

## **CHAPTER 10 POPULATION AND HUMAN HEALTH**

### **10.1 INTRODUCTION**

SLR Consulting Ireland Ltd was commissioned by Boliden Tara Mines DAC (BTM) to undertake the Population and Human Health Chapter of the Environmental Impact Assessment Report for the proposed buttressing works to be undertaken on sections of the dam walls of the Randalstown Tailings Storage Facility (TSF) associated with the Tara Mine. These works are proposed to be undertaken with a view to increasing the Factor of Safety associated with the embankment dam structure.

#### **10.1.1 Company Background**

SLR is an international planning and environmental consultancy with a network of offices in Ireland and the United Kingdom, as well as Australia, New Zealand, Canada, Namibia, Singapore, South Africa, Tanzania and USA. SLR provides a wide range of technical and professional services, including full life cycle support for projects from initial inception and feasibility through planning and on to construction.

SLR's planning & EIA team has extensive cross sector experience in all aspects of project delivery with expertise in the Built Environment, Renewable Energy, Infrastructure, Minerals and Waste Sectors. The level of support SLR can offer ranges from individual technical sections through to complete management of the EIA and associated planning process. We have a wide range of technical specialists in house to draw upon to contribute to and collaborate on an EIA; each discipline is highly experienced at producing chapters for inclusion into an Environmental Impact Assessment Report (EIAR).

#### **10.1.2 Consultation**

Ongoing consultation has been undertaken between the respective technical specialist contributors during the EIA process. Consultation has been undertaken directly with specialist contributors such as noise and air in the preparation of the population and human health assessment.

Statutory consultation has also been undertaken as part of the planning process during determination of the planning application P. Ref. 22/331 which was approved by Meath County Council, and which is now the subject of a third party appeal to An Bord Pleanála. Details of consultation are set out in Chapter 2 of this EIAR.

The applicant has provided open hours within its local Environmental offices during the consideration of the appeal by An Bord Pleanála, further details of which are also contained in Chapter 2 of the EIAR.

7 members of the public attended these open hours, and all were offered a tour of the facility to provide reassurance on the standards of environmental management in place at the site.

The issues / queries raised were as follows:

- Purpose of works – effect of proposed development on existing facility;
- Duration of construction works;
- Road traffic concerns in relation to importation of construction materials to the site;
- Visual impact of proposed works of the existing landscape;
- Groundwater concerns associated with existing facility;
- Inconvenience that proposals may have on public during construction works;
- General inconvenience / discommoding to local community during construction;

Information was provided in answer to the queries raised and provided reassurance that all aspects would be addressed as appropriate in the EIAR, and appropriate mitigation measures would be incorporated where a potential impact is identified. Pertinent information relating to the above concerns of local residents is set out / signposted within this population and human health assessment.

### **10.1.3 Aim of Report**

This chapter of the EIAR provides a baseline description of socio-economics and other population and human health characteristics in and around the application site and provides an assessment of the potential impact that the proposed development may have. Where potential impacts are identified, mitigation measures are identified as appropriate, and a residual assessment of the potential significance of effects is provided.

#### 10.1.4 Scope of Assessment

The EPA guidelines in relation to the preparation of EIAR<sup>1</sup> note the following in respect of population and human health:

- assessment of land-use planning and demographic issues or detailed socio-economic analysis is not generally required;
- economic development or settlement patterns are only relevant if they give rise to new development and associated effects;
- human health should be considered in the context of the relevant environmental topics addressed by the EIAR;
- the effects on human health via relevant pathways (such as air, soil and water) should be considered in the context of accepted standards for exposure, dose or risk;
- other health and safety issues are addressed under other EU directives.

The Institute of Environmental Management and Assessment (IEMA) has issued two new guidance documents on the assessment of human health within EIA as follows:

- Effective Scoping of Human Health in EIA; and
- Determining Significance for Human Health in EIA.

Section 1.11 of the IEMA Guidance on the Effective Scoping of Human Health in EIA recommends that if there is not potential for likely significant population effect, human health should be scoped out of the EIA. The guidance makes clear that the topics of population and human health are separate technical topics. The assessment of socio-economic conditions addressed through the topic of 'Population' provides baseline information on which an assessment of sensitivity of human health can be made, therefore it is considered appropriate that both topics are covered within this chapter.

Table 10-1 of this chapter sets out an initial review of the wider determinants of health identified within the guidance on scoping of human health and how these have the potential to be

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<sup>1</sup> Environmental Protection Agency (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.

impacted by the proposed development. The initial assessment within Table 10-1 provides a framework in order to focus the assessment of human health impacts on areas of most relevance.

This Chapter of the EIAR presents baseline information on population (including employment, amenity and community services) and assesses likely impacts as a result of the proposed development. This facilitates an assessment of the potential impacts on human health where there is a potential for this to be impacted as identified within Table 10-1.

**Table 10-1** Wider Determinants of Health and Proposed Development

| <b>Categories</b>                | <b>Wider Determinants of Health</b>                   | <b>Commentary</b>   |
|----------------------------------|---|---|
| <b>Health related behaviours</b> | Physical activity                                     | No changes likely as a result of proposed development   |
|                                  | Risk taking behaviour                                 | No changes likely as a result of proposed development   |
|                                  | Diet and nutrition                                    | No changes likely as a result of proposed development   |
| <b>Social environment</b>        | Housing   | No changes likely as a result of proposed development   |
|                                  | Relocation  | Not relevant, no relocation proposed  |
|                                  | Open space, leisure and play                          | No changes likely as a result of proposed development   |
|                                  | Transport modes, access and connections               | No changes likely as a result of proposed development, using existing accesses/routes                           |
|                                  | Community Safety                                      | Positive effect, increasing safety of TSF   |
|                                  | Community identity, culture, resilience and influence | No changes likely, proposed development is effectively a continuation of existing activity in a remote location |
|                                  | Social participation, interaction and support         | Not relevant to application site/proposed development   |
| <b>Economic environment</b>      | Education and training                                | Not relevant to application site/proposed development   |
|                                  | Employment and income                                 | Proposed development will be a source of employment during construction works                                   |
| <b>Bio-physical environment</b>  | Climate change mitigation and adaptation              | Increasing safety of TSF taking account of climate change predictions   |
|                                  | Air quality   | Potential for air quality impacts from HGV use and dust from construction activities on site                    |

|  |   |  |
|--|---|--|
|  | Water quality or availability               | Potential for contaminants in, run-off to, impact on surface water and/or groundwater during construction              |
|  | Land quality                                | Will require importation of waste (greenfield soil by-product determination by EPA and mine rock) to reinforce the TSF |
|  | Noise and vibration                         | Potential for impacts from construction site activities  |
|  | Radiation                                   | No risk of radiation from proposed development   |
| <b>Institutional and built environment</b> | Health and social care services             | No changes likely as a result of proposed development  |
|  | Built environment                           | No discernible changes likely as a result of proposed development  |
|  | Wider societal infrastructure and resources | No discernible changes likely as a result of proposed development  |

### 10.1.5 Statement of Authority

This assessment has been undertaken by the following project team:

- Edward Goulding BA, MSc
- Lynn Hassett BSc (Hons), MSc, PIEMA, MIEnvSc
- Shane McDermott BSc(Hons), MSCSI MRICS

Edward Goulding (BA, MSc) is a Graduate Town Planner with 2 years of experience in general planning and EIA. He holds a Bachelor of arts degree in Geography, Planning and Environmental Policy from University College Dublin and a master's in science in Planning and Development from Queens University Belfast.

Lynn is an EIA co-ordinator with a BSc in Applied Ecology (2000) and a MSc in Environmental Impact Assessment (2001). She has 15 years of experience of in EIA across the not-for-profit, public and private sectors in the UK and Ireland. She has worked on both the review of EIA on behalf of planning authorities assessing applications and in the production of them to support planning applications being lodged. She is a Practitioner member of the Institute of Environmental Management and Assessment, which she is a member of since 2001. She is also a Full Member of the Institution of Environmental Sciences, which she joined in 2023.

Shane is a Technical Director of SLR and a chartered surveyor with 20 years of experience of planning / environmental permitting and project management. He has extensive experience of managing planning applications and carrying out EIARs, principally for minerals related development and waste licence sites throughout Ireland.

