



# Assessment of Effects on the Environment

## Glenbrook Steel Mill Discharges to Water Permit Replacement

**Prepared for**  
New Zealand Steel  
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## Glossary

Term	Definition
Acid Regeneration Plant (ARP)	Ancillary plant associated with the Pickle Line in which spent acid is regenerated through roasting for re-use. This plant is a facility within the Finishing Plant.
Air Separation Unit	The Air Separation Unit is located on NZ Steel owned land to supply pipeline oxygen, nitrogen and argon to the Steel Mill, for use in the steel making process.
Ancillary activities	Supporting activities, including movement of molten iron and steel products between manufacturing plants; stockpiling and processing of raw materials, co-products and waste; tipping of slag, iron and Reduced Primary Concentrate and Char (RPCC); and all supporting vehicle movements.
Benthic	Of, relating to, or occurring at the bottom of a body of water or the depths of the ocean.
Best Practicable Option (BPO)	Defined in section 2(1) of the Resource Management Act 1991 (RMA), as: <i>“in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to —</i> <i>(a) the nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and</i> <i>(b) the financial implications, and the effects on the environment, of that option when compared with other options; and</i> <i>(c) the current state of technical knowledge and the likelihood that the option can be successfully applied.”</i>
Brackish Water	Water occurring in a natural environment which has more salinity than freshwater, but not as much as seawater.
Co-products	Materials that are produced in parallel to or, as a consequence of, the product of a primary product and which have a potential value.
Coastal Marine Area	Defined in section 2(1) of the RMA, as: <i>“the foreshore, seabed, and coastal water, and the air space above the water—</i> <i>(a) of which the seaward boundary is the outer limits of the territorial sea:</i> <i>(b) of which the landward boundary is the line of mean high water springs, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of—</i> <i>(i) 1 kilometre upstream from the mouth of the river; or</i> <i>(ii) the point upstream that is calculated by multiplying the width of the river mouth by 5”.</i>
Biodiversity Compensation	As defined in paragraph 1.6 of the National Policy Statement for Indigenous Biodiversity (NPSIB), biodiversity compensation means a conservation outcome that meets the requirements in Appendix 4 of the National Policy Statement for Indigenous Biodiversity (NPSIB) and results from actions that are intended to compensate for any more than minor residual adverse effects on indigenous biodiversity after all appropriate avoidance, minimisation, remediation, and biodiversity offsetting measures have been sequentially applied.

Term	Definition
Conductivity	Conductivity is a measure of the ability of water to pass an electrical current. It is an indirect measure of charged particles, such as dissolved salts and other inorganic chemicals. High conductivity is an indication of high salinity.
Consented mixing zone	The mixing zone in the coastal marine area defined in the 2003 consents, authorising discharges from the Northside and Southside Outfalls.
Consent Limit	A measurable restriction for individual environmental parameters specified by Schedule 1 of the conditions of consent (proposed at Appendix R). These restrictions are required by consent to be complied with to ensure adverse effects are appropriately managed.
Contaminant	As defined in section 2(1) of the Resource Management Act 1991 (RMA): <i>“includes any substance (including gases, odorous compounds, liquids, solids, and micro— organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat—</i> <i>(a) when discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or</i> <i>(b) when discharged onto or into land or into air, changes or is likely to change the physical, chemical or biological condition of the land or air onto or into which it is discharged.”</i>
Council	Auckland Council.
Cumulative effects	Changes to the environment that are caused by an action in combination with other past, present and future human actions.
Current Environment	The environment as it currently exists. Monitoring data and investigations undertaken during the preparation of this application describe the Current Environment, which reflects the effects of the operation of the Steel Mill over the past 55 years.
Dewatering Plant	Where the ironsand (or Primary Concentrate) slurry received from the ironsand mine is dewatered before stockpiling. This plant also includes a dedicated water treatment facility.
Electric Arc Furnace (EAF)	A furnace that heats material by directly exposing it to an electric arc and the current from the furnace terminals passes through the charged material. NZ Steel’s proposed EAF will enable reduced use of virgin steelmaking materials (including coal) and instead recycle Ferrous Scrap using electricity.
East Landfill	NZ Steel’s existing active landfill located on the eastern side of Brookside Road within the Site. This is subject to a separate suite of resource consents and is not within the scope of this replacement consents application.
Existing Consents	NZ Steel’s existing resource consents relating to the discharge of Industrial or Trade Activity (ITA) stormwater and process water that this Application seeks to replace: <ul style="list-style-type: none"> <li>• Permit 41027 – Industrial or Trade Activity (ITA) discharges – expired 31 December 2021;</li> <li>• Permit 21575 – Northside Outfall discharge – expired 31 December 2021;</li> <li>• Permit 21576 – Southside Outfall discharge – expired 31 December 2021;</li> <li>• Permit 21577 – Dewatering Plant discharge – expired 31 December 2021;</li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>Permit 23877 – Occupation of the coastal marine area by the Southside Outfall structure – expired 31 December 2021; and</li> <li>Water Right 812691 – North Drain diversion and discharge – expires 1 October 2026.</li> </ul>
External Scrap	Ferrous Scrap (defined below) that is from sources other than the Steel Mill (i.e., from external sources). External Scrap will be processed off-site by Suppliers (including removal of non-ferrous material, shredding, cutting and grading) prior to arrival on Site.
Ferrous Scrap	<p>Ferrous Scrap will be used in the EAF and will consist of scrap from two sources:</p> <ul style="list-style-type: none"> <li>NZ Steel’s own steel making and finishing processes (this scrap is referred to throughout this application as “uprisings”); and,</li> <li>Parties other than NZ Steel (this scrap is referred to throughout this application as “External Scrap”).</li> </ul>
Finishing Plants	Metal coating and painting of steel coil from the Rolling Mills, into a range of pre-painted steel (Colorsteel®) and metal coated steel products (Zincalume® and GalvSteel®).
Trigger Investigation Levels	A numerical value above which investigation actions will be taken. Trigger Investigation Levels are included in the existing Stormwater Monitoring and Management Programme required by the Existing Consents and are proposed in consent conditions to be specified in the Water Quality Management Plan.
Iron Plant	Where NZ Steel manufactures molten iron from the raw materials such as Primary Concentrate, coal and lime. This plant includes the MHF, Kilns, Melters and Cogeneration facilities.
ITA Area	The ITA (Industrial and Trade Activity) Area is the area of the Site from which the ITA stormwater is discharged. It includes all ITA activities and stockpiling landholdings, including provisional areas for potential future expansion. The area is bound to the north by Brookside Road and to the east by Mission Bush Road and to the west by the Waiuku Estuary. The ITA Area is depicted on Figure W7.
ITA Stormwater Discharges	Rainfall runoff from the ITA Area.
Kahawai Stream	The Kahawai Stream is a small watercourse that lies to the north of the Steel Mill and discharges to the Waiuku Estuary. The stream is approximately 1 km in length and lies immediately to the north of a consented, but not constructed, Managed Fill Site. The Kahawai Stream is not officially named, and has been previously known as the ‘MFS Stream’.
Klockner Oxygen Blown Maxhutte (KOBM)/ Oxygen Steel Making Furnace	Vessel within which molten iron and scrap steel is turned into liquid steel.
Leachate	Water that has percolated through the waste within the active East and closed West Landfill. The water (leachate) is collected within the landfill sub-soil drainage layers then directed to the leachate collection ponds prior to its discharge to the Northside Ponds for treatment. The leachate is significantly different to leachate from municipal landfills due to the nature of the waste.
Lower North Stream	The Lower North Stream is located to the north of the Steel Mill, and flows in a generally northerly direction between the East and West

Term	Definition
	<p>Landfills. Much of the original Lower North Stream was diverted to its current alignment along the West Landfill access road.</p> <p>The Lower North Stream is not officially named. It was previously (erroneously) known as the Northside Stream; however this was incorrect as the Northside Stream was an historical watercourse that flowed through the site to discharge at the current location of the Northside Outfall. The Northside Stream and valley were removed in the 1980s to facilitate the expansion of the Steel Mill.</p>
Macroinvertebrate Community Index (MCI)	An index used in New Zealand to measure the water and habitat quality of freshwater streams. The presence or lack of macroinvertebrates such as insects, worms and snails in a river or stream can give a biological indicator on the health of that waterway.
Mean High Water Springs	The average of each pair of successive high waters during that period of about 24 hours in each semi-lunation (approximately every 14 days), when the range of the tide is greatest.
Metal Recovery Plant	Where Steelserv Limited, a NZ Steel subsidiary, processes some of the co-products from the iron and steelmaking process, to recover ferrous for return to the steelmaking process. Residual material may be used as an “unspecified” roading material (variable grade) or landfilled. KOBM Slag is also screened in this plant.
Metal Coating Line (MCL)	The line cleans, anneals, coats and surface treats the steel in a continuous operation.
Millscale	Iron oxide generated on the surface of the steel during cooling of slabs. This is removed in the Rolling Mills (and can be reused as a process additive for some steel products).
Modelled mixing extent	The area of the coastal marine area modelled in the DHI Modelling Report (2022) beyond which metals, temperature, and changes in salinity are no longer discernible from background concentrations. Note that the “modelled mixing extent” is different to the “zone of reasonable mixing”.
Multi Hearth furnace (MHF)	The first process in the Iron Plant, which raises the temperature of the raw materials (primary concentrate, lime and coal) to 900°C and removes volatile compounds from the coal.
North Drain	The North Drain is a constructed drain that was constructed in the 1980s to convey Steel Mill discharges and is an artificial watercourse in accordance with the AUP definition. The North Drain flows entirely within the ITA area and discharges into the Lower North Stream north of Brookside Road.
North Landfill	NZ Steel’s historical landfill located to the west of the ITA Area.
North Drain ITA Catchment	The portion of the ITA Area where stormwater drains to the North Drain.
Northside ITA Catchment	The portion of the ITA Area where stormwater drains to the Northside Ponds and Northside Outfall.
Northside Ponds	Two large water quality treatment ponds that receive process water from the Steel Mill, including the primary plant, stormwater from the Northside ITA Catchment, and leachate from the East and West Landfills. Treated water from the Northside Ponds discharges to the coastal marine area via the Northside Outfall.
Northside Outfall Structure	The outfall structure from the Northside Ponds to the Waiuku Estuary.
North Stream Catchment	The North Stream Catchment is the modified catchment area that includes the artificial North Drain ITA Catchment and the Lower North Stream catchment.

Term	Definition
Paint Line	The Paint Line applies paint or laminate to coils of hot-dipped galvanised, Zinalume® and cold rolled steel in continuous coil-to-coil operation to produce Colorsteel®. (Formerly referred to as the Coil Coating Line).
Pickle Line	A series of pickling tanks containing hydrochloric acid solutions and wash water that removes the fine layer of iron oxide scale that is generated during hot rolling and produces a strip surface suitable for cold rolling. This process is part of the Rolling Mills.
Plating/Iron Plating	Process whereby molten iron is poured into pits to solidify.
Primary concentrate (PC)	Iron sand (from the west coast of the North Island) that has been through a separation process (magnetic/gravity) to increase the iron content and reduce any mineral impurities.
Primary Plants/Operations	Consists of the Iron Plant, Steel Plant and associated raw material handling. The MHF and Kilns Cogeneration facilities are also closely associated with these facilities.
Process water	Process water is water that is used for a variety of manufacturing processes at the Steel Mill. For the purposes of this application, discharged process water includes both waste process water and landfill leachate.
Proposal	Resource consent application to authorise the discharge of ITA stormwater and process water, and associated activities, at the Glenbrook Steel Mill (the Steel Mill) in accordance with sections 9, 12, 14 and 15 of the RMA.
Receiving Environment	<p>The environment that would exist without the activities and associated effects authorised by the expiring consents (i.e., removing the effects that arise as a result of current operations). In simplest terms, the Receiving Environment is the environment that would exist if the Mill was decommissioned and mothballed. This application assesses the effects of the proposed activity on the Receiving Environment.</p> <p>The Receiving Environment is the Current Environment (i.e., the environment as it currently exists), modified to <u>exclude</u>:</p> <ul style="list-style-type: none"> <li>• The effects of the activity that are the subject of the application.</li> <li>• And modified to <u>include</u>:</li> <li>• Any effects of the activity that are the subject of the application that unavoidably persist (e.g., build up of metals in sediment, ongoing diversion of water in the north drain, coastal structures);</li> <li>• Non-fanciful permitted activities that can occur as of right without additional resource consents (for this application, no permitted land use changes or discharges have been assumed); and</li> <li>• Activities that have been granted resource consents that are likely to be implemented (there are no known unimplemented resource consents in the wider area that would have a bearing on this application).</li> </ul>
Reduced Primary Concentrate and Char (RPCC)	<p>The Kilns convert pre-heated primary concentrate and char mixture from the MHFs to metallic iron by chemical reduction to produce RPCC. RPCC is then discharged from the Kilns to closed transfer vessels for delivery to the Melters. Note RPCC consists of:</p> <ul style="list-style-type: none"> <li>• Prime RPCC, which is RPCC that meets the specification for further processing at the Melters;</li> <li>• Off-specification RPCC, which is RPCC that does not contain sufficient iron content for further processing; and</li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>Accretion RPCC, which is a boulder-like build up that must be removed from the Kilns.</li> </ul>
Residual effect	Effects on biodiversity or ecological values that cannot be avoided, remedied or mitigated.
Riparian margin	An area of land immediately adjacent to a permanent or intermittent river or stream.
Rolling Mills	The Rolling Mills consist of a hot and cold rolling mill and associated facilities to mechanically form steel slab into flat product. Steel coil from the Rolling Mills may be directly exported or further processed in the Finishing Plants.
Ruakohua Stream	The Ruakohua Stream (sometimes known as Ruakahua Stream) is located to the south of the main operational areas of NZ Steel's site. It is approximately 4km in length and flows in a south westerly direction to discharge to NZ Steel's Ruakohua Dam. The lower reaches of the Ruakohua Stream were diverted around the NZ Steel development area during the 1970s/ 1980s.
Ruakohua Stream ITA Catchment	The portion of the ITA Area where stormwater drains to the Ruakohua Stream and Ruakohua Dam.
Scrap Yards	Areas where External Scrap is proposed to be stored, as follows: <ul style="list-style-type: none"> <li>Local Yard – North;</li> <li>Local Yard – South;</li> <li>Yard A; and</li> <li>Buffer Scrap Yard (Option 1 or Option 2).</li> </ul>
Scrubber	Scrubber systems are air pollution control devices that remove particulates and/or gases from industrial exhaust streams. Wet scrubbers refer to the removal of such particulates and or gases through the application of a scrubbing solution.
Settling Zone	The area where the majority of sediment and associated contaminants discharged from a catchment settles out in the coastal marine area.
Site	Includes all NZ Steel landholdings in relation to the Steel Mill at Glenbrook, which includes the Steel Mill, industrial landfills and farming activities as well as the adjoining coastal esplanade strip owned by Auckland Council (Records of Title provided at <b>Appendix C</b> ).
Slag	<p>A co-product of the iron and steel making process. Slag is a mixture of non-metallic and metallic materials that float on top of the molten iron or steel (removing impurities such as silicon, titanium and sulphur).</p> <p>Melter Slag is a co-product of the iron making process, that is similar in character to volcanic rock.</p> <p>KOBM Slag is a co-product of the steel making process, formed in the KOBM. It has cementitious properties and is used to partly replace limestone on Site.</p> <p>Vanadium Slag is a co-product of the steel making process, formed after oxygen is blown into a ladle of molten iron at the VRU.</p> <p>Steelmaking Slag means both KOBM Slag and Vanadium Slag.</p>
Southside ITA Catchment	The portion of the ITA Area where stormwater drains to the Southside Ponds and/or Southside Outfall.
Southside Ponds	Two water quality treatment ponds that receive treated process water from the Rolling Mills, primarily the Acid Regeneration Plant (ARP), and stormwater from the Southside Outfall ITA Catchment. Treated water

<b>Term</b>	<b>Definition</b>
	from the Southside Ponds is recycled to the Ruakohua Dam, however some discharges to the coastal marine area via the Southside Outfall.
Southside Outfall Structure	The outfall structure from the Southside Ponds to the Waiuku Estuary.
SRNZ Ponds (Slag Reduction Ponds)	Two large intermediate water quality treatment ponds within the Northside ITA Catchment, that receive a limited amount of process water and stormwater from the Steel Mill. Formerly known as the Slag Ponds. Treated water from the SRNZ Ponds discharges to the Northside Ponds for additional treatment.
Steel Mill	The integrated steel making facility in Glenbrook and ancillary activities on the Site.
Steel Plant	Where NZ Steel manufactures steel slabs and billets made from iron produced at the Iron Plant.
Steelserv Limited	A NZ Steel company that operates large mobile equipment for the Steel Mill and provides a range of services, including stockpiling and handling of coal, movement of iron lades to the steel plant, slag ladles and bins to the tipping banks, waste and co-products to processing areas. Steelserv also operates the Site landfill and the screening and crushing facilities for production of a range of slag products for direct sale. Its activities are authorised and managed under resource consents held by NZ Steel.
Stormwater	Rainfall runoff from land, including constructed impervious areas such as roads, pavement, roofs and urban areas which may contain dissolved or entrained contaminants, and which is diverted and discharged to land and water.
Stream Ecological Valuation (SEV)	A method for assessing the ecological condition of streams based on the performance of their key ecological functions.
Taihiki Estuary	An estuarine side arm adjoining the lower Waiuku Estuary.
Total suspended solids	The total amount of particulate matter that is suspended in the water column, that is not dissolved, that can be trapped by a filter.
Trigger Investigation Levels	A numerical value above which investigation actions will be taken. Trigger Investigation Levels are included in the existing Stormwater Monitoring and Management Programme required by the Existing Consents and are proposed in consent conditions in Appendix R to be specified in the Water Quality Management Plan.
Turbidity	A measure of the clarity of water. Turbidity is the measurement of the amount of light scattered by suspended particulates present in the water when a light is shined through the water. The more total suspended particulates in the water, the murkier it can appear and the higher the turbidity.
Waiuku Estuary	The Steel Mill is located on the Eastern bank of the Waiuku River, which, despite its name, is a long and relatively narrow tidal arm (estuary) of the Manukau Harbour. For the avoidance of confusion, the term “Waiuku Estuary” is therefore used in this report to describe this area.
Wastewater Treatment Plant (WWTP)	A wastewater treatment plant is a facility in which a combination of various processes (physical, chemical and biological) are used to treat industrial wastewater and remove pollutants.  There are multiple industrial WWTPs at the Steel Mill to treat process water discharges from a variety of plant. The processes used are dependent on the characteristics of the wastewater at each plant.

Term	Definition
West Landfill	NZ Steel's closed landfill located on the western side of Brookside Road within the Site. This is subject to a separate suite of resource consents and is not within the scope of this replacement consents application.
Works debris	A collective term for the debris that can be recovered from around the Site, including refractory material that is chipped out of the ladles, metal deposits, other waste materials and slag from the floors of the Iron and Steel Plants.
Zone of Influence (ZOI)	The areas/resources that may be affected by the biophysical changes caused by the Proposal and associated activities.
Zone of reasonable mixing	The area within which "reasonable mixing" of contaminants from discharges occurs in receiving waters and within which the relevant water quality standards do not apply. Note that the "zone of reasonable mixing" is different to the "modelled mixing extent".



## Abbreviations

Abbreviation	Meaning
AEE	Assessment of Effects on the Environment
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZWQG	Australia and New Zealand Water Quality Guidelines 2018 (formerly ANZECC 2000)
AP2050	Auckland Plan 2050
ARP	Acid Regeneration Plant
ARPHS	Auckland Regional Public Health Service
ASCV	Area of Significant Conservation Value
ASU	Air Separation Unit
AUP	Auckland Unitary Plan – Operative in part
BAT	Best Available Technique
BCM	Biodiversity Compensation Model
BERL	Business and Economic Research Limited
BHM	Benthic Health Model
BOC Ltd	British Oxygen Company Ltd
BPO	Best Practicable Option
CBMP	Coastal Birds Management Plan
CHI	Cultural Heritage Inventory
CLMP	Closed Landfill Management Plan
CMA	Coastal Marine Area
CMT	Customary Marine Title
Council	Auckland Council
DGV	Default Guideline Value
DHB	District Health Board
DHI	Danish Hydraulic Institute
DOC	Department of Conservation
EAF	Electric Arc Furnace
EIANZ	Environment Institute of Australia and New Zealand
EclAG	Ecological Impact Assessment Guidelines
EMS	Environmental Management System
ERC	Environmental Response Criteria
FMUs	Freshwater Management Units
Freshwater NES	Resource Management (National Environmental Standards for Freshwater) Regulations 2020
FSAZN	Food Safety Australia and New Zealand
FTEs	Full Time Equivalent (Employees)
FWMT	Freshwater Management Tool
GDP	Gross Domestic Product
GELs	Generally Expected Levels

Abbreviation	Meaning
HSNO Act	Hazardous Substances and New Organisms Act 1996
IBI	Index of Biotic Integrity
IMP	Iwi Management Plan
IMS	Integrated Management System
IUCN	International Union for Conservation of Nature
ITA	Industrial and Trade Activity
KOBM	Oxygen Steel Making Furnace (Klockner Oxygen Blown Maxhutte)
LMF	Ladle Metallurgical Furnace
LTS	Ladle Treatment Stations
MACA	Marine and Coastal Area (Takutai Moana) Act 2011
MCI	Macroinvertebrate Index
MCL	Metal Coating Line
MHF	Multi Hearth Furnace
MHWS	Mean High Water Springs
MR Plant	Metal Recovery Plant
NBEA	Natural and Built Environment Act 2023 (now largely repealed by the Resource Management (Natural and Built Environment and Spatial Planning Repeal and Interim Fast-track Consenting) Act 2023))
NES Drinking Water	Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations 2007
NOF	National Objectives Framework
NPSFM	National Policy Statement for Freshwater Management – Gazetted 8 December 2022
NPSIB	National Policy Statement for Indigenous Biodiversity – Gazetted 7 July 2023
NPSUD	National Policy Statement for Urban Development – Gazetted 11 May 2022
NTU	Nephelometric Turbidity Units
NZCPS	New Zealand Coastal Policy Statement 2010
NZ Steel	New Zealand Steel Limited
PC	Primary Concentrate
PCR	Protected Customary Rights
PSU	Practical Salinity Units
RMA	Resource Management Act 1991
RMAA 2020	Resource Management Amendment Act 2020
RPCC	Reduced primary concentrate and char
RPS	Regional Policy Statement
SEA(s)	Significant Ecological Area(s)
SEV	Stream Ecological Valuation
SMMP	Stormwater Monitoring and Management Plan
SNA(s)	Significant Natural Area(s)
SOE	State of the Environment
SRNZ	Slag Reduction New Zealand

<b>Abbreviation</b>	<b>Meaning</b>
Steel Mill	Glenbrook Steel Mill
Steelserv	Steelserv Limited
SPL	Species Protection Level
TSS	Total Suspended Solids
Watercare	Watercare Services Limited
WDP	Wetland Delineation Protocol
WMP	Wetlands Management Plan
WWTP	Wastewater Treatment Plant
WQMP	Water Quality Management Plan
ZOI	Zone of Influence

## Executive summary

New Zealand Steel Limited (NZ Steel) currently holds a suite of resource consents associated with the collection and discharge of stormwater and process water<sup>1</sup> (Existing Consents) for the Glenbrook Steel Mill (Steel Mill) located in South Auckland at 131 Mission Bush Road, Glenbrook, Auckland (Site). This application seeks to authorise the existing activities by replacing the Existing Consents with a bundled consent in accordance with sections 9, 12, 14 and 15 of the Resource Management Act 1991 (RMA) (the Proposal). NZ Steel requests public notification of the Proposal.

The Existing Consents are:

- Discharges from Industrial and Trade Activity areas (Permit 41027);
- Discharges from the Northside Outfall (Permit 21575);
- Discharges from the Southside Outfall (Permit 21676);
- Discharges from the Dewatering Plant (Permit 21577);
- The diversion of the North Drain (Consent Reference 812691); and
- Occupation of the coastal marine area (CMA) by a discharge structure (Permit 23877).

Five of these permits expired on 31 December 2021 and the diversion permit expires on 1 October 2026.

The application is not seeking any material changes to the existing nature or scale of these activities, with the exception of the changes associated with a proposed new Electric Arc Furnace (EAF), which is discussed further below. The activities requiring consent are predominantly controlled or discretionary activities. However, the two discharges to the Ruakohua Stream (from the Contractors Compound and Yard 31) could be considered a non-complying activity under regulation 54 of the Freshwater NES. Therefore, out of an abundance of caution, NZ Steel has sought consent for this activity as a non-complying activity.

It is possible that Council may consider that consent under regulation 54 is not required and that these activities are not non-complying activities. However, NZ Steel has been deliberately conservative in its approach to effects assessment and consent triggers.

Consequently, applying the bundling principle, and taking into account the conservative approach set out above, this application has an overall activity status of non-complying.

The Steel Mill is a fully integrated facility that converts iron sand and coal to produce steel slab, billets and a range of processed steel products. The Steel Mill has been operated at the Site since 1968 and currently comprises the:

- Iron Plant, which converts the raw materials, Primary Concentrate (PC), lime and coal, to iron;
- Steel Plant, which converts the iron to steel and casts molten steel into steel slab and billet;
- Rolling Mills, where the steel slab is rolled into coils for further processing or direct sale;
- Finishing Plants, where a range of metal-coated and painted products are produced; and
- Ancillary activities which include cogeneration facilities, handling and processing raw materials, co-products and waste derived from Steel Mill activities.

NZ Steel has secured co-funding from the New Zealand Government to enable the installation of an EAF at the Site. The installation of the EAF, which if progressed, is likely to be operational by 2027. NZ Steel is currently in the feasibility stage of plans to construct and operate an EAF within the existing Steel Plant facility. The EAF, if installed, is part of the decarbonisation of the Steel Mill. It will

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<sup>1</sup> The term 'process water' includes waste process water and landfill leachate.

reduce the use of virgin steelmaking materials (iron sand and coal) and instead recycle ferrous scrap using electricity. The only new contaminant generating activity associated with the EAF will be stormwater runoff from ferrous scrap yards which will be developed within the existing ITA (Industrial and Trade Activity) Area of the Steel Mill. This AEE therefore considers the existing operation of the Steel Mill as well as any changes that may occur as a result of the possible operation of an EAF.

The Steel Mill is an ITA<sup>2</sup> which includes the discharge of process water and ITA stormwater onto or into land or water. Surface water runoff (stormwater) is collected and treated prior to being discharged to either a watercourse or to the CMA. There are also a number of process water discharges from the Steel Mill that are treated by one of the Site's water treatment systems prior to discharge to watercourses or to the CMA. This application seeks resource consent for ITA land use and for the ongoing diversion and discharge of stormwater and process water from the Steel Mill. An Industrial and Trade Activities Report has been prepared and accompanies this application at **Appendix G**.

In order to comprehensively understand the effects of the activities for which consent is sought, a number of technical assessments have been prepared, including a:

- Freshwater Ecological Assessment (**Appendix H**);
- Marine Ecological Assessment (**Appendix I**);
- Outfall Structures Integrity Assessment (**Appendix J**); and
- Economic Impact Assessment (**Appendix M**).

In addition to these technical assessments, a draft Water Quality Management Plan (**Appendix K**) and Closed Landfill Management Plan (**Appendix L**) have been prepared to provide certainty around the management regime of relevant activities.

The Steel Mill's long history of operation means that effects are well understood and benefit from a long monitoring record. The potential effects of the discharges that have been assessed as part of this application (Section 7) include positive effects, effects on freshwater environments, effects on the marine environment and cultural effects. While the majority of the effects are assessed as being no more than minor, there remain some unavoidable residual adverse effects on coastal birds as a result of discharges of contaminants into foraging habitat. Compensation for effects on coastal birds is proposed through a Coastal Birds Management Plan (CBMP); a draft of which is included in **Appendix S** to the AEE. A resource consent to authorise compensatory actions is being sought in parallel to this application.

In relation to adverse effects on inland wetlands, the assessment has found that such effects will be no more than minor. Notwithstanding this, the application proposes enhancement wetland and wetland margin native revegetation measures on the Site (a draft Wetlands Management Plan (WMP) is included in **Appendix T** of the AEE). This will provide benefits to the freshwater environment.

All other adverse environmental effects have been avoided, remedied or mitigated to the greatest degree that is practicable. Nevertheless, NZ Steel is committed to a practice of continual improvement in its activities and processes to reduce adverse effects further over time as demonstrated throughout the application.

The Steel Mill's Existing Consents are managed by a suite of conditions and NZ Steel's Environmental Management System (EMS). Proposed conditions are provided as part of this application (**Appendix R** to the AEE) and provide for the appropriate management and minimisation of adverse effects to a

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<sup>2</sup> Defined in Chapter J1 of the AUP as having the same meaning as industrial or trade process under section 2 of the RMA but does not include a production land activity.

practicable minimum. The draft conditions are based on the conditions of the Existing Consents, with modifications proposed where considered appropriate based on the findings of this assessment and the independent expert advice that forms part of this application.

Given it is well established and fixed at Glenbrook, no alternative locations for the Steel Mill exist. Therefore, what can feasibly be considered for the alternatives assessment is limited to the methods and locations of the discharges themselves within the Receiving Environment and an assessment of whether the practices employed at the Steel Mill constitute best practice. An assessment of alternatives and the Best Practicable Option (BPO) is provided.

Allowing the ongoing operation of the long-standing Steel Mill is important to the social and economic wellbeing of the people and community of Glenbrook, Auckland and New Zealand as a whole. The value of the investment NZ Steel has in the Steel Mill<sup>3</sup> is significant, with the replacement cost for the assets being \$5.1 billion<sup>4</sup> (as discussed in the Economic Impact Assessment provided at **Appendix M** to the AEE).

NZ Steel recognises that Mana Whenua have an ongoing and enduring relationship with the land and waterbodies and have an ongoing role as kaitiaki. NZ Steel has a longstanding relationship and practice of working with Mana Whenua to support and respect cultural values of the Site and wider area. Cultural values of the Site and the wider area have been identified via the consultation that has occurred as part of this replacement resource consent process (detailed in Section 11), and consideration has been given to the effects of the Proposal on these cultural values. NZ Steel will continue to engage with Mana Whenua and other stakeholders, following lodgement of this application, including through the existing NZ Steel Environment Committee (which comprises representatives from Ngāti Te Ata and Ngāti Tamaoho).

NZ Steel is also very cognisant of the role and position of the Steel Mill in the local community. It has strong community links including those fostered through the Environment Committee, which also comprises representatives from the local Franklin Board and Auckland Public Health.

The Proposal is supported and enabled by the objectives and policies of the Auckland Unitary Plan – Operative in Part (AUP) that recognise the value of investment of the Steel Mill, the benefits it entails, and the functional and operational need of its location and relationship with the CMA. While there are a handful of individual policy provisions that are not, in the abstract, consistent with the Proposal (namely where they require avoidance of adverse effects) there are a number of equally if not more directive policies that are specifically enabling of the Steel Mill. When the package of AUP objectives and policies are read as a whole in a manner that seeks to resolve internal conflicts, it is considered that the Proposal is not contrary to, and in many cases is specifically supported by, the provisions of the AUP. Assessment of the Proposal against other relevant national planning frameworks, including the National Policy Statement for Freshwater Management (NPSFM), National Policy Statement for Indigenous Biodiversity (NPSIB), the New Zealand Coastal Policy Statement (NZCPS) and the National Policy Statement on Urban Development (NPSUD) has also been undertaken (Section 10).

On this basis, it is considered that the Proposal meets the ‘gateway test’ of section 104D of the RMA.

When assessed under section 104(1), this AEE concludes that the Proposal gives effect to the purpose of the RMA in that it will allow for the continued use of the natural and physical resources of the Site as a result of the continued operation of the Steel Mill, which provides for social and economic wellbeing of the local community, the Auckland region and New Zealand as a whole.

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<sup>3</sup> Relevant pursuant to section 104(2A), RMA.

<sup>4</sup> Based on NZ Steel’s insured value.

This application seeks to replace the Existing Consents and was lodged prior to 30 June 2021, such that section 124(3) applies.

## Schedule 4 Requirements

Schedule 4 of the Resource Management Act 1991 (RMA) sets out the information required in an application for a resource consent. All relevant matters required to be included have been addressed in the assessments and descriptions in this Assessment of Effects on the Environment (AEE). The following table provides a summary of the information required in Schedule 4 and a quick reference to its location in this report.

Schedule 4 Item	Location within AEE
A description of the activity	Sections 3 and 4
A description of the site at which the activity is to occur	Section 2
The full name and address of each owner or occupier of the site	Section 1.3
A description of any other activities that are part of the proposal to which the application relates	N/A
A description of any other resource consents required for the proposal to which the application relates	Section 6
An assessment of the activity against the matters set out in Part 2	Section 9.2
An assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b). This must include:	
<ul style="list-style-type: none"> <li>Any relevant objectives, policies, or rules in a document;</li> </ul>	Section 6 and Section 10
<ul style="list-style-type: none"> <li>Any relevant requirements, conditions, or permissions in any rules in a document; and</li> </ul>	Section 6
<ul style="list-style-type: none"> <li>Any other relevant requirements in a document (for example, in a national environmental standard or other regulations).</li> </ul>	Section 10
An assessment of the activity's effects on the environment that includes the following information:	
<ul style="list-style-type: none"> <li>If it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity;</li> </ul>	Section 8
<ul style="list-style-type: none"> <li>An assessment of the actual or potential effect on the environment of the activity;</li> </ul>	Section 6
<ul style="list-style-type: none"> <li>If the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use;</li> </ul>	Section 7
<ul style="list-style-type: none"> <li>If the activity includes the discharge of any contaminant, a description of: <ul style="list-style-type: none"> <li>The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and</li> <li>Any possible alternative methods of discharge, including discharge into any other receiving environment.</li> </ul> </li> </ul>	Sections 2 and 4
<ul style="list-style-type: none"> <li>A description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect.</li> </ul>	Section 8
<ul style="list-style-type: none"> <li>A description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect.</li> </ul>	Section 5
<ul style="list-style-type: none"> <li>Identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted;</li> </ul>	Section 11



Schedule 4 Item	Location within AEE
<ul style="list-style-type: none"> <li>• If the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved; and</li> <li>• If the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).</li> </ul>	<p>Section 5 and Section 12</p> <p>N/A, although customary right claims are addressed at Section 10.5.7</p>
<p>An assessment of the activity's effects on the environment that addresses the following matters:</p> <ul style="list-style-type: none"> <li>• Any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects;</li> <li>• Any physical effect on the locality, including any landscape and visual effects;</li> <li>• Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity;</li> <li>• Any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations;</li> <li>• Any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants; and</li> <li>• Any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations.</li> </ul>	<p>Section 7</p> <p>Section 7</p> <p>Section 7</p> <p>Section 7</p> <p>Section 7</p> <p>Section 7</p>
<i>For applications involving permitted activities</i>	
<p>If any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)).</p>	<p>Section 6</p>
<i>For applications affected by section 124 or 165ZH(1)(c)</i>	
<p>If the application is affected by section 124 or 165ZH(1)(c) (which relate to existing resource consents), an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A)).</p>	<p>Section 9.8</p>

# 1 Introduction

## 1.1 Overview

This Assessment of Effects on the Environment (AEE) report has been prepared in accordance with section 88 of the Resource Management Act 1991 (RMA)<sup>5</sup> on behalf of New Zealand Steel Limited (NZ Steel). The AEE is to support a resource consent application to authorise activities associated with the discharge of ITA stormwater and process water<sup>6</sup> at the Glenbrook Steel Mill (Steel Mill), in accordance with sections 9, 12, 14 and 15 of the RMA (the Proposal). The Steel Mill is located at 131 Mission Bush Road, Glenbrook, Auckland (Site).

NZ Steel is seeking replacement resource consents for the continuation of existing operational activities authorised by existing resource consents (described at Section 1.4) held by NZ Steel.

In addition, NZ Steel has secured co-funding from the NZ Government to enable the installation of an Electric Arc Furnace (EAF) at the Site. The EAF, if installed, will reduce the use of virgin steelmaking materials (iron sand and coal), and instead recycle Ferrous Scrap using renewable electricity. This AEE therefore considers the existing operation of the Steel Mill as well as the operation of an EAF in the event this is installed.

No increase or material change to the nature or scale of existing activities at the Site is proposed, with the exception of the changes associated with the proposed EAF (described at Section 3.2.3 and throughout this AEE).

This AEE is supported by the following appendices:

- Appendix A – Application Forms
- Appendix B – Existing consents being replaced
- Appendix C – Records of Title
- Appendix D – Auckland Unitary Plan - Operative in Part Planning Maps
- Appendix E – Figures
- Appendix F – Activity Standards Assessment
- Appendix G – Industrial and Trade Activity Report
- Appendix H – Freshwater Ecological Assessment
- Appendix I – Marine Ecological Assessment
- Appendix J – Outfall Structures Integrity Assessment
- Appendix K – Water Quality Management Plan
- Appendix L – Closed Landfill Management Plan
- Appendix M – Economic Impact Statement
- Appendix N – Mana Whenua Correspondence
- Appendix O – Consultation Records
- Appendix P – Relevant Objectives and Policies
- Appendix Q – Ecological Guidelines and Methodologies
- Appendix R - Proposed Conditions

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<sup>5</sup> It is noted that at the time of writing this update, the Natural and Built Environment Act (NBEA) 2023 has been repealed and replaced by the Resource Management (Natural and Built Environment and Spatial Planning Repeal and Interim Fast-track Consenting) Act 2023) Regardless, this application was lodged prior to the NBEA receiving Royal Assent and therefore it will continue to be processed under the RMA.

<sup>6</sup> The term 'process water' includes waste process water and landfill leachate.

- Appendix S – Draft Coastal Birds Management Plan
- Appendix T – Draft Wetlands Management Plan



Figure 1.1: Aerial photograph of the Site (denoted in orange) and Glenbrook Steel Mill Precinct (denoted in yellow)

## 1.2 Background

NZ Steel is the New Zealand-based subsidiary of Australian company Bluescope Steel (Bluescope), and produces steel slab, billets and a variety of processed steel products for domestic and export markets. NZ Steel also operates the Waikato North Head mine (which provides the ironsand for the Steel Mill) and Pacific Steel (which is a Rolling Mill located in Otahuhu that further processes products from the Steel Mill).

Commercial operations have been undertaken at the Site since 1968, with commencement of production from a continuous galvanising line with imported feed coil, construction and operation of a Pipe Mill from 1972 (which operated at the Site until 2020) and construction and operation of the Paint Line from 1982.

Major investment in the 1980s saw the commissioning of the current ironmaking facilities consisting of four Multi Hearth Furnaces (MHFs), four Kilns and two Melters, the Steel Plant consisting of continuous slab-casting facilities and the Rolling Mills. By 1987, NZ Steel was operating as a fully integrated Steel Mill, producing flat steel products predominantly for the domestic market. The continuous galvanising line (in the Metal Coating Line) was modified in 1994 to produce ZINCALUME®, in addition to GALVSTEEL®. In 1997, investment was made in a second and larger Cogeneration Plant to recover additional energy from the Iron Plant waste heat to generate electricity. As a result, 60 percent of the Steel Mill's electricity requirements are now generated on Site. In 2015 a billet caster was installed to produce billet for the NZ Steel facilities in Otahuhu (producing reinforcing rod and bar) and more recently its Fiji Rolling Mill facilities.

Today, the Steel Mill is comprised of the following components:

- Iron Plant, which converts the raw materials, PC, lime and coal, to iron;
- Steel Plant, which converts the iron to steel and casts molten steel into steel slab and billet;
- Rolling Mills, where the steel slab is rolled into coils for further processing or direct sale;
- Finishing Plants, where a range of metal-coated and pre-painted products are produced; and
- Ancillary activities, including movement of iron and steel between manufacturing plants, transport, stockpiling and processing raw materials, co-products and waste derived from Steel Mill activities.

**Figure 2.2** provides a spatial overview of the locations of each of the key components of the Steel Mill and Sections 3 and 4 provide further detail on the activities undertaken at the Steel Mill.

### 1.3 Applicant and property details

Table 1.1 below provides an overview of the applicant and property details for the Site.

**Table 1.1: Applicant and property details**

<b>Applicant</b>	New Zealand Steel Limited
<b>Owner and Occupier of application Site</b>	New Zealand Steel Limited Auckland Council (Esplanade Reserve) <sup>7</sup>
<b>Site address / map reference</b>	35 Higgins Road; 36 Higgins Road; 72 Mission Bush Road; 64 Glenbrook Beach Road; 131 Mission Bush Road; 152 Brookside Road (Collectively known as 131 Mission Bush Road, Glenbrook, Auckland)
<b>Site area</b>	Approximately 550 hectares (NZ Steel owned land not including Auckland Council Esplanade).
<b>Legal description</b>	NZ Steel: Lot 1 DP 20738; Lot 1 DP 27248; Lot 1 DP 146074; Lot 1 and 3 DP 29372; Lot 2 DP 29372; Lot 1 DP 110268; Lot 2 DP 110268; Lot 5 DP 102560; Lot 1-3 DP 202203, Allotment 363-364 Parish of Waiuku East; Allotment 285 Parish of Waiuku East; Lot 1 DP 62129; Middle Part Allotment 123 Parish of Waiuku East; Allotment 122 and Part Allotment 123 Parish of Waiuku East. Auckland Council: Allotment 322 Parish of Waiuku East.
<b>Record of Title reference</b>	NZ Steel: NA463/98; NA692/303; NA86C/596; NA727/169; NA730/133; NA62A/1003; NA62A/1004; NA56C/636; NA128C/529; NA907/240; NA19C/1494; NA700/127; NA285/12 Auckland Council: NA30A/901 Copies of the relevant Records of Title are attached in <b>Appendix C</b> <sup>8</sup> .
<b>Relevant Council</b>	Auckland Council
<b>Relevant Plans</b>	Auckland Unitary Plan – Operative in Part (AUP) The relevant AUP planning maps are attached in <b>Appendix D</b> .
<b>Address for service during consent processing</b>	Tonkin + Taylor PO Box 5271, Victoria Street West, Auckland 1142 Attention: Jennifer Carvill Phone: +64 29 707 0975 Email: jcarvill@tonkintaylor.co.nz
<b>Address for service during consent implementation and invoicing</b>	131 Mission Bush Road, Glenbrook Attention: Environment Manager, Amy Hill Phone: +64 21 199 3886 Email: amy.hill@bluescopesteel.com

<sup>7</sup> An Auckland Council Land Use Advisor confirmed via email on 26 October 2021 that landowner approval is not required.

<sup>8</sup> **Appendix C** also includes a copy of the covenant that applies to titles NA128C/529, NA463/98, NA907/240, NA727/169.

## 1.4 Existing resource consents

NZ Steel holds a number of resource consents relating to the discharge of ITA stormwater and process water containing contaminants from the Site as set out in **Table 1.2** (referred to throughout this application as the Existing Consents). This application seeks to replace these (now expired) Existing Consents. As discussed at Section 9.8, given this application was lodged prior to 30 June 2021, the existing discharges continue to be authorised as section 124(3) applies.

**Table 1.2: Existing resource consents to be replaced**

Common name	Consent reference	Description	Expiry
Industrial or Trade Activity (ITA) discharges	41027	To discharge contaminants from an industrial or trade activity <sup>9</sup> .	31 December 2021
Northside Outfall discharge	21575	To authorise the discharge of treated process water and stormwater into the coastal marine area from the Northside Outfall Structure.	31 December 2021
Southside Outfall discharge	21576	To authorise the discharge of treated process water and stormwater into the coastal marine area from the Southside Outfall Structure.	31 December 2021
Occupation of the coastal marine area by discharge structure	23877	To authorise the occupation of part of the coastal marine area with a discharge structure (the Southside Outfall Structure).	31 December 2021
Dewatering Plant discharge	21577	To authorise the discharge of clarified wastewater from the Dewatering Plant to the North Drain <sup>10</sup> .	31 December 2021
North Drain diversion	812691	To divert the total flow of the North Drain and discharge the flow into the Lower North Stream <sup>11</sup> .	1 October 2026
EAF Scrap Yard Discharges <sup>12</sup>	BUN601422451 (DIS60422452 and DIS60424342)	To authorise the ITA land use and discharges from the Scrap Yards associated with the EAF	27 November 2028

<sup>9</sup> Permit 41027 excludes ITA discharges from the Northside and Southside catchments, which are authorised by Permits 21575 and 21576.

<sup>10</sup> Referred to in Permit 21577 as the "Northside Stream".

<sup>11</sup> Referred to in Permit 812691 as "Divert and discharge the total flow of the Northside Stream upstream of Map Ref N47 252175 and to discharge to an unnamed stream at Map Ref N47 252182".

<sup>12</sup> This application was granted consent on 27 November 2023. The consent is an interim measure to authorise the discrete scrap yard activities in the period prior to the determination of this replacement consent application. The consent was sought to enable NZ Steel and the New Zealand Government to have comfort that activities associated with the EAF were able to be authorised. This short term, standalone consent seeks to provide that assurance, until the full suite of replacement consents included in this application have been assessed.

In addition to the above resource consents that this application seeks to replace, NZ Steel holds various other consents relating to the operation of the Steel Mill. Summaries of these consents are provided below for information and context only and include:

- Permits DIS60266277 and DIS60363772 (expired 1 November 2021) to discharge contaminants to air from the production of iron and steel and associated activities (including commercial iron plating) within the Glenbrook Iron and Steel Zone (replacement of these consents is being sought in a separate resource consent process)<sup>13</sup>;
- Permit DIS60388342 (expired 22 December 2023) and Land Use Consent LUC60388343 to discharge contaminants to air from diesel generators and store hazardous substances;
- AUTH141708.01.01 (expires 24 December 2056) to take water from the Waikato River to supply the Steel Mill;
- Various consents associated with the NZ Steel landfills comprising the operational East Landfill and closed West and North Landfills, including:
  - Permit 34757 (expires 31 December 2043) for the permanent diversion and infilling of a Stream (a tributary of the Lower North Stream), associated with construction of the East Landfill;
  - Water Right 896715 (expired) for the permanent diversion of the Lower North Stream for construction of the West Landfill. This permit expired on 31 December 2010 and was not replaced as, at that time, the activity was provided for as a permitted activity under the Auckland Council Regional Plan: Air, Land and Water;
  - Water Right 896716 (expired) to divert and discharge landfill seepage and runoff from the West Landfill to existing treatment facilities at the Steel Mill (the Northside Ponds). This permit expired on 31 December 2010 and was not renewed as it was determined that the activity is authorised by the Northside Outfall Permit 21575, which this application seeks to replace;
  - Permit 21771 (expires 31 December 2034) to discharge contaminants into ground and ground water from the North and West Landfills;
  - Permit 34089 (expires 18 May 2044<sup>14</sup>) to discharge contaminants to land and water (including groundwater) from the East Landfill (including the discharge of leachate to the Northside Ponds); and
  - Land use consent L07139 for the construction and operation of the East Landfill.
- Various permits (all of which expire 31 May 2048) associated with the Ruakohua Stream and Dam, including:
  - Permit 40650 to dam the Ruakohua Stream (Ruakohua Dam);
  - Permit 40651 to take water from the Ruakohua Dam to use in the Steel Mill;
  - Permit 40652 for the diversion of the Ruakohua Stream; and
  - Permit 40653 for discharges: the discharge of water from the Waikato River into a stream channel to the dam, discharge from the dam scour valve to freshwater, and discharge from the dam emergency spillway to freshwater.
- An Air Separation Unit (ASU) owned and operated by BOC Ltd<sup>15</sup> is also located on NZ Steel owned land. The ASU supplies pipeline oxygen, nitrogen and argon to the Steel Mill, for use in

<sup>13</sup> This application was granted 17 March 2023 (DIS60376538) and is currently subject to an appeal before the Environment Court. The interim activities are authorised pursuant to section 124 of the RMA.

<sup>14</sup> 35 years from date of commencement, which is set at 18 May 2009, following Environment Court order under section 116 RMA.

<sup>15</sup> British Oxygen Company Ltd

the steel making process. This activity is authorised by a separate resource consent and is not within the scope of the current application to replace the Existing Consents.

- DIS60419815 (expires 20 November 2058) authorises the passive discharge of contaminants to land and diffuse discharge of contaminants to groundwater.
- BUN60427120 – (expires 2 February 2029) authorises the land disturbance required to construct the EAF and associated infrastructure. Note the expiry date only applies to some aspects of this consent. Overview of resource consent requirements

Consent for the Proposal is sought from Auckland Council (Council) pursuant to the AUP and the Freshwater NES for the following reasons:

#### AUP

- Discharge of contaminants from the ITA Area (including EAF Scrap Yards) into land and water, including the Coastal Marine Area (CMA), pursuant to Rules E33.4.2 (A23) and F2.19.7(A65) and section 15 of the RMA, as a **discretionary activity**;
- Discharge of the water component of process water from the Dewatering Plant to the North Drain, pursuant to Rule E4.4.1 (A15) and section 15 of the RMA, as a **discretionary activity**;
- Occupation and use of the CMA by the Northside and Southside Outfall Structures, pursuant to Rule F2.19.10 (A133) and section 12 of the RMA, as a **discretionary activity**;
- Ongoing diversion of water in the North Drain (an artificial watercourse) and associated discharges, pursuant to Rule E7.4.1 (A13) and sections 14 and 15 of the RMA, as a **discretionary activity**;
- Use of land (ITA Area) for an industrial or trade activity (including EAF Scrap Yards), pursuant to Rule E33.4.1 (A9) and section 9(2) of the RMA, as a **discretionary activity**;
- Discharge of leachate from the active East Landfill to the CMA, pursuant to Rules E13.4.1 (A10) and F2.19.7(A70) and section 15 of the RMA, as a **discretionary activity**; and
- Discharge of leachate from the closed West Landfill to the CMA, pursuant to Rule E13.4.1 (A12) and section 15 of the RMA, as a **controlled activity**; and pursuant to Rule F2.19.7(A70) and section 15 of the RMA, as a **discretionary activity**.

#### Freshwater NES

- Discharge and diversion of water within, or within a 100 m setback from, natural wetlands, pursuant to regulation 54 and sections 14 and 15 of the RMA, as a **non-complying activity**.

Specifically this application seeks authorisation for discharges from the Contractors Compound and Yard 31 into the Ruakohua Stream under the Freshwater NES. In both instances however, it could be argued that consent is not required as discussed in more detail at Sections 2.7.5 and 6.3. This application takes a deliberately conservative approach to the identification of consent triggers under the Freshwater NES and therefore NZ Steel seeks consent as a non-complying activity for these discharges.

#### Summary

Applying the bundling principle (C1.6(2)), the overall activity status of this application is **non-complying**, however this results from the conservative approach to the consideration of the Freshwater NES.

For the avoidance of doubt, NZ Steel is seeking resource consent under the rules identified above and any other consents necessary to authorise the activities described in the application, even if not specifically noted.



## 1.5 Consent duration

Pursuant to section 123 of the RMA, resource consent is sought for a duration of 35 years. This is the maximum permissible duration enabled by the RMA and is considered appropriate given:

- The scale of the investment in the Steel Mill. For example, the replacement cost for the assets (and NZ Steel's insured value) is \$5.1 billion. Together with NZ Steel's related businesses and assets associated with the Waikato North Head Mine and Pacific Steel, and the considerable costs associated with the ongoing maintenance and operation of the Steel Mill (discussed further at Section 9.5.4), this represents a significant investment;
- The longstanding existing nature of the Steel Mill and its place in the community. This includes positive effects associated with provision of employment, including 1,276 direct full time equivalent employees (FTEs) of the NZ Steel businesses, and a further 2,787 FTEs through indirect and induced employment;
- The contribution made by NZ Steel to regional and national gross domestic product (GDP), with a total contribution made to Auckland's GDP of \$431 million, and to New Zealand's GDP of \$596 million;
- The extensive information concerning the existing environment and the conservative approach taken to the assessment as outlined in this AEE;
- The fact that there is a high degree of understanding regarding the actual and potential adverse effects of the Proposal given the extensive monitoring record and detailed nature of the assessments undertaken as part of this consenting process, together with the long-term record of monitoring and assessments; and
- The fact that effects of the activities can be appropriately managed with the management, monitoring, mitigation and compensation measures outlined in Section 5 and through conditions of consent (as discussed at Section 12), particularly those conditions that provide for 'living' management plans and review conditions.
- The proposal and co-funding secured from the New Zealand Government to enable the installation of an Electric Arc Furnace (EAF) which will reduce greenhouse gas emissions from the Steel Mill by approximately 45% (discussed further at Section 7.2.1). This shows NZ Steel's commitment to more sustainable operations.

These combined factors support the view that the proposed 35-year term is reasonable and accords with Part 2 of the RMA.

## 2 Environment against which effects are assessed

### 2.1 Site location – surrounding area

The Site is approximately 550 hectares, located in the Glenbrook area, south of Auckland, as shown in **Figure 2.1**.

The surrounding area is predominantly rural, comprising pastoral farming (particularly dairy farming), lifestyle blocks and horticultural activities (including kiwifruit orchards). An electrical substation owned by Transpower Limited and an ASU owned by BOC Ltd are located directly adjacent to the Steel Mill. The ASU supplies pipeline oxygen, nitrogen and argon to the Steel Mill for use in the steel making process. The topography of the surrounding area can broadly be described as flat, low-lying coastal terrain.

To the west of the Site is the Waiuku River, which, despite its name, is a long and relatively narrow tidal arm (estuary) of the Manukau Harbour. For the avoidance of confusion, the term “Waiuku Estuary” is therefore used throughout the AEE. The Taihiki Estuary is a major offshoot of the Waiuku Estuary, which extends eastward from a junction between Clarks and Glenbrook Beaches (some four km north of the Site). Together, these estuaries comprise the potential Zone of Influence<sup>16</sup> (ZOI) for the Steel Mill discharges to the CMA. The existing state of the Waiuku Estuary and wider ZOI is discussed further at Section 2.9. It is noted that the Steel Mill is located directly adjacent to the Waiuku Estuary and there are no drinking water abstractions downstream of the discharge points.

There are two Watercare Services Ltd (Watercare) owned and operated Wastewater Water Treatment Plants (WWTP)<sup>17</sup> that discharge into the Waiuku Estuary: the small Clarks Beach WWTP, at the mouth of the Waiuku Estuary, and the Waiuku WWTP located immediately south of the Site. Watercare has obtained resource consents for a new WWTP at Clarks Beach, which will replace the existing WWTPs and service Waiuku, Glenbrook, Clarks Beach and Kingseat. The replacement WWTP should improve water quality in the upper Waiuku Estuary once the existing Waiuku WWTP has been decommissioned.

To the east of the Site are the Franklin lowlands, which stretch all the way to Papakura. The lowlands are generally rolling, to relatively flat. The southern shore of the Manukau Harbour is characterised by creeks, rivers and tidal arms (of which the Waiuku Estuary is one) which extend inland and create distinct geographical areas within the Franklin lowlands.

Pukekohe is the largest urban centre near the Steel Mill and lies approximately 14 km (as the crow flies) directly east of the Site. However, the nearest township to the Steel Mill is Waiuku, which is approximately 2.5 km south-west of the Site. Until the construction of the Steel Mill, Waiuku was a small service centre for the surrounding rural area. Since construction, the township has grown considerably through a combination of direct and indirect employment related to the Steel Mill and people seeking a rural lifestyle. Glenbrook-Waiuku Road is the main access road to Waiuku from the Auckland Southern Motorway. The settlement of Glenbrook Beach, which has also experienced considerable growth in recent years, is located approximately 3 km to the north of the Site and is accessed via Glenbrook Beach Road which passes the Steel Mill.

<sup>16</sup> The ZOI is defined for the purposes of this application as estuarine and marine areas and habitats that could be potentially impacted by the Proposal.

<sup>17</sup> Watercare’s WWTPs treat and discharge domestic wastewater whereas NZ Steel’s WWTPs treat and discharge process water from the Steel Mill’s manufacturing process.



Figure 2.1: NZ Steel Site location and wider context

## 2.2 Description of Site and ITA Area

The Steel Mill contrasts to the generally rural surrounds and creates a distinctive and prominent landmark that has modified the natural environment. There are two road access points to the Site, via Mission Bush Road and Glenbrook Beach Road/ Glenbrook Road. The Steel Mill is also served by the Mission Bush Branch railway line, which was formerly a branch line to Waiuku.

Of the approximately 550-hectare NZ Steel landholding, approximately 190 hectares of the Site is used for the operational activities of the Steel Mill, the majority of which are within an area referred to in this application as the 'ITA Area' (denoted by the white dashed line in **Figure 2.2**). Operational activities of the Steel Mill that are located outside the ITA Area but that are relevant to this application are the Southside Ponds, the Southside Outfall Structure and the three landfills (discussed further below).

The ITA Area comprises a number of buildings, structures and stockpiles. The northern portion of the ITA Area is where the majority of the raw materials for the iron and steel making processes are stockpiled, including coal and PC.<sup>18</sup> The central part of the ITA Area comprises the Iron and Steel Plants. To the east and south of the Iron and Steel Plants are the Finishing Plants, Rolling Mills, storage yards, workshops and administration offices. **Figure 2.2** characterises the activities undertaken within the ITA Area. The processes that occur within these areas are further described in Section 3 below.

Within the wider Site, NZ Steel owns land to the north, east and south of the ITA Area which is farmed. This land also contains three landfills – an operational landfill (East Landfill) and closed landfill (West Landfill) are located north of the ITA Area, and a historical landfill (North Landfill) lies to the west of the ITA Area. These landfills have, or are receiving, process waste from the Steel Mill only and are subject to separate resource consents as described at Section 1.4. Further detail on the landfills is provided in Section 3.5.7.

The Northside and Southside Outfall Structures are located on the western edge of the Site and are partly within the CMA. The Northside Outfall Structure is located entirely within the NZ Steel landholding portion of the Site. The Southside Outfall Structure is located in the Auckland Council owned esplanade reserve portion of the Site, between the Steel Mill and the CMA.

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<sup>18</sup> Concentrated ironsand slurry pumped to Glenbrook. This is because ironsand mined at Maioro / Waikato North Head goes through a concentrating plant to increase the iron percentage.



Figure 2.2: NZ Steel Site, ITA Area and key activities

The ITA Area is drained by three freshwater catchments:

- North Stream Catchment (comprising the North Drain and the Lower North Stream);
- Ruakohua Stream Catchment; and
- Kahawai Stream Catchment (while there have formerly been discharges to this catchment, and may be again in future, there are not currently any ITA discharges to this catchment).

These are described further in Sections 2.5 to 2.8. Apart from the Ruakohua Stream, the names have been adopted for the purposes of this application as the watercourses do not have a legal name. The streams all ultimately discharge into the Waiuku Estuary which is directly adjacent the Site. The location of each of these watercourses is shown in **Figure 2.3** and their respective catchment areas are shown on Figures W9 – W11 of **Appendix E**.

The North Drain (which is part of the North Stream Catchment) and the Ruakohua Stream currently receive treated ITA stormwater from parts of the ITA Area, and the North Drain also receives treated process water from the Dewatering Plant. The Northside and Southside ITA Catchments discharge treated ITA stormwater and process water to the Waiuku Estuary from the Northside and Southside Outfalls. The main water treatment system within these two large catchments comprises seven WWTPs, and the Northside and Southside Ponds (a total of six ponds including the SRNZ Ponds), which discharge treated water to the Waiuku Estuary from the Northside and Southside Outfalls). A description of these discharges is provided in Section 4 of this report.

Freshwater and Marine Ecological Assessment Reports are provided in **Appendix H** and **Appendix I** respectively, which include a detailed description of the ecological values of the receiving watercourses and marine environment. A summary description of each of these environments is provided in Sections 2.5 to 2.9.



Figure 2.3: Watercourses within the Site

## 2.3 Statutory context

### 2.3.1 Site zoning

The AUP zoning of the Site is shown in **Figure 2.4** below.

The ITA Area, plus some additional land to the north and south (which is currently used predominantly for rural purposes) is zoned Business – Heavy Industry in the AUP. The AUP’s Business – Heavy Industry Zone provides for large-scale industrial activities, such as the Steel Mill, and

anticipates a lower level of amenity. The AUP contains specific recognition of the Steel Mill through the 'Glenbrook Steel Mill Precinct':

*"The purpose of the Glenbrook Steel Mill Precinct is to support and enable the continued operation of the existing steel mill and associated facilities. The Glenbrook Steel Mill is located on Mission Bush Road, Glenbrook and is a significant industrial resource within the Auckland region. This precinct seeks to provide for the mill's growth and operation in a way that continues to support the local, regional and national economy. <sup>19</sup> "*

Outside the Heavy Industry-zoned ITA Area, NZ Steel owns land to the north, east and south which is zoned, and generally used, for rural purposes. This forms a greenbelt around the Steel Mill and acts as a buffer between the Steel Mill and the surrounding farmland and communities.

Pockets of vegetation are located on the Site, two of which in the south-eastern corner are identified as Significant Ecological Area – Terrestrial (SEA-T) within the AUP. There are a number of Significant Ecological Areas – Marine (SEA-M) in the vicinity of the NZ Steel discharge points to the Waiuku Estuary, as shown on **Figure 2.5**.

The Site also includes the Council owned esplanade strip adjacent the CMA (within which the Southside Outfall Structure is located) and this is zoned Open Space – Conservation Zone.

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<sup>19</sup> Precinct description - Section I415.1 of the AUP



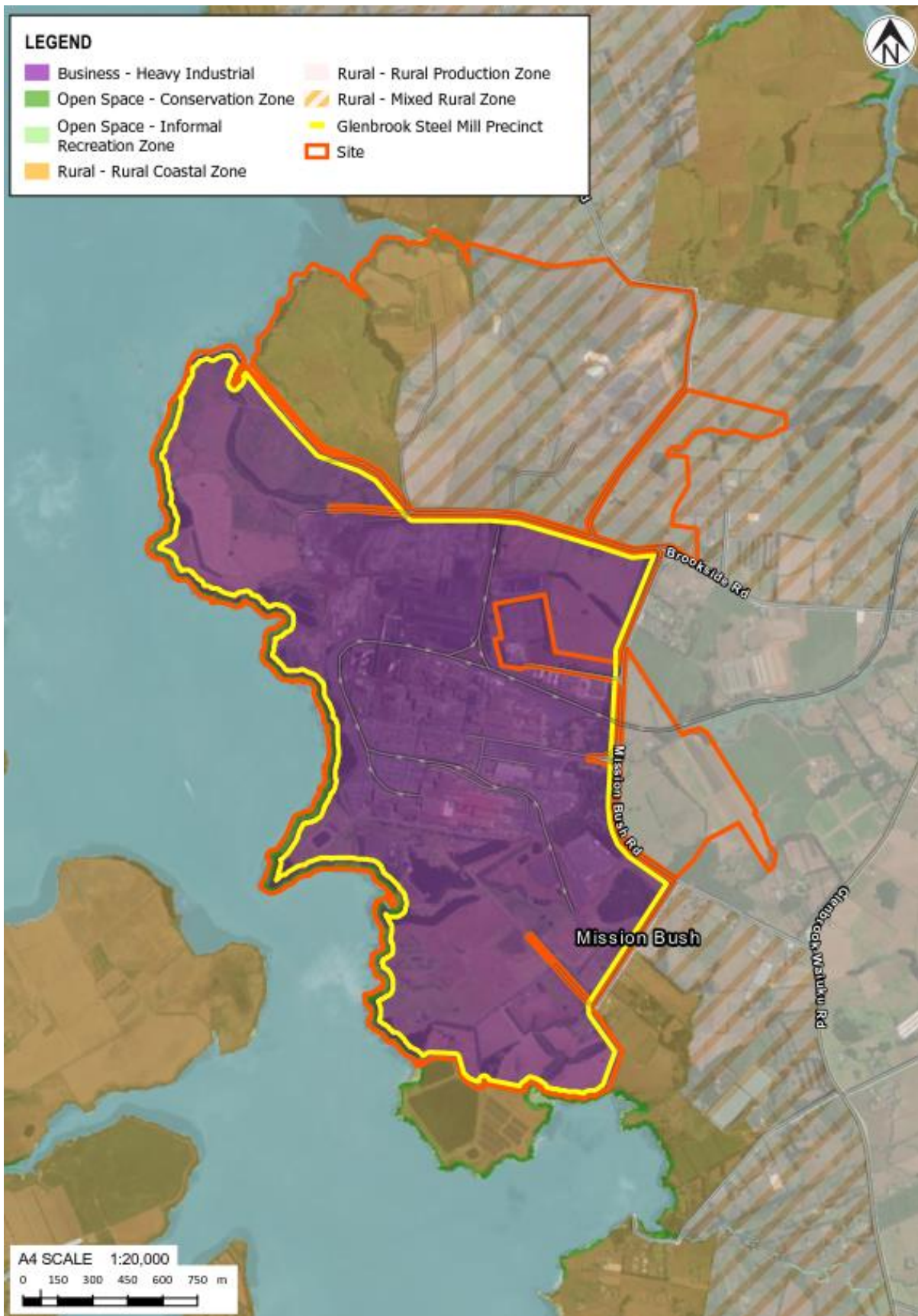


Figure 2.4: AUP Zoning of the Site



Figure 2.5: Significant Ecological Areas – Marine (SEA-M) and Terrestrial (SEA-T) as shown in the AUP

### 2.3.2 Statutory interpretation of “environment”

Section 104 and Schedule 4 of the RMA require that an application for a resource consent consider an activity’s effects on the “environment”.

