

Review of MR545 Traffic Studies

Desktop Review

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1 Introduction

Cardno has been commissioned by Byron Shire Council to undertake a review of previous traffic and transport studies and assess the objectives, outcomes, opportunities and constraints of each study. At the completion of investigations, Council wishes to undertake strategic traffic and transport planning, with a view to investigate options to improve the safety and efficiency of the road network and explore potential opportunities for providing and enhancing alternative modes of transport.

1.1 Purpose

Council has already prepared a Byron Bay Town Centre Masterplan Report with the objective to connect the centre of Byron Bay to the regional road network and to lay the foundation for future planning of the shire whilst maintaining the spirit of the community. To establish and inform the strategic vision of Byron Bay it is important the road network issues are identified, addressed and appropriately planned. These issues include traffic congestion, high parking demand, poor public transport opportunities and lack of pedestrian only streets and cycle routes.

The key objectives of this report are to:

- > Review the previously documented project history, including six previous study reports and other relevant strategic planning documents;
- > Identify the similarities and discrepancies between each study;
- > Establish priorities for the road network and identify those projects which can be progressed immediately or those that require priority focus during the new study; and
- > Provide the foundation framework for a Movement Strategy for Byron Town Centre.

As part of the Byron Bay Town Centre Masterplan adopted by Council in 2016, the community engagement process identified that access and movement are the highest priority to improve Byron Bay.

Upon completion of investigations, further advice will be provided to inform the scope of a new study and prepare the development of the Request for Tender documentation.

Figure 1-1 Byron Bay Road Network Area



Source: Byron Shire Council

1.2 Context

Byron Bay is an iconic tourist destination located on the eastern most point of Australia. It is located 800km north of Sydney and 175km south of Brisbane. It is also conveniently located close to the Gold Coast airport about 45-minute drive to the north. The population of Byron Shire is approximately 30,000 people, while the town of Byron Bay has a population of approximately 9,000. Byron is enjoyed by 1.5 million visitors each year.

The most direct route into Byron Bay is from the Pacific Highway (M1) via Ewingsdale Road (MR545). The majority of trips to Byron Bay occur to and from the north. The daily traffic volume on Ewingsdale Road is 21,000 vehicles per day. Between 1996 and 2008 traffic on Ewingsdale Road increased by over 50%. Private vehicles dominate the transport modes and this causes congestion, delays and queuing issues within the town centre, particularly during weekends, special events and peak holiday seasons.

Figure 1-2 Aerial View of the Byron Bay Area



Source: NearMap

2 Literature Review

Council has specifically requested a review of the following documents to identify projects for prioritisation and identify the extent to which projects have been investigated, considered and justified or warranted. The studies include the following:

- > The MR545 Strategic Study 2008 (Opus)
- > West Byron Development Transport Study 2011 (Veitch Lister)
- > West Byron Development Area-Western Precinct Traffic Impact Assessment 2016 (Bitzios Consulting)
- > Byron Shire Central Hospital 2014 (Taylor Thomas Witting)
- > Ewingsdale Retirement Facility DCP Traffic Study Report 2015 (Bitzios Consulting)
- > The Farm 2016 Traffic Impact Assessment and Traffic Counts (Greg Alderson & Associates)
- > McGettigans Lane Ewingsdale Road Intersection Assessment 2017 (Bitzios Consulting)
- > Broken Head / Clifford Street Intersection Traffic Analysis Report 2016 (TTM)

A copy of each study has been provided and reviewed. Detailed review of traffic analysis or models has not been undertaken and is excluded from this process. The assessment of car parking for future development and the requirements and provision for private developments was also considered irrelevant for the purpose of reviewing and recommending priority projects for the road network.

2.1 MR545 Strategic Study

The purpose of the MR545 Strategic Study undertaken by Opus International Consultants in 2008 was to undertake a Strategic Study of the regional road network to assess and predict the current and future level of service and to recommend treatments to improve the level of service.

The scope of the study involved workshop discussions with Council staff to establish the current and future population and land use, traffic generation, traffic and travel patterns and future design road environment. The data was evaluated and validated for model development. The objectives of the study included the following tasks:

- > Assess the current level of service offered by MR545;
- > Determine the impact of the future development and traffic growth on the functioning of the MR545;
- > Consider the feasibility of the town centre bypass and mini-bypass;
- > Make recommendations on measures to improve levels of service; and
- > Make recommendations to Council on contributions that may be applicable to future development on the Ewingsdale Road corridor to fund road improvements required to manage traffic growth.

