Environmental and Social Impact Assessment Volume 2: Main Text

Caspian Sea Desalination Plant

ACWA

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1.0 Introduction

1.1 Project Background Information

Azerbaijan is facing mounting water challenges driven by climate change and growing demand among other factors. To address water scarcity, the government has launched multiple initiatives under the National Strategy for the Efficient Use of Water Resources, including desalination.

On 12 April 2023, the office of the President of Azerbaijan issued a decree authorising a pilot project for producing drinking water through seawater desalination. Building on that, in March 2024 the Ministry of Economy launched a public-private partnership (PPP) competitive tender to design, build, finance, and manage a desalination facility of 100 million m³/year capacity in Sumgayit. The Government of the Republic of Azerbaijan, acting through the Azerbaijan State Water Resources Agency (ADSEA) has appointed ACWA (earlier known as ACWA Power), through the first-ever PPP in Azerbaijan to develop a seawater reverse osmosis (SWRO) plant at Sumgayit Chemical Industrial Park, with a daily capacity of approximately 300,000 m³, which is hereby referred to as “the Project”. The Project will be located near the Caspian Sea within the Sumgait industrial area on a site covering an area of approximately 30 hectares (Ha).

ACWA will be responsible for the design, financing, building, commissioning as well as operation and maintenance of the SWRO desalination plant. ACWA has established a special purpose vehicle (SPV) Project Company called the ‘Caspian Sea Azerbaijan Project Company LLC’, registered in the Republic of Azerbaijan (with registration no. 1407274281) to develop the Project using reverse osmosis technology on a Build, Own, Operate and Transfer (BOOT) basis under a 25-year water offtake agreement with the ADSEA (the product water off-taker).

5 Capitals – part of SLR (5 Capitals) has been engaged by ACWA to undertake the independent assessment of potential environmental and social impacts, as well as certain other environmental & social related scope during the development process of the desalination plant including the Environmental and Social Impact Assessment (ESIA).

At this stage, it is understood that ACWA is seeking an amount of project finance from financial Institutions (together “lenders”), that are Development Finance Institutions (DFIs), which will include the International Finance Corporation (IFC), Japan Bank for International Cooperation (JBIC), Nippon Export and Investment Insurance (NEXI), the Asian Infrastructure Investment Bank (AIIB) and Asian Development Bank (ADB). ACWA’s Corporate Environmental & Sustainability Policy is to comply with World Bank/IFC international guidelines and standards, the Equator Principles and any other relevant Environmental & Social (E&S) lender requirements for all projects undertaken globally, in order to comply with international lending banks and this includes the Caspian Sea Desalination Plant project.

The Ministry of Economy has engaged a local consultant IQLIM, who has prepared the national ESIA in compliance with the Azeri regulations and standards and subsequently approved by the national environmental regulatory agency the Ministry of Ecology and Natural Resources (MENR) of the Republic of Azerbaijan. A copy of the national ESIA approval is provided in Appendix (see ESIA Volume 4).

As part of their ESIA, IQLIM has undertaken environmental and social baseline data collection which are referred to and used in this ESIA. A detailed review and gap analyses of the existing ESIA documentation prepared by IQLIM for the Project was undertaken. The current ESIA incorporates additional assessments and updates to ensure consistency with applicable international requirements by the lenders. Further, 5 Capitals has engaged locally

based specialists to undertake certain elements of the scope and provide local experience and expertise to complement the data collected by IQLIM.

1.2 Project Rationale

The Republic of Azerbaijan, particularly Baku city and the Absheron Peninsula, faces increasing pressure on its freshwater resources due to population growth, urbanisation, industrial development, and the impacts of climate change. The region is highly dependent on surface water sources and long-distance water transfers, which are vulnerable to seasonal variability and infrastructure limitations. These factors have led to growing concerns over the long-term sustainability and resilience of the public drinking water supply system.

The proposed Caspian Sea desalination project seeks to directly address these challenges by:

- Meeting the growing demand for potable water in Baku and surrounding urban areas, ensuring reliable and uninterrupted water supply for domestic, commercial, and industrial needs;
- Diversifying the country's freshwater sources by introducing non-conventional water supply through seawater desalination, thereby reducing dependency on traditional river and reservoir systems;
- Alleviating the financial and technical strain on the existing water supply infrastructure by decentralizing water production and incorporating energy-efficient technologies;
- Promoting the transfer of international knowledge and technologies by engaging global private sector leaders and engineering firms, contributing to local capacity building and innovation in the water sector;
- Enhancing water security and climate resilience in line with Azerbaijan's national water strategy and global commitments under the UN Sustainable Development Goals (SDGs), particularly SDG 6 (Clean Water and Sanitation) and SDG 13 (Climate Action).
- This project not only supports the Government's long-term water management objectives but also represents a strategic milestone as the first PPP desalination initiative in Azerbaijan, setting a precedent for future sustainable infrastructure development in the country.

This project not only supports the Government's long-term water management objectives but also represents a strategic milestone as the first PPP desalination initiative in Azerbaijan, setting a precedent for future sustainable infrastructure development in the country.

1.3 Purpose and Objectives of the ESIA

The purpose of this ESIA is to evaluate the potential environmental and social impacts of the proposed desalination plant, and to ensure that the Project is designed and implemented in a manner that is environmentally sustainable and socially responsible.

The primary objectives of the ESIA are as follows:

- Provide an overview of the Project design and construction and operational processes and requirements;
- Identification of sensitive receptors in the Project's areas of influence;

- Review of the relevant regulatory and legislative framework of Azerbaijan that are applicable to the Project, including national laws, applicable international regulations and standards, and international lender requirements;
- Assessment of the existing environmental and social baseline conditions prior to the development of the Project through a review of available existing data provided in the IQLIM ESIA and the undertaking of additional socioeconomic baseline surveys;
- Assessment of the Project's environmental and social impacts for the construction, operational, decommissioning, and post closure activities such as rehabilitation and restoration;
- Assessment of the Project's alternatives, specifically the no project alternative and project technology;
- Determination of applicable mitigation and management measures to be implemented in order to avoid or minimise potential adverse impacts and enhance beneficial impacts;
- Preparation of a framework for which the construction and operational phase management systems and plans can be developed and implemented.

1.4 Structure of the ESIA Report

To align the ESIA with the requirements for environmental and social assessment established by the various lenders and good practice, the ESIA report is proposed to be presented in the following format developed by 5 Capitals:

- Volume 1: Non-Technical Summary
- Volume 2: ESIA - Main Text, Tables and Figures
- Volume 3: Framework for Environmental & Social Management
- Volume 4: Appendices

Volume 1 is the Non-Technical Summary (NTS) of the ESIA, including the main outcomes, and conclusions.

Volume 2 (this document) comprises the main text of the ESIA and full impact assessment, with mitigation, management and monitoring measures identified.

Volume 3 provides the Framework for Environmental and Social Management.

Volume 4 comprises all technical appendices relevant to the studies and ESIA,

2.0 Project Information

2.1 Key Project Information

Table 2-1 Key Project Information

Project Title	Caspian Sea Desalination Plant
Project Developers	ACWA
Project Company	Caspian Sea Azerbaijan Project Company LLC
Off taker	Azerbaijan State Water Resources Agency
EPC Contractor	HDEC, IWAC, WETICO
Operation & Maintenance	ACWA Operations (previously NOMAC)
Environmental Consultant	5 Capitals – Part of SLR Consulting (5 Capitals)

2.2 Project location

The proposed Caspian Sea Desalination Plant will be located within the Sumgayit Industrial Area, approximately 30 km northwest of Baku, in the Republic of Azerbaijan. Access to the site is via the southeastern gate, reached by a short gravel road off Samad Vurghun Road in Sumqayit.

The site lies in close proximity to the Caspian Sea shoreline, enabling direct access for seawater intake and brine discharge infrastructure. It is situated within the Sumgayit Chemical Industrial Park, a designated industrial zone under the Ministry of Economy, which hosts a range of manufacturing and processing facilities. The proposed Project site is a brownfield site which used to occupy a former wastewater treatment plant.

The geographical coordinates of the approximate centre of the Project site, based on the national coordinate system (projected UTM Zone 39N, WGS84 datum), are Easting 383,106.00 m and Northing 4,496,722.00 m. The site is strategically positioned to allow efficient integration with existing transportation corridors, utilities, and regional water distribution infrastructure, while avoiding the need for any land acquisition outside the industrial zone.

The location was selected due to:

- Proximity to the Caspian Sea for reliable seawater access;
- Availability of industrial land with appropriate zoning and supporting infrastructure;
- Reduced environmental sensitivity compared to undeveloped coastal areas;
- Accessibility via existing road networks linking Sumgayit to Baku and other urban centers.

The following Figure 2-1 indicates the project location in relation to Baku, the Caspian Sea, and surrounding infrastructure.

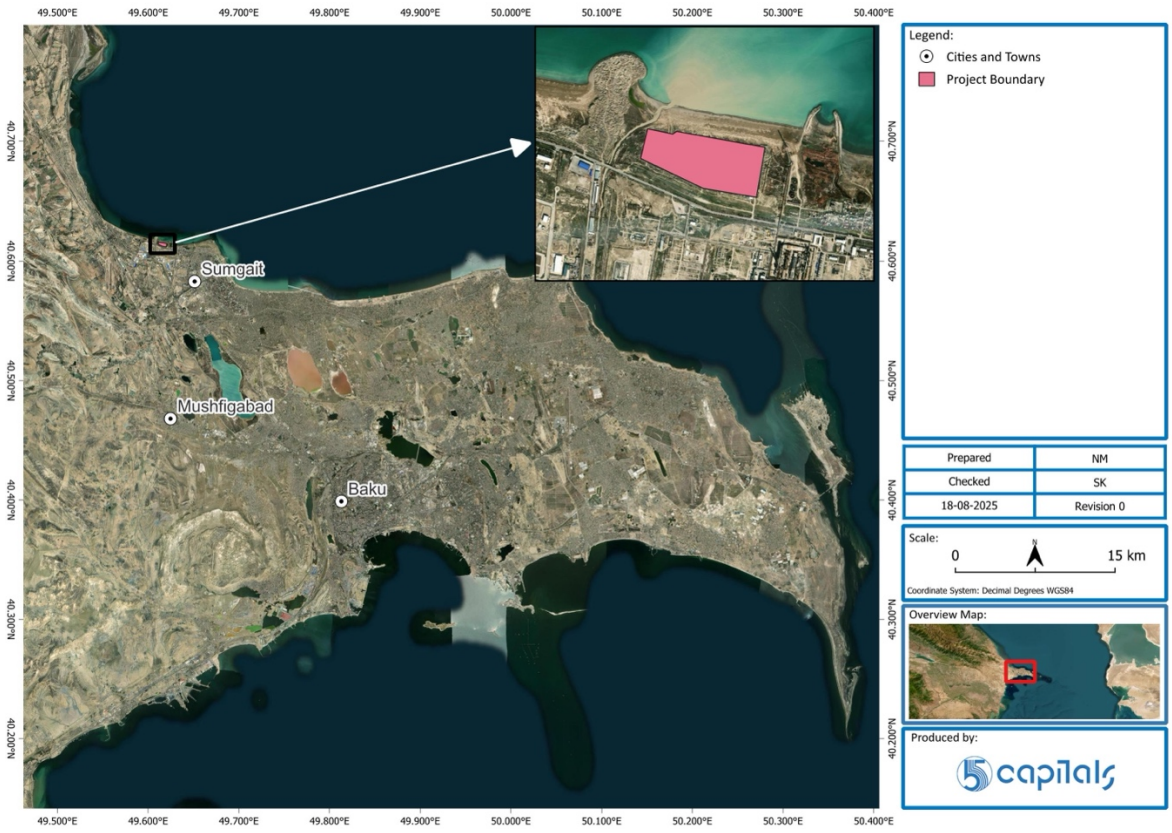


Figure 2-1 Project Location

2.3 Site Conditions

2.3.1 Land Ownership

The proposed Project site within the Sumgayit Industrial Park, is under the jurisdiction of the Sumgayit Industrial Authority (SIA), which operates under the Ministry of Economy of the Republic of Azerbaijan. The industrial park is a designated zone for manufacturing and infrastructure development, with streamlined procedures for land allocation to strategic projects.

For the Caspian Sea Desalination Plant, the land has been formally allocated to ACWA by the SIA. A Land Lease Agreement (LLA) has been executed between the Authority and the Project Company, granting the right to develop, operate, and maintain the facility for the duration of the agreed concession period under the BOOT framework.

In parallel, a Water Purchase Agreement (WPA) has also been concluded between the Project Company and the ADSEA, securing the offtake of potable water for distribution into the national supply system. All agreements including the PPP, LLA and the WPA were finalised and signed in September 2025.

This arrangement ensures that the project is developed on legally allocated land with clear tenure, in compliance with national legislation, industrial park regulations, and international financing requirements.

2.3.2 Land Use and Site Conditions

2.3.2.1 General Site Conditions

As noted earlier in this report, the Project site occupies land previously used for a wastewater treatment plant that ceased operations in 2010. Although the facility has since been dismantled, concrete foundations and residual waste, primarily rubble remain on site. The area is heavily disturbed, characterised by deep trenches, stockpiled sand, and several derelict structures.

Evidence of widespread anthropogenic disturbance includes:

- Construction debris such as concrete fragments, metal rebars, and wooden pallets.
- General litter, including plastics and organic waste.
- Multiple oil and fuel spill locations, indicating potential soil contamination.

The southern boundary of the site adjoins Samad Vurghun Road and a cluster of industrial facilities, including the SOCAR chemical plant. Access to the site is provided via a southeastern gate, reached by a short gravel road from Samad Vurghun Road in Sumqayit. Further details on existing site conditions are provided in the sections that follow.



Figure 2-2: Existing land use/condition on Project Site

Vegetation cover is relatively abundant, mainly shrubs given the disturbed nature of the site and consists primarily of grasses and small shrubs, with a limited number of ornamental trees located near the main access gate. No rare or protected flora were identified.

No evidence of human habitation or semi-permanent use was recorded. Although no people or herders were present during the site visit, few cattle were observed grazing within the site. The site is a previously developed brownfield area characterised by industrial land uses, with no permanent agricultural activity or supporting infrastructure. The observed grazing activity was limited in nature and not indicative of sustained or livelihood-dependent use of the land

Wildlife activity was limited, with only a small number of burrows observed, likely attributable to lizards. No animal tracks or droppings were recorded, aside from those associated with cattle.

The site exhibited evidence of informal grazing and illegal waste disposal, along with indications of potential hydrocarbon-related soil contamination. The combined presence of waste accumulation, fuel spills, and the site's proximity to industrial activities warrants further investigation as part of the ESIA baseline studies, which are discussed later in this report.

2.4 Human Receptors in Surrounding Area

This section describes the human receptors within and surrounding the Project area that may be affected by the proposed development. Human receptors include nearby communities, individual residences, commercial and industrial facilities, and other land users that could potentially experience environmental or socio-economic impacts during construction and operation. The identification of these receptors provides the basis for assessing potential risks and informing appropriate mitigation measures.

A map illustrating the main human receptors within a 5 km radius of the Project site is presented in Figure 2-3. Further details on each receptor, including descriptions, coordinates, and photographs, are provided in the accompanying tables.

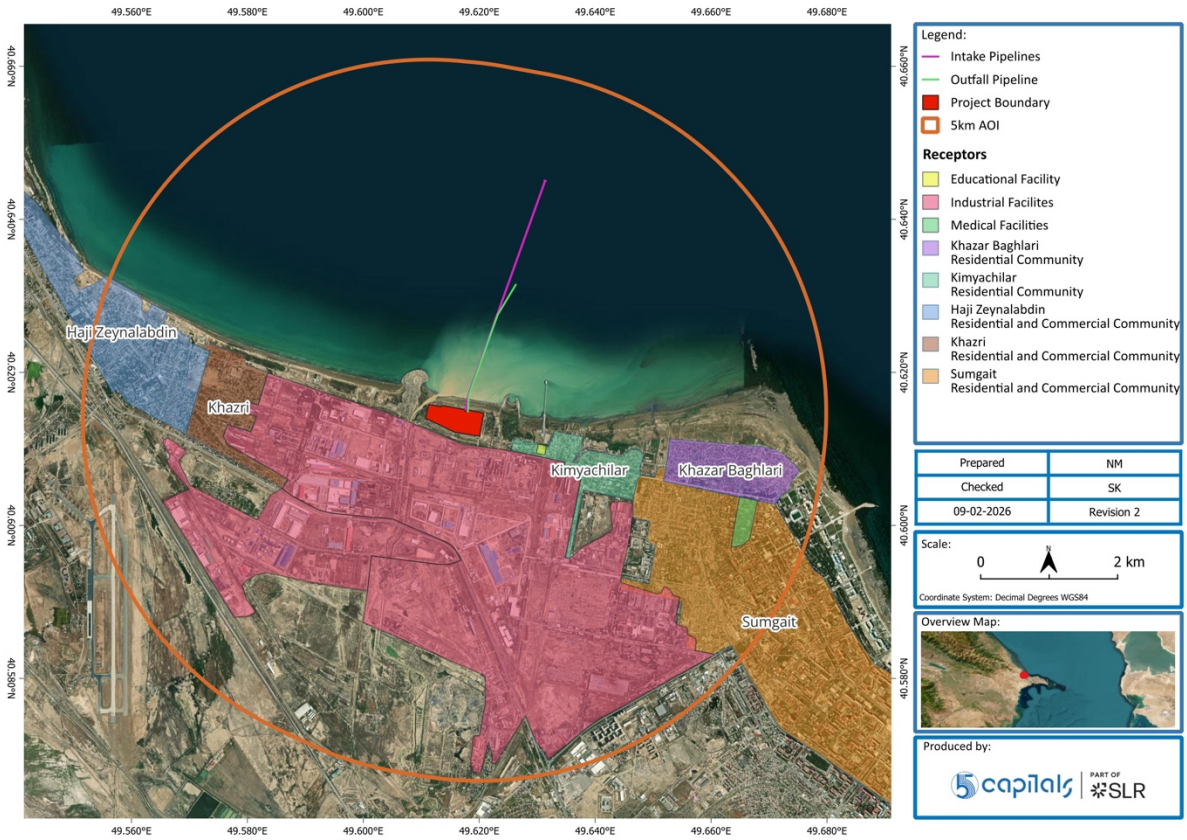
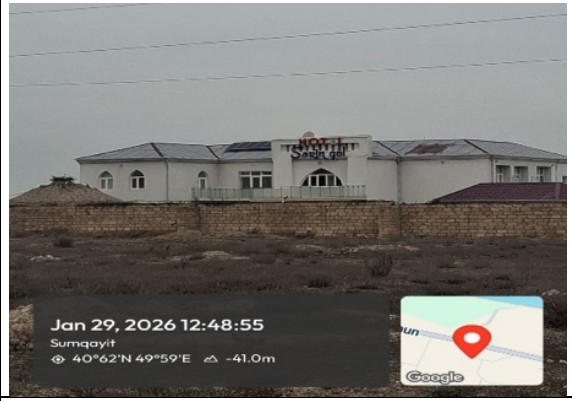


Figure 2-3: Receptors in Surrounding Area

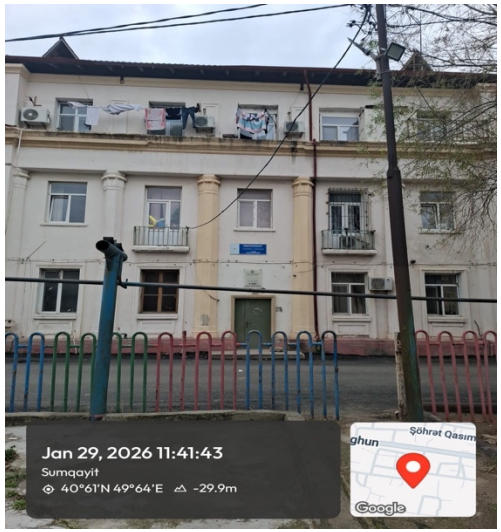
Table 2-2 Receptors within 5 kilometres of the Project Site

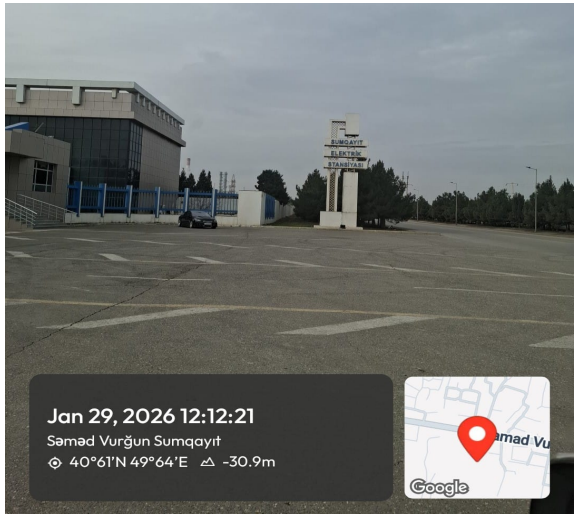
Receptor ID	Receptor Name	Receptor Type	Approximate Distance from Project Site
R1	Serin Gol Hotel and Restaurant	Residential/Commercial	1,600 m
R2	Sumgait Industrial Park	Industrial	150 m
R3	Kimyachilar Community	Residential	420 m
R4	Khazar Baghlari Community	Residential	2,750 m
R5	Sumgait Community	Residential	2,500 m
R6	Khazri Community	Residential	2,500 m
R7	Haji Zeynalabdin Community	Residential	3,600 m
R8	Samad Vurgun Street	Traffic (Road Users)	120 m

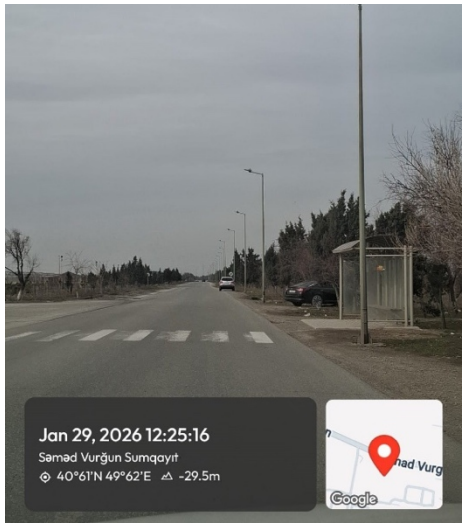
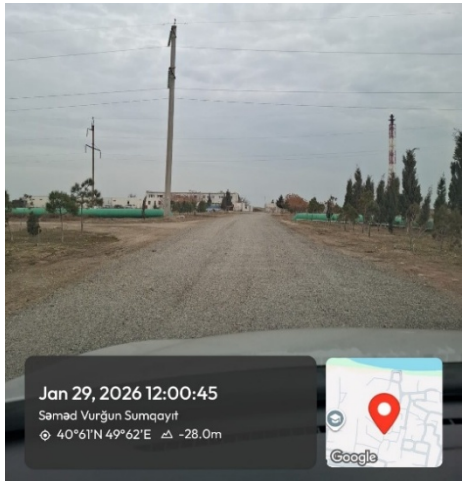
Table 2-3 Identified Sensitive Receptors Around Project Area

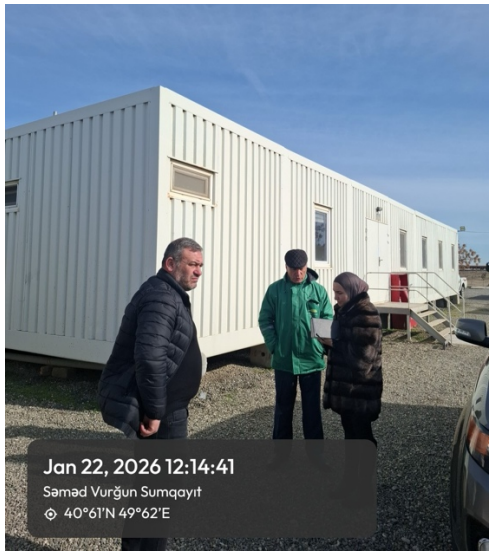
Type of Receptor	Approximate Distance from Site	Receptor Description	Photo (where applicable)
Residential / Commercial	1,600 m	**Serin Gol Hotel & Restaurant** The "Serin Gol" facility comprises a hotel and a restaurant, neither of which are currently operational. However, it was noted that, should the factory construction commence, the facility may potentially be used to accommodate construction workers.	
School	750 m	**Jabrayil District Secondary IDP School No. 6**	

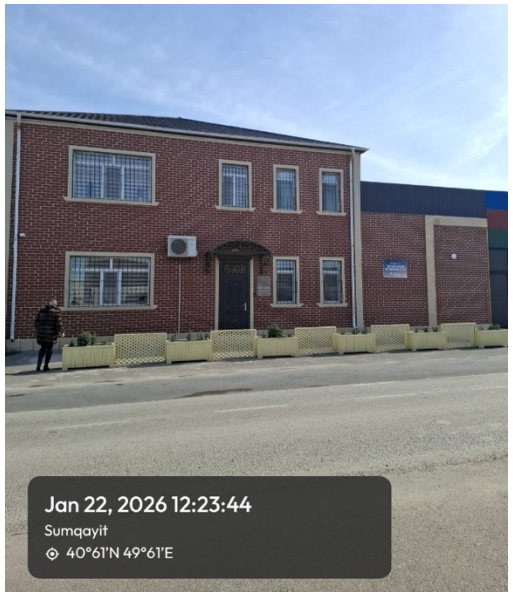
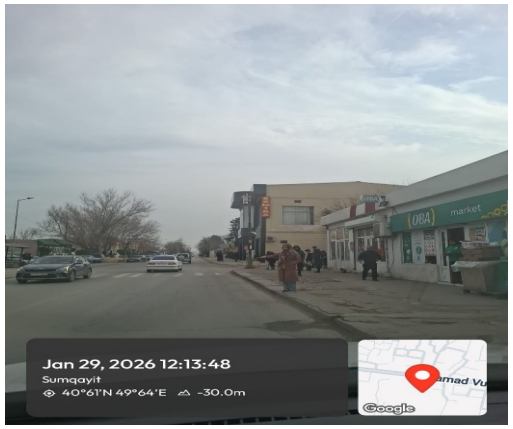
Type of Receptor	Approximate Distance from Site	Receptor Description	Photo (where applicable)
School	750 m	**Jabrayil District Secondary IDP School No. 5** is located on the first floor of the building shown in the photograph. Gubadli District, Mardanli Village IDP Secondary School, is located on the second floor of the building. This two-storey building located in the Kimyachilar settlement. Although the schools are officially registered as IDP schools, children from the local settlement as well as from surrounding settlements also attend school at this facility.	
School	2,700 m	**Gubadli District, Khalaj Village Secondary IDP School** This school building is located in the Khazri settlement.	

Type of Receptor	Approximate Distance from Site	Receptor Description	Photo (where applicable)
Kindergarten	1,800 m	**Kindergarten No. 6** Children aged 1 to 5 years are educated at this facility	
Hospital	2,500 m	**Sumgait City Hospital No. 4** It is located in the Khazar Baghları settlement and provides services to the entire population of Sumgait city, including residents of the surrounding settlements.	

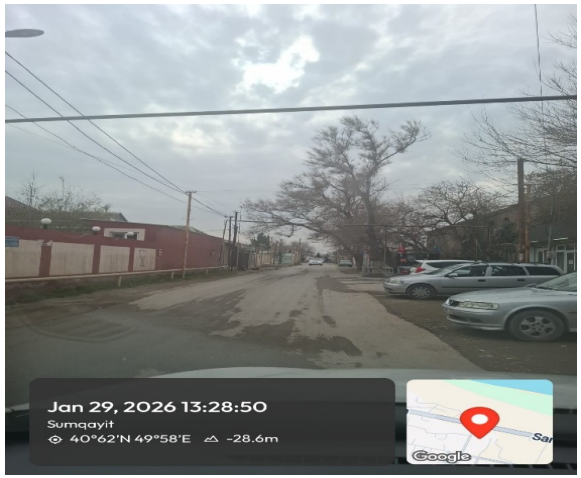
Type of Receptor	Approximate Distance from Site	Receptor Description	Photo (where applicable)
Industrial	700 m	**SOCAR Polymer Plant (SOCAR Polymer LLC)** SOCAR Polymer LLC is a subsidiary of the State Oil Company of the Republic of Azerbaijan (SOCAR) and operates Azerbaijan's first large-scale polymer production complex.	Not available
Industrial	240 m	**SOCAR Ethylene and Polyethylene Production Plant** The SOCAR Ethylene-Polyethylene Plant (EPP) is a major petrochemical production facility operated by SOCAR and forms a core part of Azerbaijan's oil and gas–based chemical industry. The Plant produces ethylene and polyethylene, which are key raw materials used in the manufacture of plastic products.	Not available
Industrial	1,500 m	**Sumgait Power Station** Sumgait Power Station is a major electricity generation facility located in Sumgait city. It supplies power to the national grid and plays an important role in meeting the electricity demand of Sumgait and surrounding regions. Due to its strategic importance, the facility is considered part of Azerbaijan's critical energy infrastructure.	

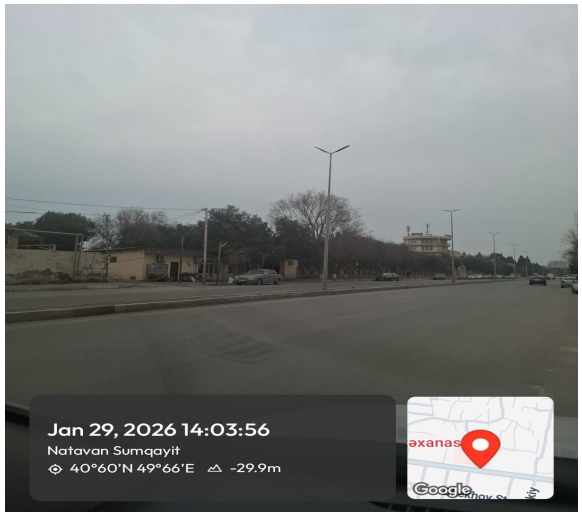
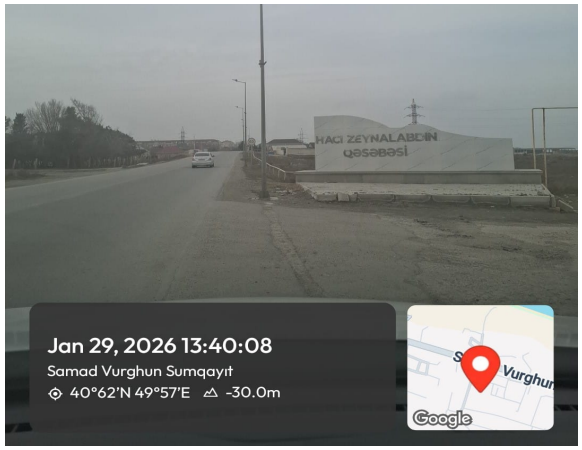
Type of Receptor	Approximate Distance from Site	Receptor Description	Photo (where applicable)
Road	120 m	**Main Road (Samad Vurgun Street)** Samad Vurgun Street is a paved urban road located in Sumgait city, functioning as a main access and traffic corridor within the area. The road consists of a two-lane carriageway with street lighting installed along side. It is primarily used by vehicles and industrial traffic, including service and delivery vehicles. The surrounding land use is predominantly industrial and semi-industrial, with limited roadside vegetation. The road appears to be in good physical condition and provides important connectivity between industrial facilities, nearby settlements, and access roads leading to project-related areas.	
Road	Adjacent	**Access Road to the project area** The road leading to the project area is an unpaved gravel road extending through an industrial landscape. The road surface consists of compacted gravel and soil and appears to be in fair condition, suitable for light and medium vehicular traffic.	

Type of Receptor	Approximate Distance from Site	Receptor Description	Photo (where applicable)
Accommodation Structures	40 m	**SOCAR greening containers** The containers are used to accommodate workers engaged in tree planting and landscaping activities in areas surrounding SOCAR's industrial facilities. The workers stationed at these containers are engaged in planting new trees and carrying out greening and landscaping improvement works within the surrounding areas.	
Industrial	460 m	**AZPIM** Azerbaijan Pallet Production Center	

Type of Receptor	Approximate Distance from Site	Receptor Description	Photo (where applicable)
Industrial	300 m	**Baki Chemistry LLC** Baku Chemistry LLC is engaged in the production and supply of chemical products used mainly for industrial and oil-and-gas–related applications. Its activities typically include the manufacture, storage, and handling of chemical materials, as well as related logistics and support services for industrial clients.	
Residential Community	420 m	**Kimyachilar Community**	

Approximate

Type of Receptor	Approximate Distance from Site	Receptor Description	Photo (where applicable)
Residential Community	2,500 m	**Khazri Community**	
Health Clinic	2,900 m	**Gubadli District (IDP) Qarakishiler Medical Clinic** The building functions as a first aid/primary health care facility. It is used by local residents to receive immediate assistance and basic medical advice from healthcare staff. The facility provides limited primary healthcare services and serves the surrounding residential population.	

Type of Receptor	Approximate Distance from Site	Receptor Description	Photo (where applicable)
Residential Community	2,750 m	**Khazar baglari settlement**	
Residential Community	3,600 m	**Haji Zeynalabdin settlement**	

2.5 Project Components

2.5.1 Overview of Project Elements and Design

The basic principle of the desalination plant involves the production of potable water by removing salts and impurities from seawater. At its core, the facility consists of intake structures that draw seawater from the Caspian Sea, through offshore pipelines and intakes, which are equipped with screening systems to prevent large debris and marine organisms from entering the process. This is followed by pre-treatment systems, involving filtration and chemical dosing, which condition the raw seawater and protect the membranes from fouling and scaling.

The central component of the plant is the reverse osmosis system, where high-pressure pumps force seawater through semi-permeable membranes, separating freshwater from concentrated brine. The resulting permeate water is then subject to post-treatment, including remineralisation and disinfection, to meet drinking water quality standards and ensure compatibility with distribution networks.

Supporting infrastructure which are essential to the operation of an SWRO plant includes power supply systems, chemical storage and dosing facilities, product water storage and distribution pipelines, as well as brine outfall structures for the controlled discharge of concentrated saline water back into the marine environment. Together, these components form an integrated system designed to reliably produce high-quality freshwater while managing environmental considerations associated with energy use, chemical handling, and marine discharges.

The main Project components are illustrated in the layout showing in and key design features are discussed in the following sections.

2.5.2 Water Balance and Potable Water Conveyance

As outlined earlier in this report, the Project has been designed to produce 300,000 m³/day of potable water through SWRO desalination to augment municipal water supplies within the Baku and Absheron Region. At the nominal design capacity and assuming an annual plant availability of 91.32%, the desalination plant will abstract approximately 439,842 m³/day (approximately 146.6 million m³/year) of seawater from the Caspian Sea via the offshore intake system.

Following pre-treatment and reverse osmosis desalination, the plant will produce approximately 300,000 m³/day (approximately 100 million m³/year) of potable water. The remaining process stream, comprising concentrated brine together with other return flows from the treatment process, will total approximately 139,605 m³/day (approximately 46.5 million m³/year) and will be discharged back to the Caspian Sea through the marine outfall. Consequently, approximately 68% of the abstracted seawater will be converted into potable water, with the remaining 32% returned to the marine environment as concentrate and associated return flows. See Table 2-4

The treated potable water will be conveyed from the desalination plant to the downstream water transmission system through a dedicated product water pipeline (not part of the Project and will be an Associated Facility as discussed later in this report). Water will be transferred by a pumping station comprising five pumps (four duty and one standby) to provide operational reliability and maintain the required delivery pressure. Prior to entering the transmission system, the product water will be stored within two treated water storage tanks, each with a capacity of 35,000 m³, providing a combined operational storage volume of 70,000 m³ to balance production and demand and provide resilience during operational fluctuations.

