Submission No.	182
Organisation Name or Name of Submitter	Mark Campbell and Aimee O'Farrell (11 The Court, Dalcassian Downs, Glasnevin)

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Letter Re: Metrolink Glasnevin Station, proximal to The Court Apartments, Dalcassian Downs. Case reference: NA29N.314724 Estuary through Swords, Dublin Airport, Ballymun, Glasnevin and City Centre to Charlemont, Co. Dublin (Metrolink)				
1	1. Specific health risk to children	1	There are significant public health risks associated with the proposed works which I do not feel have been adequately described in the Environmental Impact Assessment Report (EIAR). Health risks described in the EIAR will be based on studies that explore adult health risk. There have not been adequate studies done to examine the specific risk to infants and children who have significantly different physiology and psychology. Long term disruption/ Long-term exposure to noise can cause a variety of health effects including annoyance, sleep disturbance, negative effects on the cardiovascular and metabolic system, immune system dysfunction, as well as cognitive impairment in children. Sleep disturbance has been shown to cause delay in reaching predicted growth centiles and developmental milestones and impair academic ability. (https://www.eea.europa.eu/articles/noise-pollution-is-a-major) Children have a higher respiratory rates, and smaller lungs, they are more susceptible to air pollutants. (https://iournals.sagepub.com/doi/pdf/10.1080/1403495060Q677311) Children are more susceptible to airborne and groundborne noise due to a number of factors including their range of hearing (https://pubmed.ncbi.nlm.nih.gov/15129589/).	Thank you for your submission and for sharing your observations with regards to the MetroLink project to which we have responded below. As presented in EIAR Chapter 10 (Human Health) Section 10.3.4 Sensitive Receptors, some human beings are more sensitive than others, due to their age, health status or other reasons and in order to be conservative, and in keeping with the worst-case approach it has been assumed that there are vulnerable individuals at every receptor. In addition, the assessment is aided because Health Based Standards are derived to protect the vulnerable and not the robust. In terms of Human Health, all human beings are considered to be equally important. The use of the term 'importance' in this context refers to areas or buildings occupied by people. Their importance is considered to increase as the number of people increases and the duration of time spent there increases. Residential areas, public and private health facilities, workplaces, hotels and educational facilities are considered to be 'very important' areas because a number of persons usually spend a substantial amount of time at these locations. The sensitivity of an area or building in this context refers to the vulnerability of the population. Reasons for this include inherent vulnerability such as is the case for the very young or old. Residences, schools, workplaces, commercial areas and places of worship are considered 'highly sensitive'. This is because these areas will include populations of elderly, young people and people with health conditions. In conclusion the health impact assessment was done considering the most sensitive receptor, including children, and not simply the most healthy and fit adults. **Noise and Vibration Health Impact** <u>Construction airborne noise and vibration</u> As presented in EIAR Chapter 13, the airborne noise impact on the people living in The Court buildings during construction of the Glasnevin Station will be Significant to Very Significant. As a result, noise mitigation measures will be implemented according to TII Airborne and Groundborne Noise Mitigation Policy including a specific measure in the case of Glasnevin Compound -the site will have 4m high construction site hoarding on all boundaries instead of standard 2.4 m high. Where residual construction noise levels remain above the NI or TRH trigger values, application of TII Airborne and Groundborne Noise Mitigation Policy will be implemented with further control measures as Noise Insulation (NI) or Temporary Rehousing (TRH). Further details on the trigger values can be found in Appendix A14.6 Airborne Noise and Groundborne Noise Mitigation Policy Appendix A. The CNVMP (Construction Noise and Vibration Management Plan) will set out a detailed analysis of each construction compound relating to noise levels, durations and number of properties impacted and the planned approach for managing same. It is reiterated again that prior to any construction work commencing on any of the main work sites a detailed acoustic impact assessment will be undertaken which will involve a baseline noise study, model of the contractors final site layout, plant and equipment models, numbers and on-site location and the inclusion of all available on-site noise control measures. This is detailed in EIAR Chapter 13 (Airborne Noise and Vibration) section 13.6.1.2.7.