## **10.2 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT**

Boliden Tara Mines DAC (BTM) is proposing the following engineering works at the Randalstown Tailings Storage Facility (TSF): The construction of a reinforcement buttress to sections of the extant embankment walls of the TSF.

BTM has recently become a member of the International Council for Mining and Metals (ICMM) and is in the process of adopting the Global Industry Standard on Tailings Management (GISTM) issued in 2020.

A key objective of GISTM is to address the risk of tailings embankment failure through conservative design criteria, independent of trigger mechanisms, in order to minimise potential impacts. In order to increase the factor of safety of the extant embankment walls of the TSF, a rockfill and earthen buttress will be constructed against a selection of them is proposed to provide an enhancement to the stability of the embankment dam structure and meet requirements of GISTM.

It is important to note that the TSF is not currently at risk for instability based on the operational practices in place. However, to ensure successful adoption of GISTM, the applicant undertook additional studies and investigation in 2019 and 2020 (see Appendix 1-A in Chapter 1) which resulted in a recommendation to construct a buttress to ensure the long-term stability in line with higher standards of industry practice. The proposed construction of a buttress around the perimeter of Stages 1 to 5 of the TSF as described in Chapter 3 of this EIAR has been endorsed by the Independent Tailings Review Board (ITRB).

### **10.2.1 Construction Phase**

The construction of the buttress will require excavation to formation level and will involve the removal of topsoil, vegetation and existing rockfill material already capped over the Starter Dams at Stages 1, 2 and 3 of the TSF.

Imported materials (greenfield soil and mine rock) will be used at source and when not possible stockpiled temporarily and re-used in the construction of the proposed rockfill and earthen reinforcement buttress against the extant embankment walls of the TSF.

The proposed buttress will involve the importation of a total of 1,234,944 tonnes (561,340 m<sup>3</sup>) of construction material:

| Rock Fill (m <sup>3</sup> ) | Soil (m <sup>3</sup> ) | Total (m <sup>3</sup> ) |
|-----------------------------|------------------------|-------------------------|
| 265,690                     | 295,650                | 561,340                 |

The construction of the buttress will require the movement of materials for reuse from a number of applicant sources locations, including the Main Mine site in Navan (mine rock) and independent third party development sites (likely Clonee / via M3 motorway). Greenfield material (soil and stone) will be imported for construction purposes once the EPA provides an Article 27 determination that the greenfield soil material meets the conditions set out in the relevant legislation.

#### **10.2.1.1 Construction sequence**

The construction works will be sequenced in two phases which may run concurrently The works will commence at the eastern extremity of the site and proceed westward):

- Phase 1 will proceed on a horizontal basis along Stage 4 of the tailings dam. Works will begin at the level of the toe of the Stage 4 upstream raise against the embankment wall and will vary between 3, 4 and 7 metres in height. The material will be placed in layers along 500m sections, with each 500 m section taking approximately one month to complete. It is envisaged that the Phase 1 works will take approximately 30 weeks; and
- Phase 2 will proceed on a horizontal basis at ground level against the embankment wall of stages 1,2 and 3 (starter dams). The material will be placed in layers along 500m sections, with each 500 m section taking approximately one month to complete. It is envisaged that the Phase 2 works will take approximately 80 weeks.

### Sequence of works

1. Preparatory Works including accommodation of monitoring instrumentation, cleaning the crest of the Starter Dams, removal of any topsoil, shrubs / scrub from the side-slopes over the footprint of the proposed buttress and to facilitate plant access; and
2. Installation of the Phase 1 Buttress (toe of stage 4)
3. Installation of the Phase 2 Buttress (at ground level starter embankments)

Three possible construction programme options of varying duration have been considered in terms of potential impacts on the surrounding road network (see Chapter 5 of this EIAR). Option A proposes the shortest construction period of 1.5 years (823,296 tonnes per annum) over 2024 and 2025, Option B proposes a construction period of 2 years (617,472 tonnes per annum), also over 2024 and 2025 and Option C proposes the longest construction period of 3 years (411,648 tonnes per annum) over 2024, 2025 and 2026.

Details regarding sequencing of construction works to ensure adequate drainage and water management at the extant TSF is explained in Chapter 3 and Chapter 7 of the EIAR.

#### **10.2.2 Operational Phase**

The operational phase relates to the period following construction of the buttress. The buttress will not alter the function or operation of the existing TSF, nor will it affect the existing drainage system.

#### **10.2.3 Decommissioning Phase**

There is no decommissioning phase envisaged for the proposed development as it has been designed to achieve safety of the TSF in perpetuity.

### **10.3 ASSESSMENT METHODOLOGY**

#### **10.3.1 Study Area**

A Study Area has been defined as a 1 km buffer radius from the application site boundary as shown to scale in Figure 10-1 at the end of this chapter and identifies residential and other community receptors within this zone. Although population and human health effects would not expect to be experienced to a 1 km distance, the radius has been selected to facilitate a



conservative assessment and to ensure that a range of community services and facilities representative of the local area were included.

### 10.3.2 Guidance and Policy

This chapter of the EIAR has been prepared on the basis of the EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022).

There is no specific legislation relevant to this chapter of the EIAR. However, the information provided within this chapter is informed by:

- Section 37D and 171A of the Planning and Development Act, 2000 (as amended);
- Section 94 and Schedule 6 of the Planning and Development Regulations, 2001 (as amended); and
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

The legislation relevant to human health protection is set out within the technical EIA chapters relevant to each pathway (noise, air, soil, water, etc). The legislation in relation to human health protection is predominantly set out within World Health Organisation Guidelines and Limits.

The WHO works worldwide to promote health, keep the world safe, and serve the vulnerable. Their goal is to ensure that a billion more people have universal health coverage, to protect a billion more people from health emergencies, and provide a further billion people with better health and well-being. It has a wide remit, from setting limits to prevent danger to human health, to providing responses to health emergencies, and promoting health and wellbeing.

The Institute of Public Health (IPH) is an organisation that informs public policy to promote health and wellbeing and reduce health inequalities in Ireland and Northern Ireland. It has previously provided comments on draft legislation on EIA and has been represented on the working group for the IEMA guidance on human health in EIA. It has its own guidance on stand-alone Health Impact Assessments<sup>2</sup> (HIAs), however, the guidance is clear that EIA does

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<sup>2</sup> <https://www.publichealth.ie/reports/health-impact-assessment-guidance-manual>

not have to adopt all the HIA methods and tools. The IPH set its Strategic Objectives 2020-2025 in order to be able to fulfil its role to its best potential in informing public health policy. The Institute supports the national implementation of the UN Sustainable Development Goals, including SDG3, which focuses on good health and wellbeing. Taking opportunities to enhance wellbeing is a common thread in the IPH and IEMA guidance on human health assessment.

There is no policy or validation requirement to undertake HIA for the proposed development, therefore this chapter of the EIA aligns to HIA principles, as identified in the IPH Guidelines, including considering wider determinants of health, considering existing inequalities of health and encouraging stakeholder engagement.

