

Heavy Traffic Volumes Report

February 2007



Caring for Northland
and its environment

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REGIONAL
COUNCIL

The logo for Northland Regional Council, featuring a stylized 'N' and 'C' in blue, red, and green colors.

Heavy Traffic Volumes Report

February 2007

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1 Executive Summary of the Heavy Traffic Study

Opus was commissioned by the Northland Regional Council to review and update the previous Heavy Traffic Volumes Report prepared in 2001. The purpose of the report is to identify trends and routes for heavy traffic in the Northland region.

Since the 2001 report was prepared, a number of changes to heavy traffic have been identified. The most significant matters that this report uncovers are as follows:-

- The closing of Port Whangarei has shifted significant volumes of freight onto the State Highway to access the Marsden Point Port. This impacts on SH1N from Whangarei to One Tree Point Road and SH15 access to the port.
- As a consequence of the new Marsden Point port, the rail transportation system has lost freight transport, with approximately half the rail freight shifting to road transport. Should total access to a rail system be lost then the impact on the roading system initially is unlikely to be significant, the impact is an estimated 14% increase in heavy traffic on SH1N south of Whangarei. However, more consideration should be given to what is viable to transport by rail, one of the key enabling factors will be the rail link to Marsden Point. Rail should be considered for the long-term future of the Region.
- Heavy traffic volumes through Whangarei and south to One Tree Point are high and warrant consideration for compatibility issues with other road users and capacity during peak periods. Efficient and safe intersections are a key issue through this length of highway.
- Reliable road access between Northland and Auckland is vital for Northland as there are no sustainable viable alternative routes should access to SH1N be restricted. In addition, throughout the Northland region there are very few secondary roads that can sustain state highway volumes. In addition, Northlands roading system can be characterised mainly by arterials and local roads, with very few secondary roads.
- The forestry log export industry is in decline, however timber processing is expanding (i.e. TDC Sawmills is shifting from 200,000m³ to 400,000m³ sawn timber per year). A sustained upturn in the industry has the potential to increase heavy traffic volumes overall by 3 times. Logging growth is often faster than the roading industry can supply improvements; this matter needs careful management in order to support forestry growth whilst also providing road safety.
- Refuse solid waste disposal has become a transport matter for all local authorities with a shift from local dump sites to recycling centres and land disposal in Redvale Silverdale. The roading impact is the cumulative effect on traffic volumes mainly on SH1N. This mostly manifests itself in the need to upgrade key intersections in the region.

Just as rail has an impact on transportation, so too does shipping. Large volumes of freight are carried by coastal type shipping in Northland. Changes in freight shipping would have a very significant impact on Northland's road system. This impact on heavy traffic volumes for the fertiliser and cement works has already been noted with the shift of the port from Whangarei to Marsden Point. The report is divided into the key industries associated with heavy traffic volumes. These include forestry, stock, dairy, horticulture, solid waste, heavy industry, tourism, school buses, and public transport. In addition, the report discusses the

role of shipping and rail in the region and the likely impacts of the promotion of these modes in the region. Each of the sections contains the source and detail of data, emerging issues and key changes since 2001.

The following provides a summary table that is intended to provide the significance at a network level. If it is accepted that the heavy traffic volume on SH1N between Whangarei and One Tree Point is approaching a high volume then this is an indication of an upper limit of traffic volume at an acceptable level of service. Thus 600 heavy traffic movements in one direction per day has been used as an upper limit for benchmarking and comparative purposes. The following data is provided to demonstrate the significance, some data has been estimated.

Type	Significance	Heavy Traffic this Type per day	Current Heavy Traffic on this route per day	Upper Limit on this route per day
Forestry Logging	Current volume SH15A.	100 (max)	200	600
	Potential volume SH15A.	250 -300	200	600
	Cumulative effects in SH1N Whangarei South.	100	600	600
	Access to forest blocks and compatibility on rural roads. Intersection operational issues. Transport by rail.	1 to 15	1 to 15	15 - 30
Stock Trucks	Current volume on SH1N Whangarei South.	+12	600	600
	Typical rural road volume. Stock effluent disposal and compatibility on rural roads.	2	10	15 - 30
Dairy Industry	Current volume SH1N Kauri North.	100 peak	400	600
		58 peak	600	600
	Current volume SH1N Whangarei South.	106 peak	600	600
	Current volume SH1N North of SH12 intersection. Typical rural road volume.	1 to 6	10	15 - 30
Horticulture	Cumulative effects on SH1N Whangarei South. Reliability of freight for perishables.	8 (estimate)	600	600
Solid Waste Disposal	Cumulative effects on SH1N Whangarei South.	20	600	600
Heavy	Cumulative effects on SH1N	600	600	600

