

File No: NTH10/00092

Your Ref:

The Director
GeoLINK
Email: simonw@geolink.net.au

Attention: Simon Waterworth

Dear Sir / Madam,

Pacific Highway [HW10]: Proposed Expansion of Coffs Harbour Hospital

I refer to your email of 18 May 2018 requesting pre-lodgement comments from Roads and Maritime Services in relation to the Traffic Impact Assessment (TIA) for the abovementioned development proposal.

Roles and Responsibilities

The key interests for Roads and Maritime are the safety and efficiency of the road network, traffic management, the integrity of infrastructure and the integration of land use and transport.

Pacific Highway is a classified (State) road (a highway) under the *Roads Act 1993* (Roads Act). Coffs Harbour City Council (Council) is the roads authority for all public roads (other than freeways or Crown roads) in the local government area pursuant to Section 7 of the Roads Act. Roads and Maritime is the roads authority for freeways and can exercise roads authority functions for classified roads in accordance with the Roads Act. Any proposed works on a classified (State) road will require the consent of Roads and Maritime. Consent is provided under the terms of a Works Authorisation Deed (WAD).

It is emphasised that the comments provided below are based on the current proposal and the information provided at this time. They are not to be interpreted as binding upon Roads and Maritime and may change following formal assessment of any development application referred by the relevant consent authority.

Roads and Maritime Response

Roads and Maritime has reviewed the Traffic Impact Assessment (TIA) and provides the following comments;

- Queue length of 437 metres is shown on the 2026 AM through movement summary. With queues exceeding 400 metres further work is required on the traffic signal phasing to demonstrate better efficiency can be achieved. The queueing of traffic in the through lane extends far beyond the entry points for left and right turn lanes on the Pacific Highway approaches to the Isles Drive intersection. This will cause driver frustration and reduces the efficiency of the intersection.
- Sidra summary reports identify reduced efficiency at the Pacific Highway/Isles Drive intersection without identifying any measures to mitigate the effects. Level of Service (LOS) D reduced to LOS E, and LOS F reduced further beyond acceptable operation levels.
- There will be cumulative effects from other developments in close proximity to this development. A network model is required to properly address the whole of network effects.
- The TIA should consider access for emergency vehicles.
- A Traffic Management Plan (TMP) should be prepared for the construction phase.

All works on the classified (State) road will need to be designed and constructed in accordance with the current Austroads Guidelines, Australian Standards and Roads and Maritime Supplements.

The developer will be required to enter into a Works Authorisation Deed (WAD) with Roads and Maritime for any works deemed necessary on the classified (State) road. The developer will be responsible for all costs associated with the works and administration for the WAD.

It is recommended that developers familiarise themselves with the requirements of the WAD process. Further information can be accessed using the following link:

<http://www.rms.nsw.gov.au/projects/planning-principles/index.html>

Advice to the Consent Authority

If you have any further enquiries regarding the above comments please do not hesitate to contact Liz Smith, Manager Land Use Assessment on (02) 6640 1362 or via email at: development.northern@rms.nsw.gov.au

Yours faithfully



For Monica Sirol
Network & Safety Manager, Northern Region

Date: 19 June 2018

Copy for: Cathy Thomas, SECA Solutions
Email: cthomas@secasolution.com.au



Jester Magpayo (AU) <jester.magpayo@pwc.com>

Re: CHHE Traffic Impact Assessment Meeting

Jester Magpayo (AU) <jester.magpayo@pwc.com>

Tue, Sep 18, 2018 at 12:16 PM

To: PERKINS John G <john.perkins@rms.nsw.gov.au>

Cc: Mark Brockbank <Mark.Brockbank@health.nsw.gov.au>, "Sherrie Cowie (Health Infrastructure)" <Sherrie.Cowie@health.nsw.gov.au>, "Clancy Mears (AU)" <clancy.mears@pwc.com>, Simon Waterworth <SimonW@geolink.net.au>, Cathy Thomas <cthomas@secasolution.com.au>, S Lear <Slear@secasolution.com.au>, Sean Morgan <smorgan@secasolution.com.au>, Rob Day <rday@secasolution.com.au>, Jacob Sickinger <jsickinger@geolink.net.au>, Jeremy Clifford <jclifford@geolink.net.au>

Hi John

Thank you for your further feedback. The CHHE project has reviewed RMS's further feedback against the subsequent TIA report and SIDRA modelling submitted to the RMS (emailed to RMS on 27 July 2018). Please see CHHE project's responses below in [blue](#). Happy to discuss further if required.