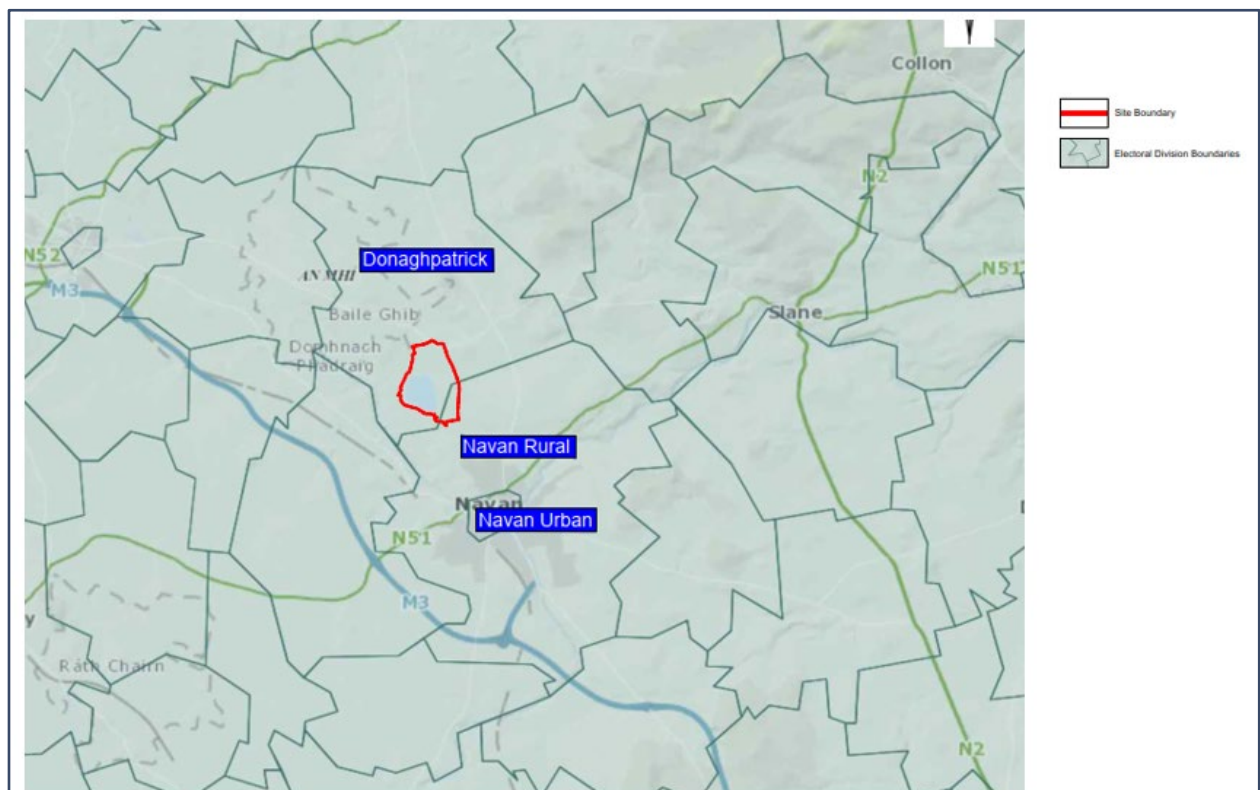
The Healthy Ireland Framework was launched by the Irish Government in 2013, with a focus to deliver a vision where 'everyone can enjoy physical and mental health and wellbeing to their full potential, where wellbeing is valued and supported at every level of society and is everyone's responsibility'. The Healthy Ireland Strategic Action Plan 2021-2025 identifies 6 themes to deliver the vision and identifies relevant government departments as well as specific implementation actions. A network of Healthy Cities and Counties (including one for Meath) is intended to be developed to deliver the Framework at a local level. One of the commitments within the Strategic Action Plan is to publish a Healthy Cities and Counties Strategic Development Plan.

The Healthy Ireland Framework is delivered within each local authority area through the Local Community Development Committee (LCDC). In Meath, the programme is supported by a dedicated Healthy Ireland Co-ordinator who produces a newsletter signposting community initiatives for each month to support the overall mental and physical wellbeing of the local population.

The MCC CDP 2021-2027 sets out a range of social objectives and policies in relation to community building and promoting economic development in tandem with inclusive and diverse community services and facilities.

### 10.3.3 Socio Economic Characteristics

Demographic data has been sourced from the Central Statistics Office (CSO)'s Census of Ireland 2022 and 2016<sup>3</sup> Small Area Population Statistics (SAP) maps. The most localised level of census data usually examined in EIA is that of the Electoral Division (ED) areas. The application site falls within two ED areas, see Figure 10-2. The majority of the application site is located within the ED of Donaghpatrick, with the southeastern part falling within Navan Rural. Census data within these two EDs are set out in this assessment to represent population and demographic baseline information within and surrounding the application area. Comparator census data relating to the State, County Meath and the Navan Urban ED are also presented to provide a wider context and to enable comparative analysis.



**Figure 10-2** Electoral Divisions covering the Application Site

<sup>3</sup> <https://visual.cso.ie/?body=entity/ima/cop/>

### 10.3.4 Human Health

There is limited publicly available data in relation to human health at the local level. The CSO data that is available on self-reported general health status is presented in this assessment as well as the Pobal deprivation indices. Other information such as general socio-economic characteristics (as outlined above), the scale of community facilities and amenities available and feedback obtained during the consultation process outlined earlier in the assessment has been used to inform the baseline assessment of human health.

### 10.3.5 Other Sources of Information

In addition to census data from the CSO and the EIA guidance referred to in the Scope of the Assessment section, the following sources have also been used to collate relevant information for the assessment:

- Myplan.ie (<http://myplan.ie/index.html>);
- Historic Environment Viewer (<http://webgis.archaeology.ie/historicenvironment/>);
- Meath County Development Plan 2021-2027;
- the environmental topic chapters of this EIAR;
- OS Maps;
- Google Maps Satellite imagery;
- [openstreetmap.org](http://openstreetmap.org); and
- Live Register Statistics.

## 10.4 RECEIVING ENVIRONMENT

Boliden Tara Mines DAC (Tara Mines) operates the largest operating zinc mine in Europe at Knockumber in County Meath, c. 50 km northwest of Dublin. The facility consists of the underground mine, an aboveground ore processing facility on a footprint of approx. 72 hectares, and an aboveground tailing storage facility on a footprint of 250 hectares, part of which is the subject of this planning application.

#### 10.4.1 Site Location and Context

The extant TSF area is approximately 2.5 km<sup>2</sup>/250 Ha in size and is located approximately 2 km west of Navan, and c. 2 km southwest of the small village of Kilberry. According to the 2022 Census data, Navan Town has a population of 33,886.

The TSF itself is of an industrial character comprising a ring-dike configuration, with stages 1 to 5 enclosed by earth fill embankment walls and Stage 6 composite lined. It has been constructed in six stages since 1974 to accommodate the storage of waste material from processing ore from the main mine site, approximately 2.8 km south.

The Yellow River bounds the site to the west, the Blakes stream to the northeast and the Simonstown Stream to the east and southeast. The L74141 / R163 roads run along the site to the north. The Navan 110kv substation is situated to the northeast. To the south, the site is adjoined by agricultural pastoral land and a network of overhead electricity pylons. The new Boyne Valley to Lakelands Greenway is located on the old railway line running approximately 100 m to the east of the TSF. It is part of a 30km walking and cycling amenity from Navan to Kingscourt, Co Cavan.

The area surrounding the site can be characterised as rural and is comprised of farmland, farm dwellings and residential dwellings. It is composed of gently undulating lands between 40m and 90m OD. Navan racecourse is located just under 1 km east of the TSF. Other industrial uses comprised of a quarry (Kilsaran Quarry) and waste disposal company (Bord Na Mona Recycling Facility), and a chemical manufacturing plant are located approximately 1 km southeast and 1.5 km southwest, respectively, of the site.

Access to the TSF is via an access road that connects with the Donaghpatrick Local Road, L74141, via the R163 Kilberry Road (Kells to Slane Road).

There is a good strategic road network in the immediate area, with the R163, R147 and R162 all surrounding the site, providing onward connection with a number of national routes, including the N51 and N52, and on to the M1 and M3 motorways.

### 10.4.2 Sensitive Receptors

In terms of the local population, there is a low and dispersed pattern of residential development within the study area, predominantly formed of linear clusters of dwellings along the road network (see Figure 10-1).

As shown on Figure 10-1, there are approximately 11 residences indicated within 250m of the proposed development, a further 26 within 500m, and a total of approximately 76 residences within the 1km study area. Navan racecourse is within the study area, hence the close proximity of equine species is considered within the context of local amenities.

A housing estate within the northwestern outskirts of Navan Town is included just outside of the south-eastern extents of the study area and the population of Navan as a whole will be considered in the assessment.

### 10.4.3 Population and Population Trends

Table 10-2 shows that the trend of population growth has been consistent across national, county and ED levels. The rate of population growth has been highest within the Navan Urban and Rural ED areas. The Donaghpatrick ED and the Meath County rate of growth are very similar and higher than the level observed across the State in general.