Type	Significance	Heavy Traffic this Type per day	Current Heavy Traffic on this route per day	Upper Limit on this route per day
Manufacturing	Whangarei South. Peak demands SH1N Whangarei to Marsden Point, additional 600 trips	1,200		
Tourism Buses	Cumulative effects on SH1N Whangarei South.	54	600	600
School Buses	Typical rural road volume. Contribution to congestion in Whangarei City. Compatibility on rural roads.	1 to 4	10	15 - 30
Shipping	Any shift from coastal shipping to road contributing to cumulative effects on SH1N Whangarei South.	Not available	600	600
Rail	Any shift from rail to road contributing to cumulative effects on SH1N Whangarei South. The rail link to Marsden Point is a key issue for the Regions Transportation system.	86	600	600

The main heavy traffic volumes by State Highway in Northland are:-

SH1N – 12 to 2,500 truck movements per day.

(SH14 to Kamo has approximately 2,500 truck movements per day; Whangarei to One Tree Point there are 1,200 movements per day; North of Whangarei has 800 movements per day; One Tree Point to SH12 intersection on SH1N has 1,200.)

SH10 – 120 to 420 truck movements per day.

SH11 – 152 to 220 truck movements per day.

SH12 – 46 to 280 truck movements per day.

(Dargaville South 122 to 280, Dargaville North to Kaikohe 46 to 280 truck movements per day.)

SH14 – 120 to 550 truck movements per day.

SH15A – 390 truck movements per day.

There is a high heavy traffic volume through Whangarei, although a large proportion of these are likely to be light heavy vehicles. The above State Highway data is total heavy traffic movements (i.e. the sum of both directions).

2 Introduction

2.1 Previous Study

During the 1999 review of the Regional Land Transport Strategy for Northland, it was recognised that due to the anticipated increase in the number of logging trucks on the region's roads, a comprehensive strategic plan was required to address those funding and maintenance issues that will be facing the Northland transportation network. This led to the formation of the Northland Regional Council Transport Working Party. The purpose of this working party was to provide a forum for discussion and collaborative action on strategic transport planning issues identified in the Regional Land Transport Strategy for Northland.

One of the priority actions was to identify as far as practicable major routes for heavy transportation and resulted in the development of the Heavy Traffic Volumes September 2001 Report

From this report, it was envisaged that a greater insight could be gained into the burgeoning heavy transport industry in the region and the effects this would have on such issues as road maintenance, road safety, and traffic congestion.

Other factors were taken into consideration which will have a direct impact on the movement and number of heavy vehicles in the region, these being:-

- The new Marsden Point deep water port;
- The associated closure of the Whangarei port;
- The movement of produce between Portland and Marsden Point;
- The projected increase in tourism; and
- The use of rail.

2.2 Review Purpose

Opus was commissioned to review the 2001 study and identify key emerging issues and changes for the operation of heavy vehicles on the roads in the Northland region. Previous studies, physical traffic counts, meetings with various transport operators, District Council's and road safety bodies has assisted in obtaining information that has gone into the compilation of this report.

The main difference between this report and the last report (2001) is to also gain an improved understanding of containerisation, the associated matters arising and to better understand the significance of freight.

In the following sections, traffic volumes and routes are discussed for each industry. This is followed by a summary of all heavy traffic combined and a brief analysis identifying emerging matters.

Please note that all information supplied by companies and operators, in relation to truck movement is based on 'loaded trips' only and therefore does not provide the complete picture of trip movements (i.e. return empty or positioning trips are not included).

2.3 Methodology for the Heavy Traffic Review

The review data has been extracted from a mix of traffic count and data provided by key stakeholders.

Key industry stakeholders were identified for the review. The stakeholders comprised of representatives from forestry, stock, dairy, horticulture, solid waste, heavy industry, and public transport providers. A stakeholder 'gap analysis' was completed. All stakeholders identified were contacted to supply updated data for the review, approximately 30% responded without follow up, another 30% responded with several telephone calls and 20% failed to respond at all.

The data provided has been analysed and compiled. Where gaps in data have been found these have been requested from the stakeholders. Where possible the truck volume data has been verified by existing traffic counts and other comparable data. Some of the data provided by the industry sector has been supplied on a confidential basis.