The “environment” for the purposes of this application includes both the environment as it currently exists (the Current Environment) and the future environment (Receiving Environment), which while not being artificial, may be amended to include the implementation of consented activities and future non-fanciful permitted activities, and their associated effects.

The environment, for the purpose of this application, relates to the land upon which the Steel Mill operates and its surrounds, together with the related freshwater and marine environments. The statements in this application regarding the qualities of the Current Environment are based on monitoring data collected as part of routine compliance monitoring as well as additional monitoring undertaken during the preparation of this application and reflect the background levels of contaminants in the environment, together with the effects of the operation of the Steel Mill. In terms of the future environment, there are no known unimplemented resource consents in the wider area and no permitted land use changes or discharges that are likely to have a bearing on this application.<sup>20</sup>

The recently granted but unimplemented EAF Scrap Yards Discharge consent could be considered to form part of the Receiving Environment. However, given the objective of that consent, including that it was sought and granted for a short duration, a conservative position has been taken and no reliance has been placed on that activity forming part of the Receiving Environment against which effects are assessed in this application.

For applications to replace expiring resource consents such as this one, consideration must be given to the environment that would exist without the activities and associated effects authorised by the expiring consents (i.e., disregarding ongoing effects that arise as a result of the Steel Mill’s operations)<sup>21</sup>. However, the legacy effects of past authorised activities remain relevant to the environment against which effects are assessed<sup>22</sup>.

Sections 2.4 to 2.9 below provide a summary of the Current Environment that has been amended to describe the Receiving Environment. Section 7 then assesses the effects of the Proposal on that determined Receiving Environment.

## 2.4 Introduction to ecological environments

The ecological environments relevant to the Proposal are the North Stream Catchment (comprised of the North Drain and Lower North Stream), Ruakohua Stream Catchment, Kahawai Stream Catchment, and the Waiuku and Taihiki Estuaries. While there are not currently any ITA discharges to the Kahawai Stream Catchment, there have been formerly and may be again in the future and therefore, for completeness, a description of the environment has been provided in a similar level of

<sup>20</sup> While some minimal industrial development could occur on the Heavy Industry Zone land to the south of the Steel Mill as of right, most industrial discharges would trigger resource consent requirements and therefore assumptions have not included development of the Heavy Industry Zone land.

<sup>21</sup> In order to exclude the effects of the expiring consents from the “environment”, it has been assumed that the consented activities, and in particular relevant discharges, cease on expiry. The cessation of these discharges would essentially mean that the Steel Mill operation would cease, including other discharges from the site (e.g., air discharges). This is a hypothetical scenario as, even if the Steel Mill operation were to cease, and the site was made safe, there would be ongoing discharges of stormwater runoff from impervious surfaces that may require consent, or with active management, may meet permitted activity standards. However, to take a conservative approach, it has been assumed that there are no ongoing discharges from the Site. This assumption produces the most conservative (high) magnitude of effect of the Proposal.

<sup>22</sup> Examples of legacy effects and past activities that would persist for the purposes of this application include the build-up of metals in sediment, and the ongoing diversion of water in the North Drain.

detail to the other catchments. Freshwater and Marine Ecological Assessments have been undertaken for the Proposal and are included in **Appendix H** and **Appendix I** respectively. These assessments assign ecological value (from Negligible to Very High) in accordance with the approach set out in the Environmental Institute of Australia and New Zealand Ecological Impact Assessment Guidelines (EciAG).

The following sections summarise the ecological values of these environments, describing both the Current Environment and the Receiving Environment values. The approach to characterising the Current Environment has comprised the following:

- Review of available data and information relating to the environmental state and ecology of the waterbodies and estuaries, including NZ Steel compliance monitoring data and data from Council monitoring programmes; and
- Collection of additional ecological data by field surveys, where required.

The values of the Receiving Environment were then determined based on assumptions of how the environment would change over the term of the consent in the absence of the proposed activities (primarily, the discharges). The Marine Ecological Assessment also used modelling tools to characterise the Receiving Environment.

The Freshwater and Marine Ecological Assessments compare water and sediment quality monitoring results to the Australia and New Zealand Water Quality Guidelines (ANZWQG) (formerly known as the Australian and New Zealand Environment and Conservation Council Guidelines (ANZECC). The ANZWQG set out default guideline values (DGVs) and high guideline values for water and sediment quality parameters at different species protection levels (SPL). Each DGV describes the long-term, ambient concentration for a given parameter at which one can expect a given percentage of species to be protected. Lower species protection percentage levels correspond to more degraded environments.

The assessment of natural inland wetlands<sup>23</sup> used the Wetland Delineation Protocol<sup>24</sup> (WDP) to determine the presence and extent of wetlands, wetland habitat type and associated values. In accordance with the WDP, an area was considered to be a wetland if plant species associated with wetland soils were common. Following confirmation of ‘wetland’ status, further assessment was undertaken to confirm the status of the wetlands as ‘natural inland wetlands’ under the NPSFM. Further detail on this classification process is set out in the Freshwater Ecological Assessment (**Appendix H**).

## 2.5 North Drain

### 2.5.1 Overview

The North Drain originates from the west side of Mission Bush Road and flows in a north-westerly direction between the Steel Mill, the BOC Air Separation Unit and the Transpower switchyard, before passing through a culvert under Brookside Road and discharging downstream of the ITA Area into the headwaters of the Lower North Stream (shown on **Figure 2.6**). The North Drain is also

<sup>23</sup> The relevant definitions for wetlands are as follows:

- The RMA defines “wetlands” as: “*wetland includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions*”.
- The Freshwater NES apply to “natural inland wetlands”, a subset of the RMA broad definition of “wetlands”. The definition of ‘natural inland wetlands’ applies regardless of wetland condition (i.e., includes degraded wetlands), and is defined in Section 3.21 of the National Policy Statement for Freshwater Management 2020 (amended by the Minister for the Environment under section 53(1) of the RMA and notified in the New Zealand Gazette on 8 December 2022 as the National Policy Statement for Freshwater Management 2020 Amendment No 1).

<sup>24</sup> <https://environment.govt.nz/publications/wetland-delineation-protocols/>

culverted for a small section near the BOC Ltd ASU. Riparian vegetation is absent along the majority of the North Drain.

The North Drain was constructed to convey the Steel Mill's ITA stormwater discharges. The North Drain is entirely fed by surface runoff, subsoil drains and process water from the Steel Mill, with the Dewatering Plant discharge dominating the flow during dry periods. The channel is entirely constructed with no natural upstream catchment. As such, the North Drain is considered to be an 'artificial watercourse'<sup>25</sup>. The downstream extent of the North Drain is considered to be approximately 65 metres downstream (north) of Brookside Road<sup>26</sup>.

## 2.5.2 History

The North Stream Catchment comprises a singular channel flowing roughly south to north in the northern part of the Site.

A historical watercourse originally referred to as the Northside Stream was diverted<sup>27</sup> in the 1980s as part of the Steel Mill expansion. Prior to the 1980s, the original Northside Stream flowed west down what was known as the Northside Valley to discharge into the Waiuku Estuary at the location of the current Northside Outfall. During the upgrade of the Steel Mill between 1978 and 1984, the entire Northside Valley was filled and ITA stormwater runoff from the eastern part of the Steel Mill was directed north through a new diversion drain (North Drain) and discharged into what is now referred to as Lower North Stream.

Much of the upper North Stream Catchment is highly modified, having been constructed after the Northside Stream was completely reclaimed (filled in) to enable the expansion. The headwaters of the North Stream Catchment are within the Site boundary immediately to the west of Mission Bush Road. The land use within the existing catchment is dominated by industrial activity (the Steel Mill, NZ Steel's two landfills (one closed and one active), the Transpower substation, and the BOC Ltd ASU), with a small amount of rural/ agricultural use in the lower reaches.

Due to the highly modified nature of the North Stream Catchment, the main channel is described in two distinct parts in this report:

- The North Drain, which comprises the channel between Mission Bush Road and 65 m downstream of Brookside Road; and
- The Lower North Stream, which comprises the section of natural modified watercourse that flows between the East and West Landfills (starting approximately 65 m downstream of Brookside Road) and the lower more natural reaches near where the Lower North Stream discharges to the CMA.

This delineation is shown in **Figure 2.6** below.

<sup>25</sup> AUP Chapter J1 defines 'artificial watercourse' as "*constructed watercourses that contain no natural portions from their confluence with a river or stream to their headwaters*".

<sup>26</sup> The downstream extent of the North Drain artificial watercourse is the location where the current constructed channel, which contains no natural portions, intersects a former tributary of the Lower North Stream (i.e., at the confluence of the North Drain with the historical stream).

<sup>27</sup> Authorised by Permit No. 812691.



Figure 2.6: Delineation of North Drain and Lower North Stream within the North Stream Catchment

### 2.5.3 Hydrology

A high-level hydrology assessment has been undertaken to estimate the long-term flows that would occur in the North Drain Receiving Environment (i.e., without the Dewatering Plant discharge), using

the Council's Freshwater Management Tool (FWMT)<sup>28</sup>. The long-term median (50<sup>th</sup> percentile) flows are estimated as 590 m<sup>3</sup>/day (7 L/s) in the North Drain. Only negligible flows would occur during the driest periods (10 year ARI 7-day minimum flow), and storm flows (95<sup>th</sup> percentile) are estimated as 2,170 m<sup>3</sup>/day (25 L/s).

#### 2.5.4 Riparian margins

Riparian vegetation is absent along the majority of the North Drain, and the channel therefore has very little shading.

#### 2.5.5 Instream ecology

The Freshwater Ecological Assessment (**Appendix H**) discusses the instream ecology of the North Drain in detail. In summary, it is considered to be of 'low' ecological value due to the highly modified nature of the channel (which is concrete lined downstream of the discharges), with a low number of macroinvertebrate taxa present and 'very poor' native fish diversity, all of which are indicators of 'poor' habitat and water quality. Macroinvertebrate scores were below the National Bottom Line of the NPSFM (in Band D), and below the applicable AUP guideline<sup>29</sup>.

Sediment quality was generally good as most parameters met the default guideline values (DGV) of the ANZWQG. The exception to this was zinc concentrations (total recoverable and extractable) which exceeded the ANZWQG high value.

As set out in Section 2.5.3 above, the process water discharge from the Dewatering Plant provides the primary source of baseflows to the North Drain and Lower North Stream. When considering the Receiving Environment (discussed at Section 2.3.2), the removal of this discharge would change the North Drain Receiving Environment flow regime from a permanent to intermittent watercourse, with only negligible low flows expected. Consequently, the Receiving Environment would have a reduced area of available instream habitat for macroinvertebrate and fish species.

#### 2.5.6 Water quality

Spot water quality data of ITA stormwater discharge locations and within the North Drain typically met or were near to NPSFM values, however generally exceeded ANZWQG. Conductivity downstream of the Dewatering Plant discharge was elevated and this is attributed to the brackish process water discharged from the Dewatering Plant as the source of the slurry water is from the tidal zone at the mouth of the Waikato River.

Water quality values within the North Drain met the ANZWQG for 80% or 95% SPL for some monitored parameters. Parameters that did not meet ANZWQG for either 80% or 95% SPL included aluminium, copper, iron, lead and zinc. Total suspended solids (TSS) and pH both on average exceeded existing trigger investigation levels (set in NZ Steel's Stormwater Monitoring and Management Plan (SMMP)), noting this is prior to mixing in the North Drain and prior to discharge into the Lower North Stream.

The water quality of the Receiving Environment would be better than that of the Current Environment (notably, aluminium concentrations and conductivity measurements would be lower), without the Steel Mill discharges.

<sup>28</sup> The Freshwater Management Tool is an Auckland Council hydrological model that estimates flows and water quality for watercourses in the Auckland Region. In the case of the Lower North Stream, the flows account for only the unmodified, 'natural' stream catchment, and therefore provide a basis for the stream flows without the site stormwater or Dewatering Plant discharge.

<sup>29</sup> AUP Policy E1.3(2) Table E1.3.1 – Macroinvertebrate Community Index guideline for Auckland rivers and streams. The rural areas land use guideline has been adopted for the North Drain.

### 2.5.7 Wetlands

There are no wetlands within or adjacent to the North Drain.

## 2.6 Lower North Stream

### 2.6.1 Overview and history

The Lower North Stream is a permanently flowing watercourse that flows from approximately 65 metres downstream (north) of Brookside Road (i.e., from the downstream extent of the North Drain) in a generally northerly direction for approximately 2 km towards the Waiuku Estuary. The Lower North Stream receives the flows from the North Drain (comprising ITA stormwater and Dewatering Plant discharges), with the Dewatering Plant discharge being the primary source of flow in the Lower North Stream. This discharge alone contributes on average 80%<sup>30</sup> of the total flow within the Lower North Stream at the stream mouth on the five to six days each week that the Dewatering Plant is operating.

Much of the original Lower North Stream was diverted<sup>31</sup> to its current alignment prior to opening the West Landfill in 1992 and during development of mid sections around 2003, as the original gully system was filled. It flows north between the closed West Landfill and active East Landfill, directly adjacent to the landfill access road. The banks and channel of this section of the stream are lined with Melter aggregate (processed Melter Slag)<sup>32</sup>. This diverted section of the Lower North Stream is considered a modified natural watercourse.

The lowermost reach of the Lower North Stream (downstream of the tributary) is considered a natural stream as its path appears largely unchanged since 1961 (based on aerial photographs). The extent of this natural reach extends from approximately 1 km downstream of Brookside Road, where the North Stream Tributary flows into the Lower North Stream, to its discharge into Waiuku Estuary. Farm pasture and cropping fields are adjacent to the riparian plantings.

A small section of the Lower North Stream is culverted by a single box culvert (at the confluence of the North Stream Tributary) to allow access to NZ Steel farmland and the East Landfill. Two other small culverts are present upstream of this point.

### 2.6.2 Hydrology

A high-level hydrology assessment has been undertaken to estimate the long-term flows that would occur in the Lower North Stream Receiving Environment (i.e., without the Dewatering Plant discharge), using the Council's FWMT. As set out in Section 2.5.3, the long-term median (50<sup>th</sup> percentile) flows are estimated as 590 m<sup>3</sup>/day (7 L/s) in the North Drain, increasing with distance downstream to be about 1,660 m<sup>3</sup>/day (19L/s) at the mouth of the Lower North Stream. The low flows (10 year ARI 7-day minimum flow) at the mouth of the Lower North Stream are estimated as 42 m<sup>3</sup>/day (0.5 L/s), and the storm flows (95<sup>th</sup> percentile) at that location are estimated as 7,460 m<sup>3</sup>/day (86 L/s).

To put these flows into perspective, the Dewatering Plant contributes an average of 3,915 m<sup>3</sup>/day<sup>33</sup> (approximately 83 L/s) to the North Drain. In the Current Environment, the Dewatering Plant

<sup>30</sup> Calculated using the long-term median (50<sup>th</sup> percentile) flow.

<sup>31</sup> The permanent diversion of the Lower North Stream was authorised by Permit 896715

<sup>32</sup> The Melter aggregate lining was installed in compliance with special condition 2 of Permit 896715: "That the diversion channel shall have a suitable vegetative lining and be of stable cross-section, with an armoured low flow channel of rock cobbles or similar."

<sup>33</sup> The average flow of 3,915 m<sup>3</sup>/day includes the 1-2 days per week when the Dewatering Plant is not operating and there is no flow.



discharge comprises approximately 60% of the long-term average flows<sup>34</sup> at the stream mouth, 80% of the flows for the 50<sup>th</sup> percentile event, and 99% for low-flow events.

### 2.6.3 Riparian margins

The true-right riparian margin of the Lower North Stream has been largely planted with native vegetation. NZ Steel undertook this ecological enhancement voluntarily as part of its programme of Site vegetation management. The planting stream enhancement was not required by any resource consent or other statutory obligation. The true-left bank riparian margin is not planted as a minor landfill road runs close to the stream banks.

In the natural portion of the Lower North Stream, being the lowest approximately 750 m reach, the riparian margins have been fenced since 1998 to exclude farm stock access and planted with native vegetation. This vegetation has now matured to provide good shading of the stream.

All areas of native vegetation on the Site are managed by NZ Steel as part of its planting maintenance programme. This programme comprises regular weed and animal pest control, with infill planting with mid and upper canopy species as required.

### 2.6.4 Instream ecology

The Freshwater Ecological Assessment (**Appendix H**) discusses the instream ecology of the Lower North Stream in detail, however, in summary it is considered to be of 'moderate' ecological value. The following factors contributed to this conclusion:

- The natural portion in the lower reaches of the Lower North Stream is considered to be of 'moderate' ecological value. This is largely driven by the established native riparian vegetation that was planted by NZ Steel approximately 22 years ago. However, the portion of the Lower North Stream that is the modified natural watercourse (upstream of the confluence of the North Stream Tributary and lower culverts) is considered to have 'low' ecological value primarily due to the incomplete riparian shading and the modified nature of the watercourse;
- The number of macroinvertebrate taxa present in the Lower North Stream samples are typically low and habitat quality is considered to be 'poor'. Macroinvertebrate scores (assessed as Macroinvertebrate Community Index (MCI) and Quantitative Macroinvertebrate Community Index (QMCI) score) were below the National Bottom Line of the NPSFM (in Band D), and below the applicable AUP guideline<sup>35</sup>. The presence of several saline tolerant species, and absence of saline sensitive species, indicates the brackish Dewatering Plant discharge is influencing macroinvertebrate communities; and
- The Lower North Stream provides habitat for longfin eel and īnanga which are listed as 'At Risk' species as well as other species such as shortfin eels and banded kōkopu which are not threatened species. However, it is likely that the existing double culvert is preventing īnanga from reaching the mid to upper reaches. The Fish Index of Biotic Integrity (IBI) score is within the NPSFM Band B, indicating the fish community is of moderate integrity.

When considering the Receiving Environment discussed at Section 2.3.2, the Lower North Stream would be quite different than it is in the Current Environment, due primarily to the absence of the Dewatering Plant discharge flow volume. By removing this primary source of stream flow, the stream classification would change from permanent to intermittent, and there would be very little base flow during the driest periods of the year (about 0.5 L/s). This would reduce the available instream habitat area for macroinvertebrate and fish, and would also affect the ability of fish to

<sup>34</sup> Mean annual flow.

<sup>35</sup> AUP Policy E1.3(2) Table E1.3.1 – MCI guideline for Auckland rivers and streams. The rural areas land use guideline has been adopted for the Lower North Stream.

navigate through the lower culvert. It is expected that macroinvertebrate communities would be of a similar quality to the current communities in the absence of the discharges, as upstream catchment factors other than the proposed discharges are influencing instream ecology. Saline sensitive macroinvertebrate taxa would however be expected to return in the absence of the Dewatering Plant discharges. The same fish species are expected to be present in the Receiving Environment.

### 2.6.5 Water quality

In the Lower North Stream daily composite water quality data (undertaken for consenting purposes) typically met or were near to established NPSFM and ANZWQG 95% SPL values, with many parameters returning lower results than the North Drain. Conductivity was elevated due to the brackish Dewatering Plant discharge (discussed in Section 2.5.6).

At the most downstream monitoring location of the Lower North Stream (Site 4), most parameters met the ANZWQG 95% SPL, apart from aluminium, boron (however still met 90% SPL), and vanadium (however the SPL has a low reliability which is discussed further in the ITA report in **Appendix G**). Average TSS and pH values met the existing Consent Limits for ITA monitoring sites, within the Lower North Stream.

As for the North Drain (Section 2.5.6), the water quality of the Receiving Environment of the Lower North Stream would be better than that of the Current Environment, without the Steel Mill discharges.

### 2.6.6 Sediment quality

Sediment quality at the upstream extent of the Lower North Stream generally met the ANZWQG DGVs for most parameters, however elevated zinc, arsenic, chromium, nickel and aluminium were recorded. Comparatively, all parameters met the ANZWQG DGVs at the monitoring site near the stream mouth. This is attributed to the natural settling out of suspended sediments in the stream.

Receiving Environment sediment quality is expected to improve over time as large rainfall events mobilise sediments and re-distribute them downstream. Sediment quality would be expected to meet ANZWQG in the Lower North Stream Receiving Environment.

### 2.6.7 Wetlands

A number of wetlands are present along the Lower North Stream. Those in the mid reaches are riparian wetlands that border the defined stream channel and together form stream-wetland complexes. These are exotic and dominated by reed sweet grass mercer grass and willow weed. Further downstream, some higher value native-dominated wetland types are present, which are dominated by raupō, harakeke (flax), or native clubrush.

The Freshwater Ecological Assessment (**Appendix H**) assesses the Lower North Stream wetlands to be of 'moderate' to 'high' ecological value. Many are buffered by native riparian plantings and maintain ecological connectivity to coastal wetlands. These wetlands generally have a greater diversity of wetland vegetation types and native species compared to wetlands in the Kahawai and Ruakohua Stream Catchments. Wetlands proximal to the CMA are likely to support the spotless crane and banded rail (both classified as 'At Risk – Declining'). That said, all wetland values within the Lower North Stream wetlands were dominated by invasive exotic wetland species such as reed sweet grass, ongoing sedimentation and nutrient runoff associated with horticultural and farming landuse, and discharge contaminants to varying degrees.

Both the extent and values of wetlands in the Current Environment are positively influenced by the volume of the Dewatering Plant discharge, which contributes on average 80%<sup>36</sup> of the total flow within the Lower North Stream at the stream mouth, when the Dewatering Plant is operating.

In the absence of the Dewatering Plant discharges, the Receiving Environment wetlands in this catchment would be considerably smaller in extent. A reduction in the volume of water within the stream (i.e., by increasing intermittency of stream flows) would impact the extent of the identified wetlands by drawing down the amount of water available to be utilised to maintain wetland extent. Water quality would likely be higher in the absence of the discharges. However, it is expected that the wetlands would still be dominated by invasive exotic plant species, and would still be influenced by ongoing sedimentation and nutrient runoff associated with horticultural and farming landuse. All else being equal, the indigenous biodiversity values of wetlands would be lower in the absence of the Dewatering Plant discharges than they are in the Current Environment, because smaller wetlands and ephemeral wetlands generally support a lower diversity of native species. For instance, the hydroperiod (period of inundation) may be too short for the aquatic life-cycles of some wetland macroinvertebrate species. Similarly, the absence of the discharge may render some or all of the remaining wetlands unsuitable for wetland bird species through a reduction in the extent and/or quality of wetland foraging or nesting habitat.

It is difficult to predict the reduction in the extent of wetlands and their values in the Receiving Environment, i.e., in the absence of the Dewatering Plant discharge. Given this uncertainty, and the direction of the NPSFM for natural inland wetland values to be protected<sup>37</sup>, a conservative approach has been taken to characterising the Receiving Environment wetlands.

## 2.7 Ruakohua Stream and Dam

### 2.7.1 Overview

The Ruakohua Stream is a permanent stream located to the south of the Steel Mill, it is approximately four kilometres in length and flows in a south westerly direction towards the Ruakohua Dam which is the Steel Mill's water supply. The stream's headwaters lie beyond the Site boundary to the east (as shown in Figure W10 at **Appendix E**). The lower reaches of the Ruakohua Stream have historically been modified and straightened so that the stream flows over a weir and into the Ruakohua Dam.

The Ruakohua Dam<sup>38</sup> is a storage reservoir for water required by the Steel Mill. The main sources of water to the reservoir are flows from the Ruakohua Stream, a tributary to the Ruakohua Stream (referred to as the Ruakohua Tributary), treated water from the Southside Ponds, and water piped from the Waikato River into the Ruakohua Tributary<sup>39</sup>. The dam contains an emergency spillway for overflow events that can occur during high rainfall and also contains a continuous low flow down the spillway to maintain fish passage<sup>40</sup>.

Upstream of the Site, the Ruakohua Stream Catchment land use is predominantly rural, including mixed use farmland and market gardens. Where the Ruakohua Stream flows within the Site it runs adjacent to the ITA Area and farmland.

<sup>36</sup> Calculated using the long-term median (50<sup>th</sup> percentile) flow.

<sup>37</sup> NPSFM Policy 6: *"There is no further loss of extent of natural inland wetlands, their values and protected, and their restoration is promoted."*

<sup>38</sup> As noted at Section 1.4, a separate suite of consents is held by NZ Steel in relation to the Ruakohua Stream and Dam.

<sup>39</sup> NZ Steel's consented Waikato River water supply pipeline (separately consented).

<sup>40</sup> In 2015, additional fish passage improvements were made (comprising spat ropes and fish ladders) to further enhance fish passage from the culvert at the base of the Ruakohua Dam and into the spillway stilling basin.

### 2.7.2 Riparian margins

NZ Steel has previously undertaken riparian planting along the section of the Ruakohua Stream that flows through the Steel Mill and the Ruakohua Tributary<sup>41</sup>. The native plantings are still maturing but they will provide good shading in the future.

### 2.7.3 Instream ecology

The Freshwater Ecological Assessment (**Appendix H**) discusses the instream ecology of the Ruakohua Stream in detail. In summary, it is considered to be of 'moderate' ecological value with the following factors contributed to this conclusion:

- The number of macroinvertebrate taxa present in Ruakohua Stream samples were typically low and are indicative of 'poor' habitat quality. Macroinvertebrate scores (QMCI and MCI scores) were below the National Bottom Line of the NPSFM (in Band D), and below the applicable AUP guideline<sup>42</sup>. Macroinvertebrate communities are dominated by pollution-tolerant taxa both upstream and downstream of the ITA discharges and appear primarily affected by upstream catchment uses (predominantly rural and include mixed use farmland and market gardens) rather than the proposed ITA discharge.
- The Ruakohua Stream contains a moderate diversity of native freshwater fish species. Species present include longfin eels, shortfin eels, common bullies and Gambusia. Grass carp is also acknowledged as present in the reservoir of the Ruakohua Dam. Longfin eels have a conservation status of 'At Risk', while common bullies have a status of 'Not Threatened'. Gambusia and grass carp are introduced species. The Fish IBI score is within the NPSFM Band B downstream of the ITA discharge, indicating the fish community is of moderate integrity.

When considering the Receiving Environment, as discussed at Section 2.3.2, it is considered that without the discharges from the Steel Mill, instream ecology would be similar on the basis that it would continue to be impacted by upstream catchment influences.

### 2.7.4 Water quality

Spot water quality data found dissolved oxygen concentrations were higher downstream of the discharge points than upstream and showed a high level of saturation (within Band A of the NPSFM) suggesting no stress to aquatic organism is expected. Water temperature, pH and conductivity were similar to the reference site.

Upstream of the ITA discharge, concentrations of aluminium, copper, iron, zinc and TSS exceeded relevant ANZWQG values for the protection of 80% of species. This indicates the effect that upstream land uses and associated discharges are having on water quality. Overall, the parameter that had the greatest exceedances of ANZWQG in the Ruakohua Stream was aluminium.

As mentioned above, the water quality of the Receiving Environment would likely be of a similar quality as there are other sources of contaminants in the upstream catchment that affect water quality.

### 2.7.5 Wetlands

Wetland complexes within the Ruakohua Stream Catchment were generally exotic dominated narrow bands of wetland vegetation that bordered defined streams. These wetlands are each assessed in the Freshwater Ecological Assessment (**Appendix H**) as being of 'Moderate' ecological

<sup>41</sup> In part this was required as ecological compensation planting related to the Ruakohua Dam (Consent reference: 40652). The balance was planted by NZ Steel as part of its ongoing riparian planting programme.

<sup>42</sup> AUP Policy E1.3(2) Table E1.3.1 – Macroinvertebrate Community Index guideline for Auckland rivers and streams. The rural areas land use guideline has been adopted for the Ruakohua Stream.

value, due in part to the overall threat status of wetlands in general. Dominant species include creeping buttercup, mercer grass and water celery.

In the absence of ITA stormwater discharge from the Site (i.e., in the Receiving Environment), the extent of wetlands in this catchment would be similar, though water quality would likely be higher in the absence of process or ITA stormwater discharge. However, it is expected that wetlands would still be dominated by invasive species such as reed sweet grass and influenced by ongoing sedimentation and nutrient runoff associated with land use activities upstream of the Site.

As set out in Section 6.3, this application has taken a conservative approach to natural inland wetlands and the application of the Freshwater NES. It could be argued that the Ruakohua Stream Exotic Wetland 3 (Figure W-FWE6) on the Ruakohua Tributary does not meet the definition of a 'natural inland wetland' under the NPSFM which excludes 'a wetland that has developed in or around a deliberately constructed water body, since the construction of the waterbody'. The Ruakohua Dam is a deliberately constructed water body which has been lawfully established (firstly as a water right under the Soil and Water Conservation Act 1968 and renewed (40650, 40651, 40562 and 40653) in 2013). These consents also authorise the Waikato River Take at the upstream end of the Ruakohua Tributary. Accordingly, these activities now form part of the existing environment and any wetlands that may have existed in the tributary prior to the construction of the dam and commencement of the upstream discharge were not afforded the same protection previously. Accordingly, any existing wetlands would have lawfully ceased to exist at the time of the construction of the dam. The current stream-wetland complexes that exist today have likely developed in or around the extent of inundation as a result of the construction of the dam.

Notwithstanding this, for the purposes of this AEE, the Ruakohua Stream Exotic Wetland 3 has been assessed as if it does fall within the definition of 'natural inland wetland'.

## 2.8 Kahawai Stream

### 2.8.1 Overview

The Kahawai Stream<sup>43</sup> is located entirely within NZ Steel's landholdings, with its headwaters immediately north of the ITA Area. It flows in a general north-westerly direction for approximately 1.2 km before entering the Waiuku Estuary. The Kahawai Stream contains permanent and intermittent flowing sections. The surrounding land is an undeveloped area within the Business – Heavy Industry Zone that is currently used for farming. This catchment formerly received ITA stormwater discharges from the Metal Cutting Yard (MCY) but this area was remediated in 2023 and therefore there are no longer any direct ITA discharges to the Kahawai Stream.<sup>44</sup> However, activities may occur in the future<sup>45</sup> and therefore a description similar to the other catchments has been provided for completeness.

### 2.8.2 Riparian margins

The majority of the Kahawai Stream is fenced to exclude farm stock access and there is mature riparian vegetation along most of the stream (approximately 900 m). The native vegetation has matured and provides good shading to the stream. Native riparian planting in the lower and upper reaches was undertaken by NZ Steel in accordance with Permit 34757 for the East Landfill and is covenanted to ensure its protection in perpetuity. Although not required by any resource consent,

<sup>43</sup> Previously also referred to as the MFS Stream.

<sup>44</sup> It is likely that the Kahawai Stream receives passive discharges from the former activities within the Northside ITA Catchment. Any such discharges were assessed and are authorised by DIS60419815.

<sup>45</sup> Any new future ITA activity/activities within this catchment would be subject to the relevant proposed consent conditions and information requirements.

NZ Steel also undertook ecological planting along the mid-reaches of the streams, between the two covenanted areas.

### 2.8.3 Instream ecology

The Freshwater Ecological Assessment (**Appendix H**) discusses the instream ecology of the Kahawai Stream in detail. In summary it is considered to be of 'moderate' ecological value, with the following factors contributing to this conclusion:

- The dominant substrate present was silt/sands with some small wood present;
- Macroinvertebrate communities are indicative of 'poor' / 'fair' habitat quality. Macroinvertebrate scores (MCI and QMCI scores) were below the National Bottom Line of the NPSFM (in Band D), and below the applicable AUP guideline<sup>46</sup>;
- Shortfin eel was the only species identified in the stream, which has a conservation status of 'Not Threatened' (Dunn *et al.*, 2018). The Fish IBI score is below the NPSFM National Bottom Line (Band D);
- Sediment quality data suggest there are existing water and sediment quality issues in the upstream catchment that influences the stream; and
- Ecological benefits provided by the riparian planting that has been previously undertaken by NZ Steel has improved instream ecology conditions.

When considering the Receiving Environment, as discussed at Section 2.3.2, it is considered that water quality issues in the upstream catchment would mean macroinvertebrate communities would be of a similar quality in the absence of the proposed ITA discharges. Native fish communities would also be expected to remain similar given the downstream reach has previously been enhanced with riparian plantings and the upstream reach is an intermittent stream.

### 2.8.4 Water quality

Spot water quality data typically highlighted that dissolved oxygen concentrations could result in stress to aquatic organisms, being below the NPSFM National Bottom Line upstream of the ITA discharge (Band D) and within the National Bottom Line (Band C) downstream of the discharge. Water temperature and pH were similar to the reference site. Conductivity measurements indicated elevated dissolved ions.

ITA stormwater quality monitoring data undertaken from September 2019 - September 2021 showed that several parameters exceed relevant guideline values in the Kahawai Stream. The stream does not achieve 80% SPL for metals (aluminium boron, copper, iron and zinc); the source of this has not been confirmed but there are no ITA stormwater discharges into the upstream reach which indicates the source is not associated with on-going ITA activities but may be associated with ongoing passive discharges from below the existing ground level. pH also exceeded the existing Trigger Investigation Level (set in NZ Steel's SMMP) within the Kahawai Stream. for the monitoring period noting however this has reduced since the remediation activities undertaken in 2023 discussed at Section 2.8.1.

As such, water quality and sediment quality data suggest there are existing water and sediment quality issues in the upstream catchment that influences the stream, and therefore the water quality in the Receiving Environment is likely to be similar to the existing situation.

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<sup>46</sup> AUP Policy E1.3(2) Table E1.3.1 – Macroinvertebrate Community Index guideline for Auckland rivers and streams. The rural areas land use guideline has been adopted for the Kahawai Stream.

## 2.8.5 Wetlands

Wetland values within the Kahawai Catchment wetland complex vary. Values are relatively higher in the lower portion of the catchment as these wetlands are buffered by maturing native riparian plantings and are immediately adjacent to a coastal wetland habitat. Many of the wetlands are exotic and dominated by mercer grass and kikuyu, with others vegetated by native carex and raupō. Although no wetland bird surveys have been undertaken on the Site, wetlands closer to the CMA and/ or dominated by native vegetation are likely to support the spotless crane and banded rail (both classified as 'At Risk – Declining'), as these wetlands are expected to provide suitable foraging and nesting habitat.

The Freshwater Ecological Assessment (**Appendix H**) assesses the Kahawai Stream wetlands to be of 'moderate' to 'high' ecological value.

## 2.9 Waiuku and Taihiki Estuaries

### 2.9.1 Overview

The Waiuku and Taihiki Estuary extents essentially form the ZOI for the Proposal. The ZOI covers approximately 2,500 ha and together receive freshwater inputs from a catchment totalling approximately 184 km<sup>2</sup>. A large proportion of the water within the Waiuku and Taihiki Estuaries drains at low tide.

Sediments in the Waiuku Estuary range from predominantly sandy, through to mud. The exposed mud and sand banks provide valuable habitat for a range of bird species and benthic fauna. Several species of fish use the Waiuku Estuary, including anchovy, flatfish, and mullet. The natural character of the Waiuku Estuary has been modified to varying degrees by urban development, sedimentation and mangrove expansion.

The Taihiki Estuary is comprised of diverse sheltered harbour habitats ranging from predominantly sandy intertidal flats to mangroves and to pockets of saltmarsh. It is considered to be an important nursery area for young flounder and grey mullet. This area remains one of the least impacted areas containing these harbour habitats in the Manukau because of the lack of major inputs of sediment from the catchment and its vegetated shoreline.

A number of small freshwater stream inlets enter the Waiuku Estuary along its length. The inlets are characterised by mudflat and mangrove communities, where streams discharge into the embayments via shallow channels. Small areas of rocky intertidal habitats are present on the fringes of some inlets. Biological communities are dominated by mud snails within mangrove areas, cockles in the sandy mid-tide habitats and crabs and shrimps lower on the shoreline. Pacific oysters are well established.

Key factors that are likely to have had a major influence on the Current Environment quality in both the Waiuku and Taihiki Estuaries are sedimentation, mangrove proliferation (related to the build-up of fine sediments), the quality of the freshwater inflows (particularly nutrient and sediment inputs from rural land use), and discharges from the Steel Mill and the Waiuku and Clarks Beach WWTP discharges.

### 2.9.2 Marine water quality

The existing discharge permits for the Northside and Southside Outfalls define a consented mixing zone, which covers the whole of the inter-tidal area within the embayment immediately west of the Steel Mill. This mixing zone was set based on dye tracer studies carried out by Bioreserches in the early 1980s, as part of investigations prior to the expansion of the Steel Mill in the mid 1980s. Dye tracer studies are useful to capture the potential extent of a mixing zone at a specific point in time,

but cannot capture the full range of potential conditions and drivers that could affect the extent of a mixing zone at different times, and therefore the currently consented mixing zone is likely to be more conservative than necessary. Detailed hydrodynamic, water quality and sediment transport modelling has been carried out as part of the current application to better define the extent of mixing under different environmental conditions.

The key chemical parameters of interest in the consented mixing zone are copper and zinc, with temperature, salinity and TSS as the key physicochemical stressors. These are discussed in turn below.

### **Auckland Council water quality monitoring**

Marine water quality is measured at two nearby Auckland Council monitoring sites: Waiuku Town Basin (to the south and upstream of the Site) and Clarks Beach (near the mouth of the Waiuku Estuary). These monitoring results reflect wider water quality drivers in the Waiuku Estuary other than the Steel Mill, as they mainly measure nutrients and sediment and do not include metals.

The Waiuku Town Basin site was consistently ranked as “poor”, while the Clarks Beach monitoring site was consistently “marginal”. The Clarks Beach site has better quality water due to being further from potential contaminant sources and is subject to considerable additional mixing with cleaner waters of the wider Manukau Harbour.

The main drivers of the water quality results at both sites are elevated nutrient parameters derived from nitrogen and phosphorus, chlorophyll *a* and suspended sediment (likely as a result of sediment and nutrient loading from high intensity horticulture and pastoral farming activities). Suspended sediment is particularly elevated at the Waiuku Town site.

### **Zinc and Copper**

Zinc and copper are trace metals that are essential for most organism’s growth and development and are found at low concentrations in most natural waters. However, at higher concentrations they can be toxic to marine fish, invertebrate and plant species and indirectly toxic to birds and marine mammals via the food chain.

Background concentrations of copper and zinc in the wider Waiuku Estuary (i.e., those not driven by discharges from the Steel Mill) may be elevated above 99% SPL<sup>47</sup> in nearshore areas directly adjacent to discharges from the major catchments, which indicates a slightly to moderately disturbed system.

Based only on discharges from the Steel Mill, 50<sup>th</sup> percentile concentrations<sup>48</sup> generally do not exceed the 99% SPL for either copper or zinc, even within the first 50 m of both the Northside and Southside Outfall discharges. However, when 95<sup>th</sup> percentile background concentrations are added to concentrations driven by the Steel Mill (for example during a rainfall event that washes sediment and metals off the catchment), several hundred metres more may be required to meet 99% SPLs for copper and zinc. 99% SPL for zinc may also not be met in areas close to the discharge points of larger catchments elsewhere in the estuary, and may not be met for much of the estuary for copper.

### **Salinity**

Salinity changes are driven by freshwater discharge volumes from the Outfalls, particularly from the Northside Outfall where the discharge volume is greatest. Modelling estimates that the mean salinity in the area within about 50 m of the Northside Outfall is reduced by about 3 Practical Salinity

<sup>47</sup> ANZECC (2000) and ANZWQG (2021) 99% species protection levels (SPL).

<sup>48</sup> A percentile is the value at a particular rank in a dataset. For example, a value on the 95th percentile can be interpreted as one that only 5% of the values in the dataset are higher than. The median is the 50th percentile, so it is commonly assumed that 50% of the values in a data set are above the median, and 50% are below the median.



Units (PSU) (or 12%) as a result of the discharge, although this varies depending on the volume of freshwater in the discharge and the different states of the tide. Salinity increases with distance from the Northside Outfall to around 200 m. Beyond this distance the salinity becomes relatively constant, indicating the Northside Outfall discharge water is no longer having an obvious effect on salinity from that point.

The effect on salinity is less pronounced at the Southside Outfall and is no longer obvious within about 50 m of the discharge.

### **Temperature**

Temperature changes are driven by the volume of warm water discharged from the Outfalls, particularly from the Northside Outfall where the discharge volume is greatest. The warm water results primarily from process water and natural warming of impervious surfaces and the treatment ponds by the sun.

The existing discharge permits for the Northside and Southside Outfalls specify that the discharge water temperature shall not exceed the ambient water temperature in the CMA by more than 20°C<sup>49</sup>, which is consistently complied with.

Modelling has been used to predict the excess temperature (being the temperature above ambient CMA temperatures) that will occur around low tide, due to the temperature of the Northside and Southside Outfall discharges increasing the temperature of receiving water in the CMA. This shows that a 95<sup>th</sup> percentile excess temperature of 20°C may occur at the Northside Outfall discharge point in the CMA during winter (when daytime heating of ambient waters is minimal), but the 95<sup>th</sup> percentile excess temperature in summer would be 15°C (this reduced heating is explained by the natural effect of shallow ambient water heating in summer). However, these values only occur around low tide, and an excess temperature of 3°C is achieved at 100-150 m from the Northside Outfall discharge.

Excess temperatures at the Southside Outfall discharge are much lower. The maximum increase in the 95<sup>th</sup> percentile excess temperature is 4.1°C in winter and 2.5°C in summer due to the lower discharge rate and lower discharge temperature. The 95<sup>th</sup> percentile excess temperature is only exceeded within 50 m of the Southside Outfall discharge point in winter and is never exceeded in summer.

### **Summary of Current and Receiving Environment values for water quality**

Overall, the Marine Ecological Assessment assigns water quality habitat value categories to the ZOI between Negligible and Low in the Current Environment, depending on distance from the Steel Mill discharge points and from other discharge points in the wider catchment. Within the modelled mixing extent, the value is driven by elevated zinc, copper, temperature, sediment and reduced salinity, while poor water quality outside the modelled mixing extent is driven mainly by sediment, metals and nutrients from other catchments.

Inside the modelled mixing extent, water quality of the Receiving Environment (i.e., excluding the Steel Mill discharges) would respond quickly in the absence of the proposed discharges, with zinc, temperature and salinity showing particular improvement. However, elevated metals from sources other than the Steel Mill would continue to drive poor water quality. In the wider ZOI, water quality values in the Receiving Environment would be only slightly improved compared to that in the Current Environment due to the continued contribution of sources other than the Steel Mill.

### **2.9.3 Marine sediment quality**

Sediment quality is considered in terms of contaminants, muddiness and sedimentation rate.

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<sup>49</sup> Condition 2.2 and Table 1 of Permits 21575 and 21576.

### Sediment contaminants

Contaminants in sediment are measured by Auckland Council at Waiuku Town Basin and Clarks Beach, and by NZ Steel in the vicinity of the Northside and Southside Outfalls and the mouths of the Lower North, Kahawai and Ruakohua Streams. Results are reported against the Auckland Council Environmental Response Criteria (ERC) “traffic light” system<sup>50</sup>, which shows zinc, copper and lead concentrations are in the highest quality category (ERC-Green) at these Auckland Council and NZ Steel monitoring sites with one exception. The exception is zinc concentrations close to the Northside Outfall<sup>51</sup> which is currently in the poorest quality category (ERC ‘Red’).

In the Current Environment, sediment quality values for contaminants around the discharge points from the Site are generally considered to be of Moderate value, increasing to High value once discharge water and sediment have fully mixed with water and sediment from the Waiuku Estuary (i.e., within approximately 400 m of the Northside Outfall and 200 m of the Southside Outfall). Directly adjacent to the Northside Outfall, the sediment quality value category for contaminants is considered to be Low (due to zinc being in the ERC ‘Red’ category), improving to Moderate value category within the wider modelled mixing extent, and High value category after complete mixing.

### Sediment muddiness

Sediment muddiness (proportions of silt and clay) is used to assess whether the sediment grain size profile is likely to result in adverse environmental effects on benthic ecology. Auckland Council monitoring data indicates a muddiness score of best condition (i.e., < 20% mud) at the Clarks Beach monitoring site (muddiness fraction of 3.2%), reducing to worst condition (i.e., > 80% mud) at the Waiuku Town site (muddiness fraction of 95%). Adjacent to the Site, sediments below the Ruakohua Spillway contained high proportions of silt and clay (mud) sized particles, while sediments in the vicinity of the Northside and Southside Outfalls were slightly less muddy. At the Lower North Stream, the mangrove zone contained high proportions of silt and clay sized particles, which reduced with distance from the mouth.

Overall, the Marine Ecological Assessment assigns habitat value categories for sediment muddiness within the ZOI of the Current Environment from Negligible (near the Lower North Stream mouth and Northside Outfall) to Moderate.

### Sedimentation

Sedimentation can be measured as an accumulation rate over time (mm/year). Based on modelling results, sedimentation rates in the ZOI can be as high as 75 mm/yr in the upper eastern arm of the Waiuku town basin, which receives a large sediment load from the large and predominantly rural Waitangi Stream catchment. The Waitangi Stream catchment is responsible for approximately 35% of the total amount of sediment deposited in the Waiuku Estuary from all its catchments combined. The greatest sedimentation rates in the vicinity of the Site are immediately adjacent to the Northside Outfall, at around 6.5 mm/yr, reducing to less than 2 mm/yr closer to the channel (that is, at the margin of the consented mixing zone). Sedimentation rates driven solely by the discharges from the Southside Outfall, Lower North Stream and Kahawai Stream are estimated to be less than 2 mm/yr in the settling zone areas around their outflows to the CMA.

Overall, the Marine Ecological Assessment assigns habitat value categories for sedimentation within the ZOI of the Current Environment from Negligible (near the Northside Outfall and areas of the ZOI in proximity to stream mouths and settling zones) to High.

### Receiving Environment values for sediment quality

<sup>50</sup> Auckland Council Environmental Response Criteria (ERC) “traffic light” system as described in TP168 (ARC 2004).

<sup>51</sup> Site NA, located approximately 160 m from the Northside Outfall.

Sediment quality in the Receiving Environment (without the discharges) would improve over the term of the consent; most notably, zinc concentrations close to the Northside Outfall would gradually improve from the ERC 'Red' to 'Green' category and sedimentation rates at that location would also improve markedly. Small improvements in copper concentrations and possibly sediment muddiness would also be expected in the modelled mixing extent compared to the Current Environment. However, sedimentation and sediment muddiness would remain at a high level over this period as they are strongly driven by catchment sources other than the Steel Mill.

#### 2.9.4 Benthic ecology

The benthic biological communities in the Waiuku Estuary are typical of many muddy tidal estuaries in the Auckland region, with mud snails dominating mangrove areas, large numbers of cockles in sandy mid-tide habitats and abundant crabs and shrimps lower on the shoreline.

Recent monitoring in the vicinity of the Northside Outfall<sup>52</sup> indicates a benthic health for metals score of "polluted" (least healthy). The results are worse than that predicted by the sediment metal concentrations at those locations, indicating stressors other than metals (particularly suspended and deposited fine sediment) may be influencing the health of the benthic community. Modelling shows that the elevated sediment muddiness and sedimentation rates within the ZOI are primarily being driven by sediment sources other than the Steel Mill, as only about 1.3% of the total annual average sediment load to the Waiuku Estuary is coming from the Steel Mill catchments<sup>53</sup>. To put this in perspective, Steel Mill catchments comprise approximately 1.5% of the land area of the wider Waiuku Estuary catchment area.

The Marine Ecological Assessment (**Appendix I**) generally assigns habitat value categories for benthic ecology in the Current Environment ZOI as Negligible near to catchment discharges, but conservatively assumes some areas will be Moderate throughout the wider ZOI away from major catchment discharge points.

Anticipated changes in the Receiving Environment benthic ecology value over the term of the consent generally follows that for sediment quality, and to a lesser extent water quality, as these are major drivers of benthic health. As such, benthic ecology is predicted to remain generally the same in the short term and improve to a certain extent over time in the absence of the discharges from the Steel Mill, particularly within the modelled mixing extent closest to the Northside Outfall. However, sediment muddiness and sedimentation across the wider ZOI is largely driven by sources of sediment other than the Steel Mill, and benthic ecological health in the Receiving Environment outside the modelled mixing extent is therefore anticipated to be comparable to what is present in the Current Environment.

#### 2.9.5 Shellfish

NZ Steel has been monitoring the density of oyster beds, the condition of oyster flesh and the concentrations of copper and zinc in oyster flesh, every year since 1985. There are five monitoring sites around the Northside and Southside Outfalls (within and on the boundary of the existing consented mixing zone) and a control site in lower Taihiki Estuary.

Oyster bed densities dropped markedly at some sites leading up to 2010, thought to be due to sedimentation, mangrove expansion and possibly the effects of the oyster herpes virus.

Oyster flesh at the NZ Steel discharge monitoring sites varies in condition, without clear consistent trends over time, but appears to improve with distance from the Outfalls. Most NZ Steel oyster

<sup>52</sup> Monitoring site Northside A is located approximately 160 m from the Northside Outfall, and Northside B is approximately 325 m from the Northside Outfall.

<sup>53</sup> The Northside and Southside Outfalls, the Lower North Stream, Ruakohua Spillway and Kahawai Stream combined.

monitoring sites have comparable flesh condition to the best site included in Auckland Council's former shellfish contaminant monitoring programme.

The NZ Steel discharges are having a clear effect on zinc and copper concentrations in oyster flesh. The effects are localised, however zinc concentrations at the monitoring site 500 m from the Northside Outfall are still approximately 50% higher than those in the Taihiki control site oysters. Zinc and copper concentrations have generally decreased (i.e., improved) over time or remained fairly constant, which may be linked to discharge system improvements that have been progressively implemented at the Steel Mill.

The existing Northside and Southside Outfall discharge permits<sup>54</sup> specify criteria for defining unacceptable levels for zinc concentration in Pacific Oysters both within and outside the existing consented mixing zone. None of the monitoring sites have reached these concentrations.

While oysters in the vicinity of the Steel Mill discharges could be harvested recreationally for consumption, it is considered this would occur infrequently due to access constraints, the obvious presence of the Steel Mill, and more attractive harvesting locations elsewhere in the Waiuku Estuary. Cockles have only been found in very low numbers at NZ Steel monitoring sites and their recreational harvest in the vicinity of the Steel Mill discharges is considered highly unlikely.

Zinc concentrations in oysters at the NZ Steel monitoring sites are elevated above "Generally Expected Levels" (GELs) according to Food Safety Australia and New Zealand (FSANZ) guidelines. However, there are no maximum concentrations for zinc or copper in oyster flesh for consumption as they are both essential elements for humans.

Overall, the Marine Ecological Assessment (**Appendix I**) assigns habitat value categories for shellfish quality in the Current Environment ZOI ranging from Negligible to Moderate.

The Receiving Environment within the modelled mixing extent is anticipated to have reduced metal concentrations in the water column, and therefore in shellfish, compared to the Current Environment. However, outside of the modelled mixing extent the Receiving Environment is anticipated to be comparable to that experienced in the Current Environment, with only a small improvement in water and sediment quality for contaminants effects, with an associated small improvement in shellfish value.

### 2.9.6 Fish

The Manukau Harbour, including the Waiuku Estuary arm, is thought to provide important habitat for fish species, including shelter and nursery grounds for bony fish, sharks and rays. The Manukau Harbour is home to three species of common ray and fifteen species of shark, eight of which are listed as threatened under the International Union for Conservation of Nature (IUCN) Red List of Threatened Species.

Surveys conducted by NIWA indicate that the Waiuku Estuary has a higher diversity of fish than other parts of the Manukau Harbour, and has the highest counts of anchovy, exquisite goby, garfish, mottled triplefin, grey mullet, estuarine triplefin, red gurnard, smelt, and speckled sole. Mangrove habitat in the Harbour is likely to act as shelter and nurseries for fish species in their juvenile stage.

The Marine Ecological Assessment (**Appendix I**) assigns a High ecological value to fish in the ZOI in the Current and Receiving Environments.

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<sup>54</sup> Permits 21575 and 21576

### 2.9.7 Marine mammals

The Manukau Harbour is home to six species of marine mammals, including the Māui dolphin, orca, and NZ fur seal, with the majority of sightings concentrated around the entrance to the Harbour. There are no official records of 'Threatened' or 'At Risk' marine mammals in the Waiuku Estuary. However, media and anecdotal evidence notes that these species may be found within the ZOI, and the Marine Ecological Assessment (**Appendix I**) assigns a Very High ecological value to marine mammals on this basis (in both the Current and Receiving Environments).

### 2.9.8 Coastal vegetation

Terrestrial vegetation along the coastal margin consists of native trees such as pōhutukawa, karaka and māhoe. Exotic pine trees are also present, and pest plants such as gorse and tree privet frequently occur. Terrestrial vegetation is located outside of the area affected by the proposed discharges.

Saline vegetation along the coastal margin and within intertidal habitat is expected to be within the potential ZOI and within areas of tidal influence. Intertidal vegetation is dominated by mangroves which formed considerable swathes of monotypic communities, including some contiguous areas of over 11 ha. Mangroves are widespread in the Waiuku Estuary and wider Manukau Harbour and are expanding in extent, encroaching on important bird wading habitat in places. However, they are assigned a Moderate ecological value in the Marine Ecological Assessment (**Appendix I**) due to their role in providing habitat for important species such as banded rail.

Rush marsh communities are present in small patches and narrow bands along the coastal fringe, and salt marsh meadow habitats were present in discrete areas in the upper intertidal zone and the stream-intertidal interface. Both vegetation types provide nesting and foraging habitat for shore birds including banded rail and are therefore considered to be of High ecological value.

Existing saline vegetation communities are expected to be relatively resilient to changes in contaminant and sediment levels and therefore the ecological values of coastal vegetation are expected to remain similar in the Receiving Environment, to those present in the Current Environment.

### 2.9.9 Coastal birds

Coastal birds comprise both seabirds (birds that spend most of their time on open ocean waters and come to shore only to breed) and waders (birds that spend much of their time near bodies of water for foraging and roosting).

The Manukau Harbour is recognised nationally as a hotspot for coastal bird diversity, supporting over 20% of the total New Zealand wader population. It is thought that more than 60% of all New Zealand waders use the Harbour on a temporary basis.

The Waiuku and Taihiki Estuaries are side arms of the Manukau Harbour and constitute some of the most important areas within the Harbour for seabirds. The AUP identifies several SEA-Ms in the vicinity of the Site (refer to Figures W5 and W-ME2 in **Appendix E**). This recognises the importance of the extensive intertidal flats as foraging habitat for nationally 'Threatened' and 'At Risk' endemic and migratory species and also the large areas of mangrove forest and saltmarsh vegetation that provide foraging and nesting habitat for banded rail (which has a threat classification of 'At Risk – Declining'). Of particular note, the ZOI supports an abundance of bar-tailed godwit, red knot, pied stilt, South Island pied oystercatchers and white faced heron, although these numbers are considered low in the context of wider Manukau Harbour populations.

In addition, there are a number of high-tide roost sites in the wider area that are recognised by the Department of Conservation (DOC) as an Area of Significant Conservation Value (ASCV), including

the Waipipi roost (located on the opposite side of the Waiuku Estuary and approximately 1 km from the Kahawai Stream mouth) and the Kahawai roost (near the Kahawai Stream mouth).

Over four seasonal surveys, twenty-four coastal bird species<sup>55</sup> have been found to use habitat in the vicinity of the Site, either for feeding or resting in the intertidal habitat, or for feeding or resting in or over the water. Four of those species are ‘Threatened’<sup>56</sup> (and are assigned a Very High ecological value in the Marine Ecological Assessment (**Appendix I**)), and ten species are ‘At Risk’ (assigned a High or Moderate ecological value). The Marine Ecology Assessment identifies those species present that are listed as ‘Specified highly mobile fauna’ as per the National Policy Statement for Indigenous Biodiversity (NPSIB). These results indicate a relatively high species diversity and favourable overall habitat conditions for coastal birds in the vicinity of the Site. The ecological value of coastal birds in the Current Environment and the Receiving Environment (i.e., excluding the Steel Mill discharges) is anticipated to be similar over time as the same species are expected to continue utilising the area.

### 2.9.10 Recreational and commercial activities

Despite the tidal nature of the Waiuku Estuary, it is widely used for recreational purposes including fishing, power boating, water skiing and yachting. Swimming and beach activities occur in some of the more sheltered areas, depending on access and tides.

Recreational fishing includes line fishing, netting and spearing. Snapper, flatfish, mullet and kahawai are the main species caught. Commercial fishing mostly targets flatfish, small sharks and grey mullet. As previously discussed, shellfish gathering is undertaken in the wider Waiuku Estuary but is likely to be minimal in the vicinity of the Steel Mill due to access constraints, the obvious presence of the Steel Mill and more attractive harvesting locations elsewhere in the Waiuku and Taihiki Estuaries. Cockles have only been found in very low numbers at NZ Steel monitoring sites and their recreational harvest in the vicinity of the Steel Mill discharges is considered highly unlikely.

The Waiuku Estuary also serves an education role for school groups, and the large number of coastal birds makes it popular with bird watchers.

### 2.10 Cultural environment

The Manukau Harbour, including the Waiuku Estuary, is of great importance to Mana Whenua, historically, presently and into the future:

- A number of iwi groups have made applications for customary marine title or protected customary rights in the area relevant to the Steel Mill (the Manukau Harbour, and in particular the Waiuku Estuary). In accordance with the Marine and Coastal Area (Takutai Moana) Act 2011 (MACA), NZ Steel has notified and sought the views of these groups as discussed in Section 11;
- Auckland Council Geomaps also shows that a number of Cultural Heritage Inventory (CHI) places, particularly archaeological sites, are located along the coastal margins of the Site, as shown in **Figure 2.7** below. While these have been identified for the purposes of the description of the environment, we note that they are not affected by this application, and therefore are not discussed further;
- The Manukau Harbour and Waiuku Estuary are a Coastal Statutory Acknowledgement Area of Ngāti Tamaoho (**Figure 2.7** below shows Statutory Acknowledgement Areas related to the Manukau Harbour); and

<sup>55</sup> In addition to the 23 bird species identified during surveys, the banded rail is also assumed to be present.

<sup>56</sup> The bird species of Very high value that are present or potentially present in the modelled mixing extent and wider ZOI are banded dotterel, lesser knot (red knot), and wry bill (all waders), and caspian tern (feeds in the water column). These species each have a threat status of “Threatened - nationally vulnerable”.

- The Tahuna Marae, of Ngāti Te Ata, is situated on the western side of the Waiuku Estuary, approximately 2 km from the Site (as the crow flies).

NZ Steel has a long-standing relationship with both the Ngāti Te Ata and Ngāti Tamaoho iwi. Representatives of both iwi are members of the Steel Mill's Environment Committee (discussed further at Section 11) and through this forum are kept up to date with the Steel Mill's environmental performance and have the opportunity to be involved in discussions. In the course of the preparation of this application (including preparation of subsequent amendments related to the EAF), NZ Steel has met with both iwi to discuss the consent applications and develop further its understanding of the cultural values as they relate to this Proposal.

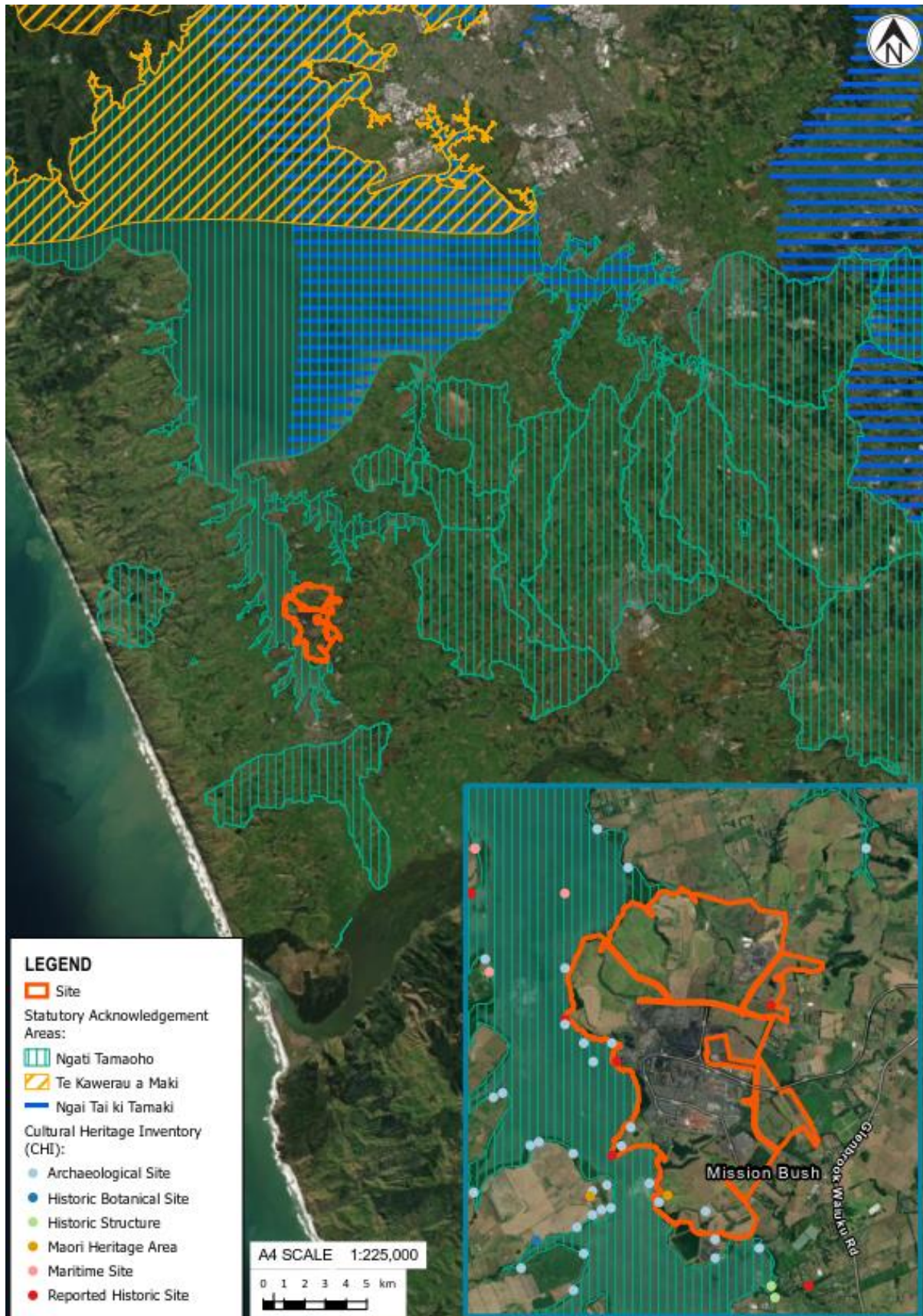


Figure 2.7: NZ Steel Site relative to sites of cultural interest including Statutory Acknowledgement Areas and Cultural Heritage Inventory locations



## 3 Steel Mill operations overview

### 3.1 Overview

NZ Steel manufactures iron and steel in the Iron and Steel Plants (referred to collectively as the Primary Plants). Steel slab and billets produced in the Steel Plant are further processed in the Rolling Mills and Finishing Plants, to produce a range of steel metal coated and pre-painted products (COLORSTEEL® and metal-coated ZINCALUME® and GALVSTEEL®). Other products produced in the Primary Plants, such as steel billets and plate iron, are also sent for further processing at other facilities within the Bluescope business (within New Zealand and internationally).

