



Shoalhaven Starches, Bomaderry
Proposed Flour Mill B Modification
Traffic Assessment
October 2016

prepared for

Manildra Shoalhaven Starches

prepared by

ARC Traffic + Transport

Introduction

Manildra Shoalhaven Starches (Manildra) proposes a Modification to the formerly approved Shoalhaven Starches Expansion Project (SSEP) to improve the production capacity of Manildra's other flour mills for the production of premium grade flour by constructing a new flour mill (Flour Mill B) at the Shoalhaven Starches Site, Bolong Road Bomaderry (the SS Site), that would produce industrial grade flour.

ARC Traffic + Transport (ARC) has been commissioned to examine the traffic and transport issues associated with the Modification. In preparing this assessment, ARC has specifically referenced the assessment requirements provided by the Department of Planning & Environment (DP&E) and Shoalhaven City Council (Council) dated 20th September 2016, which include: -

- An assessment of additional heavy vehicle movements arising from the Modification, and their associated impacts on existing access points.
- An assessment of the cumulative impacts of (broader Shoalhaven Starches) upgrade projects on existing access points.
- An assessment of sight distances and turning paths at existing access points.

From the outset, it is important to state that the DP&E requirements (based primarily on the assessment requirements proposed by Council) specifically refer to the intersections of Bolong Road & Ethanol Driveway; Bolong Road & Dairy Farmers Site; and Bolong Road & Paper Mill Site. It is noted that an earlier modification scoping report (for Flour Mill B) submitted to the DP&E (for comment) included the reuse of the Paper Mill Site, which in turn would also have potentially increased vehicle movements (either during operations or construction) in Bolong Road through the Ethanol Driveway and Dairy Farmers Driveway. Importantly, the reuse of the Paper Mill Site is not proposed as part of this (revised) Flour Mill B Modification.

Notwithstanding – and based on our recent discussions with Council (Mr Scott Wells) - it is the case that in Council's view there are outstanding upgrades requirements (based on previous approvals) at these intersections/driveways which have not been completed *to Councils satisfaction*. As generally agreed with Council, these outstanding requirements have no specific relevance to this Modification, which would utilise the upgraded intersection of Bolong Road and the SS Site Western Driveway. Moreover – and as detailed in sections below – once operational Flour Mill B (and broader SS Site operations) would not result in additional vehicle trip generation over previously approved limits, with the only period of additional trip generation occurring during a short construction period.

It is acknowledged by Manildra that there are outstanding issues at the key intersections of Bolong Road & Ethanol Driveway, and Bolong Road & Dairy Farmers which require resolve with Council. Manildra is currently preparing a separate modification relating to the production of beverage grade ethanol at Shoalhaven Starches (the Ethanol Distillery Modification) which will generate additional trips and/or redistribute trips to these key intersections.

Given that this (Flour Mill B) Modification would in no way alter the operation of these intersections, Manildra proposes that a full and detailed assessment of all outstanding works be conducted as part of the separate Ethanol Distillery Modification, to specifically include on-site discussions with Council representatives to identify all issues of concern to Council so that they are appropriately addressed in the Ethanol Distillery Modification.

It is the opinion of ARC that this is an acceptable course of action given that this Modification would have no impact on these intersections; however, ARC would state from the outset that this should in no way abrogate the responsibility of Manildra to appropriately respond to/resolve these Council issues as part of the Ethanol Distillery Modification.

1 The Existing Site

1.1 Location

The SS Site is located on the southern side of Bolong Road, Bomaderry, generally extending east from the intersection of Bolong Road & Railway Street through to the former Dairy Farmers Site (which now forms part of the broader Shoalhaven Starches operations). An existing approval provides for a Packaging Plant on the northern side of Bolong Road opposite the SS Site (currently under construction) and Manildra has also recently purchased the Paper Mill Site east of the Dairy Farmers Site.

As discussed in the **Introduction**, the Modification would have no impact on the existing and approved operations of the Dairy Farmers Site and Packaging Plant, nor on the access points to these sites. With reference to **Section 1.2** below, all access to Flour Mill B would be provided via the existing (and recently upgraded) intersection of Bolong Road & Western Driveway.