From the downstream reservoir, the desalinated water will be integrated into the existing regional potable water distribution network for municipal supply. The Project has been developed to support the increasing potable water demand within Baku and the Absheron Region, including the communities of Baku, Sumgayit, H.Z. Tagiyev, Kimyachilar, Khazri and Khazar Baghlari, thereby improving the reliability and resilience of the regional water supply system.

Table 2-4 Water Balance Summary

Water Balance Component	Nominal Fow (m^3/d)	Annual Flow (m^3/yr)*
Seawater abstraction from Caspian Sea	439,842	146,614,000
Potable water produced	300,000	100,000,000
Concentrate/brine and other return flows discharged to the Caspian Sea	139,605	46,535,000

*based on an annual plant availability of 91.32%

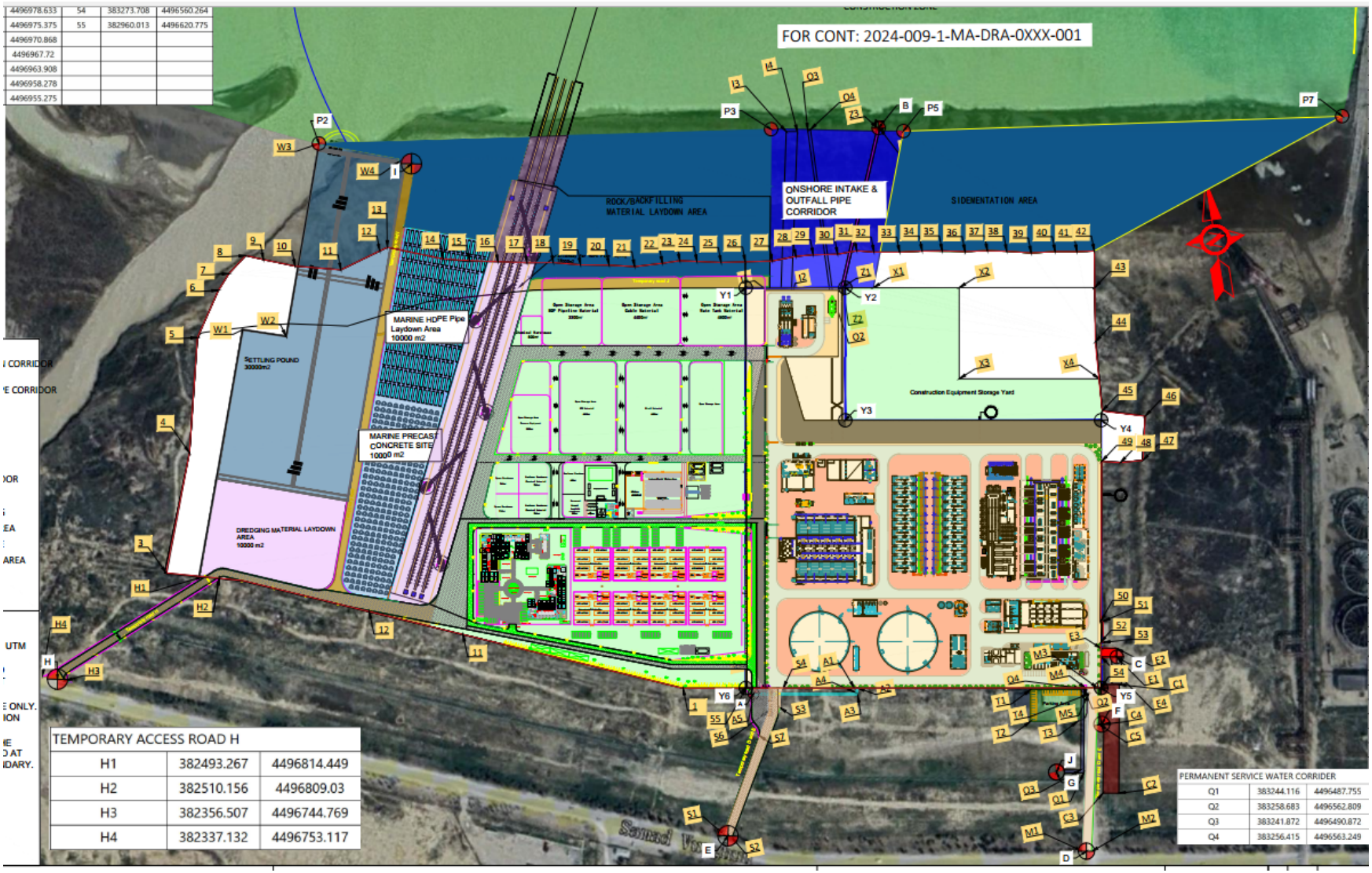


Figure 2-4 Project Layout

2.5.3 Pre-treatment System

The desalination plant will incorporate a pre-treatment system comprising Dissolved Air Flotation (DAF) and Dual Media Pressure Filters (DMPF). The purpose of the pre-treatment system is to substantially reduce suspended solids, colloidal material, organic matter, minerals, and microbiological constituents in the source seawater prior to reverse osmosis. This treatment step is designed to minimise fouling and scaling of the SWRO membranes, thereby supporting stable operation and extending membrane service life.

For this project, the following pre-treatment processes are proposed:

- Off-shore Intake Tower's Screen and Chlorination
- Onshore Coarse Bar Screen
- Traveling fine band Screen
- Intake pumping station
- Dissolved Air Floatation (DAF) Unit
- Acid & Ferric Chloride dosing
- Coagulation chamber
- Flocculant dosing
- Flocculant chamber
- Intermediate tank and pumping station
- Dual Media pressure filters with backwash system
- Antiscalant, Sodium metabisulfite (SMBS)
- Biocide dosing
- Sodium Hydroxide dosing
- Micron cartridge filters, to go to the RO System
- Wastewater Treatment Plant

Brief description of the main pre-treatment units are as follows.

2.5.3.1 Seawater Intake and Tower Screen

Intake Tower's screens are installed to prevent large organisms from entering the intake system. The proposed intake system will be equipped with two towers, with a net, with the intake water flow rate of each tower sis 9,299 m3/h.

2.5.3.2 Onshore Coarse Bar Screen

The intake system in onshore structure will be equipped with coarse bar screen. The intake system will be consisted of three independent channels, with each channel installed with a mechanical bar screen of 100 mm opening.

2.5.3.3 Traveling Band Fine Screen

The final intake mechanical screening process is completed by three (3) traveling band screens for fine particles (5 mm).

2.5.3.4 Inlet, Coagulation, and Flocculation Chamber

The purpose of this plant is to adjust the pH at the entry point of the process (before flows to RO), which will be equipped with a continuous dosing system of sulfuric acid in the seawater inlet chamber. The dosing will be followed by coagulation (two Coagulation Chambers will be provided) and subsequently flocculation will be done in the Flocculation Chamber of each Dissolved Air Flotation unit. In the event of low level of TSS in seawater intake, the coagulation and flocculation process will be by passed.

2.5.3.5 DAF System

A group of Dissolved Air Flotation (DAF) System will be used to separate suspended solids, oils, greases, and other contaminants from the water. It operates by injecting microbubbles of air into the water, which adhere to the solid particles present, causing them to float to the surface, forming a layer of foam or sludge that is then removed. There will ten (10) systems and each DAF unit will include a recirculation pump, a pressure, vessel, and a reactor. The “final result” of supernatant and sediment will be collected in a chamber, to be transferred to the effluent treatment plant. The clarified water will carry out to Clarified Water Channel.

2.5.3.6 Intermediate Pumping Station

The intermediate pumping station will transport the clarified water from the Clarified Water Channel to the Pressurized Filters. The plant will be equipped with six (6) pumps, with capacity of 4,210 m3/h each.

2.5.3.7 Dual Media Pressure Filters with Backwash System

This multimedia pressure filters functioned as pre-treatment to remove suspended solid after dissolved air flotation. The process of filtration consisted of passing the water through the bed of sand or other suitable medium at low speed. The medium retains suspended matter while allowing the water to pass and the filtrate sparkling and clear in appearance. Filters configuration will be arranged with twenty-two (22) units with a backwash system with one backwash tank and two backwash pumps. Pressure filters will be cleaned on a regular basis by a backwash system to increase the plant recovery factor.

2.5.3.8 Micron Cartridge Filter

A filtration stage will be installed using five (5) microns disposable cartridges, which functioned as a safety measure before the RO membranes. All particles with bigger size than five microns will be retained in the cartridges surface. The system will have eleven (11) cartridges housing with four hundred and thirty (430) polypropylene cartridges filters.

2.5.4 Reverse Osmosis System

The process after the pre-treatment is continued to Reverse Osmosis process. After passing through the cartridge filters, the water will enter the first stage of RO pumping by High Pressure Pumps. The permeate will be directed into the Remineralized Water Tank, while the reject will feed into the second stage of the RO pumping by Second Stage Boosters Pumps, being previously diluted with seawater from pretreatment. After this second stage, permeate will be sent to the calcite beds, and to the Flushing Tank when required.

The reject from the second stage will enter the Energy Recovery Devices (ERDs), where it will interact with part of the feedwater stream from the first stage pumping by ERO Booster Pumps. After increasing its pressure, this stream will be pumped to the second stage inlet, together whit brine from RO system 1st stage. The reject stream from the second stage, after passing through the ERDs, will be directed to the Pressurized Filters Backwash Tank.

The RO process will consist of:

- Six (6) High Pressure Pumps with VFD and high efficiency. Pressure centre concept will be applied in order to optimize as much as possible the RO system power consumption.
- Ten (10) RO first stage racks with one hundred sixty-five (165) Pressure Vessels, 8 membranes per each PV, per rack.
- Ten (10) Second Stage (interstage) Booster Pump with VFD.
- Ten (10) RO second stage racks with one hundred forty (140) Pressure Vessels per rack, 8 membranes per each PV, per rack.
- Ten (10) Energy Recovery Devices (ERO) systems, 7 units PX-Q400 each one.
- Ten (10) ERO Booster pumps with VFD.

Energy Recovery Devices (ERDs) plays a crucial role in reducing energy consumption. These devices enable the recovery and reuse of energy within the process by allowing streams at different pressures to interact. The stream exiting with higher pressure and energy transfers its energy to the lower- pressure, lower-energy stream, enhancing the overall energy efficiency of the plant.

In addition, it should be pointed out that the pumps which will involve in this part of the process, will be part of a Pressure Centre in which all pump discharges will be directed to a manifold from which the flow rate will be distributed to the RO racks. This approach reduces the number of pumps required, leading to savings in both energy consumption and costs.

2.5.5 Re-mineralization System

Permeate water is deficient in essential minerals such as calcium and bicarbonates. This can make the water corrosive, potentially damaging for distribution networks, and unsuitable for consumption. Remineralization adds these minerals, stabilizing the water and making it suitable for distribution and subsequent consumption. Remineralization through calcite beds is a process used to adjust the pH and increase the hardness of desalinated water, as it tends to be too acidic or lacks the necessary minerals for safe consumption. In this process, part of the RO permeate is passed through calcite beds, a mineral primarily composed of calcium carbonate (CaCO3). The permeate from the first stage of the RO will be directed to the Re-mineralized Water Tank, while the permeate from the second stage will be sent to the Calcite Beds for remineralization.

2.5.6 Offshore Seawater Intake and Outfall Pipelines

2.5.6.1 Overview

Marine seawater intake system is a critical part of the Project, designed to ensure the continuous and reliable supply of seawater to the plant. The system includes all required infrastructure for the intake of seawater, from offshore pipelines to the onshore pumping station, and is designed to operate efficiently while maintaining environmental compliance. The proposed layout of the seawater intake and outfall pipes is shown in Figure 2-5.

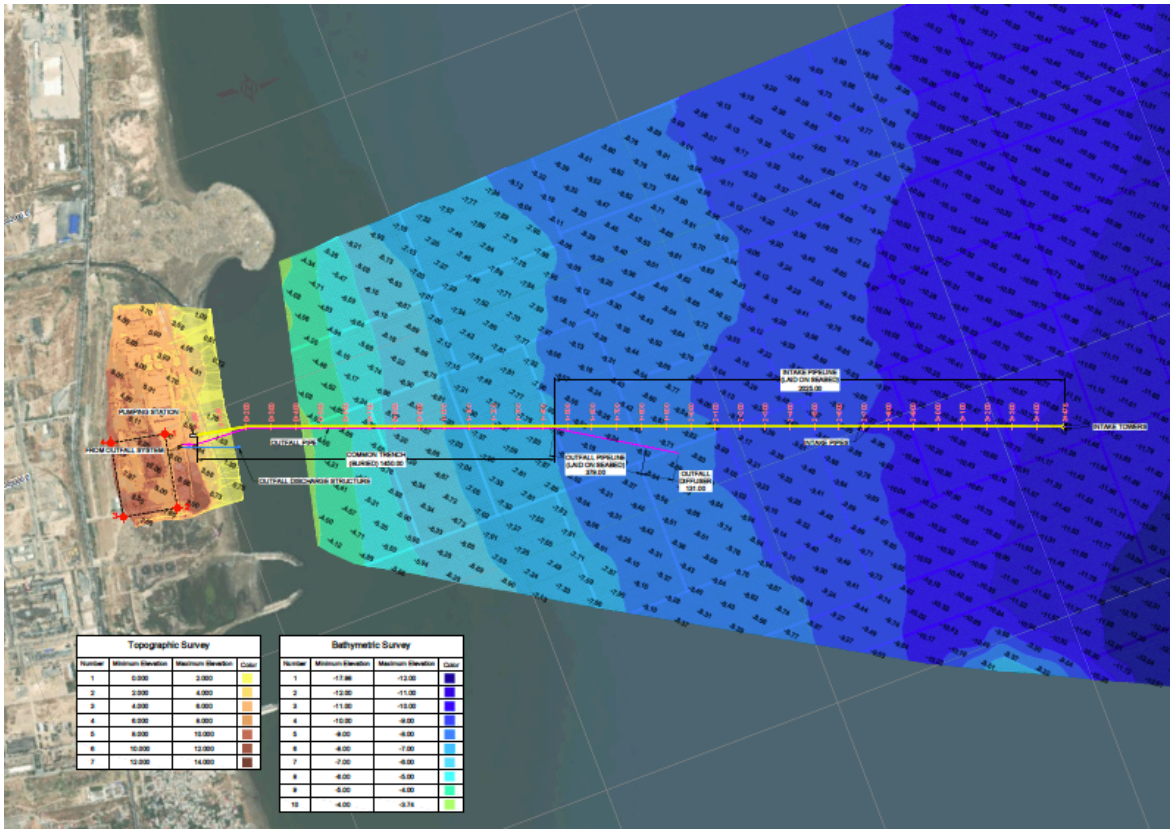


Figure 2-5 Intake and Outfall Pipeline Layout

A typical cross-section of the intake and outfall pipelines is shown in Figure 2-6, illustrating two intake pipelines and one outfall pipeline. Further details are discussed in following sections and detailed drawings included in Appendix.

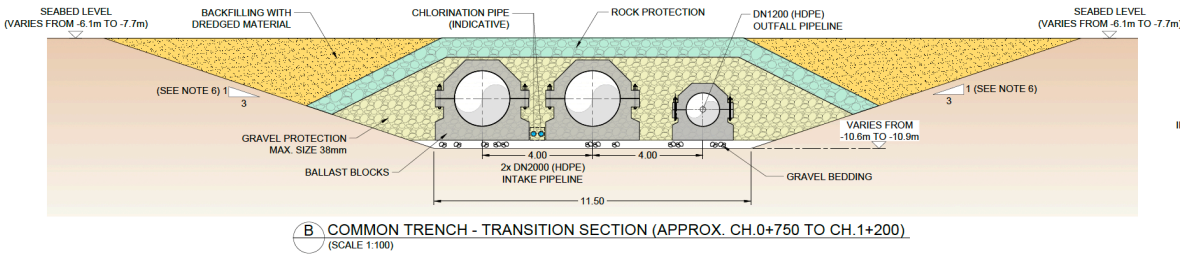


Figure 2-6 Typical Cross Section of Intake and Outfall Pipes

2.5.6.2 Marine Seawater Intake System

The offshore seawater intake system comprises two High Density Polyethylene (HDPE) pipelines, each with an outside diameter of 2,000 mm, connected to intake towers located at the offshore termination points. The intake system is designed to convey seawater from offshore to the desalination plant. The intake pipelines extend approximately 3,475 m from the shoreline, reaching a water depth of around 11 m, and have a combined capacity of 23,338 m³/h, sufficient to meet the plant's design throughput of 431,784 m³/day. The maximum approach velocity of water at the intake of the pipe will be 0.15 m/s as per good practice standards to minimise impingement and entrainment of marine species.

Along the nearshore section, the intake pipelines will be routed beneath the seabed for approximately 120 m from the receiving pumping station. Based on the findings of the offshore geotechnical investigation, the intake and outfall pipelines will be designed to be

either fully or partially buried along their entire length, depending on site-specific seabed conditions.

The seawater intake system is designed to abstract seawater via offshore intake tower made of precast concrete connected to HDPE intake pipelines conveying water to the desalination plant. The intake tower will be positioned at the offshore terminal point of the pipelines and is designed to facilitate stable seawater abstraction while limiting the entrainment of debris and marine organisms. A chlorination dosing system has been integrated into the intake design to control biofouling within the pipelines. Proposed design of the intake tower is shown in Figure 2-7.

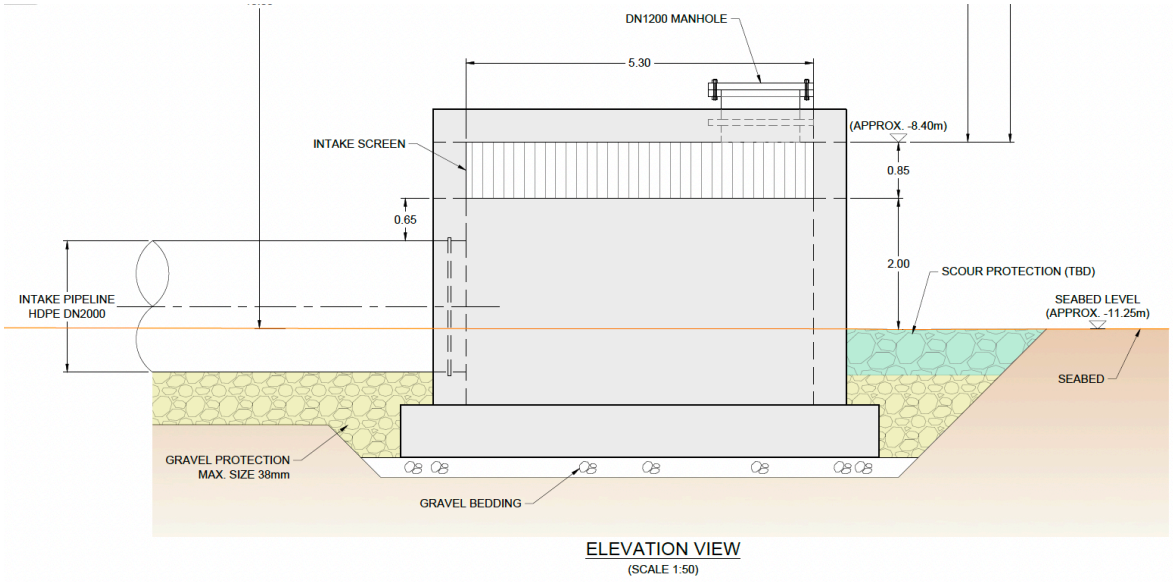


Figure 2-7 Elevation of Intake Tower

2.5.6.3 Marine Outfall Brine Discharge

As outlined earlier in this report, the offshore facility will include marine brine outfall system designed to ensure effective dilution and dispersion of the discharge within the receiving marine environment. The system comprises a DN1200 HDPE pipeline fitted with multi-port diffusers to promote controlled and uniform brine dispersion. The outfall is located approximately 2,000 m offshore at a water depth of around 9 m, where discharge occurs within a defined mixing zone to facilitate rapid dilution and minimise environmental impacts.

The outfall infrastructure consists of a single HDPE pipeline with an external diameter of 1,200 mm and a design capacity of up to 157,560 m³/day, conveying reject brine and treated wastewater from the desalination plant.

Similar to the seawater intake system, the nearshore section of the pipeline is installed underground for approximately 120 m along the coastal zone. As outlined earlier, the outfall pipeline will be designed to be either fully or partially buried along their entire length, depending on site-specific seabed conditions.

Reject brine discharged from the plant is denser than the ambient seawater and therefore has a tendency to sink and form a dense layer or gravity current along the seabed. As gravity currents dilute relatively slowly, the outfall has been specifically designed to maximise initial dilution prior to seabed contact. This is achieved through the use of multiple diffuser ports oriented upward, allowing the brine jets to rise initially before descending, thereby increasing jet trajectory length and enhancing entrainment of surrounding seawater.

The multi-port diffuser configuration ensures adequate mixing of the brine plume and supports compliance with applicable environmental quality standards. See chapter 0 for further details.

A navigation buoy will be installed above the diffuser location to mark the outfall position and provide appropriate warning to marine vessels and fishing activities, in accordance with relevant maritime regulations.

Emergency overflows and intermittent discharges associated with operational activities, such as tank or pipeline emptying, are managed via an auxiliary discharge system routed to the coastal zone. This system is designed to accommodate up to 100% of the required seawater intake capacity, ensuring the safe and controlled management of non-routine discharges.

Discharges via the outfall system will comply with the following applicable standards:

Table 2-5 Expected Discharge Water Quality

Criteria	Quality Limits
Turbidity	≤ 15 NTU
Suspended solids	≤ 20 mg/l
Oil products and grease	0 mg/l
pH (20 °C)	7-9
Total Chlorine	0 mg/l
Ammonium	≤ 3 mg/l
Nitrite	≤ 0.8 mg/l
Nitrate	≤ 5 mg/l
Total organic carbon (TOC)	≤ 10 mg/l
Biological oxygen demand (BOD)	≤ 8 mg/l
Phosphorus	≤ 1 mg/l

2.5.7 Project Battery Limits/Terminal Points

The main Project facilities will be developed within the Project site boundary. The Facility Terminal Points will include the following:

- Seawater Supply point - the intake point at the suction heads of the marine intake pipes
- Product Water Delivery point - the point at which the Product Water will be delivered to the off-taker at a point up to 5 meters from the main Project site boundary.
- Brine Discharge point - brine discharge at the diffusers of the marine outfall pipe.
- Electric Power Supply point – the supplied power take-off point
- Wastewater discharge point
- Facility gate

2.5.8 Product Water Quality Standards

The plant will be designed to meet the required quality of the Product Water, after post-treatment, to meet the local and World Health Organization (WHO) drinking water quality standards. The required water quality standards for the Project are shown in following table.

Table 2-6 Product Water Quality Standards

Criteria	Quality Limits
Chlorides	200 mg/L max.
TDS	1,000 mg/L max.
Boron	2.1 mg/L max.
pH	6.5-9.5
Langlier Index	(-0.5) – (+0.5)
Hardness	80-120 mg/L (as CaCO3)
Alkalinity	40 mg/L (as CaCO3) min
Turbidity	0.5 NTU 95% of time and in any case 1 NTU max
Free Chlorine	0.3 to 0.5 mg/L

2.5.9 Water Storage Tank

The plant will include two product water storage tanks each of capacity 35,000 m3 with a total capacity of 70,000 m^3. The product water storage tank will be designed in steel above ground. The Product Water Storage Reservoir will be covered and will be always protected from potential outside entry of pollutants of any kind.

2.5.10 Ancillary Facilities

2.5.10.1 Wastewater Treatment Plant

The on-site Wastewater Treatment Plant (WWTP) is designed to treat wastewater and sludge streams generated from pressure filter backwashing operations, as well as supernatant and settled sludge from the DAF system. The WWTP ensures that process wastewater is effectively treated and that residual sludges are appropriately thickened and managed prior to final disposal or further handling.

Sludge accumulated in the sludge tank of the WWTP will be transferred by two screw pumps to two sludge centrifuges for dewatering. These pumps also provide sludge recirculation from the sludge tank back to the flocculation chamber inlet, as required, to optimise treatment performance. Prior to centrifugation, flocculant and service water are dosed to enhance solid–liquid separation.

2.5.10.2 Stormwater Discharge

The stormwater discharge system is designed to manage clean plant drainage, rainwater runoff, and potable water discharges generated within the facility. These flows are collected through the site drainage network and conveyed to a dedicated Stormwater and Drainage Pit located within the plant area. The pit serves as a central collection point, from which the accumulated flows are conveyed by gravity to the coastal discharge location.

Discharge from the Stormwater and Drainage Pit occurs via a purpose-designed pipeline that routes the collected water to a beach discharge structure. The pipeline and associated structure are engineered to ensure the safe and controlled release of stormwater and clean effluents to the receiving environment, while minimising potential impacts on the coastal zone.

To prevent erosion and degradation of the shoreline at the discharge point, appropriate erosion control measures will be implemented. These measures are designed to dissipate flow energy during high-intensity rainfall events and reduce the potential for scouring or

sediment mobilisation over time. The discharge structure will be constructed using corrosion-resistant materials and designed to withstand exposure to saltwater, coastal conditions, and long-term environmental stressors.

2.5.10.3 Use and Storage of Chemicals

The operation of the desalination plant will involve the controlled use of various chemicals to support water treatment processes, including pre-treatment, membrane protection, disinfection, pH adjustment, and scaling control. All chemicals will be stored, handled, and dosed in accordance with internationally recognized standards, to minimise risks to personnel, the environment, and surrounding communities.

Key chemicals used in the plant include:

- Sodium Hypochlorite (NaClO) – for disinfection
- Chlorine Dioxide (ClO_2) – for microbial control
- Sulphuric Acid (H_2SO_4) – for pH adjustment
- Sodium Hydroxide (NaOH) – for pH correction and membrane cleaning
- Ferric Chloride ($FeCl_3$) – as a coagulant in pretreatment
- Polyelectrolytes – for flocculation and sludge conditioning
- Sodium Metabisulfite ($Na_2S_2O_5$) – for dechlorination of water prior to discharge
- Antiscalants – to prevent scale formation on membranes
- Biocides – to control microbial growth in pretreatment and membranes
- Carbon Dioxide (CO_2) – for pH adjustment and corrosion control
- Calcite ($CaCO_3$) – for post-treatment water stabilization

All chemicals will be stored in secure, bunded tanks or dedicated warehouses designed to prevent leaks and accidental releases. Storage areas will be equipped with appropriate secondary containment, ventilation, spill control, and fire protection systems, and will be located to minimise potential impacts on the environment and personnel.

Chemical handling during operations will be conducted by trained personnel following strict standard operating procedures (SOPs), including controlled dosing, use of personal protective equipment (PPE), and emergency response protocols. Monitoring and record-keeping systems will be implemented to ensure safe and efficient chemical use throughout the plant's operational lifetime.

2.5.10.4 Fence and Entrance gate.

The intake area, although located within the area specified for the project, will have a perimeter fence as well as a sliding gate at its entrance to control access for both personnel and possible maintenance and loading/unloading vehicles and trucks.

2.5.11 Associated Facilities

In accordance with IFC PS1, *'Associated facilities (AF), which are facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable.'*

The Associated Facilities for the Project are discussed below based on information provided by the Client.

The Project will undertake a high-level E&S screening of the Associated Facilities including the product pipeline and substation once sufficient routing and technical information becomes available.

Based on this screening, a proportionate management plan will be developed, where possible, to define key environmental and social mitigation measures. In parallel, the Project will formally engage with ADSEA and relevant government authorities to confirm that the preliminary pipeline routing currently presented reflects the most realistic alignment for development, and to identify and document any potential for future route refinements. This approach ensures that associated facilities are addressed in a structured and precautionary manner while maintaining alignment with good international industry practice as further design information is finalised.

2.5.11.1 Product Water Pipeline

Although not part of the core Project scope, an approximately 15 km long product water supply pipeline will be constructed to convey treated potable water from the desalination plant to a reservoir located to the south. The water would go directly into the distribution system at the water treatments works below the reservoir. No modernisation works are planned for the receiving water treatment works adjacent to the reservoir. The pipeline will be implemented by a contractor appointed by ADSEA and is therefore considered an Associated Facility in accordance with IFC Performance Standard 1.

The proposed pipeline corridor which is expected to be completed within 21 months of Project construction (i.e. NTP), passes predominantly through industrial and mixed-use areas and has been aligned, where practicable, along existing infrastructure corridors parallel to roads and utility lines.

The final route will be selected to avoid sensitive environmental areas and minimise crossings of watercourses and populated areas. The pipeline will be buried along most of its length, with aboveground markers and valve chambers provided at strategic locations to support operation and maintenance. The potential alignment of the pipeline is shown in Figure 2-8.

As the final design and construction methodology are developed, additional assessment will be undertaken to confirm potential environmental and social risks associated with the pipeline corridor. This assessment will specifically consider:

- Land requirements and tenure arrangements: including whether permanent easements, temporary construction areas, or additional land access agreements are required;
- Potential economic displacement: including impacts on businesses, agricultural activities, informal users, or other livelihood activities located within the pipeline corridor;
- Temporary access restrictions: including impacts on roads, pedestrian movement, commercial activities, and community access during construction;
- Community health and safety risks: including excavation activities, traffic movements, open trenches, and interaction with existing infrastructure users;
- Labour and contractor management risks: including worker accommodation, labour influx, and compliance with applicable labour standards;
- Stakeholder engagement and grievance management: ensuring affected stakeholders are identified and consulted prior to construction activities.

Where impacts associated with land acquisition, access restrictions, or livelihood disruption are identified, appropriate mitigation measures will be developed in accordance with applicable lender requirements, including IFC PS5 principles where relevant.

Standard construction and reinstatement measures will be applied to reduce impacts related to soil disturbance, access restrictions, and public safety, and to restore affected areas following installation.



Figure 2-8 Product Water Distribution Pipeline Route

2.5.11.2 Electrical Substation

To ensure reliable power supply for the desalination plant during operation, an electrical substation will be constructed just outside the plant boundary as indicated in Figure 2-9. This substation will be developed and operated by the offtaker, in coordination with ADSEA and the local utility provider, “Azerishyg” OJSC. The substation will be supplied by an existing nearby high voltage line, with a short connection via a new transmission link of less than 100m in length.

As an associated facility under IFC Performance Standard 1, the substation has been planned to minimise environmental and social impacts, including land take, visual intrusion, and potential noise emissions.

The facility which is expected to be completed after approximately 16 months of start of Project construction will include transformers, switchgear, and distribution infrastructure required to step down and distribute power to the plant, as well as access roads and security fencing. Appropriate environmental management measures will be implemented during construction and operation to mitigate potential impacts, including erosion and sediment control, vegetation management, and safe handling of electrical equipment.

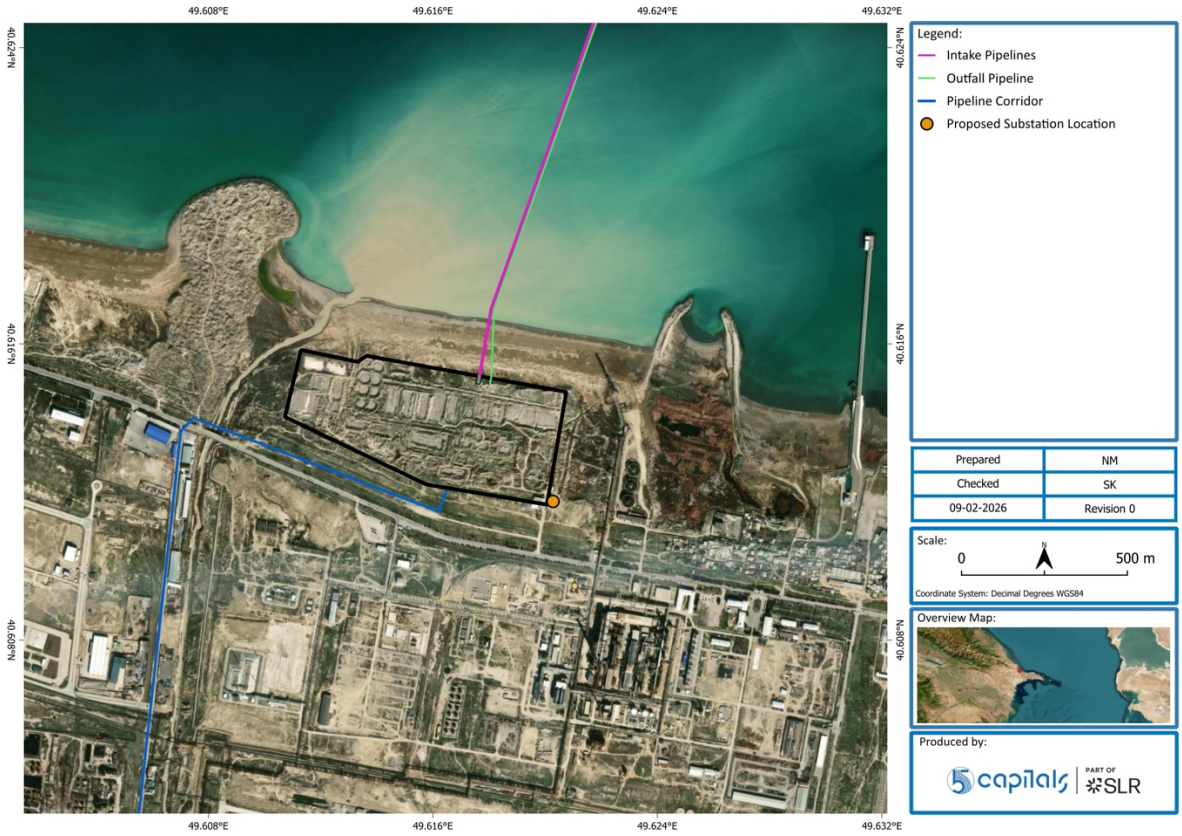


Figure 2-9 Planned Electrical Substation Location

2.6 Construction

The Project Company has appointed a consortium led by China-based Powerchina Huadong Engineering Corporation Limited (HDEC), in partnership with Saudi-based companies Innovative Water Application Company (IWAC) and Water & Environment Technologies Company (WETICO), as the Engineering, Procurement, and Construction (EPC) Contractor for the Project. This consortium brings together international expertise in seawater desalination, infrastructure delivery, and water treatment technologies, and will be responsible for the full design, construction, and commissioning of the Project in accordance with national regulations and international best practices.

A general layout of the Project site showing the areas that will be used during construction including access roads are illustrated in Figure 2-10.

