

Sustainable Development Evaluation of Road Infrastructure Programmes and Projects

Section 1.

Evaluating the Social and Community Impacts of the Outer Ring Road: An Examination of the EIS Report and additional documents.

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The Foundation for the Economics of Sustainability

Cad a dhéanfaimid feasta gan adhmaid? Tá deireadh na gcoillte ar lár
'What will we do in the future without wood? The end of the forests has come'

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SOCIO ECONOMICS

The Socio Economics Section of the Environmental RTDI Programme addresses the need for research in Ireland to inform policymakers and other stakeholders on a range of questions in this area. The reports in this series are intended as contributions to the necessary debate on Socio Economics and the environment.

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Abstract: This report reviews the “Community Effects” section of the ORR EIS – Adamstown Roundabout to N4 Road Scheme and various support documents. The report concludes that the consultant’s methodology is not clearly specified and overly subjective. The report also discusses types of Community Effects not included in either this or the UK Department of Transport’s ‘Design Manual for Roads and Bridges Volume 11’ and recommends that such factors be considered when attempting to properly assess a road scheme’s impact on a local community.

Items reviewed include:

#1: Integrated Framework for Land-Use and Transportation in the Lucan/Condalkin Area, Final Report, March 2003

#2: Adamstown Strategic Development Zone Planning Scheme, December 2002, SDCC Planning Department by Kieran Kennedy, Director of Planning.

#3:

South Dublin County Council

Outer Ring Road

Adamstown Roundabout to N4 Scheme

Environmental Impact Statement

Volume 2 – Main Text including Non-Technical Summary

#4: Site visit and conversations with residents

#5 An Bord Pleanála's Decision on Adamstown Roundabout to N4 Road Scheme. June 24, 2004.

#6 Environmental Assessment Advice Note from the UK Department of Transport Publication Design Manual for Roads and Bridges Volume 11 (DMRB et. al. UK (August 1994)). Parts of this document were used to create this EIS.

Community Effects: Key Conclusions & Recommendations

- 1. The main problem with the EIS “community effects” section is that its conclusions are – on the whole -- subjective and speculative. Much of the research presented on community effects appears to be based upon opinion and not science. Even the methodology outlined by the “Environmental Assessment Advice Note from the UK Department of Transport Publication Design Manual for Roads and Bridges Volume 11” is inadequately followed.**
- 2. More scientifically-based research on likely “community effects” should be conducted. Data and conclusions on the community effects experienced by similar road schemes in other communities (in and outside Ireland) should be collected, analyzed, and consulted.** There is plenty of research on the proper ways to build roads; we also ought to be conducting and consulting research on the effects that such roads have on people and their communities.
- 3. In general the criteria used in the EIS to assess community effects are too narrowly focused. Issues such as how the road scheme will affect health, social capital, and many other factors important to communities are not considered. More community effects should be included in future EIS reports. Reform of the EIS process is recommended.**
- 4. Proper transportation planning cannot be divorced from land-use planning. The two go together like hand in glove. Future land-use planning and transportation efforts should require joint consultation. American-style Euclidean zoning is unsustainable and should be avoided. The planning of mixed-use pedestrian-oriented communities should be encouraged if not required. Dependence on the automobile for transit should be avoided.**
- 5. Serious, innovative, inclusionary efforts designed to involve local residents in decisions that affect their communities should be undertaken. Innovative use of planning charrettes and other community-based planning efforts should be utilized.**
- 6. Consultants and inspectors should be required to assess a broader range of community effects than those outlined in existing documents. The criteria used to assess the likely effects of a road scheme on a local community should be clearly specified.**

Part I Evaluating the Social and Community Impacts of the Outer Ring Road

Section I: Brief Overview of the ORR Scheme and its Justification

Below is the description of the project from Volume 2 of the South Dublin County Council Outer Ring Road Document (#3 above). The document states that the proposed ORR is of vital importance to the economic and social development of the South Dublin County region and the local communities of Lucan/Clondalkin. The report also notes that the scheme is an important step in the creation of dramatically improved regional bus service and improved traffic management. According to the EIS:

The proposed Adamstown Roundabout to N4 Scheme will include improvements and widening of the existing section of the ORR comprising Ballyowen Road (from the N4 to Balgaddy Roundabout) to a single carriageway road with dedicated bus priority lanes.

Existing roundabout junctions at Balgaddy, Pennyhill and Ballyowen are to be upgraded to traffic signal controlled junctions including controlled pedestrian and cycle crossings, while junction modifications and a new pedestrian/cycle bridge are proposed at the N4 Ballydowd

Interchange as depicted in Figure 6.1. A new section of road of a similar profile (single carriageway plus dedicated bus lanes) is proposed to be constructed on greenfield land to join Balgaddy Junction to the Adamstown Roundabout and the ORR N7 to Adamstown Roundabout Scheme currently under construction, and ultimately to the N81 further south as part of the proposed ORR N7 to N81 Scheme. A Link Road is also proposed to connect the ORR at Adamstown Roundabout to the Fonthill Road at Ronanstown. Dedicated bus priority and cycle routes and improved pedestrian facilities will be provided throughout the proposed Scheme. A 3 tonne weight restriction will be placed on HGVs (except for service vehicles and buses) between Balgaddy Roundabout and the N4. The traffic impact assessment for the scheme is outlined in Section 5 of the EIS and predictions contained therein have been used in compiling this report.

The EIS justifies the construction of the ORR as being in line with national and regional objectives/legislation and necessary for the improvement of the quality of life and travel for local residents. Under section NTS2: Need for the Scheme, the EIS notes:

The completion of the ORR in its entirety from the N81 Tallaght Bypass to the N4 is considered by SDCC to be vital to meeting the ongoing transport needs of the local area.

The ORR will particularly provide for orbital trips between the regional South Dublin towns of Lucan, Clondalkin and Tallaght, as well as linking residential and industrial/business areas in the vicinity of the road corridor. The road scheme will therefore act as a 'District Distributor Road', as defined by the Traffic Management Guidelines, 2003. The ORR is a strategic objective of the Dublin Transportation Office (DTO) 'Platform for Change Strategy (2000-2016)' and an integral component of the South Dublin County Development Plan, 1998. (p. 9)

One of the main arguments in favor of the ORR is that it will enable and facilitate new residential and commercial development and provide linkages between Lucan, Clondalkin and Tallaght within the South Dublin County Area. In addition the ORR will help provide orbital transit by bus which is currently lacking. As the document notes:

West County Dublin, and in particular the Lucan/Clondalkin area has experienced significant growth in the last five years, with new housing units being developed in response to increasing housing demand in the local and Greater Dublin Area. This level of growth is expected to continue with the development of the Adamstown Strategic Development Zone (SDZ) Lands and the continued development of Grange Castle International Business Park. The 1998 South Dublin County Development Plan is currently under review, with a new Draft Plan scheduled for publication later this year. It is anticipated that the new Development Plan will continue to facilitate the expansion of development in the Lucan/Clondalkin area. In order to meet the servicing of existing and planned future development lands in the area, SDCC have developed an 'Integrated Framework Plan for Land Use and Transportation' (IFPLUT). This plan looks at the extent and nature of existing and future development of the Lucan/Clondalkin Area together with transport servicing needs. The completion of the ORR also forms an integral part of the recommendations of the IFPLUT. The Development Plan seeks to promote social and employment links between the principal towns of Lucan, Clondalkin and Tallaght within the South Dublin County Area. The creation of additional orbital transport links between these centres is vital to meeting this objective. The ORR has been identified as a vital strategic element of this strategy, while also directly servicing residential and employment areas immediately adjacent to the route. The ORR is also promoted as a transport corridor within the DTO Transport Strategy and is identified as an Orbital Bus Priority Route. The creation of new orbital transport routes within the Greater Dublin Area is an important element of the overall transportation strategy, particularly in the short to medium term, aimed at linking local centres of population and employment and relieving pressure on the existing road network. (p. 10)

The EIS also notes:

The development of the ORR as a transport corridor, with the provision of dedicated bus lanes and cycle/pedestrian facilities...The route of the ORR is seen as an important transport corridor under the DTO Dublin Transport Strategy, 'Platform for Change

(2000-2016)'. The scheme is intended to cater for local orbital trips connecting residential areas with places of work, and further improving local links between the West County Dublin towns of Lucan, Clondalkin and Tallaght. Under the DTO Transport Strategy, the ORR is considered to be an integral part of an integrated transport strategy for Dublin. Other elements of the strategy, including LUAS, Metro and further bus infrastructure and service provision, which form part of Government Policy, is assumed to be progressed. In the absence of these public transport initiatives, the ORR and other sections of the local road network have a finite capacity only, and the level of local development would be therefore constrained.(p.15)

Section II: Social and Community Impacts

One of the main themes of the ORR Adamstown Roundabout to N4 Scheme Environmental Impact Statement is that development (both residential and commercial) is scheduled to continue in the area around Lucan and if nothing is done traffic delays will become even worse than they are currently. Throughout the entire EIS claims are made repeatedly that completing the ORR road between the Adamstown Roundabout and the N4 will provide better bus service and to a lesser extent improved movement for pedestrians and cyclists. There is also the promise of improved METRO rail service, a new rail station at Adamstown, and possibly a new LUAS line.