The key processes and associated discharges from the Steel Mill facilities are described below with a focus on processes that involve water. The ITA stormwater catchments, associated ITA stormwater and process water sources, treatment and discharge points are discussed in Section 4.

The descriptions provided in this report are, by necessity, a relatively high-level overview of the complex activities that occur. Ongoing improvements to complex processes for efficiency, quality of product, and environmental performance are regularly made by NZ Steel within the scope of the Existing Consents and this is proposed to continue under the replacement consents. Over the term of the proposed consent, NZ Steel's product range may expand or change, within the capacity of the existing facilities and ITA Area, but will remain within the envelope of effects as defined by this application (or a variation, or new consent would be sought).

### 3.2 Primary Plants

The Primary Plants are the Iron and Steel Plants, where raw materials are converted first into iron and then molten steel is cast into steel slabs and billet. Iron and steelmaking slags are also produced in these processes and are discussed at Section 3.5.4.1. The Primary Plant processes also consume ferrous scrap (from the Site) and various other correction materials, such as millscale (from the Hot Mill) and aluminium wire and ferro-manganese.

The manufacturing process involves heating the raw materials to form iron and steel, and the waste off-gases released must be treated before discharge to atmosphere<sup>57</sup>. The majority of the Steel Mill air pollution control equipment is located within the Primary Plants and requires large volumes of water to remove solids from the gaseous stream (equipment is referred to as 'scrubbers'). In addition, large volumes of water are used for cooling hot equipment (such as the casting moulds forming slab and billet) and the cooling water itself must be cooled via cooling towers. To maintain a non-corrosive and non-scaling water quality and low solids suitable for circulation in these water systems, water is periodically released from circuits (referred to as blowdown).

The key sources of water therefore include blowdown water from the various scrubbers as well as blowdown from the cooling water systems. Iron and Steel Plant process water is treated at the associated WWTPs. Most of the water in the circuit is recycled (98%) and the remainder is discharged to the Northside Ponds.

The key contaminants from the Primary Plants include suspended solids and heavy metals, including zinc and copper.

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<sup>57</sup> NZ Steel holds existing air discharge permits (DIS60266277 and DIS60363772) and is seeking replacement consents for its air discharge activities concurrently to this application.

### 3.2.1 Iron Plant

The blended PC, coal, limestone and Klockner Oxygen Blown Maxhutte (KOBM) slag is sent to four MHFs, operating at over 1000°C, where it is heated so that moisture evaporates. The hot product is then fed directly into four rotary Kilns where the iron oxides in the ironsand are reduced to 80% metallic iron. The resulting product, known as Reduced Primary Concentrate and Char (RPCC), is then transferred without cooling, into two electric melting furnaces (the Melters).

The two Melters convert the RPCC to molten iron and Melter slag (see Section 3.5.4.1).

Waste gases from the Kilns and Melters are treated with scrubbers, which generate a metal-rich wastewater. Scrubber wastewater is treated via clarifiers in the Iron Plant WWTP and Northside Ponds prior to either recycling or being discharged to the Waiuku Estuary.

### 3.2.2 Steel Plant

At the Steel Plant, a vanadium-rich slag is firstly recovered from the molten iron (see Section 3.5.4.1) before it is transferred to an oxygen steelmaking furnace (more commonly referred to as the KOBM). At this point, scrap steel and various ferro-alloys are added to turn the molten pig iron into molten steel. After tapping from the KOBM and further customisation at the Ladle Treatment Station (LTS) and Ladle Metallurgical Furnace (LMF), the molten steel is sent to the caster to be made into slabs or billets which are then cooled in yards.

The main source of water discharging from the Steel Plant is from the KOBM scrubber, required for cleaning the waste gases (in order to meet the conditions of NZ Steel's air discharge permit). Scrubber water discharges to the Steel Plant WWTP for treatment. Treated water is recirculated to the KOBM scrubbers and the overflow from the WWTP is directed to the Northside Ponds.

### 3.2.3 EAF

As described in Section 1.1 above, as part of the decarbonisation of the Steel Mill, NZ Steel is proposing to construct and operate an EAF within the existing Steel Plant facility. The changes to the steel making process as a result of the EAF are shown conceptually in **Figure 3.1**. It is anticipated that the transition period for commissioning would be approximately six months.

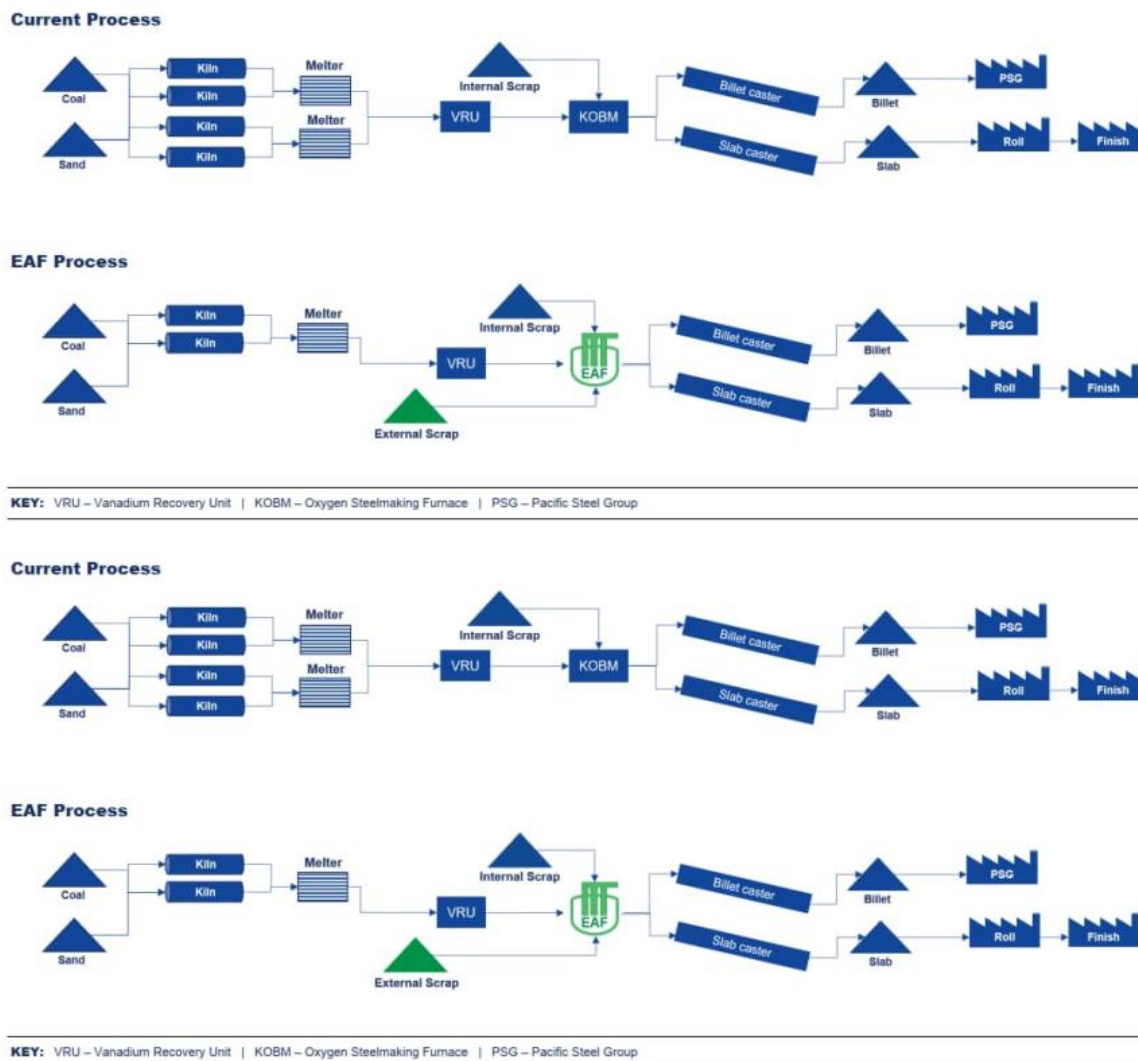


Figure 3.1: Comparison of current steel making process and process with EAF

The EAF will be fed by Ferrous Scrap as well as molten iron from the existing Iron Plant. A mixture of the different Ferrous Scrap types is required for the EAF process to produce different grades of steel. The proposed EAF will utilise Ferrous Scrap from a number of different sources, from external sources and the existing uprisings from NZ Steel's facilities. Once the EAF is fully operational, only one of the ironmaking streams in the Iron Plant (i.e., two Kilns, two Multi Hearth Furnaces (MHF) and one melter) will operate at any one time. It would also replace the KOBM. When the EAF is fully commissioned, the existing WWTPs will continue to control any process water discharges associated with the EAF operations. To date, NZ Steel has processed its existing uprisings of scrap (from internal processes) into the KOBM and this will be fully diverted to the EAF when the KOBM is decommissioned.

The EAF is a significant step-change in reducing the Steel Mill's greenhouse gas emissions. It is expected to reduce greenhouse gas emissions at Glenbrook by about 45%. It also presents a circular economy benefit for New Zealand by reusing New Zealand's steel scrap that would otherwise be exported. This application seeks consents for the use of land and associated discharges from the new Scrap Yard activities associated with the EAF.

This AEE therefore considers the existing operation of the Steel Mill as well as any changes that may occur as a result of the operation of an EAF, in the event this goes ahead.

### **3.3 Rolling Mills and Acid Regeneration Plant**

#### **3.3.1 Hot Mill**

The Hot Mill reheats the cooled slabs from the Steel Plant in the reheat furnace before reducing the thickness via a rolling process. The Hot Mill uses water for surface cleansing, to remove oxidised layers. At the end of the hot rolling process the rolled steel is water cooled and coiled or cut into heavy plate for further processing.

The process water in the Hot Mill is treated in the Rolling Mills WWTP, which also removes any residual oils collected in the rolling process. The majority of treated process water is recycled either within the Steel Mill or via the Southside Ponds to the Ruakohua water supply dam.

The key contaminants in this water are oxidised metals.

#### **3.3.2 Cold Mill**

Steel coil from the Hot Mill is sent to the Cold Mill for further rolling to produce a thinner strip, with a surface finish suitable for a wide range of coated and non-coated applications.

Cold rolled steel may then be pickled (at the Pickle Line) and oiled for distribution to customers or sent for further processing in the Finishing Plants. The Pickle Line and oil waste discharges from the Cold Mill flow to a WWTP prior to discharging to the Southside Outfall and only occasionally to the Southside Ponds.

The key contaminants in this water are metals and low pH and possibly oils and grease.

#### **3.3.3 Acid Regeneration Plant**

The Acid Regeneration Plant (ARP) is an ancillary plant associated with the Pickle Line in which spent acid is recovered for re-use.

Water associated with this process is treated at a WWTP. In the WWTP, chemicals are dosed to neutralise the acid (arising from the ARP and the wastewater from the Pickle Line). Treated wastewater from the ARP is discharged either directly to the Southside Outfall, or to the Southside Ponds when turbidity is elevated.

The key contaminant is low pH, although the ARP discharge is only discharged via the Southside Outfall when the pH is within specification.

### **3.4 Finishing Plants**

The Finishing Plants consist of the Metal Coating Line (MCL) and Paint Line.

#### **3.4.1 Metal Coating Line**

The Metal Coating Line (MCL) is where steel coil received from the Rolling Mills is cleaned, annealed, coated and surface treated to produce Galvsteel®, Zinalume® coil and flat sheet ready for direct sale or painting in the Paint Line. In the MCL, water is used for strip cleaning prior to coating the surface of the steel strip. The resulting process water is treated to adjust pH and other chemicals via the plant's WWTP, from which the water is either recycled or discharged to the Northside Ponds for further treatment.

#### **3.4.2 Paint Line**

The Paint Line applies paint or laminate to coils of hot-dipped galvanised Zinalume®, cold rolled steel and periodically other metals not produced by the Steel Mill. This is a continuous coil-to-coil

operation with paint being applied on both sides of the coil and baked on via a furnace to produce Colorsteel®. Water is used for cleaning prior to paint coating the surface of the steel strip. Process water is treated in the plant's WWTP to remove oils and adjust pH and discharges to the Northside Ponds.

### 3.5 Ancillary activities

There are a number of other activities and processes undertaken as part of the Steel Mill operations. These activities are described below.

#### 3.5.1 Bulk raw materials storage and handling

The northern portion of the Steel Mill is used for raw material stockpiling including:

- PC which is refined ironsand delivered to Site (via slurry pipeline) from the NZ Steel mine;
- Coal delivered by train is directly transferred to the working stockpile via the coal reception hopper. Coal delivered by trucks is stockpiled in intermediary stockpiles prior to being transferred by loader to the coal reception hopper, for transfer to the working stockpile; and
- Limestone and KOBM Slag, are stockpiled prior to transfer by loader to the coal reception hopper to be deposited onto the working coal stockpile. In recent years some purchased limestone has been replaced by KOBM slag produced in the Steel Plant, as it is lime rich.

Material from the PC and coal working stockpile (containing KOBM Slag and limestone) is then transferred by conveyor belts into bins to feed the MHFs, at the start of the iron making process.

ITA stormwater runoff from the stockpiling areas is treated in specific settlement ponds. Discharge from these settlement ponds is monitored continuously for turbidity and chemical treatment is added to improve settlement. The ITA stormwater catchments, treatment and discharge points are discussed in Section 4.

In the event that the EAF proceeds, the storage of bulk raw material will be progressively reduced to make way for the Scrap Yards identified below.

#### 3.5.2 Scrap Yards

As part of the operation of the EAF, External Scrap will be stored within proposed Scrap Yards prior to being fed into the EAF, ensuring consistent supply for the EAF operation.

The proposed Scrap Yards comprise:

- Local Yard – North;
- Local Yard – South;
- Yard A; and
- Buffer Scrap Yard - the final location of the Buffer Scrap Yard has not been finalised but two options are being considered. This consent application therefore assesses the operation and effects of both options, however only one will be constructed:
  - Option 1 – conversion of the existing CY19 coal yard; OR
  - Option 2 - conversion of the existing CY5/6 coal yard.

The locations of the Scrap Yards are shown on Figure W-ITA6 in **Appendix E**. Local Yard – North, Local Yard – South, and Yard A are located within the Northside ITA Catchment and runoff will therefore be directed to the Northside Ponds. Treatment and discharge is discussed further at Section 4.2. The Buffer Scrap Yard is located in the North Drain ITA Catchment and runoff will

therefore be directed to the North Drain. Treatment and discharge is discussed further at Section 4.4.

External Scrap will be processed off-site by Suppliers (including removal of non-ferrous material, shredding, cutting and grading) prior to arrival on Site by truck and train. The two main sources of External Scrap will be:

- Shredded scrap - which is predominantly sourced from shredded vehicles, and typically comprises small fist size pieces of scrap.
- Heavy melt scrap (HMS) - which comprises a mix of recovered structural steel from demolition sites and recovered materials from industrial metal processing. HMS is more variable in size and shape.

A scrap specification will clearly set out quality requirements to meet manufacturing requirements and to also minimise or avoid materials harmful to people and the environment.

### 3.5.3 Dewatering Plant

The Waikato North Head (Maioro) ironsand mine at the mouth of the Waikato River supplies the raw material (PC) by pumping it in a slurry to the Steel Mill.

The slurry is then dewatered at the Dewatering Plant. The Dewatering Plant separates the liquid and solid components (via hydrocyclones). The separated water is treated through a high-rate thickener. This treated process water is then discharged to the North Drain<sup>58</sup>. The discharge is continuously monitored for turbidity at both the clarifier outlet and the point of discharge. The process water can be rerouted to settling ponds for additional treatment when the turbidity at the clarifier outlet is high.

The key contaminants associated with the Dewatering Plant discharge include suspended solids and salinity due to the brackish water.

When the EAF is fully operational, the demands on the Dewatering Plant will reduce by up to half, with a subsequent reduction in total volume of discharge from the Dewatering Plant.

### 3.5.4 Co-product production, storage and handling

In order to avoid or minimise valuable co-products being disposed of at the on-site operational landfill (East Landfill), NZ Steel has introduced recovery processes for a range of iron-rich materials which are generated in the manufacturing facilities. Some of these products are then re-used on-site or sold as discussed below.

#### 3.5.4.1 Slag production and processing

Slag is a non-metallic residue produced from the iron and steelmaking processes.

Slag is tipped into open pits while hot and water quenched. The slag is then further air cooled and crushed into a range of aggregates by SteelServ NZ Ltd (SteelServ<sup>59</sup>).

ITA stormwater from the cooling pits, stockpiling areas and crushing plant discharges to the Northside Ponds for treatment.

<sup>58</sup> The Dewatering Plant discharge resource consent (RC 21577) places limits on the discharge: Condition 2.1 limits the daily discharge volume (measured as a monthly average), and Condition 2.3 limits the turbidity of the discharge (measured as a daily flow-weighted average).

<sup>59</sup> SteelServ is a subsidiary of NZ Steel and its activities at the Site will continue to be authorised and managed under the resource consents held by NZ Steel.

#### **3.5.4.2 Millscale**

Millscale is the term for flaked iron oxide generated on the surface of the steel during the rolling of slabs in the Hot Mill. Millscale is removed in the Rolling Mills as part of the water treatment process and stockpiled for addition in the iron and steel making processes.

#### **3.5.4.3 Internal scrap steel cutting**

Scrap steel arising from the internal manufacturing processes at the Site is sorted, graded and cut to size for recycling in the steelmaking process.

ITA stormwater from this area discharges to the Northside Ponds for treatment.

#### **3.5.4.4 Works debris**

Works debris is a collective term for the debris that can be recovered from around the Primary Plants and may consist of ferrous scrap, slag, launder sand, broken refractory brick and other residue from the iron and steel making process. Material is tipped into an open area adjacent to the Metal Recovery Plant (MR Plant). This plant screens the works debris to recover the ferrous scrap and grade the remaining product for sale or to form cells in the East Landfill.

ITA stormwater from these areas discharge to the Northside Ponds for treatment.

#### **3.5.4.5 Iron plating**

Iron plating is the pouring of molten iron into specially prepared, open-air pits. Within the pits, the metal spreads and solidifies into 'plates'. Plating of molten iron from the Melters currently occurs in two circumstances, plating due to process disruption ('process iron plating') and plating for commercial sale ('commercial iron plating'). All plated iron is cooled with recycled water, so water is either evaporated as it is sprayed over 1000°C iron or the water discharges to the Northside Ponds for treatment.

#### **3.5.4.6 RPCC tipping and recovery**

In the event of operational problems at the Melters, or a breakdown of the RPCC transfer system, RPCC produced cannot be transferred directly to the Melters which results in the tipping of RPCC.

When RPCC is tipped, water is sprayed onto it which either evaporates or flows to the Northside Ponds for treatment. The material is then stockpiled for recycling back into the process.

### **3.5.5 Car parks, access roads and non-process buildings**

There are sealed and unsealed access roads across the Site, as well as sealed and unsealed car parks. Non-process buildings such as offices, laboratories, amenities, goods storage buildings and cafeteria and medical centre are located across the Steel Mill.

The access roads, car parks and non-process related buildings do not discharge process water. However, ITA stormwater runoff from the hardstanding contains suspended sediment and metals, similar to other industrial and commercial sites within the Auckland region.

The majority of this ITA stormwater is discharged via the Northside or Southside Ponds depending on the catchment. The ITA stormwater catchments, land use and treatment are discussed in Section 4.

### 3.5.6 Workshops

There are two main workshops within the ITA Area: the Central Workshops and the Steelserv Workshops.

The Central Workshops are adjacent to the MCL, while the Steelserv Workshops are north of the Hot Mill. The activities in these workshops include maintenance of large mobile and manufacturing equipment, storage of oils and chemicals and vehicle refuelling. There are no process water discharges from these workshops. Oil traps are installed in the yards around the Steelsev vehicle workshop for pre-treatment of yard ITA stormwater, which will flow to the Northside Ponds. Within the remainder of the ITA Area there are also smaller ancillary workshops associated with each plant, including the Roll Shop within the Hot Mill building.

Potential spills of oils or chemicals would be contained within the building, in engineered storage cabinets or within a secondary containment system and both workshops have spill kits adjacent to where substances are stored and used.

### 3.5.7 Landfills

NZ Steel has three industrial landfills at the Site:

- The active East Landfill;
- The closed West Landfill; and
- The closed North Landfill.

The active and closed landfills have only accepted waste materials from the Steel Mill including from the Iron and Steel Plants, WWTPs, air pollution control systems, stormwater treatment and administration areas. The landfills have not received any municipal waste or external waste materials. The materials disposed of to the landfills comprise alluvial silts, baghouse dusts, iron-bearing sludge, and works debris (which is a mixture of residual iron sand, char, slag, and bricks), from manufacturing processes and administration areas. If an EAF is installed, the waste from the EAF (e.g. baghouse and settling chamber dusts) would also be disposed of at the East Landfill. The leachate that is generated is therefore significantly different from leachate from municipal landfills.

The active East Landfill and the closed West Landfill are located adjacent to the Lower North Stream. There are two separate leachate collection ponds for each of the East and West Landfills. Leachate is pumped to the Northside Ponds for treatment prior to discharge from the Northside Outfall. See Section 4.2 for further detail. No leachate is produced from the closed North Landfill<sup>60</sup>.

The landfill operations are authorised in their entirety by separate consents (not currently due to expire), with the exception of the leachate included in the ITA discharge from the Northside Ponds which is authorised by the existing Northside Outfall Discharge Permit. The effects of the leachate to the Northside Ponds discharge are therefore included within this assessment.

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<sup>60</sup> Leachate from the historical North Landfill used to drain to the Northside Ponds for treatment prior to discharge. There are no observed flows from this landfill; therefore, it is likely that the North Landfill is no longer generating leachate. As the North Landfill was closed around 1992 and it is situated close to processing activities, the associated leachate collection pond is also used for other purposes. The pond water is pumped to the Northside Ponds and is only a negligible volume.



## 4 Proposed ITA stormwater and process water - collection and discharge

### 4.1 Overview

The Steel Mill is an Industrial and Trade Activity (ITA)<sup>61</sup> which may result in the discharge of contaminants associated with that activity onto or into land or water. The area where ITA activities are undertaken is shown on **Figure 2.2** and this is referred to as the 'ITA Area'. This application seeks resource consent for ITA land use and for the ongoing diversion and discharge of ITA stormwater and process water from the Steel Mill.

Within the ITA Area, there are five discrete ITA catchments - see Figures W-ITA4 to W-ITA9 contained at **Appendix E** for a plan showing each of the catchments and their key features. Within each of these catchments, roof and surface water runoff (ITA stormwater) is collected and treated prior to being discharged to either a watercourse or to the CMA. There are also a number of treated process water discharges from the Steel Mill operations that are either discharged into one of the catchment's settling ponds prior to the Receiving Environment or directly to the Receiving Environment.

The five ITA catchments are described in detail in the following Sections. In summary, they are:

- **Northside ITA Catchment:** located in the northern part of the ITA Area. The key feature of this catchment is the Northside Ponds which receive pre-treated process water, ITA stormwater from the Northside ITA Catchment and leachate from the closed West Landfill and the active East Landfill. Treated water from the Northside Ponds is then discharged to the CMA from the Northside Outfall that operates 24 hours per day via gravity feed system;
- **Southside ITA Catchment:** located in the southern part of the ITA Area. Treated process water discharges directly to the Southside Outfall, unless pH is elevated when it will then flow to the Southside Ponds. ITA stormwater from this catchment is directed to the Southside Ponds along with process water. Treated pond water is largely recycled to the Ruakohua Dam reservoir for re-use at the Steel Mill. In only rare occasions would the Southside Ponds discharge to the CMA via the Southside Outfall that operates 24 hours per day via gravity feed system;
- **North Drain ITA Catchment:** the North Drain receives treated ITA stormwater from the catchment and process water from the Dewatering Plant. The combined flow from the North Drain flows into the Lower North Stream;
- **Ruakohua Stream ITA Catchment:** treated ITA stormwater from the catchment discharges to the Ruakohua Stream and to a tributary of the Ruakohua Stream, which is where the Waikato River water take also discharges<sup>62</sup>. The stream flow discharges to the Ruakohua reservoir, which is used as a source of process water in the Steel Mill. Intermittently excess water flows to the CMA<sup>63</sup> via the Ruakohua Dam spillway and at all times the spillway is kept wetted to allow for fish passage; and
- **Kahawai Stream ITA Catchment:** no ITA stormwater from the catchment is currently discharged to the Kahawai Stream.

For each of the above catchments, this section of the report summarises the activities that occur, the nature of the ITA stormwater and process water that is collected, the treatment system that is

<sup>61</sup> Defined in Chapter J1 of the AUP as having the same meaning as industrial or trade process under section 2 of the RMA but does not include a production land activity.

<sup>62</sup> Permit 40653 authorises the discharge of Waikato River water into the tributary.

<sup>63</sup> Permit 40651 authorises the take of water from the Ruakohua Dam to use in the Steel Mill and Permit 40653 authorises the discharge of water from the Ruakohua Dam to freshwater from the dam scour valve and the dam spillway.

used and the discharge point to the environment. Section 4.6 also describes other ITA Areas that contain low risk activities that discharge directly to land.

Discussion regarding alternatives and the BPO to prevent or minimise adverse effects are provided at Section 8. Further detail is provided in the ITA Report contained at **Appendix G**.

An assessment of the relevant water treatment ponds against the permitted activity standards is provided in **Appendix F**.

For clarity, it is noted that all grey water and sewage from the Site are discharged to Watercare's Waiuku WWTP, and therefore do not form part of the discharges under this application.

## 4.2 Northside ITA Catchment and discharges

### 4.2.1 Overview

The Northside ITA Catchment is the largest catchment within the ITA Area (approximately 68 hectares). **Figure 4.1** shows the extent of the catchment (which includes the Primary Plants), the key water treatment systems and the location of the Northside Outfall discharge point.

ITA stormwater from the Northside ITA Catchment includes:

- Roof runoff from the Steel Mill buildings, including the Iron Plant and the Steel Plant;
- Surface runoff from the bulk raw materials storage and handling area;
- Surface runoff from the co-product processing, storage and handling areas; and
- Surface runoff from sealed and unsealed roads and yards.

If an EAF is installed, some of the existing surface runoff areas described above will change to surface runoff from the Scrap Yards, specifically Local Yard - North, Local Yard – South, and Yard A. The locations of the Scrap Yards are shown on Figure W-ITA6 in **Appendix E**.

ITA stormwater from the Northside ITA Catchment is conveyed via gravity pipes, sheetflow, bunds, drains, and pumps to the Northside Ponds.

Process water from within this catchment includes:

- The Iron and Steel Plants (discussed at Section 3.2 above);
- The bulk raw materials storage and handling areas (discussed at Section 3.5.1 above);
- Co-product processing, storage and handling areas (discussed at Section 3.5.4 above);
- Other minor manufacturing processes including the MCL and Paint Line; and
- Leachate from the closed West Landfill and the active East Landfill<sup>64</sup>. If an EAF is installed, changes to the volumes and materials disposed to landfill may also change, although as the contribution from the landfill is relatively low (at less than 4%), any change is anticipated to be limited and would not be anticipated to impact on discharges from the Northside outfall.

Process water from the above activities is treated via one of seven onsite WWTPs or settlement ponds before discharging to the Northside Ponds for further treatment.

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<sup>64</sup> As noted in Section 3.5.7 above, the leachate is significantly different from that from municipal landfills. Regular monitoring of the leachate from the East and West Landfill shows elevated pH, aluminium, copper, vanadium and zinc which reflect the key contaminants from various processes around the Steel Mill. Therefore, leachate is pumped to the Northside Ponds for treatment prior to being discharged via the Northside Outfall.

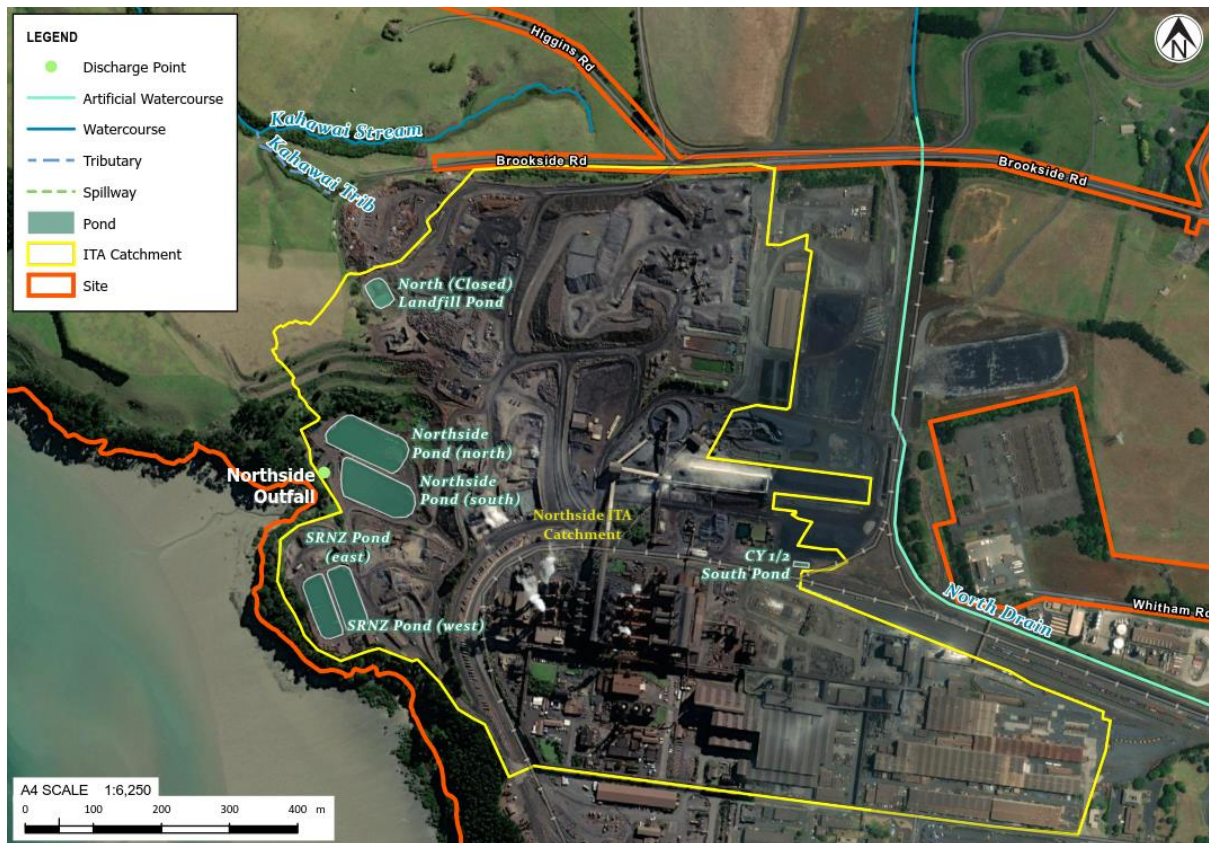


Figure 4.1: Northside ITA Catchment boundary and water treatment systems

#### 4.2.2 Treatment – Northside Ponds and Slag Reduction New Zealand Ponds

There are a number of source controls employed at the Steel Mill and these are described further at Section 5. These controls seek to remove contaminants as far as practicable before the ITA stormwater and process water reach the Northside Ponds.

The two Northside Ponds and two Slag Reduction New Zealand (SRNZ) Ponds are the principal treatment measure for ITA stormwater in the Northside ITA Catchment. They also provide additional treatment for process discharges flowing from the WWTPs. The Northside Ponds provide treatment for leachate pumped from the East and West Landfill leachate collection ponds.

Each of the Northside Ponds has a capacity of 15,000 m<sup>3</sup> and is approximately 2.8 m deep. The Northside Ponds discharge via the Northside Outfall (discussed at Section 4.2.3 below).

The Northside Ponds provide for the removal of suspended solids and also provide mixing and retention of the influents, which assists in reducing fluctuations in temperature and quality of the discharges to the Northside Outfall. The Northside Outfall is fitted with an automatic flow and water quality measuring devices, which provide the Water Treatment Plant operators with information to adjust treatment in order to meet compliance limits. The pond receives process water, which flows continuously, as well as stormwater, which varies depending on rainfall. The discharge from the Northside Outfall operates continuously via gravity.

Treatment measures employed at the Northside Ponds to enhance treatment include oil skimmers, the addition of coagulant to the inflow, and baffles that increase the length of the flow path (and hence the water residence time). Melter aggregate filter beds also provide additional treatment for a portion of the discharge flow.

There are instances where ITA stormwater is automatically redirected to the Northside Ponds, when certain parameters can't be met. For example, ITA stormwater from Coal Yard 19 in the North Drain catchment is automatically redirected to the Northside Ponds when turbidity is elevated, instead of discharging to the North Drain.

Accumulated sediment must be removed from the Northside Ponds once per year to maintain their performance. It is normal practice to clean the ponds during summer when the occurrence of high rainfall and peak stormwater flows is less likely.

The SRNZ Ponds receive ITA stormwater from parts of the Northside ITA Catchment and partially treated process water from the Paint Line, providing further treatment prior to discharging to the Northside Ponds. The SRNZ Pond (East) has a depth of approximately 1.6 m and SRNZ Pond (West) has a depth of approximately 1.7 m. The SRNZ (West) Pond has Melter aggregate weirs installed to provide for removal of solids and metals. The SRNZ Ponds each have a capacity of 5,000 m<sup>3</sup>.

The other treatment pond of note located within the Northside ITA Catchment is the North (Closed) Landfill Pond<sup>65</sup>. Historically this pond only received leachate from the North Landfill, however leachate no longer discharges from the landfill. This pond now receives process water from a small ferrous scrap wash plant, and ITA stormwater from where some co-products and scrap are processed and stockpiled. Water from a truck tray washing bay also flows to this pond. ITA stormwater from the Melter Slag stockpile also flows to open drains which flow to this pond. This pond is approximately 1 m deep and has a volume of approximately 1,200 m<sup>3</sup>. Water is pumped from this pond to the Northside Ponds.

At-source treatment comprising coarse solids and hydrocarbon treatment will be installed at the Local Yard – North, Local Yard – South, and Yard A prior to Northside Ponds.

#### 4.2.3 Discharge point - Northside Outfall Structure

The Northside Outfall Structure has been in place approximately 37 years and is a reinforced concrete structure with a V-notch weir. Various timber and steel platform / stair structures provide access over and around the outfall.

An assessment of the Northside Outfall Structure has been undertaken (at **Appendix J**) which has confirmed that the Structure is partially below Mean High Water Springs (MHWS) and therefore within the CMA<sup>66</sup>.

Sea level rise is predicted to result in more of the slab and side walls downstream of the steel V-notch weir being within the tidal range over the term of the consent. However, the structural integrity of the outfall is not anticipated to be affected, provided the structure is maintained and repaired as required.

Rip rap is present, and no obvious signs of erosion were noted immediately downstream of the outfall structure.

Consent is sought for the ongoing occupation of the Northside Outfall Structure within the CMA. No works are proposed to alter or modify this structure beyond regular maintenance and repairs.

#### 4.2.4 Nature of the discharge

The existing Northside Outfall Discharge Permit contains limits on quality and quantity of water that can be discharged from the Northside Outfall. The existing permit authorises a daily average of

<sup>65</sup> Previously referred to as the Tip Pond.

<sup>66</sup> Current and predicted Mean High Water Springs (MHWS) levels have been plotted – see **Appendix J**.

9,000 m<sup>3</sup> per day, over a calendar month. The average volume of discharge at the Northside Outfall is approximately 7,925 m<sup>3</sup> per day.

NZ Steel has a comprehensive monitoring programme and has monitored the Northside Outfall discharge since the outfalls were first constructed (over 30 years ago).

A detailed review of the discharge monitoring results for the last two years (2019-2021) has been undertaken and compared to the limits set in the existing Northside Outfall Discharge Permit. This period of data has been selected as it is most reflective of the discharges under the current controls and management.

The review shows that NZ Steel has generally been compliant. Daily average results were compared to ANZWQG for marine water. With no allowance for mixing, the analysis showed that discharges at times exceeded the 95% and 80% SPL in relation to zinc, iron, and copper. When compared to historical results, being the previous monitoring round from 2015-2020, a trend of reduction is noticeable for all contaminants; of note is copper (33.8% reduction), TSS (15.4%) and zinc (15.9%). This is likely due to the commitment of NZ Steel to its practice of continual improvement (as discussed in Section 5.4.3).

### 4.3 Southside ITA Catchment and discharges

#### 4.3.1 Overview

The Southside ITA Catchment is approximately 41 hectares in size. **Figure 4.2** shows the extent of the catchment, the key water treatment systems and the location of the Southside Outfall discharge point.

ITA stormwater from the Southside ITA Catchment includes:

- Roof runoff from the Steel Mill buildings including the Rolling Mills, Finishing Plants and several administrative buildings; and
- Surface runoff from predominantly sealed roads and car parks and unsealed slab cooling yards.

ITA stormwater from the Southside ITA Catchment flows to two settling ponds (Southside Ponds) and is typically recycled to the Ruakohua Dam reservoir. As the areas outside of buildings are largely sealed or grassed and raw materials are not stored or handled, ITA stormwater from the Southside ITA Catchment is generally much cleaner than that of the Northside ITA Catchment.

Process water from within this catchment primarily relates to the ARP and Cold Mill Pickle Line, which both discharge to a WWTP for treatment before discharge to the Southside Outfall. In addition, process water from the balance of the Cold Mill and Hot Mill is treated in WWTPs and largely recirculated. Cooling circuit water discharges will flow to the Southside Ponds.

In addition, treated water is periodically pumped to the Southside Outfall from the Northside catchment (via the SRNZ Ponds), to manage compliance with the volume consent limit at the Northside Outfall. This would typically occur during periods of heavy rainfall and over long periods of rainfall (winter months).



Figure 4.2: Southside ITA Catchment boundary and water treatment systems

### 4.3.2 Treatment - Southside Ponds

ITA stormwater and some process water from the Southside ITA Catchment flows into the Southside Ponds:

- The Southside Duty Pond has a capacity of 8,000 m<sup>3</sup> and is approximately 1.6 m deep; and
- The Southside Surge Pond has a capacity of 5,000 m<sup>3</sup> and is approximately 1.4 m deep.

The Southside Ponds are operated separately, with one online and one held for surge capacity. The ponds allow for settlement of bulk solids from ITA stormwater. The Southside Ponds discharge predominantly to the Ruakohua Dam reservoir. Recycle lines allow for passive flow back to the Ruakohua Dam reservoir, and this is the typical flow path for ITA stormwater collected in the Southside ITA Catchment.

Sediment accumulation in these ponds is very slow, so the need to fully drain the ponds for removal of solids is greater than every 5 years.

Discharges to the Waiuku Estuary via the Southside Outfall (discussed at Section 4.3.3 below) are rare, and only during periods of high rainfall when outflow can exceed the capacity of the recycle lines.

### 4.3.3 Discharge point - Southside Outfall Structure

The Southside Outfall Structure has been in place approximately 37 years and is a reinforced concrete and concrete masonry structure. Access across and around the structure is provided by a timber pedestrian bridge and stairs.

An assessment of the structure has been undertaken (at **Appendix J**) which has confirmed that the Southside Outfall Structure is partially MHWS and therefore within the CMA<sup>67</sup>.

Sea level rise is predicted to result in more of the slab and side walls downstream of the weir being within the tidal range over the term of the consent. However, the structural integrity of the structure is not anticipated to be affected, provided the structure is maintained and repaired as required.

The area downstream of the structure is protected by a layer of riprap. No evidence of scour or erosion was observed in the riprap area immediately downstream of the structure.

Consent is sought for the ongoing occupation of the Southside Outfall Structure within the CMA. No works are proposed to alter or modify this structure beyond regular maintenance and repairs. Should the timber pedestrian bridge and stairs require substantial repair or replacement, the necessary approvals will be sought at the appropriate time.

#### **4.3.4 Nature of the discharge**

The main continuous discharge from the Southside Outfall is the ARP treated process water, which is discussed in Section 3.3.3. In addition, water from the Northside Catchment is periodically pumped to the Southside Outfall (via the SRNZ Ponds), to manage Northside Outfall volume. The existing Southside Outfall Discharge Permit contain limits on quality and quantity of water that can be discharged from the Southside Outfall. The existing Southside Outfall Discharge Permit authorises an average daily discharge volume of 2,000 m<sup>3</sup> per day over a calendar month. The average recorded volume of the discharge at the Southside Outfall is approximately 950 m<sup>3</sup> per day.

NZ Steel has a comprehensive monitoring programme and has monitored the Southside Outfall discharge since the outfalls were first constructed (over 30 years ago).

A detailed review of the discharge monitoring results for the last two years (2019-2021) has been undertaken and compared to the limits set in the existing Southside Outfall Discharge Permit. This period of data has been selected as it is most reflective of the discharges under the current controls and management.

Compared to the ANZWQG, the discharge monitoring results showed that the main parameters of interest in the Southside Outfall discharge are copper, iron and zinc.

When compared to historical results, being the previous monitoring round from 2015-2020, a trend of reducing concentrations is noticeable for most contaminants. Of note is copper (19.4% reduction) and zinc (8.3% reduction). However, for some contaminants, there has been an increase. These include iron (41.3% increase), TSS (14.8%) and temperature (24.1%). While there has been an increase in iron and TSS in the monitoring results, the mean and median are still well below the relevant guideline value or consent limit. In recent years, to meet the Northside Outfall discharge volume and mass load limits under the existing consent, water from the Northside catchment has been pumped via the SRNZ Ponds to the Southside Outfall. This is likely to have influenced the changes noted in the historical comparisons.

The Southside Outfall discharge is monitored by in-situ water quality monitoring and automatic controls for discharge in accordance with the existing Southside Outfall Discharge Permit. The monitoring that is undertaken is summarised further at Section 5.5.

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<sup>67</sup> Current and predicted Mean High Water Springs (MHWS) levels have been plotted – see **Appendix J**.

## 4.4 North Drain ITA Catchment

### 4.4.1 Overview

The North Drain ITA Catchment (upstream of Brookside Road) is approximately 44 ha<sup>68</sup>, shown in **Figure 4.3** below. Activities in the North Drain ITA Catchment currently comprise:

- Surface water runoff from stockpiling of raw materials, including coal and co-product aggregates, a contractor's yard and transfer station for recyclables and a rail siding; and
- Roof runoff from a stores building.

Process water from within this catchment primarily includes the Dewatering Plant, which receives PC slurry, dewateres the PC and treats the remaining slurry water before discharge.

The North Drain ITA Catchment has been split into five smaller sub-catchments, discussed below, based on the current activities and treatment devices. An additional potential future sub-catchment (approximately 25 hectares in size) is also outlined.

#### EAF changes within the North Drain ITA Catchment

If the EAF is installed, the changes within the North Drain ITA Area will include a reduction (%) up to half) in process water discharge from the Dewatering Plant (commensurate with the reduction in raw material required as a result of the EAF). Additionally, two options have been considered for buffer storage of External Scrap for the EAF operation. This includes either the existing CY 19 coal stockpile location (Option 1) or the CY 5/6 coal stockpile location (Option 2) which currently is part of the East Pond sub-catchment (both options discussed further below).

As part of the change from coal storage to External Scrap storage, modifications to the existing treatment systems will be undertaken comprising conversion of the existing CY 19 pond or modification of an existing drain/ ponding area downgradient of CY 5/6. The modifications will involve providing a sediment pond and wetland in series, with hydrocarbon removal at the inlet. These changes associated with the EAF are also identified in the relevant sections below.

Overall, the installation and operation of an EAF is expected to result in a reduction in contaminant loads to the North Drain and subsequently to the Lower North Stream due to the reduction in area used for coal stockpiling, the provision of stormwater treatment for Scrap Yards and a reduction in the Dewatering Plant flows.

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<sup>68</sup> Total catchment area of the North Drain is 56.7 ha, of which 44 ha comprises the ITA area. The remaining catchment area outside of the ITA area includes the Transpower Switchyard and the BOC site, which was not covered by this application.



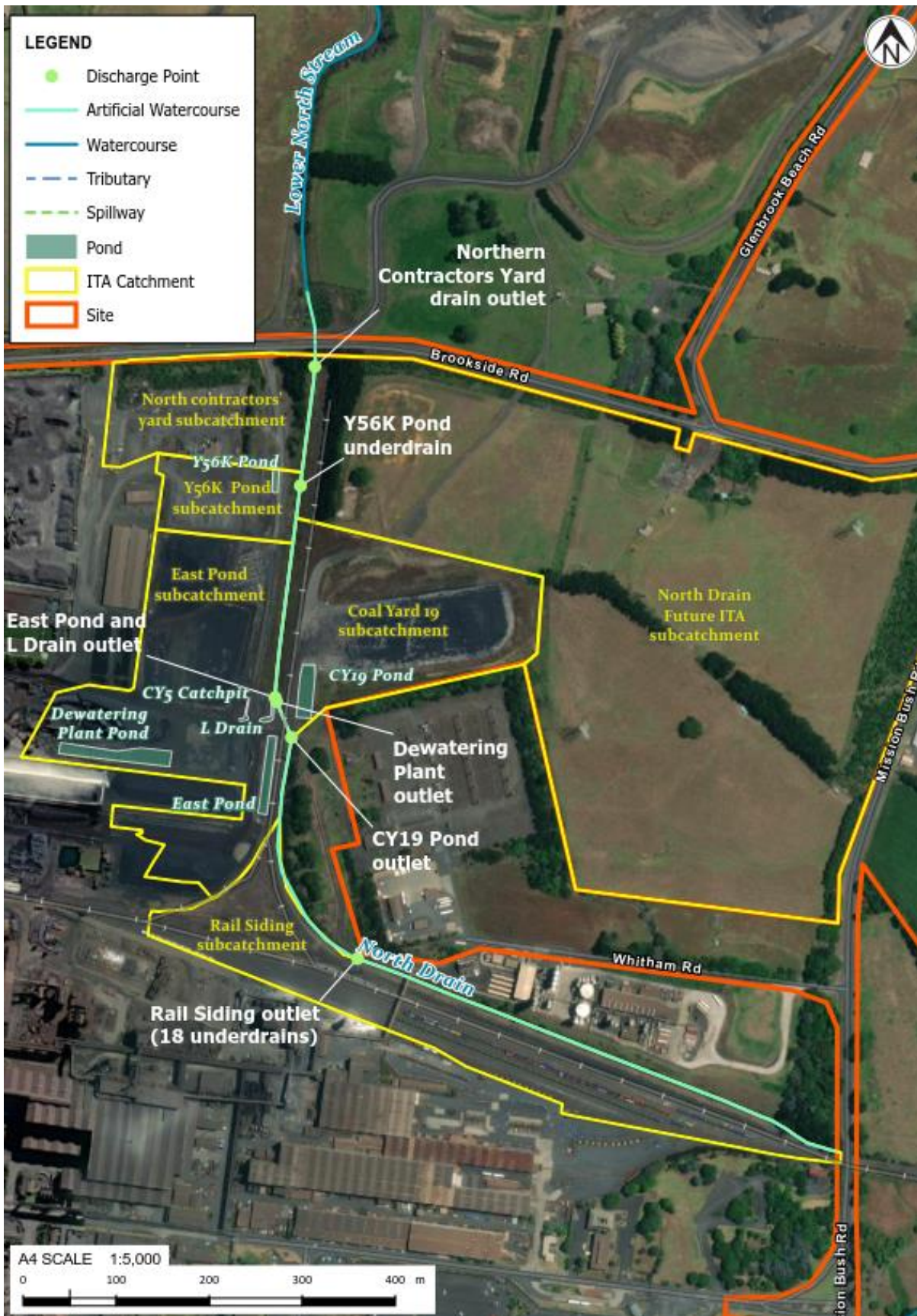


Figure 4.3: North Drain ITA Catchment boundary and water treatment systems

## 4.4.2 Treatment

Each of the sub-catchments contains separate activities and treatments as summarised below. Each of these sub-catchments is described in further detail in the ITA Report (**Appendix G**).

### 4.4.2.1 ITA Stormwater

- **East Pond sub-catchment** – An area of approximately 6.0 ha and contains Coal Yards 1/2 and 5/6 as well as a storage building roof. This sub-catchment is treated by East Pond which has a capacity of 1,310 m<sup>3</sup> and includes additional treatment measures. This sub-catchment discharges to the North Drain and water quality is monitored at the outlet via grab-samples following a rain event. As described above, when the EAF is fully operational, CY 5/6 may be converted to storage of External Scrap (Buffer Scrap Yard Option 2). If CY 5/6 is converted to a Scrap Yard, additional treatment is proposed comprising a standalone sediment pond and wetland which will discharge directly to the North Drain. The overall East Pond sub-catchment will also be reduced, potentially increasing the performance of the East Pond. Should CY 5/6 be chosen as the Buffer Scrap Yard, this will include potential improvements in the performance of the East Pond due to a reduction in the area discharging to the pond;
- **Y56K Pond sub-catchment** – An area of approximately 1.2 ha containing the aggregate stockpiling yard. The surface water from this sub-catchment is treated by the Y56K pond<sup>69</sup> that has depth of approximately 2 m and a capacity of 200 m<sup>3</sup> and discharges to the North Drain. Water quality is monitored at the outlet via grab sample following a rain event;
- **North contractor's yard sub-catchment** – An area of approximately 2.5 ha and contains administrative buildings, transfer station for recyclables and car park areas (sealed and unsealed). This sub-catchment discharges to the North Drain via a Melter aggregate lined drain/swale and does not contain any formal treatment device. Water quality is monitored only within the North Drain (at Site 1C) following a rain event;
- **Coal Yard 19 sub-catchment** – An area of approximately 4.3 ha and contains Coal Yard 19. This sub-catchment is treated by the CY19 Pond that has a capacity of 750 m<sup>3</sup> (and is approximately 2 m deep) and includes additional treatment measures. This sub-catchment discharges to the North Drain and water quality is monitored at the outlet via grab-samples following a rain event. When turbidity is elevated, the water is automatically diverted (by pumping) to the Northside Ponds for additional treatment. As described above, when the EAF is fully operational, CY19 may be converted to storage of External Scrap (Buffer Scrap Yard Option 1). If CY19 is converted to a Scrap Yard, modifications to the treatment ponds will be undertaken including splitting the pond into a sediment pond and wetland in series prior to discharge to the North Drain;
- **Rail siding sub-catchment** – An area of approximately 4.1 ha which contains train activity (including movement and rail car storage). This sub-catchment contains no formal treatment devices but does contain underflow drains that discharge to the North Drain. However, most of the water infiltrates to ground; and
- **North Drain future ITA sub-catchment** – An area of approximately 25 ha which currently contains pasture, however, may be used in future for ITA activities. Currently flows to North Drain via overland flow and no formal treatment exists.

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<sup>69</sup> Previously known as Jurie's pond.

#### 4.4.2.2 Dewatering Plant

The resulting process water from the Dewatering Plant is treated through a clarifier and/or settling ponds before discharging to the North Drain. When the clarifier is unable to treat turbidity to meet the consent limit, it is rerouted to the Dewatering Plant settling pond for additional treatment prior to being discharged.

#### 4.4.3 Nature of the discharges

##### 4.4.3.1 ITA Stormwater

NZ Steel has a long history of undertaking comprehensive of monitoring of ITA discharges and water quality within the North Drain.

The average results from the past two years' monitoring (2019-2021) were analysed and compared to the existing Trigger Investigation Levels<sup>70</sup> and the ANZWQG for freshwater. This data period was selected as being most reflective of the discharges in relation to the current controls and management at the site.

The results show that a large portion of the rain-event grab samples (taken directly from the discharge) were above the existing Trigger Investigation Levels, at most monitoring discharge locations in the North Drain ITA Catchment. This was for multiple contaminants, including aluminium, boron, iron, zinc<sup>71</sup> and copper. This is expected as these grab samples have typically been taken during rain events when stormwater contaminants are elevated and prior to mixing. They are not representative of long-term, ambient concentrations in the Lower North Stream that the guidelines are intended to manage. Nonetheless, these results illustrate which contaminants are of greatest concern.

To further understand the combined effects on the receiving environment of the discharges after mixing, for the purposes of the consent application, additional daily composite monitoring was established at Site 1 and Site 4. Site 1 is upstream and at the point the North Drain discharges into the stream. Site 4 is at the downstream end of Lower North Stream (refer Figure W-ITA2 for locations). This monitoring commenced in July 2021, with the results for the period to June 2022 reviewed. At Site 1 (upstream), parameters which exceeded the ANZWQG 80% SPL were limited to aluminium, iron and vanadium. Most other parameters were below the ANZWQG 95% SPL, apart from copper and zinc (which were below the ANZWQG 80% SPL).

Monitoring at Site 4 (downstream) showed that most parameters met the ANZWQG 95% SPL. Those that were below included aluminium (which met the 80% SPL), boron (which met the 90% SPL) and vanadium.

The main change in ITA discharges associated with the EAF are a reduction in contaminant loads discharged to the North Drain as a result of the reduction in the area used for coal stockpiling and the additional stockpiling of External Scrap in the Buffer Scrap Yard. The reduction in coal use is expected to reduce the total area required for stockpiling of coal. Any reduction in area used for coal stockpiling will reduce the contaminant loads from coal stockpiling as the runoff is directly linked to total stockpiling area. However, there will be some contaminants from areas used for other activities including storage of External Scrap for EAF feed. If one of the existing coal yards (CY 5/6 or CY 19) is converted to a Scrap Yard, additional stormwater treatment will be provided as outlined in

<sup>70</sup> The Trigger Investigation Levels are prescribed by the Stormwater Monitoring and Management Programme required by existing ITA Discharge Permit 41027.

<sup>71</sup> Note that one Dewatering Plant result for zinc on 28 October 2020 was particularly elevated. This data point is considered to be an outlier anomaly and unlikely to be correct as the other metals and flow data were not elevated and there is no apparent explanation for the result. This individual result substantially increases the apparent zinc load from the Dewatering Plant.

Section 4.4.2. Therefore, the changes associated with the stockpiling of materials within the North Drain ITA Catchment are likely to result in a reduction in the overall contaminant loads.

Further detail regarding the North Drain ITA monitoring data is provided at Section 6.3.3.2 of the ITA Report.

#### 4.4.3.2 Dewatering Plant

The Dewatering Plant discharge is brackish in nature, as the water used in the PC slurry pumping is extracted from the mouth of the Waikato River, adjacent to the Waikato North Head mine.

The existing Dewatering Plant Discharge Permit contains limits on quality and quantity of water that can be discharged from the Dewatering Plant. The existing Dewatering Plant Discharge Permit authorises an average discharge volume of 7,400 m<sup>3</sup> per day, over a calendar month. The average combined volume discharge is approximately 3,915 m<sup>3</sup>. The average results from within the last two years (2019-2021) for the Dewatering Plant discharges were analysed and compared to the existing Dewatering Plant Discharge Permit levels, and the results were compared to ANZWQG for freshwater. This period of data was selected as being most reflective of the discharges in relation to the current controls and management at the site.

The Dewatering Plant discharge monitoring shows generally good compliance with the Existing Permit limits. Average results for daily flow and turbidity were below the consent limits, with the maximum limit for daily flow and turbidity exceeded on occasion. Mean results for both parameters were below the consent limit.

Compared to the ANZWQG, the discharge monitoring results show that the main parameters of interest in the Dewatering Plant discharge to the North Drain are aluminium, copper, iron, vanadium and zinc.

The Dewatering Plant discharge is of particular interest as this is a significant proportion of the flow in the North Drain and provides relatively constant discharge, which supports the ecological values of the North Drain and Lower North Stream and related habitats. However, base flows from the Dewatering Plant do cease periodically, for a range of reasons including when the PC stockpile is full, preventative maintenance is underway, or operational issues arise either at the Waikato North Head mine or Glenbrook<sup>72</sup>. Some residual flow from the settling pond is likely to occur for a period after slurry pumping stops. During any shut down period the North Drain does not receive base flows from the Dewatering Plant discharge. However, due to the low gradient nature of the North Drain, discharge water from the Dewatering Plant becomes ponded during operation of the Dewatering Plant. When these discharges cease the ponded water continues to provide baseflow to the Lower North Stream for a period of time.

The proposed EAF will reduce the demand for iron sand by approximately half. As a result, the Dewatering Plant discharge with the EAF operational will contribute ~ 40% of stream flow within the Lower North Stream at the stream mouth compared to ~ 80% without the EAF operating. This would result in a reduction in the overall pumping hours, although the pumping volume per hour would not reduce. Based on the current operation, this would mean the variability in flow within the North Drain (and subsequently the Lower North Stream) would change, with an increased period where no pumping would occur.

To reduce any effect from any increase in variability to stream flows and the subsequent increased period of no flows, it is proposed that the Dewatering Plant discharges will discharge into the existing Dewatering Plant ponds to buffer the discharge. Existing flushing flows during rain events would still occur, with no change in the overall catchment area proposed as part of the EAF

<sup>72</sup> It is understood that periodically the shut down period will exceed 8 hours. However, this is rare and generally occurs during the summer at times when the Steel Mill is closed.

operation. The reduction in the Dewatering Plant volume will also reduce the contaminant loads, although any reduction in the concentration of contaminants is likely to be minimal. Ruakohua ITA Catchment

#### **4.4.4 Overview and treatment**

The Ruakohua ITA Catchment comprises the Contractors Compound and Yard 31, totalling approximately 13.5 ha. It also includes a Future ITA Area of approximately 5 ha.

The Contractors Compound is approximately 2 ha and comprises offices, car parking and equipment storage. ITA stormwater from this area discharges to the Ruakohua Stream after being treated in three Melter aggregate filter beds.

Yard 31 is approximately 11.5 ha and currently comprises a rail yard, container laydown, equipment and finished steel product storage, and metal scrap cutting. ITA stormwater from this area is treated by settlement ponds (Yard 31 Ponds) before discharging to a tributary of the Ruakohua Stream.

The Ruakohua Future ITA Area sub-catchment currently contains the dam raw water treatment plant and informal yard areas, however it may be used in future for ITA activities.

#### **4.4.5 Nature of the discharges**

The average results from the past two years' monitoring (2019-2021) were analysed and compared to the existing Trigger Investigation Levels<sup>73</sup> and the ANZWQG for freshwater. This period of data has been selected as it is most reflective of the discharges under the current controls and management.

Discharges from the Ruakohua ITA Catchment were above the 80% SPL on occasion at Yard 31 (for aluminium, copper, iron, zinc and pH). There were also exceedances above the 80% SPL for the Contractors Compound (for aluminium, copper and zinc).

Discharges to the Ruakohua Stream were generally of better quality than those to the North Drain and Kahawai Stream.

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<sup>73</sup> The Trigger Investigation Levels are prescribed by the Stormwater Monitoring and Management Programme required by existing ITA Discharge Permit 41027.

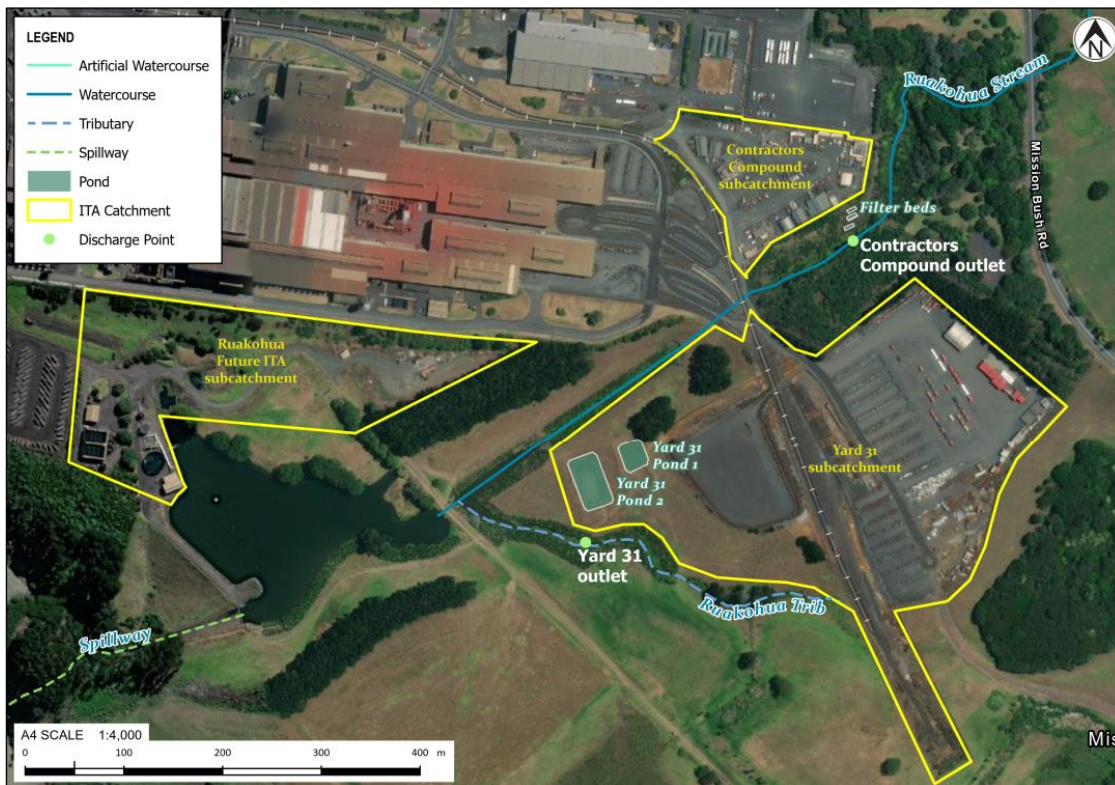


Figure 4.4: Ruakohua ITA Catchment boundary and water treatment systems

## 4.5 Former Kahawai Stream ITA Catchment / Future ITA Catchment

### 4.5.1 Overview and treatment

The Kahawai Stream ITA Catchment<sup>74</sup> is approximately 2.0 ha, which is a small fraction of the total Kahawai Stream catchment of 50 ha.

Up until early 2022, activities in this ITA catchment included metal recycling and storage of internal uprisings, and gas cutting. Melter slag was historically stored in the catchment, but runoff from this stockpile was diverted to the Northside Ponds in 2015 (reducing the size of the ITA catchment). Placement of fill occurred in the 1990s which comprised a range of materials to create the working platform, including lime-based co-products. The majority of this fill was removed around 2008 and 2011.