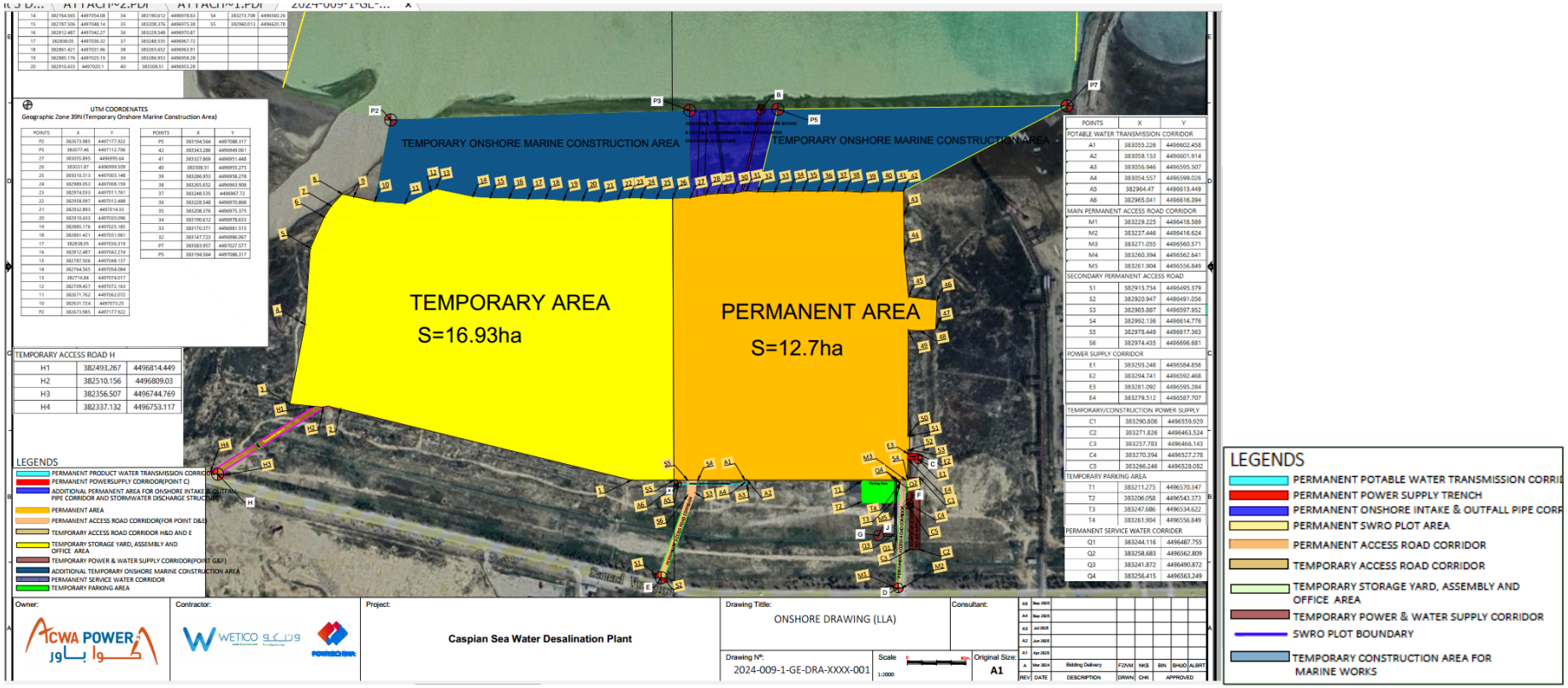


Figure 2-10 Site Layout Showing Temporary Construction Laydown Areas

2.6.1 Main Construction Activities

The main construction activities that are expected for the Project are discussed in following sections.

2.6.1.1 Earthworks, Excavation and Backfilling

Earthworks represent a key construction activity for the Project and include site preparation, excavation, material handling, backfilling, compaction, and final grading. These works are required to establish stable foundations, underground infrastructure, and finished platform levels across the plant area.

The total excavation volume is estimated at between 40,000 to 60,000 m³, while the total backfilling requirement is approximately 240,000 to 260,000 m³.

The project design and construction methodology prioritize maximising the reuse of on-site materials to minimise the need for imported backfill, reduce transportation impacts, and promote sustainable use of resources.

Prior to bulk earthworks, site preparation activities will be undertaken, including:

- Surface cleaning and removal of unsuitable materials
- Segregation of existing debris such as concrete, gravel, and reinforcing steel (rebar)
- Breaking and removal of abandoned concrete structures from the previous plant

Concrete debris suitable for reuse will be crushed and screened to appropriate particle sizes and reused as engineered backfill. Rebar and other non-reusable materials will be separated and transported to authorised disposal or recycling facilities. Unsuitable materials will be disposed of at approved dumping areas in accordance with regulatory requirements.

Excavation works will be carried out for foundations, underground tanks, pipelines, drainage systems, and utility corridors. Activities include:

- Excavation to required design depths
- Temporary stockpiling of excavated soils
- Assessment of excavated material for reuse potential

Excavated soils that meet the specified technical requirements will be retained on-site for reuse in backfilling and levelling operations.

As outlined earlier, to minimise reliance on external fill sources, the contractor will screen, assess, and process existing on-site soil, demolition waste, and debris. Where suitable, these materials will be:

- Crushed and screened to meet backfill specifications
- Reused for backfilling, levelling, and formation works
- Integrated into the overall soil balance strategy for the project

This approach ensures that available earthwork materials are utilised to the maximum practicable extent, significantly reducing the volume of imported backfill. By incorporating crushed concrete from abandoned structures and screened existing soils, the project aims to reduce the requirement for externally sourced backfill material by up to 75%.

To supplement the fill material reused from within the site, additional material will be sourced from licensed quarries in the surrounding area. The primary identified source is the Gizildash Quarry, located approximately 43 km from the project site. Other licensed quarries in the vicinity may also be used if required, subject to approval.

Backfilling works will be undertaken in controlled layers and compacted to the required density using appropriate mechanical equipment. Activities include:

- Placement of approved backfill material in layers
- Mechanical compaction using rollers and compactors
- Dynamic compaction in designated areas to improve ground bearing capacity and settlement behaviour
- Final grading and levelling to design elevations

2.6.1.2 Foundation, Building and Structures

All foundations will be designed to safely and satisfactorily transfer the combined loads from buildings, equipment, and operational conditions to the underlying soil. Foundation systems will be proportioned such that both total and differential settlements remain within acceptable design limits.

Depending on the magnitude of applied loads, soil conditions, and settlement criteria, different foundation types will be adopted, including spread footings, strip footings, raft foundations, or pile foundations. Ring foundations will be used for tank structures, as appropriate.

Based on the findings of the preliminary geotechnical investigation, a full-area ground improvement solution using strong compaction techniques has been considered for the site. The majority of plant structures are therefore assumed to be supported on shallow foundations founded on engineered backfill, following completion of soil improvement and compaction works.

Dewatering Activities During Construction

Dewatering will be required primarily during the intake pump station foundation works, with an estimated duration of approximately five months. Given the baseline studies indicating groundwater contamination in the area, a detailed groundwater monitoring and management plan will be implemented.

Groundwater sampling and testing will commence in conjunction with the detailed onshore geotechnical investigations to establish current water quality conditions. This baseline data will guide dewatering management throughout the construction phase.

If dewatering is required, wells will be excavated, and a diesel-powered pump system will be installed to manage groundwater removal. The groundwater extracted will be tested regularly to determine disposal methods:

- If groundwater quality meets environmental discharge standards, it will be discharged directly to the sea.
- If groundwater does not meet the required standards, it will be treated in a sedimentation basin specifically designed for this purpose, separate from the offshore sedimentation basins used for dredged material. Treated water may then be discharged to the sea or transported via wastewater pipelines or trucks to appropriate wastewater treatment facilities.

2.6.1.3 Marine Works

Overview of Marine Construction Activities

The marine works for this project include the following:

- Conducting offshore supplement surveying and design works required to support the execution of the marine facilities.

- Construction and installation of two offshore intake pipelines, which will consist of DN2000 HDPE pipes, each connected to an intake tower located at the pipeline termination point to supply seawater to the desalination plant.
- Construction and installation of one offshore outfall pipeline, which will consist of DN1200 HDPE pipes and be equipped with an outfall diffuser to ensure safe and uniform brine discharge into the marine environment.

As outlined earlier in the report, the intake pipelines extend approximately 3,475 m from the shoreline, reaching a water depth of around 10 m. The intake pipelines extend from the receiving pumping station through the nearshore zone, where they are buried beneath the seabed for approximately 120 m at a depth of about 2 m. Beyond the nearshore section, the pipelines are laid fully or partially below the seabed using concrete ballast foundations. The works will be supported by specialised marine vessels and temporary onshore facilities.

These works include seabed preparation, pipeline laying and securing, construction of intake towers, installation of the diffuser, application of ballast and protection measures, as well as inspection, testing, and commissioning.

A schematic of the marine construction activities are show in Figure 2-11 and discussed in following section.

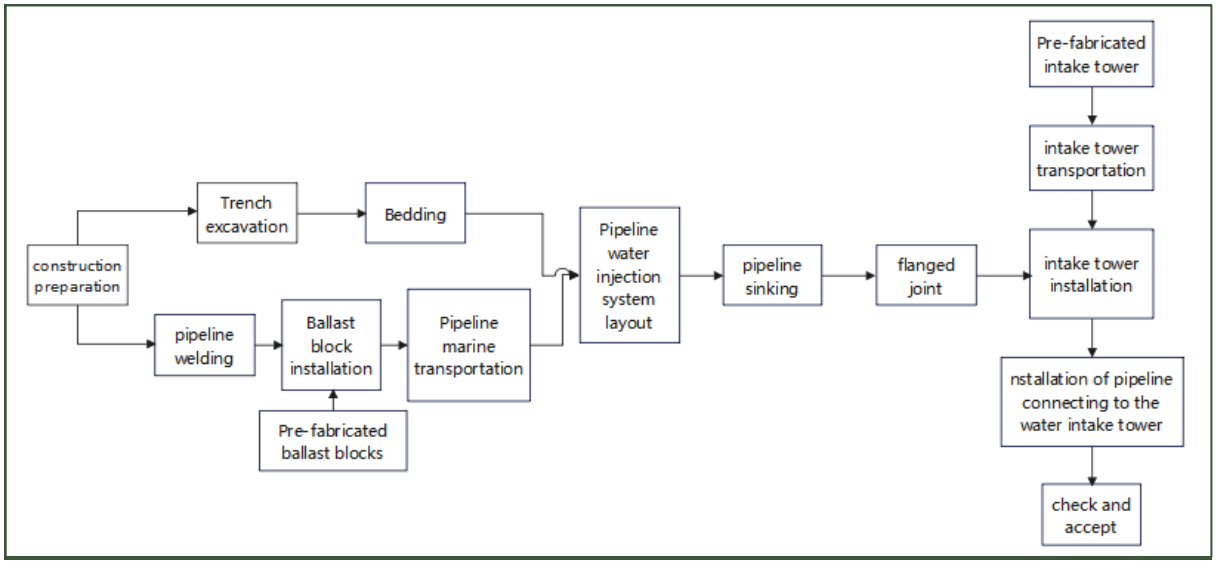


Figure 2-11 Marine Construction Activities Sequence

Preconstruction Survey and Site Preparation

Prior to the commencement of offshore construction activities, bathymetric and nearshore surveys will be undertaken to confirm seabed conditions, pipeline alignment, and trenching requirements along the intake and outfall corridors, including shore-approach areas. These surveys will also include a high-level assessment for the presence of any marine cultural heritage features, although the likelihood of encountering such features within the Project area is considered to be low. A proportionate, risk-based approach to marine cultural heritage assessment will be adopted, comprising a desktop review and interpretation of geophysical survey data (including bathymetry and, where available, side scan sonar), supplemented by targeted inspection of any identified anomalies. A chance find procedure will also be implemented during construction. Given the low likelihood of marine cultural heritage within the Project area, this approach is considered appropriate and consistent with international good practice.

Temporary onshore and nearshore facilities will be established to support marine works, including pipeline prefabrication and storage areas, launching tracks, and access points for marine vessels.

HDPE pipelines will be joined together onshore in sections using fusion welding techniques, with concrete ballast weights installed to ensure stability.

Trenching and Seabed Preparation

Pipeline trenches will be excavated along the marine routes using a Cutter Suction Dredger (CSD), extending from the shoreline to the offshore installation areas and excavated to the depths and widths specified in the design. The CSD will have a nominal dredging capacity of approximately 4,500 m³ per hour, producing a slurry with a solids content of about 10 to15%. Where required, silt curtains may be deployed to reduce the dispersion of suspended sediments during dredging activities. Dredged material suitable for reuse will be retained for subsequent trench backfilling.

Following trench excavation, the seabed will be levelled and prepared to form a suitable foundation for the pipelines. Bedding material will be placed where required, and final levels will be verified prior to pipeline installation.

Pipeline Installation and Offshore Connections

Prefabricated pipeline sections will be launched into the water and floated to their designated installation locations using tugboats. Temporary positioning buoys may be used to guide alignment along the pipeline route. Once in position, the pipelines will be gradually sunk into the trench using controlled water filling and venting, with final alignment and placement assisted by divers and lifting equipment.

Underwater flange connections between pipeline sections will then be completed to form continuous intake and outfall pipelines. For the outfall pipeline, diffuser assemblies will be installed following placement of the main pipeline, with alignment and positioning verified during installation.

Intake Structure Installation

The marine intake structure will be constructed from prefabricated segments that will be transported to site by barge and installed using marine lifting equipment. The segments will be positioned and connected sequentially until the intake structure is fully installed at the designated offshore location.

Backfilling, Protection, and Completion

Upon completion and acceptance of pipeline installation and offshore connections, the trenches will be backfilled in layers using gravel, rock, or suitable dredged material in accordance with design requirements. Backfilling will be carried out using barges or excavators depending on water depth and access conditions, followed by inspection to confirm adequate coverage and stability.

Where required for navigational safety, marine markers or beacons will be installed. After completion of marine construction activities, all temporary facilities, positioning aids, and construction materials will be removed, and affected marine areas will be reinstated as far as practicable.

2.6.1.4 Management of Dredged Material and Onshore Sedimentation Ponds

The seawater intake and outfall pipeline dredging works will generate a substantial volume of dredged material during offshore trench excavation. Based on the latest design drawings, the total volume of excavated and dredged material associated with the pipeline trench is approximately 285,500 m³, comprising both sand and dredged sludge. The dredged sludge

will be consisting predominantly of high-moisture fine material with low sand content, high plasticity, and very slow natural settlement characteristics.

Following dredging, the spoil will be hydraulically pumped to shore via temporary discharge pipelines. Due to the high water content, the total volume of the resulting sludge - water mixture requiring management is estimated at approximately 1,530,000 m³ over a construction period of around six months. The project site does not allow for one-time storage of this volume; therefore, a phased onshore sedimentation approach will be adopted.

A dedicated onshore sedimentation pond area of approximately 50,000 m² will be established within the Project site to facilitate the settlement, natural water reduction, and temporary storage of dredged material. The sedimentation system (see Figure 2-12) will be designed to ensure sufficient capacity and retention time to promote effective settling of suspended sediments and to minimise turbidity in any discharged water. The sedimentation area will include multiple basins, with one basin designated for the settlement and temporary storage of sand and gravel suitable for reuse as backfill, and additional basins subdivided into cells for staged sedimentation and moisture reduction of fine dredged sludge.

The sedimentation ponds will be enclosed by cofferdam structures constructed from geotextile sandbags and lined with double layers of HDPE anti-seepage membranes combined with geotextile to prevent infiltration to underlying soils. Overflow outlets and sluice gates will be provided to control water levels and discharge rates.

Dredged slurry will be discharged into the furthest sedimentation basin to enable progressive, staged sedimentation across the system. Clarified supernatant water will be discharged to the sea at a designated outlet point only after sufficient settling has occurred. To further limit the dispersion of fine sediments and protect marine water quality, multi-layer silt curtains will be installed at the discharge outlet, as required, to ensure that turbidity levels in the receiving waters meet applicable environmental requirements.

Detailed operational procedures for dredged material handling, sedimentation pond management, monitoring, and final reuse or disposal of settled material will be defined in the Construction Method Statement and associated environmental management plans which will be developed at a later stage.

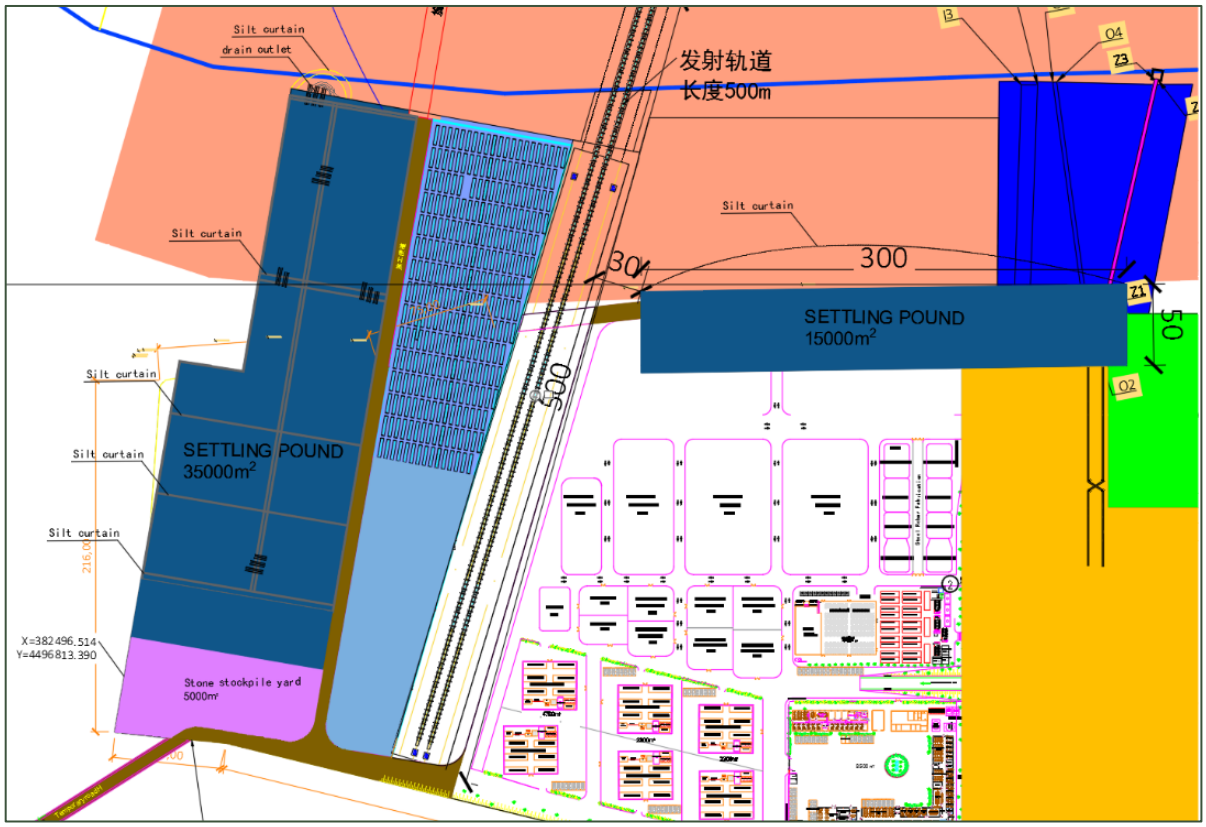


Figure 2-12 Layout of Settlement Ponds

2.6.2 Workforce and Workers Accommodation

During peak construction, the project workforce is expected to comprise approximately 1,800 personnel which includes the marine works contractor. The construction staff will include a combination of skilled and semi-skilled workers, such as civil, mechanical, electrical, and marine construction workers, equipment operators, welders, divers, surveyors, and general labourers, as well as supervisory and technical personnel. The workforce is expected to include both local and expatriate personnel; however, the detailed breakdown of nationalities and workforce composition is not yet available at this stage and will be confirmed during the construction planning phase.

Management, engineering, and HSE functions will be provided primarily by the EPC contractor's project management team, including the Project Manager, construction managers, discipline engineers, planners, and environmental and safety specialists. Where feasible, the project will seek to employ local and national workers in Azerbaijan, particularly for general construction, logistics, and support roles, while specialised expertise may be sourced from international personnel as required.

The overall organisation and reporting structure of the EPC management team is presented in the EPC Management Organization Chart provided in Appendix.

The Project does not propose the development of purpose-built construction camps. Instead, the EPC contractor and its subcontractors will utilise existing rented accommodation, including dormitories and hotels located within Sumgait and, where necessary, other suitable urban areas such as Baku. Senior personnel may be accommodated in commercial hotels or residential apartments, while subcontractor workforce accommodation will typically comprise dormitory-style facilities or budget hotels, depending on workforce composition and availability.

The use of existing accommodation reduces the need for additional land take and avoids potential environmental and social impacts associated with the construction and operation of temporary labour camps. However, it also requires a structured approach to ensure that all facilities meet applicable standards.

Workers will be transported to and from the Project site primarily via dedicated Project buses, which will be organised to minimise traffic congestion and reduce interactions with local road users. Where required, a limited number of personnel may also commute using light vehicles (e.g. cars and vans), in accordance with the Traffic Management Plan and established safety procedures.

In this regard, specific procedures will be implemented for the selection, assessment, operation, and ongoing monitoring of accommodation facilities. These procedures will ensure compliance with national regulations as well as international good practice, including the requirements of IFC Performance Standard 2 (Labour and Working Conditions) and relevant IFC/EBRD guidance on worker accommodation.

Unlike purpose-built camps, rented accommodation does not allow direct control over design and layout. Therefore, facilities will be subject to pre-occupancy inspections and periodic audits, and where necessary, corrective measures will be implemented to address any identified gaps. This may include improvements to sanitation facilities, fire safety provisions, ventilation, or space allocation to ensure that minimum standards are met.

All accommodation facilities will be required to provide safe, secure, and healthy living conditions, including adequate personal space and privacy, access to potable water, reliable utilities, and appropriate waste management. Welfare provisions will be ensured, and access to medical support will be available as required. In addition, workers will have access to a project-wide grievance mechanism, enabling them to raise concerns confidentially and ensuring timely resolution.

2.6.3 Utilities Requirements during Construction

2.6.3.1 Power Consumption

The project will obtain electrical power for the operation of temporary facilities, as well as for construction and installation activities from the local power grid. It has been estimated that approximately 5,230,000 kWh of the electricity will be required during the course of construction period. The Power supply during construction will be arranged by the Contractor. To ensure continuity of power supply during emergencies, contractors will also provide backup diesel generators.

This energy plan ensures that adequate power is available for all stages of project implementation, while maintaining backup provisions to manage potential supply interruptions.

2.6.3.2 Water Consumption

Water required for various construction activities, as well as for domestic and drinking purposes for construction staff, will be supplied by an approved local water supplier arranged by the EPC contractor. The primary source is expected to be reputable providers such as the United Water Supply Services of Large Cities, ensuring a reliable and safe supply.

To support sustainable water management, the project will implement water conservation measures on-site, including monitoring consumption, minimising wastage, and promoting reuse of treated water where possible. All water use will comply with local regulations and international best practices to avoid any adverse impact on the local water resources and community supply.

2.6.3.3 Fuel Consumption

The project will primarily rely on the local electricity grid for power, so only a limited amount of fuel, such as diesel, will be required on-site. This will be needed mainly for specific construction equipment that cannot operate on grid electricity and for testing of backup generators. In addition, fuel will be required for construction vehicles and heavy goods vehicles (HGVs). It is estimated that approximately 245,600 litres of diesel fuel will be required for various activities during construction. All fuel storage and handling will follow safety and environmental regulations to minimise risks of spills or emissions.

2.6.4 Construction Plant and Equipment

Table 2-7 provides a summary of the major construction plant and equipment to be used during the construction of the Project. It includes the types and quantities of machinery required to support excavation, dredging, civil works, mechanical and electrical installations, and other project activities.

Table 2-7 Expected Types and Estimated Number of Construction Plant

Plant Category	Estimated Quantity
Crane	39
Lorry loading crane	12
Forklift	26
Loader	28
Trailor	33
Excavator	14
Road roller	6
Dynamic compactor	4
Water tanker	6
Trucks	42
Crawler crane	4
Cuter Suction Dredger	1
Barge	4

2.6.5 Construction Waste Management

During the construction phase, the management of solid and liquid waste will be coordinated to minimise environmental impacts and ensure compliance with national regulations. Waste generated on site is expected to include solid waste (recyclable and domestic), hazardous waste, and wastewater.

The EPC contractor will be responsible for proper segregation, handling, storage, and disposal of all construction wastes. To achieve this, the EPC contractor will either:

- Sign an agreement with a licensed waste treatment company, which will collect and transport all waste from the construction site, or
- Connect the plant to the municipal wastewater network, if available, for the disposal of wastewater.

Based on desk-based planning, the estimated waste collection schedule is:

- Wastewater: Two deliveries per week

- Solid and hazardous waste: One delivery per day, adjusted according to actual site generation

Designated disposal locations for the construction wastes are:

- Solid waste: Sumgait Solid Waste Landfill,
- Hazardous waste: Sumgait Hazardous Waste Landfill
- Wastewater: Azarsu Sumgait Wastewater Treatment Plant

The approach to manage wastes will be to ensure proper treatment and disposal of construction waste, minimising potential impacts on the surrounding environment and supporting compliance with local waste management regulations.

2.6.6 Plant Commissioning

Commissioning of the desalination plant will be led by the EPC contractor with supervision from ACWA/Owner's Engineer, using established protocols to manage emissions and discharges, with timelines detailed in the project schedule.

The primary objective of the commissioning phase is to ensure that all systems operate safely, efficiently, and in accordance with design specifications. Key commissioning activities will include the inspection, testing, and start-up of the intake and pumping stations, pipelines, valves, and associated mechanical and electrical equipment. Functional and performance testing will be conducted for pumps, control systems, and monitoring instrumentation, including verification of flow rates, pressure, and operational sequences.

Flushing and cleaning of pipelines, hydrostatic testing, and water quality checks will be carried out to ensure compliance with environmental and operational requirements. Any defects or non-conformances identified during testing will be rectified prior to final handover, ensuring the plant is fully operational and ready for routine desalination operations.

2.7 Operation and Maintenance

The Operation and Maintenance (O&M) of the desalination plant will be managed by ACWA Operations, a subsidiary of ACWA. The O&M organisational structure (see Figure 2-13) is designed to ensure that the plant operates efficiently, reliably, and in full compliance with Azerbaijani regulations and international best practices. The structure balances technical expertise, safety standards, and workforce localization, while building local capacity for facility maintenance.

During operation, the desalination facility is designed to achieve an overall water recovery efficiency of approximately 70%, meaning that around 70 m³ of potable water will be produced for every 100 m³ of seawater abstracted. The remaining volume will constitute the concentrate (brine) stream, which will be discharged via the outfall in accordance with the approved design and environmental standards. The Project is designed to ensure that 100% of the treated water produced is distributed for beneficial use, thereby optimising resource efficiency and supporting regional water supply demands.

The plant will operate continuously, with a high degree of automation to reduce staffing needs, while relying on highly skilled operators and technicians to manage critical systems. The operational workforce is estimated at approximately 50 employees, including management staff, technical professionals, and maintenance personnel. Local staff will be recruited wherever possible, and a detailed staff plan, including key performance indicators for local hires and gender diversity, will be developed in line with ACWA and IFC standards.

Operational activities will include start-up and shutdown of plant systems, regulation of flow and pressure, routine inspection and maintenance of pipelines, pumps, and intake/outfall structures, as well as monitoring of water quality to ensure compliance with environmental

requirements. The plant's product water demand will be planned annually and finalized through the Annual Water Delivery Plan, three months prior to each contract year. Dedicated Environmental, Health, and Safety (EHS) / E&S roles will oversee compliance, with clear reporting and management lines integrated into the organisational structure to ensure safe, reliable, and environmentally responsible operation.

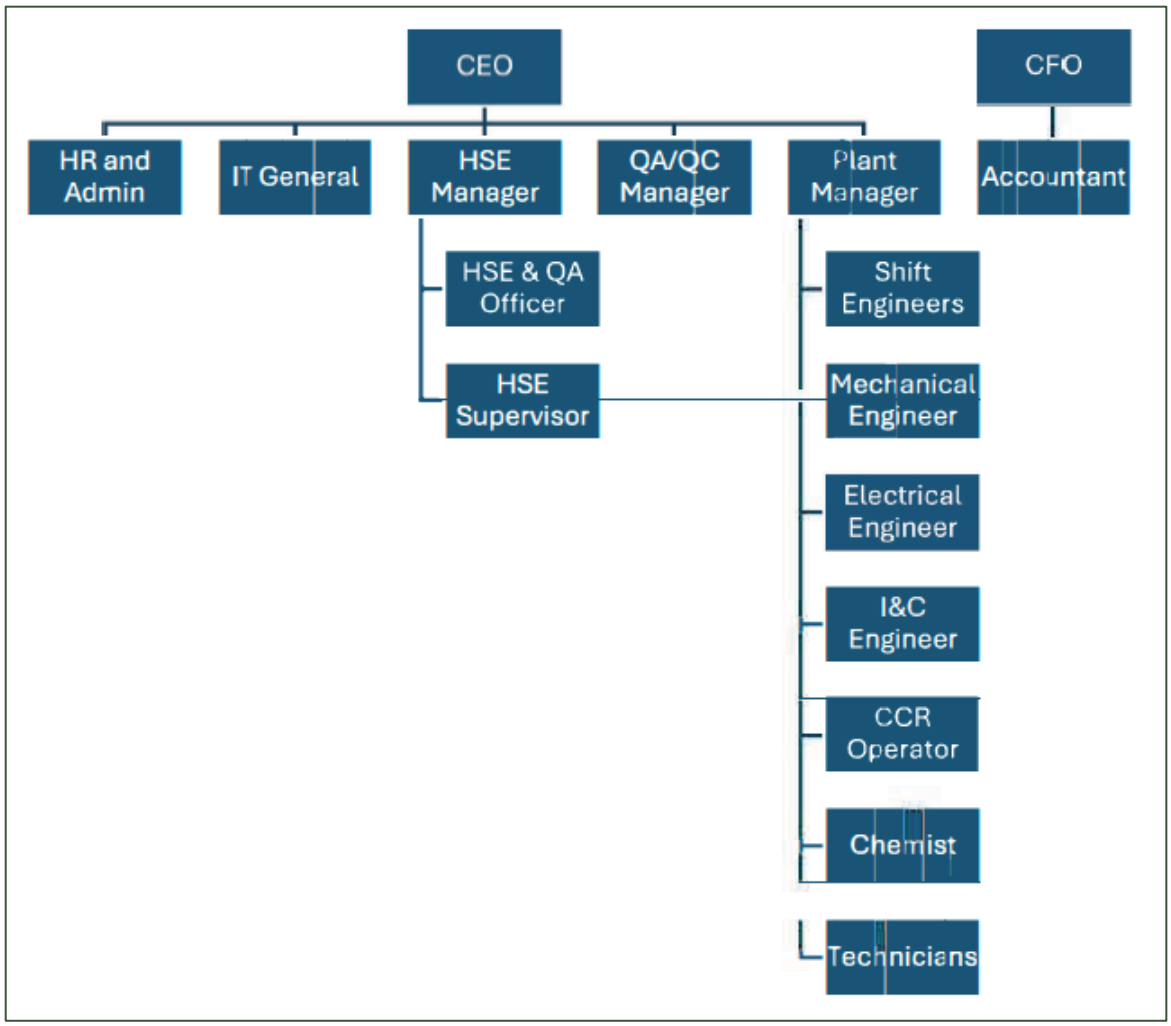


Figure 2-13 O&M Organisation Structure during Operation

2.8 Decommissioning

The Project Company has entered into a long-term Water Purchase Agreement (WPA) with the off taker for a period of 25 years. Upon expiry of the WPA, or any earlier termination date (which may be subject to extension), the Project Company will be required to undertake decommissioning activities if the option for asset purchase or transfer is not exercised by the off taker. In such a case, project assets would otherwise be transferred at the end of the contract period.

Although certain environmental and social risks are expected during the decommissioning phase, the nature of the project is such that no major or significant adverse impacts are anticipated that would require mitigation measures beyond standard good industry practice, or those comparable to measures applied during the construction phase.

Based on the WPA, the project is expected to operate for a minimum period of 25 years prior to decommissioning. Over this timeframe, changes may occur in environmental and social baseline conditions, including the sensitivity of receptors, availability of waste management

and recycling facilities, and the applicable regulatory framework. Future developments may also include advancements in technology, increased circular-economy requirements, and enhanced standards for reuse and recycling of materials.

Given these uncertainties, this ESIA does not assess decommissioning phase environmental and social impacts in detail, nor does it propose specific mitigation measures at this stage. Instead, it is proposed that decommissioning impacts will be addressed through the preparation of a Project specific Decommissioning Plan, supported by updated baseline surveys, to be developed no later than 12 months prior to decommissioning. The Decommissioning Plan will be prepared in accordance with the Project's Environmental and Social Management System (ESMS) and prevailing regulatory and international best-practice requirements at that time.

2.9 Project Milestones

Key milestones on the current project timeline are shown below. Detailed project schedule (at the time of preparing this ESIA) is included in Appendix.

Table 2-8 Anticipated Project Timeline

Milestone	Scheduled Date
Notice to Proceed (NTP) and Financial Close	Q3 2026
Initial Commercial Operation Date (COD)	Q3 2028
Commercial Operation Date (COD)	Q1 2029
Operational Term	25 Years

2.10 Project Alternatives

2.10.1 No Project Alternative

The No Project Alternative assumes that the proposed desalination plant and associated intake and outfall infrastructure are not developed. Under this scenario, the existing water supply system would remain unchanged. However, this option is not considered viable given the increasing regional demand for potable water, driven by population growth, industrial development, and long-term water security needs. Without the Project, existing water resources would continue to face increasing pressure, potentially resulting in supply shortages and reduced reliability of water services.

In addition, the project is located within a previously developed brownfield site, where industrial activities and infrastructure already exist. As such, the development does not involve the conversion of undeveloped or sensitive land and makes efficient use of an existing industrial footprint. Implementing the No Project Alternative would therefore forgo the opportunity to optimise the use of this site while addressing critical water supply needs.

Overall, the No Project Alternative would not meet the project objectives of providing a reliable and sustainable source of potable water, and it would fail to address anticipated future water deficits. Consequently, this alternative is not considered environmentally, socially, or strategically preferable compared to the proposed project.

2.10.2 Project Location Alternative

The selection of a suitable location for the desalination plant was guided by a range of technical, environmental, and operational considerations, including seawater quality, proximity to any existing pollution sources, access to electricity and existing infrastructure, seabed conditions, and proximity to the main water demand centers on the Absheron

Peninsula. These factors are critical to ensuring efficient plant operation, minimising environmental impacts, and reducing construction and operational costs.

A feasibility study assessed four potential locations: Alat, Sangachal, Shuvalan, and Sumgait. Each site was evaluated based on seawater quality, environmental risks, natural hazards, marine conditions, and infrastructure availability. Based on this comparative assessment, the Sumgait region was identified as the preferred area, as it presents fewer environmental and water quality constraints, reliable operational conditions, and a relatively short distance to both the seawater intake and the main demand centers.

Within the Sumgait region, three alternative sites along the seashore were further evaluated as summarised in Table 2-9. The location near the Sumgait power plant (location 2) was selected as the preferred site due to its industrial setting, proximity to existing power infrastructure, and favourable marine conditions. No significant differences in seawater quality were identified between the alternative sites at comparable seabed depths, while other locations were considered less suitable due to greater distances to suitable intake depths and less efficient integration with existing infrastructure.