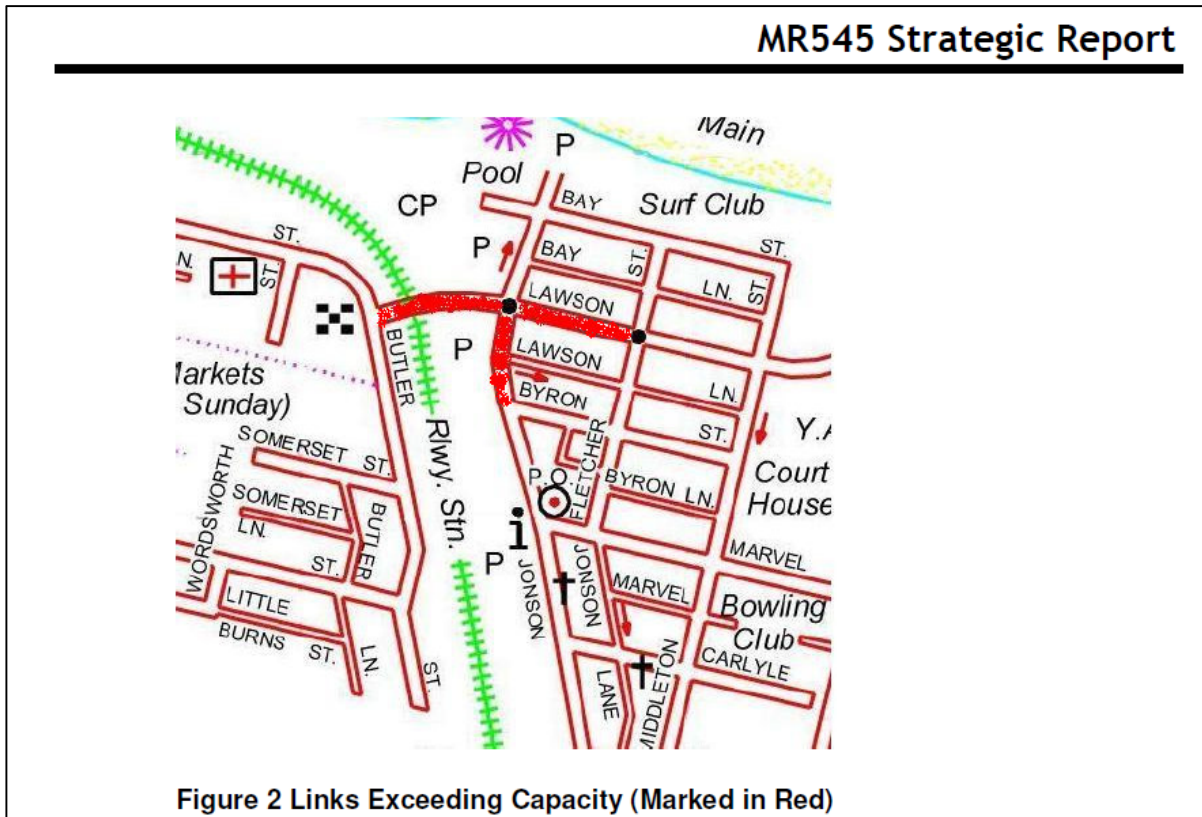
Extensive traffic surveys were undertaken as part of the study, including origin destination surveys, intersection movement counts, tube counts and travel time surveys. Survey data confirmed that the town centre is the attraction for most trips. The survey information formed the basis of traffic modelling including a strategic model in SATURN and detailed intersection modelling using SIDRA. Modelling was used to investigate the 2018 and 2028 design horizons.

Outcomes of the 2028 model indicated the following deficiencies within the network;

- > Ewingsdale Road is at capacity with 2,500 vehicles per hour between the new sports complex (Cavanbah Sports Centre) and Banksia Drive. (The 2008 traffic volumes were 1,650 vehicles per hour in the peak periods and other sections of the road to the west are nearing capacity).
- > The Jonson Street southern approach to the roundabout with Lawson Street exceeds capacity.
- > Lawson Street eastern approach to the roundabout exceeds capacity.
- > Lawson Street approach to the Butler Street/Shirley Street roundabout exceeds capacity.

These issues are illustrated on Figure 2-1.

Figure 2-1 Extract from the MR545 Study indicating Capacity Constraints



Source: Opus, 2008

The outcomes of the report indicated that network upgrades will be required to accommodate future growth, of which the majority of treatments are needed immediately. The following works were identified to ensure adequate network operation in the 2028 design horizon:

- > A roundabout at McGettigans Lane / Ewingsdale Road intersection
- > A roundabout at the Sunrise Boulevard / Ewingsdale Road intersection with access to the proposed Byron West development
- > A roundabout at Bayshore Drive / Ewingsdale Road intersection
- > A 2nd rail crossing from Butler Street to Jonson Street / Marvel Street intersection with a single lane roundabout at the Jonson Street / Marvel Street intersection
- > 4 laning of Ewingsdale Road between a roundabout at the proposed sports field and a roundabout at the Sunrise Boulevard / Ewingsdale Road intersection.
- > An upgrade of Shirley Street / Butler Street roundabout
- > Two lanes on Fletcher Street approach to the Fletcher Street / Lawson Street roundabout
- > A slip lane on the Bangalow Road at Patterson Street / Cooper Street / Bangalow Road intersection.
- > A right turn bay at Bangalow Road for the golf course access
- > A single lane roundabout at the Clifford Street / Broken Head Road intersection

Figure 2-2 illustrates the locations of these upgrades. Most treatments are needed by 2018 and it was recommended that detailed design commence. Roundabouts, rather than signalised intersections, were modelled for intersection treatments/upgrades as preferred by the community. It was recommended that the Council continue to monitor the traffic growth and economic activity as this has an impact on the triggers and timing of treatments.

