

OH Doc No: 15

Rec'd From: Mr. Tim Chillingworth 15

Date Rec'd: 07/03/08  
4.55 p.m.

## REVIEW OF TRAFFIC SECTION OF EIS FOR FINGAL LANDFILL

- Tim Chillingworth BA.,BAI, CEng, MIEI.

24/10/06 Revised 22/2/2008

This assessment of the traffic section of the EIS was drawn up using the following sources: -

- Volume 4B of the Environmental Impact Statement Technical Appendix G.
- NRA Design manual for Roads and Bridges. Volume 6 Section 1 Part 1A NRA TA 43/3
- Dept. of finance Budget and economic Statistics
- CSO Preliminary Census 2006
- CSO Irish Bulletin of Vehicle Driver Statistics 2005
- NRA Traffic Counter Statistics.
- CSO National Income and Expenditure Figures.
- Fingal County Council
- Personnel Observation.
- An Bord Pleanála

The layout of this review is based on Volume 4B of the EIS prepared by Fingal County Council.

## Traffic Forecasts.

### The EIS depends on the following for traffic forecasts;

- 1; Initial traffic surveys undertaken on April 6th 2005. These consisted of one period of 12 hour manual counts at 7 junctions between 7:00am and 7:00pm
- 2; .The output of one ATC (Automatic Traffic Counter) on Nevitt Road over a 7 day period.
3. The traffic flows measured were converted to AADT using J. Devlin's Expansion factors for Short period traffic counts (1978).

### The future year Network Assessment.

This was calculated using the NRA traffic growth figures ( NRA Future Traffic Forecasts 2002 – 2040 August 2003.

These figures forecast a growth / annum of 3.5% for the year 2005/ 2006 on the National Primary Route, in this case the M1.

However the actual increases have been:-

(The figures have been rounded slightly for clarity to combine Car and commercial Figures)

PERIOD	ACTUAL INCREASE %	FORECAST FIGURE
2002 – 2003	30.1	4
2003 – 2004	18.3	3
2004 – 2005	4.8	3
2005 – 2006	19.5	3.5
<b>2006 – 2007</b>	<b>5.2</b>	<b>3</b>

This must call the forecast figures into serious question and while the figures for the national secondary road are not available they may show similar increases, as particularly in this area what was the NI ,R132, is now being used as an alternative route as well as a feeder onto the M1.

The background to these figures is that the NRA Traffic Forecasts for HCV's is based on GDP growth figures produced by the ESRI. However figures were only available up to 2015 and so were extrapolated beyond this date. These could be seriously wrong and if the ESRI could not forecast beyond 2015 it may suggest that it is unsafe to do so.

The NRA divided LGV's into two categories LGV's(Light) and LGV's (Heavy). The model for LGV(Heavy) gives a growth of 1.8% for every 1% growth in GDP. This model held well for the 1980s and the 1990s but projecting it forward resulted in 1 LGV(Heavy) for every 2 cars by 2040. The NRA viewed this as "completely unrealistic" and so decided to taper off the growth rate to that of the HGV figure for 2006.

This seems very arbitrary research and could be entirely wrong.

Comparison of forecasted and actual figures for vehicle registration

	2006 FORECAST	2005 ACTUAL + 2006 REGS	UNDERESTIMATE
HGV REGISTRATION	27,3643	286,547+49,986 =336,533	62,890
CAR REGISTRATION	1,661,655	1,662,200+154,477 =1,816,677	155,022

There is, in addition, an issue which is not fully addressed.

Car ownership is dependent on adult population.

The forecast figure for adult population > 19 years for 2011 by the NRA is 2,742,217. The actual figure in the 2006 census is 3,076,100, already 12% ahead of the 2011 projection! Thus there is serious under projection of vehicles.

There is a further serious anomaly in the figures. In the 2006 Census eight of the top twenty fastest growing electoral divisions are in Fingal and six of these are directly in the area of the Landfill or feed traffic into the immediate area. These are Blanchardstown, Balbriggan, Swords Lissenhall, Lusk, Dubber, Swords Forrest and Julianstown in Meath. In addition Drogheda showed significant growth.

All the above would indicate a serious under-estimation of the traffic growth to be expected.

This has now been addressed by the NDP 2007 -2013 and it would seem that the traffic figures of the EIS need to be completely re-assessed by FCC.