This analysis will examine the Community and Social components of the EIS on two levels. The first is an analysis of what the report actually focuses upon, in other words, the criteria used by EIS consultants to examine the community impacts of the scheme. The second part of the analysis will focus upon what is missing from the report, namely good social science and a fundamental understanding of how car-dependency affects the health of communities and the people that live in them.

Section II, Part 1: A Critique of the Community and Social Analysis and Methodology Contained in the EIS Report.

Background: Two Preliminary Comments

Comment 1: Will the Scheme Actually Improve Travel Times by Private Vehicle?

It is not the purpose of this section of this report to examine the traffic analysis of the EIS. However, since the reduction of traffic and congestion appears to be a major component of the justification for the ORR it is worth commenting on it briefly especially to the degree it affects the community. As we know, wide roads, higher vehicle speeds, and infrequent pedestrian crossways work together to negatively impact the walkability, connectivity, and accessibility of a community. Since road design can have profound effects on a local community it is important to examine the degree to which travel (in this case by private vehicle) will actually be improved by the scheme.

Most of the modeling presented in the ORR EIS focuses upon traffic and congestion and compares two scenarios. These are presented below:

□ **Do-Minimum** – This option would see local improvements to the existing ORR Balgaddy to N4 to Lucan Road, with existing junctions remaining as roundabouts. Other committed infrastructure projects, as planned in the DTO “Platform for Change Strategy”, including the LUAS, METRO, Bus Priority Schemes, the completion of the ORR from the N81 to Adamstown Roundabout, the N4 Upgrade and the M50 widening are progressed. These transport infrastructure improvements are implemented within the timescales outlined in the DTO Strategy.

□ **Do-Something** – This option is the same as the Do-Minimum but with the provision of the proposed ORR Adamstown Roundabout to N4 Scheme (i.e. an assessment with and without the scheme).

Given the effect that the ORR is likely to have on the existing community (to be discussed below) the benefits of the ORR on traffic and congestion appear to be minimal. For example, using a traffic model the EIS report concludes that the Do-Something scenario will improve journey times by private vehicle *only slightly and maybe not at all*. As stated:

5.8.4 Effect on Congestion

The completion of the proposed scheme will have a positive effect on the local road network, with a resulting overall improvement in journey times and speed within the LAM zone. Table 5.5 presents a comparison of average traffic speeds on the local road network in the AM-Peak period for the Do-Minimum and Do-Something scenarios.

Traffic speeds for the Do-Minimum increase from 35.6 kph in 2004 to 44.4 kph in 2019, an increase of 24.7% in the AM-Peak, as a result of the implementation of the planned DTO

Transport Strategy. The introduction of the proposed scheme further improves traffic speeds across the local network, with an average speed of 36 kph in 2004 and 45.9 kph in 2019. The proposed scheme therefore has an overall positive benefit on traffic speeds and journey times on the local road network. (Emphasis added).

This means that if the Do-Minimum approach is adopted traffic speeds will improve by 8.8 kph from 2004 to 2019 whereas with the Do-Something approach traffic speeds will increase by 9.9 kph. That is a 1.1 kph difference for a very expensive road upgrade. It should also be noted that these numbers are estimates that have ranges of error. No range of error is provided in the EIS. Nor are we told the reliability of these estimates. If provided the ranges of error would probably indicate that there is no statistical difference in the Do-Minimum and Do-Something estimates of traffic speeds and journey times.

The EIS is also very clear in stating that there will be new residential and commercial development in the area but suggests that traffic increases will be “minimized” because:

The introduction of constraints on the section of the ORR scheme between Adamstown Roundabout and the N4/Lucan Road, in terms of the provision of only a single carriageway, with signal controlled junctions, speed and vehicular weight restrictions, minimises the predicted increase in through traffic volumes as a result of the proposed scheme on the existing ORR Section. Traffic volumes on the ORR immediately south of the N4 reduce significantly between the Do-Minimum and Do-Something scenarios. This is as a result of the ORR link to the south and from ORR Adamstown Roundabout to the east providing more route choice, other than having to access the N4 via Ballyowen Road. Further south on the scheme minor reductions in traffic volumes occur between the 2019 Do-Minimum and Do-Something on the link between Penny Hill and Ballyowen.

Of course this is speculative in many regards. The fact is traffic will probably increase in the area if for no other reason than planned residential and commercial growth and the delays around the provision of adequate rail service.

Conclusion: The analysis presented in the ORR EIS does not make the most basic case that traffic times by private vehicle will be significantly reduced if the scheme goes forward.

Comment2: Will the Proposed Scheme Actually Increase Walking, Cycling, and Transit by Bus?

The EIS also hypothesizes that the completed ORR scheme will have positive impacts on public transit, cyclists, and pedestrians. Conclusions are cited below:

5.8.5 Scheme Impact on Public Transport

The proposed scheme is considered to have an overall positive impact on public transport in the local area. As a transport corridor, with the provision of dedicated bus lanes and bus priority, the proposed scheme will eventually form part of an 'Orbital Quality Bus Corridor' linking the N4 to the N7 and the N81. The route will provide improved public transport service and links between local residential areas and employment centres, such as Grange Castle International Business Park and City West. Similarly the scheme will improve public transport bus links between Lucan, Clondalkin and Tallaght generally.

The ORR Orbital OBC Route, forms an integral part of the proposed Dublin Quality Bus Network, scheduled for completion by 2006. The ORR Orbital QBC route intersects existing or proposed radial QBC routes on the N4, Nangor Road, the N7 and N81.

The proposed scheme is also consistent with and integral to the local area public transport recommendations of the Lucan/Clondalkin IFPLUT.

5.8.6 Scheme Impact on Cyclists and Pedestrians

The proposed scheme includes for the provision of segregated off-road cycle tracks and pedestrian footpaths along its length. The scheme opens up a strategic north-south cycle route south of Balgaddy, together with pedestrian linkage. The scheme also provides further cycle and pedestrian linkage to the Fonthill Road to the east and forms part of a planned integrated cycle network for the area. The

scheme provides for signal-controlled crossings for cyclists and pedestrians at junctions along its route. This is considered to be a positive impact and an improvement on the existing situation where no such crossing facilities exist.

No empirical research is presented on current public transit usage, or the number of cyclists and pedestrians currently using the existing road network in the Lucan/Clondalkin area. The arguments above about bus rider-ship, cycling, and walking, are not based upon empirically grounded research of residents and their actual or likely use of buses, footpaths, or cycling tracks (either currently or in the future). No surveys using scientific sampling were collected or analyzed. Nor is any data provided from Ireland or any other country examining how a similar change in infrastructure in a similar location changed travel behavior by bus, cycle or foot. For example, what empirical evidence can be provided concerning cycle or pedestrian usage along a road similar to the one being proposed and located in a similar car-dependent community? What sort of pedestrian and cycle usage is occurring along the parts of the ORR that have been built already? What has been the reaction of pedestrians and cyclists to signalized crossings at roundabouts similar to those proposed here? What evidence is there that the proposed cycle and pedestrian bridge over the N4 will be used?

Instead the EIS makes a “build it and they will come” claim. Bus, cycle and pedestrian activities will all increase because there will be footpaths, bike lanes, and an Orbital route (at least to Tallaght.) However, it is clear from the EIS that its authors are painfully aware that there are many factors affecting decisions to bus, walk or ride a cycle other than simply making the infrastructure available.

For example, all of the following are alluded to in the EIS as being important for walking and cycling:

Traffic Speeds

Travel Distances (especially if residents are forced to follow the roads which often provide longer circuitous routes.)

Connectivity

Lighting

Real or perceived feelings of safety

Aesthetics and comfort of surroundings

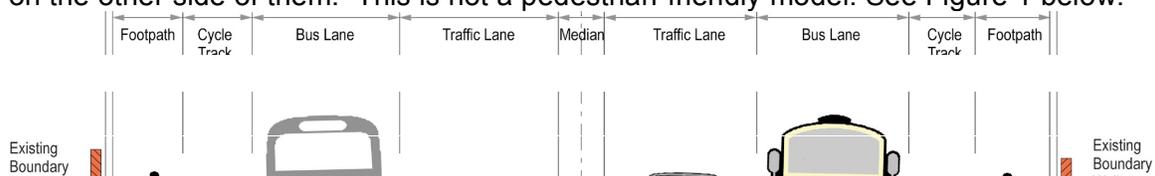
Height of walls

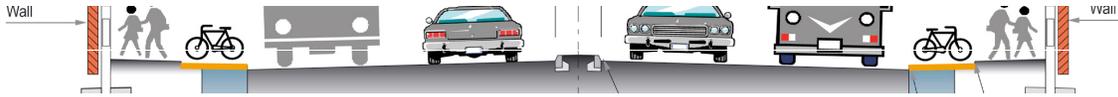
Number and quality of signalised pedestrian/cyclist crossings

Ease of crossing roads (where no formal crossings exist)

Space or barriers between vehicular traffic and walkers and cyclists

This last item is likely to be reduced in many sections of the ORR because the existing through way is not wide enough and is literally fenced in by existing housing estates. Indeed the model presented in Figure 6 of the EIS as a Typical Cross Section illustrated that many pedestrians will be forced to walk very close to the road with a wall or fence on the other side of them. This is not a pedestrian-friendly model. See Figure 1 below:





Conclusion: The EIS does not provide scientific evidence that the completed ORR scheme will have positive impacts on public transit, cyclists, and pedestrians. The analysis provided is largely speculative and subjective.