*Table 10-2 Population Trends 2011 to 2022*

| AREA             | 2011      | 2016      | 2022      | % CHANGE |
|------------------|-----------|-----------|-----------|----------|
| State            | 4,588,252 | 4,761,865 | 5,149,139 | 12.2     |
| Meath County     | 184,135   | 195,044   | 214,907   | 16.7     |
| Donaghpatrick ED | 1,741     | 1,800     | 2,004     | 15.1     |
| Navan Rural ED   | 26,657    | 28,117    | 31,940    | 19.8     |
| Navan Urban ED   | 3,168     | 3,619     | 3,814     | 20.4     |

The population growth in the area signifies a trend towards increasing urbanization and population density. The 20.4% population increase in Navan Urban is a reflection of the area's growing appeal as a residential and commercial hub. The large growth of Navan Rural ED, within which the application site is partly located, indicates a spill-over effect, where the urban expansion influences adjacent rural areas, leading to their gradual transformation.

The slightly slower growth pattern within the Donaghpatrick ED, partly located within the application site suggests a more balanced development, potentially indicative of a community retaining its rural essence amidst broader regional changes.

Table 10-3 highlights a substantial change in terms of population density in the Navan Urban ED area from 2011 to 2022 indicating rapid urbanization, likely fuelled by economic opportunities and an influx of residents seeking urban amenities.

There has also been a dynamic demographic shift within both Donaghpatrick and Navan Rural EDs, which cover the application site. The trends observed there were similar to the overall Meath County population density. The increasing population density is again indicative of the area's growing appeal as a residential and commercial area, potentially driven by its proximity to major urban centres and the development of local infrastructure.

*Table 10-3 Population Density Changes 2011-2022*

| AREA             | YEAR      | POPULATION (PERSONS KILOMETER) | PER SQUARE | DENSITY PER SQUARE | % CHANGE |
|------------------|-----------|--------------------------------|------------|--------------------|----------|
| State            | 2011-2022 | 67 to 71.2                     |            |                    | 7.8      |
| Meath County     | 2011-2022 | 75.8 to 88.5                   |            |                    | 16.8     |
| Donaghpatrick ED | 2011-2022 | 40 to 47                       |            |                    | 17.5     |
| Navan Rural ED   | 2011-2022 | 451 to 541                     |            |                    | 20       |
| Navan Urban ED   | 2011-2022 | 1,584 to 2,145.7               |            |                    | 35.5     |

These figures collectively underscore the evolving demographic landscape in and around the local and regional area, necessitating careful planning and resource allocation to accommodate the growing populations and their changing needs.

The lower gradual rise reflects broader national trends of population growth and urbanization, though at a relatively stable pace.

#### **10.4.4 Economic Activity**

Navan is identified in the Meath County Development Plan (CDP) as the Key Town and the largest settlement in the County. A key corporate priority for the Council over the plan period

is to secure the delivery of Phase II of the Dublin-Navan rail line to support the economic development of the town. In 2016, the Council published a public realm plan and public transport strategy for the town 'Navan 2030' which sets out a strategy for the renewal of the town centre together with public transport improvements. In addition, the Council was successful in a number of funding applications under the Urban Regeneration Fund that will reinvigorate the urban core of the town.

Navan is identified as a settlement with potential to make a significant contribution to the delivery of housing in the County in the medium term, and the delivery of large scale residential is considered a key feature in supporting the critical mass of population required to support the new rail line. There is a large Strategic Development Zone of c. 38 Ha (Clonmaggaden) which is one of the most notable large prospective residential planning areas, located north of Navan town centre. The CDP contains an objective to prepare a new Local Area Plan (LAP) for the town. In its December 2023 progress report on the CDP, MCC reported that preparation work had been commenced on an Area Based Transport Assessment to inform the new Navan LAP.

With respect to commuting times, 2022 data released by the Central Statistics Office (CSO), revealed that workers residing in Meath County endure the lengthiest commutes in Ireland. The data reveals that the average journey time for Meath's commuters was the highest nationwide, with many traveling for over an hour daily to their workplaces. It is an objective of the Meath County Development Plan 2021-2027 to redress the high commuter levels in towns such as Navan where the population has grown rapidly, without equivalent increases in jobs. Tara Mines, located on the north western fringe of the town, is the largest zinc mine in Europe and is a major employer in the town.

In April 2022, out of the 89,635 individuals commuting in Meath, the majority, 60,834, used cars, while 4,959 and 1,241 travelled by bus and train, respectively. Active travel methods saw a modest increase, with 5,023 walking and 634 cycling to work, indicating a shift towards more sustainable commuting options. The average travel time in Meath rose to 35.2 minutes in 2022, up from 34.6 minutes in 2016, surpassing the national average journey time, which increased from 28.2 minutes in 2016 to 29.1 minutes in 2022. This data underscores the growing commute durations for Meath's workforce and reflects broader trends in transportation and work-travel patterns.



Table 10-4 presents a detailed breakdown of the economic status of the population in Donaghpatrick, Navan Rural and Navan Urban EDs, County Meath and the State.

The proportion of those 'At work', across the EDs and Meath County are higher than that at State level. Navan Urban had a higher long term unemployment rate and rate of those reporting being unable to work due to illness or disability than the other areas noted.

The higher student population in Donaghpatrick and Navan Rural, compared to the comparator areas possibly reflects a younger demographic in these specific areas, which are partly located in the application site. This is slightly higher than the overall percentages in Meath and the State.

The proportion of the 'Retired' population is notably higher in Navan Urban at 14.8% and Donaghpatrick at 13.8%, compared to other areas.

**Table 10-4 Economic Status of the Total Population Aged 15+ 2022**

| <b>ECONOMIC STATUS</b>                                 | <b>Donaghpatrick ED</b> | <b>Navan Urban ED</b> | <b>Navan Rural ED</b> | <b>MEATH</b> | <b>STATE</b> |
|--|-------------------------|-----------------------|-----------------------|--------------|--------------|
| At work  | 58.7%                   | 56.7%                 | 58.2%                 | 59.3%        | 56.1%        |
| Looking for first regular job                          | 0.6%                    | 1.2%                  | 1.1%                  | 0.8%         | 0.8%         |
| Short term unemployed                                  | 0.8%                    | 2.4%                  | 1.9%                  | 1.6%         |              |
| Long term unemployed                                   | 1.6%                    | 5.1%                  | 3.3%                  | 2.3%         | 4.3%         |
| Student  | 13.2%                   | 5.8%                  | 12.3%                 | 11.3%        | 11.1%        |
| Looking after home/family                              | 7.9%                    | 7.4%                  | 7.2%                  | 7.2%         | 6.6%         |
| Retired  | 13.8%                   | 14.8%                 | 10.9%                 | 13.2%        | 15.9%        |
| Unable to work due to permanent sickness or disability | 2.9%                    | 6.0%                  | 4.3%                  | 3.7%         | 4.6%         |
| Other  | 0.6%                    | 0.6%                  | 0.7%                  | 0.6%         | 0.7%         |

According to Live Register<sup>4</sup> statistics for January 2024, there were 2,137 people listed in Navan, up from 2,107 and 2,067 in December and November 2023, respectively.

#### **10.4.5 Local Amenities**

With respect to existing social and community facilities, The Boyne Valley to Lakelands Greenway project, part of which abuts the application site to the east, is a strategic initiative to enhance connectivity and outdoor recreational opportunities in Ireland. This greenway, designed as a multi-use trail, aims to link the historic Boyne Valley with the Lakelands region, offering a route for walking, cycling, and other non-motorized activities. It traverses a variety of landscapes, showcasing Ireland's natural beauty and historical sites.

The development of this greenway is anticipated to not only encourage health and wellness among the local and wider community but also to boost regional tourism and economy by attracting both domestic and international visitors. The project underscores the importance of sustainable infrastructure in promoting environmental conservation and community wellbeing.

Navan Racecourse, located c. 1 km east of the application site, is a prominent horse racing venue in Ireland. Established in the 1920s, it hosts National Hunt and flat races and is known for its challenging terrain. The racecourse is a significant local attraction, drawing racing enthusiasts and contributing to the area's economy and social fabric. Its accessibility from urban centres enhances its appeal as a cultural and sporting destination. It also hosts an outdoor adventure centre, which provides a range of outdoor activities such as go karting, mini golf and other activities for a range of ages and group sizes.

Simonstown Gaels GAA sports grounds are located just outside the study area to the southeast.