As established in the CHA, the Caspian Seal Transitory Migration and Feeding Area IMMA (Important Marine Mammal Area), covering approximately 164,136 km² of the mid-Caspian Sea, constitutes the Ecologically Appropriate Area of Analysis (EAAA) for the Caspian Seal and meets the Critical Habitat threshold under IFC PS6 Criterion 3a. Given the spatial extent of this IMMA along the mid-Caspian coastline, no feasible project location on the Absheron Peninsula or within the northern Azerbaijani Caspian coast would avoid overlap with this designated Critical Habitat. The only alternative that could theoretically avoid Critical Habitat overlap would be relocation to south of the Absheron Peninsula. However, southern coastal locations were assessed in detail in the IQLIM ESIA (Section 4.8), where they were dismissed on technical, operational, and water quality grounds. No other viable alternatives exist within the region that would enable project development outside Critical Habitat on either modified or natural habitats.

Table 2-9 Analyses of Alternative Site Locations at Sumgait Shoreline (IQLIM ESIA, 2025)

Parameter	Location 1	Location 2	Location 3
Location Name	**H.Z. Tagiyev Settlement**	**Sumgait TPP**	**Sumgait WWTP**
Water Quality at 5 m Depth	Similar	Similar	Similar
Distance to 10 m Depth (km)	6.5	3.7	2.9
Distance from Power Plant (km)	11.5	1.6	1.1
Downstream Potential Pollution	No	Yes	Yes
Distance to Reservoir (km)	19	13	13
Distance to Shollar Pipeline (km)	2	7	7
Proximity to Public Settlements	Yes	No	Yes
Area Suitability for Construction	Medium	High	Medium
Distance to 10 m Depth (km)	6.5	3.7	2.9
Distance from Power Plant (km)	11.5	1.6	1.1
Downstream Potential Pollution	No	Yes	Yes

2.10.3 Project Design Alternative

Several design alternatives for the desalination plant intake system were assessed by the Project developers with the objective of improving technical performance, constructability, operational flexibility, and minimising environmental impacts. A key consideration was the significant historical and projected uncertainty in Caspian Sea water levels, which may either decrease or increase depending on climatic and hydrological conditions. To address this uncertainty, a flexible intake design was selected, incorporating an above-seabed terminal section of the offshore pipelines. This configuration allows future adjustment of the intake towers by extending or shortening the offshore structures, without major redesign, extensive offshore dredging, or disruption to plant operations.

Compared to the fully buried pipeline alternative, the selected design reduces dredging requirements, thereby limiting disturbance to seabed sediments, marine habitats, and the potential resuspension of existing contaminants. The design also enables simpler installation and allows future access for inspection and integrity monitoring of both the main intake pipeline and chlorination dosing pipes. Overall, the selected design provides clear technical and environmental advantages and represents the most suitable option for long-term operation under changing hydrological conditions.

2.10.4 Feedwater Source Alternative

Groundwater and nearshore waters in the vicinity of Sumgait are influenced by anthropogenic discharges, including contaminated groundwater inflows and municipal/industrial wastewater, resulting in elevated and variable concentrations of dissolved and suspended constituents (e.g. salinity fluctuations, organics, nutrients, and potential trace contaminants). This variability presents operational and treatment challenges, including increased pre-treatment requirements, higher fouling potential, and reduced process stability.

In contrast, open seawater abstraction from deeper offshore locations provides a more stable and predictable feedwater quality, with relatively consistent salinity and lower variability in contaminant concentrations. This improves process reliability, reduces pre-treatment complexity, and enhances overall plant performance and efficiency.

Accordingly, from both a technical and operational perspective, deep seawater abstraction represents the most feasible and reliable feedwater source for the desalination facility in this location. Alternative sources (e.g. shallow coastal waters or groundwater) are considered suboptimal due to quality variability and associated treatment constraints.

2.10.5 Alternative Power Supply Option

As part of the Project development process, alternative power supply options were considered to identify a technically feasible and reliable solution for the operation of the proposed Project. Given the continuous and energy-intensive nature of the desalination process, the Project requires a secure and uninterrupted electricity supply to maintain operational reliability.

The preferred power supply option is connection to the Azerbaijan national electricity grid, which is owned and operated by Azerenergy OJSC. This option was selected as it provides the level of reliability and capacity required to support continuous plant operation.

Renewable energy alternatives were also evaluated during the bidding and design stages. The installation of on-site solar photovoltaic (PV) generation was considered, as the proposed SWRO facilities would occupy only a portion of the allocated site, leaving sufficient land potentially available for PV development. However, following technical evaluation and discussions with the EPC Contractor, on-site solar PV was not progressed as it was not

considered capable of reliably meeting the continuous power demand of the desalination facility.

On-site wind energy generation was also assessed due to the favourable wind resource in the Project area. However, the land required to accommodate wind turbines, including the recommended buffer distance of approximately 500 m around each turbine for safety and operational considerations, significantly constrained the practical implementation of this option within the Project site. Consequently, wind energy was not selected.

Although the Project does not incorporate dedicated on-site renewable energy generation, it is expected to benefit from the increasing contribution of renewable energy to Azerbaijan's national electricity grid as the Government continues to implement its renewable energy development programme. Accordingly, the selected grid connection represents the most practical and reliable power supply solution while allowing the Project to benefit from the progressive decarbonisation of the national electricity network over the operational life of the Project.

3.0 Regulatory Framework

3.1 National Laws, Standards, and Requirements

3.1.1 The Constitution

The main legislative document that defines the rights, obligations, and provisions for the use of natural resources and environmental protection is the Constitution of the Republic of Azerbaijan, adopted on November 12, 1995 (as amended and supplemented as of September 26, 2016).

Article 39 of the Constitution establishes the fundamental rights of individuals to live in a healthy environment, to access information on the state of the environment, and to receive compensation for damage incurred as a result of violations of environmental legislation.

Furthermore, no individual or legal entity may pose a threat to, or cause damage to, the environment or natural resources beyond the limits prescribed by law.

The State guarantees the maintenance of ecological balance and ensures the protection of legally designated species of wild flora and fauna.

The Constitution stipulates how to determine the applicability of national and international requirements as follows:

- International agreements acceded to by the Republic of Azerbaijan become an integral part of the legislative system of Azerbaijan; and (Clause 148, Part II)
- If any conflicts arise between the normative-legal acts which constitute the legislative system of Azerbaijan (except for the Constitution and the acts adopted via referendum) and the international agreements acceded to by the Republic of Azerbaijan, the provisions of the international agreements shall apply. (Clause 151)

The Constitution explicitly states that every citizen has a duty to protect the environment. This means environmental protection is not only a right but also a constitutional responsibility for individuals.

3.1.2 National ESIA Requirements

The Law of the Republic of Azerbaijan “On Environmental Impact Assessment” (No. 1175-VQ), adopted on 12 June 2018, establishes the legal, economic, and organisational framework for assessing the potential environmental and human health impacts of planned activities and strategic planning documents, requiring measures to identify, eliminate, or mitigate adverse effects. It was officially approved by a Presidential decree No.193 on 13 July 2018.

Under this law, developers are required to coordinate proposed activities with the State Ecological Expertise Agency under the Ministry of Ecology and Natural Resources (MENR). To do so, it is necessary to prepare and submit an EIA report to MENR. The objective of the law is to establish a legal framework for assessing the environmental impacts of public and private projects, with the aim of preventing or minimizing negative effects on the environment and public health from the earliest stages of project planning. Preparation of an EIA report is mandatory for activities subject to the law.

In accordance with the provisions of the law, the EIA process is based on the following principles:

- Integrated assessment of environmental, social, and economic impacts of the proposed activity on both the environment and human health;

- Ensuring the transparency, completeness, and reliability of information regarding environmental safety;
- Preserving ecological balance and biodiversity;
- Ensuring that environmental impacts do not exceed established permissible limits;
- Forecasting potential environmental consequences and assessing levels of environmental risk;
- Ensuring public participation, transparency in the EIA process, and consideration of public opinion.

Specifically, the EIA report should include:

- Assessment of the initial and expected state of the environmental and socioeconomic environment;
- Determination of the environmental impacts of construction, reconstruction, and operation of facilities;
- Environmental Management Plan, combining a system of measures to reduce and mitigate environmental impacts; and
- Environmental Monitoring Plan providing for the effectiveness of environmental measures.

Based on the Azerbaijani legal updates published on October 2022, the Cabinet of Ministers issued environmental impact assessment (EIA) rules, approved by Resolution No 362 on September 21, 2022, pursuant to its mandate under the EIA Law enacted on July 17, 2018. According to the new rules, project developers are required to consult with the State Ecology Expertise Agency within the Ministry of Ecology and Natural Resources during the pre-design phase. Project developers must submit a project description and proposed assessment details to the Agency for public review. This submission should include the project's location, a feasibility study, alternative proposals, and a potential environmental impact assessment, as well as a plan for public hearings regarding the assessment.

The key deliverables of the EIA process as required by the national legislation are:

- Project Application Letter including the project description and proposed assessment details.
- If required, Scoping Meeting with MENR and relevant authorities; and
- EIA Report.

Requirements as to the EIA procedures are described in Article 4 of the Law. The article sets out the roles and responsibilities of the EIA developers (the Customer) and the competent authorities, including MENR.

3.1.3 Azerbaijan Institutional Framework

There are several ministries, government agencies, and institutions that hold key responsibilities to manage and monitor the environmental and social aspects and concerns of the Project.

Ministry of Ecology and Natural Resources (MENR)

Ministry of Ecology and Natural Resources (MENR) is the primary institution entrusted with the responsibility of environmental protection and implementation of environmental related laws. The functions and activities of MENR are sub-divided into the following areas: (i) Environmental policy development; (ii) Environmental protection; (iii) Water monitoring and management; (iv) Protection of marine (Caspian Sea) bio-resources; (v) Forest

management; and (vi) Bio-resources and protected areas management. This ministry upholds all natural resource protection laws.

The Azerbaijan State Agency for Environmental Expertise (SAEE), under the MENR acts within this agency on the Program level in reviewing EIAs. The activities, fields, and sectors to which SAEE would apply are specified in Article 54: The units controlled by the SAEE, of the EP Law as:

- The State and local programs related to development and placement of productive capacities in governmental and economical institutions;
- The documentation of technical and economical substantiation, construction (reconstruction, enlargement, and renovation technology), and destruction of economical capacities, as well as assessment of the project influence on the environment;
- Documentation concerning creation of new techniques, existing technologies, materials, and substances, as well as the import of these things from abroad;
- Draft of scientific-methodical and normative-technical documentation concerning environment protection;
- Certain ecological conditions caused by improper work of industry and extraordinary situations;
- Ecological conditions of the regions and individual (separate) natural objects and systems; and
- Provisions of draft contracts stipulating use of natural resources, as specified by the relevant decrees of the concerned executive bodies.

Azerbaijan State Water Resources Agency (ASWRA)

This agency has been established as per the presidential decree dated March 2023, and the Regulation of the Agency was approved by the Decree of the President in November 2023. ASWRA oversees the operation of state-owned amelioration and irrigation systems, drinking water supply, and rain and wastewater processing and discharge systems. Activities include participation in formulating a unified state policy and ensuring its execution, conducting state regulation and coordination, norm-setting activities, and fostering the overall development of the sector. ASWRA is also tasked with ensuring water safety, safeguarding the operation and protection of water management facilities, and conducting regular technical assessments. Moreover, it involves monitoring various aspects such as surface and underground water resources, water facilities, hydrotechnical structures, and water supply systems across Azerbaijan. State control over the protection and utilization of water bodies is within its purview. Strategic planning is another core responsibility of ASWRA by taking the lead in developing master plans for water resource use and determining the utilization of water protection zones.

Ministry of Emergency Situations (MES)

MES is a central executive body responsible for the civil defence and the protection of the population from natural and man-made disasters. They are responsible for the management of natural disasters and industrial accidents, and the implementation of safety rules in construction, mining, and industry. MES (along with MENR and other appropriate Ministries) require prompt notification in the event of an emergency, or accident. They are also involved in the issuance of construction permits.

Ministry of Health: (Sanitary and Epidemiology Service Sub-Body within Azerbaijan only)

Sanitary and hygienic safety is the responsibility of the Ministry of Health. Its main function is the implementation of control over meeting the sanitary and epidemiological rules and standards, and the hygienic standards. This entity implements anti-epidemiological measures throughout Azerbaijan and Nakhchivan Autonomous Republic (NAR) by legal and physical persons through application of laboratory and sampling controls.

Tariff (Price) Council

This is the implementing body for energy prices, service fees, and collections across all regulated entities in the economy. The Council is chaired by the Ministry of Economic Development and has 12 members.

Ministry of Labor and Social Protection of Population

The Ministry of Labor and Social Protection of Population is a governmental agency responsible for the regulation of labour markets and social protection of the people of Azerbaijan. The State Labour Inspection Service, under the Ministry of Labour and Social Protection of the Population, deals with foreign labour.

State Tourism Agency of The Republic of Azerbaijan

The State Tourism Agency is the central executive body responsible for implementing the state policy and regulation in the field of protection of historical and cultural monuments located in the territories of the state reserves under its subordination. The State service is the executive body exercising state control on usage of immovable historical and cultural monuments (except for the State Historical-Architecture of "Icheri Sheher" and “Qala” State Historical Ethnographic Reserve) that are under state protection, restoration, reconstruction, and protection.

Ministry of Culture (State service for protection, development and restoration of cultural heritage under the ministry of the culture of the Republic of Azerbaijan)

The Ministry of Culture are a governmental agency within the Cabinet of Azerbaijan in charge of regulation of the activities and promotion of Azerbaijani culture.

State Committee for Family, Women and Children Affairs

A national body for gender equality, active in mainstreaming gender into state policies, programs, and laws and in developing information systems for gender-related monitoring.

State Committee for Urban Planning and Architecture

The State Committee for Urban Planning and Architecture within the Cabinet of Azerbaijan are in charge of implementing the state policy and regulation concerning urban development, spatial planning, architecture, and other related fields of design.

Azerbaijan National Academy of Sciences, Institute of Geology

These are the main state research organization and the primary body that conducts research and coordinates activities in the fields of science and social sciences in Azerbaijan.

State Service on Property Issues and Economic Zone Development Agency

The State Service on Property Issues under the Ministry of Economy is responsible for the management and regulation of state-owned land and property, including land allocation and registration processes relevant to industrial developments. In addition, the Economic Zone Development Agency operates under the Ministry of Economy and is mandated to establish, manage, and regulate industrial parks and economic zones within the country.

District / Rayon Executive Authorities and Powers

Within the limits of their authority, these executive authorities manage a city (district), adopt acts of regulatory and normative nature, dispose of state-owned lands, and develop and implement programs for socio-economic development in the territories entrusted. The District / Rayon Executive Powers are responsible for the local management of state lands within the Rayons territories, and for the supervision of municipal land management.

Municipalities

They are a form of local self-governed and non-state groups for organizing the activities of citizens within the territories established by the laws of Azerbaijan. Municipalities, within their powers, design and implement programs for social protection and social development, economic development, and local environmental programs.

3.1.4 National Laws, Regulations, and Standards on Environmental, Social Protection and Land Issues

Itemized below is a compilation of legal and regulatory frameworks related to the Project industry, environmental protection, and social/land issues.

Table 3-1 Relevant Laws and Regulations

Law/Regulations	Year of issue / amendment	Description
Environmental Legislation		
Law on the Protection of the Environment (No. 678–IQ)	1999 (last amendment in December 2025)	This Law governs the legal, economic, and social framework for environmental protection. The purpose of this Law is to guarantee environmental safety and the ecological balance of the environment, prevent the impact of socioeconomic and other activities, preserve biological diversity, and effectively manage the use of nature. This Law governs mutual relations between society and nature for the purpose of improving the quality of the environment, using and renewing natural resources efficiently, and enforcing environmental protection laws and legal procedures. **Articles 81 and 82 of the Law** promotes international cooperation in environmental protection based on the principle of ecological safety, and where international environmental agreements differ from national legislation, the provisions of such international agreements prevail.
Law on Ecological Safety (No. 677-IQ)	1999 (last amendment in 2024)	The main purpose of this Law is to establish the legal basis for the protection of human life and health, the environment including atmospheric air, waterbodies, subsoil, land, vegetables, and the animal kingdom against risks originating from human and natural impacts.
Law on Fauna (No. 675-IQ)	1999 (last amendment in 2021)	This Law establishes the legal basis for the protection of fauna in the Azerbaijan Republic with the aim of ensuring preservation and rational use of all types of wild animals. It also describes issues of State inventory and monitoring, and economic and punitive regulations.
Law on Protection of Green Spaces	2014 (last amended in 2024)	This Law aims at conservation of greens (trees, shrubs, flowers, grasses and planting materials) and green areas, also by defining the rights and obligations

Law/Regulations	Year of issue / amendment	Description
(No. 957-IVQ)		of state agencies, municipalities, legal entities and individuals.
Law on Specially Protected Natural Territories and Objects (No. 840-IQ)	2000 (last amendment in 2019)	This Law determines the legal basis for protected natural areas and objects in Azerbaijan.
Law on Protecting the Atmosphere, (No. 109-IIQ)	2000 (last amendment in 2019)	This Law has the purpose of protecting the atmosphere to ensure the people's right to live in a favourable environment and their access to accurate environmental information. It sets general requirements for air protection during economic activities, establishes standards for mitigating physical and chemical impacts to the atmosphere, and establishes rules for the State inventory of harmful emissions and their sources.
Law on Protecting the Atmosphere, (No. 109-IIQ)	2001 (last amended in 2024)	This Law has the purpose of protecting the atmosphere to ensure the people's right to live in a favourable environment and their access to accurate environmental information. It sets general requirements for air protection during economic activities, establishes standards for mitigating physical and chemical impacts to the atmosphere, and establishes rules for the State inventory of harmful emissions and their sources.
Law on Water Code (No. 418-IQ)	1997 (last amendment in 2021)	This Code regulates legal relations concerning the protection and use of water bodies in the Azerbaijan Republic. It sets property rights and covers issues of inventory and monitoring.
Law on waste/wastewater	1998 (last amended in 2023)	This Law determines the state policy and legal relations of the Republic of Azerbaijan in the field of waste management, with the exception of harmful gases, wastewater and radioactive waste, in order to prevent the harmful effects of waste on human health and the environment, reduce their hazardous effects, ensure ecological balance in nature, as well as involve such waste in economic turnover as sources of recycled raw materials.
Law on obtaining Information on the Environment (No. 270-IQ)	2002 (last amendment in 2023)	This Law regulates relations arising in connection with the timely receipt of complete, reliable, timely information about the state of the environment and the use of natural resources from state authorities and local self-government, as well as from responsible persons.
Rules on Environmental Impact Assessment (EIA)	2018 (Approved by Resolution No 362, dated 21 September 2022)	The rules define assessment processes for projects with and without transboundary impacts.
Law On Fishing N.457-IQ	1998 (last amended in 2019)	The Law establishes the legal framework for the regulation of fisheries and aquaculture, including the sustainable use, protection, and restoration of fish and other aquatic biological resources in Azerbaijan. It defines permitted fishing activities, state control

Law/Regulations	Year of issue / amendment	Description
		mechanisms, and requirements for environmental protection and impact assessment related to fisheries water bodies.
Health/ social/ cultural and economic legislation		
Law on Community Health Care (No. 360- IQ)	1997 (last amendment in 2020)	This Law defines the basics of public health and the main principles of the healthcare system in Azerbaijan.
Law on Radiation Safety of the Population	1998 (last amendment in 2024)	This Law requires compliance with radiation safety in industrial enterprises. The law defines the basic principles of state policy in the field of radiation safety, as well as environmental standards that ensure the safety of workers and the public in territories exposed to potential impacts as a result of the use of radioactive sources.
Law on the Protection of Historical and Cultural Monuments (No. 470-IQ)	1998 (last amendment in 2022, No. 528)	This Law establishes the legal framework related to the protection, study, and use of historical and cultural monuments in Azerbaijan.
Law on Employment, No.1196-VQ	2018 (last amendment in December 2025)	This Law establishes the legal, economic, and organizational foundations of state policy in the field of employment assistance, as well as social protection of unemployed citizens.
Law on Unemployment Insurance (No. 765- VQ)	2017 (last amendment in December 2025)	This Law establishes the basic principles of relations in the labour market of Azerbaijan, the creation of new mechanisms for financing the lost wages of insured citizens, payment of compensations to them, and strengthening the social protection of the population.
Labor Code of the Azerbaijan Republic (No. 618-IQ)	1999 (last amended in December 2025)	The Labor Code, through the relevant legal standards, defines the labour, social, and economic rights of employees and employers, as well as the principles and rules for ensuring the right to work and rest in safe and healthy conditions, as well as other fundamental rights and freedoms of citizens of the republic.
Law ”On guarantees of gender (men and women) equality	2006 (last amended in December 2025)	This law aims to eliminate all forms of gender-based discrimination and ensure gender equality in the political, economic, social, and cultural spheres. All human rights are guaranteed to women and men.
Law on Prevention of Domestic Violence	2010 (last amended in 2024)	The law establishes and regulates the events held in the direction of prevention of the violence committed by the abuses of the close related relations. Also outlines the providing with legal assistance persons which were affected by domestic violence, and also elimination of the circumstances leading to domestic violence.

Law/Regulations	Year of issue / amendment	Description
Water legislation[1]		
Water Code	26 December 1997 (last amendment on 23 May 2025)	This Code is regulating legal relations concerning the protection and use of water bodies in the Azerbaijan Republic.
Law No. 723-IQ on water supply and effluent wastewater	28 October 1999 (last amendment on 29 March 2024)	This Law is regulating relations concerning supply of the population, enterprises, institutions and organizations with water complying with state quality standards and discharge of effluent wastewater
Land rights and resettlement legislation		
The Constitution of the Republic of Azerbaijan	1995 (last amended in 2016)	Recognizes the citizens' right to own, use and dispose property. It also recognizes three type of property ownership in Azerbaijan - state, municipal and private (Article 13). It guarantees that no one will be dispossessed of their property without their consent or decision by the court of law and that alienation of private property for state needs will be allowed only after payment of fair compensation to the owner (Article 29). The constitutional amendment adopted on 26th September 2016 with regards to Article 29 specifies (i) private land ownership entails social obligations and (ii) property right on land can be restricted by law for social justice and efficient use of land.
The Land Code (No. 695-IQ)	1999 (last amendment in 2024)	The Land Code is aimed at regulating land relations, fulfilling the obligations of landowners, users and tenant farmers and protecting their rights to land, creating conditions for the rational use of lands and their protection, restoration and improvement of land fertility. Article 101 states that, all damages caused by acquisition of land (compulsory purchase) or temporary detention, as well as limiting the rights of owners, users and lessees or deterioration of the quality of soil should be fully paid to landowners or users. In addition, costs derived from early termination of its obligations against third parties should also be paid to the affected person. Disputes relating to compensation, is being considered in a court in accordance with the procedure established by the legislation.
The Civil Code	Adopted in 1999 (as amended on December 2025)	**Articles 246–249 of the Civil Code of the Republic of Azerbaijan regulate the acquisition of land for state needs.** **Article 246** regulates the acquisition of land for state needs, requiring a formal decision by the relevant executive authority in accordance with the Law "On Acquisition of Lands for State Needs," registration of the decision in the state real estate registry, and written notification to landowners. Following the conclusion of a purchase agreement, the acquiring authority must,

[1] https://www.fao.org/countryprofiles/index/en/?iso3=aze

Law/Regulations	Year of issue / amendment	Description
		within 90 days, pay full compensation, complete the transfer of land rights at its own expense, and provide relocation assistance where the land constitutes the owner's residence. **Article 247** establishes compensation principles, requiring compensation to be calculated at market value or, where market value cannot be reliably determined, at replacement cost. Compensation must ensure the restoration of affected persons' assets, livelihoods, income, and living standards and may be provided in multiple forms, including land-for-land, housing, cash payments, livelihood restoration, training, or other agreed measures, with affected persons entitled to choose one or more compensation types. **Article 248** requires court approval for the acquisition of land for state needs and guarantees the right of affected persons to challenge the legality of the acquisition, the necessity of the project, the competence of the acquiring authority, or the fairness of the proposed compensation, without incurring any costs related to the acquisition procedures. **Article 249** defines the legal effect of the acquisition decision, formally recognizing affected persons, obligating the acquiring authority to prepare relocation plans where required, assist valuation processes, secure funding, and pay compensation, while also allowing the suspension of construction or demolition of structures on the acquired land in accordance with the law.
Law on Land Acquisition for State Needs (No.987 III-Q)	April 2010 (last amended in March 2025)	This Law regulates withdrawal of lands for the state needs in the Azerbaijan Republic, rules of charge and payment to compensation connected with it, and also other relations arising between the parties in this sphere. Specifically address matters related to involuntary resettlement (IR), including the process and institutional arrangement for land acquisition, compensation and valuation, consultation requirements, entitlements of various categories of displaced persons and grievance mechanism. The law considers various categories of displaced persons, including those without state registration, renters, non-formal long-term users of land, and persons who have no legal rights on the land that they live in. The law entitles persons who have no legal rights on the land to resettlement assistance and compensation for their non-land assets. It includes provision of compensation for loss of business/income, transition allowance and transportation support, and compensation for loss assets based on replacement cost. As per the law, in case of physical displacement, the acquiring authority needs to send notification to DPs at least 60 days before resettlement.

Law/Regulations	Year of issue / amendment	Description
Law on Valuation Activities (No.510-IQ)	1998 (as amended on 19 May 2020)	The law requires that valuation of the real estate is mandatory in the cases of land acquisition for state needs and the results of the valuation are to be reflected in a valuation report.
Law on land market (No.665-IQ)	1999 (last amendment in 2024)	This Law establishes general rules for land market relations in the Azerbaijan Republic and ensures the protection of property rights to land.
Law on the state land cadastre, land monitoring and land management (No.593)	1998. (last amendment in 2023)	This Law defines the legal framework for ordering the state land cadastre, land monitoring and land management works in the Azerbaijan Republic.
Law on land lease (No.587-IQ)	1998 (last amendment in 2023)	This law defines the legal framework for the lease of lands in state, municipal and private ownership, and lease relations in the Azerbaijan Republic. The law states that (Article 16) when the leased land is acquired for state needs, another land plot having a same size and a same quality can be provided to lessee. Losses incurred in this land shall be paid in accordance with the legislation.
Law on the management of municipal lands (No.160-IIQ)	2001 (last amendment by the Decree of the President of the Azerbaijan Republic dated June 19, 2020)	This Law regulates the general rules for the transfer of municipal lands to ownership, use and lease, taking into account the peculiarities of their management, legal relations in the field of their use and protection.
Cabinet of Minsters' Resolution (No.45 24)	2012	Approving of guidelines for preparation of Resettlement Plan and Resettlement Guideline.
Rules for assigning lands to categories and transferring them from one category to another", approved by Decision No. 10 of the Cabinet of Ministers of the Republic of Azerbaijan	2017 Approved by Decree No. 201 of the President of the Republic of Azerbaijan dated September 28, 2024	Agricultural lands (arable lands) are specially protected and their transfer to other categories for non-agricultural purposes is permitted in exceptional cases in accordance with the Land Code of the Republic of Azerbaijan and on the basis of the requirements of the "Rules for assigning lands to categories and transferring them from one category to another".
Resolution of the Cabinet of Ministers on approving of guidelines for preparation of Resettlement Plan and	2012	It stipulates guidelines for preparation of resettlement plan, as well as shows sample content of a resettlement plan and resettlement guideline.

Law/Regulations	Year of issue / amendment	Description
Resettlement Guideline No. 45		
Resolution of the Cabinet of Ministers on approving the guidelines for selection of a person or entity to prepare Resettlement Plan or Resettlement Guideline No. 55	2011	It reflects guidelines and criteria for the selection of a planner (person or entity who prepares resettlement plan or guideline).
Resolution of the Cabinet of Ministers No. 42 On Some Normative and Legal Acts Relating to the Land Code	2000 (last amended in 2024)	This Resolution approves the "Rules for Determining and Compensating Losses and Damages in Agricultural and Forestry Production," the "Rules for the Allocation, Lease, and Use of Pasture, Grazing, and Hayfield Lands," and the "Rules for the Use of Lands Designated for Industrial, Transport, Communication, and Other Purposes."
Law of Azerbaijan Republic on Municipality Area and Lands ((No: 771-IQ)	1999 (last amended in 2004)	The Law present the list of municipalities of Azerbaijan.
Law on Management of Municipality Lands (No: 160-IIQ).	2001 (last amendment in 2023)	This Law regulates the general rules for the transfer of municipal lands to ownership, use and lease, taking into account the peculiarities of their management, legal relations in the field of their use and protection.

3.2 International and Regional Agreements and Conventions

The following table represents the International and Regional Agreements and Conventions accepted in Azerbaijan for regulating relevant environmental and social related issues and concerns:

Table 3-2 Relevant International Conventions for the Project

International Convention	Year Ratified
International Labour Organisation (Fundamental)	
C029 - Forced Labour Convention, 1930	1992
C087 - Freedom of Association and Protection of the Right to Organise Convention, 1948	1992
C098 - Right to Organise and Collective Bargaining Convention, 1949	1992
C100 - Equal Remuneration Convention, 1951	1992
C105 - Abolition of Forced Labour Convention, 1957	2000
C111 - Discrimination (Employment and Occupation) Convention, 1958	1992

International Convention	Year Ratified
C138 - Minimum Age Convention, 1973	1992
C182 - Worst Forms of Child Labour Convention, 1999	2004
Pollution Prevention	
The Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran Convention)	2006
Moscow Protocol on the Protection of the Caspian Sea against Pollution from Land-Based Sources and Activities	2012
Ashgabat Protocol on the Conservation of Biological Diversity	2014
Espoo Convention on Environmental Impact Assessment in a Transboundary Context	Acceded in 1999
Stockholm Convention on Persistent Organic Pollutants	Acceded in 2004
Convention on the Transboundary Effects of Industrial Accidents	Acceded in 2004
Basel Convention on the Control of Transboundary Shipment of Hazardous Wastes	2001
Paris Agreement	2017
UN Convention on the Protection of the Ozone Layer (Vienna Convention)	Acceded in 1996
Montreal Protocol on Substances that Deplete the Ozone Layer, 1987	Acceded in 1996
United Nations Framework Convention on Climate Change, 1992	Acceded in 1992
UNECE Geneva Convention on Long-Distance Transboundary Air Pollution	2002
UN Convention on Control of Transboundary Movements of Hazardous Wastes and their Disposals	2001
International Carriage of Dangerous Goods by Road	2000
Espoo Convention (To promote environmentally sound and sustainable development through the application of ESIA, especially as a preventive measure against transboundary environmental degradation)	Acceded in 1999
Aarhus Convention (To guarantee the rights of access to information, public participation in decision-making and access to justice in environmental matters)	Acceded in 2000
Framework Convention for the Protection of the Marine Environment of the Caspian Sea	2003
The Protocol for the Protection of the Caspian Sea against Pollution from Land-Based Sources and Activities (LBSA Protocol)	2012
International Maritime Organization Convention	1995
MARPOL 73/78 International Convention on Prevention of Marine Pollution	2004
International Convention on Oil Pollution Preparedness, Response and Co-operation	2004
Biodiversity Protection	
UNESCO Convention on Wetlands of International Importance especially as Waterfowl Habitat / RAMSAR Convention	2001
UN Convention on Biological Diversity, 1992	2000

International Convention	Year Ratified
Bern Convention on conservation of wild flora and fauna and their natural habitats	2002
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	1999
UN Convention to Combat Desertification, 1994	1998
UN Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention; CMS), 1979	1998
Cultural Heritage	
Convention for the Safeguarding of the Intangible Cultural Heritage. Paris 2003	2007
Convention concerning the Protection of the World Cultural and Natural Heritage. Paris, 16 November 1972	1993
European Convention on the Protection of the Archaeological Heritage	2000
UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions, 2005	2009
Human Rights	
European Convention for the Protection of Human Rights and Fundamental Freedoms	2002
UN Convention on the Elimination of All Forms of Discrimination against Women	1995
UN Convention against Torture and Other Cruel, Inhuman or degrading treatment or punishment	1996
UN International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families	1000
UN International Covenant on Economic, Social and Cultural Rights	1992
UN Convention on the Rights of the Child / Protocol Faculty in connection with the participation of children in armed conflicts	1992/2002
UN Convention on the Elimination of All Forms of Racial Discrimination	1996
Regional Framework Convention for the Protection of National Minorities	2000
UN Convention on the Rights of Persons with Disabilities	2009
UN International Covenant on Civil and Political Rights	1992
The high-level conference on the future of the European Court of Human Rights. Interlaken Declaration	2010
The high-level conference on the future of the European Court of Human Rights. Izmir Declaration	2011
The high-level conference on the future of the European Court of Human Rights. Brighton Declaration	2012

3.3 Lender Requirements

It is understood that the client is seeking project finance from potential lenders, including international institutions, who are likely to be signatories to the voluntary set of guidelines for managing environmental and social risks. As such, there are a number of separate requirements for the Environmental Impact and Social Assessment of the project as set out below.

3.3.1 2.4.1 Equator Principles

The Equator Principles (EP) is a risk assessment framework used by financial institutions to determine, assess and manage the environmental and social risk in Projects financing. Currently, 138 financial institutions in more than thirty-five countries have officially adopted the EPs.

The EP apply globally to all industry sectors and to five financial products:

1. Project Finance Advisory Services,
2. Project Finance,
3. Project-Related Corporate Loans,
4. Bridge Loans, and
5. Project-Related Refinance and Project-Related Acquisition Finance.

The Equator Principles were updated in 2006 (EPII), 2013 (EPIII) and a further update EP IV became effective from October 1st, 2020.

Equator Principles Financial Institutions (EPFIs) implement ten (10) EP through their internal environmental and social risk management policies, procedures, and standards in order to comply with the EP. The Equator Principles consist of the following 10 Principles:

Principle 1: Review and Categorisation

Principle 2: Environmental and Social Assessment

Principle 3: Applicable E&S Standards

Principle 4: E&S Management System and Equator Principles Action Plan

Principle 5: Stakeholder Engagement

Principle 6: Grievance Mechanism

Principle 7: Independent Review

Principle 8: Covenants

Principle 9: Independent Monitoring and Reporting

Principle 10: Reporting and Transparency

3.3.2 IFC Performance Standards on Environmental and Social Sustainability

The IFC Performance Standards (PS) are a key component of the IFC's Sustainability Framework and are directed towards clients (i.e., the party responsible for implementing and operating the project that is being financed), providing guidance on how to identify risks and impacts. The IFC Performance Standards are designed to help avoid, mitigate, and manage risks and impacts throughout the life of a project as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities.

The 2006 version of the IFC Performance Standards was reviewed and made applicable to all new projects from 1st January 2012. The updated IFC PSs reflect IFC's stronger commitment to climate change, business and human rights, corporate governance and gender equality as well as strengthening the due diligence process for IFIs. Such updates include comparable labour terms for migrant and non-migrant workers, clarification of levels of stakeholder engagement, monitoring of supply chains and an enhanced focus on energy efficiency.