Focusing on the Community Effects Section of the EIS. How the EIS determines Community and Socio-Economic Effects of the Proposed Adamstown roundabout to N4 Scheme.

Definitions:

..The objective of the Socio-Economic Study is to identify, describe and assess the impact of the proposed Scheme on the social and economic functioning of the community. (P. 87)

There are several major avenues of analysis presented in the Community Effects section of the EIS report. These appear to be divided along REGIONAL and LOCAL community effects.

Examined *Regional Community Effects* include:

Regional Connectivity. The scheme is proposed to enhance connectivity between communities located south of Adamstown Roundabout (i.e. Tallaght, west Clondalkin) with those along and to the north of Ballyowen Road (including Lucan Esker) and similarly with those to the east along the Fonthill Road (Rowlagh).

Regional Economic Development: At a regional level, the proposed Scheme is proposed to “provide a considerable positive stimulus both to commercial activity and employment, and will be of potential benefit to the wider community.” The completion of the ORR will also enable the construction of more housing estates and the proposed development of large residential and commercial/industrial developments such as the Adamstown SDZ lands and Grange Castle International Business Park.

Regional Bus Travel. The Scheme is proposed to support strategic planning objectives for linking communities of Lucan, Clondalkin and Tallaght and supports public transport (modal shift) objectives of the DTO Strategy. The provision of dedicated bus lanes (Quality Bus Corridor) forming an orbital bus route along the ORR will provide a positive stimulus to public transport in the area

Local Community Effects refer to impacts on the local housing estates adjacent to and in the general environs of the scheme. These include:

Journey Lengths: An assessment of the impact of the proposed route on journey times and travel patterns.

Community Severance: An assessment of the impact of the proposed route with regard to community severance, including impacts on the use of community facilities, particularly schools, recreational facilities or community services. Particular reference is made to use by children, older people and other vulnerable groups.

Amenity and Quality of Life: An assessment of the impact on amenity of journeys (i.e. relative pleasantness of a journey) and on quality of life. Quality of life in this report mainly focuses upon pleasantness of journey. According to the report this includes:

- changes in the degree and duration of people's exposure to traffic – fear/safety, noise, dirt and air quality; and
- the impact of the road itself – primarily any visual intrusion associated with the scheme and its structures.

Hence aspects such as the level of traffic on a road, the proximity and degree of screening of footpaths/cyclepaths from traffic, and the nature of any crossings/junctions to be negotiated are of particular relevance when assessing amenity, as are the number and groups of people affected. Changes in the journey amenity and journey patterns are often related. For example, people might choose to take alternative routes to avoid unpleasant surroundings, or new pedestrian lights might entail a waiting time, but people could consider this delay to be acceptable given the additional safety provided.

In addition, environmental impacts affecting the pleasantness of journeys, such as pollution, noise and landscape impacts, also affect quality of life for people living in the vicinity. So too can direct impacts on particular community facilities or recreational sites or indirect impacts such as ecological degradation. Consequently, the socio-economic well being of a location can be affected.

Economic Function of Communities: An evaluation of the proposed road in the context of economic prospects and employment needs and in relation to residential development and projections in the local area.

Analysis of the Community Effects Assessment

Community Effects from a Regional Perspective

A critical reading of the Community Effects section of the EIS leads to concurrence with some aspects of the report and serious concerns with other aspects. In general, this

reviewer agrees with the assessment that the eventual completion of the ORR from the N4 to the N7 and then eventually on to the N81 at Tallaght will probably be good for *some forms* of **REGIONAL** connectivity and **REGIONAL** economic activity, *at least in the short term*. Many of these forms of regional development, however, are not necessarily good for local communities and may prove unsustainable.

Nevertheless, this reviewer does agree with the logic of some proposed regional effects discussed in the ORR EIS report (cautioned by the lack of empirically-grounded evidence for these likely scenarios). As is repeatedly stated in the EIS completing the Adamstown Roundabout to N4 section and linking that to the section that connects to the N7 **will probably**:

Enhance regional access by private motor vehicle and enhance regional economic viability, at least in the short-term. Companies considering locating to The Grange Castle International Business Park will reason that the ORR will make it easier to drive and move goods from either the N4 or the N7. This will make the Business Park a more valuable place to be located.

Enhance the probability that new residential housing estates will be built in the area or that land will be re-zoned for that purpose. Completing the ORR between N4 and the N7 and providing the proposed Adamstown link road to the ORR will no doubt better enable developers of that project to sell properties at a premium despite the absence of improved Suburban rail service or a new LUAS line. Completion of the ORR scheme will aid arguments concerning the need to create more residential housing estates to meet housing demand in the Dublin area. Most of this growth will be car-dependent leading to a call for even more roads and road widening efforts.

Enhance the likelihood that more land will be re-zoned for shopping centers or malls (similar to the Liffey Valley Center). While not in the plan, pressure for this sort of development is likely given the sort of car-dependent development that has been promoted in the area to date. The Adamstown SDZ, of course, is a giant step in the right direction. But to date the transport options from and around that development (which is currently under construction) seem to be favoring road building and car-transport. Despite the promising nature of the development, planners still appear willing to place the car before the (iron) horse in this region of Dublin County.

Completing the portion of the ORR is also likely to enhance able REGIONAL connectivity (largely by automobile) between of communities located south of Adamstown Roundabout (i.e. Tallaght, west Clondalkin) with those along and to the north of Ballyowen Road (including Lucan Esker) and similarly with those to the east along the Fonthill Road (Rowlagh) and commercial/industrial developments such as the Adamstown SDZ lands and Grange Castle International Business Park.

Much less obvious on a regional level is the viability of the proposed dedicated bus lanes and the eventual 'Orbital Quality Bus Corridor' linking the N4 to the N7 and the N81. As noted above, no data is provided as to who is riding the bus now or who might use the bus in the future should the Orbital Quality Bus Corridor be provided. This lack of data makes it difficult to determine how successful these bus routes will be given the car-dependent nature of development in this area.

From a Regional perspective, then, the ORR probably will provide some short term benefits to those that want to develop land for residential or commercial use and it may also enable development at the Grange Castle International Business Park. However, long term regional success will depend on the nature of land-use planning and the provision of viable forms of public transit. If development in the area continues along the car-dependent lines as that demonstrated in the Lucan/Clondalkin area currently (e.g., the creation of more car-oriented residential housing estates, shopping centers like Penny Hill or Liffey Valley and car-dependent business parks) **traffic will be worse than it is currently in a very short time period**. Car-dependent land-use planning invariably leads to traffic and congestion because residents must drive to everything. It is not a sustainable form of development and will have serious environmental and health consequences. These issues will be discussed in more detail in the last section of this report.

Community Effects from a Local Perspective: A critique of the methodology and conclusions of the EIS.

A key part of the Community Effects analysis focuses on how **local Journey Lengths Amenity and Quality of Life** and **Community Severance** will be affected by the proposed scheme compared to the do-minimum approach.

The **local community effects** section of the EIS begins with the statement:

The assessment of socio-economic impacts for the proposed Scheme has been undertaken in accordance with the methodology outlined in the following sections. Impacts can be either negative or positive. Their significance is assigned as Not Significant, Minor, Moderate, Major or Severe. Significance depends, amongst other considerations, on the nature of the environment affected, the duration of an impact and the probability of its occurrence. It often follows that impacts of a socio-economic nature are a function of:

- (a) the scale of the impact itself,**
- (b) the numbers of people likely to be affected, and**
- (c) the impact on vulnerable or sensitive groups.**

The eventual conclusions generally find in favor of the proposed scheme (discussed below) on both a regional and local level. However, there are serious problems with the methodology followed especially at the local level. One key hallmark of solid scientific research is that the methodology be clearly explained so that other researchers could choose to replicate the work on which claims and policy are based. That would be impossible in this case because standard descriptions of how the work proceeded are not provided.

I will provide examples of the lack of scientific rigor and explication focusing on how the scheme will affect pedestrian movement.