#### **10.4.6 Community Services**

There is a pre-school (Oakleaves) and a primary school (Naomh Eoin) within the southeastern outskirts of the study area.

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<sup>4</sup> <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?Maintable=LRM07&Planguage=0>

Navan town, which is directly southeast of the application site has a wide offering of other education, retail and other services, and the CDP contains objectives where additional services are required in line with projected further population increases.

#### **10.4.7 Human Health**

The HSE's County Clinic is located in Navan, as well as a range of other specialist public health services run by the HSE. Our Lady's Hospital is located within the town and is serviced with an emergency department, radiology department and 2 general theatres, amongst other services. There is a range of private healthcare providers in the wider Navan area.

Human health in relation to this assessment refers to the nature and possibility of adverse health effects on humans. In the context of existing human health, the most recent update from the Department of Health in Ireland regarding the 'Health in Ireland, Key Trends' report<sup>5</sup> was published on December 1, 2022, and last updated on December 6, 2022. The 2022 edition of the report provides summary statistics on health and health care over the past 10 years. The report highlights selected trends and topics and includes data from newly available sources.

Ireland has the highest self-perceived health status in the EU, with 82.1% of people rating their health as good or very good. The number of people reporting a chronic illness or health problem is also better than the EU average, at around 29% of the population.

Generally speaking, Ireland has a high level of good/very good health demonstrated in self-evaluation statistics included in Census data, which has been provided in Table 10-5. The data below shows the self-reported health status of individuals within the Donaghpatrick ED to be predominantly 'Very good' or 'Good'. The quality of health reported in Navan Urban ED is substantially less than that reported in all comparison areas. This is in line with earlier observations in Table 10-5, with a larger proportion of individuals recorded as unable to work due to sickness or disability than within the other areas considered.

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<sup>5</sup> <https://www.gov.ie/pdf/?file=https://assets.gov.ie/241598/8a6472b4-83cf-45ec-88c9-023e0c321d8c.pdf#page=null>

**Table 10-5** Self-perceived Health Status in Ireland

| <b>AREA</b>      | <b>VERY GOOD</b> | <b>GOOD</b> | <b>FAIR</b> | <b>BAD</b> | <b>VERY BAD</b> | <b>NOT STATED</b> |
|------------------|------------------|-------------|-------------|------------|-----------------|-------------------|
| State            | 59.4%            | 27.6%       | 8.0%        | 1.3%       | 0.3%            | 3.3%              |
| County Meath     | 57.1%            | 29.6%       | 7.6%        | 1.2%       | 0.3%            | 4.3%              |
| Navan Urban ED   | 42.7%            | 35.3%       | 11.2%       | 2.5%       | 0.5%            | 7.7%              |
| Donaghpatrick ED | 63.5%            | 27.7%       | 5.6%        | 0.7%       | 0.1%            | 2.2%              |
| Navan Rural ED   | 55.4%            | 30.3%       | 7.9%        | 1.2%       | 0.4%            | 4.7%              |

Pobal is an organisation that works on behalf of Government to support communities and local agencies toward achieving social inclusion and development. The organisation produces mapping<sup>6</sup> information including on deprivation indices in order to identify areas in need of social/community investment. The overall levels of deprivation have been based on census data in relation to demographic profile, social class composition and labour market situation. According to the deprivation indices based on 2022 census data, Donaghpatrick ED is categorised as marginally above average (i.e. slightly advantaged) and Navan Rural ED is categorised as marginally below average (i.e. slightly disadvantaged). Navan Urban ED is classified as 'Disadvantaged', which again agrees with previous baseline data on health and unemployment statistics in the urban area. The county of Meath is classified as 'marginally above average'.

A further review of Table 10-1 in the context of the baseline population confirms that the main potential for the proposed development to cause negative impacts to human health is through the potential for construction disturbance from potential noise, dust, land and water emissions. These issues have been addressed in detail in their respective chapters of the EIAR and conclusions in relation to their resulting impact to human health are set out later in this chapter.

The proposed development has potential for a substantial positive influence on the local economy through the enabling the continuation of the Tara Mine complex to align to best

<sup>6</sup> <https://data.pobal.ie/portal/apps/experiencebuilder/experience/?id=3b0acba7eb694ffa85340a60f81d516c>

practice in industry and to secure a continued source of direct and indirect employment. This has potential knock-on effects in terms of contributing to the overall wellbeing of the local population. The increased Factor of Safety that will be achieved for the TSF following the works is a benefit in terms of providing increased health and safety assurance, particularly in the light of climate change events.

#### **10.4.8 Health and Safety**

The EPA has produced a Radon Risk Map for Workplaces in Ireland, which shows where radon tests are required in workplaces. Radon gas is a naturally occurring gas released by the decay of uranium in rocks and soils, which can have health impacts if breathed in over long periods of time, particularly in indoor settings. A review of the Radon Map<sup>7</sup> in the context of the application site shows that the application site is not located within an area where radon testing is required.

The Tara Mine Site is listed as an Upper Tier Seveso site. The Seveso III Directive, 2012/18/EU, covers establishments where dangerous substances may be present (e.g. during processing or storage) in quantities above a certain threshold. Depending on the amount of dangerous substances present, establishments are categorised in lower and upper tier establishments, the latter are subject to more stringent requirements. The TSF itself falls outside the scope of the Seveso III Directive as the Health and Safety Authority (HSA) has confirmed that Dangerous Substances as listed in Schedule 1 of Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 are not present within it. Any potential hazard of the TSF is physical in nature rather than chemical and are adequately addressed by standard mining legislation.

The Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 implement the Seveso Directive in Ireland and lay down rules for the prevention of major accidents involving dangerous substances, and to seek to limit as far as possible the consequences for human health and the environment of any accident. The HSA are obliged to provide the Planning Authority with technical advice and information in relation

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<sup>7</sup> <https://gis.epa.ie/EPAMaps/Radon?&lid=EPA:RadonRiskMapofIreland>

to development within the consultation zone of a Seveso site. Meath County Council identifies the consultation zone for the Tara Mines Seveso site as 1 km radius.

The nearest other Seveso site from the application site is the Grassland Fertilisers Ltd site, which is a Lower Tier Site and at greater than 11 km northeast is well outside the 700 m consultation zone.

## **10.5 IDENTIFICATION OF LIKELY SIGNIFICANT IMPACTS**

The following sections aim to predict the likelihood of impacts arising on the aforementioned sensitive receptors or any of the features of the local community and health resources, including any likely new requirement of any as a consequence of the proposed development.

The intensity of environmental impacts at receptors will vary locally over the period of construction works.

Ultimately, all of the effects of a development on the environment impinge upon human beings. Direct effects relate to matters such as water, air quality and noise. Indirect effects relate to such matters as flora and fauna and changes to views and landscape character.

### **10.5.1 Construction Phase**

#### **10.5.1.1 Population and Population Trends**

The TSF, characterised by its industrial nature and ring-dike configuration, has been a notable structure in the region since its initial construction in 1974. The Tara Mine facility is a local landmark and is well known to the local population.

The proposed development itself is predicted to result in the employment of 15 workers during buttress preparation and construction. It is considered probable that the majority of the employment would be secured through direct BTM employees and Engineering and Construction contractors that serve the facility. There would be a knock-on, indirect effect on employment of local service providers, shops, etc as a result of the employment, but it is not expected to have any further impact on population trends. The proposed development will not introduce any new opportunities for residential development in itself, nor will it reduce the availability of it. Therefore, the predicted impact on population trends as a result of the construction of the proposed development is assessed as 'imperceptible'.

The population surrounding the site is predominantly rural, comprising farmland, farm dwellings, and residential properties. Careful construction and environmental management will be employed during the construction phase to ensure minimal disruption to these local land uses and the daily lives of residents.

As set out earlier, the traffic assessment described in Chapter 5 of this EIAR considered 3 options for the duration of the works to be carried out. Option A represents a worst-case scenario in terms of traffic, where all development will be carried out within the shortest option timeframe of 1.5 years. In that case, a total of 270 additional trips per day (258 HGV and 12 cars) would be generated over the timeframe for construction. If the longest option of construction programme of 3 years was selected there would be a projected maximum of 142 additional trips per day (130 HGVs and 12 cars) associated with the proposed development.