- RMS feedback: In all scenarios the pedestrian crossing across the southern approach of Pacific Highway, Isles Drive, the pedestrian volumes are high for the area, and the model indicates the pedestrian crossings will run every cycle, this can be confirmed within a review of the current onsite conditions. This will intern affect the overall intersection operation as the crossing across the southern approach of the Pacific Highway will introduced every cycle and will run a minimum time of 28 seconds.

CHHE project response: Pedestrian counts were completed for the existing pedestrian crossings provided on the southern and eastern approaches as part of the traffic survey undertaken in June 2017. The surveyed pedestrian demands for each of these legs were included in the Sidra modelling. No survey were completed on the western leg (Isles Drive) and as such the default pedestrian demands (50 peds / hour) was applied - this does not impact upon the results due to the low demand for left turns into Isles Drive and long green time required for the A phase (through traffic on Pacific Highway). Observations from site indicate that there was minimal demand for this pedestrian crossing.

The inclusion of a pedestrian phase does influence the phase time calculations, which consider both the minimum green time required for both vehicles and pedestrians. By default, Sidra automatically calculates the percentage of cycles with pedestrians and subsequently determines the average phase time (being the weighted average phase time for phases with and without pedestrians) that are applied when the model is run - (refer to Pedestrian Actuation section in Sidra User Guide).

The demand for pedestrians is not sufficiently high to require the inclusion of the pedestrians in each phase. This can be confirmed by changing the pedestrian actuation setting in Sidra from 'Program' to '% Phase Call' with a value of 100% (being all cycles).

- RMS feedback: The phasing within the future models (2021 design and 2026 design) indicates during both the morning and afternoon peak periods the trailing right turn on the southbound approach will introduce every cycle, this may not be a true representation of what will happen on site, as SCATS will only introduce this phase if the demand for the right turn is high. If the demand is not high the trailing right turn will not introduce and the time should be given back to the diamond phase (F phase – shown in all scenarios).

CHHE project response: Whilst Seca Solution acknowledges that the trailing right turn (B phase) does not occur in all cycles, the intersection operates with single diamond overlap phasing which allows for alternate phasing (B, C, F1 and F2 phases). Sidra Intersection 8 does not have the capacity to represent alternate phasing which can see the phase time and sequence vary between consecutive cycles (i.e. F, F1 or F2 phase, inclusion of B or C phase). Rather the results from Sidra provide an approximation of the intersection performance with the adaptive nature of SCATS allowing for an improved level of overall performance.

A review of the survey data indicates that the B phase currently occurs in the majority of cycles in both the morning and afternoon peak periods. Removal of this phase would see increased delays for southbound traffic on the Pacific Highway, although the frequency of this phase could reduce should the demands for right turns into the Coffs Harbour Hospital increase associated with the development.

Further modelling has been provided to the RMS (emailed to RMS on 27 July 2018) allowing for access to the south off Stadium Drive. This access is expected to cater for the majority of the demands to/from the south, reducing the demands for right turns at the signals into the hospital site. The demands for turns into Isles Drive are much greater than those for the Hospital and as such it is expected that there will continue to be demands for the B phase or F1 phase in the majority of cycles. It is noted however that with background growth along the Pacific Highway corridor the B phase may be introduced in less cycles.