According to the EIS the UK Environmental Assessment Advice Note from the UK Department of Transport (#6) was used. According to that document the following steps should be taken:

9.4 (i) identify existing and proposed routes, rights of way and important community facilities used by pedestrians and others which may be affected by a possible route corridor. Particular attention should be paid to routes used by pedestrians and others for visiting important community facilities;

9.5 ... report should consist of statements illustrated by a map showing possible route corridors and routes and important community facilities used by pedestrians and others.

No pedestrian route maps were provided by the consultant in charge of the socio-economic or community effects section of the EIS.

No counts of pedestrians currently using these routes were provided.

No counts of vulnerable or sensitive groups (e.g., the elderly and children) using these routes were provided.

From the UK Advice Note:

9.8 ... report should consist of:-

(a) a map showing community facilities and their estimated catchment areas, routes used by pedestrians and others, existing road network and the possible route options (with any mitigation measures which have been assumed clearly indicated). In some cases, it may be necessary to present the information on separate maps for each possible route option, or to annotate the maps;

(b) a report on the routes, including estimates of the number of pedestrians and others experiencing changed journey times, the extent of any change after allowing for agreed mitigation, the impact on pedestrians' and others' safety and amenity of the possible route options, and any changes in community severance. Particular attention should be paid to impacts on vulnerable groups.

No map of catchment areas is provided.

No maps of possible route journeys are provided (before or after mitigation).

No estimate or methodology of the number of pedestrians experiencing changed journeys are provided.

No obvious attention is paid to vulnerable groups other than to mention them. For example, there are no estimates of the number of children who will be directly affected by the proposed scheme, or how the scheme will affect their likelihood of walking, journey lengths, access to amenity, severance, or their quality of life.

From a local community perspective, the heart and soul of the EIS should be to estimate how pedestrians, cyclists, and others will be affected by the ORR as proposed. This is why the UK's Advice Note uses terms such as "counts" and "catchments" and "estimates." Numbers based on up to date information, not hunches, should be provided.

While the Community Effects section of the EIS does reach conclusions it is not clear what methodology was used to reach these conclusions. Counts of pedestrians and cyclists currently and number estimates as to how the scheme will affect these current counts in the future are not provided. At best we get decent guesses as to the degree to which amenity and length of journeys will be affected. We are given no indication of the number of people that will be affected positively, neutrally, or negatively.

Examples of the lack of rigor and precision of estimates are provided below:

Excepting very short trips, *most* pedestrian movement in the area focuses on the Penny Hill centre and, *to a lesser extent*, local parks and schools. *Generally*, there is *little* pedestrian activity. The design of the suburb facilitates vehicular movement rather than pedestrian movement. Direct journeys are *often* not possible or road crossings are awkward. (emphasis added, p. 95)

Even when the EIS does get specific and singles out roads or amenities for analysis it is never clear as to the number of residents who will be affected. Nor is it clear about how conclusions about improved conditions for pedestrians are determined. For example:

On Local Journey

Pedestrian journeys will be *facilitated* by the inclusion of signalised pedestrian crossings at the Ballyowen Park, Penny Hill, Balgaddy and the Fonthill Road junctions which are currently served by roundabouts with no crossing facility and the addition of a signalised crossing at Esker Ridge (see Section 4.4 Community Severance). For pedestrians, new signalized crossings and changes in traffic levels mean that the impact of the scheme in terms of journey time and amenity *is varied*. Crossings at signalised junctions *will be easier and safer than at roundabouts, but will incur a short delay*. Crossings between dedicated pedestrian crossing facilities will involve crossing a wider road with *greater* traffic than current levels, but not necessarily more traffic than under the Do-minimum scenario. (emphasis added)

and

Pedestrians attempting to access Penny Hill Shopping Centre from new estates on the west side of the ORR between Penny Hill Junction and Ballyowen Park Junction would incur *lengthened* journeys due to the need to access signalised crossings. However, traffic on this section is *predicted to be little different* under the 'Do-something scenario' to the Do-minimum' scenario.

No specific numbers of pedestrian usage now or in the future are provided. Moreover, serious assumptions are being made about the perceived safety and comfort of signalized pedestrian crossings and whether pedestrians will trade off the signalized crossing for wider roads with faster traffic in places. Signalised pedestrian crossings may be a positive but no data (or studies) are provided as to whether these signals will affect

the likelihood of pedestrian activity under conditions similar to those being proposed in this local area.

Of course, the lack of empirical data and numerical precision is true for cycling as well. For example,

Generally, cycle lanes and footpaths follow roads, rather than connecting directly between estates, thereby bringing cars and cyclists into close proximity. Partly as a result there is a low level of cycle journeys in the area.

(p. 95)

Putting aside the lack of methodology and data on **Journey Lengths, Amenity and Quality of Life** and **Community Severance** the EIS does make judgments about current and future scenarios in the local area. Sections 6.1 to 6.3.2 of the EIS are general not favorable about the *current* social or community context of the housing estates in and around the proposed scheme. The current community is not pedestrian or cycle oriented, and suffers from a lack of connectivity between housing estates. The EIS concludes that most children are being driven to school in the area and that the vast majority of residents drive to shops and other amenities in the area. Different neighborhoods are served by different bus services, and even when residents do choose to walk or cycle or go to the bus stop they are faced with long circuitous routes that follow the road. In addition, the authors of the EIS clearly perceive severance between many housing estates, and amenities. Planning in this area is poorly designed from a community perspective. The authors note:

The proposed ORR traverses an area of very recent residential and commercial development with much of the housing having been constructed in the last five or six years. Much of the existing Ballyowen Road was constructed in the first instance by the developers to service residential development. The majority of the existing development is detached and semidetached housing for people falling within the middle to higher socio-economic groups as defined by the CSO. Existing housing is interspersed with numerous areas of pleasantly landscaped green space and has been arranged in named communities/estates served by a principal access road. *These are mostly set back and separated from connecting roads by metal railings or high walls. The different neighbourhoods are served by several bus services. Local distributor roads also typically have cycle paths on both sides, although the composition of housing and railings does force many residents to make unnecessarily long walks to the nearest bus stop while cyclists are forced to follow vehicular roads.* (p. 93) (emphasis added).

The analysis of current **Community Severance** (that begins on page 97) requires special consideration. The authors of the ORR EIS provide over a dozen specific examples of current severance in and between housing estates and local amenities, including shops, parks, and schools. They also make conclusions about future severance comparing Do-Something and Do-Minimum scenarios. The results are presented in Table 6.6. Assuming (for the moment) that the analysis presented is

accurate, the **authors' own conclusion is that 40% of the locations they examine will be negatively affected either for pedestrians, cyclists, bus-riders or those driving a motor vehicle.** (I am comparing positive (25) vs. negative (17) conclusions and excluding sites found to be not significant). In many cases no mitigation is recommended for the sites to be negatively affected even though guidelines require it.

Interestingly, the EIS concludes that pedestrian, cycling, bus ridership, and even connectivity at the local level will improve –on balance -- should the road scheme go forward. For pedestrians and cyclists these conclusion are largely based on the following assumptions:

Assumption 1. The provisions of new signalised pedestrian crossings at the Ballyowen Park, Penny Hill, Balgaddy and the Fonthill Road junctions which are currently served by roundabouts with no crossing facility are will benefit pedestrian and cycle travel. No data are provided on how this benefit was determined or how many residents will be affected. Nor are there estimates as to how a wider road with more traffic in places and the lack of barriers between cyclists, walkers and cars will affect the usage of non-motorized travel.

Assumption 2. The provisions of a dedicated pedestrian/cycle bridge over the N4 will benefit cyclists and pedestrians. Again, no data is provided on how this benefit was determined or the number of residents that will be affected. Nor is there an analysis on how the proposed changes outlined in the overall scheme would affect the likely usage of this bridge. Just because a bridge is built doesn't necessarily mean it will be routinely used by many people.

Assumption 3. Overall journey length and journey times will be reduced.. As noted above, no information is provided on how these estimates were determined, the size of the catchments, or the size (in numbers) of vulnerable or sensitive population involved. No maps (specifically outlining route changes) are provided as mandated by the UK Environmental Assessment Advice Note from the UK Department of Transport.

As noted above and in Table 6.6 of the authors conclude that community severance would be reduced by the ORR scheme. This is a conclusion made "on balance" and with a suspect methodology. Nevertheless, the EIS does conclude that many neighborhoods will be negatively affected by the road scheme. Examples include (emphasis added):

At present, few pedestrian trips are made along the length of Ballyowen Road, although the number of trips would increase over time given new residential development in the vicinity. The presence of concrete block walls and railings between the road corridor and residential development mean that pedestrian journeys are already unpleasant and *would worsen with the scheme* due to additional traffic noise and fumes.

Pedestrians attempting to access Penny Hill Shopping Centre from new estates on the west side of the ORR between Penny Hill Junction and Ballyowen Park Junction *would incur lengthened journeys* due to the need to access signalised crossings.