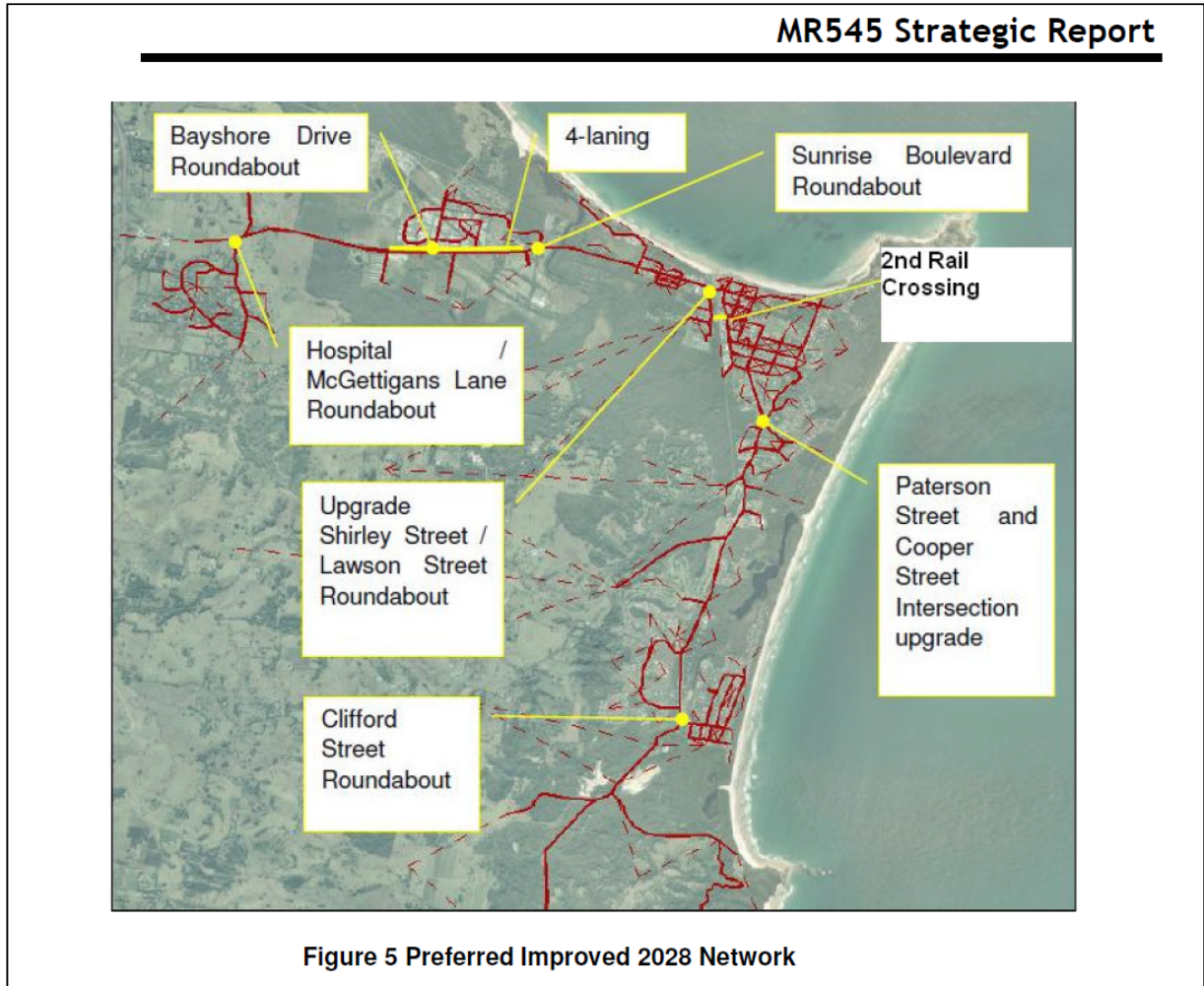
Tourist traffic is expected to continue contributing the most to traffic volumes and as such tourist groups and day trippers may be reduced through travel demand measures.

The Report also recommends a further study of parking to provide a basis for planning measures to maintain the amenity of the town centre, in regard to assessing the suitability of front-to kerb parking, patronage for a

Butler Reserve Carpark, detailed consideration of a park and ride scheme and wider public transport service based on rail corridor in totality.

The study also highlights the use of the rail corridor as an excellent future transport opportunity. It suggests it could operate as a combined cycle and public transport route.

Figure 2-2 Extract from the MR545 Study indicating 2028 Network Improvements



Source: Opus, 2008

2.2 West Byron Development Transport Study

The purpose of the study was to determine the impact of a new development comprising of residential dwellings, business/commercial uses and light industry. The proposal included an additional 856 residential dwellings, housing a population of 2,182 people. Two accesses onto Ewingsdale Road are proposed to service the development. The study was undertaken in 2010 using a base year of 2008 for traffic modelling analysis with two planning horizons of 2018 and 2028. A map of the extent of the West Byron development site is provided in Figure 2-3.

The report factored in growth rates for the purpose of forecasting future traffic in the model. Growth predictions were provided in the report and interestingly the impact of visitors and estimated growth rates were provided. Table 2-1 indicates the estimated increase in visitors.

Table 2-1 Growth Rates from VLC Report

Type of Visitors	Annual Numbers 2008	Growth From 2008 for 2018	Growth from 2008 to 2028
Domestic Overnight	887,000	2.4%	-3.5%
Domestic Day	2,635,000	15.0%	26.6%
International Overnight	183,000	13.7%	27.4%

Figure 2-3 Extract from West Byron Study indicating Development Area



Source: Veitch Lister, 2011

The report recommended prior to 2018 that the following upgrades would be required:

- > The Mini-Bypass on the Butler Street alignment and a connection across the railway line to Jonson Street at Marvel Street.
- > Dual lane roundabout at Ewingsdale Road and McGettigans Lane
- > Dual lane roundabout at Bayshore Drive
- > Dual lane roundabout at SAE Institute
- > Complete pedestrian cycleway along south side of Ewingsdale Road

Based on the modelling the following is required post-2018:

- > Maintain option to construct 4 lane divided carriageway on Ewingsdale Road
- > Progressively introduce parking restrictions in Shirley Street on the western approach to and exit from Butler Street
- > Maintain full bypass option for the town.