The major impact of this will be on the right turn into Isles Drive, which currently experiences queues exceeding the available storage. Background growth along the Pacific Highway corridor will see increased delays and queueing for this movements unless the right turn lane into Isles Drive is extended. This impact is not created by the development within the hospital and these works are not be the responsibility of Coffs Harbour Hospital with the hospital expansion neither increasing the demands for right turning vehicles into Isles Drive, nor increasing the demands for through traffic along the Pacific Highway, which will be the major factors associated with the reduced standard of operation for this movement.

- RMS feedback: In the model provided for the 2021 (PM) scenario (**Int. Pacific Hwy / Isles Dr - 2021 PM**), the cycle time used is 167 seconds, which is too high for this location and will increase the delays and affect the LOS. It should be noted the cycle time used in all other scenarios is 140 seconds, which is a more realistic cycle time.

CHHE project response: From a review of the subsequent Sidra modelling files submitted to RMS (emailed to RMS on 27 July 2018), all scenarios provide a maximum cycle time of 140 seconds.

- RMS feedback: Queue length of 437 metres is shown on the 2026 AM through movement summary. With queues exceeding 400 metres further work is required on the traffic signal phasing to demonstrate better efficiency can be achieved. The queueing of traffic in the through lane extends far beyond the entry points for left and right turn lanes on the Pacific Highway approaches to the Isles Drive intersection. This will cause driver frustration and reduces the efficiency of the intersection.
 - Traffic impacts can be reduced with a redistribution of traffic by including the Stadium Drive access. Further promotion of the alternative access should be included by applying the appropriate signage. **Noted**
 - Increase in traffic on the Pacific Highway corridor should be included in the background traffic the 2026 design year horizon.

CHHE project response: This has been addressed within the subsequent Sidra modelling submitted to the RMS (emailed to RMS on 27 July 2018).

In addition to this, please note that only the initial Sidra modelling included scenarios for the 2021 design year. The subsequent modelling issued to RMS (emailed to RMS on 27 July 2018) included the existing situation and 2026 design year scenarios only. Therefore it appears that the above comments relate only to the initial modelling completed.

- RMS feedback: Sidra summary reports identify reduced efficiency at the Pacific Highway/Isles Drive intersection without identifying any measures to mitigate the effects, Level of Service (LoS) D reduced to LoS E and LoS F reduced further beyond acceptable operation levels.
 - Impacts can be reduced with a redistribution of traffic by including the Stadium Drive access. Further promotion of the alternative access should be included by applying the appropriate signage. **Noted for consideration.**
 - There are strategies being developed which may identify road corridor treatments which could reduce the impact the traffic network in Coffs Harbour. These strategies include RMS's Pacific Highway Post duplication Strategy and a Movement and Place Strategy which RMS is preparing with Coffs Harbour City Council. **Noted. No further action required from the CHHE project.**
 - There will be some benefits in traffic flows from the Coffs Bypass works which can't be quantified at this point in time. **Noted. No further action required from the CHHE project.**

- RMS feedback: There will be cumulative effects from other developments in close proximity to the development. A network model is required to properly address the whole of network effects
 - There are strategies being developed which may identify road corridor treatments which could reduce the impact the traffic network in Coffs Harbour. These strategies include RMS's Pacific Highway Post duplication Strategy and a Movement and Place Strategy which RMS is preparing with Coffs Harbour City Council. **Noted. No further action required from the CHHE project.**
 - There will be some benefits in traffic flows from the Coffs Bypass works which can't be quantified at this point in time. **Noted. No further action required from the CHHE project.**
- RMS feedback: The TIA should consider access for emergency vehicles.
 - Response accepted. **Noted that RMS has accepted the CHHE project response detailed in the subsequent TIA report submitted to the RMS (emailed to RMS on 27 July 2018). No further action required from the CHHE project.**
- RMS feedback: A Traffic Management Plan (TMP) should be prepared for the construction phase.
 - Response accepted. **Noted that RMS has accepted the CHHE project response detailed in the subsequent TIA report submitted to the RMS (emailed to RMS on 27 July 2018). No further action required from the CHHE project.**

Note: I have re-attached the subsequent TIA report and SIDRA modelling emailed on 27 July 2018 for your reference.