The following presents the IFC Performance Standards (2012):

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts
- PS 2: Labour and Working Conditions
- PS 3: Resource Efficiency and Pollution Prevention
- PS 4: Community Health, Safety and Security
- PS 5: Land Acquisition and Involuntary Resettlement
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- PS 7: Indigenous People
- PS 8: Cultural Heritage

3.3.2.1 2.4.3 World Bank and IFC Environmental Health and Safety Guidelines

In accordance with EP IV, EPFI's require compliance with both national regulations /standards and the applicable World Bank Group (WBG) Environmental Health and Safety (EHS) Guidelines relevant to the Project. This includes the General WBG EHS Guidelines of April 2007.

In terms of specific guidelines to control environmental externalities (e.g., wastewater quality etc.), EHS guidelines have been set out by IFC and the World Bank Group to provide general guidelines for its members when involved in a project or when providing financial support to a project. These guidelines contain general and industry-specific examples of Good International Industry Practice (GIIP). In summary, it should be noted that the following IFC EHS Guidelines are relevant to this project:

- General EHS Guidelines, Environmental:
  - Air Emissions and Ambient Air Quality;
  - Energy Conservation;
  - Wastewater and Ambient Water Quality;
  - Water Conservation;
  - Hazardous Materials Management;
  - Waste Management;
  - Noise; and,
  - Contaminated Land.
- General EHS Guidelines, Occupational Health & Safety:
  - General Facility Design and Operation;
  - Communication and Training;

- Physical Hazards;
- Chemical Hazards;
- Radiological Hazards;
- Personal Protective Equipment (PPE);
- Special Hazard Environment; and,
- Monitoring.

• Community Health & Safety:

- Water Quality and Availability;
- Structural Safety of Project Infrastructure;
- Life and Fire Safety (L&FS);
- Traffic Safety;
- Transport of Hazardous Materials;
- Disease prevention; and,
- Emergency Preparedness and Response

• Industry Sector Guidelines, Infrastructure:

- Water and Sanitation (2007)

3.3.3 Asian Infrastructure Investment Bank Environmental and Social Framework

The Asian Infrastructure Investment Bank (AIIB) Environmental and Social Framework (ESF) establishes the environmental and social requirements applicable to projects financed by AIIB, with the objective of supporting environmentally and socially sustainable development.

The Environmental and Social Policy comprises mandatory environmental and social requirements for each Project and is accompanied by three associated mandatory Environmental and Social Standards (ESSs) setting out requirements applicable to Bank Clients on:

- ESS1: Environmental and Social Assessment and Management;
- ESS2: Land Acquisition and Involuntary Resettlement; and
- ESS3: Indigenous Peoples

3.3.4 Asian Development Bank Environmental and Social Framework

The Asian Development Bank (ADB) Environmental and Social Framework establishes the environmental and social requirements applicable to ADB financed projects to protect people and the environment from potential adverse project impacts while promoting sustainable development. The ESF was issued in 2024 and became effective on January 2026, replacing the previous Safeguard Policy Statement (2009).

The ESF comprises an Environmental and Social Policy supported by ten mandatory Environmental and Social Standards (ESSs), which establish requirements for borrowers and clients covering:

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts;

- ESS2: Labour and Working Conditions;
- ESS3: Resource Conservation and Pollution Prevention;
- ESS4: Health, Safety and Security;
- ESS5: Land Acquisition and Land Use Restriction;
- ESS6: Biodiversity Conservation and Sustainable Natural Resources Management;
- ESS7: Indigenous Peoples;
- ESS8: Cultural Heritage;
- ESS9: Climate Change; and
- ESS10: Stakeholder Engagement and Information Disclosure

3.3.5 OECD Common Approaches

Where export-credits from OECD countries are being provided for projects, the OECD 'Common Approaches' will apply.

The current agreement between OECD members is the 'OECD Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence' (the "Common Approaches"), which was adopted on 28th June 2012 and revised by the OECD Council for adoption on 6th April 2016 (OECD/LEGAL/0393).

This agreement sets common approaches for undertaking environmental and social due diligence to identify, consider and address the potential environmental and social impacts and risks relating to applications for officially supported export credits as an integral part of Members' decision-making and risk management systems. While an OECD Recommendation is not legally binding, it expresses the common position or will of the whole OECD memberships and therefore may entail important political commitment for Member governments.

According to Section 'V' of the 'Common Approaches', 'Adherents should undertake an environmental and social review of projects, in accordance with the international standards applied to the project…' The specific 'international standards' referenced in the Common Approaches are the following:

- 'limited or non-recourse project finance projects, against the relevant aspects of all eight IFC Performance Standards.'
- 'Adherents should also benchmark projects against the relevant aspects of the EHS Guidelines, which are referenced in World Bank Safeguard Policy OP 4.01 and IFC Performance Standard 3.'

4.0 Approach to the ESIA

4.1 Scope of Work and Key Deliverables

This ESIA Report has been informed by:

- The National ESIA prepared by IQLIM;
- Analysis of the Project details and proposed works based on design and construction and operational information provided by ACWA;
- Desk-based study of available mapping and aerial photography;
- Site visits conducted by the 5 Capitals ESIA team;
- Additional baseline surveys conducted by a local consultant engaged by ACWA (including soil, ground and surface water sampling and analysis);
- Additional socio-economic survey and stakeholder engagement activities conducted by 5 Capitals ESIA team;
- Review of available secondary information, including but not limited to:
  - Integrated Biodiversity Assessment Tool (IBAT);
  - BirdLife International (birdlife.org);
  - World Database of Protected Areas (protectedplanet.net);
  - Key Biodiversity Areas (keybiodiversityareas.org);
  - Climate Change Knowledge Portal - World Bank Group (https://climateknowledgeportal.worldbank.org);
  - Office of the United Nations High Commissioner for Human Rights;
  - United Nations Development Programme <undp.org>; and
  - United Nations Educational, Scientific and Cultural Organization (UNESCO) databases.

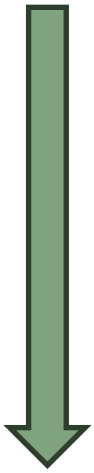
4.2 ESIA Methodology

4.2.1 Process

The ESIA process is a systematic tool for examining and assessing the potential beneficial and adverse environmental and social impacts of a proposed development. In addition to identifying impacts of the Project, the ESIA has also identified key environmental and social mitigation measures and guidance to avoid, minimise and compensate for any adverse environmental and social impacts associated with the construction and operation of the Project. The ESIA process is summarised in Table 4-1 and in the following sections.

Table 4-1 Overview of the ESIA process

Stage	Task	Objective
Scoping	Gap Analysis	Identify the approach, methodology and data requirements of the ESIA
ESIA	Consultation	Consult with statutory and non-statutory organisations and individuals with an interest in the development

Stage	Task	Objective
	Desk Based Literature Review	Use existing secondary information and data sources to obtain information on the environmental and social conditions of the development site and immediate surroundings.
	Primary Baseline Data Collection	Characterise the existing physical, ecological and social conditions of the development site and immediate surroundings.
	Specialist Studies	Further investigate those environmental and social parameters which may be subject to potentially significant impacts.
	Impact Assessment	Evaluate the existing environment and social conditions in terms of sensitivity to predict the magnitude and associated significance of the potential impacts.
	Mitigation Measures	Identify appropriate and practicable mitigation and enhancement measures to avoid, minimise and/or offset any adverse impacts. Monitoring plans are proposed to monitor residual impacts.

To obtain a credible assessment of environmental and social impacts, the assignment of 'significance' to each identified impact needs to be a robust, consistent and transparent process. The methodology to assess 'effect significance' is outlined below and follows a GIIP approach based on the assumption that the significance of an impact on resources or receptors is considered to result from an interaction between two factors:

- The nature and magnitude of the impact (i.e., a change in the environment, social and/or health baseline conditions); and
- The environmental or social value or sensitivity of those resources or receptors to the change.

A three-step approach has been used to determine the significance of environmental and social impacts, as follows:

- Step 1 – Evaluation of value/sensitivity/vulnerability of resource or receptor;
- Step 2 – Assessing the magnitude of the impact on the resource or receptor; and
- Step 3 – Determining the significance of impacts.

4.2.2 Impact Assessment Significance Criteria

4.2.2.1 Determining Receptor Sensitivity

The sensitivity of a receptor is understood as the sensitivity of the environmental or social receptor to change, including its capacity to accommodate changes that the Project may bring about. The sensitivity is assigned at the receptor level and as such details regarding sensitivity are provided within the topic specific chapters of this Report. Table 4-2 outlines the definition criteria upon which the receptor sensitivities of this ESIA are based.

Sensitive receptors are defined as:

- Elements of the environment that are of value to the functioning of natural systems (i.e., areas or elements of ecological, landscape or heritage value, species, habitats and ecosystems, soil, air and water bodies or land-use patterns); and
- Human receptors, such as stakeholders (i.e., users of dwellings, places of recreation, places of employment, community facilities or household relocation, cultural heritage – tangible & intangible, community health, livelihoods & economic activities, gender relationships) and human systems (e.g. employment market, population disease

susceptibility and disease communicability, public infrastructure and services, exposure to toxicity of chemicals).

Table 4-2 Receptor Sensitivity Criteria

Sensitivity	Description of Value
Very High	• High importance and rarity on an international scale and limited or no potential for substitution. • The receptor has already reached its carrying capacity, so any further impact is likely to lead to an excessive damage to the system that it supports (e.g., very limited or non-existent infrastructure and services such as hospitals and schools, available natural, economic or local resources are not sufficient to provide means of livelihoods for all local populations). • Locations or communities that are highly vulnerable to the environmental and social impact under consideration or critical for society (e.g., hospitals, schools). • Other examples are very high proportion of vulnerable groups (women, elderly, disabled, etc.) in the Project area, very frequent occurrences/risk of gender-based violence and harassment, sexual harassment, retaliation, very low probability of female participation in decision making and in the labour market, archaeological items of international importance or designated UNESCO world heritage sites, tangible or intangible cultural assets that contribute to international research objectives, etc.
High	• High importance and rarity on a national scale, and limited potential for substitution. • The receptor is close to reaching its carrying capacity, so a further impact may lead to a significant damage to the system that it supports (e.g., poor or limited public infrastructure and services, with limited access and high pressure on existing natural or economic resources available). • Locations or communities that are particularly vulnerable to the environmental impact under consideration (e.g., residential areas, vulnerable/marginalized groups). • Other examples are high proportion of vulnerable/marginalised groups (women, elderly, disabled, etc.), locations with poor health practices, poor education level, high crime rate, frequent occurrences/risk of gender-based violence, sexual harassment, retaliation, tangible or intangible cultural assets that contribute to national research objectives, etc).
Medium	• High or medium importance and rarity on a regional scale, limited potential for substitution. • The receptor is already significantly impacted, but it is not close to reaching its carrying capacity. Further impacts will get increase the stress of the underlying system, but evidence does not suggest that it is about to reach a critical point (e.g., public infrastructure and services with some capacity, alternative natural or economic resources are available but not sufficient or easily accessible). • Locations or groups that are relatively vulnerable to the environmental impact under consideration (e.g., commercial areas). • Other examples area: average proportion of vulnerable/marginalised groups, occasional occurrences/risk of gender-based violence, sexual harassment, retaliation tangible or intangible cultural assets that contribute to regional research objectives, etc.).
Low	• Low or medium importance and rarity on a local scale. • The receptor is not significantly impacted and shows a large spare carrying capacity. Impacts are not likely to generate any noticeable stress in the underlying system (e.g., reasonable public infrastructures and services,

Sensitivity	Description of Value
	sufficient natural, economic or local resources available but not easily accessible). • Locations or groups that show a low vulnerability to the environmental impact under consideration (e.g., industrial areas). • Other examples are low proportion of vulnerable/marginalised groups, rare occurrences of gender-based violence, sexual harassment, retaliation tangible or intangible cultural assets that contribute to local research objectives, etc.).
Very Low	• Very low importance and rarity on a local scale. • The receptor is not impacted and shows a very large spare carrying capacity. Impacts are very unlikely to generate any noticeable stress in the underlying system (e.g., very good public infrastructures and services with some capacity, equivalent natural, economic or local resources available and easily accessibly). • Locations or groups that show a very low vulnerability to the environmental impact under consideration (e.g., industrial areas). • Other examples are very low proportion of vulnerable/marginalised groups, no occurrence of gender-based violence, sexual harassment, retaliation tangible or intangible cultural assets that are not legally protected and have no significance to local people (i.e. local people no longer use the cultural asset, etc.).

4.2.2.2 Identifying potential impacts

The following types of impacts have been considered:

- Direct Impacts - Potential impacts that may result from the construction, commissioning, and operation of the Project acting directly on an environmental or social receptor;
- Indirect Impacts – Potential impacts which are not a direct result of a Project activity, that may be realised later in time or at distances further removed from the project footprint, but are normally a result of a complex pathway;
- Cumulative Impacts – Changes to the environment that are caused by an action in combination with other past, present and/or future actions;
- Beneficial Impacts – Those impacts that have a positive, desirable or favourable effect on the sensitive resources or receptors (e.g., landscape providing artificial habitat for a variety of species, jobs opportunities during the construction and/or occupation phases of a project);
- Adverse Impacts – Those impacts that are detrimental and have a negative influence on the environment, social structures, resources or other receptors;
- Secondary Impacts – Potential impacts that may result from the implementation of protection measures applied to mitigate potential direct impacts; and
- Event Related Impacts – Potential unplanned or accidental impacts stemming from an unintentional event such as fire, explosion, leakages, oil spill, etc.

4.2.2.3 Determining Area of Influence

The area of influence for each assessed aspect (e.g., air quality, noise etc.) has been established within each dedicated chapter. In some cases, this differs between each impact, for example, with regards to air quality, there is a different area of influence established for individual impacts such as dust generation and gaseous emissions. This is further outlined within individual chapters.

4.2.2.4 Determining Impact Magnitude

The magnitude of an impact has numerous components, for example:

- The extent of physical change;
- The level of change in an environmental condition;
- The permanence of impact and the reversibility of the impacted condition;
- Its spatial footprint;
- Its duration and frequency; and
- Its likelihood of occurrence where the impact is not certain to occur.

The magnitude of the impact will be defined wherever possible in quantitative terms and where necessary, the determination of impact magnitude will be assisted using modelling. The general criteria used for identifying the magnitude of impacts is provided within the following table.

Table 4-3 Impact Magnitude Criteria

Magnitude	Description of Magnitude
Major	**Adverse:** Loss of resource and/or quality and integrity; severe damage to key characteristics, features or elements. Permanent / irreversible change to livelihoods. Severe non-compliance risks relating to labour, gender, security, community health. A major impact is usually large in extent, permanent and irreversible. **Beneficial:** Large scale or major improvement of resource quality; extensive restoration or enhancement in livelihoods; major improvement of attribute quality.
Moderate	**Adverse:** Significant impact on the resource but not adversely affecting the integrity; Partial loss of/damage to key characteristics, livelihoods, features or elements. Moderate impacts usually extend outside the site boundary, and are usually permanent, irreversible or cumulative. **Beneficial:** Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Minor	**Adverse:** Some measurable change in attributes quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features, livelihoods or elements. Minor impacts usually are only noticeable within the site and are temporary and reversible. **Beneficial:** Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible	**Adverse:** Very minor loss or detrimental alteration to one or more characteristics, features or elements. **Beneficial:** Very minor benefit to or positive addition of one or more characteristics, features or elements.
No change	No loss or alteration of characteristics, features or elements; no observable impact in either direction.

4.2.2.5 Determining Impact Significance

The significance of effects is a combination of the sensitivity of a receptor or resource and the magnitude of the project impact.

The matrix shown in Table 4-4 provides criterion used for determining the significance of environmental effects through consideration of the potential magnitude of impact and sensitivity of the associated receptor.

As is evident from the matrix, in some cases the significance product is a range (i.e., a 'Minor' Magnitude and a 'Very High' Sensitivity results in a 'Moderate to Major' Significance). In these cases, professional judgement has been used to determine which significance the impact best represents.

Table 4-4 Criteria for Determining Significance of Effects

		Magnitude Of Impact (Degree Of Change)				
		No change	**Negligible**	**Minor**	**Moderate**	**Major**
Sensitivity of Receptor	**Very High**	Neutral	Minor	Moderate or Major	Major	Major
	High	Neutral	Minor	Minor or moderate	Moderate or Major	Major
	Medium	Neutral	Negligible or minor	Minor	Moderate	Moderate or Major
	Low	Neutral	Negligible or minor	Negligible or minor	Minor	Minor or moderate
	Very Low	Neutral	Negligible	Negligible or minor	Minor	Minor

The following table outlines general definitions of significance.

Table 4-5 Definition of Significance

Significance Category	Criteria
Major	• The impact is large scale and would cause a large improvement or deterioration in the environment, • Adverse impacts may be considered unacceptable due to exceeded of statutory limits or compliance and may require additional studies to ascertain if alternatives (in terms design and location) with the potential for lower impacts should be considered. These impacts represent key factors in the decision-making process. • These impacts are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category.

Significance Category	Criteria
Moderate	• The impact gives rise to noticeable improvement or deterioration to the existing environment at a regional or local scale. • If adverse, impacts are potential concerns to the project and may become key factors in the decision-making process. • Whilst the impacts will be experienced, mitigation measures and detailed design work may reduce (or enhance) the effect. Some residual effects will still arise.
Minor	• The impact is small scale and would cause a small improvement or deterioration to the existing environment. • Adverse effects are undesirable but acceptable and within statutory limits and not likely to be key decision-making issues. • Mitigation measures are typically not requited to mitigate such effects. • The cumulative effect of such issues may lead to an increase in the overall effects on a particular area or on a particular resource.
Negligible	• No discernible improvement or deterioration to the existing environment as a result of the Project will occur. • Local issue unlikely to be of importance in the decision-making process. • Effects do not exceed statutory limits. • They are of relevance in enhancing the subsequent design of the project and consideration of mitigation or compensation measures.
Neutral	• No effect or effect that is beneath the level of perception, within normal bounds of variation or within the margin of forecasting error. • No mitigation is required.

The approach to assigning significance relies on reasoned argument, professional judgement and cognisance to the advice and views of the appropriate regulators and organisation. For some disciplines, it is determined by comparison, wherever possible with locally, nationally or internationally accepted standards.

4.2.3 Mitigation and Management Measures

A key component of the ESIA process is to explore practical ways of avoiding or reducing potentially significant impacts caused by the development of the Project. These are commonly referred to as mitigation and management measures and will be included in the ESIA report and further incorporated in the future construction Health, Safety, Social and Environmental Management System (HSSE-MS) and Operational HSSE-MS that will be prepared by concerned parties. Mitigation will be aimed at preventing, minimising, or managing significant adverse impacts to as low as reasonably practicable and enhancing and maximising any potential beneficial impacts of the Project. Refer to Volume 3 of the ESIA for the full list of plans and procedures that will be prepared as part of the HSSE-MS.

The approach taken to identifying and incorporating mitigation measures into the Project is based on a typical hierarchy of decisions and measures. This is aimed at ensuring that wherever possible, potential impacts are mitigated at source rather than mitigated through restoration after the impact has occurred.

Upon approval of the Project, the stated mitigation and management measures in the approved ESIA will be required for implementation as a condition of the Environmental Permit or as part of the lenders' loan agreement.

4.2.4 Residual Impacts

The residual impacts section considers the overall significance of impacts following the implementation of the additional mitigation and management measures not included by design. The significance of such impacts is based upon the same criteria used to determine the impact significance stated above.

4.2.5 Cumulative Impacts

Cumulative impacts are those impacts that result from the successive, incremental, and/or combined effects of an action, project, or activity when added to other existing, planned, and/or reasonably anticipated future ones.

In practice, the assessment of cumulative effects requires consideration of some concepts:

- Assessment of effects over a larger (i.e., "regional") area that may be transboundary/cross-jurisdictional; (including effects due to natural perturbations affecting environmental components and human actions).
- Assessment of effects during a longer period of time into the past and future;
- Consideration of national renewable plans and national grid expansion and strengthening and cumulative impacts of national and regional development of energy projects and associated infrastructure;
- Assessment of effects on Valued Environmental Components (VECs)[2] due to interactions with other actions, and not just the effects of the single action under review; and
- Evaluation of significance in consideration of other than just local, direct effects.

[2] VECs are key environmental and social features such as specific species, habitats, ecosystem functions, physical resources, or community values that are considered important due to their ecological, economic, cultural, scientific, or regulatory significance.

5.0 Stakeholder Engagement

5.1 National Requirements

The Constitution of the Republic of Azerbaijan guarantees citizens' rights to access information related to environmental issues and to seek compensation for any harm to one's health or property because of violations of environmental regulations.

The regulatory body within the Cabinet of Azerbaijan responsible for the regulation of the activities within the country that relate to ecology, environmental protection and use of natural resources is the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan (MENR).

The legal, economic and social framework for environmental protection in Azerbaijan is governed by the Environmental Protection Law of 1999 (No. 678-IQ) and its amending Laws (Law No. 1032-IVQD, 932-IVQD, 590-VQD and 553-IVQD).

The rights of people are guaranteed by the Constitution of Azerbaijan under Chapter III 'Basic Rights and Liberties of a Person and Citizen' which lists the main principles of these rights. The Constitution states that "the state guarantees equality of rights and liberties of everyone, irrespective of race, nationality, religion, language, sex, origin, financial position, occupation, political convictions, membership in political parties, trade unions and other public organizations. Rights and liberties of a person, citizen cannot be restricted due to race, nationality, religion, language, sex, origin, conviction, political and social belonging."

Based on the revised Law on EIA (2018), public consultations in the form of hearings should be carried out during the development of EIA study in line with Law of the Republic of Azerbaijan "On Public Participation". The participants should include 'individuals living in the area of intended activity and legal entities operating in that area, as well as with the real estate owner'. The final document of public hearings conducted pursuant to article 4.10 of this Law shall be reviewed in accordance with the Law of the Republic of Azerbaijan on Citizens' Appeals'.

According to Azerbaijan's Law on Public Participation, forms of public participation can be carried out as follows:

- Public council,
- Public discussion,
- Public hearing,
- Studying public opinion,
- Public discussion of draft legal acts,
- Written consultation, and
- Information Disclosure.

5.2 Lender Requirements

5.2.1 IFC Performance Standards

All the IFC Performance Standards (PS) include requirements for an amount of stakeholder consultation/engagement (either in the ESIA, or as part of the future ESMS) and therefore the Project will require a level of engagement. IFC Performance Standard 1 on "Social and Environmental Assessment and Management Systems" describes the stakeholder engagement requirements in more depth. It states the following:

"Stakeholder engagement is the basis for building strong, constructive, and responsive relationships that are essential for the successful management of a project's environmental

and social impacts. Stakeholder engagement is an on-going process that may involve, in varying degrees, the following elements:

- Stakeolder analysis and planning;
- Disclosure and dissemination of information;
- Consultation and participation;
- Grievance mechanism; and
- On-going reporting to Affected Communities.

The nature, frequency, and level of effort of stakeholder engagement may vary considerably and will be commensurate with the project's risks and adverse impacts, and the project's phase of development."

The IFC Performance Standards indicate that when Affected Communities are subject to identified risks and adverse impacts from a project, the developer/client will undertake a process of consultation in a manner that provides the Affected Communities with opportunities to express their views on project risks, impacts and mitigation measures, and allows the client to consider and respond to them. Effective consultation is a two-way process that will:

- Begin early in the process of identification of environmental and social risks and impacts and continue an on-going basis as risks and impacts arise;
- Be based on the prior disclosure and dissemination of relevant, transparent, objective, meaningful and easily accessible information which is in a culturally appropriate local language(s) and format and is understandable to Affected Communities;
- Focus inclusive engagement on those directly affected as opposed to those not directly affected;
- Be free of external manipulation, interference, coercion, or intimidation;
- Enable meaningful participation, where applicable; and
- Be documented.

5.2.2 AIIB ESF Requirements

The AIIB ESF recognises stakeholder engagement as an important component of effective environmental and social risk management and requires Clients to establish appropriate mechanisms for ongoing engagement with stakeholders throughout the Project lifecycle. The engagement process should facilitate meaningful consultation with Project-affected people and other relevant stakeholders, support transparency and accountability, and ensure that concerns and grievances associated with Project activities can be identified and addressed in a timely manner.

Consistent with AIIB ESF requirements, the Project's stakeholder engagement approach will:

- Identify relevant stakeholders, including Project-affected communities, vulnerable or disadvantaged groups, government authorities, local institutions, and other interested parties;
- Provide timely disclosure of relevant Project information in an accessible and culturally appropriate manner;
- Facilitate meaningful consultation with affected stakeholders regarding potential environmental and social risks, impacts, mitigation measures, and Project benefits;

- Ensure that engagement activities are inclusive and consider potential barriers to participation, particularly for vulnerable groups;
- Maintain records of consultations undertaken, issues raised, responses provided, and commitments made;
- Establish and maintain an effective Project-level GRM that is accessible, transparent, and responsive to stakeholder concerns; and
- Continue stakeholder engagement throughout construction and operation phases, particularly where changes in Project activities may result in new environmental and social risks or impacts.

For potential community health, safety, and security risks, stakeholder engagement will provide affected communities with appropriate information regarding relevant risks, including construction-related hazards, traffic safety, emergency preparedness, communicable disease risks, and other community health and safety issues. Feedback received through consultation activities and the GRM will inform the implementation and continual improvement of mitigation measures.

5.3 Stakeholder Identification and Analysis

Stakeholders were identified systematically during the preparation of the ESIA scoping matrix and the ESIA stage, and engagement will continue throughout the Project lifecycle. They are classified into three main categories:

- Affected Stakeholders **(A)** – individuals or groups who may be affected by one or more of the potential impacts[3] of the project, directly[4] or indirectly[5].
- Interest-based Stakeholders **(I)** – Stakeholders concerned with any of the procedures set by the Project, the Project's beneficiaries, national and international non-governmental organizations, and interested parties of civil society, even if they are not located in the impacted area and are not adversely affected.
- Decision Making Stakeholders **(D)** – entities involved in Project development, financing or oversight, this includes the regulator, the Ministry of Ecology and Natural Resources (MENR).
- Vulnerable Groups: Special consideration is given to people who may be disproportionately affected due to characteristics such as age, gender, disability, ethnicity, religion, social status, or economic situation, including marginalized or displaced populations.

A Stakeholder Engagement matrix has been prepared to guide interactions across these categories, including vulnerable groups.

[3] The potential environmental and social impacts of the Project have been identified and assessed in the ESIA. These impacts cover air quality, noise, soil and groundwater, terrestrial ecology, landscape and visual impacts, solid waste and wastewater management, archaeology and cultural heritage, socioeconomics, community health, safety and security, human rights, labour and working conditions, and climate-related considerations.

[4] Directly affected stakeholder and/or groups refers to those who are affected and clearly need on-going attention, taking into consideration other cross-cutting analysis such as vulnerability, project stages, cultural and social context and events, etc.

[5] Indirect affected stakeholders refer to individuals, groups, or communities who may not experience direct impacts from the Project. These stakeholders may include neighbouring communities, businesses, or industries that rely on resources or services indirectly impacted by the Project. Their interests, concerns, and perspectives should still be considered by the Project during the planning and implementation stages.

Table 5-1 Stakeholder Identification

Stakeholder Group	Stakeholder Bodies	Relevance to project: affected (A), Interest-based (I), or decision maker (D)
Directly Affected Stakeholders	Workers of firms located in Sumgait Chemical Industrial Plant	**A:** May be directly affected by cumulative environmental risks, shared infrastructure constraints, traffic, emergency response arrangements, and occupational health and safety considerations associated with construction and operation of the Project within the industrial park.
	Communities near the project site Haji Zeynalabdin Khazar Baghlari Khazri Kimyachilar	**A:** Local communities may be directly affected by the Project E&S impacts, including those related to worker influx, community health & safety, and noise etc.
	Vulnerable groups in the communities near the Project site	**A:** These groups may face disproportionate risks and impacts from the Project, including worker influx, GBVH and SEAH, ability to benefit from the Project opportunities, discrimination.
Indirectly Affected Stakeholders	Fishermen located in the nearby settlements within the Project Area of Influence	**I:** Stakeholders with an interest in marine activities may be concerned about project-related impacts from construction and operation, including marine works, intake/outfall structures, exclusion zones, and restricted access to traditional fishing areas.
	Wider Population (Communities beyond the immediate Project AoI)	**A:** May be indirectly affected through cumulative impacts, increased demand on public services, traffic movements, or changes in marine and coastal use patterns.
Local Government Authorities	Sumgait City Executive Power	**D:** The land allocated to the project is found within these jurisdictions. Additionally, these government bodies will support the project in organising consultation and disclosure meetings and providing applicable E&S data.
	Sumgait Municipality	
	Haji Zeynalabdin Tagiyev Municipality	**D:** This body will support the project in organising consultation and disclosure

Stakeholder Group	Stakeholder Bodies	Relevance to project: affected (A), Interest-based (I), or decision maker (D)
		meetings and providing applicable E&S data.
	Jorat Municipality	**D:** This body will support the project in organising consultation and disclosure meetings and providing applicable E&S data.
	Sumgait city Housing and Communal Management Union	**I:** These departments fall under and report to Sumgait City Executive Power.
	Sumgait city Water Department	
	Sumgait city Energy Supply and Sales Department	
	Sumgait city Gas Exploitation Area	
	Gender Commission representative in the Local Municipalities	**I:** Will potentially be interested in the social risks and impacts of the Project on nearby communities. These include issues such as GBVH/SEA/SH, human rights, employment opportunities, community health & safety.
	Sumgait police station and police representatives in local communities	**I:** This stakeholder will be potentially interested in the safety and security of nearby communities and any safety risks from the project.
Ministries & Government Agencies	Ministry of Ecology and Natural Resources (MENR)	**D:** Will be responsible for approving the national EIA and ensuring the project construction and operational phases comply with the Azerbaijan requirements.
	Economic Zones Development Agency (EZDA), Ministry of Economy	**I:** Has a direct oversight and coordination role in Sumgait Industrial Park in addressing cumulative issues and impacts affecting the Project, i.e. emergency response.
	Azerbaijan State Water Resources Agency (ADSEA)	**I:** Will be interested in the Project's intake and outfall pipeline design of the Project, including brine discharge arrangements, as well as the associated social and environmental impacts related to water quality.
	Fisheries and Aquaculture Centre - Aquaculture Organization Department	**I:** Will be interested in the impact of the Project's intake, brine discharge and construction activities on fish stocks and spawning grounds,

Stakeholder Group	Stakeholder Bodies	Relevance to project: affected (A), Interest-based (I), or decision maker (D)
		aquaculture resources, and fishing livelihoods.
	State Labour Inspectorate Service, Ministry of Labour and Social Protection of Population of the Republic of Azerbaijan	**I:** Will be potentially interested in the labour and working conditions, workers' occupational health & safety, and compliance of national labour legislation throughout the construction and operation of the Project.
	State Border Service	**I:** This stakeholder ensures maritime security in the Azerbaijani sector of the Caspian Sea and will play a role in providing information on fishing permits, quotas, protected species measures near the Project area.
	Sumgait Regional Center, Ministry of Emergency Situations of the Republic of Azerbaijan	**D**: Responsible for emergency preparedness, industrial accident response, and coordination of disaster risk management within the Project area.
	Ministry of Culture and Tourism of Republic of Azerbaijan	**I:** Oversees the protection of cultural heritage and archaeological sites and features of Azerbaijan. It plays a key role in providing information on the location of cultural heritage sites near the Project site.
	Institute of Archaeology and Ethnography, Azerbaijan National Academy of Sciences (ANAS)	**I:** Mandated to protect archaeological and cultural heritage, with a role of confirming the presence of cultural heritage resources that may be directly or indirectly affected by construction activities associated with the Project.
NGOs/PUs	Public Union of Disabled	**I:** Will potentially be interested in the Project's environmental and social risks and impacts to local communities and vulnerable groups including the identified mitigation and monitoring measures.
	Veterans and Martyrs' Families "Ruzigar" Society	
	Bankwatch	**I:** Interested how the Project will manage the social and environmental impacts. Has high international influence

Stakeholder Group	Stakeholder Bodies	Relevance to project: affected (A), Interest-based (I), or decision maker (D)
		which can influence public perception at a global scale.
Media	Regional and local mass media	**I:** Will potentially be involved in reporting and disseminating information about the Project during the Project ESIA disclosure.
Financial Institutions	Lenders – IFC, JBIC, NEXI, AIIB, ADB	**D:** Will provide the financing to the project.

5.4 ESIA Phase Stakeholder Engagement

5.4.1 ESIA Stage Consultation

This section provides an overview of the stakeholder consultation activities conducted for the Caspian Sea Desalination Project. Engagement was undertaken to ensure meaningful participation of all relevant stakeholders, including local communities, vulnerable groups, municipal and regional authorities, government agencies, and specialized institutions.

Consultations were carried out using a combination of focus group discussions (FGDs), public meetings, key informant interviews (KIIs), door-to-door visits, and online sessions. The objectives of these engagements were to:

- Share key project information and outline planned Environmental and Social Impact Assessment (ESIA) activities.
- Understand stakeholder perspectives on potential environmental, social, and economic impacts.
- Identify concerns and priorities, particularly regarding livelihoods, community health, access to services, and inclusion of vulnerable groups.
- Explain the project grievance redress mechanism and provide channels for feedback.

The following summary table presents key indicators from these consultations, providing a high-level overview of the engagement outcomes and the Project's responses to stakeholder feedback.

Table 5-2 Stakeholder Consultation Overview

Indicatory	Summary
Stakeholder Groups Engaged	Local communities (male/female youth, men, women, vulnerable households), municipal and regional authorities, government agencies (Water, Fisheries, Emergency Services), regulatory bodies (EZDA, SOCAR, MENR), and specialized institutions (Gender Commissions, DOST, Labour Inspectorate).
Consultation Methods & Frequency	FGDs, public meetings, door-to-door visits, KIIs, and online meetings conducted between 3rd December 2024 – 23rd January 2026. Approximately 50–60 consultation events covering multiple stakeholder types.

Indicatory	Summary
Key Feedback & Concerns	• Job opportunities and local employment prioritization • Water quality and Caspian Sea level concerns • Potential environmental impacts (air, water, biodiversity) • Access to services and public infrastructure • Inclusion of vulnerable groups and GBVH/SEAH issues • Project transparency and grievance mechanisms
Project Responses & Commitments	• ESIA to assess all environmental and social impacts per national and lender requirements. • Local employment prioritized during peak construction (up to 1,800 personnel). • Treated seawater will meet national/international drinking standards. • Continuous monitoring of sea levels and ecological impacts. • Stakeholder engagement and grievance mechanisms maintained throughout project lifecycle

Note: *Detailed information on stakeholder engagement, including full consultation records, feedback, and project responses, and the framework for ongoing engagement (including the development of an engagement tracker), is provided in the Stakeholder Engagement Plan (SEP) prepared for the Caspian Sea Desalination Project. This summary table is intended to provide a high-level overview for reference purposes.*

An engagement tracking system will be established and maintained by ACWA/the Project Company following Lenders' approval of the ESIA and prior to the commencement of disclosure activities. The engagement tracker will systematically record all stakeholder engagement activities undertaken during the disclosure, construction, and operational phases. It will include details such as date, location, stakeholder group, issues raised, commitments made, and follow-up actions. This tool will support transparent documentation, ensure timely response to stakeholder concerns, and facilitate monitoring of commitments in line with lender requirements and the SEP.

5.4.2 Grievance Redress Mechanism (GRM)

The GRM is a key component of stakeholder engagement and has been in place for the ESIA stage and will continue to be active throughout the Project's lifecycle by the Project Company.