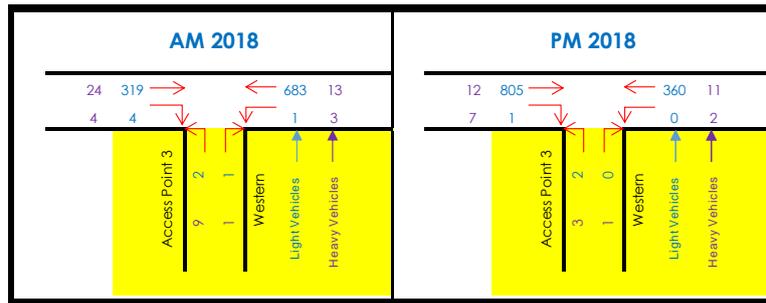
1.2 Access

Access to the SS Site is provided via numerous access driveways, all to Bolong Road. The trips generated by the Modification would be confined to a single access driveway – the Western Driveway (also referred to in previous ARC assessments as Access Point 3) which is located immediately west of the small Cleary Brothers site on Bolong Road. This Western Driveway intersection to Bolong Road is the specific subject of the assessment provided in sections below.

1.3 Traffic Operations

Further to consultation with Council over many years, ARC has prepared (and progressively updated) traffic generation forecast for Bolong Road and the numerous SS Site intersections that reflect peak SS Site traffic flows, and 120th Highest Hour traffic flows in Bolong Road.

Most recently, ARC identified "Base" 2018 flows in the March 2014 Shoalhaven Starches Access Review (Access Review) prepared further to consultation with Manildra and Council in regard to the operation of the Ethanol Driveway and Dairy Farmers Driveway intersections with Bolong Road. While the Access Review focused on flows at the Ethanol Driveway and Dairy Farmers Driveway, flows at all of the SS Site access points were also determined as part of the background assessment. These flows, provided below in **Figure 1.3**, were also referenced in the recent reports by ARC for (subsequently approved by the DP&E) modification projects at the Moorehouse Site (within the SS Site) and Packaging Plant.

Figure 1.3 2018 Flows Intersection Bolong Road & Access Point 3

It is noted that after 2018, the progressive opening of Princes Highway Upgrade stages would lead to a reduction in vehicle trips (principally between Gerringong and Nowra) using the 'Sandtrack' (i.e. Bolong Road); indeed, based on our recent discussions with the RMS through the preparation of this assessment, these flow reductions have already commenced further to the opening of the Gerringong Bypass section of the broader upgrade, with peak reductions occurring further to the completion of the Foxground to Berry Bypass and the Berry to Bomaderry Upgrade. Our recent discussions with the RMS (Mr Nick Boyd) have also indicated that planning for the upgrade of the Nowra Bridge is also well advanced, which would further cement the Princes Highway as the most efficient corridor between Gerringong and Nowra.

Notwithstanding, SIDRA analysis of the intersection under a peak (through in Bolong Road) traffic load in 2018 indicates that the intersection will operate at a good Level of Service (LoS) through 2018 (LoS "A" in the AM and LoS "B" in the PM), with minimal average and worst delays (to the movements from the Western Driveway) and significant spare capacity. After this time, i.e. further to the reduction in Bolong Road traffic flows, the intersection would operate at a LoS "A" in both peak periods.