In all scenarios, the impacts associated with the proposed development are predicted to have an imperceptible effect on the local road network. It is acknowledged that the N51 currently exceeds capacity however, the traffic associated with the construction of the proposed buttress represents less than 1% of total predicted traffic on the network in all scenarios. Similarly, the R162 arm of the R162/N51 roundabout however currently operates at capacity and will exceed capacity, although similarly the predicted modelled impacts of proposed development will be minimal in terms of overall traffic there.

The proposed haul route will use existing source locations associated with the tailings facility and signs are present at the application site entrance/exit to ensure that traffic does not encroach outside these areas. A Construction Environment Management Plan (CEMP) will be used as a tool to monitor and control construction traffic to minimise disturbance to local residents.

As well as traffic, other potential short-term disturbance that will result from the proposed construction works will include noise and dust as well as the potential for accidental spillages to soils and water features and changes to views. Chapters 4, 7, 8, 9 and 12 identify mitigation measures to ensure that any of these potential emissions are avoided as far as possible and thereafter kept within acceptable limits.

In relation to water the assessment examined the potential impacts of the proposed buttress and its construction on water levels and water quality at the TSF and in the surrounding local

water environment. Following implementation of mitigation measures no significant adverse impacts are anticipated as a result of the proposed works.

In relation to noise assessment of the significance of the potential effects of the Development during construction (to include road traffic), operation and decommissioning was undertaken. There are no operational, decommissioning, or cumulative effects. Assessment demonstrated that the site construction works are well within the NRA guideline limits while the increase in noise levels due to road traffic will be barely perceptible. Noise during construction of the Development will be managed to comply with best practice, legislation and guidelines current at that time so that effects are not significant. In relation to air quality, Chapter 8 concludes that, based on modelling, the proposed works would have a negligible impact on the surrounding population with respect to the air quality indicators considered.

The land, soil and geological resource receptors which have the potential to be impacted upon during construction, operation, and decommissioning were assessed in Chapter 12. Given proposed mitigation and construction management measures and the fact Land within the Site is predominantly Made Ground derived from the former and current industrial land use and is not used for agricultural purposes, it concluded no significant impacts to land, soil, geology or human health from the Proposed development or through the combined effects with other developments in the surrounding area.

Chapter 4 of the EIAR describes the potential impacts on views and concludes that the proposed development will have a minor physical impact on the landscape, being an extension of a similar form to the existing TMF. The impact on views from the nine representative viewpoints are deemed to be imperceptible.

Given the proposed mitigation and construction management measures, the fact that the activities are largely related to existing and established practices at the tailings facility, and the short-term nature of the works, it is predicted that the potential effect of 'slight adverse' significance to the local population 'An effect which causes noticeable changes in the character of the environment without affecting its sensitivities'.

Boliden Tara Mines has a documented complaints procedure for dealing with issues from the public that arise. Personnel from the environmental department are available on a 24 hour call out basis to deal with environmental matters including complaints and incidents. They also



have a 'Stakeholder Feedback Portal' which is a platform for members of the public or any external stakeholder to report concerns, requests for information, suggestions or grievances related to operations at their site. They implement an Environmental Management System which is certified to ISO 14001;2015. They also comply with all operating conditions and emission limits as set by the EPA in Industrial Emissions License (IEL) P0516-04.

#### **10.5.1.2 Economic Activity**

Tara Mines is recognised as being a key employer in the Navan area. The proposed development is intended to allow the applicant to gain the accreditation BTM needs to ensure it is aligned to the highest possible industry standards. Substantial investment has been made by the applicant to undertake ground investigations and similar studies to ensure that the desired Factor of Safety can be achieved. The construction of the buttress, and subsequent adoption of the GISTM will help to ensure a continuity of work for over 700 employees and indirect employment for local businesses. As set out above, although it is probable that direct employment would be provided to existing BTM staff and contractors, it is still employment that would not exist were it not for the proposed development. There would also be a knock-on, indirect effect on employment of local service providers, shops, etc as a result of the employment.

Given the above rationale, and the recent concerns regarding the applicant's ability to continue to provide large-scale employment, it is considered that the employment and global economic competitiveness that the works will facilitate, the potential effect is assessed as a positive significant 'An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment' in accordance with the EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022).

#### **10.5.1.3 Local Amenities**

The potential short-term disturbance that will result from the proposed construction works will include noise and dust as well as the potential for accidental spillages to soils and water features. These could have adverse impacts on local people's enjoyment of identified local amenities such as the local Greenway, the local natural rural surroundings, local adventure centre, sports clubs and horse racing stadium.

Chapters 7, 8, 9 and 12 identify mitigation measures to ensure that any of these potential emissions are avoided as far as possible and thereafter kept within acceptable limits. Chapter 9 of the EIAR concludes that the short-term increase in noise levels from construction works and HGV road traffic arising from the importation of construction will be within acceptable limits and negligible, hence it is not anticipated that they will give rise to adverse impacts to local amenities. Similarly, Chapter 8 predicts a negligible impact on air quality as a result of the proposed works. Chapters 7 and 12 identifies the construction mitigation measures to be implemented through the CEMP and construction best practice generally to avoid as far as possible the potential for any water or soil emissions.

Chapter 6 provides an assessment of potential impacts on ecological features including flora and fauna. Following a comprehensive assessment of the biodiversity occurring within the application site and immediately adjacent, and assuming the full and successful implementation of the mitigation measures outlined within the EIAR, based on objective scientific evidence, and peer-reviewed literature, it is the opinion of the authors that the proposed development will not result in significant negative impacts on:

- The Natura 2000 network; or
- Domestic designated sites

Following a comprehensive assessment of the biodiversity occurring within the application site and immediately adjacent, and assuming the full and successful implementation of the mitigation measures outlined within the EIAR, based on objective scientific evidence, and peer-reviewed literature, it is the opinion of the authors that the proposed development will not result in significant negative impacts on:

- Habitats and flora occurring;
- Breeding birds;
- Kingfisher;
- Overwintering birds;
- Non-volant Mammals;
- Otter;
- Roosting/Commuting/Foraging Bats.

The biodiversity assessment concludes that with the implementation of mitigation measures, such as the Habitat and Biodiversity Conservation and Management Plan, a net positive impact on the resource present can be achieved. Given the proximity of the site to the Yellow River, and the importance of the adjacent Greenway as a recreational amenity, there is therefore a potential for enhancement to local amenities in general.

Chapter 4 of the EIAR describes the potential impacts on landscape and views and concludes that in terms of landscape impacts, it is considered that the proposed development will have a minor physical impact on the landscape and that such effects will be 'permanent'. There will be a minimal impact on the landscape character as a result of the additional buttressing to the existing tailings facility as it will occur within an area that can be generally characterised as industrial. Consequently, the proposed development is not considered to conflict unduly with the prevailing landscape character of its immediate environs. For these reasons, a 'Negative', 'Permanent' and 'Imperceptible' level of landscape impact is predicted for the site and its immediate surroundings.

Visual impacts were specifically assessed at nine viewpoints representing different distances, angles and viewing contexts within the study area. The visual impacts at all viewpoints were deemed to be 'Imperceptible', even at VP7 from Proudstown Race Course, which is considered to have a slightly higher level of sensitivity relative to the other typical rural views.

The potential of climate related impacts (Greenhouse Gas Emissions and Vulnerability to Climate Change events) associated with the proposed development was undertaken. It concluded that emissions associated with the proposed development is not going to significantly impact proposed climate change targets under the EU effort sharing decision ((EC) No 401/2009 and (EU) 2018/1999) nor the National Climate change action plan budgets (CAP2023).

It is anticipated that any potential adverse residual emissions would be short-term and intermittent and would be a 'not significant' effect ('An effect which causes noticeable changes in the character of the environment but without significant consequences') in terms of the enjoyment or functioning of any of the local amenities.

#### **10.5.1.4 Community Services**

The proposed development, as set out above, is not anticipated to result in any increase or decrease in population or any additional demand on community services. Therefore, the potential effect of the proposed development on these is assessed as 'imperceptible'.

#### **10.5.1.5 Human Health**

The proposed development, as set out above, is not anticipated to result in any increase or decrease in population or any additional demand on healthcare services. The baseline information presented in the preceding section has not identified any particular sensitivities in relation to human health. The situation within the two EDs covering the application site is positive and represents a better scenario than that within the Navan Urban area. The lesser quality of health in Navan Urban will be addressed through the regeneration proposals for Navan town centre.