The results from the monitoring period 2019-2021 show that a large portion of the rain-event samples taken were above the 80% SPL for multiple contaminants. Where the Kahawai Tributary flows into the Kahawai Stream, the most frequent elevated levels were pH, aluminium, boron, copper, zinc, and iron. Some of the parameters of interest in the Kahawai Stream were present upstream of the discharge point (notably iron and lead) however, there has been ongoing improvement when compared to historical results.

This area has now been remediated and ITA discharges to the Kahawai Stream have ceased, but activities may occur in the future (subject to appropriate treatment and monitoring as required by the proposed conditions of consent).

<sup>74</sup> The Kahawai Stream ITA Catchment was previously referred to as the Metal Cutting Yard.

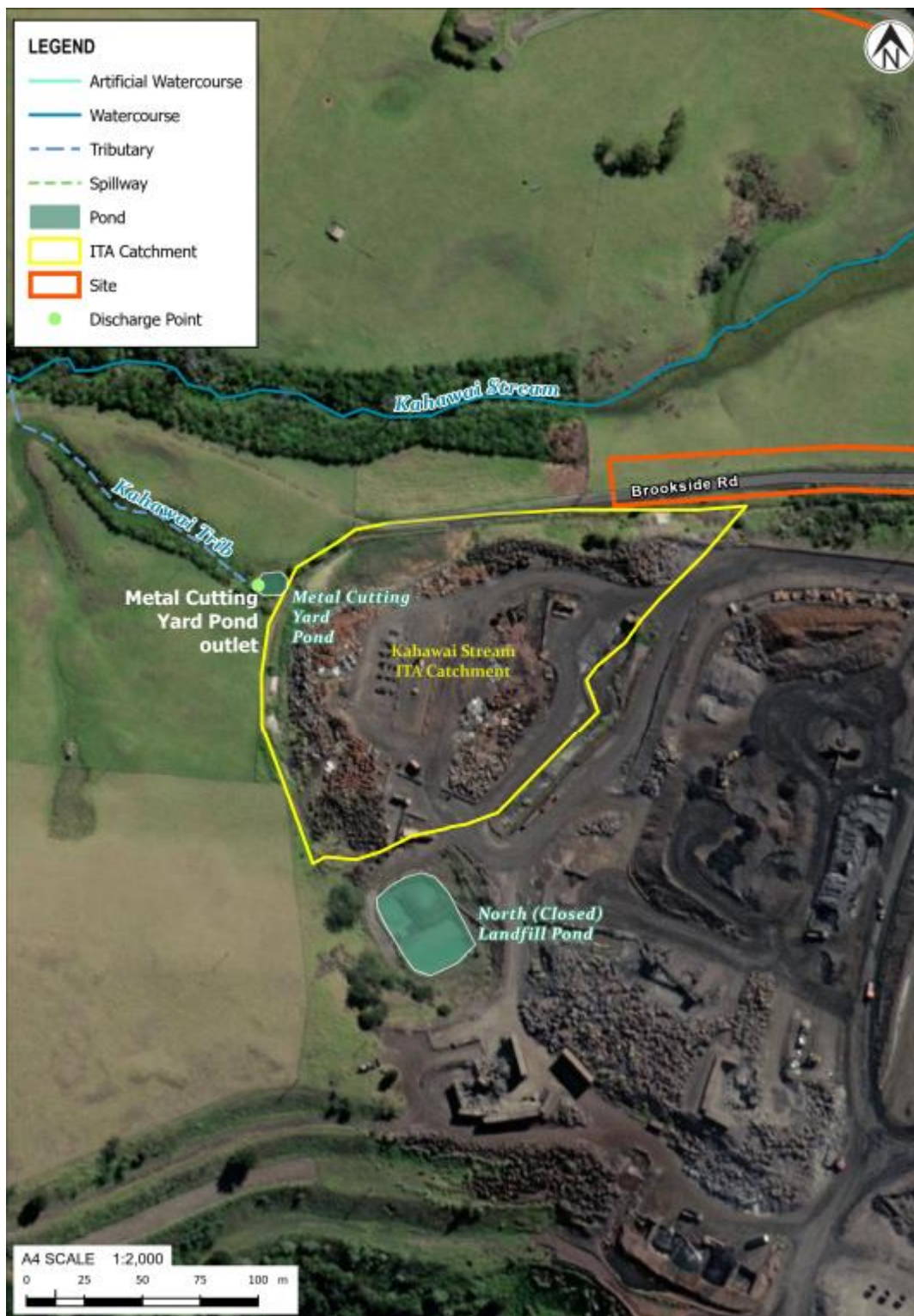


Figure 4.5: Kahawai Stream ITA Catchment boundary and water treatment systems

## 4.6 Other areas

There are two areas (totalling approximately 3.3 ha) within the ITA Area which discharge directly to land shown on **Figure 4.6**. These include:

- The Southern Slab Yard – this is an existing storage area for steel slabs, located to the south of the Steel Mill which has an approximate area of 2.3 ha. The existing slab yard discharges to land via informal vegetated swales and filter strips. The majority of runoff soaks into the ground. The runoff is expected to have slightly elevated TSS, however is not a significant source of contamination; and
- An unsealed access road, which has an approximate area of 1.0 ha. The access road discharges to land via informal vegetated swales and filter strips, with any runoff soaking to ground prior to reaching the CMA. The runoff is expected to have slightly elevated TSS, however the activities are not a significant source of contamination.

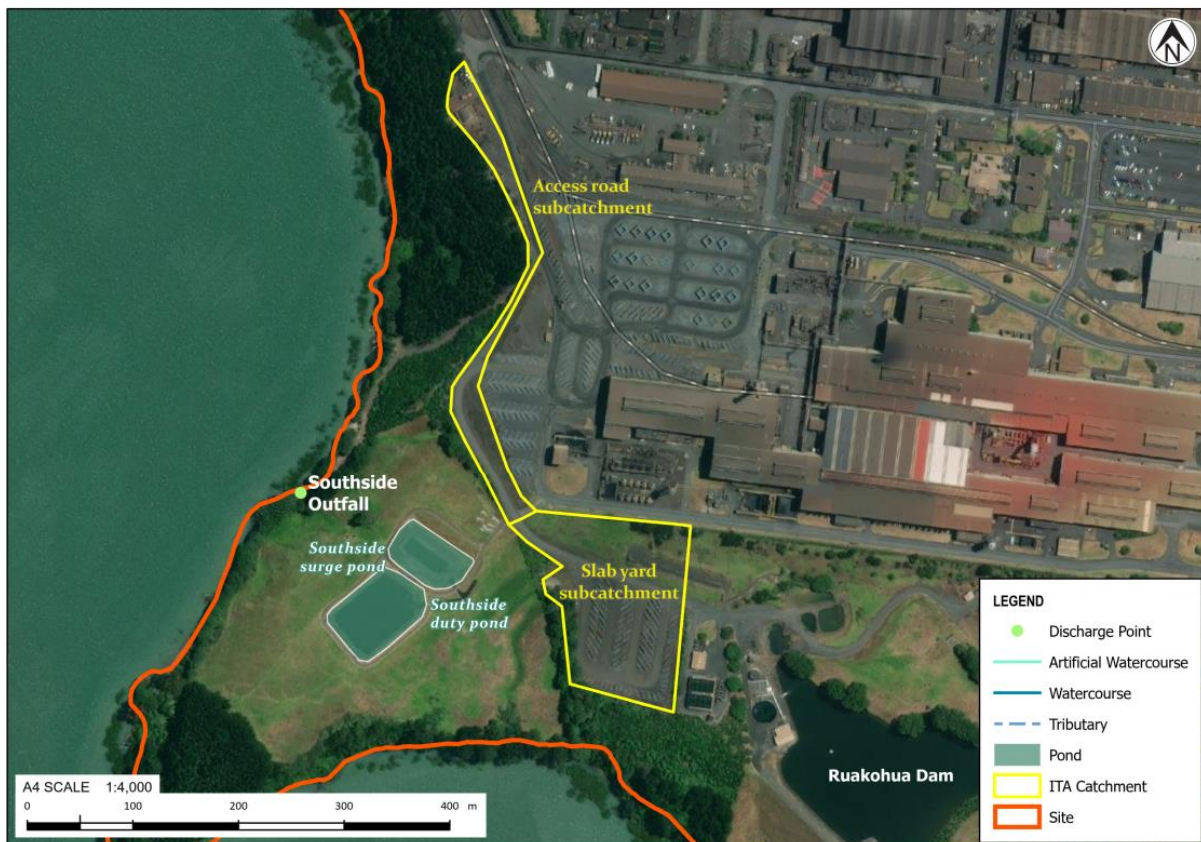


Figure 4.6: Other ITA areas boundary and water treatment systems



## 5 Management and monitoring

### 5.1 Overview

This section provides an overview of NZ Steel's Environmental Management System (EMS) as it relates to potential water contaminant sources and outlines key engineering and administration controls currently used across the Steel Mill. NZ Steel has operated and refined its water management systems over the time of the Steel Mill's existence and will maintain the control methods outlined below and as required, introduce improvements to meet discharge water quality standards. Amendments to the EMS in relation to the EAF will be made, as appropriate.

### 5.2 Certified Environmental Management System (EMS)

The key method for managing the environmental aspects of Steel Mill's operations is the implementation of the existing EMS, which has been externally certified to ISO 14001 since 2003. NZ Steel also has a mature quality management system (which is certified to ISO 9001). Combined with the EMS this forms the Steel Mill's Integrated Management System (IMS).

The IMS is an overarching management system, embedded within NZ Steel business practices and aligned with the policy, strategy and procedures of its parent company, Bluescope. NZ Steel's IMS provides checks and balances at all levels of the organisation.

The IMS is annually audited by external auditors to ensure continuing compliance with the international standards ISO 14001:2015 and ISO 9001:2015. An EMS, externally certified to ISO 14001 or equivalent, is proposed as part of the condition set at **Appendix R**.

The EMS contains matter-specific management plans, standard operating procedures and protocols such as the Water Quality Management Plan (WQMP) outlined in Section 5.3. Other key aspects of the EMS include:

- Environmental Policy (issued by parent company Bluescope) and governance protocols;
- Environmental planning for continuous improvement, based on risk evaluation, compliance and strategic direction;
- Setting of objectives and targets to minimise environmental effects, which are included in annual and medium-term plans;
- Risk assessment and management documents to reflect detailed legal requirements and environmental effects assessments (such as this AEE);
- Internal auditing of key environmental controls to ensure continued compliance with resource consents and the certified EMS;
- Management of change protocols to assess any proposed changes to people, processes and facilities, which may have a positive or negative environmental impact;
- Environmental monitoring requirements, to provide operational control and demonstrate compliance;
- Compliance review, incident investigation and reporting to Council, NZ Steel Senior Leadership Team and Environment Committee;
- Operational roles, responsibilities and functions, set out in controlled procedures and management plans;
- Training and competency checks, to ensure employees and contractors are aware of resource consent and regulatory requirements and the specified controls for the activities in which they are engaged;

- Procurement practices and contract conditions specifying relevant items and matters to ensure activities are compliant with resource consents;
- Equipment maintenance programs and operational procedures, including critical process checks to ensure treatment control equipment continues to be fit for purpose; and
- Record keeping in relation to above matters and to demonstrate continuing compliance.

As part of the EMS, auditing of both the management practices and operational procedures are undertaken by suitably qualified experts, including both internal and external auditors. An auditor's objective is to ensure that NZ Steel is appropriately managing environmental effects. The audit program includes consideration of the continuing suitability and effectiveness of the organisational structure and administration and operational procedures, a training and competency evaluation, work areas, operations and processes.

### 5.3 Water Quality Management Plan

For the purposes of this application NZ Steel has prepared a draft WQMP to describe the practices and procedures adopted, including the ISO 14001 certified EMS, to ensure compliance with the water discharge consent conditions.

The draft WQMP is contained at **Appendix K**. The WQMP sets out the requirements to manage contaminants from activities undertaken at the Steel Mill before they enter the environment, as proposed by this application. It describes:

- Key personnel accountable for implementing the WQMP and their responsibilities;
- Activities undertaken at the Steel Mill which are sources of potential contaminants to land and water environments;
- Key mitigation and prevention mechanisms and controls;
- Site-specific management controls for the handling and storage of External Scrap at the Scrap Yards. This includes External Scrap acceptance procedures, which are discussed further in Section 5.4.3 below;
- Water quality monitoring program (including the approach for determining and adopting Trigger Investigation Levels to identify short term peaks in contaminant discharges at monitoring locations across the Site);
- Maintenance programme of ITA stormwater management and treatment systems;
- Methods for managing incidents and complaints;
- Compliance reporting and records relating to the compliance; and
- Requirements for assessing the impact of changes to facilities, processes and activities.

The WQMP is intended to be a living document for the duration of the consent and it is proposed to be reviewed at least on a five-yearly basis and in the event of any material changes to activities in the ITA Area (as proposed by the conditions of consent at **Appendix R**).

### 5.4 Contaminant sources and controls

As part of the EMS and WQMP, the activities with the potential to generate contaminants are identified so that appropriate controls are designed and implemented to avoid or minimise the potential environmental effects. Controlling contaminants generally falls into one of two categories:

- Physical or engineered controls; or
- Operational / administrative controls.

Sections 5.4.1 and 5.4.2 below contains an overview of the key physical and operational controls employed at the Steel Mill, respectively. Further detail is contained in the ITA Report at **Appendix G**.

#### 5.4.1 Physical controls

**Table 5.1** below provides a high level summary of the key physical controls and treatment devices (such as WWTPs and settling ponds) for each of the activities within the ITA catchments discussed at Section 4. There are a number of other physical controls applied (such as the use of chemical treatments, silt fences and bunding etc) that are employed on site to manage potential contaminants.

Maintenance of physical controls and contingency measures are critical to ensuring compliance. The WQMP references maintenance practices and procedures for the key physical controls and identifies contingency measures in place.

**Table 5.1: Summary of contaminant sources, key contaminants and physical controls**

Activity	Key contaminants	Key physical controls
<b>Steel Mill wide</b>		
Sealed roads and yards	Metals, suspended solids	Sweeping to remove sediment Sumps and catch-pits for collection of heavy solids
Hazardous substances and oil storage and use	Various including pH and hydrocarbons	Secondary containment at storage locations and capture within ponds on site
<b>Southside ITA Catchment</b>		
Southside ITA stormwater	Metals, suspended solids	Area is largely sealed Regular sweeping of sealed roads Settling solids in Southside Ponds Surge pond and recycle line to Water Supply Dam, to minimise occurrence of overflow to Southside Outfall
ARP WWTP	pH and TSS	Continuous monitoring and adjustment of chemical treatment Contingency measure is diversion to Southside Ponds
Oily waste treatment plant	Hydrocarbons	Continuous monitoring and adjustment of chemical treatment Recycling to Southside Ponds Treatment through Southside Ponds and recycling to Water Supply Dam Oil recovery and recycling
<b>Northside ITA Catchment</b>		
Product tipping, co-product and waste processing and stockpiling	Metals, suspended solids	Northside Ponds and subsidiary ponds
Iron Plant	Metals, suspended solids	WWTP Continuous monitoring and adjustment of chemical treatment Recycling to the Iron Plant Wedge pits for heavy sediment collection Northside Ponds

Activity	Key contaminants	Key physical controls
Steel Plant	Metals, suspended solids	WWTP Continuous monitoring and adjustment of chemical treatment Recycling to the Steel and Iron Plant Northside Ponds
EAF (process water aspect)	Metals, suspended solids	Recycling to the Steel or Iron Plant WWTP Northside Ponds
WWTP sludge dewatering	Metals	Sludge dewatering plant filter weirs Northside Ponds
Iron Plant raw materials including coal and PC stockpiles	Metals, suspended solids	Subsidiary ponds and sediment fencing in coal yards Northside Ponds
Metal Coating Line	Chromium, pH and zinc	Wastewater treatment plant Continuous monitoring and adjustment of chemical treatment Northside Ponds
EAF Scrap Yards (Local Yard – North, Local Yard – South and Yard A)	Metals, suspended solids, PAHs, hydrocarbons	At source treatment for coarse sediment and hydrocarbons; Recycling to the Steel and Iron Plant Northside Ponds
<b>North Drain ITA Catchment</b>		
Dewatering Plant	Suspended solids, conductivity	Slurry water treatment plant and settling pond Continuous monitoring and adjustment of chemical treatment
CY19 Coal stockpiles	Metals, suspended solids	CY19 Pond Continuous monitoring and adjustment of chemical treatment Contingency for diversion to Northside Ponds
CY1/2 and CY 5/6 coal stockpiles	Metals, suspended solids	East Pond Continuous monitoring and adjustment of chemical treatment
EAF Buffer Scrap Yard (either CY19 or CY 5/6)	Metals, suspended solids, PAHs, hydrocarbons	At source treatment for coarse sediment and hydrocarbons and wetland
Future ITA area	Metals, suspended solids	Conversion of existing settling pond or development of new treatment if area is developed
<b>Other catchments</b>		
Kahawai Future ITA catchment	Metals, suspended solids	Site specific treatment based on nature of activities
Contractors Compound catchment	Heavy metals, suspended solids	Melter Aggregate filter beds
Yard 31 catchment	Heavy metals, suspended solids	Sediment ponds
Southern slab yard and adjoining access roads	Heavy metals, suspended solids	Discharge to planted area (filter strips)

### 5.4.2 Operational and administrative controls

There are a number of key operational and administrative controls that are implemented at the Steel Mill, including:

- **Activity specific management plans and procedures** (for example the Water Quality Management Plan) – these plans provide an overview on managing environmental effects and identify the procedures (outlining additional detail) associated with the activity;
- **Housekeeping** - NZ Steel has a housekeeping policy that covers all areas of the Site. The policy requires all areas to be maintained to a high standard of housekeeping. It aims to ensure that the layout of working areas, the marking of walkways and storage areas, adequate storage facilities and suitable provision and systems are maintained and that regular cleaning and tidying is provided;
- **Hazardous substances** - NZ Steel has a hazardous substance management procedure that cover all hazardous substances used, stored and handled at the Site. Before introduction of a new substance or change to an existing substance (or storage of either) staff and contractors are required to initiate an assessment to determine the risks, to ensure appropriate handling, storage and other controls are implemented. Hazardous substances stored across the Site are recorded in an inventory. A Location Test Certificate and tank certification is required annually, by a third-party auditor;
- **Waste management** - NZ Steel has waste management procedures that cover all wastes treated, handled and stored within the ITA Area, including recyclables. The procedure requires all staff and contractors prior to disposal, to identify wastes and to seek approval for the appropriate location for recycling or disposal (documented as a Waste Declaration). NZ Steel operates a landfill (industrial monofill) within the Site for disposal of certain wastes arising from Steel Mill activities and other wastes are disposed off-site as required, to an authorised landfill. External providers undertake services for collection of hazardous waste, general waste and recycling;
- **Spill preparedness and response** – As required under Hazardous Substances and New Organisms Act 1996 (HSNO Act) regulations, tanks and storage locations are appropriately bunded to minimise spill to waterways and land. NZ Steel assesses all hazardous substances and requires specific spill response plans for the relevant hazardous substances. The main category of hazardous substances used within the ITA Area is fuels, oils, solvents, paint and acids. NZ Steel also has a generic spill response plan for substances that are not covered by HSNO but are still environmentally hazardous;
- **Training / Inductions** - The objective of NZ Steel’s environmental training is to ensure that employees and contractors understand the key environmental risks and impacts relevant to the Steel Mill. Training of operators is an ongoing process, where environmental controls specific to the task they undertake or the equipment they operate are outlined. There are regular competency reviews and refresher training provided, as well as specific updates to training material in light of any changes; and
- **Change management** - NZ Steel has a change management procedure which covers all types of changes proposed for the Steel Mill. Changes include trials and/or modifications to plant, materials and equipment, new installations, change in practices, procedures or software relating to operations and activities within NZ Steel. The purpose of the procedure is to ensure that potential safety, environmental (including consent compliance), operational or business risks are assessed prior to the change being carried out and that appropriate actions is taken to manage any associated risks and ensure ongoing compliance with legal requirements.

These processes and procedures are reflected in the WQMP.

### 5.4.3 Scrap acceptance procedures for External Scrap

All External Scrap will have been processed by the external suppliers before being delivered to the Site. To ensure that External Scrap received at the Site is of acceptable quality, a scrap acceptance specification will be set out in the WQMP (a draft of which is provided at **Appendix K**).

The specification will set out the quality standards for External Scrap to meet manufacturing requirements and to also minimise or avoid materials harmful to people and the environment. This includes requirements such as:

- Only External Scrap from pre-approved suppliers will be accepted at the Site and suppliers will be required to prepare and maintain an “Inspection and Verification Plan” that describes the engineering and management controls (which will be audited) to exclude, as far as practicable, materials identified as ‘Specified Materials’.
- The supply agreement will define the External Scrap specification and list Specified Materials, which will include:
  - Radioactive materials;
  - Opened or sealed containers of any type of fluid;
  - Sealed containers;
  - Pipe or cut in such a way as to crimp the ends;
  - Sealed bearing housings;
  - Lead coated scrap or lead in any form;
  - Any contaminant associated with hazardous air pollutants (including chlorinated plastics, free liquids, lead, or mercury);
  - Chemicals, organic liquids, chlorinated plastics, asbestos, hazardous waste in any form; and
  - Wood and putrescible materials.
- Radiation detector(s) will be installed at the Site and each load is to be screened for radiation. If a positive result is obtained, the load will be isolated and managed in accordance with requirements set out in the WQMP.
- Visual inspections of each load of External Scrap delivered to the Site will be undertaken to, as far as is reasonably practical, inspect for Specified Materials. If Specified Materials are observed, the load will be managed in accordance with the WQMP including being isolated for sorting or returned to the Supplier.

### 5.4.4 Continual improvement

Continual improvement is a core part of NZ Steel’s EMS. NZ Steel undertakes regular reviews of water monitoring data, performance of its WWTPs and other devices, and management measures within the various catchments across the Site, to identify areas for improvement and priorities for capital expenditure.

Appendix F to the ITA Report (**Appendix G** to the AEE) sets out some notable water management improvements that NZ Steel has implemented since the existing discharge permits were issued in 2003 and 2013.

The period 2003 to 2009 saw a particular focus on the water quality associated with the Northside Outfall, Southside Outfall, and Dewatering Plant discharges. For Northside Outfall and Southside Outfall catchments, improvements (such as sealing laydown areas and upgrades to the WWTP) were effective in reducing the frequency that suspended solids and zinc concentrations exceeded consent limits. Reductions to the Northside Outfall discharge volume were achieved through measures that

included the installation of a line to recycle water to the Ruakohua Dam. Improvements to the Dewatering Plant, including automated shutdown of the slurry line and additional treatment, have reduced the frequency that suspended solids concentrations and turbidity exceed the consent limits.

From 2013 to 2022 there was considerable focus on increased monitoring and improving the treatment of ITA stormwater discharges to the North Drain. The focus since early 2023 has been on the changes and potential for improvements that the EAF may provide.

Continual improvement activities in the Northside and Southside catchments from 2017-2022 have included modification of the SRNZ Ponds to reduce the discharge volume from the Northside Outfall during rain events, additional recycle lines in the Southside Pond to reduce the potential for elevated suspended solids during high-intensity rain events, and road sealing and other measures to reduce sediment from trucks. Most recently, in anticipation of more stringent water quality standards, the focus has returned to the main WWTPs for the Iron and Steel Plant; for example the trial of alternative treatment chemicals (such as in the Iron WWTP), and optimisation of the Iron WWTP clarifier treatment to reduce zinc load.

## 5.5 Existing monitoring programme

Monitoring is a key function of determining how well source control and mitigation measures are performing, particularly against any limits prescribed by resource consent conditions. Each of the Existing Consents relating to water discharges requires that a programme of regular water quality monitoring be carried out and sets out a range of limits and monitoring requirements that NZ Steel is required to undertake.

The assessments of the effects of the replacement discharge permits on freshwater and marine environments have been undertaken based on the data available as a result of this monitoring<sup>75</sup>. These assessments are provided at **Appendix H** and **Appendix I** respectively. Based on the conclusions of these assessments, changes to the monitoring programme are proposed and are provided at Section 12 and are reflected within the proposed conditions of consent (**Appendix R**).

The discharge monitoring required by the Existing Consents is summarised below.

### 5.5.1 Northside and Southside Outfalls

The discharges from the Northside and Southside Outfalls are monitored daily by taking both grab and 24-hour composite samples at a location immediately upstream of the discharges to the CMA. The Northside and Southside Outfall discharge permits (Permits 21575 and 21576 respectively) place limits on the quality and quantity of the discharge from each outfall, measured as monthly average concentrations, daily maximum concentrations, and daily mass loads. The conditions also require monitoring of sea temperature (4.3), sediment quality (4.4), benthic community health (4.5) and shellfish contamination (metals in Pacific oysters) (4.6). The relevant conditions are set out below:

Northside (NS) Outfall Discharge Permit 21575 and Southside (SS) Outfall Discharge Permit 21576	
NS 2.1	Sets out the total volume limit of treated process water plus stormwater discharged.
SS 2.1	Sets out the total volume limit of treated process water plus stormwater discharged.
NS and SS 2.2	States that the total mass loads of contaminants and the quality of the total discharge of treated process water and stormwater at the point of entry to the Waiuku Estuary shall comply with the standards set out in the table appended to the conditions set.

<sup>75</sup> And in some instances additional monitoring that was required to provide a more complete understanding of the effects to support this consent application.

<b>Northside (NS) Outfall Discharge Permit 21575 and Southside (SS) Outfall Discharge Permit 21576</b>	
NS and SS 4.1	Requires the preparation and implementation of an Environmental Management and Monitoring Plan that includes: <ul style="list-style-type: none"> <li>• Details on how NZ Steel will assess sediment quality, benthic community health, and shellfish contaminant loads within the consented mixing zone in accordance with the conditions of this consent.</li> </ul>
NS and SS 4.2	Sets out the physical and chemical parameters including: <ul style="list-style-type: none"> <li>• Requiring the rate of discharge to be monitored by means of a suitable, permanently installed continuous recorder; and</li> <li>• Requiring the parameters listed in the table appended to the conditions set to be monitored in accordance with the methods and frequencies listed.</li> </ul>
NS and SS 4.3	Requires NZ Steel to take weekly recordings of ambient sea temperature.
NS and SS 4.4	Requires NZ Steel to collect and analyse sediment quality biannually.
NS and SS 4.5	Requires NZ Steel to assess benthic community health.
NS and SS 4.6	Provides maximum concentrations of zinc in Pacific oysters both within and outside the consented (existing) mixing zone.

### 5.5.2 Dewatering Plant discharge

The Dewatering Plant takes in PC slurry and separates the liquid and solid components. Wastewater is treated then discharged to the North Drain. The wastewater is continuously monitored for turbidity at both the outlet and the point of discharge. The Dewatering Plant Discharge Permit (Permit 21577) places limits on the daily volume and turbidity of the discharge, measured as monthly averages and as a daily flow-weighted average for turbidity. In addition to monitoring required by the resource consent, water quality results for a broader range of parameters were measured from November 2019 to August 2020 (20 results for metals and 25 for conductivity). The relevant conditions are set out below:

<b>Dewatering Plant Discharge Permit 21577</b>	
DP 2.1	Sets the total volume of clarified wastewater that can be discharged (7,400 m3 per day).
DP 2.2	Sets the maximum rate of discharge (at 400 m3 per hour).
DP 2.3	Sets the limits on quality of the discharged wastewater. <ul style="list-style-type: none"> <li>(a) SUSPENDED SOLIDS: <ul style="list-style-type: none"> <li>(i) Not to exceed 20 g/m<sup>3</sup> monthly flow-weighted average.</li> <li>(ii) Not to exceed 30 g/m<sup>3</sup> daily flow—weighted average.</li> </ul> </li> <li>(b) TURBIDITY: <ul style="list-style-type: none"> <li>(i) Not to exceed 20 NTU monthly flow-weighted average.</li> <li>(ii) Not to exceed 30 NTU daily flow—weighted average.</li> </ul> </li> </ul>
DP 4.1	Requires the preparation and implementation of an Environmental Management and Monitoring Plan.
DP 4.2	Requires turbidity monitoring including installing and operating turbidity meters and flow recorder during discharge periods at both the discharge from the clarifier and at the point of discharge to the North Drain.

### 5.5.3 Industrial and Trade Activities discharges

The conditions of the Existing ITA permit (Permit 41027) differ from the above permits in that, rather than specifying specific limits, it requires the preparation and implementation of a Stormwater



Monitoring and Management Plan (SMMP) which sets out the monitoring programme in terms of parameters to be monitored and their location and frequency. The SMMP sets Trigger Investigation Levels for each of the required parameters based on previous sample results and with reference to the ANZECC Guidelines. The relevant conditions are set out below and the below sections describe the monitoring undertaken.

<b>Industrial and Trade Activities (ITA) Discharge Permit 41027</b>	
ITA 10	Requires a Stormwater Monitoring and Management Programme (SMMP) to be developed.
ITA 11	Sets out the requirements of the SMMP including the <ul style="list-style-type: none"> <li>• Sampling locations;</li> <li>• Methods and procedures (including frequency);</li> <li>• The parameters for analysis;</li> <li>• Identified trigger levels (Trigger Investigation Levels); and</li> <li>• Methods and procedures for investigating and reporting results and exceedances of the Trigger Investigation Levels.</li> </ul>

### 5.5.3.1 North Drain

ITA stormwater within the North Drain ITA Catchment is regularly monitored at five points in the vicinity of the North Drain– four discharge points from ponds (East Pond outlet, CY19 Outlet, and Runoff Y56K) and one in North Drain from a (Site 1C). In NZ Steel’s annual reports required under the Existing ITA Discharge Permit, discharges for the East Pond discharge (previously referred to as the L Drain Outlet) are used to assess discharges to the North Drain. NZ Steel reports that Yard 56K Pond only discharges intermittently, following heavy rainfall. These six points were monitored weekly until November 2015 and monthly thereafter, when there has been sufficient rainfall.

### 5.5.3.2 Kahawai Stream

Discharges to the Kahawai Stream are monitored at four locations: in the stream upstream of the discharge, at the treatment pond, at the Kahawai Tributary culvert prior to discharge to the main stream, and in the stream around 500 m downstream of the discharge. These points were monitored quarterly until August 2015 and monthly thereafter, when there has been sufficient rainfall.

### 5.5.3.3 Ruakohua Stream

ITA stormwater from two areas in the south-east of the ITA Area discharges to the Ruakohua Stream: the Contractors Compound and Yard 31. The discharge points of the Contractors Compound Melter Aggregate beds, and Yard 31 settlement ponds are monitored quarterly, when there has been sufficient rainfall.

## 5.5.4 Summary of discharge monitoring required by the Existing Consents

**Table 5.2** below summarises the monitoring required to be undertaken including parameters and frequency.

**Table 5.2: Sampling parameters**

Permit	Activity	Location	Frequency	Parameters
21575	Discharge of stormwater and process water	Northside Outfall discharge		Flow, pH, temperature, TSS <sup>1</sup> , dissolved oxygen,

Permit	Activity	Location	Frequency	Parameters
21576	Discharge of stormwater and process water	Southside Outfall discharge	Daily (grab and composite)	oil & grease, cadmium, chromium, copper, iron, lead, nickel, zinc
21577	Discharge of dewatering water	Dewatering Plant discharge	Continuous (reported daily)	Flow and rate, TSS turbidity
41027	Discharge of contaminants from an Industrial or Trade Activity	Culvert Kahawai	Monthly during or following a rainfall event <sup>3</sup> .	pH, TSS, TPH <sup>2</sup> , aluminium, boron, chromium, copper, iron, lead, nickel, zinc
		CY19 Pond		
		East Pond		
		Metal Cutting Yard Pond		
		Outlet L Drain		
		Y56K Pond		
		Kahawai Downstream 2		
		Kahawai Upstream 1		
		Contractors Compound	3-monthly <sup>3</sup>	
Yard 31				

#### Notes

1. Total suspended solids
2. Total petroleum hydrocarbons
3. Frequency not stipulated by consent. The monthly monitoring conducted under the Existing ITA Discharge Permit is typically carried out as rainfall event-based sampling, though some locations are monitored more frequently.

## 5.6 Complaint response

NZ Steel maintains a complaint procedure for timely and appropriate response to any environmental complaints. This includes a (confidential) register of the location of the complainant, the nature of the complaint and any actions taken to investigate and resolve the complaint. The internal complaints procedure ensures that concerns reported to NZ Steel are reviewed and where relevant, are reported to Auckland Council. Complaints are also reported on at the Environment Committee, which currently meets three times a year.

In general, an average of four complaints per year have been received. This is a relatively small number of complaints given the scale of the Steel Mill operation. These complaints are generally related to dust, noise and traffic, although they are not all necessarily related to Steel Mill activities.

The nature of the complaint will determine the actions taken, however all complaints relating to the Steel Mill operations are handled through NZ Steel's Environment Team. In general, once a complaint is received a visit to the complainant is arranged to view and discuss the nature of the complaint. If applicable, samples are collected for analysis to assist in determining if the Steel Mill is likely responsible. This will then determine the steps taken to resolve the issue. This is done formally with letters and documented in NZ Steel's complaints register.

## 6 Resource consent requirements

### 6.1 Introduction

This application seeks to replace the Existing Consents held by NZ Steel. The requirements for these replacement resource consents are determined by the rules in the AUP and the Freshwater NES.

The AUP rules which apply are determined by the zoning of the Site, any identified notations in the plan and the nature of the activities undertaken. Section 6.2.4 sets out the resource consent requirements pursuant to the AUP, and Section 6.2.6 identifies the relevant permitted activity rules. An assessment of the applicable permitted and controlled activity standards in the AUP is provided in **Appendix F**.

Section 6.3 assesses the Proposal in terms of requirements for resource consents under the Freshwater NES<sup>76</sup>.

For the avoidance of doubt, NZ Steel is seeking resource consent under the rules and regulations identified below and any other consents necessary to authorise the activities described in the application, even if not specifically noted.

### 6.2 Auckland Unitary Plan

#### 6.2.1 Zoning and planning notations

**Table 6.1** identifies the AUP zoning and planning notations that apply to the Site or are otherwise relevant to the application. Figure W3 in **Appendix E**) shows the applicable AUP zones of the Site, and Figure W4 shows the zoning specific to the Outfall structures. A copy of the AUP Planning Maps that show the locations of the precinct, overlays and controls are included in **Appendix D**.

**Table 6.1: Zoning and planning notations**

	Zoning/planning notation	Location
<b>Zoning</b>	Business – Heavy Industry Zone	Covers most of the Site south of Brookside Road including the entire ITA Area.
	Rural – Mixed Rural Zone	Applies to the land within the Site to the north of Brookside Road (except land directly adjacent the Waiuku Estuary).
	Rural – Rural Production Zone	Applies to the area of land within the Site on the eastern side of Mission Bush Road.
	Rural – Rural Coastal Zone – Manukau Harbour	Applies to the area of land within the north-west portion of the Site adjacent to the Manukau Harbour (outside of that identified for Business – Heavy Industrial zone).
	Open Space – Conservation Zone	Applies to the coastal esplanade strip along almost all of the western side of the Site. This is owned by Auckland Council (landowner

<sup>76</sup>The Freshwater NES came into force on 3 September 2020, and there may be duplication or conflict between specific AUP rules and the Freshwater NES. As such, relevant chapters of the AUP, such as E4, E8, E13, F2 note that if certain activities provided in the rules, including any associated matters of discretion, are also regulated by the Freshwater NES, then in case of conflict, the most restrictive provision will prevail. If the Freshwater NES does not apply to an activity, then the AUP rules apply.

	Zoning/planning notation	Location
		approval is being sought concurrently). The Southside Outfall Structure is within this zone.
	Coastal – Coastal Transition Zone <sup>77</sup>	Applies to small areas between the indicative coastline (the AUP approximation of MHWS) and the coastal esplanade strip. A small portion of the Southside Outfall appears to be within this zone.
	Coastal – General Coastal Marine Zone	Applies to the CMA adjacent to the Site, and the majority of the Waiuku Estuary and wider Manukau Harbour.
<b>Precinct</b>	Glenbrook Steel Mill Precinct	Applies to the same area as the Business – Heavy Industry Zone.
<b>Overlays</b>	Natural Resources: Significant Ecological Areas Overlay [rp] SEA-M2-32a, Marine 2	These two SEAs have similar but slightly different footprints. They apply to much of the CMA in the northern part of the Waiuku Estuary, including near the mouth of the Kahawai and Lower North Streams.
	Natural Resources: Significant Ecological Areas Overlay [rp] SEA-M2-32w1, Significant wading bird area, Marine 2	
	Natural Resources: Significant Ecological Areas Overlay [rp] SEA-M1-32w2 and M1 – 32b, Significant wading bird area, Marine 1	Located approximately 1 km to the west of the Kahawai Stream mouth, on the opposite side of the Waiuku Estuary.
	Natural Resources: Significant Ecological Areas Overlay [rp] SEA-M2-319w1, Significant wading bird area, Marine 2	Located approximately 1.5 km to the south of the ITA Area.
	Natural Resources: Significant Ecological Areas Overlay [rp] SEA_T_5329 Terrestrial and SEA_T_5330 Terrestrial	These two SEAs apply to small areas at the south-eastern extent of the Site, SEA_T_5329 is within the Business – Heavy Industry Zone to the north west of Williams Road, SEA_T_5330 is within the Rural – Rural Production Zone to the north east of Mission Bush Road.
	Natural Resources: High-Use Aquifer Management Areas Overlay [rp] – Waiuku Kaawa	Applies to the whole Site and wider area.
	Natural Resources: High-Use Aquifer Management Areas Overlay [rp] – Glenbrook Volcanic	Applies to part of the Site to the north and east.
	Natural Resources: Quality-Sensitive Aquifer Management Areas Overlay [rp] – Franklin Volcanic Aquifer	Applies to part of the Site to the north and east.

<sup>77</sup> The Coastal – Coastal Transition Zone applies to land above MHWS and has an administrative function, to determine zoning for previously unzoned portions of land. In this case, the provisions of the adjacent zone (Open Space – Conservation Zone) apply, in accordance with Standard F8.2(2)(b).

	Zoning/planning notation	Location
	Infrastructure: National Grid Corridor Overlay – National Grid Yard Uncompromised; National Grid Subdivision Corridor; National Grid Substation Corridor	Applies to the north-eastern part of the Site.
<b>Controls</b>	Coastal Inundation 1 percent AEP Plus 1 m Control – 1 m sea level rise	Applies to a small area along the coast of the Site, including the location of the Northside and Southside Outfalls.
	Macroinvertebrate Community Index – Exotic; Native; Rural; Urban	Each index varies across the Site. This control applies to much of the Auckland Region.

### 6.2.2 Explanation of discharge rules

This application seeks authorisation for the ongoing discharge of ITA stormwater, process water and leachate from the Steel Mill (including changes to discharges resulting from an EAF) to streams and the CMA, under section 15 of the RMA. The rules in the AUP that apply to these discharges are found in different chapters. The rules in Chapter E33 (discharges from ITA areas) only authorise the discharge of contaminants carried by the water, and not the quantum of water itself. Discharge rules in other chapters therefore apply to the quantity of water being discharged, and the relevant chapter depends on both the source of the water and where it is discharged to.

To assist with rule interpretation, **Table 6.2** below sets out each of the discharge types, the receiving environment, and what component of the discharge is authorised by the rules in the relevant chapter (i.e., contaminants/quality, or water/quantity).

**Table 6.2: AUP chapters applying to the discharges**

Discharge type	Component	Receiving environment	Relevant Chapter	Discharges to:
ITA Stormwater	Contaminants (quality)	Water, CMA	E33 (Industrial and trade activities) F2 (General Coastal Marine Zone)	<ul style="list-style-type: none"> <li>North Drain</li> <li>Ruakohua Stream</li> <li>Kahawai Stream (Future)CMA (via Northside Outfall)</li> <li>CMA (via Southside Outfall)</li> </ul>
ITA Stormwater	Water (quantity)	Water, CMA	E8 (Stormwater – Discharge and diversion) F2 (General Coastal Marine Zone)	<ul style="list-style-type: none"> <li>North Drain</li> <li>Ruakohua Stream</li> <li>Kahawai Stream (Future)CMA (via Northside Outfall)</li> <li>CMA (via Southside Outfall)</li> </ul>
Process Water	Contaminants (quality)	Water, CMA	E33 (Industrial and trade activities) F2 (General Coastal Marine Zone)	<ul style="list-style-type: none"> <li>North Drain</li> <li>CMA (via Northside Outfall)</li> <li>CMA (via Southside Outfall)</li> </ul>
Process Water	Water (quantity)	CMA	F2 (Coastal – General)	<ul style="list-style-type: none"> <li>CMA (via Northside Outfall)</li> <li>CMA (via Southside Outfall)</li> </ul>

Discharge type	Component	Receiving environment	Relevant Chapter	Discharges to:
			Coastal Marine Zone)	
Process Water	Water (quantity)	Water	E4 (Other discharges of contaminants)	<ul style="list-style-type: none"> <li>North Drain</li> </ul>
Leachate (West and East Landfills)	Contaminants (quality) and water (quantity)	CMA	E13 (Cleanfills, managed fills and landfills)	<ul style="list-style-type: none"> <li>CMA (via Northside Outfall)</li> </ul>

### 6.2.3 Explanation of other rules

In addition to the discharge rules addressed in Section 6.2.2 above, this application also seeks consent for the ongoing diversion of the North Drain, the occupation and use of the CMA by the Northside and Southside Outfall Structures, and the use of land by the Steel Mill. The rules that apply to these activities are set out in **Table 6.3** below.

**Table 6.3: AUP chapters applying to the water diversion, coastal occupation and ITA land use**

Activity	Relevant Chapter
Occupation and use of the CMA by the Southside and Northside Outfall Structures	F2 (Coastal – General Coastal Marine Zone) (occupation and use) E33 (Industrial and trade activities) (use)
The ongoing diversion of water in the North Drain (an artificial watercourse) and its discharge into the Lower North Stream	E7 (Taking, using, damming and diversion of water and drilling). As the North Drain is an artificial watercourse, Chapter E3 (Lakes, rivers, streams and wetlands) does not apply
Use of land (ITA Area) for an industrial or trade activity	E33 (Industrial and trade activities)

### 6.2.4 Reasons for consent

**Table 6.4** below sets out the reasons consent is sought under the AUP.

**Table 6.4: Resource consents required under the AUP**

Proposed activity	Rule description and assessment	Activity status
<b>Discharging contaminants from industrial or trade activity areas (RMA section 15)</b>		
Discharge of contaminants from the ITA Area into land and water, including to the CMA. This is comprised of contaminants in ITA stormwater and process water that are discharged to: <ul style="list-style-type: none"> <li>North Drain</li> <li>Ruakohua Stream</li> <li>Kahawai Stream (Future)</li> </ul>	<b>E33.4.2 (A23)</b> Rules in Activity Table E33.4.2 specify the activity status of discharges of contaminants from industrial or trade activity areas pursuant to section 15 of the RMA. “Discharge of contaminants from an existing industrial or trade activity area listed as high risk in Table E33.4.3” is a discretionary activity. Note that F2.19.7 (A65) “discharge of stormwater, discharge of contaminants from industrial or trade	Discretionary

Proposed activity	Rule description and assessment	Activity status
<p>– CMA via the Northside and Southside Outfalls</p> <p>Refinement of ores and the processing of metal over an area larger than 5,000 m<sup>2</sup> is a ‘high risk’ activity in Table E33.4.3. Metal processing over an area more than 1,000 m<sup>2</sup> is considered a ‘moderate risk’. Overall, the activities occurring on site would be considered ‘high risk’.</p> <p>As set out in <b>Table 6.2</b>, the water (quantity) component of these discharges is addressed by the rules in E4, E8 and F2.</p>	<p>activity areas, or discharge of agrichemicals” does not specify an activity status and instead refers to E8, E33, and E34.</p> <p>The use of land for an industrial or trade activity pursuant to section 9(2) of the RMA is specified by Activity Table E33.4.1 (addressed below).</p>	
<p>Discharge of contaminants from the ITA Area into the CMA.</p> <p>This is comprised of contaminants in ITA stormwater and process water that are discharged to:</p> <ul style="list-style-type: none"> <li>– North Drain</li> <li>– Ruakohua Stream</li> <li>– Kahawai Stream (Future)</li> <li>– CMA via the Northside and Southside Outfalls</li> </ul>	<p><b>F2.19.7 (A65)</b></p> <p>Rules in Activity Table F2.19.7 specify the activity status of discharges other than where it is incidental to an activity covered elsewhere in Chapter F2 pursuant to section 15 of the RMA.</p> <p>“Discharge of stormwater, discharge of contaminants from industrial or trade activity areas, or discharge of agrichemicals”.</p>	Discretionary <sup>78</sup>
<b>Discharging process water from steel mill operations into water (RMA section 15)</b>		
<p>Discharge of the water (quantity) component of process water from the Dewatering Plant to the North Drain.</p> <p>As set out in <b>Table 6.2</b>, the contaminant (quality) component of this discharge is addressed by the rules in E33.</p>	<p><b>E4.4.1 (A15)</b></p> <p>Rules in Activity Table E4.4.1 specify the activity status for discharges of contaminants not otherwise provided for by other parts of the AUP onto or into land and/or water pursuant to section 15 of the RMA.</p> <p>“Discharge of water or contaminants (including washwater) onto or into land and/or into water not complying with the relevant standards or not otherwise provided for by a rule in the Plan” is a discretionary activity.</p>	Discretionary
<b>Occupation and use of the CMA (RMA section 12)</b>		
<p>Occupation and use of the CMA by the Southside and Northside Outfall Structures.</p>	<p><b>F2.19.10 (A133)</b></p> <p>Rules in Activity Table F2.19.10 specify the activity status for the occupation of the CMA pursuant to section 12(2) of the RMA.</p> <p>“Infrastructure coastal marine area structures not otherwise provided for” are a discretionary activity.</p> <p>Use of a structure (pursuant to section 12(3) of the RMA) also has the activity status listed in this table (unless it is addressed more specifically in Table F2.19.8, which does not apply in this case).</p>	Discretionary

<sup>78</sup> Council has advised that Rule F2.19.7 (A65) has the same status as that acquired under Chapter E33, as assessed above.

Proposed activity	Rule description and assessment	Activity status
	It is noted that Section E33.4 of the AUP states that Table E33.4.1 specifies the activity status of the use of a structure in the CMA for industrial or trade activities pursuant to section 12(3) of the RMA. The applicable rule is E33.4.1 (A9) which is addressed below (use of land for an Industrial or Trade Activity) and therefore this is not discussed further.	
<b>Diversion of surface water and associated discharges (RMA sections 14 and 15)</b>		
The ongoing diversion of water in the North Drain (an artificial watercourse <sup>79</sup> ) and its discharge into the Lower North Stream.	<p><b>E7.4.1 (A13)</b></p> <p>Rules in Activity Table E7.4.1 specify the activity status in relation to the taking, using, damming and diversion of surface water and groundwater in accordance with section 14(1) and section 14(3) of the RMA, and discharges associated with the diversion of surface water in accordance with section 15 of the RMA.</p> <p>“Diverting surface water not meeting the permitted activity standards or not otherwise listed” is a discretionary activity in all zones (outside of a Wetland Management Areas Overlay).</p> <p>The diversion of water into an artificial watercourse is permitted under E7.4.1 (A11) where the standards in E7.6.1.2 are met. In this instance, Standard E7.6.1.2(7) is not met as the diverted water may reduce the water quality of the downstream waterbody (Lower North Stream), and consent is therefore required as a discretionary activity.</p>	Discretionary
<b>Use of land for an Industrial or Trade Activity (RMA section 9(2))</b>		
Use of land (ITA Area) for an industrial or trade activity.	<p><b>E33.4.1 (A9)</b></p> <p>Rules in Activity Table E33.4.1 specify the activity status in relation to use of land for an industrial or trade activity in accordance with section 9(2) of the RMA.</p> <p>“Any activity in this table that does not meet the relevant permitted or controlled land use standards” is a discretionary activity.</p> <p>Use of land for an existing industrial or trade activity listed as high risk in Table E33.4.3 (after the Table E33.4.1 timeframe expires) is a controlled activity under E33.4.1 (A7) when the standards in E33.6.2.1 and E33.6.1.1(1)-(12) are met. In this instance, Standard E33.6.1.1(1) is not met as wastewater is not disposed of via the sanitary sewer or appropriately authorised system or facility, and</p>	Discretionary

<sup>79</sup> Artificial watercourse is defined as: “Constructed watercourses that contain no natural portions from their confluence with a river or stream to their headwaters. Includes:

- canals that supply water to electricity power generation plants;
- farm drainage canals;
- irrigation canals; and
- water supply races.

Excludes:

- naturally occurring watercourses.”



Proposed activity	Rule description and assessment	Activity status
	<p>Standard E33.6.1.1(9) is not met as inspections are not undertaken weekly, and consent is therefore required as a discretionary activity in accordance with section 9(2) of the RMA.</p> <p>As noted above, Activity Table E33.4.1 also specifies the activity status of the use of a structure in the coastal marine area for industrial or trade activities pursuant to section 12(3) of the RMA.</p>	
<b>Discharge of leachate (RMA section 15)</b>		
The discharge of leachate (contaminants/ quality, and water/ quantity) from the active East Landfill to the CMA from the Northside Outfall, via the Northside Ponds.	<p><b>E13.4.1 (A10)</b></p> <p>Activity Table E13.4.1 specifies the activity status of discharges from landfills pursuant to section 15 of the RMA.</p> <p>“Discharges from operative landfills” is a discretionary activity.</p>	Discretionary
The discharge of leachate (contaminants/ quality, and water/ quantity) from the closed West Landfill to the CMA from the Northside Outfall, via the Northside Ponds.	<p><b>E13.4.1 (A12)</b></p> <p>Activity Table E13.4.1 specifies the activity status of discharges from landfills pursuant to section 15 of the RMA.</p> <p>“Discharges from closed landfills that do not comply with Standard E13.6.1.3 or Standard E13.6.1.4” is a controlled activity provided the standards in E13.6.2.4 are met.</p> <p>In this instance, the discharge does not comply with permitted activity Standard E13.6.1.4(1) as contaminants in the Northside Outfall discharge (containing leachate) exceed the 80% trigger values for toxicants at alternative levels of protection of the Australian and New Zealand Environment and Conservation Council Guidelines for Fresh and Marine Water Quality 2000. The discharge complies with controlled activity Standard E13.6.2.4, and consent is therefore required as a controlled activity.</p>	Controlled
The discharge of leachate (contaminants/ quality, and water/ quantity) from the active East Landfill and the closed West Landfill to the CMA from the Northside Outfall, via the Northside Ponds.	<p><b>F2.19.7 (A70)</b></p> <p>Rules in Activity Table F2.19.7 specify the activity status of discharges other than where it is incidental to an activity covered elsewhere in Chapter F2 pursuant to section 15 of the RMA.</p> <p>‘Discharges not otherwise authorised by a rule in the Plan, or subject to the Resource Management (Marine Pollution) Regulations 1998, that do not comply with the permitted activity standards’.</p>	Discretionary

## 6.2.5 Matters of control and assessment criteria

Under Rule E13.4.1 (A12) in relation to the discharge of leachate from the closed West Landfill, Council has limited its control and assessment to the matters and criterion identified in **Table 6.5** below. The assessment in Section 7 of this AEE incorporates these matters.

**Table 6.5: Controlled activities – matters of control and assessment criteria**

Rule reference	Matters of control/ assessment criteria
E13.4.1 (A12) – Discharges of leachate from the closed West Landfill to the CMA from the Northside Outfall, via the Northside Ponds, that do not comply with Standard E13.6.1.3 or Standard E13.6.1.4.	<ul style="list-style-type: none"> <li>• E13.7.1. Matters of control</li> <li>• The Council will restrict its control to all of the following matters when assessing a controlled activity resource consent application:</li> <li>• ... <ul style="list-style-type: none"> <li>(4) Discharges from closed landfills that do not comply with Standard E13.6.1.3 or Standard E13.6.1.4: <ul style="list-style-type: none"> <li>(a) the adequacy of the site investigation (closed landfill) report including: <ul style="list-style-type: none"> <li>(i) site sampling;</li> <li>(ii) laboratory analysis; and</li> <li>(iii) risk assessment.</li> </ul> </li> <li>(b) The adequacy of the site aftercare plan including: <ul style="list-style-type: none"> <li>(i) Aftercare activities to address the risk posed by the contaminants to the environment; and</li> <li>(ii) Timing and standard of aftercare activities.</li> </ul> </li> </ul> </li> </ul> </li> <li>• E13.7.2. Assessment criteria</li> <li>• The Council will consider the relevant assessment criteria below for controlled activities.</li> <li>• ... <ul style="list-style-type: none"> <li>(4) Discharges from closed landfills that do not comply with Standard E13.6.1.3 or Standard E13.6.1.4: <ul style="list-style-type: none"> <li>(a) the extent to which the site aftercare plan will avoid, remedy or mitigate any adverse effects from discharges from the closed landfill.</li> </ul> </li> </ul> </li> </ul>

### 6.2.6 Permitted activities

The following Proposed activities in **Table 6.6** have been identified as permitted activities under the AUP. A detailed assessment against the relevant standards is provided in **Appendix F**.

**Table 6.6: Permitted activities**

Proposed activity	Rule description	Comment on compliance
<b>Discharges to the CMA (RMA section 15)</b>		
Discharge of the water quantity component of process water from the Northside and Southside Outfalls into the CMA.  As set out in <b>Table 6.2</b> , the contaminant (quality) component of these discharges is addressed by the rules in E33.	<b>F2.19.7 (A62)</b> “Discharges into the coastal marine area, which are not covered by another rule in the Unitary Plan and not covered by the Resource Management (Marine Pollution) Regulations 1998” are a permitted activity, as the standards in F2.21.1 (all permitted activities) and F2.21.8 (discharges) are met.	The Proposal is assessed under this rule in relation to the discharge of water, and most of the permitted activity standards are therefore not applicable as they relate to structures, construction, and the quality of the discharge.  The Proposal complies with Standard F2.21.8.6 (3) as there is no visible disturbance to substrate of the CMA as a result of the discharges and appropriate scour protection is in place; and complies with Standard F2.21.8.6 (4) as the discharge does not affect public access to or along the coast (given public access

Proposed activity	Rule description	Comment on compliance
		between the Steel Mill and the coast is not enabled due to public health and safety).
<b>Diversion and discharge of stormwater (RMA sections 14 and 15)</b>		
<p>Diversion and discharge of stormwater from existing lawfully established impervious surfaces into water (North Drain, Ruakohua and Kahawai Streams) and from the Northside and Southside Outfalls into the CMA.</p> <p>As set out in <b>Table 6.2</b>, the contaminant (quality) component of these ITA stormwater discharges is addressed by the rules in E33.</p>	<p><b>E8.4.1 (A3)</b></p> <p>“Diversion and discharge of stormwater runoff from lawfully established impervious areas as of 30 September 2013 not directed to a stormwater network or a combined sewer network that complies with Standard E8.6.1 and Standard E8.6.2.2” is a permitted activity.</p> <p>Rules in Activity Table E8.4.1 specify the activity status for the diversion and discharge of stormwater onto or into land or into water or the CMA pursuant to sections 9(2), 14 and 15 of the RMA. This also includes the diversion and discharge of stormwater runoff from impervious areas onto or into land or into water or to the coastal marine area pursuant to sections 14 and 15 of the Resource Management Act 1991.</p>	<p>All diversions and points of discharge are existing, and no nuisance, damage, erosion, scouring flooding or inundation is occurring or anticipated.</p> <p>Standards relating to the quality of the ITA stormwater discharges are not applicable, as this is addressed by the rules in E33.</p>
<b>Damming and diversion of surface water (RMA section 14)</b>		
<p>The ongoing damming of water in existing ponds that are part of NZ Steel’s water treatment and discharge system.</p> <p>The Ruakohua Dam is already consented<sup>80</sup>.</p>	<p><b>E7.4.1 (A29)</b></p> <p>“Off-stream dams<sup>81</sup>” are a permitted activity provided all the standards in E7.6.1.11 (damming water – all dams) and E7.6.1.12 (damming water – off-stream dams) are met.</p> <p>Rules in Activity Table E7.4.1 specify the activity status in relation to the taking, using, damming and diversion of surface water and groundwater in accordance with section 14(1) and section 14(3) of the RMA.</p>	<p>The ponds that are part of NZ Steel’s water treatment and discharge system are assessed against the relevant permitted activity standards. The ponds all comply with each of the permitted activity standards.</p> <p>For reference, those ponds are:</p> <ul style="list-style-type: none"> <li>• Southside Surge Pond</li> <li>• Southside Duty Pond</li> <li>• Northside Ponds (North and South)</li> <li>• SRNZ Ponds (East and West)</li> <li>• North (Closed) Landfill Pond</li> <li>• Dewatering Plant Pond</li> <li>• CY19 Pond</li> <li>• CY1/2 East Pond</li> </ul>

<sup>80</sup> The Ruakohua Dam is authorised by Permit 40650 (expires 31 May 2048).

<sup>81</sup> Off-stream dam is defined as “any structure which impounds surface water but which is not located on the bed of a lake or any river or stream.”

Proposed activity	Rule description	Comment on compliance
		<ul style="list-style-type: none"> <li>• Y56K Pond</li> <li>• Yard 31 Ponds 1 and 2</li> <li>• Metal Cutting Yard (MCY)</li> </ul>
<b>Land use (RMA section 9(3))</b>		
The operation of the Northside and Southside Outfalls in a coastal storm inundation 1 per cent annual exceedance probability (AEP) plus 1m sea level rise area.	<p><b>E36.4.1 (A52)</b></p> <p>“Operation, maintenance, renewal, repair and minor infrastructure upgrading, of infrastructure in areas listed in the heading above that complies with Standard E36.6.1.13” are a permitted activity.</p> <p>Activity Table E36.4.1 specifies the activity status of land use and development activities pursuant to section 9(3) of the RMA.</p>	The Proposal is for the ongoing operation of the existing Northside and Southside Outfalls, and no physical works to the Outfalls is proposed. The only standards relate to the upgrading of infrastructure and therefore the Proposal complies.

### 6.3 Freshwater NES reasons for consent

The Freshwater NES sets out regulations that apply to certain activities that may pose a risk to freshwater and freshwater ecosystems. An assessment of the Proposal against the relevant regulations is set out in **Table 6.7** below.

**Table 6.7: Resource consents required under the Freshwater NES**

Proposed activities	Regulation description and assessment	Activity status
Part 3 Subpart 1 – natural wetlands		
Diversion and discharge of ITA stormwater from the Contractors Compound and Yard 31, both of which are within a 100 m setback from natural inland wetlands <sup>82</sup> on the margins of the Ruakohua Stream.	<p>Regulation 54 (other activities)</p> <p>This regulation requires resource consent if the diversion or discharge of water into water within, or within a 100 m setback from, a natural inland wetland if –</p> <ul style="list-style-type: none"> <li>• There is a hydrological connection between the diversion/discharge and the wetland; and</li> <li>• The discharge will enter the wetland; and</li> <li>• The diversion/discharge will change, or is likely to change, the water level range or hydrological function of the wetland.</li> </ul> <p><b>Comment:</b></p> <p>The proposed diversion and discharge of water is not addressed by other regulations in subpart 1 (it is not associated with specified activities such as wetland restoration, scientific research, construction, etc), and resource consent is therefore required as an ‘other activity’ in accordance with sections 14 and 15 of the RMA<sup>83</sup>.</p>	Non-complying

<sup>82</sup> Natural inland wetlands are identified on Figures W-FWE3 to W-FWE6 in Appendix E.

<sup>83</sup> Page 6 of the Auckland Council practice guidance note states that the Freshwater NES contains regulations that deal with regional functions only (as set out in Regulation 5 of the Freshwater NES) and therefore covers matters under sections 9(1), 13, 14 and 15 of the RMA.

Proposed activities	Regulation description and assessment	Activity status
	<p>The 2022 amendments to Regulation 54(d) of the Freshwater NES<sup>84</sup> are such that all three criteria (listed in 54(d)(i), (ii) and (iii)) must be met for a discharge to require consent as a non-complying activity.</p> <p>While there is a hydrological connection between the diversion/discharges from the Contractors Compound and Yard 31 into their respective wetlands on the Ruakohua Stream/Tributary, the discharges may not change, or be likely to change, the water level range or hydrological function of the wetlands.</p> <p>In addition to the conservative basis for assessment set out above, there is also a reasonable basis to consider that the Ruakohua Stream Exotic Wetland 3 (on the Ruakohua Tributary) is not a natural inland wetland as discussed in Section 2.7.5.</p> <p>Notwithstanding this position, in an abundance of caution and in keeping with the conservative approach to effects assessment and management adopted throughout this application, NZ Steel seeks consent to authorise activities under Regulation 54(d).</p>	

#### 6.4 Summary of reasons for consent

Based on the above assessment, consent for the Proposal is sought from the Council for the following reasons:

- Discharge of contaminants from the ITA Area into land and water, including the CMA, pursuant to Rules E33.4.2 (A23) and F2.19.7 (A65) and section 15 of the RMA, as a **discretionary activity**.
- Discharge of the water component of process water from the Dewatering Plant to the North Drain, pursuant to Rule E4.4.1 (A15) and section 15 of the RMA, as a **discretionary activity**.
- Occupation and use of the CMA by the Northside and Southside Outfall Structures, pursuant to Rule F2.19.10 (A133) and section 12 of the RMA, as a **discretionary activity**.
- Ongoing diversion of water in the North Drain (an artificial watercourse) and associated discharges, pursuant to Rule E7.4.1 (A13) and sections 14 and 15 of the RMA, as a **discretionary activity**.
- Use of land (ITA Area) for an industrial or trade activity, pursuant to Rule E33.4.1 (A9) and section 9(2) of the RMA, as a **discretionary activity**.
- Discharge of leachate from the active Brookside East Landfill to the CMA, pursuant to Rules E13.4.1 (A10) and F2.19.7 (A70) and section 15 of the RMA, as a **discretionary activity**.
- Discharge of leachate from the closed West Landfill to the CMA, pursuant to Rule E13.4.1 (A12) and section 15 of the RMA, as a **controlled activity**; and pursuant to Rule F2.19.7 (A70) and section 15 of the RMA, as a discretionary activity.
- Discharge and diversion of water within, or within a 100 m setback from a natural inland wetland pursuant to Regulation 54 of the Freshwater NES and sections 14 and 15 of the RMA, as a **non-complying activity** (based on the conservative assessment set out above at section 6.3).

<sup>84</sup> Resource Management (National Environmental Standards for Freshwater) Amendment Regulations (No 2) 2022.

But for NZ Steel's conservative approach to the consideration of the Freshwater NES, the application would have an overall activity status of **discretionary**. However, out of an abundance of caution, this AEE has been prepared with the conservative approach which results in the overall activity status of this application being **non-complying**.

For the avoidance of doubt, NZ Steel is seeking resource consent under the rules identified above and any other consents necessary to authorise the activities described in the application, even if not specifically noted.

## 7 Assessment of effects on the environment

### 7.1 Scope of assessment

Schedule 4 and section 104 of the RMA require assessment of effects on the environment of allowing an activity. The “environment” upon which effects must be assessed is discussed at Section 2.3.2 of this AEE.

