



**METRO NORTH
ORAL HEARING
PROOF OF EVIDENCE
Con Curtin
Agronomy
Thursday 9th April 2009**



Metro North Oral Hearing

Proof of Evidence

Agronomy

Con Curtin

1.0 NAME, QUALIFICATIONS AND ROLE IN PROJECT

1.1 My name is Con Curtin. I have an Honours Bachelors Degree in Agricultural Science from University College Dublin. My role in the Metro North project is to assess the impact of the proposed scheme on agriculture. I have been involved in the project since 2006.

2.0 EXPERIENCE

2.1 Since 1998 I have worked on Environmental Impact Assessments for the following road schemes; N25 Waterford Bypass, N25 New Ross Bypass, N7 Castletown to Nenagh, N6 Galway City Outer Bypass, N24 Cahir to Clonmel, and N59 Moycullen Bypass. I am currently working on Environmental Impact Assessments for N22 Macroom to Ballyvourney, N14 Lifford to Manorcunningham, M4 Mullingar to Longford, M20 Patrickswell to Blarney and N15 Sligo to County Boundary. I have completed route selection reports for the following road schemes; N25 Dungarvan Bypass, N22 Killarney to Farranfore, N77 Kilkenny to Ballyraggett and N25 Glenmore to Slieverue road schemes.

3.0 GENERAL INTRODUCTION

3.1 Metro North linking Dublin City Centre to Dublin Airport and the north of Swords is a central part of Transport 21. The proposed scheme impacts on agricultural land and therefore an assessment was carried out to describe the existing agricultural environment, identify the potential significant agricultural impacts of Metro North and propose mitigation.

3.2 The assessment methodology involved:

- A desktop review of Fingal County Development Plan 2005 – 2011, Dublin City Development Plan 2005 – 2011, North Ballymun Local Area Plan (LAP) and Dublin Airport LAP
- Review of existing data resources including data from the Central Statistics Office (CSO), aerial photography and soil maps
- Review of land registry maps
- Field surveys
- Land owner interviews

4.0 RECEIVING ENVIRONMENT

- 4.1 Metro North impacts directly on 9 farms comprising of 351 hectares of land which is defined as the agricultural study area. These farms are shown in volume 3, book 1 of 2 of the EIS.
- 4.2 At the northern end of the proposed scheme in Lissenhall around the site of the proposed depot, 4 farms are affected comprising of 192 hectares of land. Further south along the scheme in Nevinstown West and Fosterstown South, two farms are affected comprising of 49 hectares. Before the proposed scheme goes underground north of Dublin Airport a land parcel belonging to Dublin Airport which comprises of 9 hectares is affected. North of Ballymun and south of Dublin Airport, Metro North affects one farm comprising of 81 hectares. Further south along the scheme in Albert College Park a farm is affected, which comprises of 20 hectares. Indirect impacts on agriculture out side of the study area have been assessed to be not significant.
- 4.3 The average size of farms affected by Metro North is approximately 64 hectares. This is significantly larger than the 42 hectare average size of farms in County Dublin. The soils in the study area are generally very good quality.
- 4.4 In the study area 45% of farms are mainly tillage, 22% of farms are mainly non dairy livestock, 22% are mainly horticultural (vegetable and glass houses) and 11% are mixed enterprise farms (livestock and tillage).
- 4.5 A functional value has been assigned to each farm. This value describes a farm in terms of its importance and sensitivity to potential impacts and takes into account, if there are existing adverse effects in the environment that might affect a farm. For example, a farm with an intensive enterprise located on very good quality land with high yield potential will have a higher functional value than a farm which is not used intensively and located on poor soil. Also a farm which is zoned for housing or industrial use will have a lower functional value because the farm will not remain in agricultural use and therefore the zoning status is an adverse effect. 74% of land in the study area has a high functional value, 23.5% has a medium functional value and 2.5% has a very low functional value. In general, farms in the study area have a high

functional value reflecting that soil quality is good and that farms are large and are farmed intensively.

Characteristics of the Proposal with Respect to Agronomy

4.6 Metro North is a proposed rail-based, public transport system comprising of a combination of tunnel, retained cut, at-grade and elevated rail tracks and station stops, car parks and depot buildings. The scheme impacts on agriculture only where it is located over ground on agricultural land or where it is in open cut through agricultural land.

5.0 POTENTIAL IMPACTS OF PROPOSAL

5.1 The main potential types of impacts to agricultural enterprises during the construction and operational phases of the proposed scheme are described under three headings: land loss, severance and disturbance.