2.3 West Byron Development Area – Western Precinct A

The purpose of the study was to determine the impact of traffic generated from the western precinct A (Villa World Site) only, although consideration was given to the potential development yields and traffic generation from the surrounding and adjacent parcels of land (Western Precincts B, C and D).

Figure 1 Proposed West Byron Development Area (extract from Bitzios Report)

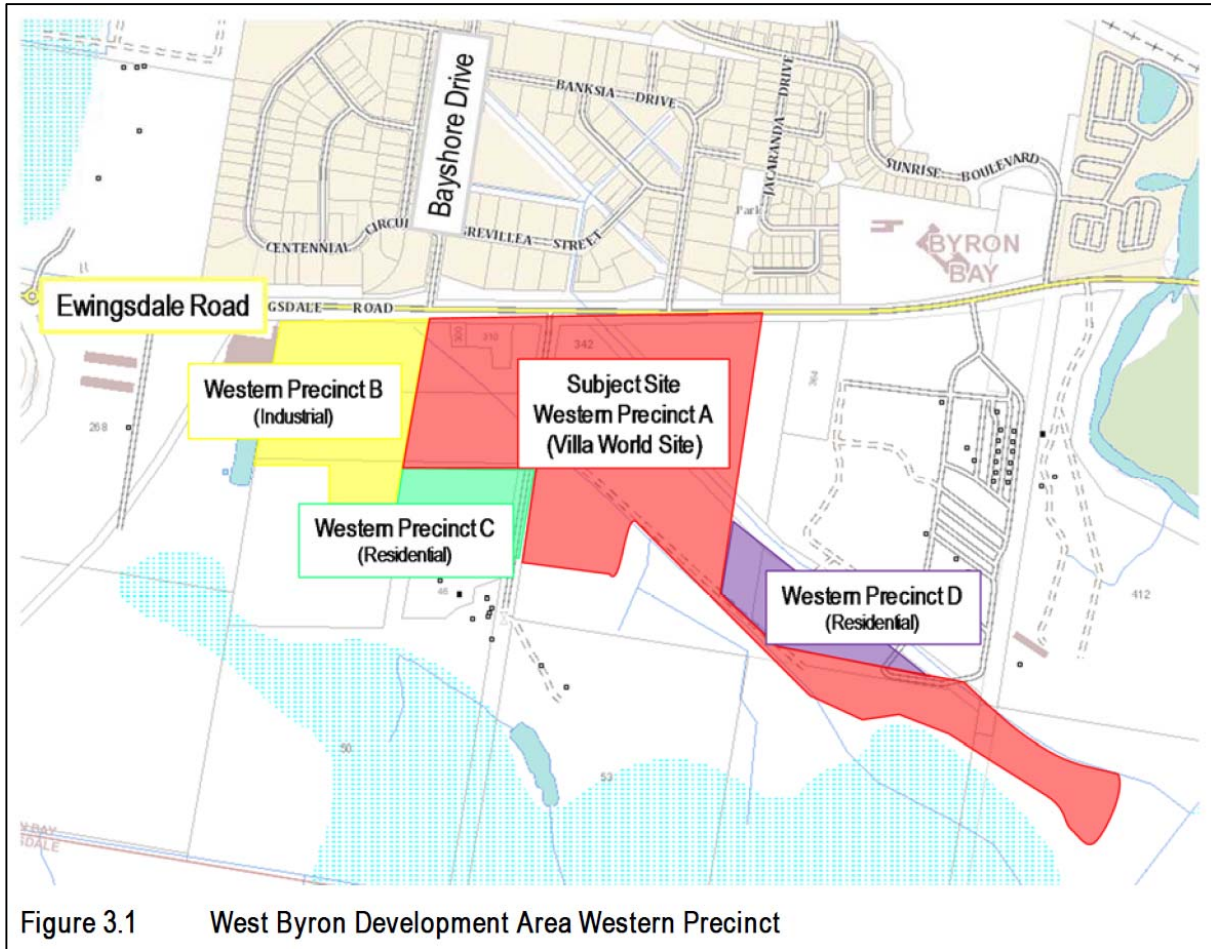


Figure 3.1 West Byron Development Area Western Precinct

Source: Bitzios, 2016

The report establishes the following conditions:

- > Access to Ewingsdale Road will be via two new roundabouts to create 4 way intersections with existing intersections on the northern side of Ewingsdale Road at Bayshore Drive and the SAE institute (300m west of Sunrise Boulevard roundabout). The existing intersection with Melaleuca Drive (south of Ewingsdale Road) will be terminated.
- > Traffic surveys for the existing road conditions were undertaken on Tuesday 16th August 2016 to obtain AM and PM peak traffic flows at the intersection of Ewingsdale Road and Bayshore Drive and also the intersection of Ewingsdale Road and Banksia Drive. (Peak hour traffic flows for 2016 for Ewingsdale Road/Bayshore Drive intersection are shown in Figure 2.1 of the Bitzios Report).
- > Traffic growth used in the assessment was obtained from the VLC Zenith Model and was less than 1% per annum compounded (refer to Table 4.1 of Bitzios Report).
- > The traffic generation for the proposed development site has been calculated based on land use (refer to Table 4.2 of Bitzios Report).
 - The trip generation for Western Precinct A is 290 trips during the AM peak period and 305 trips during the PM peak hour.
 - The total ultimate trip generation for the site (Western Precincts A-D) during the AM peak is 579 vehicles per hour and the PM peak is 623 vehicles per hour.
- > The distribution of traffic to the external road network has been based on a split of the following;
 - Movements to and from the east – 38%
 - Movements to and from Bayshore Drive – 32%
 - Movements to and from the west – 30%