In accordance with section 104(1)(a) of the RMA, the assessment set out in the following sections identifies and assesses the types of effects that may arise from the proposed activities provided for under this application (i.e., Glenbrook Steel Mill operations both with and without the EAF). This assessment also outlines the measures that NZ Steel proposes to avoid, remedy or mitigate any actual or potential adverse effects on the environment, together with compensation proposed to address residual adverse effects<sup>85</sup>.

Overall, the activity falls for consideration as a non-complying activity due to the conservative assessment (described above at Section 6.3) that water is being discharged within, or within 100 m from, natural inland wetlands (under the NES Freshwater). All other resource consent requirements are discretionary activities, with the exception of the discharge of leachate from the closed West Landfill which is a controlled activity pursuant to E13.4.1 (A12) of the AUP. In relation to the latter, the applicable Matters of Control are contained at E13.7.1(4) and the associated Assessment Criteria are contained at E13.7.2(4). These have been considered below along with a broader assessment of effects in recognition of the overall non-complying status of the application.

This assessment draws on information provided in the technical reports contained within **Appendix G to Appendix M** and addresses the following effects:

- Positive effects;
- Effects on freshwater ecology and wetlands;
- Effects on marine ecology;
- Cultural effects;
- Effects of landfill leachate discharges;
- Effects of the outfall structures occupying the CMA;
- Effect of using the land for an ITA;
- Effects of replacing the North Drain diversion consent; and
- Cumulative effects.

### 7.2 Positive effects

#### 7.2.1 Economic and social effects

The NZ Steel business is a manufacturer of flat, rolled steel and long products for the building, construction, manufacturing and agricultural businesses. The Steel Mill is the only domestic producer of steel products from predominantly locally sourced raw materials – Primary Concentrate (ironsand), coal and limestone – in accordance with New Zealand’s strict environmental, employment, safety and quality standards. NZ Steel is a significant contributor to the national and regional economy. Business and Economic Research Limited (BERL) has produced an Economic Impact Statement (**Appendix M**) which provides an independent summary of the economic

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<sup>85</sup> Effects on biodiversity or ecological value that cannot be avoided or mitigated.

contribution of NZ Steel's operations, including the Steel Mill. Including the economic impacts, a number of positive effects arise from the operation of the Steel Mill. These positive effects include:<sup>86</sup>

- In 2019/20 the GDP impact of NZ Steel's operations on New Zealand's economy was approximately \$600 million. This included approximately \$273 million of direct impact, \$107 million indirect impact and \$216 million of induced impact. To put the direct contribution of NZ Steel to Auckland's GDP into context, the direct impact of NZ Steel in Auckland is comparable to commission-based wholesaling industry which had a direct GDP contribution of \$250 million in 2020 and the accommodation industry which directly contributed \$307 million to Auckland's GDP;
- NZ Steel directly employs around 1,250 people. Nationally, the employment impacts of NZ Steel supports a total of 4,063 full time equivalent employees, businesses and suppliers by utilising their goods and services;
- NZ Steel's total expenditure, including indirect and induced impacts, contributed approximately \$1.62 billion to the NZ economy in the 2019/20 financial year;
- For every tonne of steel produced in New Zealand, 80% of the dollars spent on that steel stays within New Zealand, compared to only 5% of the dollars spent on imported steel<sup>87</sup>;
- NZ Steel also sponsors several community programmes relating to environmental awareness such as the Tread Lightly Caravan, Trees for Survival and Te Whangai Trust;
- The Steel Mill has existed on the Site since 1968. The ongoing use of the existing infrastructure provides for efficient use of resources and infrastructure. Significant capital investment has been required to set up the infrastructure and asset base that exists at the Site today; and
- The EAF will reduce direct greenhouse gas emissions at the Site by approximately 800,000 tonnes of CO<sub>2</sub>e per annum, equivalent to 45 percent of the Site's greenhouse gas emissions with the average embodied carbon per tonne below the world average<sup>88</sup>. It also provides a circular economy for scrap steel within New Zealand.

The Steel Mill contributes significantly to the wellbeing of those directly employed and the wider economy, and its ongoing use of existing infrastructure represents an efficient use of resources while the EAF comprises an important step to decarbonise the Steel Mill and contribute to achieving New Zealand's net zero emissions goal by 2050.

### 7.2.2 Positive ecological effects

In addition to the positive social and economic wellbeing effects set out above, the Proposal also includes positive ecological effects, including:

- Proposed compensation for residual adverse effects in relation to coastal birds. This compensation and the associated positive effects are discussed in Section 7.4.6 below; and
- Proposed ecological enhancement for freshwater wetlands, which NZ Steel has elected to propose to provide additional positive outcomes to wetland biodiversity and habitat quality, which goes above and beyond any requirements to compensate for residual effects (discussed further at Section 7.3.6 below).

<sup>86</sup> With the exception of the information related to the EAF, this data was current at the time of original lodgement in June 2021.

<sup>87</sup> NZ Steel Sustainability snapshot, July 2020. <https://www.nzsteel.co.nz/assets/Uploads/Files/NZPI-SustainabilityDocument-Jul20-web3.pdf>

<sup>88</sup> <https://www.mbie.govt.nz/about/news/government-announces-emissions-reduction-partnership-with-new-zealand-steel/>



## 7.3 Effects on freshwater ecology

### 7.3.1 Introduction to freshwater ecological effects

The assessment of potential ecological effects follows the framework outlined in the EclAG guidelines. The EclAG assessment involves assigning a level to the ecological value and a magnitude of effect, which is then used to determine the overall level of effect (ranging from Very High to Net Gain).

As set out in Section 2, the effects of the Proposal are assessed against the Receiving Environment, which is essentially the environment that would exist (over the equivalent term of the consent) in the absence of the proposed discharges. In addition, the NPSFM directs that when assessing loss of extent or values, both the 'existing' and 'potential' stream and wetland values need to be considered. For this assessment, the 'potential' values have been incorporated into the Receiving Environment and include the anticipated maturing of existing riparian planting (see also Section 3.2.1.2.1 of the Freshwater Ecological Assessment).

### 7.3.2 Effects on the North Drain and Lower North Stream

#### Effects of the discharge quantity

The Dewatering Plant discharge to the North Drain is a significant and relatively constant flow, discharging an average flow of 3,915 m<sup>3</sup> per day, with a monthly average consent limit of 7,400 m<sup>3</sup> per day. High level assessment indicates that the Dewatering Plant contributes on average 80%<sup>89</sup> of the total flow within the Lower North Stream at the river mouth, increasing to 99% during low flow events, except on the one to two days per week when it is not operating (refer to Sections 2.5.3 and 2.6.2).

The North Drain and Lower North Stream Receiving Environments would be quite different than the Current Environments, due primarily to the removal of the Dewatering Plant discharge flow volume. By removing this primary source of stream flow, the classification of the watercourses would change from permanent to intermittent, and there would be very little base flow during the driest periods of the year. This would reduce the available instream habitat area for macroinvertebrate and fish, of which several fish species have an 'At Risk' threat classification, and significantly reduce the extent of the wetlands as they rely on constantly or intermittently wet soil for their existence. These smaller and ephemeral wetlands would also support a lower diversity of native species, including wetland bird species. As noted above, the Proposal's continuation of the Dewatering Plant discharge would therefore have a positive effect through enabling of continued flows that support existing stream and wetland habitat.

When the EAF is operational, the Dewatering Plant discharge will increase base flows at the stream mouth by an estimated 40% (which is approximately half of the discharge quantity under current operation). This will maintain the Lower North Stream as a permanent stream but will be a reduction in supplementary base flows compared to the Current Environment. Any changes to the discharge volume due to the operation of the EAF will not likely result in a change in the salinity/ brackish nature of the discharge as this is associated with the source water. In addition, the Dewatering Plant discharge will be passed through the Dewatering Plant ponds, which will buffer flows into the Lower North Stream reducing the artificial 'flashiness'. The change in supplementary flows will likely cause a shift in the available instream habitat associated with the current Dewatering Plant discharges. However, the supplementary flow that is likely to occur when the EAF is operational will still provide the same benefits identified above (i.e., positive effects on habitat and buffering of toxicity effects). The change in discharge volume predicted will likely see an initial shift in the available habitat for

<sup>89</sup> Calculated using the long-term median (50<sup>th</sup> percentile) flow.

macroinvertebrates and fish, however; over time, stream habitat is likely to become redistributed in alignment with the change in discharge volume (and flow availability within the Lower North Stream).

Consequently, the enabled continuation of the quantity aspect of the Dewatering Plant discharge provides numerous positive benefits to the freshwater and wetland ecological values of the Lower North Stream. In fact, the Freshwater Ecological Report finds that the flow contribution of the Dewatering Plant discharge (including that of the reduced quantity of discharge as a result of the EAF) would likely have a greater positive effect on the stream than the adverse effects of the discharge salinity levels.

### **Effects of discharged contaminants**

Monitoring within the North Drain and Lower North Stream (after mixing) show that most contaminants meet the relevant ANZWQG values for the protection of freshwater species, with only aluminium and vanadium exceeding the 80% protection level.

Notwithstanding the good removal efficiencies of the treatment methods, the high incoming loads and the fine nature of the materials mean that the discharge concentrations may contain relatively high sediment and suspended metal loads during heavy rainfall events, which will result in short term impacts on water quality within the North Drain and Lower North Stream.

These exceedances suggest that discharges could result in adverse effects on freshwater ecological values in both the North Drain and Lower North Stream. The Dewatering Plant discharge to the North Drain is brackish, and this salinity (and associated water hardness and lower pH) regulates the toxicity of metals concentrations present in the watercourse. This reduces the potential ecological effects of the metal's concentrations in the discharges. However, salinity in freshwater environments can be harmful to organisms when concentrations are beyond its natural fluctuations, as it exceeds their ability to balance salt concentrations. It is likely that the Dewatering Plant discharge would exclude saline-sensitive macroinvertebrate taxa from the North Drain and Lower North Stream. However, the Freshwater Ecological Report considers it unlikely that this change in macroinvertebrate taxa would impact the availability of prey for the fish species that are present.

In addition, the potential toxicity of instream sediments was analysed. This analysis suggests that sediment in the Dewatering Plant and ITA stormwater discharges settles out on the bed of the Lower North Stream. Sediment quality in the Lower North Stream Receiving Environment would be expected to exceed ANZWQG values directly downstream of Brookside Road. However, sediment quality would also be expected to have improved over time as large rainfall events mobilise sediments and re-distribute them downstream and out into the Waiuku Estuary<sup>90</sup>.

The Freshwater Ecological Assessment concludes that the Dewatering Plant and ITA stormwater discharges would have a Low (no more than minor) overall level of effect on the freshwater ecology of the North Drain and Lower North Stream Receiving Environment.

To support the conclusion of this consent application in regard to the ITA stormwater effects on the Lower North Stream, a composite sampling monitoring programme has recently been implemented to gain a greater understanding of the long term contaminant concentrations within the Lower North Stream. Results to date meet ANZWQG values for 80% SPL across most contaminants, as a long term average. In the event that continued monitoring shows that the long-term contaminant concentrations are not consistently meeting targets, additional controls will be implemented, including additional treatment.

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<sup>90</sup> An assessment of the effects of contaminants in stream sediments on marine biota is provided in Section 7.4 and the Marine Ecology Assessment (**Appendix I**).

NZ Steel has also implemented numerous improvements to its water management systems since the existing Discharge Permits were issued in 2003 (Dewatering Plant Permit 21577) and 2013 (ITA stormwater discharge Permit 41027), which are set out in the ITA Report (**Appendix G**). The controls are largely effective at removing contaminants and sediment from the ITA stormwater and Dewatering Plant discharges. The quality of the discharges can be expected to improve over the term of the consent due to NZ Steel's practice of continual improvement. With regard to the ITA stormwater and Dewatering Plant discharges to the North Drain, further investigation is underway to confirm the current controls represent the BPO to prevent or minimise adverse effects, or modifications will be implemented to ensure the BPO is adopted. Furthermore, there is no practicable alternative to avoid the Dewatering Plant discharge to the North Drain or adequately reduce its salinity (refer to Section 8).

With regard to changes in quality as a result of the EAF, the Buffer Scrap Yard is proposed to be located within either CY 5/6 or CY 19. As such, the operation of an EAF will reduce any contaminant effects through a reduction in the quantity of coal being stockpiled. If one of the existing coal yards (CY 5/6 or CY 19) is converted to a Scrap Yard, additional stormwater treatment will be provided, including the conversion of existing ponds into a sediment pond/ wetland treatment series. Therefore, the changes associated with the stockpiling of materials within the North Drain ITA Catchment are likely to result in a reduction in the overall contaminant loads (especially from suspended solids and metals). Should CY 5/6 be chosen as the Buffer Scrap Yard area, this will include potential improvements in the performance of the East Pond due to a reduction in the area discharging to the pond. With the proposed controls and treatment, the discharges related to the operation of the EAF are not expected to increase the contaminant levels to the North Drain or impact existing water quality.

On this basis, the adverse effects of the Dewatering Plant and ITA stormwater discharges on the North Drain and Lower North Stream will be avoided and mitigated to the greatest practicable extent, and the adverse effects will be no more than minor. In addition, the proposed wetland enhancement measures set out in Section 7.3.6 will have incidental benefits to the instream communities of the Lower North Stream.

### **7.3.3 Effects on wetlands in the North Stream Catchment**

As described above, the Dewatering Plant discharge provides the primary flow in the North Drain and Lower North Stream. Without this discharge, the wetlands in the Receiving Environment would be significantly reduced in extent. The identified wetlands are essentially floodplain wetlands and are fed by overflow from the streams and groundwater incursion; there is no indication that there is any influence from seepage from the surrounding land area. A reduction in the volume of water within the stream (e.g., by increasing intermittency of stream flows) would impact the extent of the identified wetlands by drawing down the amount of water available to maintain wetland extent. All else being equal, these smaller Receiving Environment wetlands would also have lower indigenous biodiversity values, and they may be unsuitable for wetland birds due to the reduced extent and/or quality of wetland foraging and nesting habitat. The Dewatering Plant discharge contains parameters that could have direct and indirect effects on wetland ecology. In particular, the brackish nature of the discharge is likely to exclude saline-sensitive wetland plants and macroinvertebrates from the North Stream Catchment wetlands. However, the introduction of the discharge into the stream would provide a significant and relatively constant flow into what would otherwise be an intermittently flowing watercourse, which would result in a substantive increase in both the extent and the values of wetlands in the catchment.

As set out in Section 7.3.2 above, the ITA stormwater discharges to the North Drain contain aluminium, copper, cadmium, and lead concentrations. Parameters exceed relevant ANZWQG for freshwater species in a number of instances and ITA stormwater discharges therefore have the

potential to adversely affect wetland biodiversity. On the basis of the 80% SPL being met immediately downstream of Brookside Road, which will be either confirmed through monitoring that is underway or will be achieved through further improvements, the Freshwater Ecological Assessment assesses the ITA stormwater discharges as having a Low overall level of effect on wetlands.

As noted above, the operation of the EAF is expected to reduce the volume of discharge to the North Stream Catchment from the Dewatering Plant by up to approximately 50% (compared to the Current Environment). This includes a proportional reduction of saline water being discharged and a proportional reduction in contaminants associated with the use of coal and iron sands used in the steel making process. By comparison to the Current Environment, these EAF-related changes to discharge volumes once will result in a decreased wetland extent. However, when compared to the Receiving Environment (i.e. without the Steel Mill's operations), the Steel Mill's operations including the EAF do not have any adverse impact on wetland extent). There is therefore no change in the overall magnitude of effect on the Receiving Environment associated with the EAF discharge. The Freshwater Ecological Assessment concludes that the proposed discharges will have an overall Low level of effect on the wetlands in the North Stream Catchment. While offsetting or compensation is therefore not required by the EclAG framework, in recognition of the sensitivity of wetlands and the policy support for their protection and restoration<sup>91</sup>, NZ Steel proposes to undertake voluntary ecological enhancement measures. The proposed wetland enhancement approach is described in Section 7.3.6.

#### **7.3.4 Effects on Ruakohua Stream and wetlands**

Monitoring indicates that ITA stormwater discharges into the Ruakohua Stream contains parameters that exceed relevant ANZWQG values for the protection of freshwater species, which suggests the discharges could result in adverse effects on freshwater ecological values in the Ruakohua Stream at times when ITA stormwater is flowing into the stream. However, the quality of macroinvertebrate communities downstream of the ITA stormwater discharge points are significantly better than those upstream of the Site. This suggests the water quality of the Ruakohua Stream is primarily influenced by upstream catchment uses (beef and dairy farming and cropping), rather than the proposed discharges.

On this basis, the Proposal is assessed as having no more than minor adverse effects on the freshwater and wetland ecology of the Ruakohua Stream.

#### **7.3.5 Effects on Kahawai Stream and wetlands**

The monitoring of the Kahawai Stream as a result of the former ITA stormwater discharge (described at Section 4.6) contained parameters that exceed relevant ANZWQG values for the protection of freshwater species. These exceedances suggest that discharges could result in adverse effects on freshwater ecological values in the Kahawai Stream Catchment. However, as described in Section 4.5.1, NZ Steel's recent remediation actions within this catchment have resulted in removal of ITA stormwater discharge from this area. Future ITA activities may be undertaken in this area but will be subject to providing Council with information including the nature of activities, potential contaminants, management and operational procedures to manage contaminants, contingency plans and any necessary additional monitoring requirements (as proposed as a condition of consent). This will avoid or mitigate water quality effects of any future ITA activity on the Kahawai Tributary and Stream.

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<sup>91</sup> NPSFM Policy 6: *"There is no further loss of extent of natural inland wetlands, their values and protected, and their restoration is promoted."*

On this basis, the Proposal is assessed as having no more than minor adverse effects on the freshwater and wetland ecology of the Kahawai Tributary and Stream.

### 7.3.6 Proposed ecological enhancement for wetlands

As set out in Section 7.3.3 above, NZ Steel is proposing to undertake voluntary ecological enhancement measures with respect to wetlands on Site. This enhancement is not required to address any residual adverse effects of the Proposal (which have been assessed as no more than minor under the EclAG framework (refer Section 7.3.3)). However, NZ Steel has proposed these enhancement measures to achieve positive effects on wetlands and the wider catchments.

The Freshwater Ecological Assessment (**Appendix H**) and the draft Wetlands Management Plan (WMP)(**Appendix T**) set out the proposed ecological enhancement measures which include:

- Native wetland infill planting
- Wetland margin planting, and
- Pest plant and pest animal control.

With the implementation of the WMP, it is expected that the Proposal will ensure overall positive effects on freshwater wetlands.

## 7.4 Effects on marine ecology

### 7.4.1 Introduction to marine ecological effects

In accordance with the EclAG, the overall level of ecological effect on a species or habitat is derived from both its ecological value, and the magnitude of the effect of the Proposal on that species or habitat. As set out in Section 2.3.2, the effects of the Proposal are assessed against the Receiving Environment, which is essentially the environment that would exist over the term of the consent in the absence of the proposed discharges. The Marine Ecological Assessment in **Appendix I** uses modelling to understand the current environmental state and the ongoing effects of the discharges.

The proposed discharges enter the Waiuku Estuary both directly, via the Northside and Southside Ponds, and indirectly, via the three watercourses that receive discharges further upstream but ultimately discharge to the CMA.

The Marine Ecological Assessment (**Appendix I**) assesses the effects of each of these discharges on ecology in the ZOI, being the Waiuku and Taihiki Estuaries. It separately assesses effects that would occur within the modelled mixing extent (which, by its nature, has a higher level of contaminants) and outside of the modelled mixing extent, over the maximum duration of the replacement consents. The mixing extent has been determined by modelling, and is the area beyond which metals, temperature and changes in salinity are no longer discernible from background concentrations. The zone of reasonable mixing is likely to be smaller than the modelled mixing extent, and is essentially the area in which water is not expected to comply with the relevant quality standards or guidelines. A discussion of the reasonableness of the modelled mixing extent, and the zone of reasonable mixing, is included in Section 7.4.8.

Note that these loads do not account for the likely reduction in flow volumes and contaminant loads if the EAF is installed and fully operational. Therefore, the effects described below present a worst-case scenario and conservative assessment based on current operations.

### 7.4.2 Effects on estuarine habitats

The values of estuarine habitats are influenced by water quality, sediment quality, benthic ecology and shellfish. These habitats are of generally higher value outside the modelled mixing extent and

the settling zones of the Kahawai Stream and Lower North Stream, which reflects the fact that effects from the discharges from the Steel Mill over the last 53 years tend to be most concentrated in the immediate area where they enter the CMA. It also reflects the fact that the Waiuku and Taihiki Estuaries as a whole are currently and historically degraded by sediment (in particular), but also metals and nutrients from catchment sources other than the Steel Mill.

The main contaminant of concern for marine ecology in the areas closest to where the discharges from the Steel Mill enter the CMA is zinc (and to a lesser degree copper and suspended and deposited sediment), particularly in the few hundred metres around the Northside Outfall.

The ITA Area covers approximately 1.5% of the land area of the wider Waiuku Estuary catchment, and the proposed discharges (comprising both ITA stormwater and process water) contribute the following approximate loads:

- 7.0% of the total freshwater flow volume;
- 1.3% of the total sediment load, which contains 6.4% of the very fine sediment load;
- 17.2% of the total copper load; and
- 62.4% of the total zinc load.

As would be expected, ecological effects from the discharges are most pronounced within the marine modelled mixing extent, and to a lesser degree within in the settling zones<sup>92</sup> of the Lower North Stream and the Kahawai Stream (based on former monitoring as discussed at Section 4.6). These areas of greatest effect are small on the scale of the ZOI, with the modelled mixing extent only covering approximately 0.5% of the 1,900 ha of intertidal area of the Waiuku and Taihiki Estuaries. Outside of the modelled mixing extent, the overall level of effect of the discharges on estuarine habitats in the ZOI is assessed as Low and is considered to be no more than minor.

A summary of the effects of the discharges on the influences on estuarine habitat, being water and sediment quality, is as follows.

### **Water quality**

The water quality components of the discharges that are relevant to marine ecology are primarily elevated metal contaminants, elevated temperature and reduced salinity.

The discharges result in elevated concentrations of metal contaminants in the water column, particularly in the modelled mixing extent closest to the Northside Outfall discharge. The primary parameters of interest are zinc, and to a lesser degree copper. Zinc and copper are trace metals that are essential for most organisms' growth and development and are found at low concentrations in most natural waters. However, at higher concentrations they can be toxic to marine fish, invertebrate and plant species, and indirectly toxic to birds and marine mammals via the food chain.

Of the discharges covered by this application, the Northside and Southside Outfall catchments deliver the greatest water volume and contaminant load to the Waiuku Estuary, particularly for zinc (approximately 99% of the zinc load). As noted above, the Steel Mill contributes about 60% of the total zinc load to the estuary. However, 50<sup>th</sup> percentile concentrations<sup>93</sup> generally do not exceed the 99% SPL for either copper or zinc, even within the first 50 m of both the Northside and Southside Outfall discharges. When 95<sup>th</sup> percentile background concentrations are added to concentrations driven by the Steel Mill (for example during a rainfall event that washes sediment and metals off the catchment), several hundred metres more may be required to meet 99% SPLs for copper and zinc, or they may not be met at all for the upper half of the estuary. For example, 95<sup>th</sup> percentile

<sup>92</sup> The area where the majority of sediment from the catchment settles out in the CMA.

<sup>93</sup> A percentile is the value at a particular rank in a dataset. For example, a value on the 95th percentile can be interpreted as one that only 5% of the values in the dataset are higher than. The median is the 50th percentile, so it is commonly assumed that 50% of the values in a data set are above the median, and 50% are below the median.

concentrations for zinc exceed the ANZWQG 80% SPL within 100 m of the Northside Outfall discharge, improving 99% SPL at approximately 400 m.

The zones of reasonable mixing for zinc extend approximately 300 m from the Northside Outfall and 60 m from the Southside Outfall.

Increased temperature and decreased salinity are driven primarily by the freshwater discharge from the Northside Outfall. Changes in temperature and salinity can cause physiological stress to biota. The greatest temperature effect occurs at low tide in winter, when an excess temperature of 3°C<sup>94</sup> is achieved at a distance of 100-150 m from the Northside Outfall. Modelling estimates that the mean salinity in the area within about 50 m of the Northside Outfall is reduced by about 3 PSU (or 12%) as a result of the discharge, although this varies depending on the discharge volume and the state of the tide. There is no obvious effect on salinity at about 200 m from the outfall. The effect on salinity is less pronounced at the Southside Outfall and is no longer obvious within about 50 m of the discharge.

### **Suspended and deposited sediment**

Suspended and deposited sediment can have wide-ranging impacts on biota, by clogging gills, reducing visibility for feeding, smothering benthic organisms, reducing oxygen levels, and excluding species that are sensitive to mud. Sediment can also transport attached contaminants outside the modelled mixing extent on currents, and deposit these throughout the wider ZOI.

The sedimentation effects of the discharges on the ZOI are relatively small, as the Steel Mill catchments comprise only 1.5% of the total Waiuku catchment area, and annual sedimentation rates of up to just a few millimetres per year are estimated (except for higher rates immediately adjacent to the Northside Outfall). In addition, the Steel Mill contributes slightly less sediment overall than would be expected if the Site was used for the surrounding (primarily farming) land use. This reflects the efficacy of NZ Steel's existing treatment systems, such as the average 98% removal efficiency of TSS achieved by the Northside Ponds<sup>95</sup>. However, the discharges do still contribute to suspended and deposited sediment in the estuary, and the very fine sediment load is high comparative to the land area. The Marine Ecological Assessment finds that the proposed discharges are expected to have only a small influence on elevated suspended sediment, sediment muddiness and sedimentation rates across the ZOI compared to other sediment sources in the wider Waiuku Estuary catchment.

### **Sediment quality**

Monitoring indicates that zinc, copper and lead in sediment are in the highest quality category (ERC-Green) at all monitoring locations, except for the one monitoring site close to the Northside Outfall (which is currently the poorest quality category of ERC-Red). These sediment contaminant levels reflect both the history of catchment discharges, including those from the Steel Mill over the past 53 years, and the efficacy of NZ Steel's existing treatment systems, such as the average 94% removal efficiency of zinc achieved by the Northside Ponds<sup>96</sup>. Only small increases in metal sediment contamination (zinc and copper) are anticipated as a result of the proposed discharges over the term of the consent and the increases are less than those driven by other sources in the wider catchment.

<sup>94</sup> A change of the natural temperature of the receiving water of not more than 3°C, after reasonable mixing, is required by AUP permitted activity standard F2.21.8.6(2) (for discharges into the coastal marine area which are not covered by another rule in this Unitary Plan, and not covered by the Resource Management (Marine Pollution) Regulations 1998).

<sup>95</sup> ITA Report (**Appendix G**) estimates the Northside Ponds removal efficiency for total suspended solids to be a mean of 98%, by comparing the Northside Pond Chute with the Northside Pond Outlet.

<sup>96</sup> ITA Report (**Appendix G**) estimates the Northside Ponds removal efficiency for zinc to be a mean of 94%, by comparing the Northside Pond Chute with the Northside Pond Outlet.

### 7.4.3 Effects on fish and marine mammals

Potential adverse effects on fish and marine mammals include effects on food resources and risk of predation; avoidance and displacement due to reductions in water clarity, changes in temperature and salinity; and other water and sediment quality related parameters including the accumulation of contaminants by fish that feed primarily on the benthos.

Approximately 1.3% of the total sediment load and approximately 6.4% of the very fine sediment load to the Waiuku Estuary is derived from the proposed discharges. As discussed in Section 7.4.2 above, it can be assumed that the elevated suspended sediment, sediment muddiness and sedimentation rates across the ZOI are primarily being driven by sediment sources other than the proposed discharges. As such, the Steel Mill discharges are not considered to be a primary contributor to reduced water clarity outside the modelled mixing extent.

Mobile fauna, fish and rays may enact a behavioural response and avoid the area immediately adjacent to the discharge points where either the discharge has impacted food resource abundance, or the water clarity has reduced to the degree where foraging ability has declined, and predation risk has increased. Some fish may also avoid areas of increased temperature and decreased salinity in the Northside Outfall modelled mixing extent.

Overall, the discharges are assessed as having a no more than minor effect on fish habitat and on fish themselves after reasonable mixing, which reduces with increased distance from the discharge points.

Marine mammals are very unlikely to be present in the Waiuku Estuary channel on a more than infrequent basis, or within the modelled mixing extent, which is shallow and intertidal. The Marine Ecological Assessment (**Appendix I**) finds there would be Negligible effects on marine mammals, which equates to a Low overall level of effect when combined with the Very High value assessment. It is therefore considered that adverse effects on marine mammals would be no more than minor.

### 7.4.4 Effects on coastal saline vegetation

Coastal saline vegetation within areas of tidal influence has the potential to be affected by the discharges through reduced water quality, particularly elevated heavy metal concentrations and sediment levels. However, the intertidal vegetation communities present in the ZOI (mangroves, rush marsh and saltmarsh) are resilient to a wide range of environmental conditions and can even provide a buffering effect to the wider estuary by accumulating heavy metals and/or removing sediment loads.

The effect of the discharges on coastal saline vegetation is therefore assessed as being less than minor.

### 7.4.5 Effects on coastal birds

The proposed discharges have the potential to adversely affect coastal birds in the Waiuku and Taihiki Estuaries, mainly through a reduction in the quality of foraging habitat (impacted benthic invertebrates or fish), and effects on the ability to detect prey due to reduced visibility in the water column.

These effects occur primarily within the limited area of the modelled mixing extent, where the discharges reduce the quality and quantity of foraging habitat for waders, by impacting benthic invertebrate species diversity and condition, and increasing metal concentrations in shellfish, benthic invertebrates and possibly some fish. These effects are caused primarily from elevated metal concentrations in the water column and in sediment, and to a lesser extent by increased sedimentation rates, increased water temperature and decreased salinity. The effects are



particularly pronounced in the immediate vicinity of the Northside and Southside Outfalls, with effects progressively lessening towards the subtidal channels and across the wider ZOI.

The intertidal foraging habitat in the ZOI is extensive, comprising about 1,900 ha or 76% of the ZOI (the remainder of the ZOI being subtidal). The modelled mixing extent is only a small proportion (less than 0.5%) of the available intertidal habitat and there are no SEA-Ms within the modelled mixing extent. The Marine Ecological Assessment (**Appendix I**) takes a conservative approach to assessing the magnitude of effect on wading birds from feeding on impacted benthic species within the modelled mixing extent, recognising there is limited information regarding some factors such as how frequently individual waders from outside the modelled mixing extent visit the impacted area to feed.

Contaminant concentrations from the Steel Mill discharges are not expected to be at high enough concentrations to cause adverse bioaccumulation effects in coastal bird populations. In regard to zinc and copper, (the dominant metals present in the discharges) bioaccumulation is unlikely as they are essential elements that are naturally regulated to some extent.

The Waiuku Estuary contains a number of significant high tide roost sites, which are currently under threat from mangrove encroachment (coastal birds are not likely to utilise overgrown roost sites as they are more vulnerable to predation). The sediment impact of the proposed discharges to the Waiuku Estuary is small in terms of the total contribution<sup>97</sup> and is therefore not considered to be an important factor causing mangrove expansion and associated encroachment of roost sites.

Suspended sediment in the water column can impact on the visual foraging ability of birds feeding in the water column, such as shags and terns. Given the small contribution of the proposed discharges to the total annual average sediment load to the Waiuku Estuary, any elevated sediment muddiness and sedimentation rates are likely to be primarily driven by sediment sources other than the Steel Mill, except within the modelled mixing extent.

Potential effects on coastal vegetation (mangroves, saltmarsh and large roost trees) that provide habitat for cryptic birds (such as banded rail) and nesting/ roosting coastal birds (such as shags and herons) are likely to be less than minor (as assessed in Section 7.4.4).

Overall, the primary effects of the Proposal on coastal birds are due to the Northside (and to a lesser extent, Southside) Outfall discharges impacting the quality and quantity of foraging habitat for waders. The Marine Ecological Assessment (**Appendix I**) assesses this as a Low magnitude of effect on coastal birds outside of the modelled mixing extent. However, because coastal birds are assigned a Very High value due to the presence of 'Threatened' and 'At-risk species, including migratory species, the Low magnitude equates to a Moderate overall level of effect under the EciAG framework across the ZOI.

NZ Steel's existing water management systems are already effective at removing the majority of contaminants and sediment from the Northside and Southside Outfall discharges. In addition, the quality of the discharges can be expected to improve over the term of the consent due to NZ Steel's continual improvement programme which is embedded in its EMS. Consideration of alternative methods and locations for the discharges is undertaken in Section 8.1 and a BPO assessment is set out in Section 8.2, which finds that the current discharges represent the BPO to prevent or minimise adverse effects. On this basis, we consider the adverse effects of the discharges have been avoided and mitigated to the greatest practicable extent, however more than minor adverse effects on coastal birds remain. In order to address these residual effects, NZ Steel proposes ecological compensation by enhancing coastal bird habitat, as set out in Section 7.4.6.

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<sup>97</sup> The Proposal contributes approximately 1.3% of the total sediment load and approximately 6.4% of the very fine sediment load to the Waiuku Estuary.

#### 7.4.6 Compensation for residual adverse effects on coastal birds

As set out in Section 7.4.5 above, the Proposal has been assessed to have residual adverse effects on coastal birds that are more than minor. In order to address these effects, a draft Coastal Birds Management Plan (CBMP) (**Appendix S**) has been provided which sets out an indicative approach to compensating for these effects that seeks to achieve positive effects for coastal bird values. The compensation measures have adhered to the principles of offsetting as closely as possible, given offsetting for effects cannot be feasibly or demonstrably achieved for this Proposal<sup>98</sup> (refer to the Marine Ecological Assessment for further discussion).

The CBMP is based on a BCM, which has been used to determine the type and quantum of compensation that is required to address residual effects on coastal birds, in line with best practice guidance. The proposed compensation measures include:

- The enhancement of existing bird roost and intertidal feeding habitat through selective mangrove management and
- The creation of a high tide roost site above mean high water springs (mhws).

Some of these proposed activities require additional resource consents and are the subject of a separate consent application which is being progressed in parallel. There may also be the opportunity to collaborate with Auckland Council and relevant stakeholders to enhance other bird roost habitat in the Waiuku Estuary.

With the implementation of the CBMP and compensation measures proposed (and for which consent is being sought in a separate application), it is expected that the Proposal will result in positive effects that outweigh the adverse effects<sup>99</sup> for coastal bird values in line with the compensation principles set out in the National Policy Statement for Indigenous Biodiversity (NPSIB), in particular Appendix 4, Principle 3. This is discussed further at Section 10.2.3.

#### 7.4.7 Cumulative effects

The combination of elevated zinc and copper, increased water temperature, reduced salinity and elevated TSS may have a discernible cumulative ecological effect within the modelled mixing extent. This is because their effects may be additive to each other and to background concentrations (i.e., those driven by sources other than the proposed discharges). However, it is not expected that there would be cumulative effects from the combination of these parameters outside the modelled mixing extent once they become fully mixed with estuary water.

Outside the modelled mixing extent, potential cumulative effects from metal levels in sediments and sedimentation rates could lead to a minor shift in baseline ecological conditions and contribute to cumulative effects across the ZOI. However, it is considered that effects driven by the discharges from the Steel Mill are small on the scale of the ZOI, in comparison to catchment drivers other than the Steel Mill.

#### 7.4.8 Reasonable mixing

The marine modelled mixing extent (in regard to the discharges from the Northside and Southside Outfalls to the CMA) has been modelled as the area beyond which metals, temperature and changes in salinity are no longer discernible from background concentrations. The zone of reasonable mixing is likely to be smaller than the modelled mixing extent, and is essentially a zone in which water is not

<sup>98</sup> The effects management hierarchy requires steps to avoid, remedy, mitigate and offset adverse effects to have been sequentially exhausted before compensation is proposed to address residual impacts.

<sup>99</sup> The values that are adversely affected by an activity are addressed through compensation that seeks to achieve positive effects to indigenous biodiversity that outweigh the adverse effects. This reflects the terminology introduced in the NPSIB, Appendix 4, Principle 3.

expected to comply with the relevant quality standards or guidelines. This is recognised by section 107 of the RMA, which restricts the granting of a discharge permit if the discharge gives rise to specified effects (either on its own or in combination with other contaminants) after an allowance for reasonable mixing (refer to the assessment of section 107 in Section 9.7). Whether a zone of mixing is 'reasonable' is a question of fact, depending on factors such as the contaminant involved and the sensitivity of the receiving environment.

The ITA Report (**Appendix G**) finds that the discharge management measures are consistent with the BPO to prevent or minimise adverse effects, and the size of the zone of reasonable mixing is therefore the smallest extent practicable at this point in time. The Marine Ecological Assessment concludes that the size of the modelled mixing extent is reasonable from a water and sediment quality perspective, due to its spatial scale relative to the wider Waiuku Estuary, the scale of the activity, the current controls in place, the amount of similar habitat type outside of the modelled mixing extent, and NZ Steel's ongoing commitment to continual improvement. The modelled mixing extent does not extend over any areas with statutory identification as having significant ecological value, such as an ASCV or SEA-M.

'Threatened' and 'At Risk' species may use the modelled mixing extent from time to time. Fish and marine mammals may have a behavioural response, including avoidance of the modelled mixing extent if conditions are not favourable. Coastal bird species are likely to forage within the modelled mixing extent, however it is only a small proportion (less than 0.5%) of the available intertidal habitat in the ZOI. Given this relatively small size and the fact that the management measures applied to the discharges are representative of BPO, the modelled mixing extent is considered reasonable.

The modelled mixing extent and zone of reasonable mixing are therefore considered to be acceptable.

## 7.5 Cultural effects

### 7.5.1 Overview

Water is considered a taonga (treasure) by Māori. Degraded water quality can diminish mauri which upsets the balance within a system and affects the relationship between people and the environment and the ultimate health of all living things. In accordance with the RMA, NZ Steel recognises that Māori relationships with land and water are a matter of national importance and regard must be had to their role of kaitiakitanga (guardianship).

This AEE describes the management of discharges to freshwater and estuarine waters and the resulting actual and potential effects on human health and the environment. NZ Steel has been working with local Mana Whenua to understand the potential cultural effects associated with the discharges to water from the Site.

NZ Steel has a long-standing relationship with Ngāti Te Ata and Ngāti Tamaoho and has undertaken specific engagement with both parties in relation to this application (as discussed at Section 11). NZ Steel is committed to strengthening its existing relationship with local iwi and to fostering mutual respect. Cultural and traditional activities might be affected by the Steel Mill's discharges to water, and the importance of consultation and discussion is recognised.

### 7.5.2 Ngāti Te Ata

NZ Steel has worked together with representatives of Ngāti Te Ata to prepare a document that identifies relevant Ngāti Te Ata cultural values, together with NZ Steel's response in relation to management of effects arising from Steel Mill activities. A copy of this document is provided at **Appendix N**.

In summary, Ngāti Te Ata are interested in the adverse effects of activities on human health, the environment and cultural values and practices. Specific matters discussed with Ngāti Te Ata (via Ngāti Te Ata Environmental Manager, Karl Flavell) which are relevant to this application include:

- Degradation of water quality as a result of past land uses and practices;
- Risk to human and animal health as a result of increased nutrient levels and contaminants in water;
- Alteration and degradation of waterways;
- Efficient use of water;
- Mixing of clean and contaminated water;
- Risk of significant loss of indigenous flora and fauna;
- Effects on human health, property and the environment as a result of sea level rise; and
- Cumulative effects.

Responses to these matters are provided at **Appendix N**, however the following provides a summary of the key matters:

- This consent application is for activities undertaken by NZ Steel within the established industrial Site and its property.
- The runoff from building roofs and areas in use for Steel Mill activities requires treatment before reuse or discharge. For that reason, all ITA stormwater is collected for treatment, therefore, ITA stormwater and process water are combined in the treatment ponds. This also allows the treated pond water to be recirculated to help NZ Steel achieve the high level of water recycling it has maintained for over 30 years. Water is recycled from the treatment ponds into the operational process, meaning less fresh water is needed in the Steel Mill processes.
- Discharge into the Waiuku Estuary is the subject of strict water quality monitoring and compliance with resource consent conditions. NZ Steel has a high level of improvement activities regarding water use.
- Potential sea-level rise is relevant with discharges into the coastal marine area (CMA): outfall structures have been assessed for structural integrity (not causing erosion) and to ensure the structures are not affected by possible future increasing sea levels.
- Ecological enhancement on Site has taken place over more than 20 years on the NZ Steel property:
  - More than 250,000 native plants have been planted along streams and property boundaries;
  - More than 90% of riparian margins of streams and waterways on the Site have been fenced and planted (a portion of which has been required by historical consent conditions);
  - Boundary planting and replacement of pine shelter belts (farm) with native vegetation; and
  - Continued coastline enhancement.

In addition, the cover letter provided by Ngāti Te Ata at **Appendix N** notes that Ngāti Te Ata do not support 35 year long consents. As discussed in Section 1.5, a number of factors specific to the Steel Mill combine to support the view that the proposed 35-year term is reasonable and accords with Part 2 of the RMA. Conditions are proposed in **Appendix R** to ensure ongoing involvement of Ngāti Te Ata (discussed below), and to ensure that regular reviews are undertaken throughout the life of the consent, as well as additional reviews in the event of specific prescribed circumstances.

Both Ngāti Te Ata and NZ Steel are committed to ongoing engagement on matters relating to NZ Steel's operations. The potential installation and operation of an EAF has been discussed with Ngāti Te Ata as a result of this ongoing engagement. A full copy of the consent application will be provided upon lodgement and NZ Steel anticipates further discussion with Ngāti Te Ata on the key findings and recommendations.

Additionally, Ngāti Te Ata is a member of NZ Steel's Environment Committee. Meetings are held approximately every four months, and these are proposed to continue by way of condition of consent (**Appendix R**). This is an opportunity for Ngāti Te Ata to review NZ Steel's performance against the resource consent conditions, including reviewing any proposed and actual improvements.

### 7.5.3 Ngāti Tamaoho

Ngāti Tamaoho has a statutory acknowledgement which includes the CMA area adjacent to the Steel Mill and NZ Steel acknowledges the relationship that Ngāti Tamaoho has with the area.

As discussed at Section 11.3.3, Ngāti Tamaoho is a member of NZ Steel's Environment Committee which is an opportunity for Ngāti Tamaoho to review NZ Steel's performance against resource consent conditions, including review of proposed and actual improvements.

In relation to the Proposal, Ngāti Tamaoho have been provided copies of the technical assessment executive summaries and hui have also been held specifically in relation to this application. At the hui, NZ Steel discussed the continual monitoring of discharge of contaminants, the effects that have been identified through the technical work and the proposed mitigation measures. NZ Steel also described that the ongoing management will be through the provision and implementation of a WQMP.

Ngāti Tamaoho have provided written confirmation that they are comfortable with the measures undertaken and look forward to continuing to work with NZ Steel moving forward and continuing to improve environmental outcomes. A copy of this correspondence is provided in **Appendix N**. The potential installation and operation of an EAF has been discussed with Ngāti Tamaoho as a result of ongoing engagement since this correspondence was received.

Both Ngāti Tamaoho and NZ Steel are committed to ongoing engagement on matters relating to NZ Steel's operations. A full copy of the consent application will be provided to Ngāti Tamaoho upon lodgement and NZ Steel anticipates further discussion with Ngāti Tamaoho on the key findings and recommendations.

### 7.5.4 Discussion

As discussed above, specific engagement regarding the application has occurred with both Ngāti Te Ata and Ngāti Tamaoho. Ongoing engagement will continue with Ngāti Te Ata and Ngāti Tamaoho as part of the Steel Mill's standing Environment Committee. Through this forum, as discussed at Section 11.2, representatives are kept informed of environmental performance, any complaints made and any decisions regarding improving management practices.

NZ Steel also recognises that a number of groups have made applications for customary marine title or protected customary rights in the area relevant to the Steel Mill (the Manukau Harbour, and in particular the Waiuku Estuary). In accordance with the Marine and Coastal Area (Takutai Moana) Act 2011, NZ Steel has notified and sought the views of these groups, with the only response received from Ngāti Te Ata (as discussed at Section 11.3.1).

The Steel Mill will continue to manage the effects of its discharges through active management, conditions of consent and ongoing engagement with the Environment Committee upon which

representatives from Ngāti Te Ata and Ngāti Tamaoho contribute, in order to mitigate the effect of its discharges to water on cultural values.

## 7.6 Effects of landfill leachate discharges

Leachate from the operative East and closed West Landfills is discharged via the North Ponds to the CMA from the Northside Outfall and therefore forms a small component of the discharge for which authorisation is sought by this application. This leachate discharge is the only aspect of the landfills that are relevant to this application.

The operation of the East Landfill is authorised by a separate suite of resource consents (set out in Section 1.4), which manage the generation and collection of leachates. Discharges to ground from both the East and West Landfills are authorised by existing resource consents<sup>100</sup> that are not due to expire.

The closed West Landfill is managed in accordance with the Closed Landfill Management Plan (CLMP) (**Appendix L**), which meets the requirements of AUP Chapter E13 to be a site aftercare plan. The CLMP sets out the aftercare activities that are undertaken to address the environmental risk posed by the contaminants, comprising inspection of the landfill cap and leachate collection systems to minimise the generation of leachate and ensure leachate is directed appropriately to the Northside Ponds for treatment.

The ITA Report (**Appendix G**) characterises the leachate of both landfills in terms of its contaminant profile, sampling regime, and treatment, and is considered to meet the requirements of AUP Chapter E13 to be a landfill site investigation report. The key contaminants of the leachate are elevated pH, aluminium and boron. An assessment of the effects of the combined Northside Outfall discharge (including leachate) on the CMA is made in Section 7.4.

On this basis, the adverse effects of the landfill leachate discharge are assessed as being no more than minor.

## 7.7 Effects of the outfall structures occupying the CMA

Both the Southside and Northside Outfall Structures extend a small way beyond MHWS and into the CMA, with just the bottom of the outfall slab being below MHWS. A structural assessment of the structures is included in **Appendix J**, which also considers the effects of projected sea level rise on the structural integrity of the outfalls.

Both outfall structures were assessed as being in good condition. Some maintenance is expected over the term of the consent, particularly as sea level rise is predicted to result in more of the slab and side walls being within the tidal range. However, the structural integrity of the outfalls is not anticipated to be affected, as the structures will be maintained, and repairs undertaken if required (in accordance with the proposed conditions in **Appendix R**).

The outfall structures have long been present on this coastline (having been constructed circa 1983) and are essential supporting infrastructure for the Steel Mill. They have an operational need to locate in or near the CMA so that treated ITA stormwater and process water from the Steel Mill can be discharged to an environment that can most adequately assimilate it. The structures do not pose a risk to navigation or to public health and safety given their location on the edge of the CMA and in a location where public access is restricted.

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<sup>100</sup> Permit 21771 (expires 31 December 2034) authorises the discharge of contaminants into ground and groundwater from the West Landfill; Permit 34089 (expires 18 May 2044) to discharge contaminants to land and water (including groundwater) from the East Landfill.

Scour protection is provided by design and during recent review of the structures there was no scour or erosion observed downstream of the outfalls. To ensure this is maintained, including that the outfall structures are not undermined due to scour, NZ Steel proposes to inspect the downstream environment on a regular basis and implement remedial or protection measures if required (such as a placement or repair of rock riprap).

The structures have only a small footprint within the CMA, and any effects on benthic habitat would be negligible.

On this basis, the adverse effects of the ongoing occupation and use of the CMA are assessed as being no more than minor.

## **7.8 Effects of using the land for an ITA**

Inappropriate management practices from industrial or trade activities can result in discharges of contaminants associated with the activity onto or into land or water. These environmentally hazardous substances potentially accumulate within receiving environments after becoming entrained in runoff, which may lead to adverse environmental effects.

The key method for addressing this issue is the preparation and implementation of site-specific EMS and associated management plans and procedures. These identify the environmentally hazardous substances associated with a particular industrial or trade activity and set out methods to avoid, remedy or mitigate discharges.

As there is no trade waste system servicing the Site, it is necessary to discharge to the receiving environment. Section 5.4 above lists the management measures in place at the Site. Section 5.2 describes NZ Steel's EMS, which identifies the activities with the potential to generate contaminants and outlines methods to firstly avoid where practicable and then minimise contaminant discharges.

## **7.9 Effects of replacing the North Drain diversion consent**

In a scenario where expiring consent activities cease; the effects of the past diversion and discharge would unavoidably persist. It is unlikely that NZ Steel would seek the necessary resource consents to redirect stormwater runoff to its historical flow path, which was via the Northside Valley that has since been filled and the Steel Mill constructed over. Refer to Section 2.5.2 for more detail on the Northside Stream.

It is therefore considered that the diversion of water in the existing North Drain channel and the discharge of its flow into the Lower North Stream, forms part of the Receiving Environment against which the effects of this application are assessed. As no changes to this existing situation are proposed, the ongoing diversion and discharge of water associated with the replacement of Permit 812691 will have no adverse effects on the environment.

## **7.10 Cumulative effects**

Consent replacement applications are unique in that the activity is established and has been operating for some time, such that quantitative data is available to assess the actual effects of the activity. The monitoring data therefore represents the cumulative concentrations of contaminants, sediment and other parameters as a result of discharges from the Steel Mill, as well as other sources not subject to this application. Those other sources include stormwater runoff from the balance of the Site and other background sources. Background sources are upstream landuses discharging to the Ruakohua Stream, discharges from the Transpower substation and BOC Gas to the North Drain and all point source and stormwater discharges within the catchments of the Waiuku and Taihiki Estuaries. Sediment and metals attached to sediment, accumulate in the environment as the sediments settle out to the stream bed, foreshore and seabed over time. This effect is more

pronounced in the estuarine environment than in streams, as stream sediment is progressively flushed downstream toward the CMA during periods of high flow.

In regard to the marine environment, modelling<sup>101</sup> has been undertaken to quantify the current water column effects of the proposed discharges as well as predicted sediment deposition rates due to both the Site discharges and loads from the surrounding catchments. These sediment deposition rates and water column metal concentrations were used to model zinc and copper in surface sediments over the proposed consent term, including the contribution of the proposed discharges relative to other sources. This enables the effects of the Proposal on marine ecology to be isolated.

In summary, cumulative effects of contaminants from the Steel Mill have been taken into account in the assessment undertaken and the overall level of effect conclusions reached in the sections above have accounted for cumulative effects.

## 7.11 Summary of effects and conclusion

The ongoing operation of the Steel Mill (of which discharges to water are an inherent part) results in significant positive effects on the local, regional and national economy through provision of steel products and co-products, employment and contribution to GDP. In addition, measures are proposed to ensure positive effects on the environment in relation to coastal birds and wetlands.

The Proposal has the potential to give rise to a range of adverse environmental effects and these have been covered in the preceding assessment. NZ Steel proposes conditions as part of this resource consent application in order to avoid, remedy, mitigate or compensate the adverse effects as appropriate (Section 12). The actual and potential adverse effects of the Proposal are summarised as follows:

- Adverse effects of the Proposal on natural inland wetlands are assessed as no more than minor. However, taking into account NZ Steel's proposed voluntary enhancement measures results in overall positive ecological outcomes for wetlands and associated indigenous biodiversity.
- Effects on the receiving watercourses are assessed as no more than minor. The proposed wetland enhancement will also provide incidental benefits to stream ecology.
- Effects on estuarine habitats, fish and marine mammals and coastal saline vegetation are assessed as being no more than minor, after reasonable mixing.
- Discharges to the CMA are assessed as having a more than minor adverse effect on coastal birds, due to impacted foraging habitat that may be used by Threatened or At Risk species. Given it is not practicable to avoid or further mitigate residual effects, NZ Steel has proposed ecological compensation measures which are expected to result in overall positive outcomes for coastal birds.
- The ongoing occupation and use of the CMA by a small portion of the Northside and Southside Outfall Structures will have no more than minor effects.
- Cultural effects have been taken into consideration and through the ongoing involvement of Ngāti Te Ata and Ngāti Tamaoho on the Environment Committee, any adverse effects on cultural values will continue to be managed.
- Cumulative effects have been considered. The assessment of effects contained above is largely based on the monitoring data, where appropriate amended to consider the full extent of the Receiving Environment, and therefore represents a conservative assessment of effects.

Taking into account the positive effects, in particular the significant positive effects on the local, regional and national economy, the positive ecological effects of the proposed enhancement and

<sup>101</sup> Refer to the DHI Modelling Report (2022), appended to the Marine Ecological Assessment in **Appendix I**.



compensation measures and the proposed draft conditions of consent in **Appendix R**, it is concluded that the actual and potential effects of the Proposal will be minor or less than minor and are able to be appropriately managed, mitigated and compensated for.

## 8 Alternatives and Best Practicable Option

### 8.1 Alternatives

#### 8.1.1 Introduction to alternatives

Under section 105 of the RMA, if an application is for a discharge permit that would contravene section 15 or section 15B, the consent authority must have regard to any possible alternative methods of discharge, including discharge into any other receiving environment<sup>102</sup>.

In addition to section 105, Schedule 4 Clause 6 requires that an assessment of effects on the environment must include:

- A description of any possible alternative methods of discharge, including discharge into any other receiving environment where an activity includes the discharge of a contaminant (Schedule 4 Clause 6 (1)(d)(ii)); and
- A description of any possible alternative locations or methods if it is likely that the activity will result in any significant adverse effect on the environment (Schedule 4 Clause 6 (1)(a)).

It is noted that the proposed discharges of ITA stormwater and process water to watercourses and the CMA will not result in any significant adverse effects on the environment in the streams and outside the zone of reasonable mixing of the Northside Outfall.

NZ Steel is seeking replacement resource consents in order to continue operating the Steel Mill. Given the existing and long-standing nature of the Steel Mill in this location and the significant investment in existing infrastructure associated with the Steel Mill, no alternative locations for the Steel Mill exist. Therefore, what can feasibly be considered for the alternatives assessment below is limited to the methods and locations of the discharges themselves within the receiving environment.

Comment on each of the alternative methods and locations available for each of the ITA catchments is provided below and discussed in detail in the ITA Report (at **Appendix G**).

#### 8.1.2 Northside Outfall discharge

The Northside Outfall is the primary point of discharge for the Steel Mill. In terms of alternative locations for the discharge, there is not currently a reticulated trade waste system servicing the Site and therefore treated water needs to be discharged into the environment. Alternative options, which are discussed in more detail in the ITA Report (at **Appendix G**), include discharging to land, the recycling of water, discharging into other catchments and extending the discharge outlet further into the Waiuku Estuary. The reasons why none of these options are considered to be a viable alternative are discussed below. A comment specific to the discharge of landfill leachate to the Northside Ponds is also made.

##### Discharging to land

- A significant landholding would be required for discharge to land. Based on the current daily average consented flow volume of 9,000 m<sup>3</sup>/day and experience at other sites, in excess of 50 hectares would be required for discharging the water from the Northside Ponds;
- Stormwater can make up a high proportion of discharge during rain events and therefore holding and discharging to land during all storm events would not be possible. In addition, irrigation to land would therefore be required during or after heavy rainfall events at which

<sup>102</sup> Section 105 also requires the consent authority to have regard to the nature of the discharge and the sensitivity of the receiving environment to adverse effects, and the applicant's reasons for the proposed choice. For the avoidance of doubt, the term 'receiving environment' is used in section 105, and has the same meaning as 'Receiving Environment' defined for this application.

point, the land is likely already saturated. Irrigation to land would risk ponding/flooding or inundation due to over-saturation, and increase other risks such as erosion;

- The construction of the associated infrastructure would be significant (in excess of \$20 million); and
- Irrigated water would still contain contaminants which may contaminate soil and groundwater (which may not be compatible with rural land uses and/or human health and amenity considerations).

#### **Recycling of water**

- The Steel Mill is already recycling significant volumes of water. Increasing the volumes of water recycled within the system would be difficult due to water quality requirements for process water, pumping capacity and storage capacity limitations.
- Additional recycling within the treatment plants would be difficult due to the accumulation of solids and contaminants within the recycled systems which would result in process issues.

#### **Discharging into other catchments**

- Discharging to alternative catchments would mean discharging to streams rather than the CMA. The CMA provides much greater dilution for the discharge from the Northside and Southside Outfalls than streams and can assimilate the volume requirements without having adverse effects on stream ecology and erosion. The CMA is therefore the preferred discharge location.

#### **Discharging further into the Waiuku Estuary**

As a result of the CMA being the preferred discharge location, extending the discharge outlet into the subtidal channel of the Waiuku Estuary has also been considered.

- While improved mixing and dilution would occur, a number of different adverse effects would arise from the construction and occupation of such a structure.
- It would be unlikely to reduce environmental effects within the ZOI, and it may increase the extent of the ZOI.
- The zone of mixing of the existing discharges is considered reasonable (refer to Section 7.4.8), therefore this option is not warranted.

#### **Landfill leachate alternatives**

Leachate monitoring shows that the contaminants present in the landfill leachate are the same as those associated with other activities at the Site, which is expected as the material placed in the landfill is sourced from the Steel Mill's activities. Alternatives for landfill leachate discharges are the same as for other discharges from the site, including discharge to land via irrigation, and discharge to alternative locations.

An alternative discharge location for the leachate would be the Lower North Stream, given its location adjacent to the landfills. However, due to the elevated pH of the leachate of around 12, discharging to the Stream is not appropriate.

Discharging leachate to land has been considered, but discounted for the following reasons:

- A significant landholding of about 5 hectares would be required, which is not available within the Site given constraints such as separation from waterways;
- Irrigation to land has risks of ponding /flooding or inundation due to over-saturation, and increases other risks such as erosion;

- Irrigated water would contain metals and would contaminate soil and possibly surrounding waterways (which likely would not be acceptable from a cultural perspective). Landfill leachate has a high pH, which may result in downstream effects compared to the existing treatment within the Northside Ponds. The land may also not be useable for pastoral farming due to the high pH that would result in the soil; and
- The cost related to the construction and operation of the associated infrastructure to irrigate would be significant.

As such, the most appropriate method and location for the discharge of landfill leachate is to the Northside Ponds for treatment via dilution, where the high pH water is mixed with ITA stormwater and process water prior to being discharged to the CMA.

### Summary

The level of effect as a result of the water quality of the discharge from the Northside Outfall is discussed at Section 7.4, which shows the key effects are within the close vicinity of the outfall location and within the modelled mixing extent. Based on the above, no further consideration of alternatives is considered necessary. Continual improvement of discharge quality and alternative treatment methods in accordance with the BPO is discussed at Section 8.2.

#### 8.1.3 Southside Outfall discharge

ITA stormwater discharges to the Waiuku Estuary from the Southside ITA Catchment are rare, as water from the Southside Ponds predominantly discharges to the Ruakohua Dam reservoir for re-use at the Steel Mill. Process water discharges from the ARP (and at times from the recycle line from the SRNZ Ponds) can discharge directly to the Southside Outfall, which is a mostly continuous flow (but a significantly lower volume than the Northside Outfall). In terms of alternative locations and methods for the discharge, the comments made for the Northside Outfall above generally also apply to the Southside Outfall.

The level of effect as a result of the water quality of the discharge from the Southside Outfall is discussed at Section 7.4. The key effects are within the close vicinity of the outfall location within the modelled mixing extent. Based on the above, no further consideration of alternatives is warranted, rather the focus will be on the continual improvement of discharge quality and alternative treatment methods in accordance with the BPO (discussed at Section 8.2).

#### 8.1.4 North Drain discharges

As discussed at Section 4.4, the main discharges to the North Drain, which in turn discharges to the Lower North Stream, include ITA stormwater runoff from coal, PC (ironsand) and aggregate stockpiles, and process water discharge from the Dewatering Plant.

#### ITA stormwater

In terms of alternative discharge methods, the ITA Report reviews information regarding the management of coal stockpile runoff from 19 international steel mills<sup>103</sup>, which shows that about half of those sites re-use the runoff from coal stockpiles (including for spraying stockpiles, dampening roads for dust suppression or for use in cooling processes). The remaining sites discharge the runoff with treatment including sedimentation, sedimentation with flocculants, sand filters and clarifier systems. NZ Steel has an existing water recycling system which already maximises opportunity for water recycling within the Steel Mill. Therefore, additional re-use and recycling is not practicable or necessary. In the event that an EAF is installed, it is noted that the introduction of a

<sup>103</sup> Information provided by the WorldSteel Association from a self-reported survey of over 19 steel mill sites throughout the world.

Buffer Scrap Yard associated with the EAF within the North Drain Catchment would replace an existing coal stockpile and therefore would not change the existing discharge method (however, the discharge would be treated as discussed in Section 8.2).

Due to the nature of stormwater runoff following ground contours via gravity, there are no other practicable discharge locations. Therefore, the focus is on the continual improvement of discharge quality and alternative treatment methods in accordance with the BPO (discussed at Section 8.2).

### Dewatering Plant

Ironsand sourced from the Waikato North Head mine site is mixed with water sourced near the Waikato River mouth to form a slurry, which is transported to the Steel Mill through a buried pipeline. The Dewatering Plant separates out the PC (refined ironsand), treats the slurry water and discharges the brackish water to the North Drain. In the event that an EAF is installed, it is noted that the Dewatering Plant discharge could reduce up to 50%.

A number of alternatives have been considered for the Dewatering Plant process water discharge to the North Drain. These include:

- Alternative transport of ironsand from the mine site to the Steel Mill;
- Reduction of salinity at the mine site;
- Desalination of slurry water at the mine site; and
- Alternative locations for the discharge at the Site.

The only option for completely avoiding the discharge from the Dewatering Plant is by replacing the slurry line with direct transport of PC via trucks. This is not practicable due to the volume of PC and therefore has not been considered further. Therefore, alternatives that could be employed at the mine site have been investigated. These include reducing the salinity at the point of take and desalinising the slurry water.

The water used for the slurry pipeline is sourced near the mouth of the Waikato River, adjacent to the mine. The mine site takes water from the river during lower tides, when it is less tidally influenced and pumps the water to the slurry pond. Investigations into the variation in salinity at the intake has identified that even during low tide the salinity of the river water is still elevated and not within normal ranges for freshwater streams. Changes to operations of the water take would therefore not be effective at reducing the salinity of the discharge to an acceptable level and have not been considered further.

Alternatives for desalinating the slurry water at the mine site have been investigated. If adopted, this could result in freshwater discharge to the North Drain without any modifications required at the Dewatering Plant. The costs associated with desalinating the water at the mine site are in the order of \$6 million plus ongoing operational costs up to \$1 million per year. Due to the significant initial and ongoing costs, this option has not been considered further.

Alternative discharge locations at the Steel Mill have also been investigated including:

- Redirect discharge via pipe to the base of the Lower North Stream;
- Redirect discharge via pipe to the Northside Ponds;
- Redirect discharge via pipe to the Ruakohua Dam;
- Redirect to slag tipping area for use as cooling water sprays; and
- Redirect to firewater reservoir.

The ITA Report (at **Appendix G**) discusses each of these options in further detail. All of the options would require additional infrastructure and capital to implement and some, such as redirecting to the Northside Ponds or Ruakohua Dam or firewater reservoir would result in undesirable effects

(largely due to the salinity of the water). Key to note is that all of the options also divert the Dewatering Plant flows to an alternative location away from the North Drain. However, this in itself has adverse impacts as the process water discharge from the Dewatering Plant is the primary source of flow to the North Drain and Lower North Stream. Without this discharge, the watercourse would change from permanently to intermittently flowing, and the area and value of instream and wetland habitat would be greatly reduced (Section 7.3 discusses the effects on freshwater ecology).

### 8.1.5 Ruakohua Stream discharges

Only ITA stormwater runoff is discharged from the Site to the Ruakohua Stream. There are no other practicable discharge locations due to the need for gravity flow following ground contours. Therefore, the focus is on the continual improvement of discharge quality and alternative treatment methods in accordance with the BPO (discussed at Section 8.2).