2 The Proposal

2.1 The Proposal

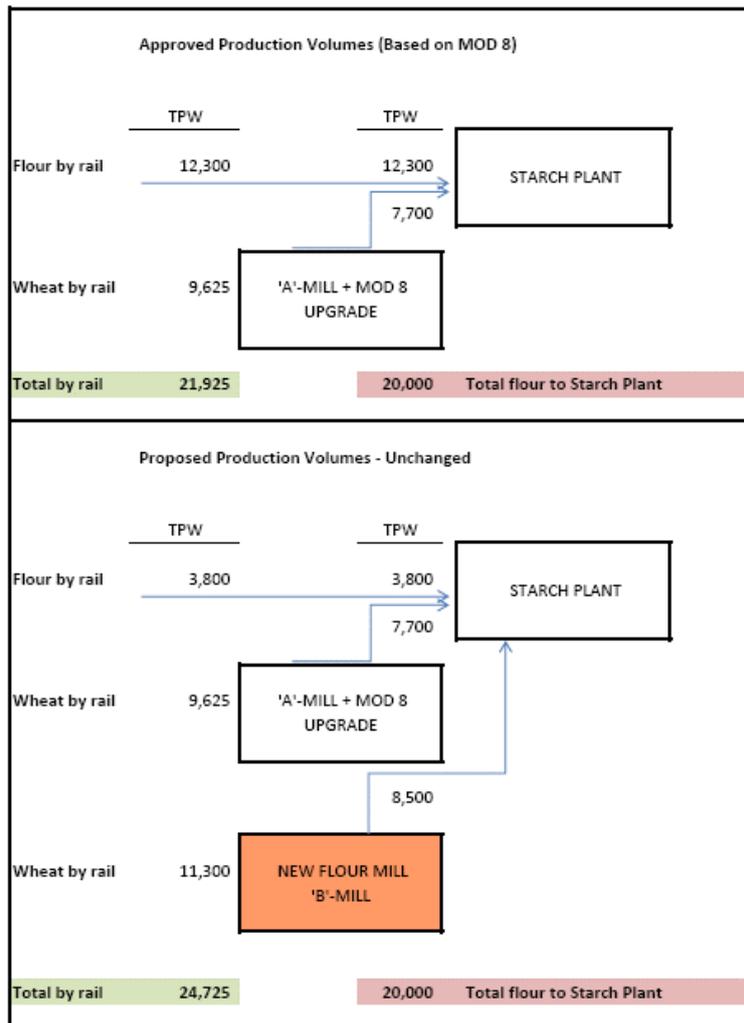
As discussed in the **Introduction**, Manildra propose to free up the production capacity of Manildra's other flour mills for the production of premium grade flour by constructing a new flour mill (Flour Mill B) at the SS Site that would produce industrial grade flour. At present industrial grade flour is supplied to the SS Site by the Manildra Flour Mill (owned by the Manildra Group of Companies) by rail; as well as by the existing flour mill located on the SS Site (Flour Mill A) which processes wheat grain delivered to the SS Site by rail.

Most importantly from the perspective of this assessment, the Modification does not propose any increases in vehicle traffic above limits established in the SSEP approval, but rather would provide for an increase in tonnage of raw materials that will be required to be transported to the SS Site by rail. As importantly, this does not mean that additional train trips will be generated across Bolong Road to the SS Site; rather, existing trains will be able to carry capacity loads as opposed to the under capacity loads they currently carry.

Similarly, the peak trip generation of the SS Site operations – and specifically product carrying heavy vehicle trip generation – would not be increased by the Modification; while additional grain would be transported by rail and stored on-site, the output of the SS Site (in accordance with the SSEP approval) would essentially remain unchanged.

Figure 2.1 provides a flow chart summary of existing and future (further to the Modification) flour mill operations at the SS Site.

Figure 2.1 Proposed Flour Mill Operations



2.2 Operational Traffic Generation

As discussed above, once the proposed Flour Mill B is constructed and operational, the Modification would not generate any additional staff or heavy vehicle trips, but rather simply form part of the broader existing flour mill operations at the SS Site operating in accordance with the SSEP approval. Also as discussed above, the Modification would not increase train movements to/from the Site, with the (relatively moderate) additional raw material requirements accommodated within existing trains currently operating below capacity.

In summary, once operational the Modification would have no impact on the operation of the local road network, with no increases to access intersection movements, nor additional trains utilising the Bolong Road railway crossing.

2.3 Construction

The only period during which the Modification would generate additional vehicle trips to the local road network would be during construction.

2.3.1 Construction Schedule & Requirements

The construction phase is estimated to occur over some 3 months, and require: -

- Up to 20 construction staff on-site daily
- Up to 5 construction material carrying heavy vehicles per day

2.3.2 Construction Access

All access to the construction area will be via the Western Driveway, which loops to the rear of the SS Site and provides direct and immediate access to the proposed Flour Mill B location (adjacent to the existing Flour Mill A). This is the same access path previously used for the construction of the existing Flour Mill A.