The result of traffic analysis are summarised below:

- > The operational performance of the roundabout with Ewingsdale Road and Bayshore Road was modelled in SIDRA.
- > The roundabout was assumed to have a diameter of 16m with two circulating lanes and two approach lanes on Ewingsdale Road, two approach lanes on Bayshore Drive and only one approach lane on the proposed development access leg. Refer to Figure 2 for the SIDRA layout extracted from the Bitzios Report.
- > Analysis was undertaken for 2018 and 2028 for both without and with development traffic scenarios.
- > The roundabout was analysed with traffic generated from Precinct A (352 lots) and was also analysed for traffic generated from all Precincts A, B, C and D.
- > Results of analysis indicated that the roundabout performs within acceptable limits and has spare capacity for all scenarios for the 2028 planning horizon year.
- > For traffic generated from Precinct A for the 2028 planning horizon year in the AM peak period the queue length for the single lane development access approach to the roundabout is 12m and for the 2028 PM peak the queue length is 6.7m. The overall level of service for this approach is B with delays less than 12 seconds. The single lane approach operates adequately with no requirement for additional lanes.

Whilst the Bitzios Report concluded that all development from the Western Precinct and the ultimate development scenario can be accommodated from the one access via the roundabout with Ewingsdale Road and Bayshore Drive, it has been proposed that the ultimate development of the West Byron Area will also have access to Ewingsdale Road via a new four-way roundabout with the SAE institute (300m west of Sunrise Boulevard roundabout).

It should be noted that it is generally best practice to provide two access intersections to the external road network for catchments with 300 lots or greater. It is concerning that in the event the main distributor road to the catchment is blocked, there is no alternative access for this catchment to exit the area. For the purpose of incident management and emergency access it is considered essential to provide an alternative interim access for Precinct A.

Precinct A (Villa World) provides for a residential catchment exceeding 300 lots and therefore a secondary intersection or point of access should be required for future development. In particular, consideration should be given to providing alternative access to Ewingsdale Road for traffic associated with the light industrial land uses. It is considered reasonable to provide two intersections on Ewingsdale Road for future stages of the West Byron Development as per the original intention.

The assumptions outlined in the report are considered reasonable for the purpose of assessing the impact of development traffic.

2.4 Byron Shire Central Hospital Transport & Accessibility Report

The purpose of the Transport and Accessibility Report for the Byron Shire Central Hospital was to evaluate the traffic and parking needs for the new hospital which is located at 54 Ewingsdale Road.

The characteristics of the proposed hospital redevelopment included:

- > Accommodation for 65 in-patient beds;
- > Daily outpatients of 120;
- > Provision of a number of consulting rooms; and
- > Limited expansion of mental health unit services.

The objectives of the study were to determine the existing condition of the road network in the study area, review the parking requirement, vehicle access arrangements and the impact on the road network and provide a transport strategy for the hospital. Figure 2-4 outlines the site area for the study.

Figure 2-4 Extract from Hospital TIA indicating Site Location



Source: Taylor Thomas Witting, 2014

The findings of the study indicated that the road network would continue to have a satisfactory level of service. All nearby intersections were deemed to operate at a similar level of service post-construction of the hospital facility when compared to pre-construction intersection performance. The report did recognise that the existing bicycle path ceased at the intersection with McGettigans Lane (300m east of the site).

The report also suggested measures to encourage public transport, including provision of a bus stop within or adjacent to the new hospital facility.

The report recommended a reduction in the posted speed limit from 80km/h down to 60km/h along the section of Ewingsdale Road adjacent to the Hospital site. This has since been implemented with the 80km/h zone now commencing to the east of McGettigans Lane.

2.5 Ewingsdale Road Retirement Facility Traffic Study report

The purpose of the study was to assess the likely traffic impacts of the proposed development and to determine the associated future infrastructure upgrades to inform the preparation of the development control plan (DCP) for the subject sites in consultation with Council. The report assumed a commencement of use year of 2018 and planning design horizon of 2028. Figure 2-5 illustrates the site area and location.

Traffic data was collected in 2015, and further traffic counts were undertaken in March 2017 at the intersection of Ewingsdale Road and McGettigans Lane.

Results of surveys indicate a clear pattern for an increase in eastbound traffic during the morning peak period and an increase for westbound traffic during the afternoon peak period, which is representative and consistent with background growth in the area of morning trips to Byron Bay from the Pacific Motorway and evening trips from Byron Bay toward the Motorway.

Figure 2-5 Extract from Ewingsdale Retirement Facility Report indicating Development Area



Source: Bitzios, 2015

The outcomes of the study included the following:

Base (without development traffic):

- > Pacific Highway / Ewingsdale Road roundabout operates at acceptable levels in 2028.
- > William Flick Lane required the removal of the right-out turn movement. Turns should be limited to left out only.
- > Hospital access roundabout will require upgrading to a dual lane roundabout.
- > The existing priority controlled seagull intersection with McGettigans Lane will fail by 2023 and require upgrading to a dual lane roundabout.