Land loss

5.2 Any reduction in land area can potentially reduce the viability and productivity of farms within the study area. The land take required will result in the loss of farm yards, buildings and access roads. The level to which land take affects the viability of an individual farm is not solely dependent on the amount of land removed, but is also dependent on factors such as quality of the land taken, total area of the holding, type of enterprise and whether the land take results in severance or permanent reduction and damage of land access, farm structures or water sources. Land will be required temporarily during the construction phase for construction compounds. Therefore the land loss impacts will be higher during the construction phase.

Severance

5.3 Increasing the segmentation of a farm can potentially increase the long-term fixed and variable costs associated with running the farm and therefore can potentially reduce the viability of farms.

Disturbance

5.4 The day-to-day operation of farms in the study area may be disrupted due to increased levels of construction traffic in the local road network and possible traffic diversions. Changes in the traffic regime can also be

expected to occur during the operational phase. Water and electricity supplies may also be temporarily disrupted. Increased levels of noise and dust may occur as a result of construction traffic and excavation works. Sudden noise sources associated with construction can cause farm animals to take flight and possibly harm themselves or other farm animals. Land drainage systems can be blocked on a temporary basis. However, implementation of the mitigation measures set out in the EIS will minimise the potential for such disturbance.

Assessment of significant impacts

5.5 Potential significant impacts are assessed in terms of their magnitude and significance. The magnitude of the impact takes into account the type and range of impact that will occur as well as the duration over which the impact will occur. The criteria for assessment of impact magnitude are:

- % of farm which is taken for the scheme
- quality of land lost to the scheme
- % of farm which is severed
- Quality of land severed
- impact on water sources or other farm facilities

5.6 The level of magnitude is categorised as being very low, low, medium, high or very high depending on the magnitude of above criteria. The significance of the impact is defined by evaluating the magnitude of the impact while considering the functional value of the target of the impact. The targets of the impact in this assessment are the individual farms directly affected by the scheme. Therefore an impact which affects a farm with a low functional value will not be as significant as a similar impact which affects a farm with a high functional value. The level of significance is categorised as being very low, low, medium, high and very high. The magnitude and significance of the identified potential impacts are assessed before and after mitigation.

5.7 Before mitigation 6 farms (farms 1, 2, 3, 5, 7 & 8 - 57% of the study area) are predicted to have very high impacts. These very high impacts are due

mainly to the high percentage land takes on these farms which range from 13 – 88 % and the high severance impacts which range from medium to very high. One farm is predicted to have a high impact before mitigation (farm 6 – 13.4% of the study area) due to 19% of the land being severed. One farm is predicted to have a medium impact (farm 4 - 24% of the study area). This medium impact is due to the severance impact. One farm (5.5% of the study area) is predicted to have a low impact due to low percentage land take.

- 5.8 Since the publication of the EIS RPA has made a number of changes to the Railway Order. Having reviewed all of these changes I can confirm that the changes have no significant impact on agriculture.

6.0 REMEDIAL OR MITIGATION MEASURES

6.1 Mitigation measures for the land loss impact are as follows:

- a) Minimise the land take requirements so that only lands required for the proposed development are taken.
- b) Works will not be carried out on lands outside the areas encompassed by the Compulsory Purchase Order (CPO).
- c) Land taken on a temporary basis during the construction phase will be reinstated by agreement with the land owner and returned to the relevant land owners.

6.2 Mitigation measures for the severance impact are as follows:

- a) All severed land parcels will be accessible either via the local road network or via accommodation access roads provided as part of the overall scheme.
- b) Where existing water and electricity supplies to fields or farm yards are severed, the supply will be reinstated by provision of ducting where possible. Alternatively, where ducting is not feasible an alternative water source or electricity supply will be made available. If an alternative water source is not available, the farmer will drill a well on his own land.
- c) Land owners can build additional farm facilities (eg cattle retaining and testing pens) on their severed land where necessary.

6.3 Mitigation measures for the impact from disturbance are as follows:

- a) The contractor will liaise with land owners prior to the finalization of the design of the scheme. Any issues predicted to occur as a result of disturbance caused during the construction works will be addressed as part of ongoing consultation with the land owners.
- b) A key contact will be appointed by the contractor during the construction phase to facilitate communications between affected landowners and the contractor. Good communication with farmers will facilitate the organisation of farm enterprises by farmers, so that vulnerable stock are kept as far away as possible from the construction work during critical times. Liaison between the contractor and farmers during the works will also minimise difficulties caused by the restriction of access to severed land parcels.
- c) Boundary fencing will be erected to delineate the site boundary and prevent disturbance to adjacent land.
- d) The land owner will be provided with access to all severed land during the construction of the scheme where this is possible. Where this access is temporarily disrupted the land owner will be notified in advance. If the land owner can not access his severed land because of works being carried out for the development, temporary gates across fenced areas will be provided.
- e) Disrupted electricity and water supplies shall be restored as soon as possible. The contractor shall minimize impacts on water quality. This shall be done by way of a programme of mitigation measures for surface water sources as described in section 11.4.2.1 of Chapter 11 (Surface Water).
- f) The contractor shall minimise impacts on agricultural land due to construction noise. This shall be done by way of a programme of mitigation measures for noise control as described in section 4.4.2.1 of Chapter 4 (Noise) and section 5.4.2.1 of Chapter 5 (Vibration). The contractor will notify all land owners in advance if particularly noisy activities are to be carried out and are likely cause impulsive, loud noises. It may be necessary to house animals in this situation or move to a suitably quiet, well fenced part of the farm. A land owner may wish to remove sensitive stock (e.g. mares in foal to high valued sires) outside the affected area.