To better understand the significance of freight, each industry reported is expressed in terms as a percentage of the Heavy Traffic Count on SH1N south of One Tree Point Road in Ruakaka. The current volume of heavy traffic in each direction one way is approximately 600 traffic movements per day on this section of highway.

Emerging matters have been summarised for input into the Northland Regional Land Transport Strategy Review.

2.4 Intended use of this Report

This report is intended as an input into the Northland Regional Land Transport Strategy Review and secondly for industry reference.

3 Developments since September 2001

3.1 Introduction

The following is a summary of the environmental changes since the September 2001 Heavy Traffic study was completed.

3.2 New Marsden Point Port

The old Whangarei port was still in operation until 2004, the new port at Marsden Point started in 2003 with two berths in operation largely exporting pulp logs. Currently a third berth is under construction.

Recently the Ports of Auckland acquired 21% of Northport. Speculators believe this to be a strategic move for the Ports of Auckland with the possibility of shifting more freight North.

Industrial development at Marsden Point is expanding.

3.3 New State Highways – Link to Marsden Point

The new port at Marsden Point created a demand for a new state highway between State Highway 1N and Marsden Point. As a result SH15A was completed in 2003/04.

The State Highway review in 2001 deleted the bypassed Kamo SH1C, deleted SH15 (SH1N to the old Port Whangarei), extended SH11 from Paihia to Puketona junction on SH10 and extended the state highway from Waitiki Landing to Cape Reinga. The state highway increased from 710 to 749 kilometres.

A new road access was constructed in 2003 for Marusumi access to SH1N north of Oakleigh. Chip was transported by rail to Port Whangarei, now it is transported by truck to Marsden Point.

3.4 Northland Growth

Several issues indicate that Northland is undertaking considerable growth. Local house construction is at an all time high with real estate prices significantly increasing bringing more wealth to the area, superstores are more and more shifting north, coastal marine farms are on the horizon and coastal development is increasing.

The growth is confirmed by a corresponding growth in traffic volume.

3.5 Coastal Development

A marine farm industry is on the horizon for Northland. This may require improved access to isolated coastal areas.

Coastal lifestyle developments are accelerating. The Ruakaka, Mangawhai and Coopers Beach areas are growing quickly, associated is the heavy construction traffic and to a lesser extent heavy commercial traffic.

3.6 Agriculture

Dairy farming is maturing and smaller holdings are being amalgamated into larger business ventures. Beef and sheep farming appear to be static. The deer farming industry has collapsed.

3.7 Horticulture Growth

The Kiwi Fruit industry has been more or less static for sometime. However, significant plantings of avocados have occurred in the Whangarei and Far North areas. The Whangarei avocado plantings are already larger than the well known Bay of Plenty orchards.

3.8 Forestry

In the early 2000's forestry logging was growing in Northland. Carter Holt Harvey alone were ramping up harvesting capacity to over 1 million tonnes pa. However, forestry pulp export is now in a slump, predicted volumes have not occurred due to poor market conditions. Even if pulp market conditions change and volumes increase it will take several years to expand to the 3 or 4 million tonnes sustainable logging volume for Northland. However, it is likely at some stage in the future that logging volumes will reach these predictions when market conditions allow.

3.9 Solid Waste Disposal

Solid waste is starting to be transported outside the region. The Far North District Council currently sends 50% of its waste to Whangarei District for disposal at Pohe Island in Whangarei. Pohe Island is due to close late in 2005 and hence forth the solid waste will be disposed of at Redvale, Silverdale. The situation in the Kaipara District is likely to be similar. Northland is approaching a significant increase in solid waste disposal transport diverging on one location. Currently the most likely end point is also Redvale in Silverdale.

3.10 Construction – High Level

The domestic construction industry is at an all time high, heavy construction including road construction is also increasing thus resulting in increased heavy traffic (i.e. quarries, concrete trucks, etc.).

3.11 TDC Sawmill Expansion

When the last study was completed TDC Sawmill was still relatively small, maybe 40,000T pa, it is now 200,000T pa. with significant growth plans to take it to 400,000 tonnes pa of sawn timber.

3.12 Rail

The responsibility for the rail track has recently shifted back to the Government with establishment of 'Ontrack' to administer the Rail Asset and Toll Holdings to operate the rail. The dominant issues are the viability of the link North of Auckland, the restriction due to the tunnel at Tunnel Hill for large containers and the potential link to Marsden Point Port.