At the intersection of Bolong Road, the majority of staff trips, and all heavy vehicle trips, are expected to travel to/from the west.

2.3.3 Construction Traffic Generation

During the construction of the existing Flour Mill A, specialist construction staff were transported to and from the SS Site daily by mini-bus (from Wollongong) and it is expected that staff for this project would travel in an identical manner. Allowing for a small number of ancillary light vehicle trips on a daily basis, the daily generation of the construction phase is estimated to be no more than 20 (total light and heavy) vehicle trips per day. In the existing peak periods, the peak hour generation of the construction phase is estimated to be no more than 4 vehicle trips per hour.

2.3.4 Construction Traffic Impacts

It is in our opinion immediately apparent that the construction phase will have little if any significant impact on the local road network simply as a factor of the minimal generation and short duration of the construction phase.

At key intersections to the west of the Western Driveway, the construction phase would generate perhaps 4 additional vehicles per hour, a level of generation that would in no way affect key intersection performance indicators. At the intersection of Bolong Road & Western Driveway, where the construction trips are concentrated, SIDRA analysis indicates that the additional trips have no impact on peak 2018 operations, with existing [minor] delays, 95%ile queue lengths and available capacity essentially unchanged from the 'existing' 2018 operations as reported in **Section 1.3** above.

In summary, the trip generation of the construction phase of the Modification would have no impact on the local traffic environment.

2.3.5 Construction Management

Notwithstanding the findings above, it remains that the case that the construction phase will need to be governed by an appropriate set of management procedures.

In relation to access, traffic and parking requirements during the construction phase, ARC recommends the following initiatives, which essentially mirror the Construction Traffic Management Plan (CTMP) prepared by ARC for the construction requirements of past SS Site projects, including most recently the Packaging Plant: -

- All parking for construction staff and construction heavy vehicles must be contained within an appropriately secure on-site environment so as not to impact or be impacted by existing SS Site operations; or on the off-site traffic environment. In this regard, it is proposed that all construction staff parking be provided for in the approved temporary construction parking area located on the northern side of Bolong Road, which is readily accessible to the SS Site, noting the existing pedestrian paths on both sides of Bolong Road and the pedestrian refuge in Bolong Road.
- While it is not anticipated that Restricted Access Vehicles (RAVs) will be required as part of the construction task, it is nonetheless the case that any such vehicles would be required to utilise the existing approved RAV route between the Western Driveway and the Princes Highway via Bolong Road; access for such vehicles via Railway Avenue is not permitted.
- Construction work hours are generally between 6:00am/7:00am and 5:00pm/6:00pm Monday to Friday, with an earlier finish time on Saturdays and no work on Sundays. Construction hours are most often established to minimise amenity impacts on neighbouring residential areas, and will require finalisation further to consultation with the DP&E and Council.

3 Conclusions

Further to our assessment, ARC has determined that there would be no significant access or traffic impacts arising from the Modification. Specifically: -

- Once operational, the Modification would not result in any increases in staff or heavy vehicle trip generation above SSEP approved limits.
- Once operational, the Modification would not result in any increases in rail movements, but rather utilise available capacity within existing trains servicing the SS Site.
- The Modification would generate a small number of construction vehicle trips during a short construction period, which would be generated exclusively to and from the Western Driveway. These additional trips would have no impact on the operation of the intersection of Bolong Road & Western Driveway, nor on the broader local road network.
- An appropriate Construction Traffic Management Plan would be in place to appropriately manage on and off site access and parking requirements during the construction period.

As detailed from the outset, it is our opinion that this Modification has essentially no bearing on the outstanding issues as determined by Council at the Ethanol, Dairy Farmers and Paper Mill driveways to the east of the Western Driveway. Notwithstanding, and as discussed with both Manildra and Council, it is in the opinion of ARC essential that these issues be examined and resolved in a collaborative manner as part of the future Ethanol Distillery Modification to ensure that these intersections/driveways – all of which will be integral to the Ethanol Distillery Modification – are appropriately assessed and, where required, upgraded/augmented to the satisfaction of Council and the RMS.