Regards

Jester Magpayo

PwC | Manager

Direct: +61 (2) 8266 4667

Mobile: +61 400 951 242

Email: jester.magpayo@pwc.com

PricewaterhouseCoopers

One International Towers Sydney

Watermans Quay, Barangaroo NSW 2000

www.pwc.com.au

twitter.com/PwC_AU

Please consider the environment before printing this email

On Wed, Sep 5, 2018 at 3:08 PM PERKINS John G <john.perkins@rms.nsw.gov.au> wrote:

Hi Jester

I have received further feedback from RMS operations, refer below.

Please consider this feedback for further refinements,

Kind regards

John Perkins

I have reviewed the model provided for Pacific Highway and Isles Drive and found the following issues that may affect the performance of the intersection:-

- In all scenarios the pedestrian crossing across the southern approach of Pacific Highway, Isles Drive, the pedestrian volumes are high for the area, and the model indicates the pedestrian crossings will run every cycle, this can be confirmed within a review of the current onsite conditions. This will intern affect the overall intersection operation as the crossing across the southern approach of the Pacific Highway will introduced every cycle and will run a minimum time of 28 seconds.
- The phasing within the future models (2021 design and 2026 design) indicates during both the morning and afternoon peak periods the trailing right turn on the southbound approach will introduce every cycle, this may not be a true representation of what will happen on site, as SCATS will only introduce this phase if the demand for the right turn is high. If the demand is not high the trailing right turn will not introduce and the time should be given back to the diamond phase (F phase – shown in all scenarios).
- In the model provided for the 2021 (PM) scenario (**Int. Pacific Hwy / Isles Dr - 2021 PM**), the cycle time used is 167 seconds, which is too high for this location and will intern increase the delays and affect the LOS. It should be noted the cycle time used in all other scenarios is 140 seconds, which is a more realistic cycle time.

From: Jester Magpayo (AU) [mailto:jester.magpayo@pwc.com]

Sent: Wednesday, 5 September 2018 11:23 AM

To: PERKINS John G

Subject: Re: CHHE Traffic Impact Assessment Meeting

Hi John

Thank you for the provided responses.

Regards

Jester Magpayo

PwC | Manager

Direct: +61 (2) 8266 4667

Mobile: +61 400 951 242

Email: jester.magpayo@pwc.com

PricewaterhouseCoopers

One International Towers Sydney

Watermans Quay, Barangaroo NSW 2000

www.pwc.com.au

twitter.com/PwC_AU

Please consider the environment before printing this email

On Tue, Sep 4, 2018 at 2:06 PM, PERKINS John G <john.perkins@rms.nsw.gov.au> wrote:

Hi Jester

I have completed a review of the information provided in the email sent 27/7/2018

My comments are provided below:

- *Queue length of 437 metres is shown on the 2026 AM through movement summary. With queues exceeding 400 metres further work is required on the traffic signal phasing to demonstrate better efficiency can be achieved. The queueing of traffic in the through lane extends far beyond the entry points for left and right turn lanes on the Pacific Highway approaches to the Isles Drive intersection. This will cause driver frustration and reduces the efficiency of the intersection.*

- Traffic impacts can be reduced with a redistribution of traffic by including the Stadium Drive access. Further promotion of the alternative access should be included by applying the appropriate signage.
- Increase in traffic on the Pacific Highway corridor should be included in the background traffic the 2026 design year horizon.

- *Sidra summary reports identify reduced efficiency at the Pacific Highway/Isles Drive intersection without identifying any measures to mitigate the effects, Level of Service (LoS) D reduced to to LoS E and LoS F reduced further beyond acceptable operation levels.*

- Impacts can be reduced with a redistribution of traffic by including the Stadium Drive access. Further promotion of the alternative access should be included by applying the appropriate signage.
- There are strategies being developed which may identify road corridor treatments which could reduce the impact the traffic network in Coffs Harbour. These strategies include RMS's Pacific Highway Post duplication Strategy and a Movement and Place Strategy which RMS is preparing with Coffs Harbour City Council.
- There will be some benefits in traffic flows from the Coffs Bypass works which can't be quantified at this point in time.