3.13 NZ Refining Company

The Oil Refinery continues to invest and expand. The Future Fuels Project is nearing completion. The implication for transport is the peak road usage associated with upgrade projects like the Future Fuels Project and the possibility of the pipeline capacity to Auckland. On the horizon is a proposed refinery expansion reported at \$500 million over the next few years.

3.14 Length of Trucks

Longer loads can now be carried to accommodate the logging industry, this came into effect on 20th June 2002. The law was changed to allow longer and lower loads to be carried and was in response to a high logging truck role over crash rate. The total length was increased to 22m. Logging truck configurations changed since the last Heavy Traffic Report review.

3.15 Land Transport Management Act 2003

The Land Transport Management Act came into effect in 2003. This requires the broader issues associated with the five key objects and longer time frames be considered for the provision of infrastructure.

The New Zealand Transport Strategy was published in December 2002. It seeks to achieve a more sustainable transport system that recognises the benefits of all transport modes in the development of transportation in New Zealand. The NZTS has the following vision:-

By 2010, New Zealand will have an affordable, integrated, safe, responsive and sustainable transport system.

The vision will be achieved by developing a transport system that contributes towards five key objectives. These are:-

- Assisting economic development
- Assisting safety and personal security
- Improving access and mobility
- Protecting and promoting public health
- Ensuring environmental sustainability

The underpinning notion of the strategy is that all of the above key objectives must be progressed in parallel in order to achieve a sustainable transport system. This was further strengthened by the Land Transport Management Act 2003.

4 Forestry

4.1 Source Information

NRC Northland Heavy Traffic Volumes Report	2001	NRC
Northland Forestry Transportation Study	2005	GHD
Forestry Industry data		
Northport	August 2005	Northport

4.2 Introduction

Forestry log transport is a significant factor for Northlands transportation system.

The previous heavy traffic report utilising satellite photography confirmed there was 127,000 ha of wood block timber (forests greater than 200 ha) and 33,600 ha of wood lot timber (forests smaller than 200 ha). These forests were estimated to yield 28.8 million tonnes of timber within the 10-year period. 19.4 million tonnes would come from wood blocks and 9.4 million tonnes from wood lots. This timber originates from the following areas:-

Far North District	12.9 million tonnes
Whangarei District	5.0 million tonnes
Kaipara District	3.8 million tonnes
Rodney District	7.1 million tonnes

A sustainable supply of logs was quoted at between 3 and 4 million tonnes per year for the Northland Region. The down turn in the International pulp log market has caused a significant reduction in forestry harvesting. However, when market conditions improve the industry is likely to be reinvigorated with activity.

Major destination points for the timber, are expected to be Marsden Point Port, TDC Sawmill in Whangarei, JNL Kaitaia, LVL Mill at Marsden Point, with some volumes being transported to the Central North Island.

4.3 Findings

Forest harvesting forward predictions are often variable due to volatile market conditions. This is due in part to the nature of the industry. A large volume of Northlands woodlots are in private ownership, these are fragmented and wood flow is extremely difficult to model. On the other hand the larger corporate players have better ability to predict volumes. However, predicted volumes can have large shifts in time due to market conditions. The log volumes that supply NZ based primary processing facilities (i.e. JNL Triboard Mill at Kaitaia, CHH LVL Mill at Marsden Point, TDC Sawmill at Whangarei, etc.) are more easily predicted. For these reasons a longer-term global view is necessary. Needless to say that access on local unsealed low standard roads will always be an issue for the industry, and with cooperation and coordination these matters are being resolved. However, the more significant matter is the concentration and cumulative effects of log trucks.

A sensible approach is then to determine likely high and low volumes so that the impact can be assessed. The logging industry can increase capacity faster than infrastructure can be provided, thus a balanced view is also necessary.

From the data provided, future predictions indicate that the volume harvested from Northland is unlikely to exceed 3 million tonnes per year. In addition forests north of Auckland are now tending to harvest wood that is either processed or log exported from Marsden Point. These forests might sustainably produce an additional 1 million tonnes resulting in a sustainable total log transport of between 3 and 4 million tonnes per year.

