

18 SUMMARY OF RESIDUAL IMPACTS

18.1 Introduction

This Chapter of the EIAR collates the predicted residual impacts on the environment as identified in Chapters 5 to 16, arising from the Proposed Development, during Demolition and Construction and Operational Phases.

Residual Impacts, according to the Draft EPA Guidelines (2017, p.3) are: -

“The final or intended effects which occur after the proposed mitigation measures have been implemented.”

A summary of the Proposed Mitigation Measures are outlined under Chapter 17: Summary of Mitigation Measures.

18.1.1 Population and Human Health (Chapter 5)

It is expected that the proposed development will have a **Neutral, long-term & imperceptible** impact on the human health of the local population.

There are no predicted adverse impacts with respect to human health.

All other environmental aspects relating to the human environment which have the potential to impact on the local population such as air quality and climate, noise and vibration, material assets and traffic are addressed in Sections 5.5.1 – 5.5.3 and in more detail in the relevant Sections of this EIAR.

Measures outlined in Section 5.5.5 will be put in place to ensure the health and safety of all site personnel during both construction and operational phases.

If additional large scale developments are proposed in the future, in the vicinity of the proposed development, this has the potential to impact of Human Health of the local population particularly in relation to the points highlighted above. However, it is unlikely that other future developments of similar scale would give rise to a significant impact during the construction and operational stages of those projects.

Future projects of a large scale would need to conduct an EIAR to ensure that no significant impacts associated with human health will occur as a result of those developments.

The cumulative impact of the development on the health of the surrounding area will be **neutral, long-term & imperceptible**.

18.1.2 Biodiversity (Chapter 6)

Construction Stage

Habitats – Hedgerow & Treelines

The residual impacts on hedgerow and treelines would be permanent habitat loss, assessed as significant at a local level.

Bats

The residual impacts on the local bat population would be temporary displacement during the construction stage, which is considered to be significant at a local level.

Breeding Birds

The residual impacts on breeding birds would be temporary displacement during the construction stage, which is considered to be significant at a local level.

Camac River

Assuming full and successful implementation of mitigation measures, there will be no significant residual impacts on the Camac River during the construction stage of the proposed development.

Operational Stage

Habitats – Hedgerow & Treelines

The residual impacts on hedgerow and treelines would permanent habitat loss, assessed as significant at a local level.

Bats

The residual impacts on the local bat population would be a potentially long-term displacement during the operational stage, which is considered to be significant at a local level.

Breeding Birds

The residual impacts on the local bat population would be potentially long-term displacement during the operational stage, which is considered to be significant at a local level.

Camac River

Assuming full and successful implementation of mitigation measures, there will be no significant residual impacts on the Camac River during the construction stage of the proposed development.

Worst Case Impact

Mitigation measures outlined above have been incorporated into the design of the development and will be implemented into the construction methodology. Nonetheless, worst case scenarios during the construction and operational phases are discussed below.

At worst case, during the construction phase of the proposed development a significant pollution event (either hydrocarbon or other) could occur causing damage to the receiving water in the Camac River. The impact would be temporary but could have longer-term significant impacts on the fish and White-clawed Crayfish population within the river. In this instance, an emergency plan to respond to the spill or pollution event will be initiated and a clean-up operation to restore the condition of the receiving waters will be implemented and agreed with the relevant body prior to commencement.

At worst case, during the operational phase of the proposed development condition of retained hedgerows and treelines within and along the periphery of the site could degrade and vegetation could die, ultimately losing these retained linear features from the area. In this case, it is expected that landscape planting would be planted to supplement or reinstate these habitats, however it could result in long-term displacement of bats and breeding birds from the proposed site, and would reduce connectivity between the site and the wider surrounding area. The complete loss of retained hedgerows and treelines from the proposed site would result in a significant impact but not at a geographical scale greater than local.

18.1.3 Land, Soils and Geology (Chapter 7)

Construction Stage

Provided the aforementioned ameliorative, remedial or reductive measures are incorporated as part of the construction phase, the residual impact during construction on the topsoil and subsoil resource within the bounds of the subject site will not be significant. It is worthy of note that the design intention is to retain the majority of arising material within the site using the sub soil material as part of the topographical reorientation of the site and topsoil materials for landscape modelling.

Operational Stage

Provided the aforementioned ameliorative, remedial or reductive measures are incorporated as part of the operational phase, the residual impact post development on the topsoil and subsoil resource within the bounds of the subject site will not be significant in the context of similar land and soils available around the county.

Worst Case Impact

The majority of the aforementioned ameliorative, remedial or reductive measures are design solutions that will be managed through the design and construction process and enforced as part of an agreed development plan with South Dublin County Council.