### Trip generation by the Landfill.

The EIS produces figures for the monthly and daily numbers of HGVs for the new Landfill (page 29 Table 4),

These are based on figures for Balleally in June 2004, and then factoring these by a figure of 3.77 for the greater capacity of the new Landfill. However the base figures used are totally incorrect if figures for April 2006 for Balleally are used instead. The comparison is shown below.

### Waste Only to Balleally

BALLEALLY			FINGAL
<b>Total for June '04</b>	<b>Daily (26 day month)</b>	<b>X 3.77</b>	
1359 trucks	52/day		197 /day
Tonnage/day @ 8.5 tonnes/truck	442 tonnes/day		1666 Tonnes/day
<b>Total for April '06</b>	<b>Daily (18day month)</b>		
1363	75/day		283/day
Tonnage/day@ 8.5/load	638 tonnes/day		2405 tonnes /day

Obviously these figures will increase if the tonnage per truck inceases.

### Cell construction.

The EIS assumes 159 deliveries /day for Cell construction and that no clay will be used for cell topping. However this takes no account of the demand for waste facilities for clay from C & D waste in the greater Dublin area.

In Balleally in April 2006 Fingal Co.Co. have confirmed by e-mail that 6694 loads of clay were delivered. This is 372 / day which is greater than the total figure projected for Fingal for waste at any time throughout the lifetime of the landfill.

If this figure were projected using the 3.77 factor there would be 1402 trucks delivering clay /day!

**Possible total variation in trucks /day in tabular form**

	<b>EIS figures</b>	<b>Using April '06 Figures for Ballealy</b>	<b>Adding in possible C &amp; D</b>
Waste Trucks	197	283	283
Clay Trucks	159	159	372
<b>Total</b>	<b>356</b>	<b>442</b>	<b>655</b>
<b>Variance from EIS</b>	<b>0</b>	<b>86</b>	<b>299</b>

**Predicted Peak Traffic Flows.**

The EIS on page 23 table 4.3 sets out the predicted traffic flows. They estimate 16 waste deliveries and 15 cell construction vehicles during the morning peak traffic times. There is no backup to explain how this figure is arrived at. However they represent 8% of the daily traffic estimate for waste and 10% of the construction traffic.

Using these percentages and the possible revised figures derived from April '06 the figures indicated would be 23 waste trucks and 140 clay trucks. This equates to 326 two way trips versus the EIS figure of 62. There is a serious difference in these figures. Further research is required of this aspect of the traffic review.

**Haulage route**

There is an assumption in the EIS that all traffic will enter and leave the landfill via the new County Road only. There is no indication on how this will be achieved or enforced. However in the oral hearing this position was modified to include waste deliveries from west of the Landfill Site. This is contrary to the turning information in the EIS and is a departure from the EIS.

There will be a natural tendency for any deliveries including construction materials coming from west of the M1 to approach from the Naul to Ballyboughall Rd using the local network which is totally unsuitable for HGV traffic. The Council themselves noted that Nevitt Rd is unsuited for HGV traffic and this road is of a higher standard than any of the other surrounding roads. There are no footpaths provided on any of the local roads. The New County Rd connects directly to and forms part of the local network. The EIS is deficient in not considering this aspect. There is also no consideration in the EIS of how deliveries arriving before site opening hours will be dealt with.

There appears to be no provision for off road parking and if so there will be the possibility of further traffic problems and danger on the road network.

### **Trip Distribution.**

The EIS assumes 100% of HGV's will use the Rowans Rd. With the revised information tabled at the oral hearing this is incorrect. An unidentified quantity of traffic will come from the West on Nevitt Rd. This is contrary to the information provided in figures 5.2, 5.3, 5.4 and 5.6.

The EIS projects 700 HGV two way trips /day( 350 trucks) to and from the Landfill. The Council have elsewhere projected a figure of 33,880 AADT for Rowans Rd in the submission for the new Courtlough Interchange, although Bord Pleanala has expressed serious reservations about this figure. Either the submission for the Courtlough Interchange, which in reality forms part of the overall area plan is wrong or the figures for the Landfill are wrong. Either way there appears to be an error.

Already there are 966 HGVs using Nevitt rd ( 55% of 1,757). This gives an anticipated 966+700 or 1666 HGVs per day using Rowans Rd. This figure will be further increased by the increase in dumping sought by Murphy Environmental. They have sought an increase from 307,000 tonnes/annum to 500,000 tonnes per annum. According to FCC this traffic will all be using Rowans Rd. The increase associated with this will be 160,000 tonnes per year or 533 tonnes per day. The planners note this as an additional 14 trucks per day. A more realistic figure is 30 loads or 60 truck movements. This gives a total of 1720 HGV movements.