The low side volume is that required to keep the processing facilities in operation. Given at present the log export is at a very low ebb then the current volumes is a very good indication, perhaps with the exception of the growth planned by TDC Sawmills (i.e. from 200,000 m³ to 400,000m³ of sawn timber per year). Therefore, we could sum the production facilities log use and add an allowance for the increase for TDC sawmills expansion and come up with the low side forecast. Volumes are as follows:-

CHHF LVL	80,000m ³
TDC Sawmill, Whangarei	200,000m ³
Rosvall Sawmill, Whangarei	35,000m ³ (estimate)
JNL Triboard Mill, Kaitaia	150,000m ³
Marasumi Chipmill, Portland	200,000m ³
Other	100,000m ³
Total current processed volume	765,000m³ pa.

Based on an average recovery rate of 70% (this is high but derives a conservative low volume), then this equates to 1.1 million tonnes of logs plus a low export log volume of 400,000 tonnes per year. This equals a total log volume transported around Northland of 1.5 million tonnes for 2005/2006 plus any increase at TDC Sawmill in Whangarei.

Northport advises they exported just under 400,000 tonnes of logs, and just over 200,000 tonnes of woodchip in 2005.

In summary, Northlands Transportation System needs to provide for between **1.5 million tonnes and 4 million tonnes** of log cartage per year. However, to increase from the current low level of 1.5 mil tonnes to 4 million tonnes is likely to take the industry at least 3 to 4 years to expand, the industry could reasonably only **increase the rate of harvesting by approximately 800,000 tonnes per year.**

4.3.1 Marusumi Chip Mill - Portland

In September 1995, Marubeni Corporation applied for resource consent for the establishment of a chip mill and log storage yard at Portland. This was granted in

December 1995. The operation involved the delivery of logs by both road and rail to the mill, where it is processed and returned on special purpose rail wagons to the Port of Whangarei. With the closure of the Whangarei Port and no rail link to Marsden Point the Marusumi Chip Mill now truck chip to Marsden Point. This is accomplished by the use of specially designed truck and trailer units built to carry 28 tonne of chip each. The total volume trucked to Marsden Point was just over 200,000 tonnes for 2005.

On the basis of 28 tonnes per load and a five day a week operation this equates to 35 woodchip trips per day. In addition to this, there is bark disposal at an estimated 3 trips per day.

Log cartage into the chipping plant is in excess of 200,000 tonnes per year (Source information from Northport).

4.3.2 CHH LVL – Marsden Point

Last year the mill produced approximately 50,000 m³ that was mostly trucked to and exported from Auckland. Future plans are to produce 80,000m³ with 18,000m³ being exported from Marsden Point and the remainder being trucked and exported via Auckland. 184,000 tonnes of logs produce 80,000m³ of LVL and 36,000 m³ of wood chip, the wood chip is trucked to Kinleith.

4.3.3 TDC Sawmill – Whangarei

The TDC Sawmill is now one of the biggest sawmills in New Zealand. Current capacity of 200,000 tonnes pa of sawn timber is being increased to 400,000 tonnes pa. This is approximately 700,000 tonnes of logs in and 400,000 tonnes of processed timber out predominantly by road. (Source information from Northern Advocate October 2005).

4.3.4 Juken Nissho Triboard Mill – Kaitaia

Information was not available from Juken Nissho but it is understood that 70,000 tonnes of Triboard and 40,000 tonnes of veneer in 2004/2005 were exported from Marsden Point. Veneer exports are expected to increase in 2005/2006. (Source information from Northport).

4.3.5 Other – Rosvall

Information not available.

4.3.6 Logging Volume Conclusions

In summary, Northlands Transportation system needs to provide for between **1.5 million tonnes and 4 million tonnes** of log cartage per year. However, to increase from the current low level of 1.5 million tonnes to the high level, it would take the industry at least 3 years to expand, the industry could reasonably only **increase the rate of harvesting by approximately 800,000 tonnes per year.**

Given that the industry is at a low (i.e. approximately 1.5 million tonnes) then in one year we could see up to a 60% increase in logging. This sort of increase could be sustained for 3 years to reach a peak or sustained level if the markets remain favourable. Another way to

understand the issue is the industry has the potential to place more than a 3 times increased demand on the transportation system.

4.4 High Impact Areas

From the information received in the various reports, the following portions of state highways and arterial routes will be subject to the increases in traffic volumes discussed. The figures will vary during the year, depending on demand and weather conditions and may fluctuate due to market changes. Please note these are loaded trips only and do not include return runs.