Notwithstanding the above, the likely worst-case effects that may arise during construction will be mixing of excavated materials or spillage of liquid products within the site. The mixing of soils is unlikely and if it were to occur would not pose a significant effect on the environment as it has already been removed.

The spillage of fuel and oil products has the potential to contaminate the upper soil layers, but it will be localised and a temporary emergency plan would have to be in operation and coordinated with the Local Authority.

In the operational phase, the risk of spillage is the only effect that can impact on the land and soil resource in the context of the housing development. However, the effect would be short term and localised and would be managed as part of the Local Authority's emergency plan for spillage on their adopted road network.

18.1.4 Water (Chapter 8)

Construction Stage

Provided the above ameliorative, remedial or reductive measures and management procedures are incorporated during the construction phase for management of run-off, the residual impact on the water receiving environment will be temporary and neutral.

Receiving Watercourse/ Surface Water Network

The implementation of the management procedures and monitoring measures outlined subsequently will ensure that the residual effect is rendered unlikely temporary and imperceptible.

Groundwater Receptor

Again, the implementation of the management procedures and monitoring measures outlined subsequently will ensure that the residual effect is reduced to unlikely, temporary and imperceptible.

Operational Stage

Provided the management procedures and monitoring measures are incorporated as part of the operational phase, the residual impact post development on the water environment will be unlikely, temporary and neutral.

Worst Case Impact

The majority of the measures outlined previously are design solutions that will be managed through the design and construction process and enforced as part of an agreed development plan with South Dublin County Council.

Notwithstanding the above, the likely worst-case effects that may arise during construction will be spillage of liquid products within the site. The spillage of fuel and oil products has the potential to contaminate upper soil layers, but it will be localised, and a temporary emergency plan would have to be in operation and coordinated with the Local Authority.

In the operational phase, the risk of liquid spillage is the likely impact on the water environment. However, given that liquid carrying tankers are unlikely to be moving through the site, the effect would be unlikely, short term and localised and would be managed as part of the Local Authority's emergency plan for spillage on their adopted road network.

18.1.5 Climate (Air Quality and Climate Change) (Chapter 9)

Construction Stage

Air Quality

When the dust minimisation measures detailed in the mitigation section of this Chapter (Section 9.6) are implemented, fugitive emissions of dust from the site will be insignificant and pose no nuisance at nearby receptors.

Climate

Impacts to climate during the construction phase are considered imperceptible and therefore residual impacts are not predicted.

Operational Stage

The results of the air dispersion modelling study indicate that the impact of the proposed development on air quality and climate is predicted to be imperceptible with respect to the operational phase.

Worst Case Impact

As part of the air dispersion modelling, worst-case traffic data was used in the assessment. In addition, conservative background concentrations were used in order to ensure a robust assessment. Thus, the predicted results of the operational stage assessment are worst-case and will not cause a significant impact on either air quality or climate.

18.1.6 Climate (Sunlight) (Chapter 10)

Construction Stage

Minimal impact, if any, is expected in relation to the sunlight levels experienced by the future inhabitants of the proposed site and to the existing inhabitants of the adjoining sites, therefore it is considered there will be no residual impacts from the construction stage in respect of sunlight.

Operational Stage

Minimal impact, if any, is expected in relation to the sunlight levels experienced by the future inhabitants of the proposed site and to the existing inhabitants of the adjoining sites, therefore it is considered there will be no residual impacts during the operational stage in respect of sunlight.

18.1.7 Climate (Daylight) (Chapter 11)**Construction Stage**

Minimal impact, if any, is expected in relation to the daylight levels experienced by the future inhabitants of the proposed site and to the existing inhabitants of the adjoining sites, therefore it is considered that there will be no residual impacts from the construction stage in respect of daylight.

Operational Stage

Minimal impact, if any, is expected in relation to the daylight levels experienced by the future inhabitants of the proposed site and to the existing inhabitants of the adjoining sites, therefore it is considered that there will be no residual impacts during the operational stage in respect of daylight.

18.1.8 Air, Noise and Vibration (Chapter 12)**Construction Stage**

During the construction phase of the project there will be some small impact on nearby residential properties due to noise emissions from site traffic and other activities. The application of binding noise limits and hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum.

Worst Case Impact

The construction noise calculations have been carried out with worst case scenarios considered, such as extended on times and combinations of plant items operating simultaneously.

Operational Stage

The predicted noise level associated with additional traffic is predicted to be of insignificant impact along the existing road network. In the context of the existing noise environment, the overall contribution of traffic is not considered to pose any significant impact to nearby residential locations. It can be concluded that, once operational, noise levels associated with the proposed development will not contribute any significant noise impact to its surrounding environment.