- g) The contractor will employ measures to prevent the spread of dust and mud onto adjoining lands. These measures are set out in section 12.4.2.1 of Chapter 12 (Air and Climatic Factors). Typically and having considered the air quality assessment, the impact of dust on agricultural grazing livestock is not significant.
- h) If soil disturbance occurs, the contractor shall ensure that all top soil is reinstated to facilitate successful crop establishment. Reinstatement shall ensure that the land is level, adequately drained and shall not contain stones or gravel or other materials imported onto the site for the construction of the scheme. The agronomy assessment assumes that it will take some years for this land to reach its production potential. It is also assumed that this production potential will be permanently lower than its original state due to compaction and disturbance of soil.
- i) The drainage design of the proposed scheme will intersect any existing field drains and carry the drainage water to a suitable outfall.

6.4 Some of the lands may not be retained in agricultural use subsequent to the development of the scheme. In these areas mitigation measures listed above may not be carried out in agreement with land owners.

7.0 PREDICTED CONSTRUCTION AND RESIDUAL IMPACTS

7.1 Predicted Residual Impacts:

- Three farms (30.5% of the study area) will have a very high magnitude of impact from Metro North and the impact on these five farms is categorised as being of high significance because the functionality of these farms is categorised as high. The impact of land loss cannot be mitigated and therefore the magnitude of residual impact is high because of the very high percentage land loss which is 30%, 41% and 43% in farm reference numbers 1, 2 and 3. In addition to this there is a medium residual severance impact on farm reference 3.
- Two farms (23.5% of the study area) will have a very high magnitude of impact and the impact on these farms is categorised as being of high significance and the functionality of these farms is categorised as medium. The impact of land loss cannot be mitigated and the magnitude

of land take impact is very high particularly with farm reference 5. In farm reference number 8 there is a very high land take and severance impact. The functionality of these farms is categorised as medium due to their zoning status which indicates that they will be developed for non agricultural purposes.

- One farm (2.5% of the study area) will have an overall very high magnitude of impact and the impact on this farm is categorised as being of low significance because the functionality of this farm is categorised as very low. The impact is categorised as being of low significance because the level of agricultural activity is very low on farm reference 7 due to proximity to Dublin Airport and poor soil quality.
- Two farms (37.5% of the study area) will have an overall medium magnitude of impact and the impact on these farms is categorised as being of medium significance because the functionality of these farms is categorised as high. Farm reference 4 has a low land take impact and a medium residual impact. The medium residual impact from severance is medium despite 45% of the land being severed because there is direct access across the railway and there is existing severance in the affected land parcel. Farm reference 6 has a medium land take impact, as part of the proposed scheme design an underbridge is provided resulting in a medium severance impact.
- One farm (5.5% of the total farmed area in the study area) will have a low magnitude of impact and the impact on this farm is categorised as being of low significance because the functionality of this farm is categorised as high. The impact on farm reference 9 is of low significance due to the low permanent land take (9%)

7.2 The construction impacts are higher due to disturbance from construction traffic and additional temporary land take

8.0 CONCLUSION

Metro North will have a significant impact on farms directly affected by the scheme. However the impacts of land loss, severance and disturbance are not significant on a regional or national level.

8.1 List of Errata

Volume 2, Book 1 of 7 - Table 14.3 page 334; column 1, last row – should read “(see notes 1 – 5 below)”.

Volume 2, Book 3 of 7 - Table 14.3 page 198; column 3, row 14 should read; “very high construction phase land take impact and high construction phase severance impact. High residual impact from land loss and severance.”

Volume 2, Book 3 of 7 - Table 14.3 page 198; column 3, row 15 & 16 – should read; “High”.

Volume 2, Book 3 of 7 - Table 14.3 page 198; column 3, row 16 – should read; “High”.

Railway Procurement Agency
Ghníomhaireacht um Fháil Iamróid
Parkgate Business Centre,
Parkgate Street, Dublin 8, Ireland
Phone +353 1 646 3400
Fax +353 1 646 3401
www.rpa.ie

Responsible for

LUAS METRO

Integrated
Ticketing
System

With funding and
support from

transport21
progress in motion