Alternative treatment methods such as sandfilters, wetlands or raingardens would provide a similar level of treatment. There is also insufficient space for the construction of treatment methods such as a wetland or raingarden.

Therefore, any additional costs would not be justified on the basis that there would not be any improvements in water quality.

### 8.1.6 Summary

For all the alternatives identified above, the scale of the environmental effects of the existing discharges (and the potential for reduced effects in the event the EAF is installed) relative to the benefit derived by any of the alternatives does not warrant the economic and environmental cost of implementing the alternatives, particularly in regard to discharge locations. NZ Steel adopts a practice of continual improvement which focuses on the purpose, process and people to enable on-going improvements and optimisation of processes. The parent company policy also directs its businesses to minimise harm to people and the environment, through selection and implementation of suitable practices and facilities. Therefore, alternative treatments and methods of discharge will continue to be investigated throughout the term of the consent, which is supported by the proposed consent conditions (Section 12).

## 8.2 Best Practicable Option

### 8.2.1 Introduction to Best Practicable Option

There are a range of engineering operational and management controls used to manage discharges to water from the Steel Mill as summarised in Section 5. The appropriateness of this suite of measures can be evaluated by considering the extent to which it constitutes the 'best practicable option' (BPO). BPO is defined in section 2 of the RMA as follows:

*best practicable option, in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to—*

- (a) *the nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and*
- (b) *the financial implications, and the effects on the environment, of that option when compared with other options; and*
- (c) *the current state of technical knowledge and the likelihood that the option can be successfully applied*

The concept of BPO is consistent with the RMA framework, which is focussed on avoiding, remedying or mitigating adverse effects. This is a different approach to concepts used internationally such as “Best Available Technique” (BAT), which are focussed on identifying the best technically and financially viable technologies as the basis for setting limits (regardless of the nature and scale of effects). BPO is determined on a site-specific basis, taking into account the nature of the discharge and the environmental context.

A number of relevant AUP policies direct the BPO to be adopted for discharges, including for the diversion and discharge of stormwater<sup>104</sup> and for discharges to the CMA<sup>105</sup>. Therefore, the policy direction of the AUP requires an assessment of BPO for the proposed discharges.

Comment on each of the ITA catchments against BPO is provided below.

## 8.2.2 Northside and Southside Outfall discharges

As outlined in Section 4, the Steel Mill utilises extensive water recycling systems both within the Iron and Steel Plants and within the broader Steel Mill, reducing the overall volume of water discharged.

The remaining water is treated via the treatment plants, filtration is provided through the Melter aggregate bed filters for a portion of the catchment flow and settlement is provided within the numerous settling ponds in the Northside and Southside ITA Catchments. Chemical treatment is also used to maximise the settlement of solids and adjust water quality to meet discharge limits.

The discharges from the Northside and Southside Outfalls to the CMA are assessed (in Section 7.4) in terms of effects on the environment within the modelled mixing extent and within the wider ZOI. With the exception of effects on coastal birds, environmental effects outside of the modelled mixing extent are assessed as being no more than minor. The existing and proposed controls are consistent with current best practice guidance.

A BPO review of the Northside Outfall discharge was undertaken for this application. A range of possible options focussed on the Steel and Iron Plant WWTPs, ancillary settling ponds and the Northside Ponds, with each option assessed for practicability, effectiveness and financial implication. Options that were considered, then discounted as a result of this process include:

- Constructing new state-of-the-art WWTPs; and
- Installing additional treatment devices (such as sand filters) at the Northside Outfall.

Both replacing the existing WWTPs and installing additional treatment devices were discounted due to the significant cost and insufficient space available, while providing limited benefits.

BPO includes consideration of opportunities to reduce the contaminant loads of the discharge and therefore reduce the size of the zone of reasonable mixing over the term of the consent. NZ Steel follows a continual improvement framework, whereby controls and processes are regularly reviewed and modified as required.

Additional improvements currently underway or being investigated by NZ Steel include:

- On-going improvements within the Northside Catchment including:
  - Optimisation of the chemical dosing in the Steel Plant and Iron Plant WWTPs;
  - Pre-treatment for, or avoiding high-zinc overflows from sludge dewatering facilities; and
  - Additional treatment devices within the Iron Plant WWTP, including the use of sand filters.

<sup>104</sup> Policy B7.4.2 (9).

<sup>105</sup> Policies F2.11.3 (2) and F2.11.3 (8).

- Improvement of the settling pond treatment systems, including:
  - Evaluation of direct discharge from SRNZ Pond (with existing Melter Slag filtration walls) to reduce load on Northside Ponds; and
  - Review of requirement for further upstream catchpits to collect gross-sediment load at source.

With respect to the Southside Outfall, the current controls are consistent with BPO and the majority of water is recycled within the system. Alternative treatment methods could include the use of sandfilters or constructed wetlands. These alternative treatment options would be expected to provide a similar level of treatment as the current controls. Moreover, these alternative methods could involve greater uncertainty regarding their efficacy at the Site compared to the current treatment systems, which are established and operate well. Given the above, the additional costs and increased uncertainty would not be justified by the minimal (if any) reduction of environmental effects.

An assessment of the BPO to manage the discharges from the Scrap Yards is provided in the ITA Report. In summary, for the Scrap Yards that discharge to the Northside Outfall (Local Yards – North and South and Yard A), the proposed at-source treatment comprising coarse solids and hydrocarbon removal and treatment through the Northside Ponds is considered to be consistent with BPO.

Overall, it is considered that the current site management methods, controls and continual improvement reviews associated with the discharges from the Northside and Southside Outfalls are consistent with BPO. To support this conclusion and ensure it remains correct over the duration of the sought consents, a WQMP and associated monitoring programme are proposed as conditions of consent. Through these processes, NZ Steel will continue to manage and monitor the discharges to ensure that the treatment methods and controls continue to be effective and consistent with BPO.

### 8.2.3 North Drain discharges

#### ITA stormwater

As discussed at Section 8.1.4 above, there are no practicable alternative locations or methods regarding the discharges to the North Drain and therefore the focus is on continual improvement of the discharge quality in accordance with BPO.

The current treatment systems comprise a range of measures as summarised at Section 5.

The material in the aggregate and PC stockpiles is reasonably coarse, so it rapidly settles out without chemical treatment. The current sediment control measures used for the aggregate and PC stockpiles and pond size and design are consistent with Auckland Council Guideline Document GD05<sup>106</sup>, which sets out current guidance on best practice for erosion and sediment control within the Auckland Region. The current controls within the ITA Area include the use of silt fences around stockpiles, decanting earth bunds, sediment ponds and chemical treatment, which are consistent with the GD05 guidance and are therefore considered to be BPO.

Sediment from the coal stockpiles is lighter and finer than that generated from the other stockpiles, and typical earthworks controls (prescribed by GD05) will not adequately settle out these finer sediments. The ITA Report (**Appendix G**) has reviewed the controls used at other sites that stockpile coal both in New Zealand and internationally. Based on this review, alternative treatment options include the use of clarifiers in addition to the settling ponds, along with either increasing the overall pond capacity (at CY19 pond, East Pond and Y56K pond) and the use of sand-filters or other treatment to further treat the discharge.

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<sup>106</sup> Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05).



While the alternative treatment options would provide a reduction in overall sediment and contaminants loads, whether this is effective in terms of the environmental effects depends on the current level of effects and what additional benefit would be achieved with the alternative.

A reduction in sediment loads and heavy metal concentrations provided through the use of clarifiers and sand filters may improve the water quality and ecology within the upper to mid reaches of the Lower North Stream. However, the benefit to more sensitive receiving environments (being the Waiuku Estuary and the more natural downstream reaches of the Lower North Stream) would be limited with monitoring indicating water quality effects from the ITA discharges are not significant and meeting relevant water guidelines for key contaminants. Therefore, the significant capital cost (up to \$20 million) of implementing these alternatives, with limited improvements in water quality, is not considered to be justified.

The ITA Report (**Appendix G**) finds that the measures being utilised at the Steel Mill are not inconsistent with controls used at other sites.

NZ Steel has recently commenced a composite sampling monitoring programme to gain a greater understanding of water quality changes along the length of the watercourse and provide greater confidence that the relevant guidelines are being met within the Lower North Stream.

In the event that the additional monitoring indicates that the long-term contaminant concentrations are not consistently met, additional controls will be implemented (and will be reflected in the WQMP) to ensure that relevant guidelines are met. These additional controls could include:

- The addition of further treatment capacity including temporary surge-ponding at the coal stockpiles;
- Optimisation of chemical treatment, which may involve change in location of dosing and use of a coagulant in addition to the current chemical; and
- Installing a Melter aggregate filter.

Overall, the current controls and on-going optimisation of the existing infrastructure are considered to be BPO for the ITA stormwater discharges to the North Drain.

In relation to the discharges from the EAF Buffer Scrap Yard to the North Drain, the existing ponds would not be consistent with BPO and will therefore be modified with at-source treatment. Constructed wetlands are considered to be best practice and therefore the stormwater discharges from the Buffer Scrap Yard discharges are proposed to be treated via a wetland. In addition, presently the existing treatment systems for CY 5/6 and CY 19 do not have any hydrocarbon treatment. If there is conversion of either of these yards to Scrap Yards for External Scrap, provision for hydrocarbon and oil and grease removal is proposed and the proposed 'treatment train' approach is considered to be consistent with BPO.

### **Dewatering Plant discharge**

The current Dewatering Plant includes separation of the PC from the slurry water through a hydro-cyclone and then either treatment of the separated water through a clarifier and/or pond system (depending on the turbidity of the outlet from the clarifier). The discharged water has a relatively low suspended solids concentration, with additional treatment used if the consent conditions cannot be complied with<sup>107</sup>. Therefore, in terms of turbidity and heavy metals the current controls are considered to be BPO.

The slurry water has elevated salinity and alternatives have been considered and detailed in Section 8.1.4, which consist predominantly of discharging to an alternative location. A desalination plant

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<sup>107</sup> Condition DP3.1 of Permit 21577 requires that the discharge be diverted to the settling ponds when the turbidity doesn't meet the quality required by Condition DP2.3.

could also be used to desalinate the water but is likely to cost in the vicinity of \$6 million dollars, plus ongoing operational costs up to \$1 million per year due to significant on-going energy use.

The Freshwater Ecological Assessment (**Appendix H**) has assessed the effects on the Lower North Stream from the Dewatering Plant process water discharge and has determined that the effects of removing the discharge would be greater than the level of effect from the elevated salinity due to the loss of habitat.

Therefore, the current controls are considered to be BPO.

#### **8.2.4 Ruakohua Stream ITA stormwater discharges**

The activities undertaken within the sub-catchments that drain to the Ruakohua Stream are predominantly low risk, with no significant contaminant loads expected. Stormwater treatment is also provided prior to discharge via either filters or ponds to further reduce contaminant loads, which are consistent with current good practice. Alternative treatment methods such as sandfilters, wetlands or raingardens would provide a similar level of treatment. There is also insufficient space for the construction of treatment methods such as a wetlands or raingardens to treat runoff from the Contractor's Yard. Therefore, any additional costs would not be justified on the basis that there would not be any improvements in water quality.

In addition, the Ruakohua Stream feeds into the Ruakohua Dam which provides water for the Steel Mill and only rarely discharges to the Waiuku Estuary. Therefore, the current controls and discharge locations are considered to be consistent with BPO.

#### **8.2.5 Future Kahawai Stream ITA stormwater discharges**

Monitoring within the Kahawai Stream indicated that the former ITA stormwater discharges were impacting on water quality in the Kahawai Stream. In response, NZ Steel has removed historical fill and returned the area to grass. Any new future ITA activities within this catchment will be subject to the proposed conditions of consent. Therefore, based on the remediation works undertaken and implementation of the consent conditions proposed, any future ITA stormwater discharges from the Kahawai ITA Catchment are proposed to be consistent with BPO.

#### **8.2.6 Summary**

Discharges from the Steel Mill have the potential to cause adverse environmental effects, with discharges to the North Drain and to the CMA from the Northside Outfall identified as having the greatest potential. A detailed consideration of BPO for these discharges is discussed in the ITA Report (**Appendix G**) and in Sections 8.2.3 and 8.2.2 above. The effects of other discharges from the Steel Mill (i.e., to the Ruakohua and to the CMA from the Southside Outfall) have been assessed as no more than minor with the current or proposed controls in place and therefore significant investment in further improving the discharges would not be warranted. Therefore, it is determined that the operational and management controls applicable to the discharges from the Steel Mill (including those relevant to the proposed EAF) are considered to be BPO. In accordance with NZ Steel's practice of continual improvement, NZ Steel will continue to undertake regular reviews of water quality monitoring and management measures to identify areas for improvement and priorities for capital expenditure.

## 9 Statutory assessment

### 9.1 Introduction

The purpose of the statutory planning assessment is to provide analysis of the Proposal against the relevant RMA legislative framework within which the resource consents are sought.

The RMA is the principal guiding statute governing the use of land, air and water. Part 2 of the RMA sets out the purpose and principles of the RMA. The matters to which a consent authority may, must and must not have regard to in its consideration of an application for a resource consent are stipulated under section 104. That consideration is subject to the provisions in Part 2, and other relevant matters for consideration are set out in sections 104D, 105 and 107 of the RMA. Sections 9.2 to 9.9 below consider the Proposal against this RMA framework.

### 9.2 Part 2 of the RMA

Part 2 of the RMA sets out the purpose and principles of the Act. The purpose of the RMA is to promote the sustainable management of natural and physical resources.

The Court of Appeal's decision on *RJ Davidson Family Trust v Marlborough District Council*<sup>108</sup> addresses the approach to Part 2 of the RMA in the context of consent applications. The Court held that reference to Part 2 of the RMA would likely not add anything if "it is clear that a plan has been prepared having regard to Part 2 and with a coherent set of policies designed to achieve clear environmental outcomes"<sup>109</sup>. It is therefore generally not necessary to consider Part 2 of the RMA, unless the relevant plan has been shown to not have been prepared in accordance with and to give effect to Part 2 and higher order planning documents.

The AUP was made operative following an extensive process of engagement and thorough consideration of all relevant planning documents, in particular Part 2 of the RMA. There is no reason to consider the AUP has not been prepared in a manner that appropriately reflects Part 2 of the RMA. Consequently, the below assessment of the proposal against Part 2 is provided for completeness only.

Overall, based on the assessment undertaken as part of this application, it is considered that the Proposal is aligned with the purpose of the RMA, consistent with sections 5, 6, 7 and 8 of the RMA, and is therefore in accordance with Part 2. The reasons for this conclusion are set out in the sections below.

#### 9.2.1 Section 5 – Purpose

Section 5(1) of the RMA states that the purpose of the RMA is to promote the sustainable management of natural and physical resources, with sustainable management defined in section 5(2). The Proposal has been assessed against section 5 and is considered to be consistent with the purpose of the RMA as summarised below:

- The ongoing operation of the Steel Mill will continue to provide for the social and economic well-being of the Glenbrook community into the future through employment generation and will also contribute significantly to the economic well-being of the wider Auckland regional economy, and the national economy through the continuation of steel manufacturing and export.

<sup>108</sup> [2018] NZCA 316.

<sup>109</sup> At [74].

- The cultural well-being of Mana Whenua (in particular, Ngāti Te Ata and Ngāti Tamaoho) will continue to be provided for through ongoing engagement, including the involvement of representatives on the Environment Committee.
- The life supporting capacities of air, water and soil and ecosystems will be safeguarded by robust operating practice, environmental management and monitoring regimes.
- Potential adverse effects from the ongoing operation of the Steel Mill will be avoided, remedied or mitigated through robust management measures and operational procedures (particularly as controlled through management plans and proposed conditions of consent). Positive new effects incorporated in the Proposal and proposed conditions of consent will compensate for residual effects in relation to coastal birds and freshwater.

### 9.2.2 Section 6 – Matters of National Importance

Matters of national importance, which are to be recognised and provided for, are set out in section 6 of the RMA. Of particular relevance to this proposal is:

- Section 6(a) – the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development;
- Section 6(c) - the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;
- Section 6(d) – the maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers;
- Section 6(e) - the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga; and
- Section 6(h) the management of significant risks from natural hazards.

Natural character is not defined in the RMA but it generally refers to the ‘degree of naturalness’ of an area. Natural character is primarily determined by the nature and extent of modification to a landscape and comprises natural elements appearing in natural patterns, underpinned by natural processes. The Marine Ecological Assessment (**Appendix I**) and the Freshwater Ecological Assessment (**Appendix H**) provide discussion on the existing coastal and freshwater environments including the extent and condition of their natural state, as well as the degree to which they have been modified as a result of both the Steel Mill and other surrounding land uses.

With respect to section 6(a), the AUP identifies several SEA-Ms in the vicinity of the Site (refer to Figure W5 in **Appendix E**), which recognises the importance of the extensive intertidal flats in providing foraging habitat for nationally ‘Threatened’ and ‘At Risk’ endemic and migratory coastal bird species, and also the large areas of mangrove forest and saltmarsh vegetation that provide foraging and nesting habitat for the ‘At Risk’ – declining banded rail. Section 7.4 concludes that there is a residual effect on coastal birds and therefore compensation is proposed to enhance and protect habitat that supports indigenous avifauna. The objective of the compensation is positive effects for coastal bird values, and the CBMP proposed in consent conditions will ensure this is achieved.

With respect to section 6(d), the Proposal seeks authorisation for two existing structures within the CMA. The structures do not pose a risk to navigation or to public health and safety given their location on the edge of the CMA and in a location where public access is restricted.

With respect to section 6(e), As described above, the relationship of Māori to water, which is considered taonga, is provided for through ongoing engagement with Ngāti Te Ata and Ngāti Tamaoho, including involvement of representatives on the Environment Committee. Both iwi have been consulted with specifically in relation to this application and this is discussed further in Section 11.

With respect to section 6(h), the on-site water management system and associated discharge controls have taken into account flood risk and is capable of responding to high rainfall conditions (which typically discharging to land would not). The Proposal has also considered the effects of sea level rise and the potential impact this may have on the Northside and Southside Outfall Structures (see Section 7.7 and the Outfall Structure Integrity Assessment (**Appendix J**)).

### 9.2.3 Section 7 – Other Matters

Section 7 of the RMA sets out other matters to which particular regard must be had when exercising functions and powers under the RMA. Of particular relevance to this Proposal are:

- (a) Kaitiakitanga;
- (aa) The ethic of stewardship;
- (b) The efficient use and development of natural and physical resources;
- (d) Intrinsic values of ecosystems;
- (f) Maintenance and enhancement of the quality of the environment;
- (g) Any finite characteristic of natural and physical resources;
- (i) The effects of climate change; and
- (j) The benefits derived from the use of renewable energy.

The following comments in respect to the above other matters are made:

- Representatives from Ngāti Te Ata and Ngāti Tamaoho sit on the Environment Committee of the Steel Mill, and NZ Steel is committed to strengthening its existing relationships with Ngāti Te Ata and Ngāti Tamaoho to assist them to undertake their role as kaitiaki;
- NZ Steel practice an ethic of stewardship as they continually seek to improve their practices and processes to mitigate their effects on the environment;
- Given this consent application is seeking to replace Existing Consents, it is considered that the proposed continuation of activity at the Steel Mill ensures the continued use of existing infrastructure and plant. This is an efficient use of natural and physical resources and efficiency gains are inherent in NZ Steel's continual improvement and BPO programmes;
- Regard has been had to the intrinsic values of ecosystems by adopting BPO and a programme of continuous improvement for all discharges into freshwater and marine environments, and by compensating for residual effects that cannot practicably be avoided, remedied or mitigated;
- The operation of the Steel Mill is appropriately controlled through a suite of management plans, procedures and consent conditions which ensure that the quality of the environment is maintained and, where possible, enhanced;
- The Steel Mill manufactures products which use finite natural resources including coal and ironsand. There are existing economic imperatives that provide for the efficient use of these resources and that efficiency has been built into NZ Steel's site resource management practices. Importantly, the end product, steel, is fully recyclable and there is a healthy international market in scrap steel;
- Additionally, the EAF will see reduced reliance on finite resources in the manufacturing processes and instead will enable increased use of electricity sourced from the National Grid, which is predominantly renewable in nature. This has benefits related to the reduction in greenhouse gas emissions and support for renewable electricity generation and use. The EAF provides the flexibility to scale down production in times of peak electricity demand, which in turn can enable reduction in reliance on non-renewable electricity supplies; and

- The use of domestically sourced scrap steel also provides wider resource efficiency benefits by supporting a circular economy for recycling scrap steel and reducing inefficiencies associated with the alternative exportation of scrap steel to overseas markets.

#### 9.2.4 Section 8 – Treaty of Waitangi

Section 8 requires those exercising powers or functions under the RMA to take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

NZ Steel has an ongoing relationship with Mana Whenua in the area and both Ngāti Te Ata and Ngāti Tamaoho are familiar with NZ Steel’s operations. NZ Steel has engaged with Mana Whenua (as outlined in Section 11) and will continue to engage to ensure that their culture and traditions, and their ancestral land and water are considered and that the principles of Te Tiriti o Waitangi are taken into account.

#### 9.2.5 Summary – Part 2

In summary, while the Proposal will result in some adverse effects on the environment, extensive measures are proposed to mitigate or otherwise compensate for those effects, together with management and monitoring to support NZ Steel’s approach to continuous improvement under its ISO 14001 Environmental Management System. The Proposal will enable ongoing operation of the Steel Mill which will continue to result in national, regional and local benefits. As such, the Proposal is consistent with Part 2 and granting this application will further the sustainable management purpose of the RMA.

### 9.3 Section 95A – public notification of consent application

The applicant requests that the application be publicly notified. In accordance with section 95A(2)(a) and 95A(3)(a) of the RMA, public notification is therefore mandatory.

### 9.4 Section 104D – ‘the gateway test’

Based on the conservative approach to the assessment of “natural inland wetlands under the Freshwater NES, the application falls for consideration overall as a non-complying activity. Given the overlapping nature of the activities for which resource consent are required, it is appropriate for the resource consent applications to be ‘bundled’ together and considered jointly as a non-complying activity.

Section 104D sets out particular restrictions for non-complying activities and effectively establishes what is known as a ‘gateway test’ for non-complying activities. In order to proceed to consideration under section 104(1) the Proposal must meet at least one of the following gateway tests:

- (a) The adverse effects of the activity on the environment will be minor; **or**
- (b) The application is for an activity that will not be contrary to the objectives and policies of the relevant plan.

In terms of the second gateway test, i.e., the application is for an activity that will not be contrary to the objectives and policies of the relevant plan, the relevant plan in this instance is the regional plan components of the AUP.

A discussion in relation to the second gateway test i.e., an assessment against the relevant objectives and policies of the regional plan components<sup>110</sup> of the AUP, is set out in Section 10 below. It is relevant to note that the gateway test of section 104D does not require a detailed ‘policy by policy’ assessment, but rather requires that the provisions are ‘read as a whole’ noting the need to

<sup>110</sup> “Regional plan” is defined in section 43AA of the RMA, and includes a regional coastal plan.

seek to recognise and resolve any internal conflicts of the Proposal within the context of the regional plan provisions. In addition, the Court has applied the definition of “contrary” as being “repugnant to” or “opposed to”, not simply that the proposal does not find support from the relevant policies and objectives<sup>111</sup>.

On the basis of the assessment set out in Section 10, the application is considered to be not contrary to the objectives and policies of the regional plan provisions of the AUP. The application therefore passes the second gateway test of section 104D and can proceed for consideration under section 104(1).

## **9.5 Section 104 considerations**

### **9.5.1 Overview**

Section 104, including subsections 104(1), 104(2A) and 104(2B) of the RMA sets out the matters to which a consent authority must have regard to, subject to Part 2 of the RMA, when considering an application for resource consent. Section 104(2) also sets out matters a consent authority may disregard.

### **9.5.2 Section 104(1)**

#### **9.5.2.1 Overview**

Section 104(1) of the RMA requires that a consent authority must have regard to each of the following matters:

- (a) Any actual and potential effects on the environment of allowing the activity;
- (ab) Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity;
- (b) Any relevant provisions of:
  - i a national environmental standard;
  - ii other regulations;
  - iii a national policy statement;
  - iv a New Zealand coastal policy statement;
  - v a regional policy statement or proposed regional policy statement;
  - vi a plan or proposed plan; and
- (c) Any other matter the consent authority considers relevant and reasonably necessary to determine the application.

These matters are each addressed in the following sections.

#### **9.5.2.2 Section 104(1)(a) – actual and potential effects on the environment**

Section 104(1)(a) of the RMA requires that a consent authority must have regard to any actual or potential effects of the proposal on the environment. In accordance with clause 2(3) of Schedule 4, an assessment of effects is included in Section 7 of this AEE.

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<sup>111</sup> See *Tairua Marine Ltd v Waikato Regional Council* [2010] NZEnvC 398, and *Director-General of Conservation (Nelson-Marlborough Conservancy) v Marlborough District Council* [2010] NZEnvC 403.

The environmental effects associated with the activities to be authorised by resource consent are all able to be appropriately managed through mitigation and compensation for coastal birds as set out in Section 7 and in the suite of technical assessments, and as reflected in the proposed consent conditions (**Appendix R**).

These activities are required to enable the ongoing operation of the Steel Mill, and as such the effects of allowing these activities include the significant positive effects associated with the Steel Mill (as described at Section 7).

### 9.5.2.3 Section 104(1)(ab) – positive effects to offset or compensate adverse effects

Section 104(1)(ab) of the RMA requires that a consent authority must have regard to measures proposed by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment. Discussion and assessment of such matters are included in Sections 7.2 and 7.4.6 of this report.

Subsection (1)(ab) was inserted in the RMA in 2017, providing for both offsets and compensation (recognising the distinction between these two concepts) as part of the consideration of applications required under section 104(1). It is relevant to note that this section of the RMA came into force after the AUP had been made operative in part and is therefore not fully reflected in the AUP provisions, including those which are directly relevant to this application.

The measures proposed by NZ Steel for the purpose of ensuring positive effects on the environment to compensate for residual adverse effects on coastal birds are relevant in terms of section 104(1)(ab), as discussed below.

The proposed approach to manage and monitor residual adverse effects on coastal birds and support ecological enhancement is set out in a draft CBMP (**Appendix S**), which is proposed to be developed and certified as a condition of consent (**Appendix R**). The CBMP is based on the Preliminary BCM Report (attached to the Marine Ecological Assessment in **Appendix I**), which is used to determine the type and quantum of compensation that is required to address residual effects on coastal birds, in line with best practice guidance. Such compensation measures could include the enhancement of existing bird roost and intertidal feeding habitat through selective mangrove management, the creation of artificial roosts, and protective measures including fencing and the control of weeds and predators. There may also be the opportunity to collaborate with Auckland Council, the local board and community groups to enhance other bird roost habitat in the Waiuku Estuary. The Marine Ecological Assessment (**Appendix I**) considers that the positive effects resulting from these works will adequately compensate for residual adverse effects on coastal birds.

### 9.5.2.4 Section 104(1)(b) – provisions of the relevant standards, regulations, policies and plans

Section 104(1)(b) of the RMA requires that a consent authority must have regard to any relevant provisions of planning documents. In accordance with clause 2(1)(g) and clause 2(2) of Schedule 4, an assessment of the Proposal is set out in Section 10 below.

### 9.5.2.5 Section 104(1)(c) – other matters

Section 104(1)(c) of the RMA requires that a consent authority must have regard to any other matter the consent authority considers relevant and reasonably necessary to determine the application. The RMA does not define what other matters are to be considered under section 104(1)(c) and as such, a case-by-case identification of the matters that are relevant to the consideration of an application for resource consent is required. For the re consenting, 'other matters' are generally relevant statutes and non-RMA planning or policy documents that are directly relevant to the Steel Mill's outcomes, have been through public engagement processes or have been prepared in accordance with related legislation.



Other matters that the consent authority may consider relevant to determine the application are identified and discussed in Section 10.5 below.

### 9.5.3 Section 104(2) – permitted activities

Section 104(2) of the RMA states that when forming an opinion for the purposes of subsection (1)(a), a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect. The activities assessed as permitted activities are identified in Section 6.2.6 above and therefore the effects of these activities may be disregarded.

### 9.5.4 Section 104(2A) – value of the investment

Section 104(2A) of the RMA requires that consent authorities, when considering an application affected by section 124<sup>112</sup>, must have regard to the value of the investment of the existing consent holder.

The Steel Mill is a long-standing industrial facility that has been developed with significant investment over many decades to be what it is today. It is a regionally and nationally significant industry that makes a significant contribution to the economic and employment sectors in the south Auckland area and beyond.

The value of the investment of NZ Steel as the existing consent holder is significant on any measure. Using historical information<sup>113</sup>, original costs are valued in the order of \$2 billion and the current book value (original cost less depreciation) is in the order of \$0.5 billion. Replacement cost for the assets (and NZ Steel's insured value) is \$5.1 billion and this most closely represents the value of the investment in current financial terms. Further, NZ Steel invests more than \$100 million each year on maintaining and improving the assets, including environmental improvements.

As discussed at Section 7.2, NZ Steel directly employs around 1,250 people, contributes approximately \$600 million to New Zealand's GDP annually and sponsors several environmental community programmes. These additional benefits are attributable to the value of the investment made by NZ Steel.

### 9.5.5 Section 104(2B) – customary marine title groups

Section 104(2B) of the RMA requires that the consent authority, when considering a resource consent application for an activity in an area within the scope of a planning document prepared by a customary marine title group, must have regard to any resource management matter set out in that planning document.

The Marine and Coastal Area (Takutai Moana) Act 2011 (MACA) creates a no-ownership regime over the marine and coastal area and introduces mechanisms to recognise customary rights of Māori in that area. These mechanisms include "protected customary rights" (PCRs) and "customary marine title" (CMT). Iwi, hapū and whānau can apply to have PCRs or CMT recognised either through High Court proceedings or by engaging directly with the Crown.

All CMT and PCR applications were required to be lodged by 3 April 2017<sup>114</sup>. There are approximately 35 High Court applications and 30 applications with the Crown in the Auckland Region. There are currently no planning documents prepared by CMT groups in the Auckland Region.

<sup>112</sup> Section 124 relates to the exercise of a resource consent while applying for a new consent.

<sup>113</sup> Personal communication – email correspondence between Ron Gillespie and Jennifer Carvill dated 11 March 2021.

<sup>114</sup> MACA, section 100.

As discussed further at Section 11.3 below, NZ Steel has notified CMT and PCR applicant parties in accordance with section 62(3) of MACA where such applications relate to the coastal area of the Waiuku Estuary directly adjacent to the Steel Mill. The only response received was from Ngāti Te Ata (as discussed at Section 11.3).

## 9.6 Section 105 – matters relevant to certain applications

Section 105 is relevant to applications for discharges under section 15 of the RMA.

Section 105 requires the consent authority to have regard to:

- (a) The nature of the discharge and the sensitivity of the receiving environment;
- (b) The applicant's reasons for the proposed choice; and
- (c) Possible alternative methods of discharge, including discharges into any other receiving environment.

This application seeks to replace the Existing Consents for the Steel Mill, and the existing investment and location of Steel Mill infrastructure constrains the ability to consider alternative discharges or receiving environments. Matters relevant to section 105 have also been addressed throughout the AEE, particularly in:

- Section 2 which describes the receiving environments;
- Section 3 which describes the Steel Mill operations and Section 4 which describes the discharges;
- Section 7 which assesses the effects on the environment; and
- Section 8 which considers alternative methods and locations for the discharges, and the application of the best practicable option.

Consequently, it is considered that the required matters for consideration in relation to section 105 have been addressed in this application.

## 9.7 Section 107 – restrictions on grant of certain discharge permits

Section 107 is relevant to applications for discharges under section 15 of the RMA.

Section 107 restricts the granting of discharge permits in certain circumstances, namely if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- Any conspicuous change in the colour or visual clarity;
- Any emission of objectionable odour;
- The rendering of fresh water unsuitable for consumption by farm animals; and
- Any significant adverse effects on aquatic life.

Section 4 of this AEE and the ITA Report (**Appendix G**) contain a description of each of the ITA stormwater catchments, treatment systems and discharge locations, and the nature of the contaminants in the discharges. Comprehensive assessments of the effects of the discharges on freshwater and marine ecology environments have been undertaken (and are provided at **Appendix H** and **Appendix I** respectively).

As discussed in Section 7.4.8, the zone of mixing in the CMA is considered to be reasonable, and therefore section 107 applies beyond this zone of reasonable mixing for the Northside and Southside Outfalls.

The discharges to the CMA and freshwater do not result in any conspicuous changes in the receiving waters after reasonable mixing. Some suspended sediments are present in the discharges, however these do not cause visual plumes and the material rapidly settles out. The discharges do not emit objectionable odour, and do not affect the suitability of the stream water for consumption by farm animals or cropping.

An assessment of the effects of the discharges on freshwater and marine ecology is provided in Section 7.3 and 7.4 respectively, which conclude that the discharges will not have significant adverse effects on aquatic life after reasonable mixing.

Overall, it is concluded that the discharge would not give rise to any of the effects set out in section 107(1)(c) to (g). Therefore, it is considered that section 107 does not prevent Council from granting the consents sought in this application.

## **9.8 Section 124 – exercise of resource consent**

Section 124 sets out that a consent holder may continue to operate under an existing consent until a new consent is granted and all appeals are determined<sup>115</sup>. In order to continue to operate under section 124, a consent holder must apply for a new consent for the same activity, at least six months before the expiry of the existing consent<sup>116</sup>.

The resource consents that this application seeks to replace expired on 31 December 2021, except for the resource consent to divert and discharge the flow of the North Drain which expires on 1 October 2026. Six months prior to the earliest expiry date is 30 June 2021. This application was lodged prior to 30 June 2021, therefore section 124 applies.

## **9.9 Schedule 4, Clause 6(1)(a) – significant adverse effects**

Clause 6(1)(a) of Schedule 4 requires the applicant to include a description of any possible alternative locations or methods for undertaking the activity, where it is likely that the activity will result in any significant adverse effect on the environment.

The proposed discharges of ITA stormwater and process water to watercourses and the CMA will not result in any significant adverse effects on the environment in the streams and outside the zone of reasonable mixing of the Northside Outfall. Notwithstanding this, and in light of the effects *within* the zone of reasonable mixing in the CMA, a description of possible alternatives is contained at Section 8.

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<sup>115</sup> RMA, section 124(3).

<sup>116</sup> RMA, section 124(1).

## 10 Assessment of planning documents

### 10.1 Introduction

This section of the AEE assesses the Proposal against the relevant provisions of the following planning documents:

- National policy statements (Section 10.2);
- National environmental standards (Section 10.3);
- Auckland Unitary Plan – Operative in Part (Section 10.4); and
- Other relevant matters (Section 10.5).

This section of the AEE explains why the Proposal is consistent with the relevant planning documents in accordance with section 104(1)(b), and why the Proposal is not contrary to the objectives and policies of the regional plan (including regional coastal plan) component of the AUP in accordance with 104D(1)(b) of the RMA. In addition, it addresses the Proposal in relation to “other matters” that may be considered in accordance with section 104(1)(c).

The RMA provisions relevant to the Proposal are discussed in Section 9 of this AEE. A full set of the relevant provisions of the planning and statutory documents is contained in **Appendix P**.

### 10.2 National policy statements

#### 10.2.1 Overview

National policy statements state objectives and policies for matters of national significance that are relevant to achieving the purpose of the RMA. The national policy statements that are potentially relevant to this application are:

- National Policy Statement for Freshwater Management 2020 (NPSFM);
- National Policy Statement for Indigenous Biodiversity (2023);
- New Zealand Coastal Policy Statement 2010 (NZCPS); and
- National Policy Statement for Urban Development 2020 (NPSUD).

#### 10.2.2 National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management 2020 (NPSFM) came into force on 3 September 2020. The NPSFM is directly relevant as the Proposal involves discharges to freshwater environments and to land where it may enter freshwater environments<sup>117</sup>.

The NPSFM addresses, as a matter of national significance, the management of freshwater through a framework that considers and recognises Te Mana o te Wai as an integral part of freshwater management. It imposes national bottom lines, seeks to improve degraded water bodies and maintain or improve others, and seeks to avoid any further loss or degradation of wetlands and streams. The NPSFM provides local authorities with updated direction about how they should manage freshwater under the RMA through their policy statements, plans and resource consent decisions.

The concept of Te Mana o te Wai seeks to protect the mauri of the water by restoring and preserving the balance between water, the wider environment, and the community. Te Mana o te

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<sup>117</sup> This assessment of the NPSFM is as of March 2024. The National-led coalition government elected in 2023 has indicated that changes are likely to be made to this NPSFM.

Wai establishes a hierarchy of obligations, which is formalised in the single objective of the NPSFM (contained at **Table 10.1**).

The NPSFM specifies six principles of Te Mana o te Wai, which set out the obligations and responsibilities of tangata whenua, authorities and all New Zealanders in regard to freshwater. The NPSFM directs regional councils to engage with communities and tangata whenua to determine how Te Mana o te Wai applies to the region and to develop a freshwater vision. Regional councils are also required to implement a National Objectives Framework (NOF) process, which involves the identification of Freshwater Management Units (FMUs) in the region, which are assigned values, environmental outcomes (as regional plan objectives), baseline and target states<sup>118</sup>, with accompanying rules and action plans (as appropriate) to achieve the outcomes. Regional councils must then follow the Schedule 1 process to make the necessary changes to its regional policy statement and regional plan(s), with the changes notified no later than December 2024. Until that occurs, the provisions of the NPSFM have the same status as other national policy statements.

The NPSFM also directs regional councils to use the section 55(2) process to include three clauses<sup>119</sup> within their regional plans (i.e., without using the Schedule 1 process). Council has followed this direction and these additions have been made at Chapter E3 (relates to the beds of lakes, rivers, streams and wetlands).

A brief assessment of the Proposal against the sole objective and most relevant policies<sup>120</sup> of the NPSFM is provided in **Table 10.1** below.

**Table 10.1: NPSFM Relevant Objectives and Policies**

Objective/ Policy	Assessment
<p><b>Objective</b></p> <p>(1) The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:</p> <p>(a) first, the health and well-being of water bodies and freshwater ecosystems</p> <p>(b) second, the health needs of people (such as drinking water)</p> <p>(c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.</p>	<p>The Steel Mill manages its discharges into freshwater environments such that effects on freshwater ecosystems is minimised as far as practicable, while also enabling the Steel Mill to operate and provide for the social and economic wellbeing of people and the communities that it serves.</p> <p>NZ Steel's proposed management plans, conditions and principles of continual improvement are in keeping with the overall outcomes of the NPSFM both in terms of the objective of managed improvement to meet well-being needs and the increased monitoring and assessment of freshwater quality.</p> <p>Moreover, the longstanding nature of the proposed discharges means that the health and wellbeing of the North Stream Catchment is reliant on the continuation of the Dewatering Plant discharges (discussed at Sections 7.3.2 and 7.3.3).</p> <p>Additionally, the health needs of people are not affected by the Proposal in relation to drinking water as there are no drinking water abstractions downstream of the discharges.</p>

<sup>118</sup> It is noted that the Site is within the Pukekohe specified vegetable growing area, which may allow Council to set a target attribute state that is below the national bottom line.

<sup>119</sup> Clause 3.22(1) (natural inland wetlands), Clause 3.24(1) (rivers), and Clause 3.26(1) (fish passage)

<sup>120</sup> In *Rangitane o Tamaki Nui a Rua Inc v Manawatu-Wanganui RC* [2021] NZEnvC 51, where the relevant plan had not given effect to the NPSFM, the Judge held that it is not possible to determine consistency with individual policies with any degree of confidence, but there is no doubt about the objective of the NPSFM.

Objective/ Policy	Assessment
<p><b>Policy 1</b> Freshwater is managed in a way that gives effect to Te Mana o te Wai.</p>	<p>NZ Steel has an ongoing relationship with Mana Whenua, and this engagement includes their active involvement in freshwater management through the Environment Committee. This enables tangata whenua to perform the principles of mana whakahaere, kaitiakitanga and manaakitanga.</p> <p>NZ Steel acts consistently with the principles of stewardship and care and respect through the sustainable management of freshwater receiving waters and its programme of continual improvement for all discharges.</p>
<p><b>Policy 2</b> Tangata whenua are actively involved in freshwater management (including decision making processes), and Māori freshwater values are identified and provided for.</p>	
<p><b>Policy 3</b> Freshwater is managed in an integrated way that considers the effects of the use and development of land on a whole-of-catchment basis, including the effects on receiving environments.</p>	<p>Freshwater resources relied on by the Proposal will be managed in an integrated way, recognising the interconnectedness of the whole environment and particularly the streams to the sea. This application contains an ITA Assessment (<b>Appendix G</b>), Freshwater Ecological Assessment (<b>Appendix H</b>) and Marine Ecological Assessment (<b>Appendix I</b>) in recognition of the integrated nature of water and its receiving environments.</p>
<p><b>Policy 5</b> Freshwater is managed through a National Objectives Framework to ensure that the health and well-being of degraded water bodies and freshwater ecosystems is improved, and the health and well-being of all other water bodies and freshwater ecosystems is maintained and (if communities choose) improved.</p>	<p>Although Council has not yet implemented the NOF process to assign outcomes and targets to the FMUs relevant to the Site, it is noted that NZ Steel manages its discharges under a continual improvement programme, with the aim of improving the health and wellbeing of receiving freshwater ecosystems.</p> <p>As noted above this is consistent with the NPSFM Objective, which (prior to the implementation of the NPSFM), provides appropriate guidance regarding the intended outcomes of the future NOF process.</p>
<p><b>Policy 6</b> There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted.</p>	<p>Stream-wetland complexes (natural inland wetlands) are present in the receiving watercourses. No loss of extent of any wetland will occur as a result of the Proposal, and in fact the flow volume contributed by the Proposal's Dewatering Plant discharge (either with or without the EAF operating) is essential to the wetlands in the North Stream Catchment (i.e., a substantive loss in wetland extent and values would occur if the discharge was removed).</p> <p>The Freshwater Ecological Assessment (<b>Appendix H</b>) finds that the potential effects of the discharges on the values of all receiving wetlands will be 'Low'. Despite this, NZ Steel proposes ecological enhancement of wetlands through native planting and animal and plant pest control, which will enhance wetland value, including as habitat for the threatened banded rail.</p>
<p><b>Policy 7</b> The loss of river extent and values is avoided to the extent practicable<sup>121</sup>.</p>	<p>No loss of river extent will occur and impacts on river values has been avoided to the extent practicable by implementing BPO for all discharges and following the effects management hierarchy. The Steel Mill and its associated discharges have a functional need to be located</p>

<sup>121</sup> The policy contained at Clause 3.24(1) of the NPSFM has been inserted into AUP Chapter E3 (Lakes, rivers, streams and wetlands). Chapter E3 is not assessed in this application as the Proposal doesn't affect beds of waterbodies. However, the policy at Clause 3.24(1) has been considered as part of the assessment of Policy 7 of the NPSFM.

Objective/ Policy	Assessment
	<p>at this location due to the existing infrastructure and value of investment.</p> <p>Additionally, as noted above, the proposed discharges increase river extent (materially in the case of the Lower North Stream, which would otherwise be a smaller, intermittent stream) and support Policy 7.</p>
<p><b>Policy 9</b> The habitats of indigenous freshwater species are protected.</p>	<p>The receiving watercourses provide habitat for a low-moderate diversity of indigenous freshwater fish species, which will be protected as the effects on fish are assessed as being no more than minor. In particular, the Dewatering Plant discharge creates a permanently flowing instream habitat in the Lower North Stream in what would otherwise be an intermittent stream. Proposed enhancement of the Lower North Stream wetland and wetland margins will improve and protect habitat for indigenous freshwater species.</p>
<p><b>Policy 12</b> The national target (as set out in Appendix 3) for water quality improvement is achieved.</p>	<p>The proposed discharges do not contain <i>E. coli</i> or <i>cyanobacteria</i> (planktonic), and therefore do not affect the suitability of the receiving streams for primary contact as set out in Appendix 3 to the NPSFM.</p>
<p><b>Policy 13</b> The condition of water bodies and freshwater ecosystems is systematically monitored over time, and action is taken where freshwater is degraded, and to reverse deteriorating trends.</p>	<p>NZ Steel systematically monitors the discharges and condition of receiving freshwater ecosystems and has a framework of continual improvement for its discharges to ensure existing freshwater degradation is lessened over time.</p> <p>The proposed conditions in <b>Appendix R</b> include requirements for a monitoring programme, and a WQMP which is to include Consent Limits, Trigger Investigation Levels, and actions to be taken in the event of any exceedances.</p>
<p><b>Policy 14</b> Information (including monitoring data) about the state of water bodies and freshwater ecosystems, and the challenges to their health and well-being, is regularly reported on and published.</p>	<p>Monitoring data and emerging trends is reported by NZ Steel to the Environment Committee and to Council on a regular basis.</p> <p>The proposed conditions in <b>Appendix R</b> include requirements for reporting to the Environment Committee, annual reporting and five yearly reporting.</p>
<p><b>Policy 15</b> Communities are enabled to provide for their social, economic, and cultural wellbeing in a way that is consistent with this National Policy Statement</p>	<p>The ongoing operation of the Steel Mill will enable the community (both directly and indirectly) to provide for their social, economic and cultural wellbeing through employment, expenditure and wider economic contributions. This is further discussed at Section 7.2.</p>

**Table 10.1** has provided an overview and discussion of the requirements of the NPSFM as a relevant statutory document that must be had regard to in the section 104 assessment. The NPSFM's primary purpose is to provide national direction for plan and policy making at the regional and district levels, with resource consent applications then assessed against those regional and district frameworks. This is because the NPSFM sets out the requirement for there to be a collaborative public process to incorporate Te Mana o Te Wai framework into regional and district planning documents. This process will take some time, particularly in the Auckland context and therefore its full implementation is likely to take some time to complete.

Overall, the Proposal is considered to be consistent with the NPSFM. The Proposal first avoids then mitigates adverse effects on freshwater where at all practicable and compensates for residual effects. This is consistent with the effects management hierarchy set out in Subpart 3 of the NPSFM, which requires this approach in relation to wetlands and rivers. The intent of the Proposal is to continue to provide for social and economic wellbeing through employment opportunities and the Steel Mill's significant contribution to the national economy.

### 10.2.3 National Policy Statement for Indigenous Biodiversity

The National Policy Statement for Indigenous Biodiversity (NPSIB) came into force on 4 August 2023. Its objective is to maintain indigenous biodiversity across Aotearoa New Zealand so that there is at least no overall loss in indigenous biodiversity after the commencement date.

The NPSIB applies to indigenous biodiversity in the terrestrial environment throughout Aotearoa New Zealand. There is a particular focus on Significant Natural Areas (SNAs), but the provisions of the NPSIB also apply to indigenous biodiversity outside SNAs.<sup>122</sup> Of relevance to this application is clause 3.16(2) which states that adverse effects of any activities that may adversely affect indigenous biodiversity that is outside an SNA must be managed to give effect to the objectives and policies of the NPSIB.

Of particular relevance to this application are the NPSIB provisions that relate to specified highly mobile fauna as set out in Appendix 2 of the NPSIB. There are 11 species present or potentially present in the modelled mixing extent and wider ZOI that are identified as specified highly mobile fauna species. There are also two species that may be present in wetland habitats at the Site. These species are identified in Table 6-7 of the Marine Ecology Report.

The NPSIB provides a set of principles for offsetting and compensation contained at Appendix 4. The Marine Ecological Assessment (**Appendix I**) has stepped through the application of this in its approach to residual adverse effects on coastal birds.

**Table 10.2** below provides an assessment of the Proposal against the relevant objectives and policies of the NPSIB<sup>123</sup>.

**Table 10.2: NPSIB Relevant Objectives and Policies**

Objective/ Policy	Assessment
<p><b>Objective</b></p> <p>(1) The objective of this National Policy Statement is:</p> <p>a to maintain indigenous biodiversity across Aotearoa New Zealand so that there is at least no overall loss in indigenous biodiversity after the commencement date; and</p> <p>b to achieve this:</p> <p>i through recognising the mana of tangata whenua as kaitiaki of indigenous biodiversity; and</p> <p>ii by recognising people and communities, including landowners,</p>	<p>The Steel Mill manages its discharges into receiving environments such that effects on ecosystems, and any associated adverse effects on indigenous biodiversity are minimised as far as practicable, while also enabling the Steel Mill to operate and provide for the social and economic wellbeing of people and the communities that it serves.</p> <p>NZ Steel's proposed management plans and conditions (and principles of continual improvement) are in keeping with the overall objective of the NPSIB so that there is no overall loss in indigenous biodiversity, including specified highly mobile fauna.</p>

<sup>122</sup> The SEAs in the AUP are deemed SNAs in accordance with the definition of SNA in the NPSIB. The AUP identifies terrestrial SEAs in the vicinity of the Site but these are not affected by this application. While the AUP identifies marine SEAs in the CMA, these are outside the jurisdiction of the NPSIB.

<sup>123</sup> It is noted that Appendix P was prepared prior to the NPSIB gazettal and therefore does not include the objectives and policies of the NPSIB.



Objective/ Policy	Assessment
<p>as stewards of indigenous biodiversity; and</p> <p>iii by protecting and restoring indigenous biodiversity as necessary to achieve the overall maintenance of indigenous biodiversity; and</p> <p>iv while providing for the social, economic, and cultural wellbeing of people and communities now and in the future.</p>	<p>The ongoing relationship with Mana Whenua as kaitiaki is also provided for as discussed further at Section 11.3 including as a result the active involvement of Mana Whenua in the Environment Committee.</p>
<p><b>Policy 1</b> Indigenous biodiversity is managed in a way that gives effect to the decision-making principles and takes into account the principles of the Treaty of Waitangi.</p>	<p>NZ Steel has an ongoing relationship with Mana Whenua, and this engagement includes their active involvement through the Environment Committee. This enables tangata whenua to perform the principles of mana whakahaere, kaitiakitanga and manaakitanga.</p>
<p><b>Policy 2:</b> Tangata whenua exercise kaitiakitanga for indigenous biodiversity in their rohe, including through: (a) managing indigenous biodiversity on their land; and (b) identifying and protecting indigenous species, populations and ecosystems that are taonga; and (c) actively participating in other decision-making about indigenous biodiversity.</p>	
<p><b>Policy 3:</b> A precautionary approach is adopted when considering adverse effects on indigenous biodiversity.</p>	<p>A conservative approach has been taken to evaluating the need for further residual effects management by assessing the highest overall level of effect on each of the various habitat types, species, and spatial areas (both within and outside the modelled mixing zone). This includes the approach taken to residual effects management for coastal avifauna (some of which are specified highly mobile fauna), particularly where the potential effects on these species were considered to be uncertain.</p>
<p><b>Policy 5:</b> Indigenous biodiversity is managed in an integrated way, within and across administrative boundaries.</p>	<p>Indigenous biodiversity is being managed in an integrated way such that the effect of the discharges are being minimised as far as practicable (through continual improvement measures adopted on Site) as well as compensatory actions proposed within the vicinity of the Site to be as close to the impact as possible. The CBMP sets out measures that will compensate for the effects on indigenous biodiversity. This approach is in line with the compensation principle of 'landscape context'.</p>
<p><b>Policy 8:</b> The importance of maintaining indigenous biodiversity outside SNAs is recognised and provided for.</p>	<p>The application recognises the importance of maintaining indigenous biodiversity. The proposed compensatory measures aim to restore intertidal foraging areas and roost sites and to maintain indigenous biodiversity (coastal avifauna). While this is outside SNAs, it is within areas that Auckland Council identify as SEA within the marine environment. NZ Steel also proposes</p>

Objective/ Policy	Assessment
	enhancement wetland planting outside of SNAs which will also maintain indigenous biodiversity.
<b>Policy 9:</b> Certain established activities are provided for within and outside SNAs.	The Steel Mill is an established activity. This policy seeks to provide for the continuation of the Steel Mill activities in the same location. NZ Steel adopts a continual improvement philosophy and will appropriately avoid, mitigate and compensate adverse effects on the environment as discussed at Section 7.
<b>Policy 10:</b> Activities that contribute to New Zealand’s social, economic, cultural, and environmental wellbeing are recognised and provided for as set out in this National Policy Statement.	Section 7.2 identifies the positive effects including the significant contribution that the Steel Mill provides to the local, regional and national economy.
<b>Policy 13:</b> Restoration of indigenous biodiversity is promoted and provided for.	The proposed compensatory measures aim to restore intertidal foraging areas and roost sites through management of mangroves that have encroached in recent years and affected foraging and roosting habitats of coastal birds. Additionally, the wetland enhancement proposed will also provide benefits for indigenous biodiversity.
<b>Policy 15:</b> Areas outside SNAs that support specified highly mobile fauna are identified and managed to maintain their populations across their natural range, and information and awareness of highly mobile fauna is improved.	There are 11 species present or potentially present in the modelled mixing extent and wider ZOI that are identified as specified highly mobile fauna species. The discharges from the Steel Mill are managed to minimise effects on the areas used by these species as far as practicable. The proposed compensatory measures are expected to provide benefits for these species. The CBMP sets out measures that will compensate for the effects on these species.

Overall, the Proposal is considered to give effect to the objectives and policies of the NPSIB.

#### 10.2.4 New Zealand Coastal Policy Statement

The New Zealand Coastal Policy Statement 2010 (NZCPS) is administered by the DOC and its purpose is to state objectives and policies to achieve the purpose of the RMA in relation to the coastal environment of New Zealand<sup>124</sup>. The coastal environment is not limited to the CMA<sup>125</sup>. The Environment Court recently held that it was satisfied that the AUP has given effect to the NZCPS<sup>126</sup>. However, for completeness, this AEE has identified the provisions most relevant to this application (contained at **Appendix P**) and provided comment on these against the Proposal below.

- Objective 1 seeks to safeguard the integrity, form, functioning and resilience of the coastal environment and sustain its ecosystems by maintaining biological and physical processes, maintaining the diversity of New Zealand’s indigenous coastal flora and fauna and maintaining coastal water quality (and enhancing it where it has deteriorated from what would otherwise be its natural condition, with significant adverse effects on ecology and habitat, because of discharges associated with human activity). A discussion of the effects of the Steel Mill on marine ecology is provided at Section 7.4. In summary, over the duration of the consent term,

<sup>124</sup> NZCPS, Preamble.

<sup>125</sup> NZCPS, Policy 1.

<sup>126</sup> Auckland Council v Auckland Council [2020] NZEnvC 070 at [44].

effects in the ZOI are generally expected to be low, with moderate (but not significant) effects on coastal birds (due to the Very High value of some species). These effects on birds are primarily due to impacted foraging habitat quality, driven by concentrations of zinc, and to a lesser degree copper, suspended sediment, and sedimentation rates. However, it is considered that the effects on coastal birds can be adequately addressed through compensatory action such as roost and foraging habitat enhancement. NZ Steel has adopted a practice of continual improvement which focuses on the purpose, process and people to enable on-going improvements and optimisation of processes so as to avoid, remedy and mitigate effects as far as practicable on an ongoing basis (as detailed in the ITA report), which will lessen the effects of the discharges over the term of the consents.

- In accordance with Objective 6 of the NZCPS, granting consents to allow the ongoing operation of the long-established Steel Mill activity will recognise that the activities are functionally bound to the coastal environment. This takes into account the existing plant, equipment and infrastructure (including rail facilities) at the location. The continued use of the natural resources in the coastal environment within the limits sought is vitally important to the social and economic wellbeing of the people and community at Glenbrook and the wider Auckland region.
- Policy 1 and Policy 4 recognise that the coastal environment includes areas beyond the CMA including coastal wetlands, coastal vegetation and habitat of indigenous coastal species, intertidal zone and physical resources and built facilities that have modified the coastal environment, such as the Steel Mill. Therefore, assessments under the NZCPS are not limited solely to the CMA and should include activities in the coastal environment. As a result, this assessment is not confined to discharges to the CMA, but also includes the land-based Steel Mill activities where relevant to the NZCPS as they occur in the coastal environment. An integrated management approach is taken, particularly in regard to considering the effects of discharges to streams on the estuarine environment, and the cumulative effects of other activities.
- Objective 3 and Policy 2 require that the principles of the Treaty of Waitangi be taken into account, and the role of the kaitiaki recognised in relation to the coastal environment. This is discussed at Section 8.
- Policy 6, particularly clauses (2)(a), (2)(c) and 2(e), recognises that activities of national or regional importance may have a functional need to locate and operate in the CMA, promotes the efficient use of occupied space, and recognises contributions to the social, economic and cultural wellbeing of people and communities. The Steel Mill is an existing facility and has a functional need to locate and operate adjacent to the CMA (due to the need to discharge water as well as a reliance on ironsand). The outfall structures therefore have a functional need to be located within the CMA and represent an efficient use of occupied space given they are existing. These activities will continue to support people and the community through the contribution the Steel Mill makes (as described at Section 7.2).
- Policy 11 requires the protection of indigenous biological diversity in the coastal environment, and specifies the types of taxa, ecosystems and habitats on which adverse effects are to be avoided, and those on which significant adverse effects are to be avoided and other effects avoided, remedied or mitigated. The Waiuku Estuary is home to threatened and at-risk coastal birds, including migratory species, and while adverse effects on these species will be avoided, remedied and mitigated to the greatest practicable extent, more than minor adverse effects will remain, primarily through the degradation of foraging habitat. NZ Steel has proposed a compensation programme, which will enhance the value of roosting and/ or foraging habitat for coastal birds. All other potential adverse effects of the Proposal on indigenous coastal biodiversity will be avoided, remedied or mitigated, and no significant adverse effects outside of the zone of reasonable mixing are anticipated. This includes consideration of effects on

mangroves and other saline vegetation, which provide important habitat during the vulnerable life stages of indigenous species (juvenile fish) and are ecosystems considered to be particularly vulnerable to modification.

- Objective 2 and Policy 13 seek to preserve the natural character of the coastal environment, and it is noted that the Site is not identified in the AUP as having outstanding natural character. The Proposal generally has no effect on natural character matters such as scenery, natural landforms, natural darkness and experiential attributes, as it is for the purpose of obtaining replacement consents for those expiring in relation to the operation of an existing Steel Mill. In regard to biophysical and ecological aspects and other natural elements, processes and patterns, the assessments in Section 7 demonstrate that significant adverse effects will be avoided after reasonable mixing and other effects will be avoided, remedied, mitigated or compensated for. Ecological compensation measures are proposed in the coastal environment that include the enhancement of coastal bird habitat. Enhancement measures are also proposed for natural inland wetlands (refer Sections 7.3.6 and 7.4.6). These measures which will support the restoration of the ecological elements of natural character, consistent with Policy 14.
- Policy 3 directs a precautionary approach to be taken when effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse. Although the effects on coastal birds are not considered to be potentially significant, the Marine Ecological Assessment (**Appendix I**) adopts a precautionary approach in assessing these effects. The Freshwater Ecological Assessment (**Appendix H**) also takes this approach with regard to natural inland wetlands, particularly as enhancement is proposed even though adverse effects are no more than minor.
- Policy 21 seeks the enhancement of water quality in the coastal environment where it has deteriorated so that it is having a significant adverse effect on ecosystems, natural habitats, or water based recreational activities, or is restricting existing uses, such as aquaculture, shellfish gathering, and cultural activities. The Steel Mill has a long-standing history of discharging to the Waiuku Estuary, and the Marine Ecological Assessment (**Appendix I**) contains an assessment of the Current Environment and the effects of the proposed consenting of the activities sought by this application. The Steel Mill is not assessed as having significant adverse effects on coastal water quality, and it does not restrict the use of the Waiuku Estuary for activities such as boating, fishing or shellfish gathering.
- Policy 22 seeks to assess and monitor sedimentation levels and impacts on the coastal environment as well as reduce sediment loadings in runoff and in stormwater systems through controls on land use activities. Sedimentation rates for the ZOI have been modelled and the proposed discharges will contribute to overall sedimentation rates. However, the sedimentation effects of the proposed discharges are proportionally small and spatially constrained compared to those expected from other land uses in the Waiuku Estuary catchment. Monitoring of ongoing sedimentation is proposed as part of the overall monitoring programme.
- Policy 23 relates to discharges of contaminants to water in the coastal environment. It requires that particular regard be given to the sensitivity of the receiving environment, the nature of the contaminants and the capacity of the receiving environment to assimilate those contaminants, avoiding significant adverse effects on ecosystems and habitats after reasonable mixing, using the smallest mixing zone necessary, and minimising the adverse effects on the life-supporting capacity of water within the mixing zone. These matters are discussed in the Marine Ecological and ITA Reports (**Appendix I and Appendix G**), and Section 7.4.8 contains a discussion about the modelled mixing extent and zone of reasonable mixing that concludes these are acceptable. As the ultimate receiving environment, the monitoring data from the CMA is reflective of cumulative impacts of discharges from the Site. The

adoption of BPO for all discharges ensures the zone of reasonable mixing is of the smallest practicable size, and adverse effects within the zone of reasonable mixing are minimised. No significant adverse effects on ecosystems or habitats are anticipated.

- Policy 23 also sets out the means by which the adverse effects of stormwater discharges to the coastal environment are to be avoided. Stormwater contaminant and sediment loadings are controlled initially at source, then by treatment devices, to achieve the best practicable quality prior to discharge.

## 10.2.5 National Policy Statement on Urban Development

The National Policy Statement on Urban Development (NPSUD) 2020 sets out the objectives and policies for planning for well-functioning urban environments under the RMA. One purpose of the NPSUD is to ensure growth is strategically planned and leads to well-functioning urban environments that enable communities to provide for their social, economic, and cultural well-being and for their health and safety (Objective 1).

While the NPSUD's principal focus does not directly engage with applications such as the Proposal, the NPSUD is relevant insofar as:

- Its application may affect the provision of well-functioning urban environments. Although the Steel Mill is not located specifically within an urban environment (and is outside the Rural Urban Boundary<sup>127</sup>), it is located within the Auckland Region which is classified by the NPSUD as a Tier 1 urban environment; and
- Industrial zoned land is considered Business Land. The industrial zoning represents a resource that is planned in keeping with the NPSUD Implementation (3.3). The Proposal's use of that resource/zoning is in keeping with the NPSUD at a high level given it is plan-enabled and infrastructure ready.

The existing nature of the Steel Mill means that appropriate zoning and land use provision has been made for the activity, its surrounds in the AUP, and to minimise the off-site effects of its activities. Therefore, the replacement consents sought which are associated with the operation of the Steel Mill are consistent with the NPSUD insofar as they enable people to provide for their economic wellbeing and employment opportunities in accordance with Objective 1. The Steel Mill's contribution to the economy is described at Section 7.2.

## 10.3 National environmental standards

### 10.3.1 National Environmental Standards for Freshwater

The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (Freshwater NES) came into force on 3 September 2020 with the latest amendment regulations in effect from 5 January 2023. The Freshwater NES set requirements for carrying out certain activities that pose risks to freshwater and freshwater ecosystems, seeking to protect natural inland wetlands, protect streams from infilling (reclamation), ensure fish passage, and limit the impacts of farming activities on freshwater.

Regulation 6 clarifies the relationship between the Freshwater NES and plan rules, in that a district or regional rule may be more stringent than the Freshwater NES. In specific circumstances, however, a rule may be more lenient than the regulations relating to culverts, weirs and flap gates (regulations 70-74).

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<sup>127</sup> The Rural Urban Boundary is a tool used in the Auckland Unitary Plan to set constraints on where housing development can occur.