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			Response (1) continued.	<u>Construction ground borne noise and vibration</u> As presented in EIAR Chapter 14, the ground borne noise impact on the people living in The Court buildings during construction of the Glasnevin Station will be Significant due to the Tunnel Boring Machine (TMB) Passage and Mechanical Excavation. The noise impact will be noticeable to all and disturbing to some over a number of days. The vibration during construction will have no impact on the residents of The Court Buildings. The TBM passage will be a temporary impact. The duration of this impact will be in the order of up to two weeks as the TBM passes. As a result mitigation measures will be implemented such as advance public consultation, stakeholder engagement and application of TII Airborne Noise and Ground-borne Noise Mitigation Policy (appendix A14.6) as presented above. Further details can be found in EIAR Chapter 14 (Groundborne Noise and Vibration) section 14.5, and Chapter 13 (Airborne Noise and Vibration) section 13.6. <u>Operation noise and vibration</u> As presented in EIAR Chapter 14 (Groundborne Noise and Vibration), section 14.4.2.6, the noise and vibration resulting during the operation period of MetroLink will have no impact on The Court buildings and residents. **Air Quality Health Impact** As presented in EIAR Chapter 10 (Human Health), when the dust minimisation measures detailed in the mitigation section of Chapter 16 (Air Quality) are implemented, fugitive emissions of dust from the site are not predicted to be significant and to pose no nuisance to human health and there will be no residual Construction Phase dust impacts. The Construction Phase of the Air Quality assessment, as detailed in Chapter 16 (Air Quality), identifies a generally negligible or slight negative impact on air quality in the vicinity of the proposed project during the Construction Phase post mitigation. No exceedances of air quality standards are predicted, therefore, no significant adverse human health impacts are predicted. This is detailed in section 10.5.1.1. of Chapter 10 (Human Heath).

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2	1. Specific health risk to children	1 and 2	Any mitigation measures and modelling included in the EIAR are based on adult data, these studies don't include and cannot accurately predict risk to children, and therefore cannot be relied upon. Specifically, EIAR suggests 'Significant to Very Significant' Airbourne Noise and Vibration (NV4) for Dalcassian Downs Court post mitigation measures. Whilst TII have documented 'Potential annoyance and disturbance of sleep for residents' this does not describe the potential risk to infants and small children, or night workers related to disturbance of daytime sleep patterns. Construction traffic holds another risk for children in addition to the noise and dust and pollutants caused by construction traffic. As children are smaller, they may be more difficult to see from the cabin of large vehicles. Being less visible to these drivers puts them at increased risk of injury/serious incidents/near misses.	Please refer to response item (1) above regarding the sensitive receptors, including children, and noise and vibration impacts. Shift workers have been acknowledged and considered in the assessment, however as presented in EIAR Chapter 10 (Human Health), the ambient noise levels, during day time, are much greater at this time so it is less likely that an additional noise source will have a significant effect. The assessment of impact on sleep is therefore based on night-time noise. This is detailed in section 10.3.6.1.1. of Chapter 10 (Human Health). Construction traffic impact on noise and air quality was considered into the overall noise and air quality impact. This is detailed in section 16.5.2.1 of Chapter 16 (Air Quality). Prior to the enabling works and the main construction phase a Traffic Management Plan will be developed (Refer to Appendix A9.5 of the EIAR). The use of a traffic management plan is critical to the management of construction phase traffic and vulnerable road users such as cyclists and pedestrians. The assessment did not consider children as a separate road user group. The contractor will be legally required to adhere to the requirements of the plan on a day by day basis and so any such measures will be implemented with a focus on managing traffic movements to ensure that there are no accidents. In EIAR Appendix A 9.5 Scheme Traffic Management Plan, mitigation measures are presented: - Construction vehicles will be controlled in terms of the hours of operation (i.e., construction traffic may be prohibited during periods of very heavy traffic) and by imposing restriction on vehicle size and weight; - There will be controls at the entrance/exits of sites for construction vehicles in order to ensure the safety of other road users; - Pedestrian routes will be maintained throughout the construction period, either around or through the construction site, where safety risks to the general public will not increase as a result of construction activity; - In very sensitive areas, the designated access and pedestrian routes around the construction sites, particularly at and/or along the hoarding lines, must not be perceived as uninviting by pedestrians. The environment around the sites, therefore, will be designed to ensure that pedestrians and cyclists feel they are entering a safe and accessible environment. This will ensure that impact to businesses and shops adjacent to the works areas is minimised. - Temporary pathways and cycle ways will be installed where appropriate and provision will be made to ensure access for the mobility impaired is maintained; and - Where the existing level of service cannot be maintained in the vicinity of the construction sites, an alternative route will be designated, be clearly visible, be safe and be signed and have the level of service required to cater for the pedestrian demand.
3	2. Quality of life	2	These are very formative years for infants and children, their physical health, their growth potential, and their academic performance have been shown to be negatively impacted by disruption to their sleep, being exposed to prolonged periods of noise. They will no longer be able to socialise in the common areas, speak to neighbours, invite friends over. This will hinder their emotional development.	Please refer to response item (1) above in relation to the assessment of health impacts on children.

