West Byron Development (WBD) Issues

Traffic Modelling and Reporting

The approaches to Byron bay along Ewingsdale Road and within the township are now infamous for the frequency and extent of congestion. This issue and the impact WBD would have on this situation and the suitability and possibility of solutions remains one of the most contested issues as to how the proposal was approved for rezoning.

Our preliminary review of the various reports provided by the proponents traffic consultants (VLC) and the separate reports prepared for Council (PPK and Parson's Brinkerhoff) indicate that the for all the studies done on this matter that the recommendations provided to address the congestion seem dubious and worthy of considerable peer review. This is based on the current lack of review of the model, anomalies in impacts of bypass options when simple alternative assumptions / observations are made to those provided by the VLC model, assumed and approved development densities and restricted assessment areas of impact extents of proposed bypass alternatives.

Congestion along Ewingsdale Road past the site is reported in all cases as being principally caused by intersection restrictions at the Jonson St / Lawson Street (L/J) roundabout. The majority of the various reports use the proprietary VLC model for simulating traffic into town. The VLC is highly sophisticated and except for PPK's 1990's model, no alternative model comparisons appear to have been done. APP has not reviewed the PPK model but the results reported by Parsons Brinckerhoff from the PPK study indicate much higher traffic loads than the VLC results. This is a concern as simple comparisons to RTA standard procedures produce quite different results to the VLC numbers. Byron council did commission a traffic study which identified only 15-20% of traffic heading into Byron from Ewingsdale wished to bypass the town. This result is also in variance to the VLC outcomes. Importantly, all modelling is principally concerned with reducing congestion within the town, not along Ewingsdale Road. With traffic growth Council's (and APP's preliminary review) adopted traffic load across the L/J intersection in the future with a bypass is no different to the current situation. Hence the Ewingsdale congestion should remain. This is in variance to the VLC results.

The West Byron development has used VLC consultants to model the existing and future traffic issues at the L/J intersection and other parts of the relevant road network with and without the WBD proceeding. The VLC report recommends the installation of the current mini bypass as approved by Council as providing a satisfactory short term solution to the situation. VLC also recommends a 4 lane Ewingsdale Road upgrade. The current bypass solutions appear to be based on the VLC model. We are not aware of any plan, capacity or possibility of making Ewingsdale Road into a 4 lane road.

The VLC model appears to underestimate the potential impact on the road network by the assumptions below.

1. Adopting assumed residential and employment densities which can now be exceeded by the rezoning approval. This would increase the traffic load from 6,000 vpd to 9,500 vpd from WBD. We assume the VLC model was completed before the rezoning land areas and uses were finalised.
2. Adopting 50:50 splits east to west from the WBD site, presumably as per the model, when a 70E:30W split is quite plausible. Because of the existing low level of serviced at the intersection (VLC understate the LOS in our view) a conservative and traditional engineering approach would be to make allowance for worst cases than best cases. The VLC results appear to provide the best case results.
3. Adopting 30-50% bypass take-ups when Council traffic counts indicate 15% take up more likely. This appears to be a major contestable parameter. Intuition supports the case that if 85% of the traffic wishes to enter the town, why would it take a bypass when it has reached the town entry having queued for a considerable time in the unresolved congested Ewingsdale Road.
4. VLC assumes Ewingsdale Road will be upgraded to a 4 lane road at some time. We are not aware of any plans, funding or capacity from Council for this to occur.

Based on our preliminary review and simple calculations from RTA procedures it appears uncertainty exists as to whether the VLC predictions can be achieved and for such a critical component of the development's impact alternative provisions should be built into any Development Approval for the site. To this end we would make the following recommendation

- **To address potentially larger traffic impacts than suggested by VLC on the township and Ewingsdale Road congestion that WBD provide the extra 2 lane capacity referred to in the model via a bypass constructed through or around WBD linking into the current bypass proposal at its southern end or extension further south. This would provide a bypass alternative at the head of the congestion rather than the tail and a more permeable access into the town with at least two points of entry from the east**
    - **I. Shirley Street/Lawson Street and**
    - **II. Bypass / Browning Street**

| | | **NO BYPASS 2 lane Shirley** | | | | | | **BYPASS 2 lane Shirley** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Shirley Street vpd AADT or AWT | | | | | | Shirley Street vpd | | | | |
| | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 |
| Parsons Brinckerhoff | | | | | | | | | | | | |
| Council adopted values | | | | 20,110 | | | | | | 22,420 | | |
| VLC REPORT 1 no WBD | | 15,800 | | 18,620 | | 20,110 | | | | 20,000 | | |
| VLC REPORT 1 WITH WBD | | VLC Report examines case for WBD occurring with Ewingsdale Road / Shirley Street being 4 lanes. See later comparison tables | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | Lawson Street/Jonson Intersection vpd | | | | | | Lawson Street/Jonson Intersection vpd | | | | |
| | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 |
| Parsons Brinckerhoff | 20,704 | | 25,218 | | 30,405 | | 10,565 | | 12,730 | | 15,129 | |
| Council adopted values | | | | 21,000 | | | | | | 16,260 | | |
| VLC REPORT 1 no WB | | **16,800** | | 19,950 | | 21,280 | | | | 14,000-16,000 | | |
| VLC REPORT 1 WITH WBD | | VLC Report examines case for WBD occurring with Ewingsdale Road / Shirley Street being 4 lanes. See later comparison tables | | | | | | | | | | |
| APP Estimate Without WBD | | | | | | | | | | **16,957+** | | |