For clarity, it is considered that the Proposal does not constitute ‘specified infrastructure’ as this has the same meaning as ‘regionally significant infrastructure’ identified as such in a regional policy statement or regional plan. The AUP does not define regionally significant infrastructure, however, does define ‘infrastructure’. The Proposal is not considered to fall within this definition.

Part 3 of the Freshwater NES set out the standards for activities that relate to freshwater, other than farming activities. Subparts 1 and 3 of Part 3 are relevant to this application.

### **Subpart 1 of Part 3 – Natural inland wetlands**

Subpart 1 of Part 3 applies to natural inland wetlands, including the discharge of water within, or within a 100 m setback from, a natural inland wetland. The Freshwater NES defines ‘natural inland wetland’ as having the same meaning given by the NPSFM. The NPSFM defines ‘natural inland wetland’ as a wetland (as defined in the RMA) that is not:

- a In the coastal marine area; or
- b A deliberately constructed wetland, other than a wetland constructed to offset impacts on, or to restore, an existing or former natural inland wetland;
- c A wetland that has developed in or around a deliberately constructed water body, since the construction of the water body; or
- d A geothermal wetland; or
- e A wetland that:
  - i is within an area of pasture used for grazing; and
  - ii has vegetation cover comprising more than 50% exotic pasture species (as identified in the National List of Exotic Pasture Species using the Pasture Exclusion Assessment Methodology (see clause 1.8)); unless
  - iii the wetland is a location of a habitat of a threatened species identified under clause 3.8 of this National Policy Statement, in which case the exclusion in (e) does not apply.

As set out in Section 2, there are wetlands on the margins of some of the streams that receive the proposed discharges, and resource consent is sought under the Freshwater NES in this regard (refer to Section 6.3). As discussed above, NZ Steel has taken a deliberately conservative approach to the identification of natural inland wetlands.

### **Subpart 3 of Part 3 – Passage of fish affected by structures**

Subpart 3 of Part 3 applies to the effects of riverbed structures (culverts, weirs, flap gates, dams and fords) on the passage of fish. The regulations specify the conditions under which these structures are permitted, and the resource consent requirements if the conditions are not met. The regulations also require specific information about the structure to be provided to the regional council, regardless of whether a resource consent is required, and specifies the monitoring and maintenance consent conditions that must be imposed. However, subpart 3 does not apply to any structure that was in the river or connected area prior to the Freshwater NES taking effect<sup>128</sup>, including any later alterations or extensions of that structure.

As all riverbed structures within NZ Steel’s site existed prior to September 2020, and no new structures are proposed within riverbeds, this application is not affected by subpart 3 of Part 3 of the Freshwater NES.

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<sup>128</sup> Regulation 60 states that subpart 3 does not apply to structures existing at the close of 2 September 2020.

### 10.3.2 National Environmental Standard for Sources of Human Drinking Water

The Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations 2007 (NES Drinking Water) came into effect in 2008 and sets requirements for protecting sources of human drinking water from becoming contaminated. The NES Drinking Water requires regional councils to ensure that decisions on resource consents and regional plans consider effects on drinking-water sources.

The Proposal is for discharges to streams and the CMA. There are no human drinking water abstractions downstream of the discharges, and the NES Drinking Water is therefore not relevant.

## 10.4 Auckland Unitary Plan

### 10.4.1 Overview

The AUP became operative in part on 15 November 2016. The AUP contains the Regional Policy Statement (RPS), Regional Coastal Plan (RCP) and Regional and District Plan objectives and policies.

An assessment of the Proposal in relation to the policy direction of the AUP is set out below. Each table identifies a key theme and the key relevant AUP chapters and paraphrased relevant provisions associated with that theme. **Appendix P** contains a copy of the full provisions that are considered relevant to this consenting application.

An assessment in relation to these provisions, and to the broad overall direction set by the AUP, is set out below each table.

### 10.4.2 Provisions that recognise and provide for the Steel Mill

**Table 10.3** provides an overview of the objectives and policies of the following chapters of the AUP that recognise and provide for the Steel Mill:

- Chapter B2 – Urban growth and form;
- Chapter B3 – Infrastructure, transport and energy
- Chapter B7 – Natural resources;
- Chapter I425 – Glenbrook Steel Mill Precinct; and
- Chapter H16 – Business – Heavy Industrial Zone.

**Table 10.3: AUP – Provisions that recognise and provide for the Steel Mill and support the EAF**

RPS	Regional Plan / District Plan
<p><b>Objective B2.5.1(1)</b> Employment and commercial and industrial opportunities meet current and future demands.</p> <p><b>Objective B2.5.1(3)</b> Industrial activities are enabled in a manner that promotes economic development, the efficient use of buildings, land and infrastructure in industrial zones recognising particular locational requirements of certain</p>	<p><b>Objective I415.2 (1)</b> The Glenbrook Steel Mill is enabled to contribute to the social and economic wellbeing of the Auckland Region.</p> <p><b>Policy I415.3 (1)</b> That a range of activities which are necessary to the functional<sup>129</sup> and operational needs<sup>130</sup> of the steel mill are enabled.</p> <p><b>Policy I415.3 (2)</b> The character and amenity of the rural environment surrounding the steel mill is maintained and noise monitoring is undertaken.</p>

<sup>129</sup> Functional need is defined in the AUP (Chapter J1) as “the need for a proposal or activity to traverse, locate or operate in a particular environment because it can only occur in that environment”.

<sup>130</sup> Operational need is defined in the AUP (Chapter J1) as “the need for a proposal or activity to traverse, locate or operate in a particular environment because of technical or operational characteristics or constraints.”

RPS	Regional Plan / District Plan
<p>industries while managing conflict between activities.</p> <p><b>Policy B2.5.2(7)</b> Enable the supply of land for heavy industrial activities where the scale, character and intensity of effects from those activities can be appropriately managed.</p> <p><b>Policy B2.5.2(8)</b> Enable the supply of industrial land which is relatively flat, has efficient access to freight routes, rail or freight hubs, ports and airports, and can be efficiently served by infrastructure.</p> <p><b>Policy B2.5.2(9)</b> Enable the efficient use of industrial land for industrial activities and avoid incompatible activities.</p> <p><b>Policy B2.5.2(10)</b> Manage reverse sensitivity effects on the efficient operation, use and development of existing industrial activities, including by preventing inappropriate sensitive activities locating or intensifying in or adjacent to heavy industrial zones.</p> <p><b>Objective B3.4.1(2)</b> Energy efficiency and conservation is promoted.</p> <p><b>Policy B3.4.2(1)</b> Recognise the national, regional and local benefits to be derived from maintaining or increasing the level of electricity generated from renewable energy sources.</p> <p><b>Policy B7.6.2(2)</b> Encourage the use of recycled mineral, construction waste and demolition waste to supplement mineral supply.</p>	<p><b>Policy I415.3(3)</b> The natural character and amenity values of the coastal environment are managed.</p> <p><b>Objective H16.2(1)</b> Heavy industry operates efficiently and is not unreasonably constrained by other activities.</p> <p><b>Objective H16.2(2)</b> Business – Heavy Industry Zone zoned land, and activities that are required to locate there because of the nature of their operation, are protected from the encroachment of: (a) activities sensitive to air discharges and activities sensitive to noise; and (b) commercial activities that are more appropriately located in other business zones.</p> <p><b>Objective H16.2(4)</b> Adverse effects on the natural environment within the zone and on the amenity values of neighbouring zones are managed.</p> <p><b>Policy H16.3(1)</b> Avoid activities which do not support the primary function of the zone.</p> <p><b>Policy H16.3(4)</b> Restrict maximum impervious area within the riparian yard in order to ensure that adverse effects on water quality, water quantity and amenity values are avoided or mitigated.</p>

## Discussion

The provisions identified above in B2.5.1 and B2.5.2 of the RPS, and the Regional Plan provisions<sup>131</sup> which give effect to the RPS direction, are enabling provisions that recognise the benefits of industrial activities, the efficient use of land, buildings and infrastructure while appropriately managing adverse effects.

The purpose of the Glenbrook Steel Mill Precinct is to support and enable the continued operation of the existing Steel Mill and associated facilities<sup>132</sup>. The AUP recognises that the Steel Mill is a significant industrial resource within the Auckland region and seeks to provide for the Steel Mill's growth and operation in a way that continues to support the local, regional and national economy.

The Steel Mill has an operational requirement to discharge contaminants as a result of the processes required to produce iron and steel. Further, the Steel Mill is locationally constrained by virtue of the extensive plant already established at Glenbrook, and by its need to be close to the ironsand mine at

<sup>131</sup> Objective I415.2 (1), Policy I415.3 (1), Objective H16.2(1).

<sup>132</sup> I415.1 Precinct description.



Maioro/ Waikato North Head, the on-site waste gas cogeneration plant, and with ready access to rail facilities. The use of the existing infrastructure established at the Site recognises the value of the investment already made and the efficient use of existing resources.

Chapter H16, particularly Objectives H16.2(1) and (2), seeks to ensure that heavy industrial activities are not unreasonably constrained by other activities while managing appropriately any adverse effects on the natural environment. Policy I415.3(1) recognises that a range of activities, which includes those sought by this consent application, are a fundamental requirement to the function and operation of the Steel Mill. Therefore, the activities sought by this application are considered to be enabled by this provision.

The existing nature and longevity of the Steel Mill means that it is well established within its locale, and the effects are well understood and are being appropriately managed by the existing consent conditions and the EMS. The replacement of the existing consents will enable NZ Steel to continue operating and producing iron and steel and its associated activities.

The ongoing operation of the Steel Mill as sought by this application represents an efficient use of the AUP zoning, land and infrastructure already established on the Site. It enables the significant contribution that the Steel Mill has to the local, regional and national economy to continue (as discussed at Section 7.2), as well as to the social wellbeing of the people and communities that it serves, in accordance with Objective I415.2(1).

In terms of the provisions that support the installation and operation of the EAF, the following comments are made:

- Steel is infinitely recyclable, and the installation and operation of an EAF will mean New Zealand will be able to recycle domestic scrap steel, rather than shipping it offshore.
- The EAF will encourage investment in / support renewables as the EAF will see reduced reliance on finite resources in the manufacturing processes and instead will enable increased use of electricity sourced from the National Grid, which is predominantly renewable in nature. Moreover, the EAF operation (through innovative partnership with Contact Energy) will be able to be scaled up or down depending on peak electricity demand or supply shortages enables the national energy supply to be managed in a way that supports renewable energy.

The EAF will aid in the reduction of direct greenhouse gas emissions at the Site by approximately 800,000 tonnes of CO<sub>2</sub>e per annum equivalent to 45 percent of the Site's greenhouse gas emissions and provide ongoing certainty of operations and the benefits outlined above. The Proposal is consistent with and also supported and enabled by these RPS and Plan objectives and policies.

#### **10.4.3 Provisions related to industrial and trade activities, and stormwater quality and management**

**Table 10.4** provides an overview of the objectives and policies of the AUP from the following chapters that are relevant to stormwater quality and management, including industrial and trade activities:

- Chapter B7 – Natural resources;
- Chapter B10 – Environmental risk;
- Chapter E1 – Water quality and integrated management; and
- Chapter E33 – Industrial and trade activities.

**Table 10.4: AUP – Provisions related to industrial and trade activities**

RPS	Regional Plan / Regional Coastal Plan / District Plan
<p><b>Objective B7.4.1 (4)</b> The adverse effects of point and non-point discharges, in particular stormwater runoff and wastewater discharges, on coastal waters, freshwater and geothermal water are minimised and existing adverse effects are progressively reduced.</p> <p><b>Policy B7.4.2 (9)</b> Manage stormwater by requiring subdivision, use and development to minimise the generation and discharge of contaminants and minimise adverse effects on freshwater and coastal water and by adopting the best practicable option for every stormwater diversion and discharge.</p> <p><b>Policy B10.3.2 (1)</b> Manage the use and development of land for hazardous facilities and industrial or trade activities to avoid adverse effects on human health and the environment and remedy or mitigate these effects where they cannot be avoided.</p>	<p><b>Objective E33.2 (1)</b> Industrial and trade activities are managed to avoid adverse effects on land and water from environmentally hazardous substances and discharge of contaminants, or to minimise adverse effects where it is not reasonably practicable to avoid them.</p> <p><b>Policy E33.3 (1)</b> Manage the use of land for industrial or trade activities to prevent or minimise any adverse effects of storage, use or disposal of environmentally hazardous substances.</p> <p><b>Policy E33.3 (2)</b> Require industrial or trade activities to have, where reasonably practicable, onsite management systems, processes, containment, treatment, or disposal by lawful means.</p> <p><b>Policy E33.3 (3)</b> Require measures to be implemented, where contaminants cannot be disposed as trade waste to the wastewater network or contained on site, to minimise adverse effects on land and water including:</p> <p>(a) reducing contaminant volumes and concentrations as far as practicable; and</p> <p>(b) applying measures, including treatment, management procedures, monitoring, controls, or offsite disposal, having regard to the nature of the discharge and the sensitivity of the receiving environment.</p> <p><b>Objective E1.2 (3)</b> Stormwater and wastewater networks<sup>133</sup> are managed to protect public health and safety and to prevent or minimise adverse effects of contaminants on freshwater and coastal water quality.</p> <p><b>Policy E1.3 (10)</b> In taking an integrated stormwater management approach have regard to: the nature and scale of the development and practical and cost considerations recognising industrial land uses have greater constraints and that site operational and use requirements may preclude the use of an integrated stormwater management approach; the location, design, capacity, intensity and integration of sites/development and infrastructure; the nature and sensitivity of receiving environments to the adverse effects of development; reducing stormwater flows and contaminants at source prior to the consideration of mitigation measures; the use and enhancement of natural hydrological features and green infrastructure for stormwater management where practicable.</p> <p><b>Policy E1.3 (11)</b> Avoid as far as practicable, or otherwise minimise or mitigate adverse effects of stormwater diversions and discharges, having particular regard to the nature, quality, volume and peak flow of the stormwater runoff; the sensitivity of freshwater systems and coastal waters, the potential for the diversion and discharge to create or exacerbate flood risks; options to manage stormwater on-site or the use of communal stormwater management measures; practical limitations in respect of the measures that can be applied; and the current state of receiving environments.</p> <p><b>Policy E1.3 (13)</b> Require stormwater quality or flow management to be achieved on-site.</p>

**Discussion:**

The policy direction of Chapter E1, Chapter E33 and Policy B10.3.2(1) and B7.4.2 (9) in relation to stormwater discharges, is to minimise, manage and control contaminants at source in order to avoid or minimise effects on public health and safety as well as land and water as far as practicable.

The Steel Mill is managed by an overarching EMS, consistent with Policy E33.3(2). As part of this EMS, a number of administrative and engineering controls are applied to control and minimise

<sup>133</sup> Stormwater network is defined in the AUP (Chapter J1) as: "A system of stormwater pipes, open channels, devices and associated ancillary structures used for the purpose of conveying, diverting, storing, treating, or discharging stormwater."

contaminants at the source as described at the ITA report at **Appendix G** (consistent with Policy E33.3(1)). These management measures are also reflected in the WQMP attached at **Appendix K** which is proposed as a condition of consent (**Appendix R**) to ensure ongoing appropriate management of stormwater.

The effects of the discharges on the freshwater and marine environments have been assessed with particular regard to the nature of the receiving environment (Policy E33.3(3)(b)). These assessments are summarised at Section 7. The assessments conclude that given the Site is an existing facility and based on monitoring undertaken and an assessment of the associated effects of the discharges, the current controls at the Site are consistent with achieving the BPO to prevent or minimise adverse effects resulting from the discharges. The possible exception is the ITA discharges from coal stockpiles to the North Drain, which are the subject of ongoing assessment. If that additional monitoring demonstrates that current controls are not BPO, additional measures will be implemented to decrease the concentrations of metals and suspended sediment in the discharges to ensure the BPO is achieved. See the ITA report (**Appendix G**) or Section 8.2 of this AEE for a more detailed discussion. It is noted that the proposed controls for the Scrap Yards to be established to support the EAF are also considered to be consistent with BPO as discussed at Section 8.2. Proposed consent conditions (**Appendix R**) impose requirements for minimum discharge quality, and setting of Trigger Investigation Levels, with a requirement for reviews, and BPO assessments to ensure existing effects on coastal and freshwater environments are progressively reduced.

Overall, it is considered that the current Site management methods, controls and continual improvement programme (consistent with Objective B7.4.1 (4)) are consistent with BPO, and the industrial and trade activities and associated stormwater discharges are managed to avoid or minimise adverse effects on the freshwater and marine environments as far as practicable.

The Proposal is considered to be consistent with the RPS and Regional Plan provisions relating to industrial and trade activities, and stormwater quality and management.

#### 10.4.4 Provisions related to freshwater systems

**Table 10.5** provides an overview of the objectives and policies of the following AUP chapters that are relevant to freshwater systems<sup>134</sup>:

- Chapter B7 – Natural resources; and
- Chapter E1 – Water quality and integrated management.

**Table 10.5: AUP – Provisions related to freshwater systems**

RPS	Regional Plan / Regional Coastal Plan / District Plan
<p><b>Objective B7.3.1 (1)</b> Degraded freshwater systems are enhanced.</p> <p><b>Objective B7.3.1 (2)</b> Loss of freshwater systems is minimised.</p> <p><b>Objective B7.3.1 (3)</b> The adverse effects of changes in land use on freshwater are avoided, remedied or mitigated.</p> <p><b>Policy B7.3.2 (1)</b> Integrate the management of subdivision, use and development and freshwater systems by controlling the use of land and discharges to</p>	<p><b>Objective E1.2 (1)</b> Freshwater and sediment quality is maintained where it is excellent or good and progressively improved over time in degraded areas.</p> <p><b>Policy E1.3 (1)</b> Manage discharges, until such time as objectives and limits are established in accordance with Policy E1.3(7), having regard to the National Policy Statement for Freshwater Management National Bottom Lines and the Macroinvertebrate Community Index.</p>

<sup>134</sup> Freshwater system is defined in the AUP (Chapter J1) as: “The beds, banks, margins, flood plains and waters of rivers and natural lakes and wetlands, and groundwater systems together with their natural functioning and interconnections.”

RPS	Regional Plan / Regional Coastal Plan / District Plan
<p>minimise the adverse effects of runoff on freshwater systems and progressively reduce existing adverse effects where those systems or water are degraded.</p> <p><b>Policy B7.3.2 (3)</b> Promote the enhancement of freshwater systems identified as being degraded to progressively reduce adverse effects.</p> <p><b>Policy B7.3.2 (5)</b> Manage subdivision, use, development, including discharges and activities in the beds of lakes, rivers streams, and in wetlands, including to maintain or enhance freshwater systems and riparian vegetation.</p> <p><b>Policy B7.4.2 (1)</b> Integrate the management of subdivision, use and development and freshwater systems by controlling the use of land and discharges to minimise the adverse effects of runoff on freshwater systems and progressively reduce existing adverse effects where those systems or water are degraded.</p> <p><b>Policy B7.4.2 (2)</b> Give effect to the National Policy Statement for Freshwater Management 2014.</p> <p><b>Policy B7.4.2(7)</b> Manage the discharges of contaminants into water from subdivision, use and development to avoid where practicable, and otherwise minimise adverse effects on the quality of freshwater and coastal water.</p> <p><b>Policy B7.4.2 (8)</b> Minimise the loss of sediment from subdivision, use and development, and manage the discharge of sediment into freshwater and coastal water.</p> <p><b>Objective B7.4.1 (1)</b> Coastal water, freshwater and geothermal water are used within identified limits while safeguarding the life-supporting capacity and the natural, social and cultural values of the waters.</p> <p><b>Objective B7.4.1 (2)</b> The quality of freshwater and coastal water is maintained where it is excellent or good and progressively improved over time where it is degraded.</p>	<p><b>Policy E1.3 (2)</b> Manage discharges, subdivision, use, and development that affect freshwater systems to:</p> <p>(a) maintain or enhance water quality, flows, stream channels and their margins and other freshwater values, where the current condition is above National Policy Statement for Freshwater Management National Bottom Lines and the relevant Macroinvertebrate Community Index guideline in Table E1.3.1; or</p> <p>(b) Enhance water quality, flows, stream channels and their margins and other freshwater values where the current condition is below national bottom lines or the relevant Macroinvertebrate Community Index guideline in Table E1.3.1.</p> <p><b>Policy E1.3 (3)</b> Require freshwater systems to be enhanced unless existing intensive land use and development has irreversibly modified them such that it practicably precludes enhancement.</p> <p><b>Policy E1.3 (4 and 5)</b> When considering any application for a discharge, the Council must have regard to the following matters:</p> <p>(a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of freshwater including on any ecosystem associated with freshwater and the health of people and communities; and</p> <p>(b) the extent to which it is feasible and dependable that any more than a minor adverse effect on freshwater, and on any ecosystem associated with freshwater, or on the health of people and communities resulting from the discharge would be avoided.</p> <p><b>Policy E1.3 (6)</b> Policies E1.3(4) and (5) apply to new discharges or a change or increase in any discharge of any contaminant into freshwater, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering freshwater.</p> <p><b>Policy E1.3 (26)</b> Prevent or minimise the adverse effects from construction, maintenance, investigation and other activities on the quality of freshwater and coastal water by adopting best management practices and establishing minimum standards for the discharges.</p>

## Discussion:

Chapter E1 contains multiple references to the ‘National Policy Statement’ which relate to the NPSFM 2014 as the NPSFM 2020 (discussed at Section 10.2.2) has yet to be incorporated into this Chapter via the Schedule 1 process<sup>135</sup>. However, given the NPSFM 2020 is operative, and it is likely that the AUP will be updated in the near future to reflect the latest version of the policy document, the below assessment of Chapter E1 in relation to freshwater systems takes into consideration the provisions of the NPSFM 2020.

### Freshwater quality:

Objective E1.2 (1), Policy B7.3.2 (1), Policy B7.4.2 (1) and B7.4.2(7) seek to minimise (and to avoid where practicable in the case of B7.4.2(7)) the adverse effects of runoff on freshwater systems, requiring existing adverse effects to be progressively reduced where those systems or freshwater or sediment quality are degraded. As assessed in the Freshwater Ecological Assessment (**Appendix H**), the water and sediment quality of the three receiving freshwater systems is degraded. Policy E1.3 (1) and Policy E1.3 (2) seek to manage discharges, until such time as objectives and limits are established in accordance with Policy E1.3(7), having regard to the NPSFM National Bottom Lines and the AUP Macroinvertebrate Community Index (MCI) guidelines. In this regard, the Freshwater Ecological Assessment finds that the MCI scores of the receiving streams are generally below both the NPSFM National Bottom Lines and the AUP guidelines.

While it is not practicable to avoid the discharge of ITA stormwater to the streams or the discharge of Dewatering Plant process water to the North Drain (as demonstrated by the alternatives and BPO assessments in Sections 8.1 and 8.2), effects will be minimised through the adoption of BPO for all discharges. NZ Steel proposes to undertake reviews to ensure its processes and treatment remain consistent with BPO as best practice evolves, which will ensure the quality of the discharges improve over the consent term.

As discussed at Section 7.3, all ecological effects on freshwater systems from the Steel Mill are considered no more than minor, and adverse effects will be avoided or mitigated to the greatest practicable extent. Notwithstanding this, NZ Steel proposes to undertake ecological enhancement measures to restore wetlands on the Site, which will also have incidental benefits to instream ecology (Policy B7.3.2(5)), thus enhancing those freshwater systems. Furthermore, the Dewatering Plant discharge provides life-supporting flows to the Lower North Stream and its wetland complexes, that are necessary to maintain the extent and value of habitats (Policy E1.3 (2)).

Policy E1.3(26) requires establishing minimum standards for the discharges. The proposed conditions of consent (**Appendix R**) set these standards by way of a monitoring programme including Consent Limits and a trigger level system (Trigger Investigation Levels) for early detection of potential quality issues.

The Proposal is considered to be consistent with the RPS and Regional Plan provisions relating to freshwater systems.

## 10.4.5 Provisions related to the CMA and coastal environment

**Table 10.6** provides an overview of the objectives and policies of the following AUP chapters that are relevant to the coastal marine area and coastal environment:

- Chapter B7 – Natural environments;
- Chapter B8 – Coastal environment;

<sup>135</sup> Noting that updates to the AUP by way of section 55 have occurred in Chapter E3 which is not considered relevant to this application.

- Chapter E1 – Water quality and integrated management; and
- Chapter F2 – General coastal marine zone.

**Table 10.6: AUP – Provisions related to the CMA and coastal environment**

RPS	Regional Plan / Regional Coastal Plan / District Plan
<p><b>Objective B8.3.1 (1)</b> Subdivision, use and development in the coastal environment are located in appropriate places and are of an appropriate form and within appropriate limits, taking into account the range of uses and values of the coastal environment.</p> <p><b>Objective B8.3.1 (2)</b> The adverse effects of subdivision, use and development on the values of the coastal environment are avoided, remedied or mitigated.</p> <p><b>Objective B8.3.1 (4)</b> Rights to occupy parts of the coastal marine area are generally limited to activities that have a functional or operational need.</p> <p><b>Objective B8.3.1 (5)</b> Uses and developments that have a need to locate on land above and below MHS are provided for in an integrated manner.</p> <p><b>Policy B8.3.2 (1)</b> Recognise the contribution that use and development of the coastal environment make to the social, economic and cultural well-being of people and communities.</p> <p><b>Policy B8.3.2 (3)</b> Provide for use and development in the coastal marine area that: (a) have a functional need which requires the use of the natural and physical resources of the coastal marine area; or (c) have an operational need making a location in the coastal marine area appropriate and that cannot practicably be located outside the coastal marine area.</p>	<p><b>Policy E1.3 (26)</b> Prevent or minimise the adverse effects from construction, maintenance, investigation and other activities on the quality of freshwater and coastal water by adopting best management practices and establishing minimum standards for the discharges.</p> <p><b>Objective F2.11.2 (1)</b> Water and sediment quality in the coastal marine area is maintained where it is excellent or good and progressively improved over time in degraded areas.</p> <p><b>Policy F2.11.3 (1)</b> Avoid the discharge of contaminants where it will result in significant modification of, or damage to any areas identified as having significant values.</p> <p><b>Policy F2.11.3 (2)</b> Require any proposal to discharge contaminants or water into the coastal marine area to adopt the best practicable option to prevent or minimise adverse effects on the environment.</p> <p><b>Policy F2.11.3 (5)</b> Encourage source control of contaminants, through the management of land use and discharges, as a method to prevent or minimise contaminant generation and discharge to coastal receiving environments.</p> <p><b>Policy F2.11.3 (7)</b> Enable discharges associated with new or redevelopment of infrastructure to meet the economic and social needs of people and communities.</p> <p><b>Policy F2.11.3 (8)</b> Avoid the discharge of wastewater to the coastal marine area, unless alternative methods, sites and routes for the discharge have been considered and are not the best practicable option; Mana Whenua have been consulted in accordance with tikanga Māori and due weight has been given to section 6, 7 and 8 of the Resource Management Act 1991; the affected community has been consulted regarding the suitability of the treatment and disposal system to address any environmental effects; the extent to which adverse effects have been avoided, remedied or mitigated.</p> <p><b>Objective F2.14.2 (2) and Policy F2.14.3 (1)</b> Occupation rights are provided for in appropriate locations, and in appropriate circumstances for use and development that has a functional need to be located in the common marine and coastal area.</p> <p><b>Objective F2.14.2 (7)</b> Use and development in the coastal marine area is supported by all necessary land-based access and infrastructure.</p> <p><b>Policy F2.14.3 (10)</b> Require any proposed use and development for activities in the common marine and coastal area to demonstrate that any necessary land-based access and infrastructure can be appropriately provided for.</p> <p><b>Policy F2.14.3 (11)</b> Determine the appropriate duration for granting rights of occupation.</p> <p><b>Objective F2.16.2 (1)</b> Structures are generally limited to those that have a functional or operational need to be located in the coastal marine area.</p> <p><b>Objective F2.16.2 (3)</b> Structures are appropriately located and designed to minimise adverse effects on the ecological, natural character, landscape, natural features, historic heritage and Mana Whenua values of the coastal marine area, and avoid to the extent practicable the risk of being adversely affected by coastal hazards.</p>

RPS	Regional Plan / Regional Coastal Plan / District Plan
<p><b>Policy B8.3.2 (4)</b> Require subdivision, use and development in the coastal environment to avoid, remedy or mitigate the adverse effects of activities above and below the mean high water springs, including the effects on existing uses and on the coastal receiving environment.</p> <p><b>Policy B8.3.2 (5)</b> Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown or little understood, but could be significantly adverse.</p> <p><b>Policy B7.4.2(7)</b> Manage the discharges of contaminants into water from subdivision, use and development to avoid where practicable, and otherwise minimise adverse effects on the quality of freshwater and coastal water.</p> <p><b>Policy B7.4.2 (8)</b> Minimise the loss of sediment from subdivision, use and development, and manage the discharge of sediment into freshwater and coastal water.</p> <p><b>Objective B7.4.1 (1)</b> Coastal water, freshwater and geothermal water are used within identified limits while safeguarding the life-supporting capacity and the natural, social and cultural values of the waters.</p> <p><b>Objective B7.4.1 (2)</b> The quality of freshwater and coastal water is maintained where it is excellent or good and progressively improved over time where it is degraded.</p>	<p><b>Policy F2.16.3 (1)</b> Limit structures to those that generally have a functional or operational need to be located in the coastal marine area; locations where the purpose and frequency of use warrants the proposed structure, and an alternative that would have lesser effects is not a practicable option.</p> <p><b>Policy F2.16.3 (2)</b> Avoid adverse cumulative impacts from structures in the Coastal – General Coastal Marine Zone.</p> <p><b>Policy F2.16.3 (4) [rcp]</b> Enable the maintenance, repair, reconstruction and upgrade of existing lawful structures, including where necessary to comply with applicable standards and codes.</p> <p><b>Policy F2.16.3 (7)</b> Require structures in the Coastal – General Coastal Marine Zone to be located to minimise impacts on other coastal activities, including activities provided for in zones or resource consents; adverse effects on recreational use and public access to and along the coastal marine area; visual impacts, the size of the structure, including its size in relation to wharves and jetties and consider providing for partial rather than all-tide access, unless this is not a practicable option given the function and frequency of use; the risk of being affected by coastal hazards including sea level rise; the need for dredging, including ongoing dredging to maintain water access; and adverse effects on scheduled sites and places of significance to Mana Whenua.</p> <p><b>Policy F2.16.3 (8)</b> Require structures to be designed to be the minimum size reasonably necessary to provide for the proposed use; be multi-purpose where practicable and where it will not conflict with operational or safety requirements; minimise impacts on natural character and amenity values and generally fit with the character of any existing built elements, including in the use of materials and colours having regard to safety requirements; not increase rates of coastal erosion; and take into account dynamic coastal processes, including the expected effects of climate change and sea level rise.</p> <p><b>Policy F2.16.3 (19)</b> Require applications for structures in the coastal marine area to demonstrate that any landward component, development, or use of land-based infrastructure or facilities can be appropriately provided for.</p> <p><b>Policy F2.16.3 (22)</b> Ensure that structures in the coastal marine area do not pose a risk to navigation or to public health and safety.</p>

**Discussion:**Discharges:

Objective B8.3.1(2) and Policy B8.3.2(4) seek that adverse effects of use and development activities on the values of the coastal environment are avoided, remedied or mitigated. Specific to the discharge of contaminants to coastal water, Policy B7.4.2(7) directs adverse effects on water quality to be avoided where practicable, or otherwise minimised. Avoidance and minimisation of effects starts with the source control of contaminants within the Steel Mill (as directed by Policy F2.11.3(5)), followed by effective treatment prior to discharge, and both aspects at the Site are currently BPO (as discussed at Section 8.2 and within the ITA Report (**Appendix G**)). The assessments in Section 7 demonstrate that adverse effects have been avoided and mitigated to the greatest practicable extent, and ecological compensation will adequately address the residual adverse effects on coastal birds.

AUP Figure B7.4.2.1 indicates that the entire Waiuku and Taihiki Estuaries have been degraded by human activity and are categorised as Degraded 1<sup>136</sup>, and the Marine Ecological Assessment (**Appendix I**) also confirms that coastal water and sediment quality is degraded and will therefore need to improve over time (as directed by Objective B7.4.1(2) and Objective F2.11.2(1)). NZ Steel proposes conditions that require the water management systems to be regularly reviewed, which will ensure the controls continue to follow best practice and continuously improve the quality of the discharges over the consent term.

Policy F2.11.3(1) directs that the discharge of contaminants be avoided where it will result in significant modification of, or damage to any areas identified as having significant values. The assessment in Section 7.4 finds that while the residual adverse effects on coastal birds will be more than minor, the effects can be adequately compensated for through enhancement of important roosting and foraging habitat, and there will be no significant modification or damage to areas identified as having significant values. Regardless, and although not required by Policy B8.3.2 (5) for this application, a precautionary approach has been taken for the Marine Ecological Assessment (**Appendix I**).

Policy F2.11.3(2) requires any proposal that discharges contaminants into the CMA to adopt BPO to prevent or minimise adverse effects on the environment. It is considered that the Proposal is consistent with BPO in light of the following matters:

- It is not appropriate or practicable to discharge above MHWS, although land treatment options have been considered as an alternative discharge location as discussed at Section 8.1. Section 8.2 provides a discussion on BPO in regard to further preventing and minimising the contaminant load to the CMA. This concludes that the current controls and discharge method is assessed as being BPO;
- There is no municipal or reticulated wastewater network in place that could be used as an alternative;
- The Marine Ecological Assessment's finding that there is assimilative capacity for contaminants in the outer Waiuku Estuary (as levels are relatively low there). While there is less assimilative capacity for sediment in the Waiuku Estuary (as levels are already quite elevated), sediment is a wider issue in the catchment outside the modelled mixing extent – not related to the proposed discharges;

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<sup>136</sup> B7.7 (Explanation and principal reasons) states that degraded areas have been identified based on assessments of water quality, sediment contamination and benthic health.



- Present and foreseeable future adverse effects have been avoided and mitigated to the greatest extent practicable, including on recreational activities, the suitability of fish and shellfish for consumption, and the conservation or management of fisheries;
- Parts of the Waiuku Estuary are recognised for their high ecological values through the AUP SEA-M Overlay and being identified by DOC as an ASCV. Effects on these areas will be minimised through the adoption of BPO for the onsite controls and water management system, however a more than minor residual adverse effect on coastal birds will remain. Use of a BCM will ensure the proposed ecological compensation measures will appropriately address these adverse effects;
- The BPO assessment considered whether cleaner production methods could be used to minimise the volume and level of contaminants being generated, which found the current methods are the BPO; and
- The discharge is not expected, after reasonable mixing, to result in conspicuous visual changes or odour, or significant adverse effects on aquatic life or aesthetic or amenity values.

Policy F2.11.3(8) is specific to the discharge of wastewater<sup>137</sup> to the CMA, directing it to be avoided unless specific steps and considerations have been made, on which the following comments are made:

- An assessment of alternative methods, sites and routes for the discharges to the CMA has been undertaken (in Section 8, which finds the current discharges to be BPO (also in accordance with Policy F2.11.3(2) and Policy E1.3(26));
- Mana Whenua have been consulted as discussed at Section 11, and due weight has been given to Part 2 of the RMA in Section 9.2;
- Consultation has occurred as described at Section 11 and public notification of this application has been requested. It is noted that the Steel Mill is part of the community fabric, and the treatment and disposal systems are existing and are managed in accordance with a certified ISO 14001 EMS which requires continual improvement over time; and
- The Marine Ecological Assessment (**Appendix I**) and the assessment provided at Section 7.4 discusses the extent to which effects have been avoided, remedied and mitigated on areas used for fishing and shellfish gathering and areas of high ecological value.

The conditions of consent (**Appendix R**) provide for a monitoring programme that establishes minimum standards for the discharges (consistent with Policy E1.3(26)).

Policy B8.3.2(1) recognises the contribution that use and development of the coastal environment make to the social, economic and cultural well-being of people and communities and Policy F2.11.3(7) enables discharges associated with new or redevelopment of infrastructure to meet the economic and social needs of people and communities. While the Steel Mill and its infrastructure are not new, and no redevelopment is proposed, these provisions recognise that benefits to people and communities arise from the operation of the Steel Mill, which includes the necessitated discharges proposed by this application.

Objective B8.3.1 (1) and Objective B8.3.1 (5) provide for uses and development in the coastal environment to be located in an appropriate manner with integration between the land above and below MHWS. The Steel Mill is functionally bound to the coastal environment, given the existing plant, equipment and infrastructure (including rail facilities) at this location.

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<sup>137</sup> Wastewater is defined in the AUP (Chapter J1) as: “Liquid (and liquids containing solids) waste from domestic, industrial, commercial premises including (but not limited to) toilet wastes, sullage, trade wastes and gross solids”. In this report, wastewater refers to waste process water and landfill leachate.

### Outfall structure occupation:

The Northside and Southside Outfall Structures are partially within the extent of the CMA (as assessed in the Outfall Structure Integrity Assessment contained at **Appendix J**). Objective F2.16.2 (1), Objective F2.14.2 (3), Objective B8.3.1 (4), Policy B8.3.2 (3), Policy F2.16.3 (1) and Policy F2.14.3 (1) seek that occupation rights are provided for in appropriate locations, and in appropriate circumstances for use and development that has a functional or operational need to be located in the CMA<sup>138</sup>. Furthermore, Policy F2.16.3 (19) and Policy F2.14.3 (10) require that any proposed use and development for activities in the CMA to demonstrate that any necessary land-based access and infrastructure can be appropriately provided for.

The outfall structures are existing and are essential supporting infrastructure for the Steel Mill, which is on the edge of the Waiuku Estuary. They have an operational need to locate in or near the CMA so that treated ITA stormwater and process water from the Steel Mill can be discharged to an environment that can most adequately assimilate it. While the outfalls could be located immediately above MHWS, the assessment in Section 7.7 has shown their ongoing occupation in the CMA would have less than minor environmental effects, and it is a more efficient use of existing resources to use these structures and avoid the need for demolition and construction in this location. A consent term of 35 years is sought, consistent with that sought for the associated discharges (Policy F2.14.3 (11)). A qualified engineer has assessed the structural integrity of the outfall structures, including under the influence of predicted sea level rise, and deemed that they will continue to be structurally sound for duration of the consent with routine maintenance as required (enabled by Policy F2.16.3 (4)) (refer to the Outfall Structural Assessment in **Appendix J**).

The structures do not pose a risk to navigation or to public health and safety given their location on the edge of the CMA and in a location where public access is restricted, consistent with Policy F2.16.3 (22).

Overall, the Proposal is considered to be consistent with the RPS and Regional Plan provisions relating to the CMA and coastal environment.

### **10.4.6 Provisions related to significant ecological areas**

**Table 10.7** provides an overview of the objectives and policies of the following chapters of the AUP that are relevant to significant ecological areas which are relevant to the CMA:

- Chapter B7 – Natural resources; and
- Chapter D9 – Significant Ecological Areas Overlay.

**Table 10.7: AUP – Provisions related to significant ecological areas**

RPS	Regional Plan / Regional Coastal Plan / District Plan
<b>Objective B7.2.1 (1)</b> Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision use and development.	<p><b>Objective D9.2 (1)</b> Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision, use and development.</p> <p><b>Objective D9.2 (2)</b> Indigenous biodiversity values of significant ecological areas are enhanced.</p> <p><b>Policy D9.3 (1)</b> Manage the effects of activities on the indigenous biodiversity values of areas identified as significant ecological areas by (a) avoiding adverse effects on indigenous biodiversity in the coastal</p>

<sup>138</sup> Provisions in Chapter F2 refer to both the common marine and coastal area and the CMA. “Common marine and coastal area” is defined in Chapter J1 of the AUP as having the same meaning as in the MACA, and in regard to the Outfall Structures under this application, the common marine and coastal area and the CMA are the same. The assessment in this section therefore refer to the area as the CMA only for simplicity.

RPS	Regional Plan / Regional Coastal Plan / District Plan
<p><b>Objective B7.2.1 (2)</b> Indigenous biodiversity is maintained through protection, restoration and enhancement in areas where ecological values are degraded, or where development is occurring.</p> <p><b>Policy B7.2.2 (5)</b> Avoid adverse effects on areas listed in the Schedule 3 of Significant Ecological Areas – Terrestrial Schedule and Schedule 4 Significant Ecological Areas – Marine Schedule.</p>	<p>environment to the extent stated in Policies D9.3(9) and (10); (b) avoiding other adverse effects as far as practicable, and where avoidance is not practicable, minimising adverse effects on the identified values; (c) remedying adverse effects where they cannot be avoided; (d) mitigating adverse effects where they cannot be avoided or remedied; and (e) considering the appropriateness of offsetting any residual adverse effects that are significant, having regard to Appendix 8 Biodiversity offsetting.</p> <p><b>Policy D9.3 (2)</b> Sets out a range of adverse effects on indigenous biodiversity values in significant ecological areas that are required to be avoided, remedied, mitigated or offset, which includes effects which contribute to a cumulative loss or degradation of habitats.</p> <p><b>Policy D9.3 (3)</b> Enhance indigenous biodiversity values in significant ecological areas.</p> <p><b>Policy D9.3 (8)</b> Manage the adverse effects from the use, maintenance, upgrade and development of infrastructure in accordance with the policies above, recognising that it is not always practicable to locate and design infrastructure to avoid SEAs.</p> <p><b>Policy D9.3 (9)</b> Avoid activities in the coastal environment where they will result in any of the listed effects, including: (a) non-transitory or more than minor adverse effects on: (i) threatened or at risk indigenous species.</p> <p><b>Policy D9.3 (10)</b> Avoid (while giving effect to Policy D9.3(9) above) activities in the coastal environment which result in significant adverse effects, and avoid, remedy or mitigate other adverse effects of activities on listed matters, including: (e) habitats, including areas and routes, important to migratory bird species.</p> <p><b>Policy D9.3 (11)</b> In addition to Policies D9.3(9) and (10), avoid subdivision, use and development in the coastal environment where it will result in any of the listed effects, including: (b) any change to physical processes that would destroy, modify, or damage any natural feature or values identified for a SEA-M in more than a minor way.</p> <p><b>Policy D9.3 (12)</b> Manage the adverse effects of use and development on the values of SEA-Ms, taking into account: (a) the extent to which existing use and development already, and in combination with any proposal, impacts on the habitat, or impedes the operation of ecological and physical processes; (b) the extent to which there are similar habitat types within other SEA-Ms in the same estuary; and (c) whether the viability of habitats of regionally or nationally threatened plants or animals is adversely affected, including the impact on the species population and location.</p>

### Discussion of RPS provisions:

The AUP identifies several SEA-Ms in the vicinity of the Site (refer to Figure W5 in **Appendix E**), which recognises the importance of the extensive intertidal flats in providing foraging habitat for nationally 'Threatened' and 'At Risk' endemic and migratory species, and also the large areas of mangrove forest and saltmarsh vegetation that provide foraging and nesting habitat for the 'At Risk' – declining banded rail.

The overall objective established by the RPS provisions in relation to significant indigenous biodiversity values is to protect these from the adverse effects of subdivision, use and development, and to maintain, restore and enhance indigenous biodiversity in areas where this is occurring (Objectives B7.2.1 (1) and (2)). Policy B7.2.2 (5) further directs adverse effects on SEA-Ms to be avoided. These RPS provisions are given effect to by the Regional Plan provisions, which are discussed below.

### Discussion of Regional Plan provisions:

Objective D9.2 (1) directs areas of significant indigenous biodiversity value to be protected, and the Regional Plan policies establish a mitigation hierarchy around managing effects of activities on indigenous biodiversity values in an SEA. Policy D9.3 (1) directs adverse effects on indigenous biodiversity values of SEAs to be managed by:

- a avoiding adverse effects on indigenous biodiversity in the coastal environment to the extent stated in Policies D9.3(9) and (10);
- b avoiding other adverse effects as far as practicable, and where avoidance is not practicable, minimising adverse effects on the identified values;
- c remedying adverse effects where they cannot be avoided;
- d mitigating adverse effects where they cannot be avoided or remedied; and
- e considering the appropriateness of offsetting any residual adverse effects that are significant, having regard to Appendix 8 Biodiversity offsetting.

The following policies are particularly relevant to this mitigation hierarchy of effects management:

- Policy D9.3 (9) directs specific effects be avoided, including non-transitory or more than minor effects on threatened or at-risk indigenous species. The Marine Ecological Assessment (**Appendix I**) has concluded a 'Moderate' level of effect on coastal birds, which is due to the combination of their 'Very High' value and a 'Low' magnitude of adverse effects on foraging habitat quality. Small increasing concentrations of zinc, and to a lesser degree copper, suspended sediment, and sedimentation rates are anticipated, which can result in reduced diversity and condition of benthic invertebrate species available for foraging coastal birds.
- Policy D9.3 (10) directs that significant adverse effects on the coastal environment are avoided, while giving effect to Policy D9.3 (9) above, and other effects on listed matters are avoided, remedied or mitigated. The Marine Ecological Assessment (**Appendix I**) concludes that no significant adverse effects are anticipated beyond the zone of reasonable mixing, and the zone is considered to be reasonable (as discussed in Section 7.4.8). However, residual (more than minor) adverse effects are anticipated on habitat important to migratory birds (clause (e)) that cannot practicably be avoided, remedied or mitigated. Although the residual effects are not significant (Policy D9.3 (1)(e)), ecological compensation is proposed in line with best practice guidance and Appendix 8 to the AUP (biodiversity offsetting).
- In addition to Policies D9.3 (9) and (10), Policy D9.3(11)(b) directs that use and development in the coastal environment be avoided where they would destroy, modify or damage any natural feature or value identified for an SEA in a more than minor way. The adjacent SEA-Ms identify values of foraging and nesting habitat for nationally 'Threatened' and 'At Risk' endemic and migratory species, and the Proposal is assessed as having a more than minor adverse effect on the quality of foraging habitat.
- Similarly, Policy D9.3 (2) sets out a range of adverse effects on indigenous biodiversity values in SEAs that are required to be avoided, remedied, mitigated or offset, which includes effects which contribute to a cumulative loss or degradation of habitats. The Proposal will avoid many of these effects, as no habitat removal will occur. The discharges may however reduce the abundance and diversity of benthic invertebrates due to increased metal and sediment levels, which may in turn have some effect on coastal bird foraging habitat quality. Although the fine sediment load is comparable to other catchments draining to the Waiuku Estuary, it would contribute somewhat to mangrove expansion and encroachment on intertidal feeding grounds and high tide roosts (sub-clauses (g), (h), (i), (j) and (p)). Ecological compensation is proposed to address the anticipated residual effects on coastal birds.

Policy D9.3(12) requires that a number of matters are taken into account, in addition to the policies above, when managing adverse effects on the values of SEA-Ms. Of particular relevance, the SEA-M habitat is already impacted by existing use and development in the catchment that contribute contaminants and sediments to the ZOI; elevated sediment muddiness and sedimentation rates (and the associated ecological effects) are particularly attributable to sources other than the Steel Mill (Policy D9.3 (12)(a)). There are numerous SEA-Ms located in the Manukau Harbour, outside of the ZOI, that also provide significant bird foraging and roosting habitat (Policy D9.3 (12)(b)). The viability of habitats of threatened animals is affected by the Proposal to the extent that benthic habitat health will reduce, which in turn reduces the quality of foraging habitat for threatened birds, however these are addressed by the compensation measures proposed in the CBMP (Policy D9.3 (12)(c)).

Restrictive provisions such as Policy D9.3 (9) and Policy D9.3 (10), requiring adverse effects to be avoided, should not be interpreted as an absolute prohibition because the wider context of the AUP indicates that Auckland Council has determined that the Steel Mill should be enabled through inclusion of the Glenbrook Steel Mill Precinct (I415). Instead, these provisions seek to achieve the overall objectives of protecting and enhancing significant indigenous biodiversity (Objectives D9.2 (1) and (2)), and importantly is given effect to through policy provisions which specifically recognise that it is not always practicable to avoid adverse effects on an SEA (Policy D9.3 (8)).

Adverse effects on SEAs have been avoided and minimised to the greatest practicable extent, through the adoption of the BPO for discharges and NZ Steel's commitment to review and implement continual improvements to the quality of discharges over the term of the consent. However, residual adverse effects on coastal birds will remain, which will be addressed through ecological compensation set out in the draft CBMP (included in **Appendix S**, and proposed as a condition of consent at **Appendix R**). The CBMP is based on a BCM, which is used to determine the type and quantum of compensation that is required to address residual effects on coastal birds, in line with best practice guidance. Such compensation measures include proposals to enhance existing bird roost and intertidal feeding habitat through selective mangrove management, the creation of artificial roosts, and protective measures including fencing and the control of weeds and predators (Objective D9.2 (2) and Policy D9.3 (3)). There may also be the opportunity to collaborate with Auckland Council, the local board and community groups to enhance other bird roost habitat in the Waiuku Estuary.

Policies D9.3 (1) and (2) make specific reference to 'offset' only, and not to compensation. However, this strict interpretation is not reflected in the RMA or the AUP. Section 104(1)(ab) of the RMA was inserted on 18 October 2017, after the AUP became operative, and includes explicit reference to both offsets and compensation. This reflects the distinction that has now been drawn and ensures "offset" is not read down in a way that would exclude compensation when the intent was that offset would encompass both. This provides some flexibility so that an offset is still recognised in the policies (and would not be considered to be contrary to those policies in terms of any non-complying gateway tests). The reference to offsetting in Policies D9.3(1) and (2) therefore incorporates the compensation package proposed in the Marine Ecological Assessment.

Based on the above, while the Proposal may not specifically achieve all the SEA individual provisions (namely the provisions that directly require the avoidance of effects) it is, when taken as a whole, broadly consistent with and certainly not contrary to the AUP when considered holistically. This is evidenced by the Proposal's application of the effects management hierarchy and focus on adverse effects having been avoided as far as practicable. There will be no significant adverse effects beyond the zone of reasonable mixing. BPO has been adopted to minimise adverse effects, and residual effects on coastal birds are being appropriately compensated for.

### 10.4.7 Provisions related to vegetation management and biodiversity (outside of SEAs)

**Table 10.8** provides an overview of the objectives and policies of the following AUP chapters that are relevant to vegetation and biodiversity outside of the SEA areas:

- Chapter B7 – Natural resources; and
- Chapter E15 – Vegetation management and biodiversity.

**Table 10.8: AUP – Provisions related to vegetation management and biodiversity**

RPS	Regional Plan / Regional Coastal Plan / District Plan
<p><b>Objective B7.2.1 (2)</b> Indigenous biodiversity is maintained through protection, restoration and enhancement in areas where ecological values are degraded, or where development is occurring.</p>	<p><b>Objective E15.2 (1)</b> Ecosystem services and indigenous biological diversity values, particularly in sensitive environments, and areas of contiguous indigenous vegetation cover, are maintained or enhanced while providing for appropriate subdivision, use and development.</p> <p><b>Objective E15.2 (2)</b> Indigenous biodiversity is restored and enhanced in areas where ecological values are degraded, or where development is occurring.</p> <p><b>Policy E15.3 (1)</b> Protect areas of contiguous indigenous vegetation cover and vegetation in sensitive environments including the coastal environment, riparian margins, wetlands, and areas prone to natural hazards.</p> <p><b>Policy E15.3 (2)</b> Manage the effects of activities to avoid significant adverse effects on biodiversity values as far as practicable, minimise significant adverse effects where avoidance is not practicable, and avoid, remedy or mitigate any other adverse effects on indigenous biological diversity and ecosystem services, including soil conservation, water quality and quantity management, and the mitigation of natural hazards.</p> <p><b>Policy E15.3 (3)</b> Encourage the offsetting of any significant residual adverse effects on indigenous vegetation and biodiversity values that cannot be avoided, remedied or mitigated, through protection, restoration and enhancement measures, having regard to Policy E15.3(4) below and Appendix 8 Biodiversity offsetting.</p> <p><b>Policy E15.3 (4)</b> Protect, restore, and enhance biodiversity when undertaking new use and development through: (b) requiring legal protection, ecological restoration and active management techniques in areas set aside for the purposes of mitigating or offsetting adverse effects on indigenous biodiversity; (c) linking biodiversity outcomes to other aspects of the development such as the provision of infrastructure and open space.</p> <p><b>Policy E15.3 (9)</b> Avoid activities in the coastal environment where they will result in listed effects, including: (a) non-transitory or more than minor adverse effects on (i) threatened or at risk indigenous species; (b) any regular or sustained disturbance of migratory bird roosting, nesting and feeding areas; (c) the deposition of material at levels which would adversely affect the natural ecological functioning of the area; (d) the fragmentation of the values of the area to the extent that its physical integrity is lost.</p> <p><b>Policy E15.3 (10)</b> Avoid (while giving effect to Policy E15(9) above) activities in the coastal environment which result in significant adverse effects, and avoid, remedy or mitigate other adverse effects of activities on listed matters, including: (a) areas of predominantly indigenous vegetation; (b) habitats that are important during the vulnerable life stages of indigenous species; (c) indigenous ecosystems and habitats that are found only in the coastal environment and are particularly vulnerable to modification; (d) habitats of indigenous species that are important for recreational, commercial, traditional or cultural purposes; (e) habitats, including areas and routes, important to migratory species; (f) ecological corridors, and areas important for linking or</p>

RPS	Regional Plan / Regional Coastal Plan / District Plan
	maintaining biological values; (g) water quality such that the natural ecological functioning of the area is adversely affected.

#### Discussion of RPS provisions:

The RPS seeks that indigenous biodiversity be maintained through protection, restoration and enhancement in areas where ecological values are degraded (Objective B7.2.1 (2)). The Freshwater and Marine Ecological Assessments (**Appendix H** and **Appendix I**, respectively) have found that the receiving watercourses and Waiuku Estuary are currently degraded. The proposed consent conditions (**Appendix R**) will ensure the Proposal maintains existing indigenous biodiversity values, by imposing requirements for minimum discharge quality, and setting of Trigger Investigation Levels. The conditions will further ensure existing effects on coastal and freshwater environments are progressively reduced through the term of the consents, by requiring regular review and BPO assessments of the discharges. The Proposal also incorporates measures to benefit indigenous biodiversity, through compensation and the continuation of the Dewatering Plant discharge that provides life-supporting flows to the Lower North Stream and its wetland complexes. The proposed compensation comprises restoration measures to address residual effects on coastal birds. Although not related to specific adverse effects, NZ Steel has also proposed to undertake voluntary ecological enhancement of existing wetlands. In this way, the Proposal is consistent with the RPS direction in regard to vegetation management and indigenous biodiversity (outside of SEAs).

#### Discussion of Regional Plan provisions:

The policy direction in relation to vegetation management and indigenous biodiversity outside of SEAs is to protect and maintain ecosystem services and biodiversity values, and where possible, enhance these while providing for use and development.

The Steel Mill is existing and as a result, there is a comprehensive set of monitoring data that has been leveraged to understand the actual and potential effects of the Steel Mill discharges. The Freshwater Ecological Assessment (**Appendix H**) and Marine Ecological Assessment (**Appendix I**) describe the vegetation and biodiversity values of the Receiving Environment and assess the actual and potential effects of the Proposal.

As detailed in the ITA report (**Appendix G**) all the existing mitigation for discharge water quality and quantity in the form of the treatment systems will continue to be utilised if consent is granted (including through appropriate conditions of consent), and these systems are managed in accordance with an ISO 14001 certified EMS which requires continual improvement over time. Based on the list of potential improvements included in the ITA report, small improvements to discharge quality are expected over the short to medium term. From there, additional incremental improvements to the Receiving Environments are also expected.

A discussion on marine and freshwater biodiversity in relation to the policy direction is provided below.

#### Marine:

While the provisions of Chapter E15 apply only to vegetation and biodiversity outside of SEA areas, the mobile nature of some species in the marine environment (such as coastal birds, fish and marine mammals) makes it difficult to clearly separate the effects within and outside of these areas.

Policies E15.3(9) and E15.3(10) seek to avoid activities in the coastal environment which result in significant or specifically listed adverse effects and to avoid, remedy and mitigate other adverse effects. Policy E15.3(9) specifies that non-transitory or more than minor effects on threatened or at-risk indigenous species or their habitats and the deposition of material at levels which would adversely affect the natural ecological functioning of the area shall be avoided.

The Marine Ecological Assessment (**Appendix I**) states that the overall levels of effects are generally predicted to be Low on the scale of the ZOI, with only a Moderate level of effects on coastal birds due to their Very High value and the effects on their foraging habitat quality, driven by changes to benthic ecology (small increasing concentrations of zinc, and to a lesser degree copper, suspended sediment, and sedimentation rates). This 'Moderate' effect correlates to an effect that is more than minor and the EclAG specify that effects that are Moderate and above warrant further effects management. Consistency with Policies E15.3(9) and E15.3(10) is therefore not able to be achieved as effects on threatened and at-risk coastal birds species are expected to be both non-transitory and more than minor, and effects on habitat important to migratory coastal birds will remain after all practicable measures to avoid and minimise them. As a result of the effects on coastal birds, residual effects management will be undertaken in accordance with best practice guidelines for biodiversity compensation which is consistent with Policy E15.3(3). This will seek to protect and enhance bird roosting and/ or foraging areas consistent with Policy E15.3(4), and active management techniques such as the control of mangrove seedlings encroaching on roost habitat and animal and weed pest control.

With the ongoing implementation of the existing treatment systems at the Steel Mill and NZ Steel's approach of continual improvement, all other marine vegetation and biodiversity will be maintained.

Based on the above, while the Proposal may not specifically achieve all the individual provisions (namely the provisions that directly require the avoidance of particular effects), it is, when taken as a whole, broadly consistent with, and certainly not contrary to the AUP when considered holistically. This is evidenced by the Proposal's application of the effects management hierarchy and focus on adverse effects having been avoided as far as practicable and there will be no significant adverse effects outside of the zone of reasonable mixing. BPO has been adopted to minimise adverse effects, and residual effects on coastal birds are being appropriately compensated for.

#### **Freshwater:**

Policy E15.3(2) seeks for activities to avoid and minimise significant adverse effects on biodiversity values as far as practicable, and avoid, remedy or mitigate any other adverse effects on indigenous biological diversity and ecosystem services, including water quality and quantity management. The Freshwater Ecological Assessment (**Appendix H**) has assessed the effects of the Dewatering Plant and ITA stormwater discharges on the instream ecology of the receiving waterbodies and wetlands and has concluded that the proposed water management measures will appropriately avoid and mitigate adverse ecological effects. In regard to water quantity, it finds the Dewatering Plant discharge provides numerous positive benefits to the freshwater and wetland ecological values of the Lower North Stream, and the flow contribution of the discharge would likely have a greater positive effect on the stream than the adverse effects resulting from its quality.

Wetlands are identified as a sensitive environment where vegetation is to be protected (Policy E15.3(1)). The Proposal is assessed as having a no more than minor effect on natural inland wetlands, and adverse effects will be avoided or mitigated to the greatest practicable extent. Furthermore, as noted above, the existing wetlands in the North Stream Catchment are reliant on the Dewatering Plant discharge to maintain their current extent and value. Notwithstanding the fact that residual adverse effects on wetlands have been assessed to be no more than minor, NZ Steel proposes voluntary wetland enhancement measures. This exceeds the requirements of Policy E15.3 (3), which encourages the offsetting of significant residual adverse effects.

Proposed measures comprise wetland enhancement within the Site (planting and associated animal and plant pest control), which will also provide incidental benefits to the ecology of the Lower North Stream. The measures will enhance the currently degraded instream and wetland habitat for fauna, including for wetland bird species, consistent with Objectives E15.2(1) and E15.2(2) and Policy E15.3 (4).



In this way, indigenous biodiversity is maintained and enhanced by the proposed discharges and wetland enhancement measures. The Proposal is assessed as being consistent with the Regional Plan provisions related to freshwater vegetation and biodiversity (outside of SEAs).

#### 10.4.8 Provisions related to Mana Whenua

**Table 10.9** provides an overview of the objectives and policies of the following AUP chapters that are relevant to Mana Whenua and their relationship to water:

- Chapter B6 – Mana Whenua;
- Chapter B7 – Toitū te whenua, toitū te taiao – Natural resources
- Chapter D9 – Significant Ecological Areas Overlay; and
- Chapter E1 – Water quality and integrated management.

**Table 10.9: AUP – Provisions related to Mana Whenua**

RPS	Regional Plan / Regional Coastal Plan / District Plan
<p><b>Objective B6.2.1 (1)</b> The principles of the Treaty of Waitangi/Te Tiriti o Waitangi are recognised and provided for in the sustainable management of natural and physical resources.</p> <p><b>Objective B6.2.1 (2)</b> The principles of the Treaty of Waitangi/Te Tiriti o Waitangi are recognised through Mana Whenua participation in resource management processes.</p> <p><b>Policy B6.2.2 (1)</b> Provide opportunities for Mana Whenua to actively participate in the sustainable management of natural and physical resources.</p> <p><b>Objective B6.3.1 (1)</b> Mana Whenua values, mātauranga and tikanga are properly reflected and accorded sufficient weight in resource management decision-making.</p> <p><b>Objective B6.3.1 (2)</b> The mauri of, and the relationship of Mana Whenua with, natural and physical resources including freshwater, geothermal resources, land, air and coastal resources are enhanced overall.</p> <p><b>Policy B6.3.2(1)</b> Enable Mana Whenua to identify their values.</p> <p><b>Policy B6.3.2 (2)</b> Integrate Mana Whenua values, mātauranga and tikanga in the management of natural and physical resources.</p> <p><b>Policy B6.3.2 (3)</b> Ensure that any assessment of environmental effects for an activity that may affect Mana Whenua values includes an appropriate assessment of adverse effects on those values.</p> <p><b>Policy B6.3.2 (4)</b> Provide opportunities for Mana Whenua to be involved in the integrated management of natural and physical resources.</p> <p><b>Policy B6.3.2 (5)</b> Integrate Mana Whenua values, mātauranga and tikanga when giving effect to the National Policy Statement on Freshwater Management 2014.</p> <p><b>Policy B6.3.2 (6)</b> Require resource management decisions to have particular regard to potential impacts on all of the following:</p> <p>(a) the holistic nature of the Mana Whenua world view;</p> <p>(b) the exercise of kaitiakitanga;</p> <p>© mauri, particularly in relation to freshwater and coastal resources;</p> <p>(d) customary activities, including mahinga kai;</p> <p>(e) sites and areas with significant spiritual or cultural heritage value to Mana Whenua; and</p>	<p><b>Objective D9.2 (3)</b> The relationship of Mana Whenua and their customs and traditions with indigenous vegetation and fauna is recognised and provided for.</p> <p><b>Policy D9.3 (7)</b> Provide for the role of Mana Whenua as kaitiaki in managing biodiversity.</p> <p><b>Objective E1.2 (2)</b> The mauri of freshwater is maintained or progressively improved over time to enable traditional and cultural use of this resource by Mana Whenua.</p>

RPS	Regional Plan / Regional Coastal Plan / District Plan
<p>(f) any protected customary right in accordance with the Marine and Coastal Area (Takutai Moana) Act 2011.</p> <p><b>Objective B7.4.1 (6)</b> Mana Whenua values, mātauranga and tikanga associated with coastal water, freshwater and geothermal water are recognised and provided for, including their traditional and cultural uses and values.</p>	

### Discussion

The objectives and policies of RPS Chapter B6 recognise the role of Mana Whenua as kaitiaki and provides for integration of mātauranga Māori and tikanga into resource management processes. Of particular importance are Objectives B6.2.1 (1) and (2) and Policy B6.2.1 (1) which recognise the principles of the Treaty of Waitangi and seek Mana Whenua participation and engagement in resource management processes and the sustainable management of natural and physical resources. Objective D9.2 (3) and Policy D9.3 (7) recognise the relationship of Mana Whenua and their customs and traditions with indigenous biodiversity, providing for the role of Mana Whenua as kaitiaki in managing biodiversity.