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4	3. Air Quality:	2	Air quality in the area already exceeds the World health organisation air quality guideline levels. There is a direct correlation between elevated pollutants and mortality. This is more significant on those with smaller lungs and higher respiratory rates such as children. (https://www.who.int/publications/i/item/9789240034228) Building a station/ transport system to reduce pollution in the future should not be offset by increasing the risk to the local population now. The proposed development will undoubtably reduce the quality of life, the air quality, and the ability to use green spaces locally due to invasive/intrusive noise, dust.	Please refer to response item (1) above in relation to the impact on noise, vibration and air quality during both the construction and operational phases. As detailed in section 16.6.1.4 of Chapter 16 (Air Quality), the modelling of road traffic for impacts on human and ecological receptors has found no significant impacts that require mitigation measures with respect to the modelling of emissions. However, some mitigation measures can be put in place to minimise emissions: * Implement a policy which prevents idling of vehicles both on and off-site including HGV holding sites; * Construction Phase traffic should be monitored to ensure construction vehicles are using the designated haul routes; * Additional vehicular traffic will be managed through the CEMP and Temporary Traffic Management Plans for the proposed Project and stations as per Chapter 9 (Traffic & Transport); * Efficient scheduling of deliveries to minimise number of deliveries required, and in turn their emissions; and * Construction vehicles should conform to the current EU emissions standards and where reasonably practicable, their emissions should meet upcoming standards prior to the legal requirement date for the new standard. This will ensure emissions on haul routes are minimised. As detailed in section 16.6.1.4 of Chapter 16 (Air Quality), mitigation measures are required for the control of dust with respect of HGV moments on site and deliveries to/from the site: * HGV traffic leaving site will pass through a wheel wash; * Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary. If public roads are deemed to require additional cleaning where possible a suction device for road cleaning will be utilised which can access spaces around cars and other street furniture more effectively; and * During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions. As detailed in Chapter 16 (Air Quality), section 16.7.2, the air dispersion modelling assessment has found that in 2035 no receptors will have ambient air quality exceedances of the ambient air quality standards for the Do Something (and Do Minimum) scenario as a result of the proposed Project.

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5	4. Air and noise pollution:	2	The has been no sustained collection of air or noise quality readings at the site of the proposed station. This is already an area of elevated noise and poor air quality. There is no evidence that any mitigation measures would be capable of reducing the increased risk to human health. EIAR Section 10.5.1.2 suggests that working at this site will be 24h per day, and that mitigation methods are predicted not to adversely affect human health. As described above - These predictions cannot account for infant and child health. The impact on children is immeasurable. Noise control targets/Noise emission limits for drilling- (<50dB at The Court, <45dB vibration from Mechanical excavation). These limits should be reduced in evening and night-time by minimum 5-10 decibels).	Please refer to response item (1) above in relation to the impact on noise, vibration and air quality during both the construction and operational phases. Both Air Quality and Noise baselining has been undertaken and presented in the EIAR. EIAR Chapter 13 Airborne Noise details in section 13.3 the baselined environment. This is based on circa 11 monitoring locations surrounding the Glasnevin Station - Figure 13.1 refers. Chapter 16 Air Quality section 16.4 details the baseline conditions of the 3 monitoring locations in close proximity to the station - Figure 16.2 refers. As presented in the EIAR Chapter 5, Section 5.2.4 Working Hours, the majority of works will be done during standard working hours, from 07:00hrs to 19:00hrs on weekdays (excluding Bank and Public Holidays) and from 07:00hrs to 13:00hrs on Saturdays. There are however some activities that will require 24h per day working program and in the case of Glasnevin station these are: • Sliding new rail bridge into position; • MEP station works; • Blockades or weekend possession work required with Irish railway (GSWR & MGWR). Regarding the threshold limits for TBM Passage and Mechanical Excavation, there are no statutory standards in Ireland relating to noise and vibration limit values for railway sources or construction works. In the absence of specific statutory Irish guidelines, the assessment makes reference to other national guidelines and standards, where available, in addition to international standards relating to noise and or vibration impact for environmental sources. The convention has been established that groundborne noise is assessed in terms of the maximum A-weighted sound level using the index LpASmax. This approach was subject to scrutiny by the specialist assessor in the Oral Hearings for Old Metro North and the Dart Underground and considered appropriate. It has also been used in the UK for schemes including Crossrail (Elizabeth Line) and High Speed 2 where it underwent scrutiny in Parliamentary Select Committees. This is detailed in section 14.2.4 of Chapter 14 (Groundborne Noise and Vibration). An impact has been considered significant if groundborne noise levels exceed 40 dB LAmax,S. This excludes the passage of the TBM, which is short term and transitory, as it would progress continuously, at a variable rate depending on conditions at a particular location. It would therefore be within range of any particular location for a very limited duration. Based on experience of the driving of the Dublin Port Tunnel and other major tunnelling projects the implementation of a consultation and public relations programme in advance of the works will allow for a higher threshold of acceptability than is the case for the permanent operating railway. As a result a threshold is proposed for groundborne noise from the passage of a TBM 5dB LAmax,S greater than the thresholds for other sources. This is detailed in section 14.2.1.1 of Chapter 14 (Groundborne Noise and Vibration). As a result, TII consider that the limits used for the assessment are appropriate.