- *There will be cumulative effects from other developments in close proximity to the development. A network model is required to properly address the whole of network effects*

- There are strategies being developed which may identify road corridor treatments which could reduce the impact the traffic network in Coffs Harbour. These strategies include RMS's Pacific Highway Post duplication Strategy and a Movement and Place Strategy which RMS is preparing with Coffs Harbour City Council.
- There will be some benefits in traffic flows from the Coffs Bypass works which can't be quantified at this point in time

- *The TIA should consider access for emergency vehicles.*
 - Response accepted

- *A Traffic Management Plan (TMP) should be prepared for the construction phase.*
 - Response accepted

Kind Regards

John Perkins

Land Use Assessment Officer | Network & Safety Management

Northern Region | Regional & Freight

T 02 6640 1362 E development.northern@rms.nsw.gov.au

www.rms.nsw.gov.au

Every journey matters

Roads and Maritime Services

Level 1, [76 Victoria Street](#)

[Grafton NSW 2460](#)

From: Jester Magpayo (AU) [mailto:jester.magpayo@pwc.com]

Sent: Friday, 27 July 2018 3:41 PM

To: PERKINS John G

Cc: Simon Waterworth; Jacob Sickinger; Cathy Thomas; Sherrie Cowie (Health Infrastructure); Mark Brockbank

Subject: CHHE Traffic Impact Assessment Meeting

Hi John

Please see attached traffic assessment report prepared by SECA Solutions (Traffic Consultant) for discussion during Monday's teleconference meeting.

This report has been prepared in response to RMS's pre-lodgement comments on the TIA assessment for the Coffs Harbour Hospital Expansion Project (SSD No. 8981).

Have a good weekend.

Regards

Jester Magpayo

PwC | Manager

Direct: +61 (2) 8266 4667

Mobile: +61 400 951 242

Email: jester.magpayo@pwc.com

PricewaterhouseCoopers

One International Towers Sydney

Watermans Quay, Barangaroo NSW 2000

www.pwc.com.au

twitter.com/PwC_AU

Please consider the environment before printing this email

This email is sent by PwC.

Our liability is limited by a scheme approved under Professional Standards Legislation.

The email and any attachments may contain confidential and/or legally privileged material. You must not use or disclose the email if you are not the intended recipient. If you have received the email in error please let us know by contacting the sender and deleting the email. If this email contains a marketing message that you would prefer not to receive in the future please reply to the sender and copy your reply to privacy.officer@au.pwc.com with "unsubscribe" in the subject line.



Before printing, please consider the environment

IMPORTANT NOTICE: This email and any attachment to it are intended only to be read or used by the named addressee. It is confidential and may contain legally privileged information. No confidentiality or privilege is waived or lost by any mistaken transmission to you. Roads and Maritime Services is not responsible for any unauthorised alterations to this email or attachment to it. Views expressed in this message are those of the individual sender, and are not necessarily the views of Roads and Maritime Services. If you receive this email in error, please immediately delete it from your system and notify the sender. You must not disclose, copy or use any part of this email if you are not the intended recipient.

This email is sent by PwC.

Our liability is limited by a scheme approved under Professional Standards Legislation.

The email and any attachments may contain confidential and/or legally privileged material. You must not use or disclose the email if you are not the intended recipient. If you have received the email in error please let us know by contacting the sender and deleting the email. If this email contains a marketing message that you would prefer not to receive in the future please reply to the sender and copy your reply to privacy.officer@au.pwc.com with "unsubscribe" in the subject line.



Before printing, please consider the environment

IMPORTANT NOTICE: This email and any attachment to it are intended only to be read or used by the named addressee. It is confidential and may contain legally privileged information. No confidentiality or privilege is waived or lost by any mistaken transmission to you. Roads and Maritime Services is not responsible for any unauthorised alterations to this email or attachment to it. Views expressed in this message are those of the individual sender, and are not necessarily the views of Roads and Maritime Services. If you receive this email in error, please immediately delete it from your system and notify the sender. You must not disclose, copy or use any part of this email if you are not the intended recipient.