With Development Traffic:

- > Pacific Highway / Ewingsdale Road interchange will require updates to signage and line marking to provide double left-turns (to Ewingsdale Road) on the north-west approach (southbound off-ramp).
- > William Flick Lane will operate with the removal of the right-out turn movement (as described above in the base case). The existing right turn into William Flick Lane can be retained.
- > Dual lane roundabout access to Byron Hospital (as per base case).
- > Upgrade of McGettigans Lane and Ewingsdale Road intersection to a dual lane roundabout.

2.5.2 Development Assessment Referral Comments

A review of the development assessment referral comments dated between 5th July 2016 and 24th August 2017 has been undertaken.

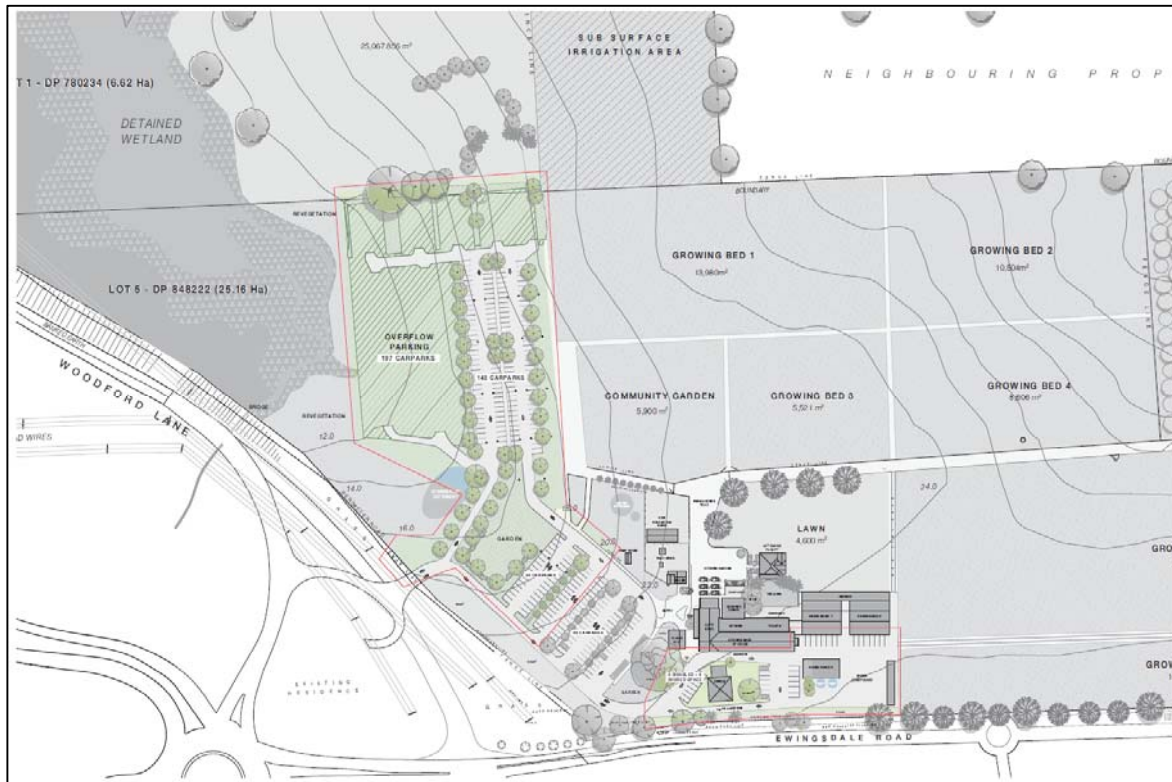
Council do not have funding to construct the roundabout and it is considered unreasonable to request the developer to construct the roundabout given the trips generated from the proposed development. Therefore, Council recommended that the development application should be refused unless the developer offers to upgrade the intersection or until such time as Council has funding available to enter into a planning agreement.

2.6 The Farm – Parking and Traffic Impact Assessment

The report was undertaken by Greg Alderson & Associates in 2016 for an extension to the existing development. The purpose of the report was to respond to the information request issued by Council to address traffic conditions, the effects of seasonal peaks and to determine parking requirements. The analysis did not incorporate growth due to large developments such as West Byron, however applied a growth rate of 2.5% p.a. compounded for traffic along Ewingsdale Road.

SIDRA intersection modelling was carried out for the roundabout intersection with Ewingsdale Road, Woodford Lane and the Southbound on and off ramps. The report assumed a commencement of use year of 2016 and planning design horizon of 2026. Figure 2-6 illustrates the site area.

Figure 2-6 The Farm Development Site



Source: Greg Alderson & Associates, 2016

The analysis concluded that whilst the traffic generated from The Farm is unlikely to result in worsening of Level of Service on the adjacent road network during periods outside school holidays, it was recognised that during school holidays and the Christmas holiday peak The Farm is likely to exacerbate existing congestion issues. Analysis indicated that significant queueing issues will occur by 2026 on the southbound off ramp and Ewingsdale Road during peak holiday conditions. The report recognises that there are deficiencies within the road network but suggests Council provide a solution rather than the development be conditioned.

2.7 McGettigans Lane/Ewingsdale Road Intersection Assessment

This Report was prepared by Bitzios Consulting in May 2017 as additional information to the proposed Wellness HUB development application. The purpose of the report was to review the intersection of McGettigans Lane and Ewingsdale Road. There was concern that this intersection required upgrading and it was not considered feasible to bring forward the works. It is not expected to be constructed for at least 3 years. Revised traffic counts and further modelling would be undertaken to determine the year that the intersection exceeded acceptable operational thresholds.