The GRM has been specified in a standalone ESIA-stage SEP and has further been included in the implementation stage SEP, for engagement during construction and operations. It provides an accessible, transparent, culturally appropriate, and cost-free process for stakeholders to raise complaints or concerns related to the Project. The Project Company will establish and manage the GRM, ensuring alignment with both the existing plan and lenders' requirements.

The **GRM Management Steps** outline how stakeholder grievances are handled from submission to resolution, ensuring a transparent, efficient, and accountable process.

6.0 Air Quality

6.1 Applicable Requirements & Standards

Ambient air quality in Azerbaijan is governed by national standards, which are established to limit public exposure to harmful air pollutants. These standards are complemented by international benchmarks such as those set by the World Health Organization (WHO), also adopted by the International Finance Corporation (IFC) in its Environmental, Health, and Safety (EHS) Guidelines.

6.1.1 National Regulations

Air pollution prevention and control in Azerbaijan are primarily governed by the Law on Environmental Protection (1999) and the Law on the Protection of Atmospheric Air (2001). Both laws require that compliance with hygienic and environmental air quality standards be ensured at all stages of project development, including design, site selection, construction, reconstruction, and operation. Air emissions from facilities must be regulated through permits issued in accordance with the applicable legal requirements.

Azerbaijan became a Party to the United Nations Framework Convention on Climate Change (UNFCCC) in 1995. As a non-Annex I Party, the country is committed to several obligations, including the preparation and regular update of a national greenhouse gas (GHG) inventory. Azerbaijan also signed the Paris Agreement on April 22, 2016, and ratified it in October of the same year.

As part of its national contribution to climate change mitigation, Azerbaijan has committed to reducing GHG emissions by 35% by 2030 compared to 1990 levels. Accordingly, all industrial facilities, including those in the mining sector, are expected to implement energy efficiency measures to support this target and reduce their carbon footprint. The national ambient air quality standards are presented in Table 6-1.

Table 6-1 Applicable National Air Quality Standards

Parameter	Averaging Period	Azerbaijan MAC^{6}_{on} (µg/m³)	Azerbaijan MAC^{7}_{oad} (µg/m³)
Nitrogen Dioxide (NO_2)	20 to 30 minutes	85	-
	1 hour	-	-
	24 hours	-	40
Sulphur Dioxide (SO_2)	20 to 30 minutes	500	-
	1 hour	-	-
	24 hours	-	50
Carbon Monoxide (CO)	20 to 30 minutes	5,000	-
	1 hour	-	-
	24 hours	-	3,000
Ozone (O_3)	20-30 minutes	160	-
	8 hour mean	-	-
	24 hours	-	30

[6] MAC_{on} – the maximum allowable single concentration of a chemical in the air of residential areas.

[7] MAC_{ad} – the maximum allowable daily average concentration of a chemical in the air of residential areas.

Parameter	Averaging Period	Azerbaijan MAC[6]$_{on}$ (µg/m³)	Azerbaijan MAC[7]$_{oad}$ (µg/m³)
Benzene (C_6H_6)	20-30 minutes	1,500	-
	8-hour mean	-	-
	24 hours	-	30

6.1.2 Lender Requirements

The WHO ambient air quality standards are adopted by the WBG General EHS Guidelines and are presented in the table below. In the case of this project, interim target 1 will be used as a benchmark.

Table 6-2 WHO ambient air quality standards (µg/m3 unless otherwise specified)

	Guideline	Interim Target 1	Interim Target 2	Interim Target 3	Interim Target 4
Nitrogen dioxide					
1-Hour	200	-	-	-	-
24-Hours*	25	120	50	-	-
Annual	10	40	30	20	-
Carbon monoxide					
15-minute	100000	-	-	-	-
1-Hour	35000	-	-	-	-
8-Hours	10000	-	-	-	-
24 Hours*	4000	7000	-	-	-
Sulphur dioxide					
10 minutes	500	-	-	-	-
24 Hours*	40	125	50	-	-
Particulate Matter not exceeding 10µm in diameter (PM_{10})					
24 Hours*	45	150	100	75	50
Annual	15	70	50	30	20
Particulate Matter not exceeding 2.5µm ($PM_{2.5}$)					
24 Hours*	15	75	50	37.5	25
Annual	5	35	25	15	10
Ozone (O_3)					
8 Hours average	100				
*Allowance of 3-4 days exceedance per year (99th percentile)					

6.2 Baseline Conditions

To establish the baseline for air quality, within the Project area, ambient air quality monitoring was conducted by IQLIM in 2024 at selected locations across the Project site and its surrounding area.

Continuous 48-hour measurements were conducted at 10 monitoring stations during two separate campaigns: July 2024, and November 2024.

Each station was equipped with calibrated instruments for measuring key atmospheric pollutants and meteorological parameters. The selection of monitoring locations followed IFC's General EHS Guidelines (30.04.2007), which recommend baseline monitoring near sensitive receptors and populated areas likely to be affected by project activities.

Monitoring was conducted in accordance with the manufacturer's calibration requirements.

The following parameters were measured:

- Gases: O_2, CO, CO_2, NO_2, H_2S, SO_2, O_3, and VOCs (mg/m³)
- Particulate Matter: $PM_{2.5}$ and PM_{10} (µg/m³)
- Background Radiation: µRh
- Meteorological Data

The wind roses for the months of July and November (the months during which baseline ambient air quality monitoring was undertaken), as presented in the IQLIM ESIA report and based on historical meteorological data, are shown in Figure 6-1. The data indicate that the prevailing wind direction is predominantly southerly. This means that, for most of the time, air masses move from south to north, placing the industrial area generally downwind of the dominant flow pattern. Consequently, the residential communities located to the east and west are not typically situated in the main downwind direction and are therefore unlikely to be significantly affected under normal prevailing wind conditions.

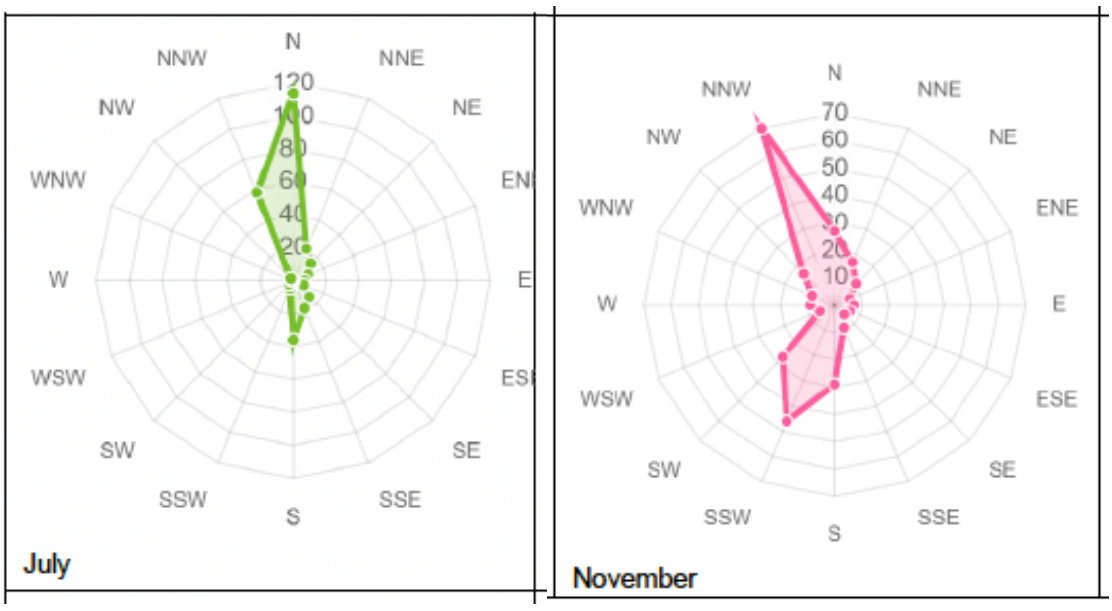


Figure 6-1 Wind Rose Diagram for July and November (Source: IQLIM ESIA)

The ambient air quality monitoring campaign utilised calibrated equipment to ensure the accuracy and reliability of the collected data. A Garmin GPSMAP® 64 device was used to record the geographic coordinates and elevation of each monitoring location. This rugged, full-featured handheld GPS unit is equipped with both GPS and GLONASS support, a high-

sensitivity receiver, and an external antenna to enhance positioning accuracy in remote environments.

For the measurement of particulate matter concentrations, a CW-HAT200 laser particle counter was deployed. This instrument can measure both $PM_{2.5}$ and PM_{10} concentrations, using light scattering technology with a laser diode source. It offers an accuracy of ±10% and a short sampling time of 60 seconds, making it suitable for real-time ambient air quality assessments. All monitoring activities were conducted in accordance with the manufacturers' calibration protocols and relevant international standards to ensure data quality and consistency.

Figure 6-2 shows the indicative locations of the monitoring stations within and around the Project site.



Figure 6-2: Ambient Air Quality Monitoring Locations (IQLIM's ESIA, July 2025)

Below is a summary of the ambient air quality monitoring results in July and November 2024. Observed exceedances from relevant WHO ambient standards are highlighted.

Table 6-3 Summary of Ambient Air Quality Monitoring Results (average concentrations, µg/m^3) – July 2024

Parameter	$PM_{2.5}$	PM_{10}	CO	H_2S	SO_2	NO_2	O_3	VOC
AP-01	13	27	870	190	160	30	80	280
AP-02	15	31	1540	70	20	20	110	470
AP-03	20	42	1200	20	20	20	90	340
AP-04	18	37	970	140	250	20	90	290
AP-05	18	38	880	90	100	20	90	250
AP-06	16	34	950	60	20	30	90	270
AP-07	14	29	870	70	20	20	280	260
AP-08	14	31	880	110	30	20	70	8150
AP-09	16	33	820	80	20	20	110	250
AP-10	13	27	760	60	20	30	100	220

Table 6-4 Summary of Ambient Air Quality Monitoring Results (average concentrations, µg/m^3) – November 2024

Parameter	$PM_{2.5}$	PM_{10}	CO	H_2S	SO_2	NO_2	O_3	VOC
AP-01	9	20	680	100	100	30	50	170
AP-02	6	14	620	50	10	10	50	260
AP-03	11	26	900	20	20	20	30	260
AP-04	12	26	790	60	170	20	40	250
AP-05	9	20	840	70	80	20	30	180
AP-06	8	20	860	30	20	20	60	180
AP-07	8	18	730	30	20	20	80	170
AP-08	9	20	920	60	20	30	30	5380
AP-09	7	16	670	30	20	20	40	140
AP-10	9	7	209	65	20	20	20	30

Overall, the baseline ambient air quality monitoring results indicate that most parameters are within applicable WHO short-term guideline values across the monitoring locations. However, localised exceedances were recorded for certain pollutants, including $PM_{2.5}$, SO_2, and ozone, at a limited number of monitoring points. In addition, VOCs were detected at all locations, with notably elevated concentrations at location AP-08.

These exceedances are considered reflective of existing baseline conditions and are consistent with the Project's location within an established industrial park, where emissions from ongoing industrial activities, traffic, and energy use are present. The results provide an appropriate baseline against which potential construction and operational air quality impacts will be assessed, and they highlight the need for effective dust and emissions management measures during project implementation.

6.3 Area of Influence and Receptors

6.3.1 Area of Influence

A 250 m buffer (as per the UK Institute of Air Quality Management (IAQM) Guidance on the assessment of dust from demolition and construction (January 2024)) around the Project is shown in the following figure. It is important to highlight that this buffer does not include any construction vehicle routes, which would also result in air quality impacts, and have also been assessed.

6.3.2 Receptors

In addition to the above site-specific area of influence, the area of impact for the air quality impact assessment also considers potential areas or communities affected by cumulative or indirect impacts.

Table 6-5 E&S impact receptors - ambient air quality

Receptor	Sensitivity	Justification
Nearby Residential Communities	**High**	High sensitivity due to the presence of permanent residents, including vulnerable groups, and the proximity of schools, health facilities, and other community receptors that may be exposed to project-related air emissions (e.g. dust and exhaust) over extended periods.
Project workers	**Medium**	Medium sensitivity as workers may experience short-term exposure to air emissions within the worksite, which will be managed through occupational controls and health and safety measures including the use of PPEs.
Samad Vurghun Road users	**Medium**	Medium sensitivity due to regular public use and potential short-term exposure to construction related fugitive dust emissions, vehicle-related emissions and dust from increased project traffic.
Industrial facilities	**Low**	Low sensitivity as surrounding industrial receptors have limited occupancy and a higher tolerance for temporary changes in air quality associated with industrial activities.

6.4 Potential Impacts, Mitigation, Management & Residual Impacts

6.4.1 Construction Phase

The construction phase will include site preparation, earthworks, and construction of the plant, all of which are expected to generate particulate matter (dust). Additional activities such as excavation, movement of construction vehicles, and the use of temporary power generators may also affect local ambient air quality. Typical air emissions associated with these activities include nitrogen oxides (NO_x), sulphur dioxide (SO_2), carbon monoxide (CO), carbon dioxide (CO_2), volatile organic compounds (VOCs), particulate matter, and BTEX compounds.

The Project area is located within an established industrial park, and the baseline ambient air quality monitoring indicates that background concentrations of particulate matter and certain gaseous pollutants are already elevated at some locations, including localised exceedances of $PM_{2.5}$, SO_2, and ozone, as well as general detection of VOCs. Construction-related emissions are therefore assessed in the context of these existing background conditions.

The main sources of particulate and gaseous emissions during construction will include:

- Earthworks and excavations;
- Truck movements on unpaved or compacted surfaces;
- Particulate matter dispersion from uncovered truckloads;
- Vehicle and construction equipment emissions (e.g. NO_x, SO_x, CO, CO_2, VOCs, particulate matter, and BTEX) from vehicles, generators, and mechanical equipment;
- VOC emissions from stored and in-use fuels, paints, solvents, and other volatile materials; and
- Odour emissions from temporary wastewater containment or sanitation facilities.

6.4.1.1 Dust Emissions

In accordance with the screening guidance of the UK Institute of Air Quality Management (IAQM), a detailed assessment of construction dust is required where human receptors are present within 250 m of the site boundary. Potentially sensitive receptors include nearby workers, public roads, and residential areas located beyond the industrial park boundary.

Dust emissions during construction will mainly arise from excavation and earthworks, heavy vehicle movements, and material handling. Coarse particles generated by earthworks typically settle rapidly and close to the source; however, finer fractions may become airborne, particularly during dry and windy conditions.

Given the existing elevated background particulate concentrations identified during baseline monitoring, construction dust has the potential to contribute incrementally to local $PM_{2.5}$ and PM_{10} levels. However, impacts are expected to be temporary, localised, and reversible, and will be controlled through standard construction dust management measures.

The magnitude of dust impacts is assessed as:

- Moderate negative for on-site workers, due to proximity and duration of exposure;
- Minor for off-site receptors, given distance, industrial land use context, and dispersion.

6.4.1.2 Dust and Particulate Emissions from Vehicle Movements

Dust emissions resulting from vehicle movements on unpaved surfaces and potential loss of material from trucks during transport are expected to result in short-term, localised impacts. These emissions are comparable to existing traffic-related dust levels within the industrial park.

As outlined earlier in this report, there is the need to transport significant quantities of fill materials of up to 260,000 m^3 from external sources. While excavated soil and other C&D waste materials that exist within the Project site will be utilised for backfilling as much as possible still there is the need to transport significant quantities of materials from a quarry located approximately 43 km away. This construction activity can lead to air emissions including dust and exhaust affecting receptors along the haul route. Details regarding the confirmed haul route, the anticipated number of HGV movements etc will be discussed in a construction stage Traffic Management Plan that will be prepared by the EPC contractor at a later stage.

Considering the baseline air quality conditions and the temporary nature of construction traffic, the magnitude of dust impacts from vehicle movements is assessed as moderate negative for on-site workers and minor for off-site receptors.

6.4.1.3 Gaseous Emissions

The main source of power during construction will be from the electric grid thereby reducing the amount of combustion emissions. Gaseous emissions during construction will primarily arise from the operation of vehicles, and construction equipment using liquid fuels. Emission quantities will depend on equipment type, usage duration, and maintenance condition.

Given the open nature of the site, prevailing wind conditions, and the existing industrial emission background, construction-related gaseous emissions are expected to disperse rapidly and mix with ambient air, resulting in no discernible change from baseline concentrations at nearby receptors. No significant cumulative impacts are anticipated.

The magnitude of gaseous emission impacts is assessed as:

- Minor within the Project site, primarily affecting workers; and
- Negligible at nearby off-site receptors.

6.4.1.4 Emissions of Volatile Organic Compounds (VOCs)

Small quantities of fuels, paints, solvents, and other volatile materials will be used during construction and stored within designated laydown areas. While baseline monitoring identified the presence of VOCs within the industrial park, including a localised elevated concentration at one monitoring location, construction-related VOC emissions are expected to be limited in volume, short-term, and localised.

With appropriate storage and handling measures in place, VOC emissions are not expected to materially affect ambient air quality beyond the immediate work areas. The magnitude of VOC-related impacts is therefore assessed as negligible negative for all receptors.

6.4.1.5 Odour

Temporary sanitation facilities and wastewater holding systems will be provided for construction personnel. There is potential for localised odour generation if wastewater containment is inadequately managed. Any odour impacts are expected to be short-term, intermittent, and confined to the Project site or immediate surroundings.

The magnitude of odour impacts is assessed as minor negative, primarily affecting on-site workers.

Table 6-6 Air Quality Impact Significance, Mitigation & Management Measures and Residual Impacts - Construction

Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Dust emissions	Minor	Nearby residential communities	High	Moderate	• Defined haul routes to be used at all times by site vehicles. • Prompt mitigation of visible dust emissions, by measures such as compaction or wetting down of key routes through the application of water sprays. • Provide suitable covers to stockpiles of dusty materials that might generate airborne particulate matter. • Daily review of weather forecasts, to give warning of likely strong winds to assist with management of windblown dust. • Only designated site routes will be used for project vehicles (outside of working areas). Such roads will be demarcated and signposted (as necessary), to maximize compaction and reduce the need for wetting down for dust suppression. • All haulage vehicles are to have their loads covered at all times when leaving site. • Workers at risk to be provided with Respiratory Protective Equipment (RPE) or face masks during dust generating activities and elevated PM events or when standards are exceeded. • Dust arising from transfer of dry materials to/from stockpiles must be controlled by damping of materials to avoid wind-blown dust into areas where workers are present.	Minor
	Moderate	Project workers and visitors	Medium	Moderate		Minor
	Minor	Samad Vurghun Road users	Medium	Minor		Negligible
	Minor	Industrial facilities	Low	Minor		Negligible
Gaseous emissions – From vehicle exhaust	Negligible	Nearby residential communities	High	Minor	• Instructions will be provided to operators to turn off equipment and vehicles when not in use. • Cleaner types of fuel will be used where possible (i.e., low sulphur diesel, ultra-low sulphur diesel fuel).	Negligible
	Minor	Project workers and visitors	Medium	Minor		Negligible

Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
	Negligible	Samad Vurghun Road users	Medium	Minor	• There should be pre-requisite requirements of site vehicles to ensure no black smoke before entering site and that any identified machinery or vehicles with black smoke will require maintenance and re-assessment before it is returned. • Equipment will be installed with pollution control devices such as diesel oxidation catalyst or particulate filter where feasible. • Construction vehicles and machinery on site will be maintained regularly.	Negligible
	Negligible	Industrial facilities	Low	Negligible		Negligible
Emissions of VOCs and other hazardous volatiles	Negligible	Nearby residential communities	High	Minor	• Hazardous materials stored and used on site with potential gas emissions (e.g. Volatile Organic Compounds) will be located in well-ventilated, but secure low-risk areas, away from major transport routes and away from the site boundary (where possible). • Volatile fuels and chemicals (including hazardous wastes) will be stored in sealed containers. On site storage of large quantities of volatile fuels will be avoided, equally prolonged exposure to direct sun and heat will be avoided. A data log of all chemicals with MSDSs will be provided at the storage facility within easy access. • Fires and material burning will not be allowed on the Project site.	Negligible
		Project workers and visitors	Medium	Minor		Negligible
		Samad Vurghun Road users	Medium	Negligible		Negligible

Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Odour from onsite sanitary facilities	Minor	Project workers and visitors	Medium	Minor	• Portable toilets, sewage storage tanks and waste storage facilities will be placed on site ideally in locations that are away from receptors. • Toilets and septic tanks will be adequately maintained and frequently cleaned. Leaks will be fixed as soon as possible. Septic tank lids will be replaced after emptying to prevent odour. • Waste bins holding putrescible waste will be covered to minimise odour emission and attraction of vectors. • Regular off-site disposal of waste will be arranged by a licensed service provider.	Negligible

6.4.2 Operation Phase

During the operational phase, the desalination plant is not expected to be a significant source of air emissions. Potential effects on ambient air quality are limited to minor, indirect sources associated with routine plant operation and maintenance activities. These include:

- Low-level emissions of NO_x, SO_2, particulate matter, and CO from operational vehicles and maintenance equipment;
- Project-related vehicle movements, which are expected to be limited in number;
- VOCs emissions from the storage and handling of treatment chemicals; and
- Odour emissions associated with ineffective operation or maintenance of wastewater and sewerage systems.

These potential sources are assessed in the context of baseline air quality conditions, which reflect an industrial park environment with existing background emissions from industrial activities and traffic.

6.4.2.1 Gaseous Emissions

Gaseous emissions during operation will primarily arise from the use of light-duty vehicles, maintenance equipment, and occasional service activities. Traffic to and from the plant is expected to be limited and will not place additional pressure on the surrounding road network or contribute meaningfully to congestion-related emissions.

Given the low frequency of vehicle movements, the small scale of maintenance activities, and the dispersive characteristics of the area, operational emissions are expected to be minimal and indistinguishable from existing background concentrations. No measurable change in local ambient air quality is anticipated, and cumulative impacts are not expected.

The magnitude of impacts from gaseous emissions during operation is therefore assessed as negligible for all receptors, including nearby workers, public roads, and surrounding land uses.

6.4.2.2 Emissions of Volatile Organic Compounds (VOCs)

Small quantities of chemicals will be stored and used on site for water treatment processes. While baseline monitoring identified the general presence of VOCs within the industrial park, operational VOC emissions from the Project are expected to be low, localised, and well-controlled through appropriate storage, containment, and handling procedures.

With these measures in place, VOC emissions are not expected to materially affect ambient air quality beyond the immediate vicinity of storage areas. The magnitude of VOC-related impacts during operation is assessed as negligible for all receptors.

6.4.2.3 Odour

The Project has been designed to prevent odour generation during normal operation. Backwash wastewater will be directed to dedicated wastewater tanks and sludge treatment systems using transfer pumps. Final backwash water is of sufficient quality to be discharged to the marine environment.

Odour generation could potentially occur only under abnormal conditions, such as ineffective wastewater management, poor housekeeping, or delayed removal of waste materials. With routine inspection, maintenance, and proper waste management practices, any odour impacts would be temporary, localised, and limited to the Project site, resolving promptly once corrective actions are implemented.

The magnitude of odour impacts during operation is assessed as minor, primarily affecting on-site receptors under exceptional circumstances.

6.4.2.4 Overall Operational Air Quality Impact

Overall, given the nature of the desalination process, the limited sources of emissions, and the Project's location within an established industrial park, no significant adverse air quality impacts are expected during operation. Operational air quality impacts are assessed as negligible to minor and not significant, provided standard operational controls and maintenance practices are implemented.

Table 6-7 Air Quality – Impacts Significance, Mitigation & Management Measures and Residual Impacts - Operation

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Gaseous Emissions from vehicles, and other equipment	Negligible	Nearby residential communities	High	Minor	• Unnecessary usage of vehicles, plant and equipment will be minimised, and unnecessary idling of vehicles and plant will be avoided. • Deliveries of materials to the site will be efficiently managed to reduce the number of trips. • Exhaust fumes and particulates emitted from trucks and vehicles will be minimised by ensuring the use of good condition vehicles (e.g., compliant to vehicle emission requirements). • Low Sulphur diesel fuel will be used, if available, through the local supply chain. • There should be pre-requisite requirements of site vehicles to ensure no black smoke before being provided a site permit and that any identified machinery or vehicles with black smoke will require maintenance and re-assessment before it is returned. • Lorries and truck engines will be turned off while waiting on site to minimise gaseous emissions.	Negligible
		Plant workers and visitors	Medium	Minor		Negligible
		Samad Vurghun Road users	Medium	Negligible		Negligible
		Industrial facilities	Low	Negligible		Negligible
Odour Emissions from different sources during operation (waste management, wastewater, etc.)	Minor	Plant workers and visitors	Medium	Minor	• Maintenance of sewerage systems to minimise risks of any leakage to groundwater and the exposure of operational staff to odours. To include but not limited maintenance in case of leaks, ensuring effluents are treated effectively. • Appropriate management of sludge waste to minimise odour (e.g. not leaving uncontained or exposed). • Housekeeping and sanitary conditions should be well maintained at the waste management facilities. Bins for putrescible waste should be kept covered. Waste on site and at the waste management facilities to be removed from site regularly to avoid over accumulation of waste.	Negligible

6.5 Monitoring

The following are monitoring programmes that will be undertaken to ensure that the selected measures are consistently implemented and to determine whether these measures are sufficient to demonstrate compliance with WHO Interim Target 1 ambient air quality standards.

Table 6-8 Air Quality Monitoring Measures

Monitoring	Parameter/Activity	Monitoring Methodology	Monitoring Schedule
Construction Phase			
Dust generation from site development works.	Fugitive dust	Visual monitoring of dust emissions. To be monitored quantitatively if generation is considered to be excessive or complaints are received.	On-going daily observations
Exhaust emissions from the operation of construction equipment, plant and machinery using fuel.	Vehicle and equipment exhaust emissions	Visual assessment of emissions to be undertaken on a daily basis while vehicles & equipment are in use and annual inspection of vehicles. This will include an inspection during the initial acceptance criteria of such vehicles to site.	At acceptance of vehicles on site and on-going daily observations
VOC emissions from onsite storage of fuel and volatile materials. Odour from sanitary facilities.	Odour and VOCs	Daily olfactory observations – as part of maintenance and inspection checks Daily inspection of hazardous materials storage areas for any leaks or emission of VOCs	On-going daily observations
Monitoring of construction related emissions	PM_{10}, $PM_{2.5}$, NOx and SOx	Quarterly 24 hour survey to be undertaken at the Project boundary (4 sites) for comparison with baseline and WHO standards	Quarterly
Operational Phase			
Emissions from engines	Vehicle emissions and emissions from back-up generators	Regular maintenance & servicing of project vehicles and planned annual inspection.	As identified during annual vehicle inspections or site-based observations
VOC emissions from volatile materials.	VOCs emissions	Daily olfactory observations – as part of maintenance and inspection checks. Daily inspection of hazardous materials storage areas for any leaks or emission of VOCs.	On-going daily observations
Odour from sanitary facilities.	Odour	Daily olfactory observations – as part of maintenance and inspection checks.	On-going daily observations
Monitoring of operation related emissions	PM_{10}, $PM_{2.5}$, NOx and SOx	Annual survey undertaken at the Project boundary (4 sites) for	Annual

Monitoring	Parameter/Activity	Monitoring Methodology	Monitoring Schedule
		comparison with baseline and WHO standards	

7.0 Climate Change Risk Assessment

7.1 Applicable Requirements & Standards

7.1.1 National Agenda

The Paris Agreement came into force on 4th November 2016. The Republic of Azerbaijan ratified the Paris Agreement on 9 January 2017.

The United Nations Development Programme in Azerbaijan and MENR signed a project on the Fourth National Communication and the Second Biennial Reporting under the United Nations Framework Convention on Climate Change (UNFCCC). The aim of the project is to support the Government of Azerbaijan through the MENR to continue reporting under the Convention.

Climate change is reflected in the government's strategies as follows:

- Republic of Azerbaijan's Fourth National Communication to the UNFCCC (2021);
- Azerbaijan 2020: Look into the Future Development Concept (2014);
- Comprehensive Action Plan to improve environmental situation in the Republic of Azerbaijan in 2006 (2010);
- Action Plan on Improvement of the Ecological Situation and Efficient Use of Natural Resources in the Republic of Azerbaijan (2015–2020); and
- National Adaptation Plan (NAP).
- Azerbaijan ratified the UNFCCC on January 10, 1995, and the Kyoto Protocol on July 18, 2000.

The Intended Nationally Determined Contribution (INDC) represents a non-binding national strategy outlining climate change mitigation efforts in a country. It includes specific goals to reduce pollution . INDCs connects a country's own rules with global efforts agreed upon in the Paris agreement. This aims to create a future that's better for the environment. These contributions are vital fighting climate change because they outline how much a country plans to cut down on pollution and emissions, following the guidelines of the United Framework Convention on Climate Change (UNFCCC).

The Republic of Azerbaijan actively participates in the implementation of the UNFCCC, the Kyoto Protocol and the Paris Agreement. In accordance with Article 4 of the Paris Agreement, the Republic of Azerbaijan has introduced its Nationally Determined Contributions (NDC) to the UNFCCC Secretariat in October 2015 and as a contribution to initiatives for preventing global climate change (mitigation initiatives) compared to 1990 (base year) aims to reduce greenhouse gas emissions by 35% by 2030. Azerbaijan's NDCs by 2050 were renewed in 2023. The Republic of Azerbaijan updated its NDC document in accordance with the Paris Agreement with a target of reducing its GHG emissions by 40% compared to 1990 levels by 2050, taking into account the maximum possible absorption capacity of forests and ecosystems.

7.1.2 Lender Requirements

IFC

The IFC Performance Standards acknowledge that climate change is a topic that can be addressed across multiple Performance Standards and there is an expectation under IFC PS1 for relevant risks associated with climate change to be identified.

With regard to 'Greenhouse Gases', IFC PS3 requires consideration of alternatives and for Project's to implement, 'technically and financially feasible and cost-effective options to reduce project-related GHG emissions during the design and operation of the project.'

Equator principles

Equator Principles IV establishes that impacts to climate should be avoided where possible, and in support of the 2015 Paris Agreement recognises that EPFIs have a role to play in improving the availability of climate-related information.

Factors including climate change are required to be incorporated into the Project Review and Categorisation (EP1), while a key element of EP IV (under EP2 for Environmental and Social Assessment) is that an assessment of climate change risks is expected in an ESIA.

For projects that have Scope 1 & 2 GHG emissions of over 100,000 tonnes of CO_2 equivalent per annum, there are also other requirements linked to alternative analysis and client annual reporting on GHG emissions.

7.2 National Context

Azerbaijan boasts a highly diverse climate, featuring nine of the eleven global climate zones. These range from semi-arid regions in the central and eastern parts, including Baku, to temperate zones in the north, continental climates in the west, and cold and tundra regions. Consequently, there's a wide range of annual temperatures and precipitation levels across the country. Generally, the mountainous regions experience more precipitation and cooler temperatures, while the central lowlands and Caspian Sea coast have a drier, hotter climate. Summers are particularly hot in the lowland areas, and winters are moderate. In the hottest months of July and August, average temperatures in Baku and other eastern and southeastern regions typically reach around 27ºC, while in the mountainous north and west, temperatures range between 15ºC and 20ºC during the same period.

During winter (December to February), Baku experiences average temperatures of about 3ºC to 4ºC, whereas temperatures in the western and northern areas plummet to between −5ºC and −10ºC.

Rainfall in Azerbaijan displays a bimodal distribution throughout the year, with average levels surpassing 40 millimetres (mm) per month from April to June and again in October. The peak precipitation occurs in May and June in the northern and western parts of Azerbaijan, where it can exceed 100 mm per month (CCKP, 2026[8]).

7.3 Climate Baseline and Projections

7.3.1 Climate Baseline

The following figure illustrates the average monthly temperature and precipitation conditions for the period 1991–2020, based on data representative of the Absheron Peninsula, including the Project area. The climatic conditions are characterised by hot summers and relatively mild winters, with low to moderate precipitation distributed unevenly throughout the year.

The highest average maximum temperature of 30.87°C and the lowest average minimum temperature of 0.31°C were recorded in August and January, respectively. The annual mean temperature in the Project area shows a clear increasing trend, rising from 13.78°C in 1991 to 15.21°C in 2022, indicating ongoing warming in line with regional climate trends. Precipitation remains relatively low overall, with the highest monthly average of 36.91 mm

[8] https://climateknowledgeportal.worldbank.org/country/azerbaijan

recorded in October and the lowest of 8.38 mm in July (Climate Change Knowledge Portal, 2025).

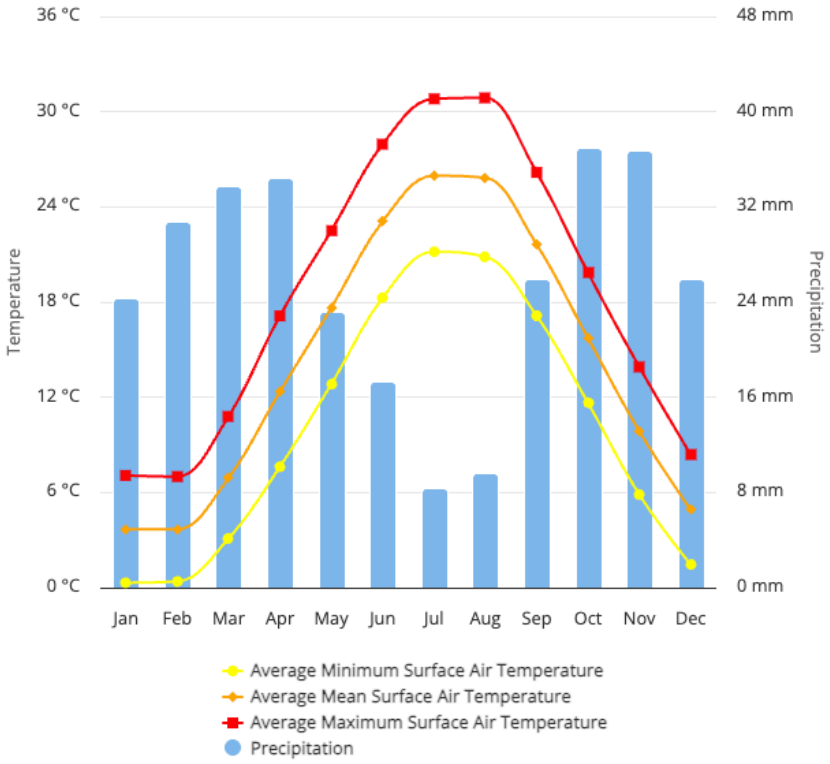


Figure 7-1 Average monthly temperature and precipitation condition in Absheron (CCKP,2025)

7.3.2 Climate Data and Scenarios

Climate projections for the Project area have been derived from the Climate Change Knowledge Portal (CCKP), which is based on Coupled Model Intercomparison Project Phase 5 (CMIP5) models utilised in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. These models provide projections of future temperature and precipitation under different greenhouse gas emission pathways.

Future climate conditions are assessed using Shared Socioeconomic Pathways (SSPs), which incorporate a range of assumptions related to population growth, economic development, technological change, and policy responses. For the purposes of this assessment, two scenarios have been selected to represent a reasonable range of potential future conditions.