Although for amenity (pleasantness of journey) purposes *it would be far more preferable to locate cycle routes at a distance parallel to the Scheme*, the configuration of existing estates and the width of the remaining road corridor along Ballyowen Road *does not make this possible*.

Changes in the layout of the road and traffic volumes (and associated noise, fumes, dust etc) will inevitably have an impact on amenity and quality of life for residents in the study area.

The proposed Scheme will produce improvements in journey amenity largely due the

reduction in real and perceived safety issues associated with crossing at unsignalised crossings of the Ballyowen Road, particularly on east-west routes. This benefit would follow despite the slightly lengthened travel times especially for cyclists.

Increases in traffic between Balgaddy and Penny Hill Junctions will however have a negative impact on the journey amenity of pedestrians, however this is somewhat mitigated by the provision of pedestrian lights. The provision of landscaping between the cycle/footpath and the carriageway will provide an enhanced sense of separation and hence assist in improving the pleasantness of the journey. Details of landscaping plans are contained in Section 7 of the EIS. ***However, the road corridor between Balgaddy Junction and Penny Hill is narrow and this combined with increased traffic levels implies a deterioration of amenity compared with the present despite the better pedestrian facilities. The impact of the Scheme on cyclists travelling along this stretch is considered minor negative on balance.***

Along Ballyowen Road, there will be negative impacts over time as traffic increases, although much of this is anticipated to occur in any case under the Do-minimum scenario. Much recent housing has rear gardens which back onto Ballyowen Road or are separated from the road by a mixture of walls and railings. However, the corridor is still narrow in places and at Moy Glas estate some housing also faces onto the road. ***There is expected to be a minor negative impact on the quality of life of residents at Foxdene estate due to the presence of the Fonthill Link Road on the southern boundary and expected increases in noise.***

The impact on amenity/quality of life on residents in the estates of Ballyowen, Hermitage and Mount Andrews is, on balance, Not Significant compared with the Do-minimum scenario for 2019. While traffic on the carriageway immediately south of the N4 is predicted to be considerably less than under the Do-minimum scenario, ***traffic levels on Ballyowen Park/St. Loman's Road could be somewhat higher. At Hermitage Valley and Ballyowen Way the proposed road would pass very close to the rear of private housing while some properties in Willsbrook Crescent are below the level of the road. Hermitage, Ballyowen and Mount***

Andrew (including housing under construction) estates are rather isolated between four busy roads, including the N4.

The EIS is extremely clear on this point: there will be a lot of negative impacts on residents' quality of life if the scheme is improved and built. The conclusion that these effects are "on balance" positive for the local community appears to be a subjective claim made by the authors of the EIS. How they reached this "on balance" conclusion is a mystery. There is simply not enough information provided or collected or analyzed to make the "on balance" conclusion with any degree of certainty.

Section II, Part 2: A Critique of the Community Effects Section of the EIS: Are Enough Aspects of Community Being Considered?

Poor Planning:

The most significant problem with the area around the ORR scheme (the Lucan/Clondalkin Area) is that it suffers from poor planning. The area is largely designed using American style Euclidian Zoning that is associated with car-dependent sprawl development. Euclidean zoning's main characteristic is the segregation or separation of uses. Shops, schools, and other amenities tend to be separated from residential zones. Car use is typically a requirement due to distances and the lack of connectivity between housing estates. In such places children are typically driven to school and all shopping or the enjoyment of amenities is car-dependent.

No long lecture on the unsustainability of this sort of zoning is necessary because it is clear from the documents entitled: Integrated Framework for Land-Use and Transportation in the Lucan/Clondalkin Area, Final Report, March 2003 and the Adamstown Strategic Development Zone Planning Scheme, December 2002 and the DTO "Platform for Change" Strategy 2000-2016, that the SDCC Planning Department is well aware that Euclidian Zoning practices have been largely discredited. Nevertheless, it is worth noting that almost every major organization in the US involved with planning, architecture, town-building, the environment, or health has called for a move away from Euclidean zoning, preferring more mixed-use, pedestrian-oriented planning models instead. Examples of organizations calling for more enlightened, time-tested land-use practices include:

The Centers for Disease and Prevention Control (CDC)
The Robert Wood Johnson Foundation
American Planners' Association
National Trust for of Historic Preservation
US Environmental Protection Agency (EPA)
American Institute of Architects (AIA)
Congress for New Urbanism

An example of the sort of planning being promoted can be found on the American Institute of Architects' webpage. It reads in part:

 **AIA's 10 Principles for Livable Communities**

Visit the [Center for Communities by Design](#) for more information on how architecture can influence the quality of life in our nation's communities.



1. Design on a Human Scale

Compact, pedestrian-friendly communities allow residents to walk to shops, services, cultural resources, and jobs and can reduce traffic congestion and benefit people's health.

2. Provide Choices

People want variety in housing, shopping, recreation, transportation, and employment. Variety creates lively neighborhoods and accommodates residents in different stages of their lives.

3. Encourage Mixed-Use Development

Integrating different land uses and varied building types creates vibrant, pedestrian-friendly and diverse communities.

4. Preserve Urban Centers

Restoring, revitalizing, and infilling urban centers takes advantage of existing streets, services and buildings and avoids the need for new infrastructure. This helps to curb sprawl and promote stability for city neighborhoods.



5. Vary Transportation Options

Giving people the option of walking, biking and using public transit, in addition to driving, reduces traffic congestion, protects the environment and encourages physical activity.

6. Build Vibrant Public Spaces

Citizens need welcoming, well-defined public places to stimulate face-to-face interaction, collectively celebrate and mourn, encourage civic participation, admire public art, and gather for public events.

7. Create a Neighborhood Identity

A "sense of place" gives neighborhoods a unique character, enhances the walking environment, and creates pride in the community.

8. Protect Environmental Resources

A well-designed balance of nature and development preserves natural systems, protects waterways from pollution, reduces air pollution, and protects property values.

9. Conserve Landscapes

Open space, farms, and wildlife habitat are essential for environmental, recreational, and cultural reasons.

10. Design Matters

Design excellence is the foundation of successful and healthy communities.

Obviously, the EIS for the ORR emphasizes a very different set of factors as being important to a "livable community."

So what does the EIS emphasize? The Community Effects section of the EIS tends to focus narrowly on how motor vehicle traffic volumes and congestion will affect:

Regional and Local Economic Development

Regional and Local Connectivity and Severance

Access to Amenities

Travel times, distances, and safety and the pleasantness of a journey

Quality of Life

Of course, even these features are defined very narrowly. For example, consider the following conclusions on Amenity and Quality of Life:

Amenity/Quality of Life

The impact on amenity/quality of life on residents in the estates of Ballyowen, Hermitage and Mount Andrews is, on balance, Not Significant compared with the Do-minimum scenario for 2019. While *traffic* on the carriageway immediately south of the N4 is predicted to be considerably less than under the Do-minimum scenario, *traffic levels* on Ballyowen Park/St. Loman's Road could be somewhat higher. At Hermitage Valley and Ballyowen Way the proposed road would pass very close to the rear of private housing while some properties in Willsbrook Crescent are below the level of the road. Hermitage, Ballyowen and Mount Andrew (including housing under construction) estates are rather *isolated between four busy roads, including the N4.*

Along Ballyowen Road, there will be *negative impacts over time as traffic increases*, although much of this is anticipated to occur in any case under the Do-minimum scenario. Much recent housing has rear gardens which back onto Ballyowen Road or are separated from the road by a mixture of walls and railings. However, the corridor is still narrow in places and at *Moy Glas estate some housing also faces onto the road.*

There is expected to be a minor negative impact on the quality of life of residents at Foxdene estate due to the presence of the Fonthill Link Road on the southern boundary and expected *increases in noise*. On the other hand, *traffic levels* are expected to decrease in 2019 (Do-Something Scenario) on the sections of Castle Road (east) and Fonthill Road adjacent to the estate. Despite this anticipated reduction, the addition of a crossing to Ballyowen Park would reduce the *sense of psychological severance caused by the proximity of three busy roads*. For all residents of the area there will be improved access to the Grand Canal and to the large Corkagh Demesne. The study area is well endowed with *green space*, but as awareness of these new recreational opportunities increases over time, the improved access represents at least a minor positive impact of the Scheme (emphasis added).

And

Changes in the layout of the road and traffic volumes (and associated noise, fumes, dust etc) will inevitably have an impact on amenity and quality of life for residents in the study area.

The proposed Scheme will produce improvements in journey amenity largely due the reduction in real and perceived safety issues associated with crossing at unsignalised crossings of the Ballyowen Road, particularly on east-west routes. This benefit would follow despite the slightly lengthened travel times especially for cyclists.

For the most part, the concerns about Amenity and Quality of Life in the EIS focus on issues such as traffic volumes, congestion on roads, traffic being too close to homes, travel times, and access to green space and other amenities. The assumptions are – basically- that motor vehicle traffic is bad and that people want to be away from it.

