A Recent Traffic Impact Assessment to be Submitted By An Accredited Professional. | | |
| 2. The above ADVT values are only the "Non-Residential portion" of the "One-way" Trips not already included in Residential Trips. | | |
| 3. Seasonal usage of a facility allows a discount calculated as (the number of days used per year / 365) to the above values | | |