3 attachments

-  **180713_CHHE SSD891 TIA response to RMS.pdf**
170K
-  **180713_CHHE SSD8981 Sidra Notes.pdf**
105K
-  **180713_CHHE SSD8981_Final.sip8**
12748K

25 September 2018

P0942A Coffs Harbour Hospital Expansion RFI

Health Infrastructure
C/o- PriceWaterhouseCoopers
One International Towers
Barangaroo NSW 2000**Attn: Jester Magpayo**

Dear Jester,

Proposed Expansion of Coffs Harbour Hospital - Responses to RMS Comments

Further to your recent correspondence, we have now reviewed the comments provided by Roads and Maritime Services (RMS) and provide the following responses.

1. *Queue length of 437 metres is shown on the 2026 AM through movement summary. With queues exceeding 400 metres further work is required on the traffic signal phasing to demonstrate better efficiency can be achieved. The queueing of traffic in the through lane extends far beyond the entry points for left and right turn lanes on the Pacific Highway approaches to the Isles Drive intersection. This will cause driver frustration and reduces the efficiency of the intersection.*

The modelling undertaken for the project and reviewed by the RMS is summarised below and included in Attachment A. Table 1 allows for the modelling of the existing situation only (2017 traffic surveys) to determine the current operation of this intersection. It makes no allowance for the future development.

Table 1 - Sidra Results – Existing Situation 2017 Intersection Operation

Approach	Level of Service	Average Delay (s)	95% Back of Queue (m)
Pacific Highway (northbound)	D / C	54.6 / 42.3	347 / 201
Coffs Harbour Hospital access road	E / E	59.1 / 65.1	28 / 75
Pacific Highway (southbound)	B / B	24.8 / 21.4	154 / 233
Isles Drive	D / C	42.8 / 37.7	91 / 115
Overall	C / C	41.0 / 33.7	347 / 233

Note: AM / PM peaks

It can be seen that for the existing situation in the morning peak the queue for northbound traffic is approximately 350m which extends beyond the entry points for left and right turn lanes on the Pacific Highway (approximately 60 m back from the stop line). This would therefore already cause driver frustration based on the RMS comments.

Sidra modelling has been completed under the same scenario allowing for background growth for the forecast 2026 design year. These have been run allowing for no changes to phasing (Table 2) and for the optimising of green time (Table 3) to determine the length of queues in 2026. These do not include the hospital expansion.

Background growth on the through traffic on the Pacific Highway has been calculated at 1.8%pa per the initial assessment.

Table 2 - Sidra Results - 2026 Design Year - Background Growth Only-No Development (No Change to Phase Times)

Approach	Level of Service	Average Delay (s)	95% Back of Queue (m)
Pacific Highway (northbound)	F / D	109.7 / 45.2	584 / 249
Coffs Harbour Hospital access road	E / E	58.1 / 62.8	28 / 73
Pacific Highway (southbound)	B / B	25.2 / 22.7	177 / 288
Isles Drive	D / C	42.8 / 37.7	91 / 115
Overall	E / C	65.8 / 34.6	584 / 288

Note: AM / PM peaks

Allowing for background growth only along the Pacific Highway, it can be seen that the queues for the northbound movement on the Pacific Highway will increase considerably to nearly 600 metres in 2026, an increase over 200 metres over the current situation, increasing drivers' frustrations further.

With future growth on this corridor, increased green time will be required to support the increased demands for through traffic on the Pacific Highway. This will see less green split provided to turning movements into / out of the side roads, creating increased delays and queuing on these roads as reflected in the results below.