+ Based on BSC Traffic study only 15% of people travelling on Shirley Street wish to bypass township. Therefore, you would expect L/J intersection to be at 85% of Shirley St. or .85 x 20,110 or .85 x 19,950 depending on which count you take. But approximately 17,000 vpd. That is the bypass will not divert traffic away from the town centre to the extent as modelled by VLC. This likely failure appears highly plausible as the bypass is located at the end of the Shirley St congestion and you would expect drivers to use the direct access into town via the LJ crossing and not further delay their entry into the township having already endured Shirley Street Ewingsdale Rd delay.

For this scenario it can be seen the traffic congestion at L/J intersection will continue. Traffic congestion in town may reduce. And this is the main purpose of the bypass.

| | | **NO BYPASS 4 lane Shirley** | | | | | | **MINI BYPASS 4 lane Shirley** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Shirley Street vpd AADT or AWT | | | | | | Shirley Street vpd | | | | |
| | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 |
| Parsons Brinckerhoff | | | | | | | | | | | | |
| Council adopted values | | | | 20,110 | | | | | | 22,420 | | |
| VLC REPORT 1 no WBD | | 15,800 | | 18,620 | | 24,410 | | | | 20,320 | | 22,890 |
| VLC REPORT 1 WITH WBD | | | | | | | | | | 21,750 | | 24,410 |
| | | | | | | | | | | | Diff'ce | 1520 |
| | | | | | | | | According to VLC WBD sends an extra 1520 vpd to Byron at this point. 3000 started heading east from Sunrise Blvd | | | | |
| | | Lawson Street/Jonson Intersection vpd | | | | | | Lawson Street/Jonson Intersection vpd | | | | |
| | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 | | 2008 | 2013 | 2018 | 2023 | 2028 |
| Parsons Brinckerhoff | 20,704 | | 25,218 | | 30,405 | | 10,565 | | 12,730 | | 15,129 | |
| Council adopted values | | | | 21,000 | | | | | | 16,260 | | 16,260 |
| VLC REPORT 1 no WBD | | 16,800 | | 19,550 | | | | | | 13,520 | | 14,600+ |
| VLC REPORT 1 WITH WBD | | | | | | | | | | 14,170+ | | 15,390+ |
| APP Possibility | | | | | | | | | | | | **20,101** |
| | | | | ???? | | | | | | | Diff'ce | 790 |
| APP Possible impact | | | | | | | | | | | | 20,101- 14,600 =5,501 |
| APP question | | | | | | | How plausible is it that if according to VLC 3000 vpd head towards Byron that only 790 VPD HEAD into the township? That is only 26%. Other research shows 85% will head into town and if app numbers are correct then the real number would be .85 x 6,472 or 5,501. The load on the crossing is then 15,390 – 790+ 5501 = 20,101 | | | | | |
| * APP Approximation | | | | | | | + For only 15% of people wishing to bypass township you would expect L/J intersection to be at 85% of Shirley St or 18,450@ 2018 and 19,450 @ 2028 | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ewingsdale Road at Sunrise Blvd vpd AADT or AWT no WBD | | | | | | **WITH WBD** | | | | | |
| | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 |
| Parsons Brinckerhoff | | | | | | | | | | | | |
| Council adopted values | | | | | | | | | | | | |
| VLC REPORT 1 no WB | | 15,000 * | | 17,660 | | | | | | | | |
| VLC REPORT 1 WITH WBD | | | | | | | | | | 20,980 | | |
| APP ESTIMATE | | | | | | | | | | **25,320** | | |
| | Ewingsdale Road at Bayshore Drive Street vpd AADT or AWT NO WBD | | | | | | WITH WBD | | | | | |
| | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 | 2003 | 2008 | 2013 | 2018 | 2023 | 2028 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| VLC REPORT 1 no WB | | 15,000 | | 18,820 | | | | | | | | |
| VLC REPORT 1 WITH WBD | | | | | | | | | | 21,850 | | |
| | | | | | | | | | | | | |
| Commentary | VLC report takes 6000 trips to Ewingsdale and splits them apparently 50:50 east and west. An unlikely split and an unlikely traffic load. The approved density is 1053 lots @ 7 trips/lot plus 40,000 square metres commercial building at 5 trips/100 sqm. This would create about 9,500 trips. VLC have taken a density of 850 lots and an unspecified industrial component and stated the load is 6,000 trips and as can be seen from above split the 6,000 50:50. It is more likely the split will be 70:30 to Byron at 9,500 trips. Hence traffic into Byron will likely increase by 6,350 | | | | | | | | | | | |
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