The outcome of the study indicated that the intersection of McGettigans Lane and Ewingsdale Road will exceed operational thresholds in 2019 in the PM peak, 2022 in the AM peak and 2027 outside peak periods. The

addition of development traffic from the Wellness HUB brings the thresholds for acceptable intersection operations forward to 2018 in the PM peak, 2019 in the AM peak and 2025 outside peak hours.

Results of the analysis for the upgraded intersection of McGettigans Lane and Ewingsdale Road to a dual lane roundabout (12m diameter) will operate within operational thresholds in the AM and PM peak hours in the year 2028.

2.8 Broken Head Road and Clifford Street Intersection Traffic Analysis Report

The report was prepared by TTM Consulting in February 2016 for Byron Shire Council to investigate three potential upgrade options for the intersection of Broken Head Road and Clifford Street.

- > Upgrading the intersection to a single lane roundabout
- > Upgrading the intersection to a signalised intersection, with turn lanes; and
- > Removal of the southbound left turn lane (to improve Clifford Street right turn capacity)

Traffic counts of the intersection were undertaken in December 2015 and January 2016 over a 12-hour period on 4 different days. Surveys also included entry and exit into The Park Hotel's car park.

A growth rate of 0.7%pa has been applied to Clifford Road and a growth rate of 2.7%pa has been applied to Broken Head Road for the design horizon of the intersection. A commencement year of 2018 (upgraded) and a 2038 design horizon (20-year design horizon of the upgraded intersection).

The 2016 AADT traffic volumes for Broken Head Road (north) are 15,039 vpd, for Broken Head (south) are 10,113 vpd and for Clifford Street are 7,099vpd.

The signalised option operates adequately however queueing occurs on Clifford Street and Broken Head Road. The roundabout option operated similarly to the signals although queues are not as long the overall intersection reaches capacity in 2038 in the AM peak period. The removal of the southbound left turn lane does not provide a long term solution to the intersection.

In summary both signalised and roundabout options were considered viable however the signalised option was recommended along with consolidation of the Park Hotel Car Park entry.

A road safety audit was also provided by TTM for this intersection and highlighted a number deficiencies and potential hazards with corrective actions recommended.

3 Discussion on Key Findings

As outlined previously, a review of the required transport studies has been undertaken to determine the existing operational performance in Byron Bay and identify deficiencies where future upgrades or improvements to the network are required. This section provides a summary of the key findings related to each section of the road corridor.

3.1 Development Traffic Analysis

A summary of the reports is provided below and indicates the following traffic generation and growth rates used as part of the analysis:

Table 3-1 Development Elements

Development	Daily Traffic	Peak traffic	Growth Rate Used	Commencement
West Byron	6,000 vpd	~600vph	Modelled	Idle
West Byron Precinct A	-	305vph	<1% compound	Idle
Hospital	-	120vph	1.3% compound	Completed 2016
Retirement Village	-	428vph	3.2% linear	Idle
The Farm	1,200 – 1,500 vpd 1,374 vpd (Xmas)	179vph 338vph	2.5% compound	Completed 2015 and extending

All reports used a 2018 commencement year and 2028 design horizon year apart from The Farm which used a commencement year of 2016 and design horizon on 2026.

It was noted that the growth rates used in the different reports had an impact on the long term forecasts of the capacity of the road network and the triggers for when upgrades were required. It was also noted that some reports analysed the morning and afternoon peaks, whilst other also included seasonal variations and peak holiday periods.

It was also noted that there were existing deficiencies in the road network, however the reports generally analysed the network directly adjacent to the development site, apart from the MR545 Study provided by Opus. These isolated areas of analysis, did not take into consideration the cumulative effects of high growth and seasonal variations and the impact on intersections upstream and downstream of the development sites.

The studies focused on the capacity and efficiency of the road network with limited information investigating the safety components of the road network for all road users and transport modes.

3.2 Upgrade Requirements for the Network

The reports were generally consistent in identifying upgrades on the road network and indicated the following recommendations for upgrading sections of the road network:

3.2.1 Ewingsdale Road

- > A dual lane roundabout at McGettigans Lane / Ewingsdale Road intersection. McGettigans Lane and Ewingsdale Road will exceed operational thresholds in 2019 in the PM peak, 2022 in the AM peak and 2027 outside peak periods.
- > A dual lane roundabout at the Sunrise Boulevard / Ewingsdale Road intersection with access to the proposed Byron West development - currently being constructed as a three-way roundabout.
- > A dual lane roundabout at Bayshore Drive / Ewingsdale Road intersection – constructed planned in early-mid 2018.
- > Four laning of Ewingsdale Road between the roundabout at the sports field and the roundabout at Sunrise Boulevard / Ewingsdale Road intersection.
- > Pacific Highway / Ewingsdale Road interchange will require updates to signage and line marking to provide double left-turns (to Ewingsdale Road) on the north-west approach (southbound off-ramp) by 2028. Analysis indicates that significant queueing issues will occur by 2026 on the southbound off ramp and Ewingsdale Road during peak holiday conditions.

- > William Flick Lane will operate adequately in 2028 with the removal of the right-out turn movement and retaining the existing right turn into William Flick Lane.
- > Dual lane roundabout access to Byron Hospital by 2028.

3.2.2 Town Centre

- > A 2nd rail crossing from Butler Street to Jonson Street / Marvel Street intersection with a single lane roundabout at the Jonson Street / Marvel Street intersection.
- > An upgrade of Shirley Street / Butler Street roundabout
- > Two lanes on Fletcher Street approach to the Fletcher Street / Lawson Street roundabout
- > Maintain full bypass option for the town.