The SSP2-4.5 scenario represents an intermediate emissions pathway broadly aligned with moderate climate policy implementation and is associated with an estimated global temperature increase of approximately 2.7°C by the end of the century. In contrast, the SSP5-8.5 scenario represents a high-emissions pathway driven by continued fossil fuel use and limited climate policy, resulting in significantly higher temperature increases. These scenarios provide a suitable basis for assessing potential climate-related risks to the Project.

7.4 Future Climate Projections

7.4.1 Temperature

Under scenario SSP2-4.5, for the time period 2020-2039, the average mean surface air temperature in the Project area is projected to be the highest in July where the 10-90th percentile range is 26.15°C to 27.52°C (median 26.79°C). The lowest temperature is expected in January where the 10-90th percentile range is expected at 3.78°C to 5.28°C (median 4.41°C). The 50th percentile for the projected annual average mean surface air temperature anomaly for 2020-2039 for the Project area (Ref. Period: 1995-2014), is highest in August at 1.18°C increase.

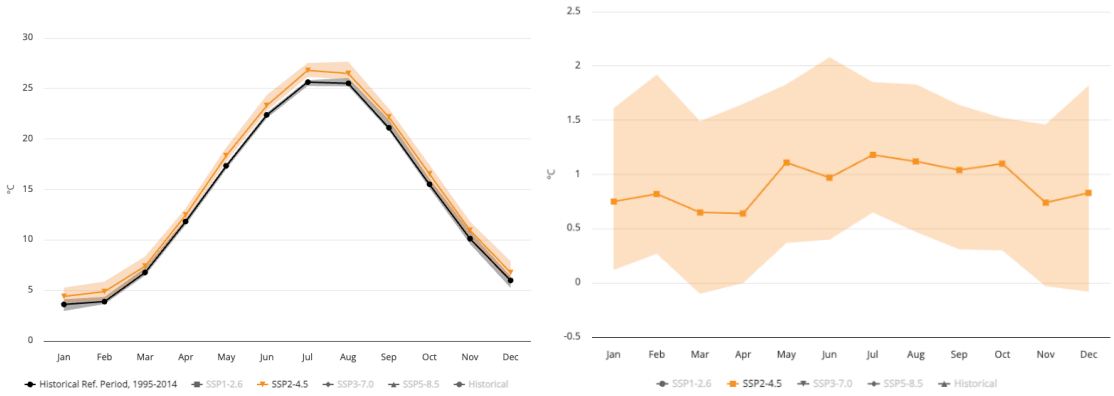


Figure 7-2 Projected Climatology (Left) and Anomaly (Right) of the average Mean Surface Air Temperature for 2040 – 2059 (Annual) for Absheron; (Ref. Period: 1995 -2014), SSP2-4.5, Multi-Model Ensemble (CCKP,2026)

For scenario SSP2-4.5 in 2027 in the following figure, the 10-90th percentile range of average mean surface air temperature in the Project area is expected to be 14.39°C to 16.23°C (median 15.16°C). However, by 2051, the 10-90th percentile range of average mean surface air temperature in the Project area is expected to reach 15.15°C to 16.61°C (median 15.79°C).

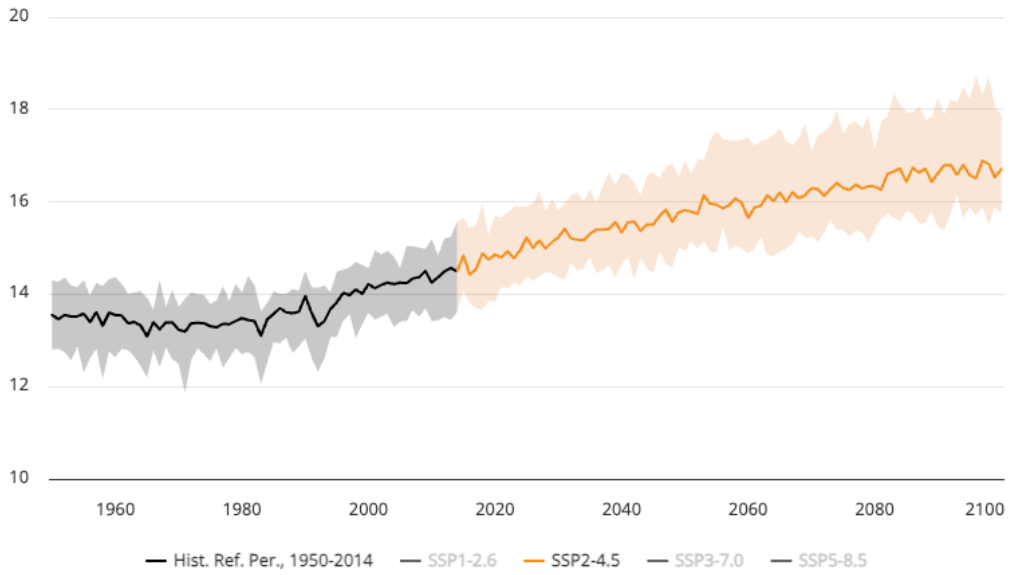


Figure 7-3 Projected average mean surface air temperature for Absheron; (Ref. Period: 1995-2014), SSP2-4.5, Multi-Model Ensemble (CCKP,2026)

Under scenario SSP5-8.5, for the time period 2020-2039, the average mean surface air temperature in the Project area is expected be highest in August where the 10-90th percentile range is 26.09°C to 28.11°C (median 26.97°C). The lowest temperature is expected in January where the 10-90th percentile range is 3.68°C to 5.46°C (median 4.62°C). The 50th percentile for the projected annual average mean surface air temperature anomaly for 2020-2039 for the Project area (Ref. Period: 1995-2014), is highest in July at 1.46°C.

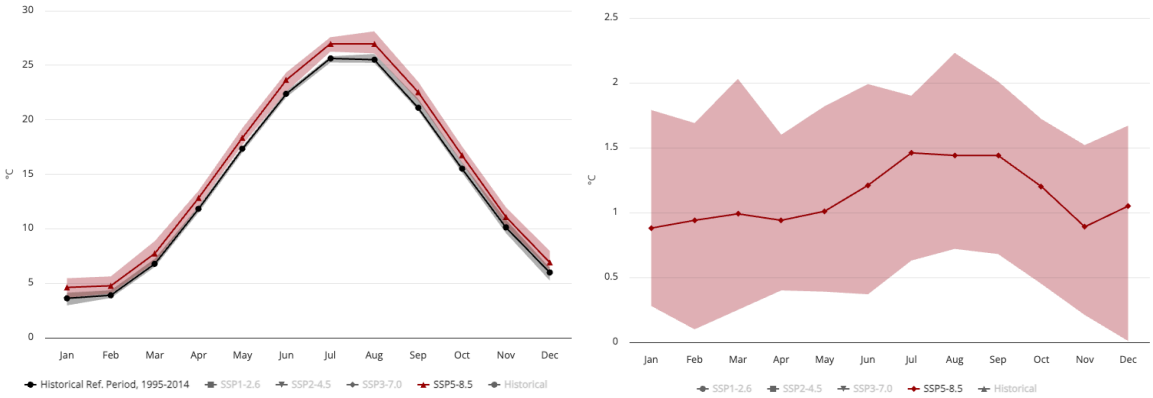


Figure 7-4 Projected Climatology (Left) and Anomaly (Right) of Average Mean Surface Air Temperature for 2020-2039 (Annual) for Absheron; (Ref. Period: 1995-2014), SSP5-8.5, Multi-Model Ensemble (CCKP,2026)

Under scenario SSP5-8.5, for the time period 2040-2059, the average mean surface air temperature in the Project area is highest in July where the 10-90th percentile ranges between 27.15°C to 29.28°C (median 28.26°C). The lowest temperature is in January where the 10-90th percentile range is expected at 4.49°C to 6.87°C (median 5.39°C). The 50th percentile for the projected annual average mean surface air temperature anomaly for 2040-2059 for the Project area (Ref. Period: 1995-2014), is highest in August at 2.79°C.

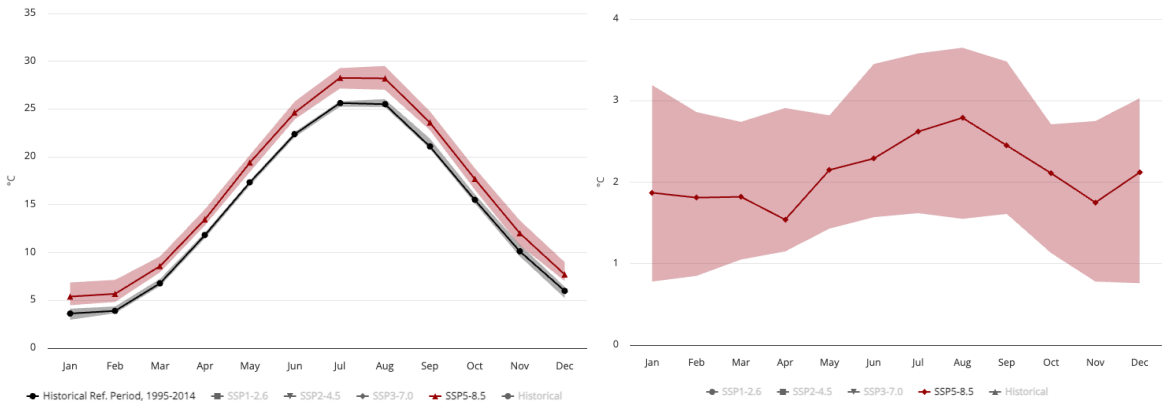


Figure 7-5 Projected Climatology (Left) and Anomaly (Right) of Average Mean Surface Air Temperature for 2040-2059 (Annual) for Absheron; (Ref. Period: 1995-2014), SSP5-8.5, Multi-Model Ensemble

As presented in the following figure, under scenario SSP5-8.5, in 2027, the 10-90th percentile range of average mean surface air temperature in the Project area is expected to range between 14.31°C and 16.13°C (median 15.20°C). By 2051, the 10-90th percentile range of average mean surface air temperature in the Project area is expected to reach a range of 15.37°C to 17.60°C (median 17.60°C).

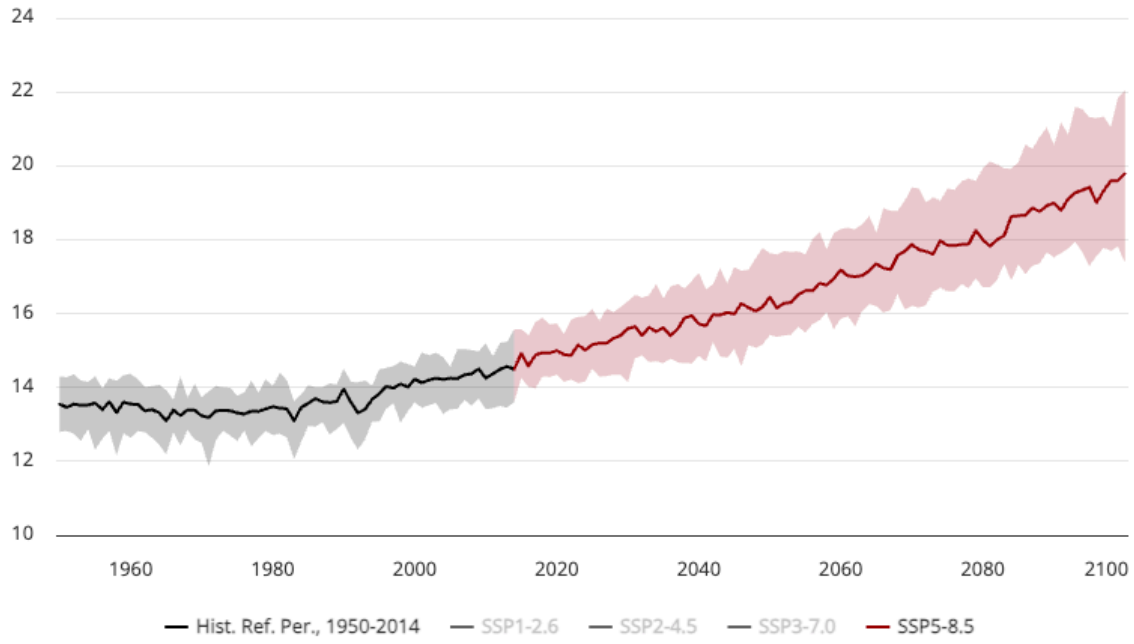


Figure 7-6 Projected Average Mean Surface Air Temperature for Absheron; (Ref. Period: 1995-2014), SSP5-8.5, Multi-Model Ensemble (CCKP,2026)

The following table presents the projected anomaly changes in temperature for the time period of 2040-2059 from the reference period of 1986-2005 for all RCPs. This encompasses the minimum, maximum and average daily temperature values, offering a comprehensive view of the expected temperature variation and showing the median CCKP model ensemble and the 10-90th percentiles in brackets.

Table 7-1Projected Anomaly Changes in Temperature in Absheron

Scenario	Average Daily Maximum Temperature	Average Daily Temperature	Average Daily Minimum Temperature
Years (Time Period)	2040 - 2059	2040 - 2059	2040 - 2059
RCP4.5	21.8°C (21.34°C -23.55°C)	17.13°C (16.53°C -18.47°C)	12.28°C (11.61°C -13.42°C)
RCP8.5	22.19°C (21.16°C -23.21°C)	17.29°C (16.36°C -18.27°C)	12.43°C (11.49°C -13.33°C)

7.4.2 Precipitation

The multi-year average precipitation during the past 20 years has been 464 mm, which is 6.3% less than the usual of 493 mm from 1971 to 2000. This decline has increased to 10% in the last 13 years. While most of the country has seen a decline in precipitation, Baku has also seen an increase in locally driven precipitation due to aerosols. The Absheron region's average precipitation during the last 13 years has risen by 32 mm, 14% more than the 1971–2000 average (229 mm).

Under scenario SSP2-4.5, for the period of 2020-2039, the average precipitation in the Project area is projected to be the highest in November where the 10-90th percentile range is 35.69mm to 51.02mm (median 42.84mm). The lowest precipitation is expected in July where the 10-90th percentile range is expected at 6.91mm to 12.35mm (median 9.53mm). The 50th percentile for the projected annual precipitation anomaly for 2020-2039 for the Project area (Ref. Period: 1995-2014), is highest in March with 4.32mm increase (10-90th percentile range of -1.69mm to 9.37mm).

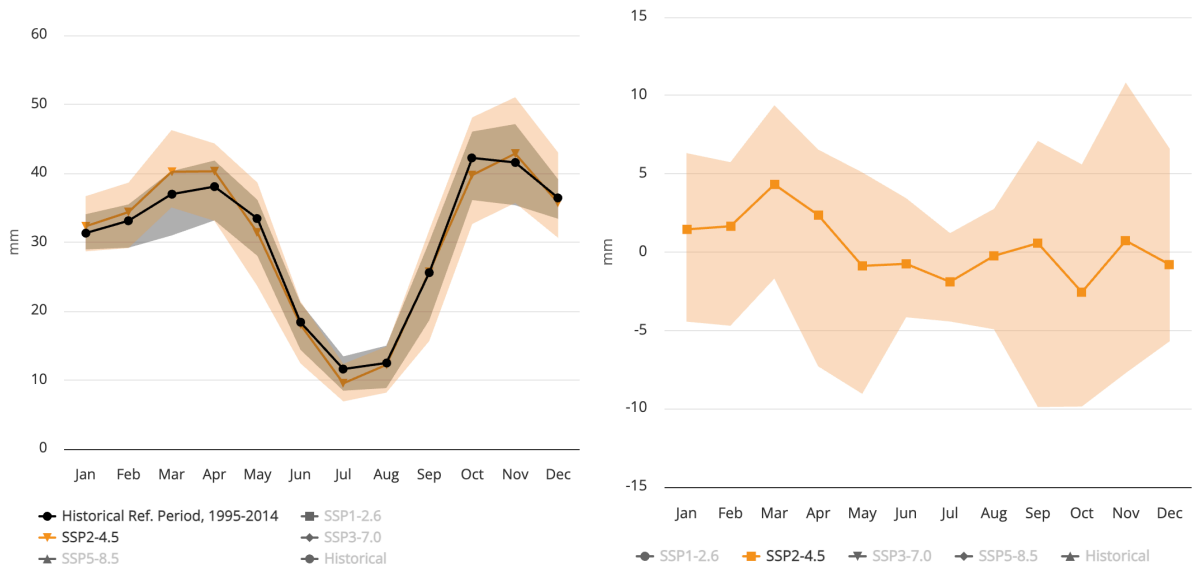


Figure 7-7 Projected Precipitation Climatology (Left) and Anomaly (Right) for 2020-2039 (Annual) for Absheron; (Ref. Period: 1995-2014), SSP2-4.5, Multi-Model Ensemble (CCKP,2026)

Under scenario SSP2-4.5, for the period of 2040-2059, the average precipitation in the Project area is projected to be the highest in November where the 10-90th percentile range is 37.23mm to 51.81mm (median 46.35mm). The lowest precipitation is expected in July where the 10-90th percentile range is expected at 6.29mm to 13.28mm (median 10.08mm). The 50th percentile for the projected annual precipitation anomaly for the Project area (Ref.

Period: 1995-2014), is highest in March with 5.6mm increase (10-90th percentile range of -3.57mm to 11.83mm).

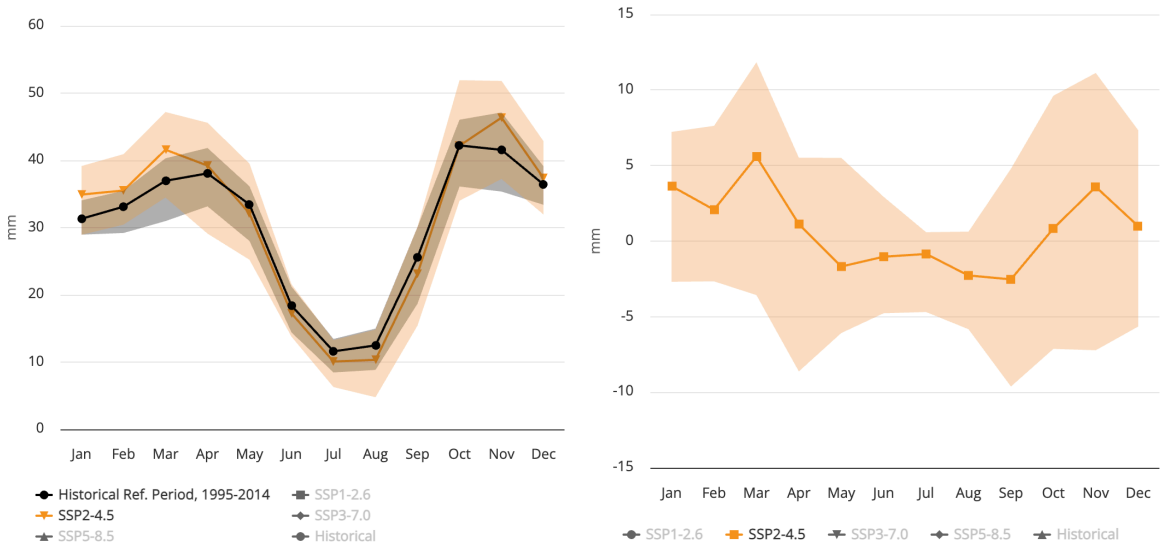


Figure 7-8 Projected Precipitation Climatology (Left) and Anomaly (Right) for 2040-2059 (Annual) for Absheron; (Ref. Period: 1995-2014), SSP2-4.5, Multi-Model Ensemble (CCKP,2026)

Under scenario SSP2-4.5, the 10-90th percentile range of precipitation in 2027 for the Project area is expected to be 298.20mm to 448.13mm (median 375.91mm). By 2051, the 10-90th percentile precipitation in the Project area is expected to reach a range of 280.56mm to 433.13mm (median 370.06mm). This is shown in the following figure.

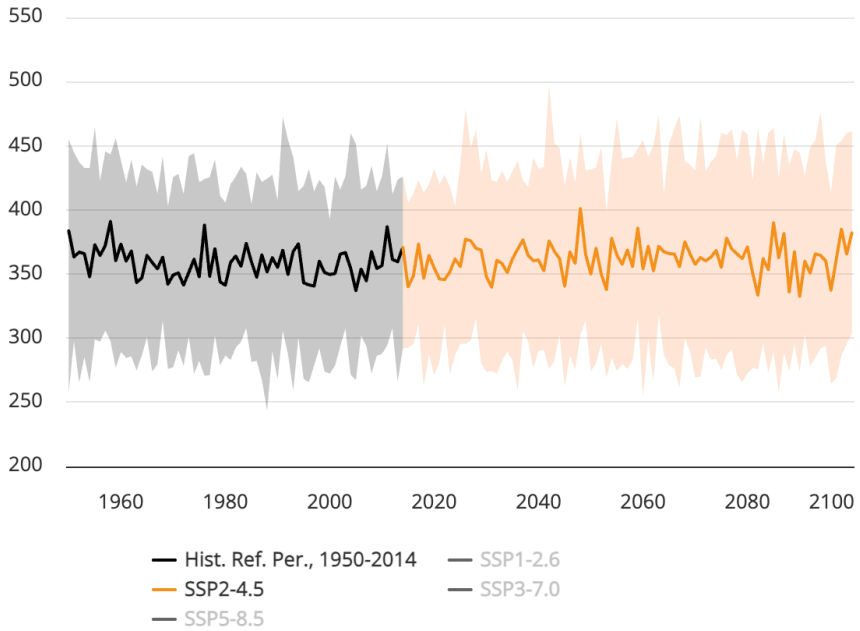


Figure 7-9 Projected Precipitation for Absheron; (Ref. Period: 1995-2014), SSP2-4.5, Multi-Model Ensemble

Under scenario SSP5-8.5, for the time period 2020-2039, the average precipitation in the Project area is projected to be the highest in November where the 10-90th percentile range is 36.28mm to 49.16mm (median 43.03mm). The lowest precipitation is expected in July where the 10-90th percentile range is expected at 6.32mm to 14.11mm (median 9.96mm).

The 50th percentile for the projected annual precipitation anomaly for 2020-2039 for the Project area (Ref. Period: 1995-2014), is highest in November with 1.74mm increase (10-90th percentile range of -6.92mm to 10.26mm).

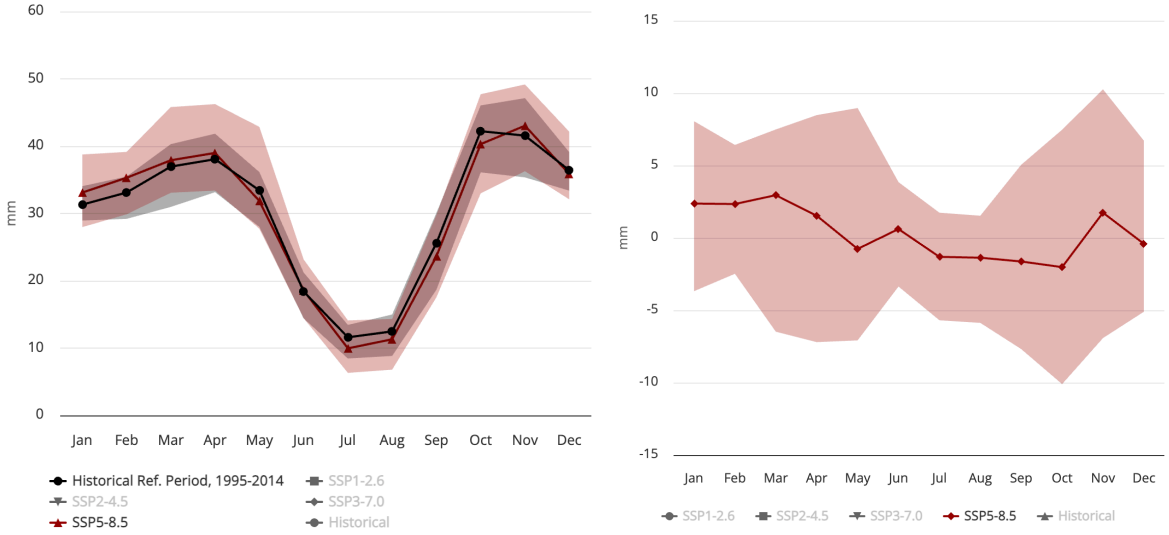


Figure 7-10 Projected Precipitation Climatology (Left) and Anomaly (Right) for 2020-2039 (Annual) for Absheron; (Ref. Period: 1995-2014), SSP5-8.5, Multi-Model Ensemble (CCKP,2026)

Under scenario SSP5-8.5, for the time period 2040-2059, the average precipitation in the Project area is projected to be the highest in November where the 10-90th percentile range is 40.31mm to 52.03mm (median 45.68mm). The lowest precipitation is expected in July where the 10-90th percentile range is expected at 5.72mm to 14.31mm (median 9.27mm). The 50th percentile for the projected annual precipitation anomaly for the Project area (Ref. Period: 1995-2014), is highest in November with 4.64mm increase (10-90th percentile range of -3.91mm to 11.37mm).

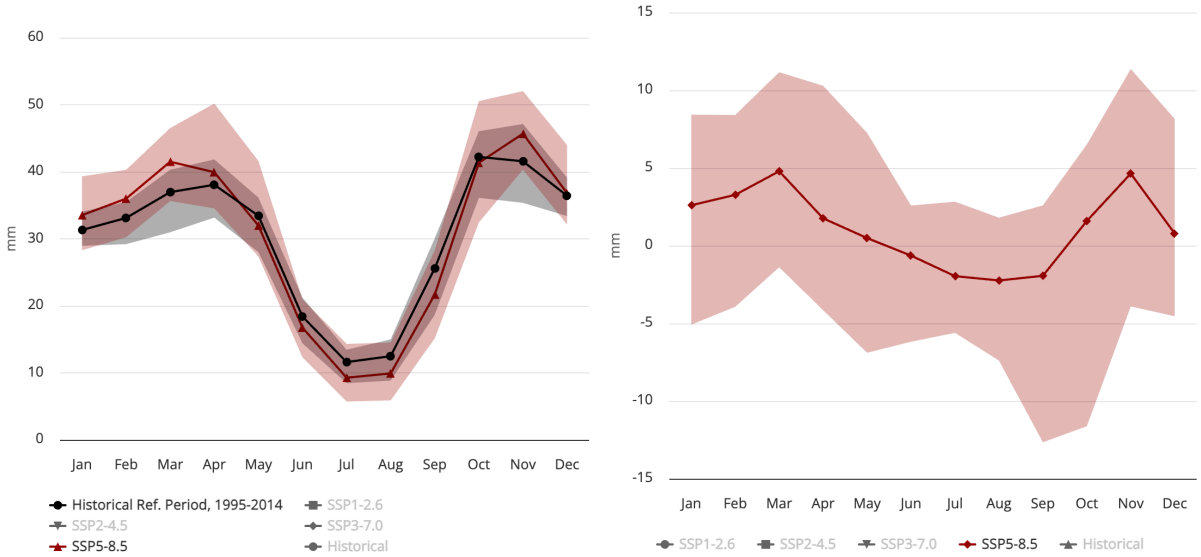


Figure 7-11 Projected Precipitation Climatology (Left) and Anomaly (Right) for 2040-2059 (Annual) for Absheron; (Ref. Period: 1995-2014), SSP5-8.5, Multi-Model Ensemble (CCKP,2026)

Under scenario SSP5-8.5, the 10-90th percentile range of precipitation in 2027 for the Project area is expected to be 340.17mm to 492.55mm (median 423.89mm). By 2052, the

10-90th percentile precipitation in the Project area is expected to reach a range of 308.05mm to 518.96mm (median 421.96mm). This is shown in the following figure.

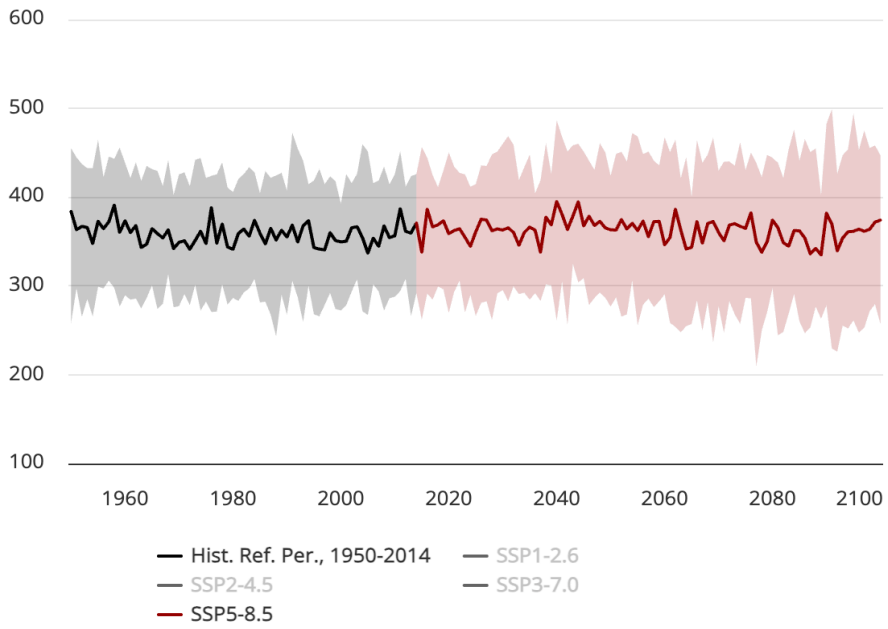


Figure 7-12 Projected Precipitation in Absheron; (Ref. Period: 1995-2014), SSP5-8.5, Multi-Model Ensemble (CCKP,2026)

Across all scenarios, the anticipated median (50th percentile) for precipitation projections is comparable across all scenarios, with the exception of an outlier seen of 1.74mm for the SSP5-8.5 projections for the period of 2020-2039 for the Project area. However, nonsignificant increases are observed across all projections in the future. Impacts due to precipitation are not expected.

7.4.3 Extreme Weather Events

Climate projections suggest an increase in the frequency and intensity of extreme heat events in the Project area, particularly under higher emission scenarios. This includes an increase in the number of days exceeding high temperature thresholds, contributing to longer and more intense heatwave periods.

The potential for wildfire risk is also expected to increase due to higher temperatures and variability in precipitation patterns. However, given the industrial nature of the Project site and the limited presence of vegetation, wildfire risk is not considered to be a significant concern for the Project.

At the same time, extreme cold events are expected to become less frequent, reflecting the overall warming trend in the region. This is likely to reduce the risk of operational disruptions associated with freezing conditions.

7.5 Caspian Sea Level Change

The Caspian Sea exhibits unique hydrological behaviour compared to global oceans, as it is a closed basin with no natural outflow. As a result, its water levels are governed by the balance between river inflows, precipitation, and evaporation.

Historical records indicate that the Caspian Sea has experienced significant fluctuations in water level, with variations exceeding ±3 metres over the 20th century. Since the mid-1990s, however, a consistent declining trend has been observed, with a reduction of approximately

1.5 metres between 1996 and 2015 and evidence suggesting that the rate of decline has accelerated since 2006[9].

The primary drivers of this decline are linked to climate change, particularly increased evaporation resulting from rising air and sea surface temperatures, as well as changes in wind patterns. Variability in river inflows, especially from the Volga River, which contributes the majority of inflow to the Caspian Sea, also plays a significant role. Although precipitation across the basin may increase in some areas, this is not expected to offset the increase in evaporation, resulting in an overall negative water balance.

Future projections indicate that the declining trend in Caspian Sea levels is likely to continue throughout the 21st century. While there is considerable uncertainty, studies suggest potential reductions ranging from approximately 2 metres to more than 14 metres by the end of the century, depending on the emission scenario and modelling approach.

7.6 Climate Change Impacts and Mitigation

7.6.1 Physical Risks

7.6.1.1 Increased Temperature

As per the CCKP, the projected maximum daily maximum temperature in 2027 is 35.34°C (median) compared to 36.42°C (median) in 2051. However, during the summer months of July and August over the project's lifetime, the Project area may witness days of extreme temperatures projected to exceed 38°C (median) in the period 2040-2059, with more than 3°C increase from current temperatures.

Sustained high ambient temperatures can reduce the efficiency of mechanical and electrical systems, increase cooling requirements, and accelerate wear on membranes, pumps, and auxiliary equipment, leading to higher maintenance costs and reduced operational reliability over time. In addition, prolonged heat stress can raise overall energy demand for desalination and associated infrastructure, exacerbating operational costs and increasing vulnerability where power supply systems are already under strain.

Mitigation Measures

At the design stage, all critical mechanical, electrical, and control systems will be specified to operate reliably under elevated ambient temperatures, with appropriate safety margins to account for future climate projections. This includes the provision of enhanced ventilation, thermal insulation, reflective or light-coloured building materials, and both passive and active cooling systems for control rooms, and membrane treatment areas. Layout optimisation will minimise heat accumulation in enclosed spaces and reduce exposure of sensitive equipment to direct solar radiation.

For operation, heat-adapted operating procedures should be implemented, including preventive maintenance regimes adjusted for high-temperature conditions, monitoring of equipment performance during heatwaves, and energy efficiency measures and contingency planning for increased energy demand to maintain reliable operation during prolonged high-temperature periods.

[9] United Nations Environment Programme (UNEP) (2024). Caspian Sea Fluctuations and Climate Change: Coordinated research is needed to understand how climate change is impacting Caspian Sea levels. Nairobi: UNEP.

7.6.1.2 Extreme Weather Conditions

Acute physical climate risks relevant to the Project include health and safety incidents amongst operational plant workers during periods of extreme heat. The incidence of substantially high temperatures could potentially impact on the wellbeing of workers, particularly those who will not operate within units with controlled temperatures. Workers stationed in the Plant's exterior, for instance, will be prone to health effects such as dehydration, and heat stress, heat stroke, heat exhaustion, heat cramps, heat rashes and burns from contact with overheated surfaces.

Mitigation Measures

To ensure the safety of the workers, the following measures are proposed:

- Ensure all workers receive worker induction and regular ongoing training (e.g., toolbox talks, work briefings) on the health and safety risks of extreme weather conditions.
- Ensure the availability of medical facilities and nurses as well as first aid and transport for medical emergencies.
- Workers assigned to operations in the exterior of buildings and shaded areas will be provided with appropriate PPE (e.g., sun hats and cooling vests).
- Shaded resting areas and adequate access to sufficient potable water will be provided for workers and maintenance staff stationed outside of the Plant's buildings.
- Work locations (and duration, to the extent possible) will be restricted during periods of extreme heat or cold to lessen the risk of heat/cold-related health effects. Maintenance work within high/cold-temperature units will be avoided during days with inordinately high/low temperatures.
- Staff rooms on the plant's premises will be equipped with air conditions/fans/heaters to enable operations at workstations during periods of extreme heat/cold.
- Monitor weather forecast and halt outdoor maintenance work in any expected events of extreme weather conditions (rainstorm, extreme cold, extreme heat waves, high wind etc.).
- All workers will be entitled to sick leaves in accordance with national Labour Law.

In addition to the above prescribed mitigation measures, both the EPC Contractor and O&M Contractor will compile and update the following management plans as part of ACWA's HSSE-MS in which the management actions of these risks will be outlined and implemented on site as required.

- Training Management Plan,
- Emergency Preparedness and Response Management Plan,
- Occupational Health and Safety Management Plan
- Labour and Working Conditions Management Plan

7.6.1.3 Caspian Sea Level Fluctuations

The decline in sea level represents a key climate-related risk for the Project, particularly in relation to coastal and marine infrastructure. Potential impacts include reduced water depths affecting intake and outfall structures, shoreline retreat, changes in sediment dynamics, and possible constraints on operations. Given the long design life of the Project, consideration of these risks is essential to ensure long-term resilience.