The community factors considered important in the EIS, while relevant, certainly only scratch the surface of all possible effects that a road scheme might have on a local community. Many factors are important to the quality of life or residents.

Below is a list of factors not considered by the EIS. All of these factors are impacted by the road building process and car-oriented planning schemes. All can and have been measured and are relevant for the well-being of a community.

Obesity. A growing body of research now suggests that the inability to walk or cycle to school, shops, or other amenities affects the likelihood of child, adolescent, or adult obesity. Obesity is the result of an energy imbalance over a long period of time. It is basically caused by eating too many calories and not getting enough physical exercise. Interestingly, moderate exercise, such as 30 minutes of brisk walking five or more times a week, can help most adults avoid weight gain.

Obesity is affiliated with other health problems including coronary heart disease, hypertension, diabetes, stroke, respiratory problems, gallbladder disease, and some cancers including breast and colon cancer. Obesity and overweight are a significant problem in the US. Currently 65% of Americans adults are either overweight (35%) or obese (30%). Moreover, there has been a tripling of overweight among children in the US since 1980. Currently 16% of that country's children or teens are overweight or obese. Empirical evidence in the US suggests that car-dependency and poor planning are part of the blame (along with diet). For example, research by Saelens, et al., (2003) and Frank, et al, (2005) have demonstrated a relationship between neighborhoods that were not walkable and overweight prevalence among adults. Children who live in places where walking is minimal or discouraged (by land-use planning and car-oriented transportation designs) tend to watch more television and play other sedentary activities such as computer games. Walking to school is one key deterrent to adolescent obesity. (Frank et al, 2003 and Frumkin, et al., 2004). Clearly the degree to which a proposed road scheme might cause obesity and poor health should be considered when assessing community effects.

Social Capital, Community, and Health. Harvard Professor Robert Putnam and others have repeatedly demonstrated the importance of social interactions and engagement for community well-being. Social and community ties are key components of a more encompassing concept called social capital. Social capital is defined as the social networks and interactions that inspire trust and reciprocity among citizens (Putnam, 2000). Individuals with high levels of social capital tend to be involved politically, to volunteer in their communities, and to get together more frequently with friends and neighbors. They are also more likely to trust or to think kindly of others and attempt to help solve community problems (Putnam, 2000; Coleman, 1990; and Fukuyama, 1995). Social capital has been found to be linked to the proper functioning of democracy, the prevention of crime, the creation of well-adjusted young people, and enhanced economic development. (See Putnam, 2000 for discussion). Higher levels of individual-level or community-level social capital is also affiliated with better health.

A growing number of researchers agree that social networks and community involvement have positive health consequences. Persons who are socially engaged with others and

actively involved in their communities tend to live longer and be healthier physically and mentally. (See References 1 through 13 below.)

The more integrated we are with our community, the less likely we are to experience colds, heart attacks, strokes, cancer, depression, and premature death of all sorts. . . . Over the last 20 years more than a dozen large studies . . . have shown that people who are socially disconnected are between 2 and 5 times more likely to die from all causes, compared with matched individuals who have close ties with family, friends, and the community. (Putnam, 2000)

In a survey of the neighborhoods of Galway, Ireland, Leyden (2003) investigated the relationship between neighborhood land-use design and individual levels of social capital. Data were obtained from a household survey that measured the social capital of citizens living in neighborhoods that ranged from traditional, mixed-use, pedestrian-oriented designs to modern, car-dependent suburban housing estates. Statistically controlling for host of factors, the analyses indicate that persons living in walkable, mixed-use neighborhoods have higher levels of social capital compared with those living in car-oriented suburbs. Respondents living in walkable neighborhoods were more likely to know their neighbors, participate politically, trust others, and be socially engaged.

Leyden's study concluded with an appeal to avoid the planning and construction of car-dependent communities. Mixed-use, pedestrian-oriented designs that encouraged access to amenities on foot were recommended as being important for the proper functioning and well-being of a community. Clearly, if we are to assess the impact of a road scheme on a community we should be considering the scheme's likely impact on social capital. However, social capital was not considered in the EIS.

Depression, Social Isolation, and the Elderly. There are also empirical linkages between walking, social engagement, and depression. The elderly are particularly susceptible to the corrosive effects of social isolation. Social isolation among the elderly tends to occur in car-dependent housing conditions (where they must rely upon others to get around) or in crime-ridden urban places where the fear of crime acts as a deterrent to walking and community involvement. In addition, healthy communities contain residents of all ages and ideally different economic means. Car-dependent housing estates may very well force the elderly to leave their communities once they find it difficult to drive; families with limited means (or whose economic lot changes) may find they are also forced to move due to the added cost-burdens of car-ownership and maintenance. Future EIS reports should consider how car-dependency, poor planning, and road schemes contribute to social isolation.

Car-Crashes. About 42,000 Americans die each year on US roads and motorways. In 2004 the figure was 42,800 and includes the deaths of 4,598 pedestrians. **The biggest killer of children and teenagers in the US is traffic crashes.** Traffic crashes also lead to millions of injuries on a yearly basis. According to the American National Highway Traffic Safety Administration "highway crashes cost society (in the US) \$230.6 billion a year. It is worth noting that building communities that are oriented around the motor vehicle cause significant costs in terms of life, injury and property damage. They also place children at significant risk of death or injury. Many road schemes directly

encourage more driving by automobile and thus place residents at greater risk of injury or death. Clearly this effect should be considered in future EIS reports.

Commuting. According to Robert Putnam (2000) and several other scholars commuting (especially by private automobile) has a negative affect on social and community involvement. Long, tiring commutes, tend to take away from the time and energy commuters would otherwise spend in their communities or with their families. How commuting affects communities and families should be considered in an EIS report.

Culture and Civic Society. Social interaction and conversations between adults, teenagers, and children are an important component of cultural transfer and the teaching of social norms. Car dependent communities tend to offer less opportunities for the sort of social interactions that are important for culture transfer, and the creation of well-adjusted young people. In the absence of conversation and other forms of guidance and role-modeling many young people are forced to learn cultural values from television or other artificial mediums. Those portrayed via these mediums are often distorted and alien to reality. The degree to which a road or planning scheme impacts cultural transfer (and thus community) ought to be considered by future EIS reports.

Sense of Place and Pride in Community. Most human beings develop a connection with their communities and a sense of pride in the place they are from. It is an empirical question as to the degree this is occurring in car-dependent, cookie cutter, housing estates. Poor connectivity, severance and the inability to walk to anything that resembles a real village or urban place may have a dysfunctional affect on children. At a minimum the inability to walk or cycle to shops, school, or other amenities probably affects their sense of independence and adds to the time burden of parents who must serve as continual family-chauffeurs. The attachment to one's community is a "community effect" that should be considered by an EIS report.

Economics, the dearth of small shops, and the cost of motor vehicles. . It is important to note that the model of American-style Euclidian Zoning demonstrated in the Lucan/ Clondalkin area is detrimental to small neighborhood-based entrepreneurs. Segregating residential development from commercial zones tends to discourage small shop-owners; they can not compete with larger (big-box) chains who can afford the high rents affiliated with the limited amount of land zoned commercial. From the perspective of community this tends to minimize the important individualized connections often formed between residents and local shop keepers. EIS reports should be expected to analyze how road schemes might affect locally-owned businesses, especially neighborhood shops.

It might also be wise to examine the costs of living in a car-dependent community. The costs of owning and maintaining a motor vehicle is quite high. Unlike a home, cars do not appreciate in value; they depreciate profoundly. This makes them an extremely unwise use of limited family resources. A family with several teen-agers can quickly find-themselves in dire-strights financially. And the need for two or more cars may translate to the need for two income wage earners and the expenses associated with child-care.

The American Automobile Association estimates that – in the US -- the average cost of driving a new passenger car in 2004 was \$8, 431 per year. This cost includes depreciation (which is the biggest cost), finance, insurance, maintenance and fuel costs (which are much higher in Ireland!). This is a substantial percentage of one's family

budget; and such costs increase in car-dependent areas where more than one car is common per family. Future EIS reports should be required to assess how building a road instead of public transit will impact family and community budgets.

Closing Note:

This purpose of this section was to suggest that there are many more community effects (or socio-economic effects) than those examined in the EIS. The well-being of a community can be profoundly affected by the lay-out of the community and the degree to which it is car-dependent. Road projects, especially those that affect severance, walkability, and access to amenities can also affect health, social capital, and a whole host of factors related to the proper functioning of a community. At the very least, future EIS and planning decisions should be aware of and consider these socio-economic and community factors. Ideally these issues should be studied in a systematic way just like we might assess a road scheme's impact on air quality or noise. There should also be an effort to use scientifically attained public opinion information to assess how the residents of affected communities perceive issues of severance, connectivity, pedestrian and cycling issues, the use of public transit, and the value of a road or road widening project through their community. Serious efforts to assess how a community feels about proposed changes should be undertaken.