3.2.3 Southern Section

- > A slip lane on the Bangalow Road at Patterson Street / Cooper Street / Bangalow Road intersection.
- > A right turn bay at Bangalow Road for the golf course access
- > Upgrading of Clifford Street/Broken Head Road to a signalised intersection.

3.2.4 Other

- > Progressively introduce parking restrictions in Shirley Street on the western approach to and exit from Butler Street.
- > Connection of the bicycle pathway network along Ewingsdale Road to the town centre.
- > Improved bus stops and services along Ewingsdale Road.
- > Review opportunities for train services - noting a new proposed service between a station adjacent to Bayshore Drive to a station just north of Shirley Street and Butler Street. This service is due to commence in late 2017. Figure 3-1 shows the new railway station at Bayshore Drive.

Figure 3-1 Proposed New Railway Station at Bayshore Drive



Source: Cardno, 2017

4 Priority Projects

The indication from the Masterplan and the community engagement indicated that connectivity and accessibility was a concern for the community. Other concerns highlighted in discussions with Council included capacity issues, queueing and in particular queueing during peak times and impacting on the Pacific Motorway, as well as safety concerns and a lack of integration with active and public transport modes.

4.1 Upgrade Works

The following works have been listed as part of the studies and programmed accordingly.

4.1.1 Completed or under construction

- > Bangalow Road and Patterson Street, new right turn lane on Bangalow Road
- > Sunrise Boulevard and Ewingsdale Road dual lane roundabout

4.1.2 Designed and due for construction

- > Dual lane roundabout (as 3-way) at Bayshore Drive and Ewingsdale Road (Construction due to begin in February)

4.1.3 Funded or partially progressed to design

- > Dual lane roundabout into the sports fields with Ewingsdale Road
- > Dual lanes along Ewingsdale Road between sports fields and Sunrise Boulevard roundabout
- > Bypass of town centre and connection of Butler Street into Jonson Street

4.1.4 Uncommitted works

- > McGettigans Lane and Ewingsdale Road dual lane roundabout
- > Hospital access dual lane roundabout dual laning on Ewingsdale Road
- > Maintain option for 4 laning Ewingsdale Road
- > 2 lane roundabout at Butler Street and Shirley Street
- > Changes to Lawson Street / Fletcher Street intersection (dual lane approach)
- > Bangalow Road with Golf Course upgrade to provide right turn lane.
- > Upgrade of the intersection of Clifford Street/Broken Head Road to traffic signals.

4.2 Suggested Priorities and Recommendations

The priorities and recommendations for integration and further investigation are listed below. The upgrades which have already been committed and constructed have been excluded from the list.

4.2.1 High Priority

- > Finalise the bypass design and connection of Butler Street in Jonson Street.
 - Further consideration must be given to connectivity across the railway corridor. Investigations into connecting pedestrians, linking the cycle way and providing alternative public transport modes and car parking options adjacent to Butler Street should be integrated into the bypass project.
 - As part of the bypass prepare a parking strategy and movement strategy. This is to minimise unnecessary traffic flow within the town centre and maximise pedestrian movements. Review current car park management, on-street time restrictions and loading/service areas.
 - The impact of the new bypass on the intersection of Shirley Street/Butler Street and Lawson Street intersection should be assessed using recent traffic turning movement count data and Sidra intersection modelling, to determine the geometric requirements at this location.
 - In addition, it is recommended that a detailed design road safety audit be undertaken prior and post construction of the bypass.

- > Undertake a safety review of Ewingsdale Road
 - Undertake a speed review, including crash investigation and signage of Ewingsdale Road between the Pacific Motorway and Kendall Street to determine any safety issues and provide recommendations.

4.2.2 Medium to High Priority

- > McGettigans Lane and Ewingsdale Road intersection.
 - Prepare detailed design for a dual lane roundabout at this intersection and program construction to occur prior to 2022. Investigate opportunities to provide an alternative connection to the hospital at their southern boundary. Integrate pedestrian pathways and cycle ways as part of the design, with consideration to the provision of bus stops as deemed appropriate.
- > Lawson Street with Fletcher Street and Johnson Street Intersections
 - The two intersections should be analysed using recent traffic count turning movement data and SIDRA intersection modelling. Traffic analysis should incorporate current operational performance and a 10-year design horizon using reasonable growth rates for projecting traffic flows. Investigate the geometric requirements at this location and options for reviewing pedestrian movements and safety. Investigate opportunities for one-way traffic flow and pedestrian only streets and the impact of car parking in this section of the town centre.
- > Broken Head Road and Clifford Street intersection
 - Provide a detailed design investigation for the implementation of traffic signals at the intersection. Consolidate the separate entry and exit driveways into Park Hotel Car Park.
- > Pacific Motorway Interchange and Ewingsdale Road
 - Undertake further investigations into the operational performance of this intersection and impact of queueing on the Pacific Motorway. Provide options for geometric improvements and the proposed future management of the on and off ramps.

4.2.3 Other Priorities

- > Undertake a safety review of Bangalow Road
 - Undertake a speed review, including crash investigation and signage of Bangalow Road between Browning Street and Broken Head Road to determine any safety issues and provide recommendations.
- > Council have a number of projects that will influence travel and movement within Byron Bay. The studies include:
 - Byron Bay to Suffolk Park Cycleway Investigation
 - Rail Corridor Project
 - Access and Movement Strategy