

## **Appendix 14**

# **Traffic Impact Assessment**





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## PROPOSED DISTRICT PLAN CHANGE LOT 1 DP 341981, MANGAWHAI



### TRAFFIC EFFECTS ASSESSMENT

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## 1. INTRODUCTION AND BACKGROUND

A zone change is proposed over Lot 1, DP 341981 on the corner of Molesworth Drive and Estuary Drive, Mangawhai.

This report is an assessment of the traffic effects of the proposal including the identification and evaluation of the feasibility of measures that might be required to remedy and mitigate those effects, as conditions of future developments that the zone change might enable.

## 2. DESCRIPTION OF THE PROPOSAL AND EXISTING ROADS

The proposal is to re-zone the 0.8 hectare subject site to commercial from the current residential zone.

The site has frontages to three public roads – Molesworth Drive along its entire northwestern side, Estuary Drive along its entire southwestern side and Norfolk Drive on part of its southeastern side. The site also adjoins several residential properties. The three road frontages all provide technically feasible access to future developments on the site.

In 2008, a land-use consent – Council reference RM050271, was granted for a service station, associated facilities and commercial services building on the site. Condition 3(l) of that consent is as follows:

*"...the consent for Stages 1 and 2 [Service Station, Retail and Professional Offices and Motel] of the development shall be for a period of five years and the consent for Stage 3 [Future Services Businesses and Vehicle and Boat washing and grooming] shall be for a period of ten years."*

Stages 1 and 3 of this consent were entirely on the site that is the subject of the plan change, Stage 2 was on an adjoining site. It is understood that the time limits referred to are to give effect to the various stages of the consent, not for the activities themselves. None of either Stages 1 or 3 have been given effect to as at early March 2016. On this basis, the consent for the service station has now lapsed but that for the "Future Services Businesses" and vehicle and boat washing and grooming (Stage 3) has not.

It is not clear from the supporting information provided with the application for land-use consent RM050271, or subsequent documents, what Stage 3 (the future services businesses) is intended for. However, the consent has the following condition 3(g) in relation to it:

*"The Future Services Businesses building containing an area of 620m<sup>2</sup> may only be used by those activities which comply with the standards set out in NZS 9201.23:2004 (Trade Waste)."*

As shown later, all access and associated traffic management facilities can be designed to achieve all access and transport rules in the *Kaipara District Plan* without encroaching on private land that is not under the applicant's control and/or without having effects that cannot be avoided, remedied or mitigated.

All roads along the frontage are sealed with two lanes for through traffic and speed limits of 50 kilometres per hour. Molesworth Drive has a carriageway width of 7.0 metres plus a left-turn lane for Estuary Drive and open side channels (no kerbs). Both Estuary Drive and Norfolk Drive have 6.0 sealed carriageways with flush concrete strips/nibs along both edges, footpaths on one side and some carriageway lighting.

**Photo 1.** Molesworth Drive looking southwest towards Estuary Drive (centre), which forms a cross intersection with another side road – Thelma Road South (at right).



**Photo 2.** Molesworth Drive looking northeast towards Estuary Drive (right) and Thelma Road South (left). The speed limit transition at this locality is from 80 kilometres per hour. The site is in the background at upper right.



**Photo 3.** Looking northwest towards Molesworth Drive from Estuary Drive. A corner of the site is visible at upper right.



**Photo 4.** Looking southeast along Estuary Drive from Molesworth Drive. The site is at left.



**Photo 5.** Norfolk Drive Looking northeast from Estuary Drive with the site at left.



## TRAFFIC

### 2.1 Traffic Generation

All vehicle movements referred to here are one-way movements in one direction.

The operative *Kaipara District Plan* has rules that limit the daily number of traffic movements. In the commercial zone, this is 200 movements per day. The plan change will only enable, as a permitted activity, a consent that results in no more than this level of traffic generation from the site.

The traffic assessment provided with the application for land-use on the site, which was prepared by Cook Costello and dated October 2005, estimates 50 movements per day from the “future services businesses” building on the site. A review by then Council consultant Duffill, Watts and King estimated 124 movements from that building. There is no comment, nor even a reference, to these estimates in the consent, so it is presumed that the council accepted the estimate of its consultant. With the absence of specifics about the building, this estimate is also used as input to this assessment.

On this basis, the permitted baseline of the site is 130 to 140 movements depending whether a house is permitted in addition to the services business that already has consent on the site. If the 200 movements is additional to that, then the potential permitted traffic from the site is a maximum of 340 movements per day.

The plan change would probably also make a range of activities easier to obtain consents for, although the 2008 land-use consent included a service station – one of the biggest attractors of traffic movements of any land use.



It is not clear from the previous consent documentation why the service station consent lapsed in only 5 years. A hint is provided by a report from Council's then consultant Duffill, Watts and King entitled "RM50271 Sandway Development and Metcalf Developments. Molesworth Drive Upgrading" which is undated but stamped "received May 2012". That report includes the following statement in reference to the author's estimate of traffic diversion by the service station:

*"The Service Station may attract up to 25% of the 9700 [vehicle movements per day] on Molesworth Drive predicted for 2015 in the Mangawhai Urban Roading Development Contributions report."*

The Duffill, Watts and King report into consent RM050271 states that the existing (2008) traffic on Molesworth Drive was 3,600 movements per day, only 7 years before a 2.7-fold increase was expected. Council's engineers presumably considered the traffic to be growing so fast that the entrance arrangements proposed for the service station would become inadequate and perhaps it was providing an opportunity to re-visit this if the consent was not given effect to time.

On this basis, there is potential for much greater traffic from the site than the plan change will enable as a permitted activity. However, as will be shown later, the traffic on Molesworth Drive has not grown anywhere near as quickly as expected in 2008, so the potential remains for very big traffic generators, including a service station, to obtain fresh consents on the site with or without the plan change.