The most highly impacted area is between Portland and Marsden Point on SH1N. The Mangakahia and Otaika Valley Roads being strategic forestry routes. The cumulative effect on Rewarewa Road in Whangarei needs to be monitored. Key intersections will include SH1N/One Tree Point, Loop Rd/SH1N, Otaika Valley/SH14/Mangakahia, Mangakahia/SH12, and West of Kaikohe/SH12 to avoid the Kaikohe/SH12 intersection, Taheke/SH12, SH10/SH1N at Pakaraka, TePua/SH12, and TePua/SH1N.

The main challenge for the logging industry is the need for the transportation system to respond to high and often uncertain demand for roading infrastructure. Secondly, when isolated blocks are harvested the benefits of increasing the transportation infrastructure is short lived as the blocks may never be harvested again or at least not for another harvesting cycle in 20 to 30 years. Put another way the roading transportation system plans with a two year plus year time frame, whereas demand for logging can increase in a matter of months.

The significance is:-

- The need to upgrade local roads associated with access to isolated blocks, this is currently reasonably well understood and managed;
- Peak demands on intersections, this is an area of difficulty;
- Shared use between log trucks, school busses and milk tankers on rural narrow roads, this is largely managed through local knowledge and cooperation;
- Logging truck compatibility with other road users on arterials, separation of routes like the Maungakahia Road could be encouraged;
- Cumulative effects in the high concentration areas like Whangarei need to be better understood.

4.5 Changes Since 2001

The most significant change is a downward trend in forestry pulp logging due to poor market conditions. However, other processed logs (i.e. saw logs) are in demand and is keeping the logging industry going but at a reduced level. TDC Sawmills is going through significant growth in capacity.

4.6 Route Data

The following table is in one way truck movements.

<u>Main Route Locations</u>	<u>Prediction from 1998 for 2005</u>	<u>Prediction from 2002 for 2005</u>	<u>Actual Planned for 2006</u>	<u>Adjusted Actual 2006</u>
SH1 (South)	20	54	85	170
SH1 (North)	162	204	65	130
SH14	58	124	30	60
Total Tonnes Logged	3 mil t pa	3 mil t pa	1.5 mil t pa	3 mil t pa

The figures shown in the table above depict loaded trips per day. Those trips listed under the heading 'Prediction from 1998 for 2005' were extrapolated from the 1998 Northland Forestry Transportation Study. Those trips listed under the heading 'Prediction from 2002 for 2005, were from the 2002 report. The trips listed under the "Actual Planned for 2006" have been supplied by the forestry industry planned for 2006. The trips listed under the heading "Adjusted Actual 2006" are what might be expected if the industry reached 3 million tonnes per annum. The trips south of Whangarei have increased; this reflects the change in traffic due to the shift from Port Whangarei to Marsden Point.

The following data is for Local Authority Roads that are known to be used by logging trucks; the data is averaged over a year and is only a sample of the roads used. Often logging is over a very short period, thus the number of trips per day is much higher than reflected by the average. Smaller blocks with only one harvesting crew will on average have 10 logging trucks per day when operating. Larger blocks may have more crews and thus the number of trucks logging is double for 2 crews, trebled for 3 crews and so on.

		<u>Planned for 2006</u>
Far North District	Kohukohu Road	23
	Lovatt Road	1.3
	Mangakahia Road	-
	Mangamuka Road	26
	Matawera Road	16
	Ngapipito Road	-
	Otiria Road	-
	Pipiwai Road	-
	Te Ahu Road	-
	West Coast Road	23
Whangatane Drive	-	
Kaipara District	Murray Road	-
	Poutu Road (north)	20
	Poutu Road (south)	20
	Tangowahine Road	10
Whangarei District	Durham Road	10
	Kioreroa Road	70
	McCardle	2
	Mangakahia Road	14
	Murray Road	-
	Opouteke Road	-
	Patutahi Road	-
	Otaika Valley Road	42
	Pipiwai Road	2
	Port Road	0
	Rewa Rewa Road	25
	Saleyards Road	0
	Waiotoi Road	-
	Waipu Gorge Road	-
Whatatiri Road	-	
Wright Road	-	

The following data is for State Highways.