Table 3 Sidra results – 2026 with modified green phases to suit 2026 traffic -Background Growth Only-No Development

Approach	Level of Service	Average Delay (s)	95% Back of Queue (m)
Pacific Highway (northbound)	D / D	46.9 / 43.8	382 / 204
Coffs Harbour Hospital access road	E / E	63.5 / 65.0	30 / 95
Pacific Highway (southbound)	B / B	25.1 / 21.0	166 / 228
Isles Drive	D / C	48.5 / 37.7	102 / 115
Overall	C / C	38.6 / 34.5	382 / 228

Note: AM / PM peaks

Sidra was then run with the proposed development flows applied to the current 2017 design year only with no allowance for background growth. This was for the initial assessment of the proposed development and allowed for the expansion to provide for 133 beds. It also provided a robust assessment with all additional traffic being distributed to the road network through the Pacific Highway/Isles Drive intersection.

Table 4 - Sidra Results – 2017 Flows + Additional 133 Beds (AM/PM)

Approach	Level of Service	Average Delay (s)	95% Back of Queue (m)
Pacific Highway (northbound)	E / D	58.2 / 44.0	364 / 204
Coffs Harbour Hospital access road	E / E	59.9 / 65.4	37 / 97
Pacific Highway (southbound)	B / B	21.5 / 21.0	155 / 228
Isles Drive	D / C	42.3 / 37.7	91 / 115
Overall	D / C	41.0 / 34.7	364 / 228

Note: AM / PM peaks

With the increased traffic associated with the proposed hospital expansion the intersection can continue to operate to a similar standard compared to that observed in 2017. Delays for northbound traffic during morning peak would increase by less than 4 seconds, with queues increasing by approximately 17 metres.

Therefore, it can be seen that queues for northbound traffic are an existing situation with the back of these queues already extending beyond the turn lanes for entry into the side roads. The proposed expansion of Coffs Harbour Hospital alone will have a minimal and acceptable impact upon the overall operation of the intersection and the queue lengths. The major impact upon the operation of the intersection over time is however the increased demands for through traffic on the Pacific Highway corridor.

Refinement to the Proposed development

With ongoing refinement of the proposed expansion, the model was then reviewed to reflect the actual operation of the site. A secondary access to the hospital is available to the south via Stadium Drive, which is likely to appeal to staff or visitors travelling from southern locations. Use of this access would see reduced demands for traffic passing through the Isles Drive intersection, with the overall impact of the proposed expansion being less than indicated in the above results.

The traffic impact assessment prepared by GeoLINK (April 2014) for an approved carpark at Coffs Harbour Health Campus indicates that approximately 40% of staff and 30% of visitors would access the hospital via Stadium Drive. This access would appeal mostly to those travelling from locations to the south of the hospital, with vehicles travelling from the north expected to use the signalised access off the Pacific Highway.

Sidra modelling was refined, allowing for traffic with an origin/destination to the south to use the alternate southern accesses. This could see 30% of development traffic removed from the intersection, with the results shown below.

Table 5 - Sidra Results - 2026 Design Year - Additional 133 Beds (with secondary access via Stadium Drive) (AM/PM)

Approach	Level of Service	Average Delay (s)	95% Back of Queue (m)
Pacific Highway (northbound)	D / D	50.2 / 45.1	397 / 249
Coffs Harbour Hospital access road	E / E	64.8 / 66.8	36 / 91
Pacific Highway (southbound)	B / B	22.8 / 22.0	164 / 280
Isles Drive	D / C	47.7 / 37.5	101 / 115
Overall	C / C	38.9 / 34.9	397 / 280

Note: AM / PM peaks

The above results for 2026 with background growth and traffic distributed across multiple site access points show that with southern traffic using alternate routes there is an improvement to delays and queuing associated with northbound traffic on the Pacific Highway and the critical right turn movement into the hospital campus. The northbound queue would be less than the 400 m arbitrary queue limit identified by the RMS in their response to the project.

Sidra summary reports identify reduced efficiency at the Pacific Highway/Isles Drive intersection without identifying any measures to mitigate the effects, Level of Service (LoS) D reduced to to LoS E and LoS F reduced further beyond acceptable operation levels.