Part II: Analysis of the Oral Hearing, Inspector's Report and Board Decision on the Outer Ring Road.

By

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The following items were reviewed for this report:

Report to An Bord Pleanála On the Hearing into South Dublin County Council Development Approval Application for the proposed Adamstown Roundabout to N4 Road Scheme (Outer Ring Road, Phase 2). Brendan Devlin, Inspector. May 2004.

(Includes the Inspector's Report) REFERED TO AS the "ORAL HEARING" below.

An Bord Pleanála's Decision on the Adamstown Roundabout to N4 Road Scheme (Outer Ring Road, Phase 2)

Introductory Comments:

Three introductory comments are in order about these documents and the decisions that they contain:

1. Many of the same concerns raised in my analysis of the socio-economic or community effects of the ORR EIS were raised at the oral hearing by either citizens or by various professionals. Examples include concerns about the consultant's lack of empirical data and questionable measurement of community effects.
2. With the exception of adding one crossing and requiring wider or more properly designed footpaths and cycling paths, Inspector Brendan Devlin does not mitigate the concerns about "community effects" raised at the oral hearing. He also appears to have an overly narrow understanding of how this road scheme might negatively affect the quality of life of those living in adjacent communities.
3. In general, there appears to be a serious unwillingness among the engineers and consultants defending the ORR to recognize the concerns of local residents. In the case of socio-economic or community effects" the problem is made much worse by the Inspector's failure to require the consultant to produce the empirical data on which his conclusions were supposed to be based.

CONCERNS RAISED AND NOT ADDRESSED AT THE ORAL HEARING

I. Concerns Raised about the Lack of Real Data and Measurement Problems:

On six days in March, 2004, Inspector Brendan Devlin oversaw public hearings concerning ORR. My analysis primarily focuses on the presentation and cross-examination of Craig Bullock of Optimise Consultancy. According to the Inspector's Report, Mr. Bullock "had written the socio-economic sections of the EISs on a number of road schemes" including this one (Oral Hearing, p. 127). At the oral hearing Mr. Bullock says his analysis "is undertaken in line with current EPA guidelines which advise on impact types relating to human beings/socio-economic assessment and that reference was also made to the guidelines provided on Community effects in Part 8, Section 3 of the UK DMRB, Volume 11 of 1993.

Several participants at the Oral Hearing question Mr. Bullock's methodology and lack of data.

Item #1: Cross-Examination by David Healy on behalf of LTQL : (Oral Hearing pp. 132-134)

"Mr. Healy handed a copy of part of the UK DMRB to Mr. Bullock, Volume 11, Section 3 Part 8, (listed at Day 3 in Appendix 1 of this Report) and referred him to

page 9/1 relating to the assessment of impacts on pedestrians and other travellers and asked if he had carried out the 3 stages of assessment shown there. Mr. Bullock said he had used the procedure in 9/4 and Mr. Healy then asked if he had produced a map as described in 9/5. Mr. Bullock said that he had and referred to Figure 6.1 in the EIS, and Mr. Healy asked why no routes that people used were shown there but Mr. Bullock said these were described in the text and that it would have been very difficult to show these on a map. When Mr. Healy suggested he had not followed either of the two methods set out in page 2/1, Mr. Bullock replied that he had identified the key communities and that he had taken counts of pedestrians near Pennyhill. **Mr. Healy said that data was not in the EIS** and Mr. Bullock said there was not much pedestrian movement there and that it was a very car-dependent community and that because of this, the catchment for many of the facilities was the extent of the study area.” (emphasis added)

“Mr. Healy asked what he meant by his reference to the guidelines in the DMRB. Mr. Bullock said it was **just a guidance document but the primary guidance was from the EPA documents**. Mr. Healy asked if he had **assessed the number** of people going to the Lucan Educate School and **where they lived** and when **Mr. Bullock said he had not** done so on a one to one basis but had been to the school and asked questions there and that the more important point was that most children were brought by car. **Mr. Healy asked what proportion and when told that information was not available to the school, he asked why he did not take a count for this**. Mr. Bullock said his observations showed that most children **seemed to be brought by car** and a discussion followed about the objective of transport policy to encourage non-car access to schools with Mr. Healy referring to the methodology in the DMRB on such assessments.” (emphasis added)

“Mr. Healy asked if he carried out numerical predictions on changes in journey length or time for pedestrians, referring to the graph at 3/2 of the DMRB and the schedule at 3/6 but **Mr. Bullock said he had not used the graph which was in the UK design manual**.” (emphasis added)

Comment: Mr. Healy raises several relevant questions about Mr. Bullock’s methodology and data. **We learn here that Mr. Bullock has concluded that he can pick and choose what he wants to include from the UK DMRB and that it is up to him to decide what data should or should not be collected and reported**. This demonstrates that Mr. Bullock’s analysis is neither scientific nor professional. As a result, one would have to conclude that his conclusions are based – at best – on a hunch. I know of no panel of scientific experts that would accept the answers Mr. Bullock has provided nor conclude that they have scientific merit.

Item #2: Cross-Examination by Cllr. Fintan McCarthy (pp. 136-137). This exchange helps illustrate that Mr. Bullock's measurement of the various levels of "severance" are clearly problematic and may be neither valid nor reliable. Mr. Bullock provides no set pre-determined way as to how he categorizes levels of severance; as a result people with different pre-conceived perspectives can easily disagree with Mr. Bullock's categorization. *Scientific research requires that measurable categories be based upon clearly specified criteria. As suggested in this exchange, Mr. Bullock's categorizations appear to be more opinion than science:*

"Cllr. McCarthy asked where were the moderate positive impacts for pedestrians from the reconfiguration of the bridge over the N4 as referred to in Section 6.4.3. Mr. Bullock said these came from the facilities being provided there to make crossing safer. Cllr. McCarthy referred to Table 6.3 and the definition of "severe severance" and asked if that pertained presently within the area of the ORR. Mr. Bullock disagreed and said there would be a moderate severance on certain parts of the existing road. Cllr. McCarthy suggested the fact of children within walking distance of schools being driven there was a severe severance and Mr. Bullock said he had already discussed this with Dr. Farrell and he would not equate this to severe severance. Cllr. McCarthy asked if he thought it peculiar that on the stretch from Balgaddy Roundabout past Pennyhill as far as the lights at Hermitage Road there were so few pedestrian crossings at present. Mr. Bullock said there was little traffic on the section from Balgaddy to Pennyhill but there was a degree of severance between Pennyhill and Ballyowen Park with crossing awkward at roundabouts which was why the road development would be an improvement. "

Comment: At a minimum this exchange suggests that the measurement of severance is unclear to all involved and that its level of categorization appears to be based upon Mr. Bullock's personal opinion not an empirical reality.

II. Concerns raised about the lack of empirically-based knowledge (or reference to scholarly literature) about community effects and consequences.

Instead of grounding his findings and forecasts on existing research and empirical precedent, Mr. Bullock tends to rely on what could be labeled as "common sense" approach. In many places, he fails to cite any evidence or research upon which he is using to base his conclusions and predictions. Examples include:

Cross-examined by Justin Byrne on behalf of FIG: (pp. 134-135)

“Mr. Byrne referred to the 8 sets of traffic lights at the Ballydowd junction and suggested that going through these was less pleasant than going through 2 sets and would act as a discouragement for children and teenagers from using the crossing. Mr. Bullock **hoped** it would not be a discouragement as it was a safer means of crossing those roads and said while he accepted 2 sets were less inconvenient than 8 sets, there was a balance to be found between providing for safety and providing for convenience and **he thought** that the 8 gave a higher level of safety in this case. (emphasis added)

Mr. Byrne asked what he considered to be an acceptable wait at traffic lights. **Mr. Bullock said that he did not have actual figures** but when people were informed of the waiting time, like that at the quays in the City centre...(emphasis added)

And:

Cross-examined by Dr. Kevin Farrell on behalf of LTQL (pp. 135-136)

“Dr. Farrell asked if children would behave in a way that was logical in going to the correct location to cross, pressing the button and waiting for the lights. Mr. Bullock said that depended on the individual child and accepted that adults were better able to judge those situations .”

“Dr. Farrell referred to his Evidence of the road 's economic effects in terms of access to workplaces and suggested that as the area was so car-dependent that it would be difficult to get people to change to using public transport and that the most likely effect of the Balgaddy link was that they would drive to Grange Castle. **Mr. Bullock said that because the road was being provided with dedicated bus lanes and cycle lanes from the outset, there was a better chance of bringing about a modal shift in transport** and while he accepted it **had proven difficult in the past** to force people from their cars into buses, dedicated bus routes had proved to be **quite successful elsewhere** and should also be in this scheme. Dr. Farrell asked if a bus-only link between Balgaddy and Adamstown would provide the maximum incentive for this shift. Mr. Bullock said that it could, but that people also had a right to use their cars and had to be facilitated as well”
(emphasis added).