<u>Road Lengths</u>	<u>Trips per Day</u> <u>Sept 2002 Report</u> <u>(based on 3mil</u> <u>tonnes pa)</u>	<u>Planned trips</u> <u>2006 (based on</u> <u>1.5mil tonnes pa)</u>
Waitiki Landing – Awanui (SH1N)		
Waitiki Landing – Te Kao	32	-
Te Kao – Ngataki	51	56
Ngataki – Pukenui	51	56
Pukenui – Motutangi	51	56
Motutangi – Awanui	100	56
Awanui – Pakaraka (SH1N)		
Awanui – Kaitaia	123	38
Kaitaia – Rangitihī	44	36
Rangitihī – Mangataiōre	44	36
Mangataiōre – Mangamuka Bridge	54	36
Mangamuka Bridge – Rangiahua	54	42
Rangiahua – Okaihau	43	55
Okaihau – Pakaraka	47	55
Pakaraka – Whangarei (SH1N)		
Pakaraka – Kawakawa	72	65
Kawakawa – Hukerenui	67	65
Hukerenui – Whakapara	68	65
Whakapara – Hikurangi	68	65
Hikurangi – Kauri	68	65
Kauri – Kamo	162	65
Kamo – Horahora	68	65
Whangarei - Kaiwaka (SH1N)		
Horahora – Raumanga	76	90
Raumanga – Portland	19	90
Portland – Oakleigh	295	86
Oakleigh – Ruakaka	295	86
Ruakaka – Waipu	42	23
Waipu – Brynderwyn	42	4
Brynderwyn – Kaiwaka	42	4
Wellsford – Warkworth	42	4
Awanui – Pakaraka (SH10)		
Pakaraka – Puketona	5	2
Puketona – Matauri Bay T/O	8	2
Matauri Bay T/O – Kaeo	8	2
Kaeo – Kahoe	8	2

<u>Road Lengths</u>	<u>Trips per Day</u> <u>Sept 2002 Report</u> <u>(based on 3mil</u> <u>tonnes pa)</u>	<u>Planned trips</u> <u>2006 (based on</u> <u>1.5mil tonnes pa)</u>
Kahoe – Coopers Beach	8	16
Coopers Beach – Kaingaroa	15	16
Kaingaroa – Awanui	15	21
Dargaville – Brynderwyn (SH12)		
Dargaville – Tokatoka	6	-
Tokatoka – Ruawai	6	-
Ruawai – Matakohē	6	2
Matakohē – Paparua	6	4
Paparua – Maungaturoto	6	4
Maungaturoto – Brynderwyn	6	4
Kaikohe – Dargaville (SH12)		
Katui – Kaihu	3	3
Kaihu – Mamaranui	6	3
Mamaranui – Dargaville	18	5
Kaikohe – Taheke	6	10
Waipoua Forest – Katui	0	3
Whangarei – Dargaville (SH14)		
Whangarei – Maungatapere	19	1
Maungatapere – Tangiteroria	32	30
Tangiteroria – Tangowahine Valley Road	32	30
Tangowahine Valley Rd – Dargaville	58	30
Maungakahia – Otaika Valley Roads		
Tuatoro – Twin Bridges	39	2
Twin Bridges – Parakao	67	2
Parakao – Titoki	245	12
Titoki – Otaika	295	12
One Tree Point – Marsden Point Port	0	109

The volume used in the 2002 report was based on 3 million tonnes per year, the current volume is at 1.5 million tonnes, and thus we would expect on average a 50% reduction. Some areas have more sustainable volumes (i.e. the Far North), other areas are more susceptible to down turns (i.e. the Maungakahia area). The data provided from the forestry industry was often non specific about destinations in the Whangarei area. The data provided by the possessors or destination points was often non specific about the source. Therefore, the actual volumes on roads such as Rewarewa Rd, Portland Road, SH1N Rewarewa Road to Portland are indicative only. No volume has been assumed from forests outside the Northland Region.

4.7 Map of Logging Truck Transportation



5 Stock Trucks

5.1 Source Information

Stock Truck Effluent Disposal Study (Stage 1)	July 1997	VK Consulting
Stock Truck Effluent Disposal Study (Stage 2)	January 1998	VK Consulting
Stock Truck Effluent Disposal Study (Stage 3)	July 2000	VK Consulting

The North Island Stock Truck Effluent Strategy Study¹ confirmed the previous VK Consulting reports.

Additional information supplied by stock truck operators.

5.2 Introduction

There has been little change to the industry since the previous heavy transport report. This report identified that there are about 5500 registered beef farms within the Northland Region. Stock from these farms is taken to those abattoirs as listed below. Once processed, the frozen meat for export is then transported via road refrigerated container.

The Opus report confirmed the VK Consulting reports thus there has been no material change since the last Heavy Traffic report was written. However, deer farming has become less viable but this is unlikely to make any significant impact on truck movements.