As outlined in chapters 7, 8, 9 and 12 of the EIAR, a number of mitigation measures are proposed and the residual effect of the proposed development during the construction phase is considered to be within acceptable limits in accordance with industry standards.

In terms of human health, the sensitivity of the population is considered to be low. The technical assessments within the chapters above have concluded that the predicted changes in pollutants are well within statutory standards and WHO guidelines. The potential for non-threshold effects is noted and is considered to be of a very low level over a short-term basis, therefore the magnitude is predicted to be low. In accordance with the significance matrix proposed by the IEMA Guide to Determining Significance for Human Health in EIA, therefore, the potential for effects on human health is considered to be minor adverse (not significant). On this basis, it is considered that there would be no likely significant temporary or permanent effects on human health during the construction phase following mitigation.

The scale of community facilities and amenities available to local residents is considered to be in proportion with their rural location. The proposed development, itself, will not introduce new communities to the local area and is not expected to create any additional demand on services. Therefore, the potential effect of the proposed development on these is assessed as 'imperceptible'.

### **10.5.1.6 Health and Safety**

The proposed works are general construction/earthworks and entailing standard construction machinery. The purpose of the proposed development in itself is to increase the health and safety standards of the TSF to the highest possible standards.

The Tara Mine complex comes under heavy regulation through the Health and Safety Authority (e.g. The Safety, Health and Welfare at Work (Mines) Regulations SI 133 of 2018 and Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015)., who have specialist mining inspectors carry out several inspections to prevent against major incidents such on an annual basis. All company activities are carried out and governed by the Company's Industrial Emissions License (IEL) P0516-04 which is managed by the Environmental Protection Agency (EPA). An extensive monitoring programme is in place to ensure compliance with this.

BTM is obligated under condition 10 of its Industrial Emissions licence to undertake Environmental Liabilities Risk Assessment (ELRA) which addresses the liabilities from past and present activities. The ELRA considers the risk of unplanned events occurring during the operation of the facility that could result in unknown liabilities in addition to reviewing financial risk associated with the winding down of operations. BTM is obliged to undertake periodic review of the ELRA to reflect any significant change on site, and in any case every three years following initial agreement. These regulations and measures will ensure there will be no adverse impact on the health and safety of the local community arising from the development.

In addition, BTM has a Closure Reclamation and Aftercare Management Plan (CRAMP) in place in accordance with Condition 10.2.1 of its Industrial Emissions Licence, P0 516-04 (for known liabilities). The CRAMP details the closure, remediation and aftercare strategy as well as defining criteria to determine success of closure of both the Tailings Management Facility located at Randalstown and the underground mine and mine site facilities at Knockumber (review undertaken in August 2023).

Tara Mines has a long history of contributing to the knowledge bank of mining waste and its impacts and conducted a research project in conjunction with UCD on the subject of on Mine Tailings and Environmental Risk Assessment and Management between 1977 and 2009. Most of the research programme at Tara Mines was elective, rather than driven by regulatory

need, in that the company, recognising the importance of understanding the risks of tailings storage and management thereof, so they undertook research to start the process of investigating rehabilitation and closure options.

A detailed waste classification for the Stage 5 tailings conducted in 2015 by SLR (ref:416-03390-00004-Hazwaste), to include analysis by X-ray diffraction and Chemometric Identification of Substrates and Element Distribution, concluded that more than 99 % of the tailings were comprised of naturally occurring species derived from limestone and contained less than 0.5 % lead and zinc ore. The tailings stored at the TSF were classified as 'non-hazardous' tailings and under the European Waste Catalogue (EWC) Code 01 03 06.

Chapter 7 of the EIAR sets out the assessment of a site-specific flood risk which concluded that the proposed Finished Floor Level is above low probability exceedance event level, it is not at the risk of flooding, will not obstruct or impede important flow paths, exacerbate flooding in the immediate vicinity or wider area and will not result in residual risk to the area.

Although construction work, by its nature, is considered to have health and safety risks, it is not considered that the works proposed in this instance are any more risky than generic construction works that are regularly undertaken in the area.

Based on the information set out above, the risks of the Tara Mines to public health and safety are very low, and the proposed development will be carried out in such a way and under strict control by MCC, the EPA and the HSA that the significance of the effect is assessed as 'imperceptible'.

## **10.5.2 Operational Phase**

### **10.5.2.1 Population Trends**

Once constructed, the proposed development will be complete and the normal limited patterns of movement at the TSF site will resume. Therefore, the significance of the effect is assessed as 'imperceptible'.

### **10.5.2.2 Economic Activity**

Once constructed, the proposed development will be complete and the normal limited patterns of movement at the TSF site will resume. Therefore, the significance of the effect is assessed as 'imperceptible'.

### **10.5.2.3 Local Amenities**

Once constructed, the buttress will remain in perpetuity against the extant TSF embankment walls. The embankment walls will be seeded and vegetated with the tone and texture of the new buttress similar to existing embankment walls (Refer to Chapter 4 for assessment of landscape and visual impacts) which will ensure that the long-term effect will be in keeping with the surrounding area and will provide opportunities for ecological habitats.

Habitats present at the TSF are of high biodiversity importance on a national and international scale: The mosaic of semi-natural habitats occurring present the largest undisturbed such habitats in County Meath. The natural grassland habitat support a wide variety of flora, including a diversity of Orchid species. The wetland habitats are of international importance as regards breeding birds, and overwintering bird species. There are numerous, red-listed bird species and several Annex I listed birds including Kingfisher and Whooper Swan. The TSF habitats are of international importance as regards mammals, supporting a wide range of native mammal species, including the Annex II listed Otter and a minimum of six bat species, all of which are listed on Annex IV of the Habitats Directive.

Ultimately, the proposed development aims to enhance the setting of amenities such as the Greenway. The significance of the effect is assessed as a 'not significant' 'An effect which causes noticeable changes in the character of the environment but without significant consequences'.

### **10.5.2.4 Community Services**

Once constructed, the proposed development will be complete and the normal limited patterns of movement at the TSF site will resume. The significance of the effect is assessed as 'imperceptible'

### **10.5.2.5 Human Health**

Once constructed, the proposed development will be complete and the normal limited patterns of movement at the TSF site will resume. There will be no additional requirement for healthcare services. Therefore, the significance of the effect is assessed as 'imperceptible'.

### **10.5.2.6 Health and Safety**

Once constructed, the proposed development will remain in perpetuity as an enhancement to the already high standards of stability required to ensure safe storage of tailings waste. This is classified as a beneficial 'moderate' effect significance 'An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends'. The emerging baseline trends in this case is in relation to the improving standards of industrial and mining management that are consistent with the emergence of research and experience.

## **10.7 DO NOTHING SCENARIO**

In a 'do-nothing scenario' for the Tara Mines Tailings Storage Facility, the current embankment walls would remain, and the opportunity to provide a higher Factor of Safety, therefore, a higher Health and Safety situation in general, would be lost.

## **10.8 MITIGATION MEASURES**

Mitigation measures to be adopted during the proposed development will relate primarily to minimising any construction style impacts of the project on surrounding sensitive receptors (primarily associated with noise, dust and traffic). These measures are discussed in the following chapters of this EIAR:

- Chapter 4 – Landscape and Visual Impact Assessment;
- Chapter 5 – Material Assets: Roads and Traffic;
- Chapter 6 – Biodiversity;
- Chapter 7 – Water: Hydrology and Hydrogeology;
- Chapter 8 – Air Quality;
- Chapter 9 – Noise;
- Chapter 11 – Climate; and
- Chapter 12 – Land and Soils.



## **10.9 RESIDUAL IMPACTS**

The assessment of impacts on human health and population has been undertaken taking into account appropriate construction mitigation measures at the application site. Therefore, the findings of significance in Section 10.5 remain.

## **10.10 INTERACTIONS ARISING**

The comprehensive assessments undertaken as part of the EIA have assessed the potential for a number of environmental impacts that can have an impact on the local population and human health.

These have been considered throughout the assessment in this chapter and a matrix/summary overview of Interactions is also set out in Chapter 14 of this EIAR.