Furthermore, the internal noise environment within the proposed residential units and the corresponding external amenity space will be, once mitigation is implemented, within the recommended levels for good residential amenity.

The resulting impact is of neutral, long-term and not-significant.

Worst Case Impact

A worst case scenario has been considered during the traffic noise assessment since future traffic flows have been used which includes other developments and future growth.

It is expected that plant items will operate during the operational hours of the community facilities however in the case that these operate at night time a criterion has been set for the night time period. Plant items will be designed and controlled in order to meet the relevant criteria.

18.1.9 Landscape and Visual Impact (Chapter 13)

Operational Phase

Initially, on completion of the development the introduced shrubs, plants and trees will be at early stages of establishment, the trees shall be semi mature at planting. As time progresses the plants and trees will grow and stabilise in their new environment creating better defined avenues and spaces.

The number and quality of landscape elements shall be an addition to the built environment of adjoining developments providing quality amenity for the residents.

The extensive development of the external spaces shall provide an improvement on the existing landscape, as a planned extension of Clondalkin. The ordered design shall be visually positive and long term. The visual impact on the surrounding landscape shall be moderate in the short term, however with maturity of the trees, hedges and plants it shall be neutral to positive in the long term.

18.1.10 Material Assets (Transport) (Chapter 14)

Construction Stage

Provided the above mitigation measures and management procedures are incorporated during the construction phase, the residual impact on the local receiving environment will be temporary in nature and neutral in terms of quality and effect.

Operational Stage

The implementation of the mitigation measures outlined in the Chapter, including the MMP, will ensure that the residual effect on the local receiving environment is both managed and minimised. The analysis predicts the scale of residual impact, during the 2020, 2025 and 2035 design years, as largely being well below 5% on the surrounding links with the exception of following links as shown in Table 14.1.

The significance of each of the projected impacts at each of the key links is detailed within the following tables for the worst case (i.e. peak hours) 2035 Future Year scenarios.

Junction	AM	PM
B-St Cuthbert's Rd/New Nangor Rd junction	5.9%	8.2%
C-Nangor Rd/St Cuthbert's Rd/Upper Nangor Rd Junction	68.2%	128.7%

Table 14.1: Junctions with Impacts >5%

The significance of each of the projected impacts at each of the key junctions is detailed within the following tables for the worst case (i.e. peak hours) 2035 Future Year scenarios.

Ref	Environmental Character	Quality / Scale of Impact	Impact Significance	Duration
B	Low Sensitivity	Negative - Low	Slight	Long Term
C	Low Sensitivity	Negative - High	Moderate	Long Term

Table 14.2: Impact Significance – 2035 Design Year (AM Peak Hour).

Ref	Environmental Character	Quality / Scale of Impact	Impact Significance	Duration
B	Low Sensitivity	Negative - Low	Slight	Long Term
C	Low Sensitivity	Negative - High	Moderate	Long Term

Table 14.3: Impact Significance – 2035 Design Year (PM Peak Hour).

Worst Case Impact

The analysis undertaken above represents a worst-case appraisal of a typical weekday as it is focused upon the two busiest periods of the day (i.e. AM and PM peak hours). During the remaining 22 hours of the day, traffic flows are predicted to be significantly lower resulting in the network operating with additional reserve capacity to that forecast for the peak hour periods. Similarly, over the weekend periods both the site generated traffic and the external road network traffic flows are generally lower compared to the weekday peak hour periods that have been assessed.

18.1.11 Material Assets (Waste) (Chapter 15)**Construction Stage**

The resulting residual impacts of excavation waste will be neutral, slight and short term.

The resulting residual impact of construction and demolition waste will be slight, neutral and short term.

Operational Stage

Based on the residential nature of the scheme the residual impact of operational waste will be long term and slight.

There is likely to be significant available capacity within existing Irish waste management infrastructure to manage the excavation, construction and operational waste from the proposed residential development.

Worst Case Impact

The majority of the Ameliorative, Remedial or Reductive measures outlined or directed previously are solutions that will be managed through the design and construction process and enforced as part of an agreed development plan with South Dublin County Council.

Notwithstanding the above, the likely worst-case effects that may arise during construction with regard to waste management will be mixing of waste materials and incorrect disposal. However, the industry is closely scrutinised, and the likelihood of this risk is unlikely.

18.1.12 Cultural Heritage (Archaeology and Architectural Heritage) (Chapter 16)

Following the completion of the above mitigation measures there would be no residual impact on the archaeological, architectural or cultural heritage resource from the proposed development.