Asuming a 10 hour day this equates to 172 HGVs/ hour or 3 / min. This is one heavy goods vehicle every 20secs for 10 hours per day. Adding in the figures for traffic associated with the public re-cycling centre there will be a total of 1720 + 265 vehicles or 1 every 17 secs. With no provision for pedestrians or cyclists it will be impossible to cross or travel safely on the road.

The delivery figures will be a seven day occurrence due to the numbers of private vehicles associated with the re-cycling centre where the EIS projects a figure of 530 cars on Saturdays and 288 on Sundays. There is an omission in the EIS where these figures have not been projected to take account of the increased size of the facility. If the 3.77 factor is used the car numbers would become 1998 on a Saturday and 1086 on a Sunday. There is no account taken within the EIS of these figures. It assumes a static situation. The Stated policy is to increase re-cycling but no provision has been made in the traffic figures at weekends.

These traffic figures represent a serious deterioration in the living conditions of local residents.

## **M1 Traffic figures.**

There is no traffic assessment in the EIS of the effect on the M1, the national route. This is a major omission. There appears to be an implicit assumption that once traffic is on the M1 there are no further problems.

The M1 is a national route and is classified as a class C route. This means that the AADT (Average annual daily traffic) should not be greater than 41,000. At flows greater than this the level of service begins to fall.

The 2007 figure for the AADT for Balbriggan South is 51,809, This is already far in excess of the design figures and so the route is not operating over this section as a Class C route. Even taking Class D levels of service as the benchmark the road in the immediate vicinity of the Landfill is operating above the maximum level. The NRA states that Class D traffic levels should be taken as the absolute maximum. The 2007 situation at the Airport North and Turnapin Lane is far worse where AADT figures of 77911 and 105285 already exist. There are no plans for upgrading the M1 so the situation will only worsen.

The AADT figures are the standard ways of designing and comparing roads and assessing the maintenance requirements. The peak traffic flows however give a better view of the subjective experience of driving.

In 2007, using the NRA traffic counts the southbound flow in the morning peak is 3094/hr with 5% or 154 of these being HGVs. The HGV figure could increase by 163 if the higher projected figure for clay trucks is used.

The EIS assumes that there will be an additional 31 trucks going to the Landfill at peak traffic times and that this only equates to 1.6% of the total flow and is therefore negligible. This does not take into account the fact that there are already 966 trucks increasing to 1720 with Murphy Environmentals increase using Nevitt Rd. At present these trucks mostly use the N1 and drive south and rejoin the M1 at Lissenhall. When the Nevitt Rd is closed these trucks will be forced to Rowans Rd and will join the M1 at Courtlough. Assuming the additional trucks at peak times to be 8% of the daily total as above this will generate an additional 137 trucks or a total of 291 trucks. This would be a 188% increase in HGV traffic. Obviously any increase in HGV traffic has a disproportionate effect as the trucks speed is restricted below the general speed limit. This causes ripple effects on the general flow and can be very dangerous as traffic can stop for no apparent reason. This already happens on the M1 at peak times.

## **Bremore Port.**

The following is a quote from Bremore port's website.

(Sept '07)

Transport Minister Noel Dempsey briefed the Irish Cabinet of his intention to allow Government go-ahead for the new deep water port at Bremore. An investment of approximately €210m is planned in a JV between the Drogheda Port Company and Castle Market Holdings, a private company.

Government legislation is now being prepared to allow the development to proceed, including a new Harbours' Bill as Bremore lies outside the area provided for in current legislation.

Drogheda Port Company intend to progress now with an Environmental Impact Statement(EIS).

Bremore Port will have 24 hour marine access with short sea shipping services to UK and Europe including Lo-Lo, Ro-Ro and passenger traffic.

Phase I is being planned to cater for up to 10 million tonnes of freight with approx. 350,000 TEU Lo-Lo units, 400,000 Ro-Ro units and 1 million tonnes of general cargo.

The development will provide approximately 500 metres of linear quay for cargo handling, two Ro-Ro and one high speed ferry berth for road freight, car and foot passenger traffic.

Outer Dublin Orbital Route - The construction of the Orbital Route is not expected to begin until 2012.

The route being considered begins south of Drogheda, goes west towards Navan, pass south around Trim before ending near Naas in Co Kildare.

The orbital route is estimated to cost around €2bn with likely investment under PPP (Public Private Partnership) as the road is outside of the National Development Plan.