Being a coastal location, there will be big, but temporary, increases in traffic during peak holiday periods. No counts are available to evaluate this, but experience in other coastal areas in Northland indicates at least a doubling of traffic in such areas during the peak of holiday periods. Any increase will apply equally to commercial and residential development.

The generated traffic is expected to be biased towards the north (including Mangawhai Heads shopping centre and all the popular beaches in Mangawhai) but not heavily so.

## 2.2 Traffic on Existing Roads

The traffic on Molesworth Drive was counted in May 2015 0.9 kilometres northeast of Estuary Drive and registered a 7-day average daily count of 4,300 movements per day. The traffic is likely to be slightly less at this locality and is estimated to be in the range 4,000 to 4,100 movements per day.

The traffic on this part of Estuary Drive was last counted in May 2009 and registered a 7-day average count of 180 movements per day. There is a 65-lot subdivision on Estuary Drive ("Parkview Waters") which is only partly developed, along with other vacant land. The number of existing houses other development in the catchment of Estuary Drive (including a christian camp) would indicate more traffic than that registered in 2009. The permitted baseline traffic on the road is estimated at 450-500 movements per day.

There are forty-five houses on Norfolk Drive and little or no space for more. The estimated traffic from those is 200 movements per day, all of which are already included in the estimate for Estuary Drive (all of Norfolk Drive is in the catchment of this part of Estuary Drive).

These are traffic levels on an average annual day. Traffic during peak holiday periods is expected to be at approximately double those levels.

### 2.3 Crashes

The CAS database has been searched on the road frontages that surround the site and the associated intersections. The search covers the entire period since the beginning of 2010. No crashes of any type have been reported.

## 3. ASSESSMENT OF TRAFFIC EFFECTS AND POSSIBLE MITIGATION MEASURES

Because this application is only for a plan change, not a subdivision, it is only necessary to ensure there are no insurmountable constraints to the granting of future applications for subdivision.

To evaluate this, measures have been identified that are considered to adequately mitigate the traffic effects and that might be required as conditions of consent for future land use(s). Sufficient investigation has then been carried out to ensure there are no associated constraints to the implementation of such measures.

This is not concluding that such measures are a vital component of future development, only that they are a possible requirement. In fact, the possible measures identified in this report are considered likely to be maximum conditions.

This assessment evaluates the effect of both the increase in permitted traffic generation from the site and the more traffic-intense activities that will become more consentable (even though some of the most intense traffic generators have already been granted consent at levels of traffic on Molesworth Drive only slightly less than the current levels).

The most significant potential traffic issue is with the Molesworth Drive/Estuary Drive intersection. With 8,000 movements in both directions, a level that is likely during peak holiday periods, the capacity for the critical right turns from Estuary Drive, in its current “tee” configuration and allowing for right-turn entries, is still more than 300 movements in a peak hour. That is, in the order of 8,000 total movements per day. Outside the peak of the holiday season, the capacity will be much greater than this again.

This is significantly greater than the permitted level of traffic that the proposal will enable from the site. In fact, the catchment of Estuary Drive has limited remaining development capacity and the traffic will never reach anywhere near those levels. Even a service station is only likely to attract 20 to 25% of traffic from the main route – no more than 1,000 movements per day currently (and a service station would require consent in any case).

There are no facilities on Molesworth Drive to separate vehicles turning right into Estuary Drive from others that are not turning. Estuary Drive already warrants such facilities according to Council’s Engineering Standards 2011 Sheet S09. As shown in Photo 6, there is ample space for such work within the existing road reserve, should it become a condition of any future development on the site.

Estuary Drive and Norfolk Drive are already narrower than Council standards for the level of traffic they carry. Despite this, no crashes have been reported on either road, along the site frontage, since at least the start of 2010. General widening is likely to be required as a condition of consent, but all can be carried out on the site sides of both roads.

**Photo 6.** Looking southwest along the northwestern side of Molesworth Drive (opposite the site). Thelma Road South is at upper centre and Estuary Drive is at left. All widening for right turns into Estuary Drive would occur on this side of Molesworth Drive and be a maximum of approximately 2.0 metres wider than the existing carriageway. That is, approximately as far as the trunks of the trees.



Some local widening is probably already warranted at the intersection of Norfolk Drive and Estuary Drive, especially at full development of the Estuary Drive catchment. The left-turn component of such widening would be on the site side of Estuary Drive, the right-turn component on the opposite side. As can be seen in photo 4 (page 3), there is ample space opposite Norfolk Drive, within the Estuary Drive road reserve, for any local widening required as a condition of future development on the site.

Consent RM050271 includes the following advice note:

*“Council wishes to obtain a triangular portion of land approximately 150m<sup>2</sup> on the corner of Molesworth Drive and Estuary Drive for the construction (by Council) of a roundabout and associated footpath and services to facilitate upgrading of Estuary Drive to an appropriate standard. This would be at no cost to the applicant.”*

While a roundabout would be desirable, especially so close to a speed limit transition to urban speeds, the intersection is already currently close to an appropriate standard (and would be completely appropriate with some widening for right turns into Estuary Drive), as already shown.

With the relatively slow growth of traffic on Molesworth Drive, it will be many decades before a roundabout is necessary for capacity purposes, even with the highly traffic-intensive development proposed in consent RM050271. Provision of a roundabout was not part of that consent, for good reason, and neither will one be necessary with the development enabled by the plan change, especially at the traffic levels permitted without a requirement for land-use consent.

Overall, it is concluded that work that might be required as a condition of future development enabled by the proposed plan change can be carried out without encroaching on private land that is not owned or controlled by the applicant. As such, there are no traffic-related impediments to the proposal.

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