## **10.11 POTENTIAL CUMULATIVE/IN-COMBINATION IMPACTS**

A GIS search was undertaken of available online planning search facilities provided by the Meath County Council, An Bord Pleanála and the EIA Portal. The purpose of the search was to identify other projects in the planning pipeline in the surrounding area that have the potential to have any significant adverse cumulative impacts with the proposed development. The GIS search covered a radius of 5km from the application site, within which planning applications from the previous 5 years were identified.

A number of large-scale residential planning permissions and an associated water upgrade project (MCC P. Ref. 221031) have been noted to the southeast of the application site, and this is considered to be in line with general policy direction of Meath County Council as set out earlier.

There are two planning permissions in relation to the Tara Mines complex that are of relevance (ABP Ref. PL17.247707, ongoing development) and (MCC P. Ref. NA171232, currently under appeal with An Bord Pleanála). These have been included as part of the consideration when referring to the relationship of the application site to the mine complex in general. BTM intend to lodge an application in the immediate future for a solar farm to generate renewable electricity for use within the BTM Knockumber site providing for an electrical capacity of approximately 18-megawatts (MW) (advertised in Meath Chronicle date Saturday February

3<sup>rd</sup>). The development will consist of a ten-year planning permission for a solar energy development with an approximate development area of 34 ha.

Planning permission has been recently granted for a new distributor road (ABP Ref. 307434-20) and for a new pedestrian/cycle bridge crossing the River Blackwater (MCC P. Ref. 22653). It is hoped that these developments can assist long-term in addressing current traffic congestion issues as inferred in Chapter 5 of this EIAR.

The most pertinent project identified in the context of the proposed development is the proposed construction of an underground potable water mains between Liscarton Water Treatment Plant and Proudstown Reservoir (MCC P. Ref. 2360198), which is 500 m south of the application site at its closest point. It is suggested that the CEMP that is proposed to manage construction traffic and general construction activities during delivery of the project takes into account this nearby project, and consultation with the contractor for that development is undertaken to synchronise truck movements and avoid clashes of peak activities.

## **10.12 MONITORING**

Monitoring is proposed in the technical chapters of the EIAR, as appropriate, to ensure that the mitigation measures within those and mentioned above are effective. No specific monitoring measures are proposed in relation to population and human health.

## **10.13 CONCLUSIONS**

Overall, the proposed development is considered to represent an enhanced situation for population and human health in terms of providing the highest possible health and safety standards. There is no indication of any unacceptable adverse impacts that may arise.

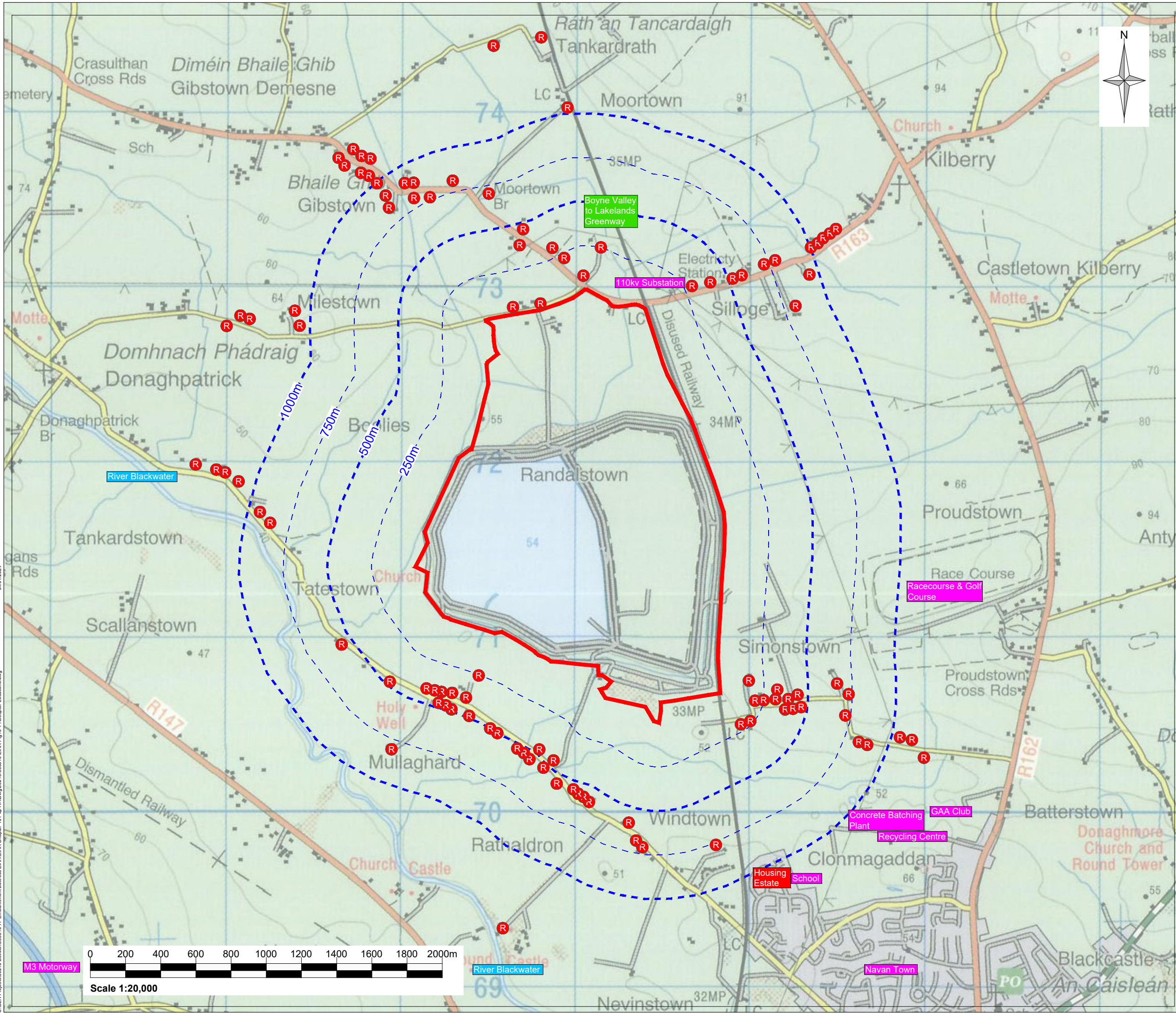
## **10.14 REFERENCES**

- Census Statistics Office (2022) Census of Ireland Data
- Department of Health in Ireland (2022) 'Health in Ireland, Key Trends'
- Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports
- Healthy Ireland (2021) Strategic Action Plan 2021-2025

- Institute of Environmental Management and Assessment (IEMA) (2022) Effective Scoping of Human Health in EIA
- Institute of Environmental Management and Assessment (IEMA) (2022) Determining Significance for Human Health in EIA
- Institute of Public Health (2021) Health Impact Assessment Guidance Manual
- Johnson (2013 submission to EPA 'An analysis of the Randalstown Tailings storage Facility (TSF) in relation to the Seveso II Directive 96/82/EC as enacted in Ireland by S.I.476 (2000) and latterly by S.I. No. 74 (2006)
- Meath County Council (2023) County Development Plan 2021-2027

**Figure 10-1 Study Area and Receptor Map**





**Notes:**  
 Extract from Ordnance Survey Discovery Series Mapping 42  
 Ordnance Survey Ireland Licence No. CYAL 50316488  
 (c) Ordnance Survey Ireland and Government of Ireland

**Legend:**

- Site Boundary
- Distance off-set from Site Boundary
- R Residential Receptors

| Rev | Amendments | Date | By | Chk | Auth |
|-----|------------|------|----|-----|------|
|     |            |      |    |     |      |



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Client  
**Boliden Tara Mines DAC**

Project  
 EIAR for Planning Ref. 22/331  
 Reinforcement Buttress to existing Tailings Storage Facility

Figure Title  
**Receptor Location Map**

|                   |       |                                     |
|-------------------|-------|-------------------------------------|
| Scale<br>1:20,000 | @ A3  | SLR Project No.<br>501.00218.065316 |
| Designed          | Drawn | Checked                             |
| Date              | Date  | Date                                |

Figure Number  
**Figure 10-1**