6	Further questions that should be answered	2	• Who will be responsible for measuring noise levels during construction?	As presented in the EIAR Chapter 13 (Airborne Noise and Vibration), during the Construction Phase, the contractor will be required to carry out noise and vibration monitoring at representative Noise Sensitive Locations (NSLs) to evaluate and inform the requirement and/or implementation of noise and or vibration management measures. As detailed in Appendix A5.1 Outline CEMP, for the duration of the contract(s), the environmental performance of the contractor(s) will be monitored through site inspections and audits by the Environmental Manager. The programme for monitoring, inspections and audits will be specified in the contract and it is likely to be a combination of internal inspections and independent external audits that may be either random or routine.

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7	Further questions that should be answered	2 and 3	• How will the equipment and measurements be validated, and who is responsible for monitoring and reporting? o This telemetry should be publicly available on a hosted website for public access to records. o Monitoring should be continuous. Monitoring equipment should be maintained/ inspected at regular intervals. o Breaches should have swift and significant penalties, that should not be seen as merely an additional cost. o Repeated or sustained breaches will require more severe penalties.	As presented in the EIAR Chapter 13, a full monitoring and auditing programme will form part of the CNVMP (Construction Noise and Vibration Management Plan) which will be agreed with the Local Authorities prior to the commencement of the Construction Phase. At a minimum, the monitoring programme will include an alert system for threshold exceedances, remote access and a platform for sharing monitoring results between the contractor, TII, DCC and FCC. Please refer to response item (6) above in relation to the programme for monitoring, inspections and audits. Mitigation and monitoring will be carried out in accordance with the requirements of the EIAR and NIS so that construction activities are undertaken in a manner that does not give rise to significant negative effects. Suitable monitoring programmes will need to be developed, implemented, documented and assessed in accordance with the specification outline in the detailed CEMP. The results of all environmental monitoring activities will be reviewed by the Environmental Manager on an ongoing basis to enable trends or exceedance of criteria to be identified and corrective actions to be implemented as necessary. The contractor(s) will be required to inform TII of any continuous exceedances of criteria. This is detailed in section 4.2.2 of Appendix A5.1 Outline CEMP. Further, regulatory and statutory bodies may undertake site visits to monitor compliance with legislative and regulatory requirements.
8	Additional considerations	3	Given that many people are working from home, there are implications to our working day. As someone working in healthcare remotely, this presents a significant barrier to normal working conditions, and could cause undue levels of stress.	Please refer to response item (1) in relation to the anticipated impacts on noise during the construction phase. The Court buildings were assessed as a residential property, and the threshold limits for noise were used accordingly. These levels as presented in Tables 14.2 and 14.3 in EIAR Chapter 14 (Groundborne Noise and Vibration), are identical for residential use and for office buildings. As such the impact on working from home is no different from the impact on the residential receptors.
9	Additional considerations	3	Control of noise at work regulation is relevant here, as not only peak noises, but sustained noise can interrupt video calls, telephone calls.	Please refer to response item (1) and (8) above in relation to the anticipated impacts on noise during the construction phase. As stated in section 14.2.5.2.4 of Chapter 14 (Groundborne Noise and Vibration), the duration of the noise will depend on whether mechanical excavation is used as a full substitute for blasting or as a means of removing rock not dislodged after blasting has taken place.
10	Additional considerations	3	The current EIAR report does not examine the welfare of children and thus is inadequate. This group is physiologically different form adults and thus the same findings can't be universally applied to all ages. The health and welfare of children and infants in the area cannot be sacrificed nor should they be used as case studies in the future to highlight dangers that can be predicted.	Please refer to response item (1) above in relation to the assessment of impacts on children.
11	Additional considerations	3	As residents of The Court, Dalcassian Downs, this construction will be taking place outside our front door and our apartment window. We will be living on a building site, and do not feel that the plans that are suggested are safe or appropriate.	The Glasnevin Compound will be clearly delimited from the surrounding areas by a 4m high hoarding that will provide a noise and dust protection for the residential buildings in the vicinity and a safe barrier between working and residential areas. Through the design, embedded measures and additional mitigation measures, TII will seek to minimize any possible impact on the residents of The Court buildings. TII will continue to engage with the residents of The Court buildings during the next phases of the project. Please refer to response item (1) in relation to the anticipated impacts on noise, vibration and air quality during the construction phase. Please refer to response item (2) above which details the proposed traffic management to ensure the safety of pedestrians and other traffic users in the vicinity of the construction sites.