5.3 Findings

Whilst investigating the problems related to Stock Truck Effluent Disposal, the following statistics with regard to stock truck movement in the Northland Region were highlighted:-

- Average number of stock transported per year = 1,493,100 (includes cattle, sheep, pigs, goats and deer)
- 351 trips per week were operated, with major destinations points as follows:-

AFFCO Moerewa	132
Richmond, Dargaville	124
Auckland Abattoir	51
Kaikohe Saleyards	21
Kauri Saleyards	7
Other destinations within Northland	16

Incorporated into the Stock Truck Effluent Disposal Study, was information pertaining to stock truck movement in the Northland area indicating travel patterns to and from both sale yards and abattoirs on a weekly basis.

¹ Opus International Consulting Engineers, C Davies, October 2003

As the stock trucks travelled more than one route or part thereof, it has been necessary to split the routes into sections as depicted in the Stock Truck Effluent Disposal Study in order to get an accurate count of truck trips per route.

It has been assumed that of the 76 trips per week to Whangarei, 19 trips from the North and West and 6 trips from the South would now go to AFFCO Moerewa. 31 trips from the West would now go to Richmond Dargaville. The remaining 20 trips would go to processing plant in the South e.g. Auckland and Waikato.

It must also be noted that the method of transporting processed meat from the Dargaville plant to Auckland, is done by containers on trucks at an average of 3 loads per day via B Brynderwyn.

AFFCO indicate a high of 18 stock truck movements per day between SH14 and Rewarewa Road on SH1N with more than 10 trips per day between SH1N between Pakaraka and Whangarei and on SH10 between Waikaraka and Pakaraka. However, on average there are between 1 and 4 stock truck trips per day on most parts of the Northland Road network. AFFCO send on average 6 refrigerated trips per day (with 9 between December and May) from Moerewa to Whangarei.

5.4 High Impact Areas

From the information received in the Stock Truck Effluent Disposal Study and through consultation with abattoirs, the following roads have been identified high impact areas.

<u>State Highways</u>		<u>Trips per day</u>
Stage Highway 1N	Pakaraka – Moerewa	14
	Moerewa – Whangarei	12
	Maungaturoto – Wellsford	13
State Highway 14	Dargaville – Tangiteroria	11
	Tangiteroria – Maungatapere	10
<u>Arterial Routes</u>		N/A

A stock effluent disposal site has been agreed to be constructed in Whangarei in South End Avenue, thus this is likely to impact on the volume of trucks using the associated intersections.

The significance is:-

- Cumulative effects on arterials.
- Potential conflict with other traffic on local roads, this is well managed by the community.
- Stock truck effluent spillage on road surfaces, although stock trucks must contain effluent, it is still common to see evidence of effluent on roads. Currently there is no industry managed effluent disposal sites in Northland. However, it is understood that one site is in progress in South End Avenue, Whangarei.
- The proposed Effluent Disposal facilities at Moerewa AFFCO, Kaikohe Saleyards have not progressed over the last 4 years.

5.5 Changes Since 2001

Deer farming has become less viable and therefore the market has collapsed. A stock truck effluent disposal site is under consideration in South End Avenue, Whangarei.

5.6 Route Data

<u>State Highways</u>	<u>SH</u>	<u>Trips per Day</u>
Waitiki Landing – Awanui	1N	2
Awanui – Kaitaia	1N	2
Kaitaia – Mangamuka	1N	4
Mangamuka – Okaihau	1N	4
Okaihau – Ohaeawai	1N	4
Ohaeawai – Pakaraka	1N	8
Pakaraka – Moerewa	1N	12
Moerewa – Whangarei	1N	12
Maungaturoto – Wellsford	1N	13
Kaitaia – Pakaraka	10	5
Kaikohe – Ohaeawai	12	4
Hokianga – Aranga	12	2
Aranga – Dargaville	12	5
Dargaville – Paparoa	12	9
Paparoa – Maungaturoto	12	11
Dargaville – Tangiteroria	14	11
Tangiteroria – Maungatapere	14	10
Maungatapere – Whangarei	14	9
<u>Arterials</u>		
Kaitaia via Herekino and Broadwood Mangamuka		1
Hokianga – Kaikohe		5
Dargaville – Poutu		2
Puwera – Maungakaramea		2
Maungakaramea – Taipuha		3
Taipuha – Paparoa		2
Waiotira – Maungakaramea		3
Whangarei – Puwera		6
Puwera – Maungaturoto		3