This AEE has considered the potential effects on cultural values (Section 7.5) which has been informed by ongoing engagement with Mana Whenua by way of the Environment Committee, site visits, and hui (detailed in Section 11). Key values of importance to Ngāti Te Ata are identified and addressed in Section 7.5. The role of Mana Whenua as kaitiaki will continue to be recognised during the exercise of the consents through their inclusion on the Environment Committee (proposed as a condition of consent in Section 12). This includes engagement during the development of the proposed coastal birds compensation measures, which seek to achieve positive effects on coastal birds and the voluntary enhancement of natural inland wetland biodiversity values which will have incidental benefits to instream ecology. The mauri of freshwater and the marine environment will be progressively improved over time through NZ Steel's commitment to continual improvement (Objective B6.3.1 (2), Policy B6.3.2 (6), Objective E1.2 (2)).

The Proposal is considered to be consistent with the RPS and Regional Plan provisions relating to Mana Whenua.

#### 10.4.9 Provisions related to landfills

**Table 10.10** provides an overview of the objectives and policies of the following AUP chapter that is relevant to discharge of landfill leachate proposed as part of this application:

- Chapter E13 – Cleanfills, managed fills and landfills.

**Table 10.10: AUP – Provisions related to landfills**

RPS	Regional Plan
N/A	<p><b>Objective E13.2 (1)</b> Cleanfills, managed fills and landfills are sited, designed and operated so that adverse effects on the environment, are avoided, remedied or mitigated.</p> <p><b>Objective E13.2 (2)</b> Human health is protected from the adverse effects of operational or closed cleanfills, managed fills and landfills.</p> <p><b>Policy E13.3 (1)</b> Avoid significant adverse effects and remedy or mitigate other adverse effects of cleanfills, managed fills and landfills on lakes, rivers, streams, wetlands, groundwater and the coastal marine area.</p> <p><b>Policy E13.3 (5)</b> Manage closed managed fills and landfills (including the closure of) to: (a) protect the integrity of the site including the containment of contaminants; and (b) require</p>

RPS	Regional Plan
	aftercare that is appropriate to the nature and requirements of the site including the type of material that was deposited during its operative period.

#### Discussion:

Landfills are relevant in so far as the leachate from the operative East and closed West Landfills is discharged via the North Ponds to the CMA, and therefore forms a small component of the discharge for which authorisation is sought by this application. Aside from this, the operation of the East Landfill is authorised by a separate suite of resource consents, and both the East and West Landfills have existing authorisation for discharges to ground.

The West Landfill is managed in accordance with the Closed Landfill Management Plan (**Appendix L**), which sets out the inspection requirements of its cap and leachate collection systems to firstly minimise the generation of leachate, and ensure leachate is directed appropriately to the Northside Ponds for treatment (Policy E13.3 (5)). The nature of the leachate from both landfills is set out in Section 3.5.7, and an assessment of the effects of the combined Northside Outfall discharge on the CMA is made in Section 7.4. The assessment finds that adverse effects of the landfill discharges on the environment will be appropriately avoided, remedied or mitigated (Objective E13.2 (1) and Policy E13.3 (1)) and human health will not be affected by the leachate discharges (Objective E13.2 (2)).

The Proposal is considered to be consistent with the Regional Plan provisions relating to landfills, and there are no RPS provisions specifically relevant to leachate discharge.

#### 10.4.10 Provisions related to natural character of the coastal environment

**Table 10.11** provides an overview of the objectives and policies of the following AUP chapters that are relevant to natural character of the coastal environment:

- Chapter B8 – Coastal environment; and
- Chapter E18 – Natural character of the coastal environment.

**Table 10.11: AUP – Provisions related to natural character of the coastal environment**

RPS	Regional Coastal Plan / District Plan
<p><b>Objective B8.3.1 (2)</b> Subdivision, use and development in the coastal environment are designed, located and managed to preserve the characteristics and qualities that contribute to the natural character of the coastal environment.</p> <p><b>Objective B8.3.1 (3)</b> Where practicable, in the coastal environment areas with degraded natural character are restored or rehabilitated and areas of high and outstanding natural character are enhanced.</p> <p><b>Policy B8.2.2 (4)</b> Avoid significant adverse effects and avoid, remedy or mitigate other adverse effects on natural character of the coastal environment not identified as outstanding natural character and high</p>	<p><b>Objective E18.2(1)</b> The natural characteristics and qualities that contribute to the natural character of the coastal environment are maintained while providing for subdivision, use and development.</p> <p><b>Objective E18.2(2)</b> Where practical the natural character values of the coastal environment are restored or rehabilitated.</p> <p><b>Policy E18.3(3)</b> Manage the effects of subdivision, use and development in the coastal environment to avoid significant adverse effects, and avoid, remedy or mitigate other adverse effects, on the characteristics and qualities that contribute to natural character values.</p>

RPS	Regional Coastal Plan / District Plan
natural character from inappropriate subdivision, use and development.	

#### Discussion:

Natural character is the term used to describe the natural elements of the coastal environment, and is primarily determined by the nature and extent of modification to an area. The objectives and policies of Chapter E18 give effect to Policy 13(1)(b) of the NZCPS, which is assessed in Section 10.2.3, and RPS Objective B8.2.1(2) and Policy B8.2.2.(4). Chapter B8 also contains other relevant provisions to consider in relation to natural character of the coastal environment (B8.2).

The Steel Mill is part of an existing lawfully established industrial environment and therefore is seen within the context of existing industrial buildings and structures which have modified and contribute to the natural character of the coastal environment in that location (Objective B8.3.1(2)). Therefore, the consents sought by this application seek to maintain that established character (Objective E18.2(1)), generally having no effect on natural character matters such as scenery, natural landforms, natural darkness and experiential attributes. The continuation of the Steel Mill, well established as it is, and given it is consistent with the AUP, does not amount to 'inappropriate' use (Policy B8.2.2 (4)). Furthermore, the effects of the Proposal are not significant, and measures are in place to avoid, remedy and mitigate adverse effects (including on biophysical and ecological aspects and other natural elements, processes and patterns) that contribute to that character (Policy B8.2.2 (4) and Policy E18.3(3)).

The Proposal is considered to be consistent with the RPS and Regional Plan provisions relating to natural character of the coastal environment.

#### 10.4.11 Provisions related to Rural and Open Space - Conservation Zones

Table 10.12 provides an overview of the objectives and policies of the following AUP chapters that are relevant to the Rural and Conservation Zones.

**Table 10.12: AUP – Provisions related to Rural and Open Space – Conservation Zones**

RPS	District Plan
<b>H19 – Rural Zones</b>	
N/A	<p><b>Objective H19.2.1 (1)</b> Rural areas are where people work, live and recreate and where a range of activities and services are enabled to support these functions.</p>
	<p><b>Policy H19.2.2 (5)</b> Enable a range of rural production activities and a limited range of other activities in rural areas by:</p> <p>(a) separating potentially incompatible activities such as rural production and rural lifestyle living into different zones; and</p> <p>(b) avoiding or restricting rural subdivision for activities not associated with rural production in areas other than those subdivision provided for in E39 Subdivision – Rural.</p>
	<p><b>Policy H19.2.3 (1)</b> The character, amenity values and biodiversity values of rural areas are maintained or enhanced while accommodating the localised character of different parts of these areas and the dynamic nature of rural production activities.</p>

	<b>Objective H19.2.5 (3)</b> The rural economy and the well-being of people and local communities are maintained or enhanced by social, cultural and economic non-residential activities, while the area’s rural character and amenity is maintained or enhanced.
<b>H7 – Open Space Zones - Conservation</b>	
N/A	<b>Objective H7.4.2 (1)</b> The natural, ecological, landscape, Mana Whenua and historic heritage values of the zone are enhanced and protected from adverse effects of use and development.
	<b>Objective H7.4.2 (2)</b> Use and development complements and protects the conservation values and natural qualities of the zone.
	<b>Policy H7.4.3 (4)</b> Limit activities, buildings and structures to those necessary to maintain or enhance the use or values of the zone.
	<b>Policy H7.4.3 (5)</b> Locate and design new buildings, structures and additions to: (a) complement the context, character and values of the zone; and (b) ensure that there is minimal disturbance to existing landform, vegetation and vulnerable habitats.

### Discussion:

The Rural Zones are applicable to land on the Site outside of the Business – Heavy Industry Zone, through which the watercourses flow. Therefore, while not specifically relevant to the application, these provisions have been included for completeness. Objective H19.2.1(1) and Objective H19.2.5(3) recognises that activities and services (such as the Steel Mill) are enabled to support the rural economy and the wellbeing of people working and living in rural areas.

The Open Space – Conservation Zone is applicable to the esplanade strip directly adjacent the CMA which is applicable to the Outfall Structures and discharges. In particular, the Southside Outfall Structure is located entirely within the Open Space – Conservation Zone. The provisions of this zone are directed toward maintaining, protecting and enhancing the values of the Conservation Zone. The outfalls are existing structures and therefore adverse effects of construction are avoided and there is minimal disturbance to the existing landform and vegetation consistent with Policy H7.4.3(5).

### 10.4.12 Summary of objectives and policies assessment

Both the RPS and Regional Plan components of the AUP include a suite of objectives and policies that recognise, enable and provide for the Glenbrook Steel Mill, specifically recognising the benefits it provides at a local, regional and national scale. Objectives and policies set out an approach to managing the adverse effects on the environment, with specific objectives and policies relating to effects on indigenous biodiversity, the coastal marine area and freshwater systems. In assessing the Proposal against these objectives and policies, we have taken the contextual approach that was reiterated by the Environment Court<sup>139</sup>, whereby the suite of applicable provisions are read together.

The Proposal is supported and enabled by the objectives and policies that recognise the value of investment of the Steel Mill, the benefits it entails, and the functional and operational need of its location and relationship with the CMA. The Steel Mill has existed for many decades and therefore the effects are well understood as a result of monitoring undertaken. Given the management and mitigation measures are already in place and considered to be representative of BPO, the focus of the management of adverse environmental effects has been on ongoing improvements. Where residual adverse effects have been identified and are practicably unavoidable – namely effects on coastal birds as a result of contamination of foraging habitat – compensation is proposed. NZ Steel also proposes a conservative approach and will provide voluntary ecological enhancement for

<sup>139</sup> *Royal Forest and Bird Protection Society of NZ Inc v Bay of Plenty Regional Council* [2017] NZEnvC 045.

effects on natural inland wetlands that are no more than minor. All other adverse environmental effects have been avoided, remedied or mitigated to the greatest degree that is practicable.

Overall, while there are a handful of individual policy provisions that the Proposal is not strictly consistent with, or which the Proposal cannot achieve (for example where they require the absolute avoidance of adverse effects) we consider the Proposal as a whole is not contrary to, and in many cases is supported by, the Regional Plan provisions as set out in the sections above. The same conclusion can be reached in relation to the RPS provisions.

## **10.5 Other matters**

This Section sets out the other matters that the consent authority may consider relevant and reasonably necessary to determine the application in accordance with section 104(1)(c). This includes a discussion on the realistic future use of the Site as well as a number of other non-statutory documents relevant to the application.

### **10.5.1 Realistic future use of the Site**

Section 7 provides an assessment of effects of the Proposal, as a result of the operation of the Steel Mill (in accordance with section 104(1)(a)). The assessment of the effects of the Proposal in this report has been undertaken as if the activities currently authorised by the Existing Consents have been discontinued and the Proposal is an application for a new activity (that is, and in simplistic terms, the consented activities cease, and the effects assessment relates to recommencement of the activities). The enduring or legacy effects of historical consented activities also form part of the existing environment, and this includes the build-up of metals in sediment and the ongoing diversion of water in the North Drain. This is what constitutes the 'Receiving Environment'.

Pursuant to section 104(1)(c), it is appropriate to consider the reasonably likely alternative use of the Site (and the effects from such use) should the consents for the Steel Mill not be renewed and to consider the effects of the ongoing discharges to water from the Steel Mill in that context.

The Site is zoned for heavy industrial land use and therefore it is reasonably likely that, should the Steel Mill operation cease, the Site would be repurposed for an alternative use of an industrial nature. That is particularly so if that use were able to modify or repurpose the existing structures and infrastructure. Industrial activity is defined within the AUP as "the manufacturing, assembly, packaging or storage of products or the processing of raw materials and other accessory activities". Therefore, alternative uses could include, but are not limited to, depots (such as freight, rail or bus), manufacturing, storage or wholesaler. While not all of these uses would result in discharges to water, the diversion of water or the need for coastal occupation, an alternative use of the Site could result in these activities. Therefore, while not quantified as part of the assessment of effects, it is appropriate to note that it would not be fanciful to assume that a future use of the Site would also see the types of activities sought by this application occur.

### **10.5.2 Auckland Council's State of the Environment report**

Auckland Council's Research and Evaluation Unit has released its latest State of the Environment (SOE) report – "The health of Tāmaki Makaurau / Auckland's natural environment in 2020". This report is a synthesis of Auckland Council's monitoring and reporting programme. SOE monitoring and reporting generates knowledge to inform Auckland Council decisions on where to prioritise responses, actions and funding.

River water quality monitoring uses a range of physical, chemical and microbiological variables and attributes that can be affected by land use activities, point and diffuse source discharges, and land and in-stream erosion. Overall, the report finds that water quality is improving in more streams than degrading, however, the scale of improvement was small. In many of our river systems, water

quality at the top of the catchment is good where the land cover is predominantly native forest, declining as these rivers traverse urban and productive rural areas. Auckland Council has developed attributes for metal contaminants, which finds most monitored urban streams are contaminated with zinc at levels greater than the proposed bottom line (band D). No monitored streams were below the proposed bottom line for copper, however many rural and urban streams had very likely degrading trends. Macroinvertebrate communities, which reflect the overall health of a stream, mostly fall into attribute band D and are below the national bottom line for MCI.

The health of the marine environment is monitored through three main programmes: monitoring of water quality and ecology commenced in the Manukau Harbour in 1987, and sediment contamination monitoring began in 1998. Overall, water quality in open coastal sites and at harbour mouths is generally good, while upper estuarine (tidal creek) sites have poorer water quality. Sites within the Manukau Harbour tended to have poor water quality due to elevated nutrients, higher levels of chlorophyll (algae), and lower water clarity, and results suggest that the effects of eutrophication may be increasing. The report notes that regionally, Auckland's harbours and estuaries are getting muddier, but states that there are no concerning trends related to sedimentation in the Manukau Harbour. Heavy metal contamination is another region-wide pressure on estuarine benthic health, but it is somewhat less prevalent regionally, than sedimentation. In the Manukau Harbour, health in relation to metals tends to be lower in the tidal creeks than the sandflats. In terms of contaminants in marine sediments, most of the sites measured across the region still have relatively low levels of contaminants (copper, lead and zinc), however there are several hot spots of higher contamination across the region, which tend to be muddy estuaries and sheltered tidal creeks in intensively urbanised or industrialised catchments.

Implementing the NPSFM will be an important step towards increasing gains in water quality region-wide.

### 10.5.3 The Auckland Plan 2050

The Auckland Plan 2050 (AP2050) is a spatial plan that sets the direction for how Auckland will grow and develop over the next 30 years. This plan was updated in 2018 to further build on what was done in the 2012 plan. AP2050 recognises that the Auckland region is faced with three key challenges: high population growth, ensuring prosperity is shared amongst all, and arresting and reversing environmental degradation. AP2050 identifies six strategic directions in which we must make significant progress. One of these outcomes relates to Environment and Cultural Heritage which sets strategic direction including describing how to maintain rural, freshwater and marine environments. Marine and freshwater environments, for example, have been polluted by sediments and contaminants arising from development, building and industrial activities.

The AP2050 recognises that the Manukau Harbour's catchment is significantly developed, with urban and industrial land use affecting its quality. The AUP seeks to protect and enhance the marine environments, through setting rules for what activities can occur where. Alongside that, there are other programmes underway which aim to improve the health of our marine environments. Auckland Council's water quality programme provides an overall framework for driving better water outcomes, for which a protected and enhanced marine environment is a key goal. The following are some examples of programmes underway:

- **The Wai Ora Healthy Waterways programme:** The Wai Ora Healthy Waterways programme was established to implement the NPSFM. The programme's objectives are to support communities in caring for freshwater and coastal environments, address the complex water issues in Auckland and meet the AUP's water management requirements. The approach recognises that what happens on the land has direct impacts on the marine environment.
- **Integrated watershed plans:** These plans are developed in partnership by the Auckland Council and local communities. They are designed to improve both freshwater and marine

environments. The plans are based on assessing the current state of catchments, the values and goals that the community identifies for the catchment and take into account their implementation cost. Improving our freshwater environments has direct, downstream impacts on marine environments. The plans are being developed progressively for each watershed.

- **State of environment monitoring programmes:** Auckland Council operates several long-term programmes that monitor the health of the Manukau Harbour (as discussed at Section 10.5.2 above). These programmes report on a range of marine data, including water quality, ecology and sediment. These marine water programmes are complemented by a freshwater monitoring programme, and data is reported regularly.

The AP2050 also recognises that Māori hold an enduring relationship with the land, marine and freshwater environments and have deep and valuable knowledge.

In respect of this application, the Steel Mill's replacement consents sought by this application will ensure that the Steel Mill's contribution to local, regional and national prosperity is continued and NZ Steel will also continue to monitor, manage and improve its practices, in order to improve its discharge water quality such that the affected freshwater and marine environments improve over time.

#### 10.5.4 Climate related planning documents

The Auckland Climate Plan identifies that Auckland has a large amount of industrial activity and identifies a priority action area to reduce process heat and industrial emissions. This includes actions such as collaborating and partnering with Central Government and industry to decarbonise process heat.

As required by the Climate Change Response Act (discussed at Section 10.5.8.3), in May 2022 the New Zealand Government released New Zealand's first Emissions Reduction Plan (ERP). It describes how New Zealand is going to meet emissions budgets and make progress towards meeting our 2050 target.

The proposed EAF is consistent with, and assists to meet objectives of, the Auckland Climate Plan and the Emissions Reduction Plan.

#### 10.5.5 Iwi management plans

The Auckland Council website identifies the following hapu/ iwi as potentially having an interest in the area: Ngāti Tamaoho, Te Ahiwaru - Waiohua, Ngāti Te Ata, Ngāti Maru, Waikato – Tainui, Te Akitai Waiohua. An iwi management plan (IMP) is a term commonly applied to a resource management plan prepared by an iwi, iwi authority, rūnanga or hapū.

No publicly available IMPs were able to be sourced for the following iwi:

- Ngāti Te Ata
- Ngāti Tamaoho
- Te Akitai Waiohua
- Te Ahiwaru - Waiohua
- Ngāti Maru

Ngāti Whātua Orakei have a publicly available IMP however, the area ('rohe') to which it applies does not include the Steel Mill Site or its surrounds (as it is largely focussed north of the Awhitu peninsula).



### Waikato-Tainui's Environmental Management Plan (Tai Tumu Tai Pari Tai Ao)

Waikato Tainui have developed an Environmental Plan and this Plan is applicable to the Steel Mill and its surrounds. The Plan is developed out of Whakatapuranga 2050 (Waikato-Tainui strategic plan), which is a long-term development approach to building the capacity of Waikato-Tainui marae, hapu, and iwi. The goal of Waikato-Tainui is to ensure that the needs of present and future generations are provided for in a manner that goes beyond sustainability towards an approach that enhances the environment.

The Plan sets out the specific environmental matters of interest to Waikato-Tainui. Of these, the following chapters (which set out objectives, policies and methods for each topic) are considered to be relevant to this application.

- Chapter 14 relates to customary activities and includes Hauanga kai - the customary and contemporary gathering and use of naturally occurring and cultivated foods. This is taken into consideration in the effects on shellfish for consumption as described by the Marine Ecological Assessment.
- Chapter 15 relates to natural heritage and biodiversity. Objective 15.3.1 seeks that the full range of Waikato ecosystem types found throughout the Waikato-Tainui rohe are robust and support representative native flora and fauna. While not in the Waikato, the Steel Mill is located within the Waikato-Tainui rohe and therefore assesses, and where practicable, supports native flora and fauna as described at Section 7.
- Chapter 19 relates to freshwater. Waikato-Tainui aspires to have waters that are drinkable, swimmable, and fishable with the water quality (at least at the level it was when Kiingi Taawhiao composed his time) as prescribed by Objective 19.4.1. Supporting Policy 19.4.2.1 challenges regulators to set clearer and higher water quality targets and incentivise methods to achieve those targets. The Freshwater Ecological Assessment (**Appendix H**) has used the ANZWQG and AUP as a basis for undertaking the assessment. While not all effects can be avoided, those with more substantial effects have had alternatives considered (such as the Dewatering Plant discharge to the North Stream) and have enhancement measures proposed.
- Chapter 20 relates to wetlands. Objective 20.3.1 seeks that existing wetlands are protected and enhanced. As described at Section 7.3, wetlands on the Site have been assessed in accordance with the NPSFM 2020. Residual effects resulting from the discharges on the North Stream Catchment wetland complex will be addressed using ecological enhancement measures.
- Chapter 24 relates to the coastal environment. Objective 24.3.1 seeks that the mauri of marine waters in the Waikato-Tainui coastal area is protected and enhanced and the marine biodiversity is restored and protected. The coastal environment of the Waiuku Estuary is already heavily modified as a result of land use activities including the Steel Mill. This application includes a 'continual improvement' aspect to the quality of the discharges to the CMA to ensure that, over time, the water quality and biodiversity values are maintained, and where possible, improved on the current situation.

It is considered that the proposal is consistent with Waikato-Tainui's Environmental Management Plan.

### 10.5.6 Statutory Acknowledgements and Deeds of Settlement

Of relevance to this application is the Ngāti Tamaoho Claims Settlement Act 2018 (specified in Schedule 11 of the RMA). This Act acknowledges and apologises to Ngāti Tamaoho for confiscated lands in which the iwi had interests in and gives effect to provisions of the deed of settlement that settles the historical claims and the breach of te Tiriti o Waitangi/ the Treaty of Waitangi and its

principles. As part of the cultural redress, statutory acknowledgement was made over an area of CMA including the Manukau Harbour and Waiuku Estuary (as shown in Figure W6 in **Appendix E**).

The Deed of Settlement Summary states that “A statutory acknowledgement recognises the association between Ngāti Tamaoho and a particular site or area and enhances the iwi’s ability to participate in specified Resource Management Act 1991 processes.” In particular, the consent authority “must have regard to every relevant statutory acknowledgement made in accordance with an Act specified in Schedule 11” when determining affected parties.

Ngāti Tamaoho has been consulted with as part of this application process and will continue to be engaged with in an ongoing capacity as discussed at Section 11.3.

There are also inland areas where Ngāti Tamaoho has statutory acknowledgement, largely in relation to streams and their tributaries. These areas are shown on Figure W6 in **Appendix E**.

Other statutory acknowledgement areas relevant to the Manukau Harbour and area surrounding the Steel Mill Site include Ngai Tai ki Tamaki (which covers the eastern half of the Manukau Harbour) and Te Kawerau a Maki (which covers the northern portion of the Manukau Harbour). While these areas are noted in this application for completeness, they lie beyond the influence of potential adverse effects of the Proposal (given their physical distance) and are particularly noted as being outside of the Zone of Influence of the discharges to the CMA, and therefore are not considered further.

### **10.5.7 Marine and Coastal Area (Takutai Moana) Act 2011**

Section 62(3) of the MACA requires that, if a person applies for a resource consent in relation to part of the common marine and coastal area, that person must notify any CMT applicant groups with an interest in that part of the common marine and coastal area and seek the views of those groups.

NZ Steel has notified parties in accordance with section 62(3) of the MACA, as there are CMT applications which apply to the coastal area of the Waiuku Estuary that is directly adjacent to the Steel Mill. Further detail regarding the MACA notifications is set out in Section 11.3.

### **10.5.8 Other legislation relevant to the application**

Activities that may not require RMA consent, but which may affect animal health or welfare, or disturbance or destruction of archaeological sites are governed under other legislation. These are identified below.

#### **10.5.8.1 Wildlife Act 1953**

The Wildlife Act 1953 outlines the protection and control of wild animals and birds, and the management of game. Approvals to undertake certain biological survey and management methods may be required to handle wildlife under the Wildlife Act 1953. Should such approval be required for the Proposal an authorisation(s) will be sought from the Director-General of Conservation under section 53 of the Wildlife Act for the disturbance of any protected wildlife.

#### **10.5.8.2 Heritage New Zealand Pouhere Taonga Act**

The purpose of Heritage New Zealand Pouhere Taonga Act 2014 is to promote the identification, protection, preservation, and conservation of the historical and cultural heritage of NZ. Modification or destruction of an archaeological site is prohibited unless an archaeological authority is obtained from Heritage NZ, and this applies whether or not the site has been previously recorded or listed.

No land disturbance work is proposed as part of this application, and the Proposal will therefore not result in the modification or destruction of any archaeological sites.

### **10.5.8.3 Climate Change Response Act 2002 and the Zero Carbon Amendment Act 2019**

The Climate Change Response Act 2002 puts in place a legal framework to enable New Zealand to meet its international obligations under the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement. The subsequent amendments made by the Zero Carbon Amendment Act include establishing a Climate Change Commission, requiring the government to set five year emission budgets, requiring the development of an Emission Reduction Plan and establishing a target to reduce net carbon emissions (except biogenic methane) to zero and biogenic methane emissions by 24-47% (from a 2017 baseline) by 2050.

The EAF is New Zealand's largest emissions reduction project to date and will reduce New Zealand Steel's emissions by more than 45% and sets the platform for NZ Steel's net zero goal by 2050 in line with the Zero Carbon Act.

## 11 Consultation

### 11.1 Introduction

Consultation and communication regarding this replacement resource consent application has been undertaken with a number of stakeholders and interest groups, including Mana Whenua, adjacent landowners and utility operators. As part of its longstanding connection to the local community, NZ Steel continues to engage with stakeholders following lodgement of this AEE. NZ Steel is also developing communication resources, including infographics and videos, to assist stakeholders to understand key aspects of this consent application.

This section provides an overview of the consultation activity that has occurred to date and indicates where this is likely to continue to occur throughout the duration of the consenting process.

### 11.2 NZ Steel Environment Committee

NZ Steel has an established engagement process through its Environment Committee, which has existed since the 1970s. The Committee meets three times per year and comprises representatives from a number of external parties including:

- Franklin Local Board;
- Auckland Council compliance team;
- Auckland Regional Public Health;
- Mana Whenua (Ngāti Tamaoho and Ngāti Te Ata);
- Federated Farmers; and
- Glenbrook Irrigation Co Limited.

These meetings provide a platform for NZ Steel and representatives to discuss a range of matters concerning the Steel Mill including day-to-day business, compliance and monitoring as well as provide representatives with an opportunity to pose queries and give feedback.

When representatives are unable to attend meetings, minutes of the meeting and copies of presentations are provided to representatives for their information.

At the July 2020 meeting, Claire Jewell (NZ Steel's Environment Manager) presented an initial briefing on the replacement resource consent application. The attendees were provided with an overview of the Steel Mill processes, the indicative programme including anticipated lodgement dates, an overview of the technical studies being undertaken and an overview of the stakeholder actions to be undertaken. The attendees were also advised of the briefing held between NZ Steel and Auckland Council that occurred in June 2020 (discussed below in Section 11.5.1). Meeting attendees had no comments or questions in response to this initial briefing.

At the November 2020 meeting, Ms Jewell presented a summary of activities to date of key aspects of the technical assessments including marine ecology, freshwater ecological survey as well as a summary of key findings relating to discharges to air (for which an application for replacement consents was lodged in April 2021). An update on the NZ Steel external website and information on the replacement consent timeframe was provided.

In March 2021, the most recent meeting held prior to the initial lodgement of this application, a summary of the water discharge monitoring was provided, and it was indicated that the two key activities were further zinc reduction in the northern catchment in response to the water quality guideline changes (ANZWQG) and managing the Northside Outfall discharge volumes. Further information on timeframes and the lodgement of applications for the Steel Mill's air and water discharge replacement consents was also given at the meeting.

An Auckland Council representative on the Environment Committee asked about possible rehabilitation of the Metal Cutting Yard and details on when it would be completed. This work has now been completed. The ITA Report (**Appendix G**) provides an update on this area and the proposed activities. The Council representative also asked about the surface water run off for the coal yards and if any further work was planned in this area. Ms Jewell stated that pond upgrades and the implementation of continuous monitoring were proposed. These details are provided in the meeting minutes included in **Appendix O**.

At the July 2021 meeting, the first meeting held following lodgement of this application, Ms Jewell presented a further update on the consent application timeframes (including confirmation that it was lodged on 30 June 2021) and monitoring results. In addition to continuing improvements in the areas mentioned in the previous meetings, the installation of new water quality monitoring equipment in the Lower North Stream was announced. These monitoring devices will allow NZ Steel to verify the effect of incremental improvements on the stream water quality.

At the November 2021 meeting, Amy Hill informed the members about the public notification of the air permit application, and that NZ Steel was working with the technical experts to the address a further information request from Council for the water permit application. Quarterly water and air quality monitoring data was also shared. Key activities were to maintain zinc levels in the Northside catchment and investigate opportunities to reduce copper. Continued focus on North Drain ITA discharges, including commencement of Dewatering Plant water treatment system improvements.

The following meeting in March 2022 was postponed to July 2022 as only one external member attended. Update on the application progress and the monitoring results were subsequently sent out to all members.

New members from the Auckland Council Compliance Team were welcomed at the July 2022 meeting. This meeting was focussed on the monitoring results and continuing environmental improvement activities. Claire Jewell presented the monitoring results and explained that in addition to the continued focus on improvement activities discussed at the previous meetings, the Kahawai Stream water quality will be improved by remediation of the Metal Cutting Yard (which has now been completed). No particular progress of the consent application process was reported, but Ms Jewell advised that NZ Steel is preparing summary information for further engagement with key stakeholders.

Copies of Environment Committee meeting minutes from July 2020 to July 2022 are contained at **Appendix O**. It is noted that the Environment Committee meetings since July 2022 have also covered the EAF project and associated Scrap Yards.

## **11.3 Mana Whenua**

### **11.3.1 Overview of Mana Whenua consultation**

A number of iwi groups have Mana Whenua interests in the area of the Site. These are identified on the Auckland Council Geomaps database as (in alphabetical order):

- Ngāti Maru
- Ngāti Tamaoho
- Ngāti Te Ata
- Te Akitai Waiohua
- Te Awhiwaru – Waiohua
- Waikato-Tainui

On 11 November 2020, each of these groups was notified via a letter and email of NZ Steel's intention to seek replacement resource consents for air and water discharges. No responses were received in relation to this initial contact. A follow up email was sent on 14 December 2020 to update the iwi on progress made on the applications. No responses were received to this follow up email. Copies of the communications are provided at **Appendix N**.

As described in Sections 7.5 and 10.5.7, there are applications under the MACA which apply to the coastal area of the Waiuku Estuary directly adjacent to the Site. It is a statutory requirement to notify and seek the views of such applicants prior to lodgement of the Proposal application. The relevant parties are:

- Cletus Manu Paul
- Ngāti Kawau
- Te Waiariki Korora
- Ngāti Kawau te Kōtuku
- Te Uri o Te Aho
- Ngāti Kuri
- Te Waiariki Korora nga Hapū o Ngāpuhi-Nui-Tonu
- Ngāti Te Ata
- Ngāti Tamaoho
- Te Whakakitenga o Waikato
- Te Whakakitenga o Waikato Incorporated
- Rihari Dargaville on behalf of the New Zealand Maori Council

These parties were notified of the Proposal and their views sought on 11 November 2020. Copies of the notification material is provided at **Appendix N**. A response was received from Ngāti Te Ata requesting copies of the relevant technical reports, and draft executive summaries of those reports were provided on 25 May 2021. A copy of this AEE, together with appended technical reports, will be provided to Ngāti Te Ata following lodgement.

These parties received an updated MACA notification 21 May 2021 and their views sought in relation to the need to seek an additional consent for the occupation of the Northside Outfall as a result of survey work undertaken as part of the application preparation. No response was received.

In addition to the above consultation, and in recognition of the close connection that some of the abovementioned iwi have with the area surrounding the Site, two parties have been consulted further as described below.

### **11.3.2 Ngāti Te Ata**

NZ Steel has a long-standing relationship with Ngāti Te Ata. This is recognised by Ngāti Te Ata's representation on the Environment Committee as discussed at Section 11.2 above, which includes the distribution of Environment Committee pack and minutes to Ngāti Te Ata.

Hui with Karl Flavell (Environmental Manager) of Ngāti Te Ata have been held in relation to the Proposal on 1 August 2020; 15 and 23 September 2020; 22 December 2020 and 27 January 2021. Mr Flavell provided NZ Steel with a draft Consultation Document on 30 November 2020 which included detail regarding cultural values and related recommendations and aspirations.

The hui discussed matters of importance for Ngāti Te Ata as detailed in the document mentioned above and NZ Steel's response to those matters in the context of the consent application process.

This document was updated after these discussions and was approved by Ngāti Te Ata as an appropriate Cultural Values Assessment on 18 March 2021 (copy provided at **Appendix N**).

This document, along with participation of Ngāti Te Ata on the Environment Committee and the multiple hui with Mr Flavell have been used to develop an understanding of matters of importance to Ngāti Te Ata, and to inform the discussion of cultural effects in Section 7.5 of this AEE.

A consent progress update was provided to Ngāti Te Ata (via email to Karl Flavell) on 25 May 2021. This update included copies of the executive summaries of the technical reports. A hui was held on 28 May 2021 to further discuss the details of the application. Ngāti Te Ata confirmed (via letter dated 25 June 2021, provided in **Appendix N**) that they will continue to work with NZ Steel to ensure best cultural and environmental outcomes.

Ngāti Te Ata was provided a copy of the lodged application.

A further consent progress update was provided to Ngāti Te Ata at a hui on 27 August 2022, following lodgement, and it was agreed to meet again in November 2022 after the section 92 response has been provided to Council. NZ Steel has engaged with Ngāti Te Ata more recently regarding proposed coastal bird compensation and wetland enhancement measures and also the EAF proposal and associated Scrap Yards.

Engagement with Ngāti Te Ata will be ongoing.

### 11.3.3 Ngāti Tamaoho

NZ Steel has a long-standing relationship with Ngāti Tamaoho. This is recognised by Ngāti Tamaoho's representation on the Environment Committee as discussed at Section 11.2 above, which includes the distribution of Environment Committee pack and minutes to Ngāti Tamaoho.

Ngāti Tamaoho has a statutory acknowledgement which includes the CMA area adjacent to the Steel Mill. The statutory acknowledgement recognises the association between Ngāti Tamaoho and the area and enhances the iwi's ability to participate in specified RMA processes.

A hui to discuss progress with the consenting was held with Zac Rutherford-Sirrett (RMA Officer for Ngāti Tamaoho) on 22 March 2021. A further hui, with both Zac Rutherford-Sirrett and Edith Tuhimata during a site visit to the Steel Mill involving Ngāti Tamaoho leadership, was undertaken on 25 March 2021. Attendees of the site visit included Ngāti Tamaoho CEO, Matekino Marshall, and other representatives of the iwi.

A consent progress update was provided to Ngāti Tamaoho (via email to representatives Lucie Rutherford, Zac Rutherford-Sirrett and Edith Tuhimata) on 25 May 2021. This update included copies of the executive summaries of the technical reports.

A follow up meeting with Ms Rutherford and Ms Tuhimata took place on 9 June 2021 (via Teams) to discuss the ongoing work and application material. Ms Rutherford verbally acknowledged all the work and commitment that NZ Steel undertakes to protect the environment and expects that the proposal will not be opposed by Ngāti Tamaoho.

Ngāti Tamaoho confirmed that they are comfortable with the measures NZ Steel has taken in the application (via email dated 26 June 2021, provided in **Appendix N**) and that they look forward to continuing working on environmental improvements with NZ Steel.

The hui and participation of Ngāti Tamaoho on the Environment Committee have enabled the development of an understanding of matters of importance to Ngāti Tamaoho. This understanding and these discussions have informed the discussion of cultural effects in Section 7.5 of this AEE.

Ngāti Tamaoho was provided a copy of the lodged application. NZ Steel has engaged with Ngāti Tamaoho since regarding proposed coastal bird compensation and wetland enhancement measures and also the EAF proposal and associated Scrap Yards.

Engagement with Ngāti Tamaoho will be ongoing.

## 11.4 Community

The local community, including surrounding neighbours, the general public and internal stakeholders are anticipated to be interested in the ongoing environmental effects of the Steel Mill. Consultation undertaken so far with these groups is outlined below.

### 11.4.1 Surrounding rural neighbours

NZ Steel commenced consultation on the resource consent replacement process with surrounding rural neighbours in December 2020. The nearest landowners to the Steel Mill were identified and members of NZ Steel's Environment Team, Amy Hill and Debbie Bryson, have initiated contact via letter drop and door knocking. A copy of the Consent Briefing Pack used for the letter drop and door knocking is contained at **Appendix O**. No matters relevant to water or water discharges have been raised to date.

### 11.4.2 Transpower

Transpower owns and operates a substation directly adjacent to the Steel Mill. In February 2021, NZ Steel contacted Transpower and lodged a query with their online query portal Patai (Reference PATAI000024). A copy of the Consent Briefing Pack (a copy of which is provided at **Appendix O**) was provided and no response has been received at the time of lodgement.

### 11.4.3 BOC Gas

BOC Gas owns and operates an air separation plant adjacent to the Steel Mill (on land owned by NZ Steel), which provides the Steel Mill with gas required for various processes. NZ Steel also provides water and electricity to BOC Gas for the manufacture and supply of BOC Gas products. A meeting was held in March 2021 between representatives of NZ Steel and BOC Gas.

A copy of the Consent Briefing Pack (a copy of which is provided at **Appendix O**) and NZ Steel's Sustainability Snapshot (2020) was provided. BOC Gas did not indicate a particular interest in the water consent application. NZ Steel will provide the AEE and technical documentation post-lodgement.

### 11.4.4 General public

NZ Steel established a page on its external website specifically for providing brief information regarding the proposed replacement air and water discharge consents. The webpage was initially published in September 2020 with subsequent updates as preparation of the applications has progressed. More recently, the external website has also provided information regarding the EAF project.

The website also lists contact details for NZ Steel and includes discussion of why the consents are required and what can be expected from the process. The website is located at <https://www.nzsteel.co.nz/sustainability/our-environment/environmental-management-and-resource-consents/>.

The website encourages the community to contact NZ Steel should they have any queries or comments about the consenting process. To date, no queries or comments have been received from the general public.



NZ Steel maintains a complaints register, and it is noted that there are on average, four complaints received each year. While NZ Steel endeavours to have the least impact on residents and takes all complaints seriously, the numbers are relatively low given the scale of the Steel Mill operation.

#### **11.4.5 Internal stakeholders**

NZ Steel employees and onsite contractors have been kept up to date on the process via a number of internal communication avenues, including updates on the internal staff intranet, quarterly updates on findings to Central Health Safety and Environment Improvement Team Meetings (CHEIST) (similar to what is provided at the Environment Committee meetings) and in quarterly financial briefings given to staff from their Senior Leadership Representative. No specific feedback from internal stakeholders has been received to date.

### **11.5 Auckland Council**

#### **11.5.1 Auckland Council**

The Site is located wholly within Auckland Council's jurisdiction as a Unitary Authority<sup>140</sup>.

An initial briefing meeting was held with team members from Council's Regulatory Team in June 2020. Attendees at this briefing included the Project Lead, and the assigned processing planner, as well as the Council's team of specialists that will be assessing and reporting on the application.

A follow up site visit was held with Council specialists on 2 July 2020. The site visit enabled Council specialists to understand the operations of the Site and to compile a list of questions or matters for the applicant to cover within the application.

Ongoing regular 'Steering Group' meetings have occurred since September 2020 to provide a forum to report on progress with the applications, any potential risks and issues etc. Attendees at this meeting include the Council's Project Lead and processing planner.

A workshop was held with Council (comprising the assigned Project Lead, processing planner and Council specialists) on 26 January 2021. The intention of the workshop was to provide an opportunity for the technical specialist team preparing the application to present on the work undertaken to date including preliminary findings, and to provide Council the opportunity to provide feedback in advance of lodgement of the applications.

Regular correspondence with Council's Regulatory Team has continued since lodgement of the application, including monthly meetings with the Project Lead and processing planner.

NZ Steel also has periodic meetings with Auckland Council compliance officers. Auckland Council compliance officers are also invited to the Environment Committee meetings (held three times a year).

#### **11.5.2 Franklin Local Board**

Local Boards provide governance at the local level within Auckland Council. They enable democratic decision making by, and on behalf of communities within the local board area.

As discussed in Section 11.2 above, elected representatives from the Franklin Local Board area sit on the NZ Steel Environment Committee and have therefore been kept up to date on progress of the replacement resource consent applications through that process.

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<sup>140</sup> Unitary Authority under the Local Government Act 2002 (LGA), meaning it is a territorial authority that also has the responsibilities, duties, and powers of a regional council.

Site visits have been undertaken in order to familiarise Franklin Local Board representatives with the manufacturing process. No specific feedback has been received in relation to these applications. NZ Steel will continue with engagement post lodgement.

### 11.5.3 Watercare

Watercare owns and operate the Waiuku Wastewater Treatment Plant located adjacent to the south of the Site. Watercare may be interested in effects on water quality and potential reverse sensitivity issues and cumulative effects of discharges to the Waiuku Estuary.

Mark Boyd, Head of Servicing and Consenting from Watercare, was provided with the Consent Briefing Pack (contained at **Appendix O**) via email (24 May 2021). Watercare indicated that it would like to be involved in the process going forward and kept up to date with the application process.

As an update, Watercare were provided with the executive summaries of the technical reports and copies of the Existing Consents for reference. NZ Steel will continue to engage with Watercare throughout the consenting process. No specific comments have been received to date.

### 11.5.4 Manukau Harbour Forum

The Manukau Harbour Forum (the Forum) is a collective comprised of representatives of the nine Auckland Local Boards on the shores of the Manukau Harbour in a collaborative response to improve the condition of the Manukau Harbour. The Forum was provided with a copy of the Consent Briefing Pack (**Appendix O**) via email on 1 April 2021. NZ Steel has engaged specifically with the Franklin Local Board which is part of this forum (see Section 11.5.2).

On 14 May 2021, NZ Steel representatives Amy Hill and Edit Simpson attended a boat tour of the Manukau Harbour (including the Waiuku Estuary) organised by the Forum, together with other users and interest groups associated with the Manukau Harbour. Some of the attendees provided information regarding aspects of the Harbour during the tour. The NZ Steel representatives gave a brief overview of the Steel Mill operations and resource consents being applied for. Other parties that attended this event included:

- Watercare;
- Kahawai Point Development;
- Awhitu Landcare group;
- Raetahi Cruises;
- George Flavell (Ngāti Te Ata);
- Fisheries Representative;
- Waiiau Pa and Clarks Beach Business Association; and
- Manukau Harbour Restoration Society.

The Consent Briefing Pack was provided to those who attended. No further correspondence has been received from the group specific to this consent application at the time of lodgement.

Jim Jackson, from the Manukau Harbour Restoration Trust, was updated on the progress of the application on 2 August 2021 by email, and he indicated they would like to be kept informed of the application progress.

## 11.6 Other stakeholders and local interest groups

### 11.6.1 Department of Conservation

The Department of Conservation (DOC) has a statutory obligation to conserve New Zealand's wildlife. DOC was contacted via email on 15 December 2020. In its response on 2 March 2021 and on 10 March 2021, Fiona McKenzie, Senior Ranger (Statutory Land Management), indicated that DOC would like to see the technical documentation and AEE reports and is particularly interested in the discharges to the CMA.

NZ Steel provided DOC with a copy of this application (including the AEE and all technical reports) upon lodgement.

An email relating to the application was received from Ms McKenzie on 16 August 2021. She requested further information about the effects of the water discharges on wildlife, and regarding compliance with NZCPS Policies 21 and 23. NZ Steel responded at an online meeting, providing a high-level overview of the site and the existing water treatment systems, and outlining the current and proposed ecological improvement activities. DOC was represented at the meeting by Ms McKenzie, Clinton Duffy (Marine Species Scientific Officer) and Joao Silva (RMA Planner). Following the meeting, NZ Steel's technical experts prepared a written response to the questions raised by DOC, which was provided to Ms McKenzie on 5 November 2021.

A follow-up enquiry regarding the consenting progress and the public notification date was received from Ms McKenzie on 28 June 2022. An online meeting attended by Ms McKenzie and Mr Duffy and NZ Steel representatives was held on 28 August 2022. NZ Steel provided an update on the consenting progress, as well as an overview of the proposed coastal bird compensation and wetland enhancement measures. DOC was contacted via email regarding the Draft CBMP and a response letter was received from Rebecca Rush, Tāmaki Makaurau Operations Manager, on 23 March 2023 (a copy of which can be provided on request). The letter indicated that DOC generally supports the ecological compensation measures proposed for coastal birds.

### 11.6.2 Auckland Regional Public Health Service

The Auckland Regional Public Health Service (ARPHS) is responsible for preventing disease and improving the health of the people in the Auckland region and they represent the District Health Boards (DHB) on public health and environmental matters.

The ARPHS is represented on the Environment Committee (by Mr John Whitmore). At this stage, no specific feedback or query has been received from ARPHS in relation to this application.

### 11.6.3 Federated Farmers

Federated Farmers is a national rural advocacy organisation. Federated Farmers is represented on the NZ Steel Environment Committee as described in Section 11.2 above in the recognition that the Steel Mill is surrounded by agricultural land. A representative from Federated Farmers was invited to attend the site visit held on 16 October 2020, with other Environment Committee members, however the invitation was declined.

No correspondence from Federated Farmers or discussions at Environment Committee meetings have raised matters of concern with respect to this application.

### 11.6.4 Manukau Harbour Restoration Society

Manukau Harbour Restoration Society (the Society) has an interest in the health and recovery of the Manukau Harbour, including the Waiuku Estuary.

In February 2021, the Society was contacted to see if it was interested in NZ Steel's application for replacement resource consents. The Society advised it was interested and would like to be kept up to date with water discharge related documentation and findings.

On 14 May 2021, NZ Steel representatives attended a Manukau Harbour tour (as discussed at Section 11.5.4) and gave a brief update on the consent applications. NZ Steel representatives spoke with the Chair of the Society and provided the Consent Briefing Pack (a copy of which is provided at **Appendix O**) and will continue to engage with them. NZ Steel provided the Society with a copy of the lodged application (including the AEE and all technical reports) and will update the Society regarding progress of the application.

#### **11.6.5 Awhitu Landcare**

Awhitu Landcare is a community environmental group for the Awhitu Peninsula. The group is working with Council to control erosion and minimise sediment loss by planting trees and conducting animal and plant pest control on the Awhitu Peninsula.

A representative of this group attended the Manukau Harbour tour on 14 May 2021. Email contact was made with Brian Hamilton, and they have advised they would like to be kept up to date with the application and relevant information.

#### **11.6.6 Forest & Bird**

Forest & Bird is an independent organisation specialising in the protection and conservation of New Zealand's indigenous flora and fauna. On 23 March 2021, an email was sent to the organisation to gauge their interest in the application. No response was received.

## 12 Proposed conditions of consent

NZ Steel has proposed a set of draft resource consent conditions. These are included in **Appendix R**. For continuity and ease of implementation the conditions of the Existing Consents sought to be replaced by this application have been used as a base for the development of the proposed conditions.

The conditions of the Existing Consents were developed to manage effects on the environment resulting from the Steel Mill operations and therefore it is considered that the conditions of the Existing Consents are comprehensive and robust and have appropriately managed the effects to date. Therefore, the conditions of the Existing Consents have been used as a template for the proposed conditions contained in **Appendix R**. However, the proposed conditions have been updated to reflect current practice and to take into account the findings of the assessments undertaken to inform this application.

**Appendix R** contains both a clean set of proposed conditions and a table which sets out the existing conditions, the proposed conditions, and comments regarding the changes that are proposed. The discussion below contains a summary of the key changes, which are:

- Consolidation of the general conditions and updates to reflect current practice;
- Overarching management plan approach;
- Changes to the monitoring programme;
- Amendments to reporting requirements;
- Addition of compensation requirements;
- Removal of stream diversion conditions; and
- Addition of Environment Committee requirements.

### 12.1 Consolidation of the general conditions and updates to reflect current practice

The Existing Consents were all standalone consents and therefore each had their own set of General Conditions. Given this application proposes to bundle these consents, it is considered appropriate to consolidate these into a single set of General Conditions. This will avoid repetition and will help to ensure that the conditions are effective and efficient, from the perspective of implementation and compliance monitoring. The general wording of these general conditions has been updated to reflect current practice, guidance and expression. Reference has been made to the Auckland Council Conditions Manual, and to the wording proposed in NZ Steel's application for the replacement air discharge permit. Where appropriate, consistent wording with wording proposed for the air permit is considered useful for implementation and compliance monitoring.

### 12.2 Overarching management plan approach

In accordance with the general principle of updating the conditions to reflect current practice, a management plan approach is proposed to be implemented for the water management system for the discharges at the Steel Mill.

The Existing Consents contain a number of conditions relating to monitoring, compliance and processes, including a requirement to operate an EMS. It is proposed to retain the requirement to implement an EMS (compliant with ISO 14001 or equivalent), but to also adopt a management plan approach (the WQMP) to manage activities and their potential effects. The EMS is highly complex and contains detailed procedures relating to all facets of the Steel Mill. It is intended that the WQMP will be complementary to the EMS, providing sufficient detail to address the conditions of consent,

and describing how the necessary procedures are implemented by the EMS to ensure compliance with the conditions.

The WQMP (of which a draft is contained at **Appendix K**) is proposed to include information such as:

- Roles and responsibilities, training and competency checks, auditing requirements, and a change management process;
- Identification of the main activities and potential contaminants on the Site and procedures to manage the associated risks;
- Description of how the management and operational procedures (including methodologies and contingency plans) are implemented by an EMS (compliant to ISO 14001 or equivalent);
- An Emergency Spill Response Plan, and incident actions and reporting procedures;
- A water monitoring programme;
- Operation and maintenance practices;
- A chemical treatment programme;
- Ecological management plans (relating to coastal birds and wetlands); and
- Reporting requirements (as discussed below).

A management plan is considered a 'living document' and its purpose is to contain all relevant information and management protocols without unnecessarily constraining the Consent Holder by way of consent conditions. However, it is proposed that the WQMP is reviewed regularly to ensure it remains relevant. That review is intended to be conducted:

- 1 At least every five years; and
- 2 Prior to any material changes to any activities in the ITA Area. A material change is considered to be any proposed change that may have a significant effect on the quality or quantity of the authorised discharge.

### 12.3 Changes to monitoring programme

A number of changes to the existing monitoring requirements are proposed as a result of the findings of the assessment undertaken to support this application and to reflect current practice.

The proposed approach to monitoring differs depending on the intended purpose, with a combination of high-resolution daily or continuous sampling, on-going monthly or quarterly grab sampling, and monitoring of longer-term trends as described at Section 11.1 of the ITA Report (**Appendix G**).

The review of the historical monitoring and effects assessment has determined that for the majority of parameters, the results over the duration of the previous consents have been stable, and the effects less than minor. In some circumstances, the results have been consistently below relevant environmental thresholds such as the ANZWQG DGVs and therefore are no longer considered to be key contaminants. These contaminants are proposed to either be removed from the monitoring schedule going forward or the frequency reduced (including some parameters which are currently in the daily sampling).

The proposed conditions include the requirement for a water monitoring programme that will enable NZ Steel to assess:

- Sediment quality, benthic community health, and shellfish quality within the Coastal Marine Area (within and outside the modelled mixing extent);
- Contaminant concentrations within the North Drain, Ruakohua Stream and Kahawai Stream; and

- Contaminant loads from the process water and ITA stormwater discharge locations (including the Northside and Southside Outfalls).

The programme is set out in the draft WQMP (as discussed above) and includes sampling locations, methods and procedures, parameters for analysis, Consent Limits and Trigger Investigation Levels. These changes are reflected in the conditions at **Appendix R** and are summarised below:

### 12.3.1 Consent Limits

The assessments undertaken to support this application have identified key parameters and effects. Consent limits are an effective mechanism for ensuring mitigation and management of contaminants as it enables a direct comparison of performance against these limits. Therefore, Schedule 1 of the Proposed Conditions at **Appendix R** contains proposed Consent Limits.

The Existing Consents include a discharge volume limit from both the Northside and Southside Outfalls. This volume limit in the Existing Consents does not appear to relate to the management of any effect of the Steel Mill operations. Furthermore, we note that flows above the consented limits generally occur as a result of rainfall events, not process water, and freshwater flows from other catchments under rainfall events contribute much more freshwater to the estuary.

NZ Steel proposes to no longer include a Consent Limit for volume from the Northside and Southside Outfalls. The management focus will instead more appropriately be on the key contaminants that may cause adverse effects, in particular zinc. It is noted that the inclusion of the zinc concentration and load Consent Limits will also constrain discharge volume, as the concentration and load are linked through the overall volume discharged. For example, assuming the discharge was at the zinc concentration limit of 0.11 mg/L the maximum daily volume able to be discharged would be 9,090 m<sup>3</sup> to ensure the zinc load limit of 1 kg/day is not exceeded.

### 12.3.2 Trigger Investigation Levels

For the majority of contaminants, the historical results have been stable, and the purpose of the monitoring is to identify changes in water quality and proactively manage the source. Trigger Investigation Levels will be developed for the key contaminants at each discharge location to identify individual exceedances or results or trends and enable responsive actions to be taken.

The Trigger Investigation Levels will be set based on the higher of the following, for the majority of contaminants (with the exception of pH):

- The average plus two standard deviations based on the previous two years of monitoring data; or
- The ANZWQG 95% SPL.

The exception to this approach is pH, where the existing triggers of less than 6 and more than 9.5 will remain.

A review of the monitoring data for the period 2019 to 2021 has been undertaken to provide initial draft Trigger Investigation Levels. The draft Trigger Investigation Levels are included in the Monitoring Data Review (Appendix C to the ITA Report in **Appendix G**) and in the water monitoring programme within the draft WQMP (**Appendix K**). It is proposed that these draft Trigger Investigation Levels will be updated annually based on the previous two years of monitoring data.

## 12.4 Amendments to reporting requirements

The Existing Consents include various requirements for ongoing reporting to Council, including reporting of all information required by the conditions. In order to consolidate the reporting

requirements, it is proposed that conditions will require two types of report that address all matters covered by the resource consents sought<sup>141</sup> – an Annual Report and a Five Yearly Report.

The Annual Report will provide details relating to treated process water and ITA stormwater discharges for the preceding 12 months including:

- Any revisions made to the WQMP;
- A summary of maintenance undertaken;
- Summary of water quality monitoring data collected (in accordance with WQMP);
- Summary of any spills with the potential to result in exceedances of Consent Limits and Trigger Investigation Levels;
- Identification of any emerging trends or environmental or operational factors that may have impacted the monitoring results;
- Summary of activities supporting the Coastal Birds Management Plan and Wetlands Management Plan; and
- Summary of actions taken in response to any Consent Limit or Trigger Investigation Level exceedance and the outcome.

The Five Yearly Report will evaluate all aspects of the environmental performance of the ITA Area relating to treated process water and ITA stormwater discharges. The Five Yearly Report is proposed as a two-part report. The first part requires an analysis of compliance with the conditions of the consent and of the five preceding Annual Reports to identify any long-term trends. From this information, a critical evaluation of the performance of the operations and maintenance systems can be undertaken and recommendations for any additional improvements can be made. It will also enable identification of any effects beyond those identified in the application. Should any effects be identified, Part 2 of the conditions requires any alternatives and the best practicable option to be assessed.

## 12.5 Addition of compensation requirements

In keeping with the management plan approach set out above, it is proposed to develop a management plan for the ecological compensation measures proposed associated with coastal birds.

More specifically, within six months of the commencement of the consent, a CBMP shall be submitted to the Council for certification. The CBMP shall be generally in accordance with the draft CBMP in **Appendix S**. The overall objective of the CBMP is to describe the management and monitoring practices and procedures to be implemented to compensate for residual effects on coastal birds.

## 12.6 Removal of stream diversion conditions

The North Stream diversion permit (812691) contains a number of existing conditions. These existing conditions are not proposed to be included for the replacement consents as the diversion is in place, and has been for a long time, no changes are proposed to the channel or surrounding area physically and any new structures or buildings adjacent to the diversion will be subject to current building consent requirements.

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<sup>141</sup> Other than initial reporting undertaken in the event of a spill or incident, which will continue to occur on an as required basis, in accordance with the WQMP.



## 12.7 Addition of Environment Committee requirement

NZ Steel (as discussed at Section 11.2) has an existing established Environment Committee whose membership includes members of Council's compliance team, the Franklin Local Board, and representatives of Ngāti Tamaoho and Ngāti Te Ata. The Environment Committee meets on a regular basis and are provided a summary of the monitoring data and its analysis, and any complaints received. Conditions are proposed to detail requirements associated with continuation and formalisation of the Environment Committee in the consent to ensure that this process is mandated.

## 12.8 Addition of EAF related conditions

A number of conditions have been proposed to reflect the changes that may arise as a result of the EAF installation. These include, but are not limited to:

- The requirement for information to be included in the WQMP should an EAF be installed. In particular, this is in relation to management of External Scrap brought to Site and stored in the Scrap Yards. The information requirements include describing the procedural and physical controls to manage and treat stormwater from the Scrap Yards as well as describing the scrap acceptance procedures which provide certainty around the quality of the scrap (and therefore minimise contaminants) brought onto Site.
- Structural control conditions – these will only be relevant if the Scrap Yards are to be established under this consent (and not the standalone consent BUN601422451). This will depend on the timing of the establishment of the Scrap Yards (as the standalone consent is only in place until this application is determined and consent is granted, and beyond appeal).

## 13 Conclusion

This AEE report has been prepared on behalf of NZ Steel. It accompanies a resource consent application to authorise the use of land and discharge of contaminants from an Industrial and Trade Activity, the discharge of ITA stormwater and discharge of process water associated with iron and steel production and ancillary activities (including any changes arising if an EAF were to be installed) at the Glenbrook Steel Mill located at 131 Mission Bush Road.

As described in Section 6.3, out of an abundance of caution NZ Steel is applying for consent pursuant to Regulation 54 of the Freshwater NES which is a non-complying activity. It is noted the status is only non-complying due to discharges into the Ruakohua Stream. As such resource consent is sought from the Council as a Non-Complying Activity pursuant to the AUP and Freshwater NES.<sup>142</sup> But for this conservative approach, the activity would be considered to be a discretionary activity.

As discussed at Section 1.5, a 35-year consent term is sought.

This AEE report draws the following conclusions:

- The application meets the ‘gateway test’ set out in section 104D of the RMA as the Proposal is not contrary to the objectives and policies of the Regional Plan provisions of the AUP.
- The assessment of the environmental effects of the activities sought has concluded that:
  - The ongoing operation of the Steel Mill results in significant positive effects on the local, regional and national economy through provision of steel resources, employment and contribution to GDP (as set out in Section 7.2).
  - Effects on the receiving watercourses and natural inland wetlands are assessed as no more than minor. Notwithstanding this, the proposed wetland enhancement will provide positive effects to wetland values while providing incidental benefits to stream ecology.
  - Effects on estuarine habitats, fish and marine mammals, and coastal saline vegetation are assessed as being no more than minor, after reasonable mixing.
  - Discharges to the CMA are assessed as having a more than minor adverse effect on coastal birds, due to impacted foraging habitat that may be used by ‘Threatened’ or ‘At-Risk’ species. As it is not practicable to avoid or further mitigate the effect, residual effects are proposed to be addressed through compensation measures that seek to achieve positive effects on coastal bird values, the CBMP proposed in consent conditions will ensure this is achieved.
  - Given their location within the CMA, the structural integrity of the outfall structures has been assessed as adequate for the duration of the consent and will have no more than minor effects.
  - Cultural effects have been taken into consideration and through the ongoing involvement of Ngāti Te Ata and Ngāti Tamaoho on the Environment Committee, any adverse effects on cultural values will continue to be managed.
  - Cumulative effects have been considered as the existing monitoring provides data from all sources. The assessment of effects contained above is largely based on the monitoring data, amended (where appropriate) to consider the full extent of the Receiving Environment and therefore represents a conservative assessment of effects.

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<sup>142</sup> For the avoidance of doubt, NZ Steel is seeking resource consent under the rules identified in this application and any other consents necessary to authorise the activities described in the application.

- It is expected that overall effects on the Receiving Environment will be less should an EAF be installed.
- The Proposal is supported and enabled by the objectives and policies of the AUP that recognise the value of investment of the Steel Mill, the benefits it entails, and the functional and operational need of its location and relationship with the CMA. Overall, while there are a handful of individual policy provisions where strict consistency cannot be achieved (namely where they require the absolute avoidance of adverse effects) it is considered that the Proposal as a whole is not contrary to, and in many cases is supported by, the Regional Plan provisions of the AUP.
- Assessment of the Proposal against other relevant national planning frameworks, including the National Policy Statement for Freshwater Management, the New Zealand Coastal Policy Statement, the National Policy Statement on Urban Development and the National Policy Statement on Indigenous Biodiversity has also been undertaken (Section 10).
- Overall, it is considered that the Proposal is consistent with Part 2 of the RMA and promotes sustainable management of natural and physical resources.
- The value of the investment of NZ Steel as the existing consent holder is significant on any measure. Information on the value of the investment has been provided in accordance with 104(2A).

NZ Steel requests that this resource consent application is publicly notified. In accordance with section 95A(2)(a) and 95A(3)(a), public notification is therefore mandatory.

The suite of draft conditions proposed by NZ Steel is included in **Appendix R**.

Until such time as this application is determined and any appeals on this application are resolved, the Steel Mill will continue to operate in accordance with the terms of the Existing Consents pursuant to section 124.

## 14 Applicability

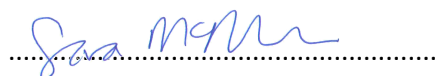
This report has been prepared for the exclusive use of our client New Zealand Steel Limited, with respect to the particular brief given to us and in accordance with the scope of work set out in our letter of engagement dated 17 June 2019 and associated variations. It may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application for resource consent and that Auckland Council as the consenting authority will use this report for the purpose of assessing that application.

We understand and agree that this report will be used by Auckland Council in undertaking its regulatory functions in connection with the applications for replacement resource consents.

Tonkin & Taylor Ltd  
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## **Appendix A: Application Forms**

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## **Appendix B: Existing Consents**

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## **Appendix C: Records of Title**

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## **Appendix D: AUP Planning Maps**

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## Appendix E: Figures

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## **Appendix F: Activity Standards Assessment**

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## **Appendix G: ITA Report**

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## **Appendix H: Freshwater Ecological Assessment**

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# **Appendix I: Marine Ecological Assessment**

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**Appendix J: Outfall Structures Integrity  
Assessment**

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## **Appendix K: Draft Water Quality Management Plan**

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## **Appendix L: Closed Landfill Management Plan**

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## **Appendix M: Economic Impact Statement**

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## **Appendix N: Mana Whenua Correspondence**

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## **Appendix O: Consultation Records**

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## **Appendix P: Relevant Objectives and Policies**

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## **Appendix Q: Ecological Guidelines and Methodologies**

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## **Appendix R: Proposed Conditions**

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## **Appendix S: Draft Coastal Birds Management Plan**

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## **Appendix T: Draft Wetlands Management Plan**

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