This crucial link in the National Road Network must complement Bremore Port as it will bring substantial HGV and passenger traffic onto the M1 when Phase I is completed.

August 2005 : Meath County Council rezone 250 acres of land near Gormanston, Co Meath for Industrial use under the East Meath Development Plan.

Until the orbital route is constructed all traffic will have to use the M1 and local roads. This must be assessed in the applicants EIS. The whole omission of the M1 and Bremore calls the EIS into question. There is a need in major infrastructural schemes to consider the cumulative effect of all proposals in an area and this has not been done.



## Other aspects arising from the Traffic Analysis

### a. Noise.

The background noise figures were assessed at 4 locations. The results of these seem surprisingly high. However, readings were only taken for 15 minutes and were noted to be resulting from traffic noise. The level is misleading as the existing traffic densities are low except on the Nevitt Road and so there will be long periods when the only background noise is from animals. It would be more representative to take data over a longer period. The additional noise will all be generated by traffic and construction plant and therefore if the increase in traffic has been underestimated so too will be the noise generation figures.

There are no noise mitigation measures proposed for those affected by the increased traffic on the public road network.

### b. Emissions

The same argument applies to emissions which while they have been assessed and found to be within acceptable levels will have been underestimated if the traffic figures are incorrect.

For inspection purposes only  
Consent of copyright owner required for any other use

## SUMMARY

### 1. General

The Traffic Section of the EIS considers the impact of the proposed Landfill on the road network in the immediate area of the Landfill and in particular of the capacity of 5 junctions close to the site.

Junction Capacity Analysis

**420 pages** out of a total of **470 pages** of the appendix consist of input and output data from the Arcady and Picardy roundabout and junction analysis software. The document is really 50 pages with 420 pages of one appendix.

### 2. Junction Analysis

The junction analysis show that the junctions have capacity for the proposed additional traffic. Without access to the software it is impossible to assess the results.

As part of the junction capacity study one of the conditions analysed is the situation when the planned work on the Courtlough Interchange is completed. In the planning application for the Courtlough Interchange FCC estimate an AADT of 33,800veh/day on the Rowans Road. This figure is not used in the EIS "do something" analysis. The current AADT figure from the EIS is 1476 and the figure suggested by the Council in this hearing for the design year of the Landfill is 4000. These figures are not compatible. No explanation is given of this discrepancy.

### 3. M1

There is no assessment of the effect on the M1, the National Primary Route, and the planned sole route for waste and construction traffic. The EIS only assesses the junction capacity which while being the normal procedure does not confront the issue of lane capacity on the motorway. The M1 is already seriously over capacity

### 4. Local Road network

There is no assessment of the possible effects on the local road network. There is no proposal for the prevention of landfill traffic using the local road network. The Council notes that A1 Tipper Hire landfill and Murphys landfill are running down and nearing the end of their lives. In fact both have been granted increased capacity by FCC with subsequent traffic effects.

### 5. Clay Deliveries

The report states that no deliveries will take place for landfill capping as there will be sufficient matter stockpiled on site for this purpose. This takes no account of the demand for landfill from C & D waste which presently is used for capping.

## **6. Accident Data.**

The figures are noted as not including "material damage only" accidents or obviously non reported accidents. The figures are therefore inaccurate as from personal experience the bulk of accidents on the local roads are either single vehicle "damage only" accidents or incidents where the responsibility is shared due to the acceptance by drivers that the roads are inadequate and that collision could not be avoided.

## **7. Trip Generation**

Depending on the month used for the baseline figure from Balleally there is a substantial possible variation in trips.

## **8. Traffic Forecasts**

While the forecasts were based on NRA figures these have proved to be an underestimate and the traffic forecast needs to be revisited.

## **Questions raised by the review**

1. Why is there such a big variance in the Rowan's Rd AADT?
2. How is use of local roads to be prevented?
3. Will C & D waste be barred from the Landfill? If not the traffic figures are seriously wrong.
4. What noise and emission mitigation measures are proposed for houses on the existing public approach roads?
5. Can the Council give examples of Community Gain?
6. Why was Bremore Port not considered. (This was first mooted in 1990 in a report on infrastructure by the ESB/ ESBI. And then resurrected in 2005/06)
7. What assumption is made in para 1.5.5 regarding the mode of transport to school. It states an increase of 5 mins via the the County road. If this is by car it is at variance with government policy. To walk would be approx 30mins.
8. Why was the Tesco National Distribution Centre not taken into account?

For inspection purposes only.  
Consent of copyright owner required for any other use.