This intersection currently operates near to capacity. As detailed in the TIA the impact of the development traffic can be mitigated through the optimisation of the signal phasing and timing by the RMS.

Modelling of the existing situation indicates that some movements are currently operating at LoS D or worse and are at near capacity within these levels as determined by Austroads and Sidra. Minor changes to traffic demands see the average delays increase only slightly however these minor changes tip the volumes over the thresholds reflected in the modelling thresholds reducing to the next LoS E.

The increase delays however are due to the high volumes on the Pacific Highway and the signal phasing and are not due to the increased traffic flows associated with the hospital development. The refined Sidra modelling shows that with adjusted green times the intersection can continue to operate to similar LoS and queue lengths to the current situation.

Impact of the Coffs Harbour Bypass

The RMS has identified the preferred route for the Coffs Harbour bypass, with funding for this project included within the state budget announced in June 2018. Once constructed, this bypass is expected to reduce traffic on the Pacific Highway (north of Stadium Drive) and travelling through Coffs Harbour. RMS has advised that there will be some benefits in traffic flows from the Coffs Bypass works, however, the extent of any reduction in traffic volumes along the Pacific Highway cannot be quantified at this time. .

The above assessment has demonstrated that the need for appropriate mitigation is predominantly driven by increased demands for through traffic on the Pacific Highway associated with growth along this corridor. Conversely, the expansion of Coffs Harbour Hospital will have a minimal impact upon the existing operation of the traffic signals. The need for comprehensive mitigation measures to ensure the continued performance of the intersection should therefore not be imposed entirely on the proposed hospital expansion with the above mitigation considered appropriate to offset the impacts of the proposal.

2. *There will be cumulative effects from other developments in close proximity to the development. A network model is required to properly address the whole of network effects.*

A growth rate of 1.8% per annum has been allowed for on the Pacific Highway to account for future growth along this road corridor. Whilst no additional traffic has been allowed for due to further development off Isles Drive, there appears to be some opportunity for further development in this area. The RMS have prepared a network model for the locality as part of the Coffs Harbour Bypass and has demonstrated the benefits of the bypass for all intersections through Coffs Harbour. Given the size of the development expansion on the site and the limited opportunity for development of Isles Drive the development of a network traffic model is not considered appropriate.

3. *The TIA should consider access for emergency vehicles.*

Access for emergency vehicles will be maintained as per the existing situation. Emergency vehicles gain access via the traffic signals and with the use of flashing lights and sirens can access the site in an appropriate manner consist with normal emergency vehicle access. Further information is provided below.

- The existing primary access for emergency vehicles is via the Pacific Highway and the main Health Campus access road opposite Isles Drive. The existing Emergency Department access is located at the north-western corner of the Hospital building about 60 metres east of the roundabout on the access road. The main Hospital entrance is located a further 100 metres east of the Emergency Department via the main access road and a semi-circular one-way loop road.
- A secondary access is available from the south via Stadium Drive and Phil Hawthorne Drive, however, emergency vehicles are unlikely to favour this route over the Pacific Highway access unless there was major congestion on the Pacific Highway that was causing extensive, impassable delays.
- The proposed works associated with the Coffs Harbour Health Campus expansion will not have any adverse impact on access for emergency vehicles as the changes to access arrangements will primarily consist of a reconfiguration of the main access road across the frontage of the Hospital building over a distance of less than 200 metres. This reconfiguration will not increase the travel distance from the Pacific Highway to the main Hospital entrance, thereby not increasing emergency response times.
- The access to the Emergency Department will be relocated to the western side of the Hospital building, however, the travel distance from the Pacific Highway will not increase nor will emergency response times.

4. A Traffic Management Plan (TMP) should be prepared for the construction phase.

A traffic management plan shall be prepared by the contractor prior to the issue of the construction certificate for the site. The majority construction traffic shall access the site via the signalised access on the Pacific Highway, which is the main arterial route through the area. The highway currently provides adequate capacity to support these movements.

Please feel free to contact me on 4032, 7979, should you have any queries.

Yours sincerely,



Sean Morgan
Director