Comment: Although, Mr. Bullock does attempt to answer most of the questions purposed, he bases his answers on what appears to be opinion. Why, for example, does he not base his conclusions on previous empirical study in Ireland or elsewhere? His responses are not simply due to the nature of a public forum; there was a lack of such evidence in the written EIS as well.

III. The Inspector's Conclusions and Recommendations about Community Effects

In Section 41, Inspector Brendan Devlin discusses the ORR EIS and the Oral Hearing.

On page 240 he discusses community severance issues. The inspector appears to feel that severance is a real problem in the communities surrounding the road scheme. As evidence, he cites a DTO report that commented on severance associated with the ORR:

"The DTO in its submission, while supporting the proposed road scheme, drew attention to **the need to integrate the scheme with adjacent residential and future residential areas by improving their accessibility** to the route and also to the need for an additional crossing point between the Pennyhill and Ballyowen Park junctions."

The Inspector thus decides to require **ONE ADDITIONAL CROSSING as a solution to community severance associate with the ORR**. As he states:

"It would appear from my site inspection that a suitable location for such a crossing might be in the vicinity of chn. 0820 where there is a gap in the road boundary wall between the Forester and Mount Bellew estates which might also provide for access to the Lucan Educate Together School from the bus service."

Still, he holds out hope for additional crossings **but does not require them**:

"In his evidence Mr. McDaid confirmed that the Council would work with the local community to identify suitable access points between the estates and the bus/pedestrian/cyclist facilities being provided as part of the proposed road scheme."

The concerns about community severance are thus mitigated with one crossing. As the Inspector concludes:

"I consider that with the addition of a "Toucan" crossing in the vicinity of chn. 0+820 the crossings provided in the proposed road development will adequately mitigate community severance from the proposed road development."

It is not clear – at all - why one crossing "will adequately mitigate community severance from the proposed road development" despite the chorus of community and professional concerns over severance. Given the extent of public commentary on this matter and the enormous cost of the project, one might hypothesize that one additional crossing would not be enough.

It is, however, important to note that the Inspector does offer other mitigating remedies that are arguably related to community effects. These include efforts to widen footpaths and cycle lanes. As stated:

- (A) The design of the proposed footpaths and cycle lanes and road crossing facilities shall be modified both in their width and layout to comply with the recommendations in the Traffic Management Guidelines Manual issued by the DTO, DoELG &DoT and the Provision of Cycle Facilities, National Manual for Urban Areas issued by the DTO & DoELG. -- To provide for the safety of pedestrians and cyclists.
- (B) The design of the proposed pedestrian and cycle lane bridge at Ballydowd Interchange shall be modified so that its width and layout complies with the recommendations in the Traffic Management Guidelines Manual issued by the DTO, DoELG &DoT -- To provide for uniformity of construction in accordance with National guidelines..
- (C) A Signal controlled "Toucan" crossing shall be provided at a suitable location in the vicinity of chainage 0+820 -- To reduce the severance effects between the Pennyhill and Ballyowen junctions.

These remedies are repeated in the Bord's Decision (Document 06S.ER2026)

Inspector Devlin also discusses other issues of relevance to Community Effects and Socioeconomic effects. On pages 233-234 he sites government planning documents to reach his conclusion that:

Having regard to the evidence in the EIS, to the evidence and cross-examination of the Council witnesses relating to the objectives in the 1998 CDP and in the other documents relied on, to the certificate submitted by the Council's Planning Officer of the proposal being consistent with the proper planning and sustainable development of the area and notwithstanding the LTQL comments relating to the applicability of their suggested bus-only link, I am satisfied that the proposed road development conforms to the objectives of the South Dublin County Development Plan.

Comment: In light of the testimony, Inspector Devlin's recommendations appear narrow and terribly incomplete. Most of the concerns raised by the community are not addressed; instead the focus is on one additional crossing and the widening of paths. Almost none of a number of additional issues – such as matters related to physical and mental health, social capital, or access to shops and other amenities (See Leyden's EIS Document) – are discussed by the Inspector.

Additionally, the Inspector makes no effort to require the Consultant – Mr. Bullock – to clarify the evidence on which his conclusions are based. Given the enormous impact the ORR scheme is likely to have on the residents of adjacent

communities it is reasonable to conclude that Inspector Devlin could have done far more to mitigate and address the concerns raised at the oral hearing.

IV. Additional Observations on Community Effects

Interestingly, the consultant, Mr. Bullock, notes – several times—that part of the problem residents face is that their communities are largely designed for use of the automobile as opposed to the pedestrian or cyclist. In Mr. Bullock’s words, this is caused by :

“the configuration of self-contained individual estates with little connectivity between them.” (p. 128)

and because “there are not many opportunities to access the road from the estates as there were railings in place and no natural crossing points...” (p. 134)

“the community [is] very car-dependent with pedestrian very circuitous due to the nature of individual estates” (p.135).

Unfortunately, Mr. Bullock suggests that this car-oriented design is “a characteristic of modern society.” (p. 135)

This of course, is totally false, and suggests that Mr. Bullock has – in effect – given up on improving the character of the communities he has been asked to assess. The design exemplified in the communities adjacent to the ORR are neither modern nor traditional. They are one type of urban design or planning choice. There are plenty of modern community designs that emphasize walkability and the use of public transit over car-dependency. Indeed, one of those modern designs is -- in fact -- slated for Adamstown just down the road from the communities being affected by the ORR.

Conclusions:

This report and review of the COMMUNITY EFFECTS of the ORR has five major conclusions:

1. In general, the EIS fails to make the case that the ORR will benefit the local community. The main problem with the EIS is that its conclusions are – on the whole -- subjective and speculative.

Much of the research presented on community effects appears to be based upon opinion and not science. Even the methodology outlined by the “Environmental Assessment Advice Note from the UK Department of Transport Publication Design Manual for Roads and Bridges Volume 11” is inadequately followed. The likely positive effects on what is labeled “the regional community” appear to be more plausible in some regards, yet these conclusions also suffer from inadequate scientific rigor and research.

2. More scientifically-based research on likely “community effects” should be conducted. Data on the community effects experienced by similar road schemes in other communities (in and outside Ireland) should be collected, analyzed, and consulted. There is plenty of research on the proper ways to build roads; we also ought to be conducting and consulting research on the effects that such roads have on people and their communities.

3. In general the criteria used in the EIS to assess community effects are too narrowly focused. Issues such as how the road scheme will affect health, social capital, and many other factors important to communities are not considered. More community effects should be included in future EIS reports. Reform of the EIS process is recommended.

4. Proper transportation planning cannot be divorced from land-use planning. The two go together like hand in glove. Future land-use planning and transportation efforts should require joint consultation. American-style Euclidean zoning should be avoided and the creation of mixed-use pedestrian-oriented communities encouraged. Dependence on the automobile for transit should be avoided.

5. Serious, innovative, inclusionary efforts designed to involve local residents in decisions that affect their communities should be undertaken.

Questions & ANSWERS (by KEVIN M. LEYDEN)

COMMUNITY EFFECTS and the EIS

We have a set of standard questions which are of value as a unified format for conclusions. (Additionally answering them should bring some of the flaws in the process into focus and thereby put you in a position to make your Recommendations more specific.)

Does the EIS cover the appropriate geographical scope (i.e. all areas affected)?

Yes.

- **Are all important issues identified in the EIS?**

No. As outlined in my report community effects such as those related to issues of physical and mental health or social capital are not examined.

- **Does the EIS include sufficient baseline data?**

No. There is almost no data on the community effects recorded.

- **Are all important baseline data quantified?**

No. See above.

- **Are interpretations of data correct?**

No.

- **Does the EIS predict all relevant likely impacts?**

No. What is predicted is largely conjecture.

- **Are important impacts properly quantified?**

No.

- **Do predictions in one area of the EIS contradict predictions in other areas of the EIS? (e.g. in one section the road will lead to increased economic development or demand for building, but elsewhere the road will not lead to any increased traffic.)**

Yes. And there are measurement problems throughout.

- **Does the EIS accurately reflect the technical reports leading to the statement?**

No. UK Department of Transport Publication Design Manual for Roads and Bridges Volume 11 not adequately followed. Consultant's methodology unclear.

- **Does the evidence to the hearing accurately reflect the EIS and/or technical reports?**

There doesn't seem to be a set methodology.

- **Does the Inspector's Report accurately reflect all the evidence given at the hearing?**

No.

- **Are the conclusions of the Inspector substantiated by evidence?**

At best, only on a narrow range of the evidence presented.

- **Does the Inspector's report show that he had the necessary understanding of the subject to carry out an assessment?**

No. He has a narrow understanding of community effects and their mitigation.

- **Do the undertakings given at the hearing and/or conditions imposed by the Board adequately address the mitigation measures identified as necessary?**

No.

- **Do the conditions imposed by the Board demonstrate that the EIA was inadequate (by requiring gathering of information which should have been in the EIS)?**

Yes.

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