Mitigation Measures

As part of the climate resilience considerations incorporated into the project design, the intake infrastructure has been engineered to account for potential future variability in Caspian Sea levels. The Request for Proposals (RFP) for the Project required the desalination system to remain fully operational under a scenario of up to a 2 metre reduction in seawater level at the intake location. This requirement has been incorporated into the engineering design of the intake structures and pumping systems to ensure continued abstraction capacity under projected fluctuations in sea level. By incorporating this design allowance, the project improves operational resilience to long-term hydrological variability and potential climate related changes affecting the Caspian Sea water level.

7.6.1.4 Floods

According to the Climate Country Profile Report of WBG & ADB in 202110, Azerbaijan experiences frequent flooding which typically occurs in late spring and early summer in higher altitude areas of the country (above 1,500 m in altitude), whereas in lower areas, flooding may occur in spring or autumn. The parts of the country at greatest risk of floods are in the central and south-eastern regions, while some parts of the country, such as the south slope of the Greater Caucasus, experience mudflows caused by flooding.

Azerbaijan is divided into several hydrographic regions, with the Kura (also referred to as Kur) and Aras (also referred to as Araxes) forming the dominant international basin that covers approximately 90% of the country's territory and drains into the Caspian Sea. Azerbaijan's water resources depend primarily on these two key river basins. The future hydrology of their basins, including the greater and lesser Caucasus Mountain ranges, will likely determine fluvial flooding trends.

The Sumgaitchay River flows from south to north into the Caspian Sea, approximately 350 m from the western boundary of the project site. Sumgait River's watershed is characterized by seasonal variability with low flows in summer due to aridity, peaks during spring snowmelt and autumn rains. The average long-term water resource of Sumgaitchay is 47.6 million m^3/year, the water reserve in high-water years is 185 million m^3/year, and in low-water years - 1.89 million m^3/year.

A flood risk study was undertaken as part of the IQLIM ESIA (2025). The study indicates that in the event of a flood with a probability of 1% (once in 100 years), the western and northwestern parts of the project site may be subject to flooding and erosion. This situation must be taken into account at the design stage of the SWDP.

7.6.1.5 Drought

According to the Climate Country Profile Report of WBG & ADB in 202111, Azerbaijan may experience two primary types of droughts, meteorological due to the lack of precipitation and hydrological, usually due to a deficit in surface and subsurface water flow, potentially from the region's larger river basins. Currently, Azerbaijan faces an annual median probability of severe meteorological drought of about 2%, defined by a standardized precipitation evaporation index (SPEI) of less than −2.26.

In the Project area, Absheron, water scarcity is classified as low according to ThinkHazard[12]. This means that there is a 1% chance drought will occur in the coming 10 years, thus the

10 WBG & ADB. (2021). Climate Risk Country Profile: Azerbaijan (2021): The World Bank Group and Asian Development Bank. https://www.adb.org/sites/default/files/publication/707466/climate-risk-country-profile-azerbaijan.pdf

11 WBG & ADB. (2021). Climate Risk Country Profile: Azerbaijan (2021): The World Bank Group and Asian Development Bank. https://www.adb.org/sites/default/files/publication/707466/climate-risk-country-profile-azerbaijan.pdf

12 https://thinkhazard.org/en/report/147297-azerbaijan-absheron/DG

probable impact of drought should be considered in all phases of the project in the event the present hazard level may increase in the future due to the effects of climate change. It would be prudent to design the Project in this area to be robust to increased drought hazard and water scarcity in the long-term.

Climate-induced natural disasters, such as floods, droughts, high-intensity rainfall events may lead to interruptions of the desalination plant operations. However, based on the low hazard risk of water scarcity in the Project region, this risk is considered insignificant and is not assessed further.

7.6.2 Transition Risks

Climate transition risks refer to those which may arise from the plans or processes that may be put in place to adjust to a lower-carbon, climate-resilient economy. These can include changes or updates to policy or legislation (e.g. introduction of emission limits), imposition of carbon tax, shifts in demand and supply due to technology and market changes and reputation risks reflecting changing customer or community perceptions (Equator Principles, 2020).

According to the EP4 guidance note, transitional risks are anticipated for projects with combined Scope 1 (direct) and Scope 2 (indirect electricity) emissions exceeding 100,000 tCO_2e per year.

The Project is a desalination plant with emissions shown in the table below:

Table 7-2 Estimated Emissions from Electricity and Fuel Usage

Phase	Electricity Usage (Scope 2)	Fuel Usage (Scope 1)	Total CO_2 Emissions (Tonnes of CO_2 e.)
Construction (for the entire construction duration)	5,230,000 kWh	245,988L of diesel	3,013
Operation (annual)	579,000 kWh/day ~ 211,335,000 kWh/year	11,000L of diesel	95,130

Azerbaijan has articulated commitments to reduce greenhouse gas emissions and increase energy efficiency. Climate transition risks for the desalination plant in Azerbaijan are assessed to be low and not project-critical, given the nature of the facility. The project is intended to support long-term water security, which is a recognised climate adaptation measure rather than a carbon-intensive activity. While Azerbaijan has articulated medium- and long-term climate and energy efficiency objectives, there are no specific or imminent policy measures such as carbon pricing or technology phase-out requirements. Any future tightening of energy or emissions regulations would be expected to apply broadly across sectors and can be addressed through incremental efficiency improvements.

Market and technology transition risks are similarly limited. Market-related risks include rising electricity prices particularly if the plant is supplied by grid electricity with a high carbon intensity. Desalination technologies are mature, widely deployed, and not subject to rapid obsolescence driven by the low-carbon transition. The plant's exposure to electricity price fluctuations is considered a general operational consideration rather than a climate-specific transition risk, and does not threaten project viability. In addition, lender and stakeholder expectations regarding climate disclosure and emissions management can be readily met through standard reporting and operational efficiency measures. Overall, no significant constraints on financing, permitting, or long-term operation are anticipated as a result of climate transition dynamics.

7.6.3 General Mitigation Measures to Reduce GHG Emissions

Construction Phase

- Optimise construction scheduling, material delivery routes, and sequencing of works to minimise unnecessary transport movements and reduce fuel consumption from vehicles and marine vessels.
- Specify modern construction machinery and marine equipment that meets recognised fuel efficiency and emissions standards, and implement regular maintenance programmes to ensure optimal combustion efficiency.
- Enforce idling control policies for construction vehicles and generators, supported by site supervision and worker training, to avoid avoidable fuel use and emissions.
- Where feasible, connect construction activities to the electricity grid and limit the use of temporary diesel generators to essential or emergency applications only.
- Prioritise locally sourced construction materials to reduce transport-related emissions and, where practicable, select materials with lower embodied carbon, such as blended cements or recycled aggregates.
- For offshore and nearshore works, optimise vessel selection, routing, and operating speeds to reduce fuel consumption during dredging, installation, and pipeline laying activities.

Operation Phase – GHG Mitigation Measures

- Incorporate energy-efficient desalination technologies, including high-performance membranes, optimised pretreatment systems, and high-efficiency pumps and motors, to minimise specific energy consumption.
- Implement automated process control and real-time energy monitoring systems to optimise operating conditions, reduce losses, and align production with demand.
- Assess opportunities to source electricity from renewable or lower-carbon power generation.
- Design buildings, lighting, HVAC, and auxiliary systems to high energy-efficiency standards, taking into account climate-appropriate design principles.
- Maintain membranes, pumps, and energy recovery equipment through structured preventive maintenance programmes to avoid efficiency losses, increased energy demand, and premature equipment replacement.
- Restrict the use of backup diesel generators to emergency situations through reliable grid connections, load management, and, where feasible, energy storage solutions.

8.0 Ambient Noise and Vibration

8.1 Applicable Requirements and Standards

8.1.1 National Regulations

Noise and vibration standards for the Project are based on the national "Norms of vibration and noise pollution, which have negative impact on the environment and human health", as approved by the Government of Azerbaijan. These norms define the maximum allowable noise levels for various types of land use and public facilities during both day and night periods. A summary of the national noise limits is presented in the following table.

Table 8-1 National Ambient Noise Levels (dB(A), max)

Area/Facility Type	Daytime 07:00 – 22:00	Night-Time 22:00 – 07:00
Residential areas	40	30
Commercial areas	55	60
Hotels and shared households	45	35
Industrial areas	-	-
a) High-specialization facilities	50	50
b) Equipment locations or permanent workplaces inside buildings	80	80
c) Workplaces for drivers and truck maintenance	70	70
d) Workplaces for tractor and agricultural machinery maintenance	80	80
Vulnerable areas	-	-
a) Hospitals and sanatoriums	35	25
b) Schools, libraries, and conference halls	40	40

8.1.2 Lender Requirements

WHO sets standards and guidelines for various aspects of public health, including noise pollution. Noise pollution can have significant detrimental effects on human health and well-being, including hearing impairment, sleep disturbances, cardiovascular diseases, and impaired cognitive development in children. Therefore, WHO has established comprehensive noise standards and guidelines to mitigate these risks and protect public health.

WHO noise standards are based on extensive scientific research and expert consensus regarding the health effects of exposure to noise pollution. These standards provide recommendations for acceptable levels of noise in different environments, such as residential areas, workplaces, and recreational areas.

The WBG/IFC General EHS Guidelines require that the project is in compliance with the WHO noise standards, though these relate to noise received at receptor locations rather than the project boundary.

Table 8-2 WHO Noise Standards

Receptor	One Hour LAeq (dBA)	
	Daytime 07:00 – 22:00	Night-Time 22:00 – 07:00
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

Noise impacts should not exceed the levels presented above or result in a maximum increase in background levels of 3 dB at the nearest sensitive receptor location off-site.

Furthermore, the following requirements have also been specified in the WBG/IFC EHS noise guidelines:

- No employee should be exposed to a noise level greater than 85 dB (A) for duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).
- The use of hearing protection should be enforced actively when the equivalent sound level over 8 hours reaches 85 dB (A), the peak sound level reaches 140 dB(C), or the average maximum sound level reaches 110 dB (A). Hearing protective devices provided should be capable of reducing sound level at the ear to at least 85 dB (A).
- For every 3 dB(A) increase in sound levels, the allowed exposure period or duration should be reduced by 50%.
- Where feasible, use of acoustic insulating materials isolations of the noise source and other engineering controls should be investigated and implemented prior to the issuance of hearing protection devices as the final control mechanism.
- Medical hearing checks on workers exposed to high noise levels should be performed periodically.
- National Standards

8.2 Baseline Conditions

Baseline ambient noise monitoring was conducted at six representative locations within the Project area and its surroundings, including residential settlements such as Kimyachilar village. The objective was to assess existing noise levels prior to project activities and determine compliance with national and international standards, including the IFC General EHS Guidelines.

The monitoring campaign was carried out by IQLIM, from 22 to 24 July 2024, using calibrated sound level meters. Measurements were recorded for key acoustic indicators, including:

- LAeq: Equivalent continuous sound level
- L90: Level exceeded 90% of the time
- L50: Level exceeded 50% of the time
- L10: Level exceeded 10% of the time

The monitoring covered both daytime and nighttime periods. Results were compared against Azerbaijan's national limits and IFC noise standards for residential and industrial zones.

The monitoring covered both daytime and nighttime periods. Results are compared against Azerbaijan's national limits and IFC noise standards for residential and industrial zones. Indicative locations of noise monitoring stations are shown in Figure 8-1.



Figure 8-1 Baseline Noise Monitoring Locations (IQLIM's ESIA, July 2025)

A summary of the noise monitoring results is presented in Table 8-3 and Table 8-4. Baseline noise levels at the Project area were influenced by a combination of natural and anthropogenic sources. The primary contributing factors included:

- Meteorological conditions: Wind speed and direction significantly affected ambient noise levels during monitoring.
- Marine influences: Wave action and surf noise were notable contributors, particularly at monitoring locations closer to the shoreline.
- Road traffic noise: Vehicle movements along the Samad Vurgun Road contributed intermittently to baseline levels.
- Industrial activities: Ongoing operations within the adjacent industrial park represented a continuous background noise source.

Baseline noise conditions in the Project area were characterised using the results of a 24-hour noise monitoring survey undertaken by an independent consultant.

Measurements were conducted at 10 monitoring locations. At each location, monitoring was performed during both daytime and nighttime periods, with a total of eight measurements undertaken in day and nighttime hours.

The baseline noise levels exceed the WHO and IFC guideline values for residential areas (55 dBA during the day and 45 dBA at night).

The elevated baseline noise levels are primarily attributable to:

- Continuous traffic along the Samed Vurgun Street, which passes through Kimyachilar village;
- Operational noise from the nearby industrial activities including from a flare tower; and
- Natural ambient contributions, including sea wave activity, which contributes to the overall background noise climate.

With respect to industrial and working zone standards, the reported baseline noise levels do not exceed the applicable limit of 70 dBA.

Table 8-3 Ambient Noise Monitoring Results Summary – July 2024

Station ID	Noise (dBA)			
	LAeq	LA90	LA50	LA10
N-1	53.8	53.5	52.3	56.9
N-2	71.5	71.6	71.7	69.6
N-3	66.7	64.8	68.1	70.7
N-4	64.1	63.9	64.4	68.4
N-5	58.2	58.7	60.3	63.6
N-6	60.7	58.8	59.9	63.5
N-7	54.6	51.1	53.9	60.5
N-8	56.6	62.9	58.3	68.1
N-9	58.8	57.4	59.8	62.9
N-10	54.6	56.7	55.1	62.8

Table 8-4 Ambient Noise Monitoring Results – November 2024

Station ID	Noise (dBA)			
	LAeq	LA90	LA50	LA10
N-1	48.6	47.2	46.1	49.4
N-2	46.9	48.6	43.1	47.1
N-3	62.1	60.0	60.2	56.9
N-4	56.5	53.7	56.2	52.5
N-5	54.5	55.2	51.0	46.7
N-6	50.1	48.1	46.8	48.1
N-7	42.4	43.6	44.7	46.1
N-8	51.0	52.7	53.1	52.5
N-9	46.7	47.6	49.4	47.0
N-10	49.9	48.8	50.4	50.8

8.3 Area of Influence and Receptors

8.3.1 Area of Influence

During the construction phase, increased noise levels are expected within approximately 500 m of the project site, with potential audibility extending up to a maximum of 2 km under very calm meteorological conditions and low ambient background noise levels. The highest impacts will occur closest to active work areas, particularly during operation of heavy machinery and any high-noise activities.

In addition, noise impacts may occur for distance of up to 100 m along road corridors used by construction vehicles, primarily due to increased HGV movements transporting materials and equipment to and from the site. Receptors located adjacent to these access routes may experience intermittent increases in noise levels, especially during peak delivery periods.

8.3.2 Receptors

In addition to the above site-specific area of influence, the area of impact for the ambient noise impact assessment also considers potential areas or communities affected by cumulative or indirect impacts.

Table 8-5 Noise Sensitive Receptors

Receptor	Sensitivity	Justification
Nearby Residential Communities	**High**	High sensitivity due to the presence of permanent residents, including vulnerable groups such as children, the elderly, and individuals with health conditions. Residential receptors are particularly sensitive to noise, especially during evening and nighttime periods, where disturbance to sleep, rest, and general wellbeing may occur. The presence of schools, healthcare facilities, or community buildings further increases sensitivity.
Project workers	**Medium**	Medium sensitivity as workers may be exposed to elevated noise levels during construction and operation within the Project site. However, exposure is occupational in nature, time-limited, and managed through occupational health and safety controls, including administrative measures, and the use of appropriate personal protective equipment (PPE).
Roadside receptors	**Medium**	Medium sensitivity due to temporary and intermittent exposure to increased noise levels from construction traffic, particularly HGVs. While exposure durations are typically short-term (pass-by events), receptors located close to access roads may experience noticeable increases in daytime noise levels. Sensitivity may increase if residential properties are present immediately adjacent to road corridors.
Industrial facilities	**Low**	Low sensitivity as surrounding industrial and commercial receptors are generally compatible with higher ambient noise environments and typically operate during daytime hours. These receptors have a higher tolerance for temporary or incremental increases in noise associated with industrial and construction activities.

8.4 Potential Impacts, Mitigation, Management & Residual Impacts

This section is focused on the impact assessment of construction and operational activities on the identified receptors.

8.4.1 Construction Phase

8.4.1.1 Noise from On Site Construction Activities

Construction activities associated with the Project will generate temporary increases in ambient noise levels due to the operation of construction plant, vehicles, and equipment. Noise emissions will vary depending on the construction phase, type of activity, equipment in use, and duration of works.

Given that the baseline acoustic environment is already elevated due to traffic along Samed Vurgun Street, existing industrial operations, construction noise will occur within an already noise influenced soundscape.

Construction-related noise impacts are expected to be temporary and limited to the construction phase.

Noise-generating activities will differ between the initial and later stages of construction:

During the initial stage, activities such as preparation of temporary facilities, site clearance and ground levelling works typically involve construction equipment such as bulldozers, graders, excavators, and compactors. Noise levels during this phase are expected to be moderate and short-term in nature.

Once the initial activities mentioned above are over, the later stages will involve more intensive construction activities, including:

- Dynamic compaction (anticipated to be one of the highest intermittent noise sources)
- Foundation works and structural construction
- Installation of process and non-process pipelines
- Mechanical and electrical installation
- Marine construction works

These activities will require heavy machinery such as pile drivers, cranes, compressors, welding units, generators, pumps, and marine equipment. Certain equipment (e.g., generators, pumps) will generate continuous noise, while others (e.g., pile drivers, jackhammers, rock drills) will generate intermittent high-level impact noise characterised by short-duration peaks.

Noise emissions at any given time will fluctuate depending on the combination of equipment operating simultaneously.

The preliminary list of construction equipment is based on information provided by the EPC Contractor.

Reference noise emission levels for typical plant and equipment have been obtained from BS 5228-1:2014 – Code of Practice for Noise and Vibration Control on Construction and Open Sites (see Table 8-6).

Table 8-6 Noise Level of Expected Construction Equipment

Equipment	BS 5228-1:2009 Reference	SPL dB (A) – at 10m from Noise Source
Lorry with lifting boom	Table C.4, 53	77
Shovel	Table C.10, 2	76
Crane	Table C.3, 29	70
Crane	Table C.5, 37	76
Forklift	Table C.4, 57	67
Loader	Table C.4, 66	69
Trailer	Table C.4, 75	79
Excavator	Table C.5, 11	73
Road roller	Table C.5, 18	80
Excavator	Table C.4, 63	80
Dynamic compactor	Table C.2, 42	78
Truck	Table C.4, 02	78
Crane	Table C.3, 28	67
Crane	Table C.4, 38	78
Cumulative Source Noise Contribution at 10m dB(A)		88.1

It is noted that all equipment is unlikely to operate simultaneously. The assessment has therefore adopted conservative assumptions regarding concurrent operation to ensure a precautionary evaluation of potential impacts.

Construction noise will result in:

- Temporary increases in ambient noise levels at nearby receptors;
- Short-term intermittent high noise levels during activities such as dynamic compaction or piling (if undertaken);
- Fluctuating noise levels depending on construction sequencing.

However, considering that:

The existing baseline noise environment is already elevated due to traffic and industrial activities; and Industrial/working zone standards (70 dBA) are currently met, the relative increase in ambient noise levels attributable to construction activities is expected to be moderate and temporary in nature.

At residential receptors where baseline levels already exceed WHO/IFC guideline values, construction activities may result in short-term additional exceedances during peak activity periods. These exceedances would be temporary and confined to active working hours.

8.4.1.2 Vehicular Traffic Noise

Construction activities, particularly during the land preparation phase, will require a significant number of heavy-duty truck movements for the transport of fill material, equipment, and construction supplies. As described earlier in this ESIA, these movements will occur throughout active construction periods and are expected to be most intensive during earthworks and ground preparation.

Noise impacts associated with construction vehicles will vary depending on:

- The phase of works;
- The number and frequency of HGVs;
- The timing of deliveries (e.g., peak vs. off-peak periods); and
- The proportion of heavy vehicles relative to existing traffic flows.

Heavy vehicles generate higher noise levels than light vehicles due to engine size, exhaust systems, braking, and body rattle, particularly during acceleration, deceleration, and gear changes. The exact route that will be used by construction vehicles is not determined at the time of preparing this ESIA and will be detailed as part of the Traffic Management Plan that will be prepared by the EPC Contractor.

The main transport route to the Project site is likely to use the existing highway, such as the motorways M4 and M1, which already experiences high traffic volumes and sustained ambient noise levels throughout the day. Given the established high baseline traffic flows, the relative increase in vehicle numbers attributable to the Project is not expected to result in a perceptible change in overall noise levels at receptors located along this highway corridor.

Although short-term, localised increases in heavy vehicle movements may occur during peak delivery periods, the contribution of Project-related traffic is expected to remain small relative to existing traffic volumes. Therefore, impacts along the main highway are anticipated to be minor and temporary.

In contrast, receptors located along the Project access road (e.g., the Samad Vurgun Road) and designated haul routes may experience more noticeable temporary increases in noise, particularly during the land preparation phase when truck movements are expected to be highest.

Given the already elevated background noise environment from traffic and industrial sources, construction traffic will add cumulatively to existing noise levels. However, this contribution will be temporary and reversible. Once construction activities cease, traffic volumes will return to baseline conditions.

With the implementation of good traffic management practices (e.g., routing controls, scheduling of deliveries during daytime hours, speed limits, and vehicle maintenance requirements), traffic-related noise impacts are expected to remain manageable and not significant in the long term.

8.4.1.3 Ground Vibration

Certain construction activities, such as ground preparation, compaction, and the use of vibratory rollers, have the potential to generate vibration. In addition, heavy vehicle movements may generate minor ground-borne vibration in close proximity to haul roads.

However, vibration attenuates rapidly with distance from the source due to energy dissipation through soil and ground media. Based on the anticipated equipment types and the separation distance to sensitive receptors:

- Vibration impacts are not expected to be discernible at receptors located away from the immediate Project boundary;
- Some minor vibration may be perceptible at or very near the site boundary during intensive compaction activities;
- Structural damage or significant human disturbance from vibration is not anticipated.

Given the temporary nature of the works and rapid attenuation characteristics, vibration impacts are assessed as negligible.

Table 8-7 Ambient Noise and Vibration Impact Significance, Mitigation & Management Measures and Residual Impacts - Construction

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Noise from on-site construction activities	Moderate	Nearby residential communities	High	Moderate	• Acoustic covers on machine engines to always remain closed. • The Contractor will, at all times, carry out all work in such a manner as to keep any disturbance from noise to a minimum (by phasing noisy works). • Vehicles/equipment will be operated within manufacturer recommended guidelines so as to avoid causing excessive noise. • Where practical, electrically powered plant will be preferred to mechanically powered alternatives. • All mechanically powered plant, diesel engine vehicles and compression equipment will be fitted with noise control equipment (exhaust silencers, mufflers) as available from the manufacturer. • Where possible, the highest noise emitting activities should be undertaken in a central site area and away from boundaries. • Where appropriate, noise barriers /attenuation to be employed to ensure that the maximum noise level at 1 m distance from a single source will not exceed 85dB(A). • Where noise levels exceed 85dB(A) noise protection devices shall be provided to personnel on-site and the area marked as a high-noise zone where ear protection is mandatory.	Minor
		Project workers	Medium	Moderate		Minor
		Roadside receptors (Samad Vurgun Road)	Medium	Moderate		Minor
		Industrial facilities	Low	Minor		Negligible
Vehicular Noise	Minor	Nearby residential communities	High	Minor	• A traffic Management Plan will be prepared and implemented by the EPC contractor that will take into account all aspects including, noise and community health and safety factors. • Limit unnecessary usage of vehicles/equipment – No idling – Equipment to be shut or throttled down when in intermittent use. • Delivery vehicles will be prohibited from waiting outside the site with their engines running. • Ensure any appropriate permits are in place for deliveries to the site and for any works performed outside normal working hours.	Negligible
		Roadside receptors	Medium	Minor		Negligible

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
		(including Highways)			• Review vendor specifications and accept site plant & vehicles, in particular heavy vehicles, based on noise emissions (as far as practical). • The movement of heavy vehicles during the night will be avoided wherever practical.	

8.4.2 Operational Phase

8.4.2.1 Operational Noise

During the operational phase, the primary sources of noise associated with the plant will include high-pressure pumps, water treatment infrastructure, and routine vehicle movements to and from the site.

The RO units are typically low-noise components and will be housed within enclosed internal structures, which will provide inherent noise attenuation. The principal continuous noise source during operation is expected to be the main pumps, which will operate on a 24-hour basis. Typically, pump noise emissions are anticipated to be approximately 80 dB(A) at 1 metre. However, the main pumps will be fully enclosed within the pumphouse structure, substantially reducing noise propagation beyond the building envelope. While certain elements of the intake screening system will not be fully enclosed, these components are not considered significant noise sources and operate intermittently (e.g., backwashing for short durations).

Operational traffic associated with the Project is expected to be minimal compared to the construction phase. Additional vehicle movements will primarily consist of employee commuting, occasional visitors, periodic deliveries of consumables and chemicals, and waste collection activities. Given the limited frequency of these trips and the existing traffic volumes on surrounding roads, operational traffic is not anticipated to result in a perceptible increase in ambient noise levels.

Overall, considering the enclosure of key mechanical equipment, the industrial character of the surrounding area, and the already elevated baseline noise environment, operational noise from the desalination plant is not expected to result in any discernible adverse impacts at nearby receptors. No further assessment has been carried out.

8.5 Monitoring Measures

The EPC Contractor will undertake noise monitoring on a periodic basis during construction. The minimum expected requirements for the noise monitoring are outlined in the table below. The final monitoring methodology with specific monitoring details (i.e., locations, frequencies, durations, parameters etc.) will be developed in the specific ‘Environmental Monitoring Plan’.

Table 8-8 Noise Monitoring Requirements

Monitoring	Parameter	Frequency & Durations	Location	Responsibility
Construction				
Day time noise	LAeq	Monthly for 15-minute periods at the 4 boundary locations. Increase in case of any complaints from nearby receptors	The same receptor locations along the boundary of the Project site measured in this ESIA baseline	EPC Contractor
Night time noise	LAeq	Monthly for 15-minute periods at the 4 boundary locations. Increase in case of any complaints from nearby receptors	The same receptor locations along the boundary of the Project site measured in this ESIA baseline	EPC Contractor

9.0 Geology, Soils, Surface Water and Groundwater

9.1 Applicable Requirements and Standards

9.1.1 National Regulations

Following are the main relevant national regulations applicable for the Project:

- Water Code of Azerbaijan Republic (approved by Law No. 418-IQ); specifically relevant articles under Chapter V: Usage of water objects, Chapter VI: Rights and obligations of water users, and Chapter XIII: Usage of water objects for water discharge, fire prevention and other purposes, Chapter XIV: Protection of water objects, Chapter XVI: Economical regulation of measures on usage and protection of water objects, and Chapter XVII: Dispute resolution on the issues of usage and protection of water objects for violation of water legislation.
- Law on Water Economy of Municipalities which is enacted with President's Degree on August 2001; specifically relevant articles under Part IV: Use of the Municipal Water Economy Structures, and Part V: Rights and Duties of Municipalities to Regulate Water Relations.
- State Standard No. AZS 834-5-2015 for Soil quality -- Sampling -- Part 5: Guidance on the procedure for the investigation of urban and industrial sites with regard to soil contamination.
- State Standard No. AZS 834-6-2015 for Soil quality -- Sampling -- Part 6: Guidance on the collection, handling and storage of soil under aerobic conditions for the assessment of microbiological processes, biomass and diversity in the laboratory.

9.1.2 Lender Requirements

IFC Performance Standard 3 on 'Resource Efficiency and Pollution Prevention' requires the client and/or the Project to:

- Avoid or minimise adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities; and
- Prevent the release of pollutants to water and land due to routine, non-routine, and accidental circumstances, or when not feasible, minimize and/or control the intensity and mass flow of their release.

Other Standards and Good International Industry Practice

The Dutch Standards lists Target and Intervention Values. Target values refer to background concentrations that occur naturally in soils (based on the Netherlands) and are considered to reflect good soil quality that requires no remediation (no action). Intervention Values relate to cases of soil and groundwater contamination which are dangerous to the health of humans and the natural environment. These levels of contamination typically require remediation and appropriate treatment and disposal. The Dutch Standards for the most significant pollutants are presented in the table below. Where a parameter is not covered by the National Standards in the table above, the Dutch Standards will be referenced for benchmarking purposes.

Table 9-1 Dutch Standards for Soil and Groundwater Contamination (2013)

Parameters	Soil (mg/kg dry matter)		Groundwater (µg/l)	
	Target Value	Intervention Value	Target Value	Intervention Value
Heavy Metals				
Arsenic	29	76	10	60
Barium	160	-	50	625
Cadmium	0.8	13	0.4	6
Chromium	100	-	1	30
Chromium III	-	180	-	-
Chromium IV	-	78	-	-
Cobalt	-	190	20	100
Copper	36	190	15	75
Lead	85	530	15	75
Mercury	0.3	36 (inorganic) 4 (organic)	0.05	0.3
Molybdenum	3	190	5	300
Nickel	35	100	15	75
Zinc	140	720	65	800
Aromatic Compounds				
Benzene	0.01	1.1	0.2	30
Ethyl benzene	0.03	110	4	150
Toluene	0.01	32	7	1000
Xylene (sum)	0.1	17	0.2	70
Styrene (vinylbenzene)	0.3	86	6	300
Phenol	0.05	14	0.2	2000
Cresols (sum)	0.05	13	0.2	200
Chlorinated Hydrocarbons				
Volatile Hydrocarbons				
monochloroethene (vinyl chloride)	0.01	0.1	0.01	5
dichloromethane	0.4	3.9	0.01	1,000
1,1-dichloroethane	0.02	15	7	900
1,2-dichloroethane	0.02	6.4	7	400
1,1-dichloroethene	0.1	0.3	0.01	10
1,2-dichloroethene (sum)	-	1	0.01	20
Dichloropropanes (sum)	-	2	0.8	80
Trichloromethane (chloroform)	0.02	5.6	6	400
1,1,1-trichloroethane	0.07	15	0.01	300
1,1,2-trichloroethane	0.4	10	0.01	130

Parameters	Soil (mg/kg dry matter)		Groundwater (µg/l)	
	Target Value	Intervention Value	Target Value	Intervention Value
Trichloroethene (Tri)	0.1	2.5	24	500
Tetrachloromethane (Tetra)	0.4	0.7	0.01	10
Tetrachloroethene (Per)	0.002	8.8	0.01	40
Chlorobenzenes				
Monochlorobenzene	-	15	7	180
Dichlorobenzenes (sum)	-	19	3	50
Trichlorobenzenes (sum)	-	11	0.01	10
Tetrachlorobenzenes (sum)	-	2.2	0.01	2.5
Pentachlorobenzene	-	6.7	0.003	1
Hexachlorobenzene	-	2.0	0.00009	0.5
Monochlorophenols (sum)	-	5.4	0.3	100
Dichlorophenols (sum)	-	22	0.2	30
Trichlorophenols (sum)	-	22	0.03	10
Tetrachlorphenols (sum)	-	21	0.01	10
Pentachlorophenol	-	12	0.04	3
Other Substances				
Mineral Oil	-	5,000	50	600
Source: Soil Remediation Circular 2013, (*Target values for soil refer to 2000 version as they are not present in the 2013).				

Note: The soil values are calculated for a 'Standard Soil' with 10% organic matter and 25% clay. A case of environmental contamination is defined as 'serious' if >25 m³ soil or >100 m³ groundwater is contaminated above the intervention value.

Where contaminants are found to exceed 'intervention' levels, this is considered to be a case of soil contamination, which is dangerous to the health of humans and the natural environment. Such a level of contamination should prompt a need for remediation, appropriate treatment and disposal.

9.2 Baseline Conditions

9.2.1 Topography

According to the IQLIM ESIA, ground elevations within the Project area range from approximately –26.0 m to –17.0 m above mean sea level. The natural topography has been significantly modified by anthropogenic activities. The surface is characterised by uneven, wave-like relief formed by remnants of former industrial uses, including abandoned foundations, concrete piles, and demolition debris, which have created localised mounds and irregular terrain.

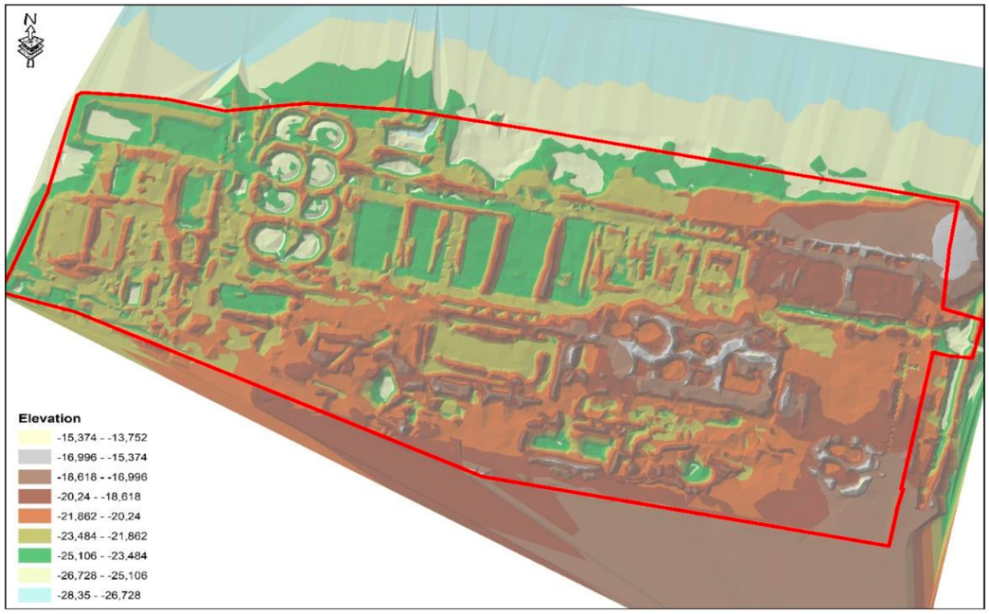


Figure 9-1 Topography and landforms at the project site (source: IQLIM ESIA)

9.2.2 Geology and Geomorphology

Azerbaijan is geologically diverse and is located at the intersection of the Eurasian and Arabian tectonic plates. The principal tectonic features of Azerbaijan include the east-west-trending Greater Caucasus Mountains to the north, the Kura Depression to their south, the Lesser Caucasus Mountains further south, and the expansive South Caspian Depression to the east of these three features.



Figure 9-2 Scheme Geomorphological zoning of Azerbaijan territory (Adapted from Alizadeh, Guliyev, Kadirov and Eppelbaum, 2016)

Based on IQLIM ESIA, the Project area located at the north-western part of the Absheron Peninsula, which traditionally regarded as the south-eastern plunge of the Greater Caucasus Mega Anticlinorium. The sub-surface geology of the Project area and its adjacent area is characterised by a complex stratigraphic sequence that has been tectonically deformed during early Mesozoic and late Tertiary time. The youngest sediments in the vicinity of the Project Area consist of sedimentary rocks of Neogene age covered by Quaternary sediments near the coast.

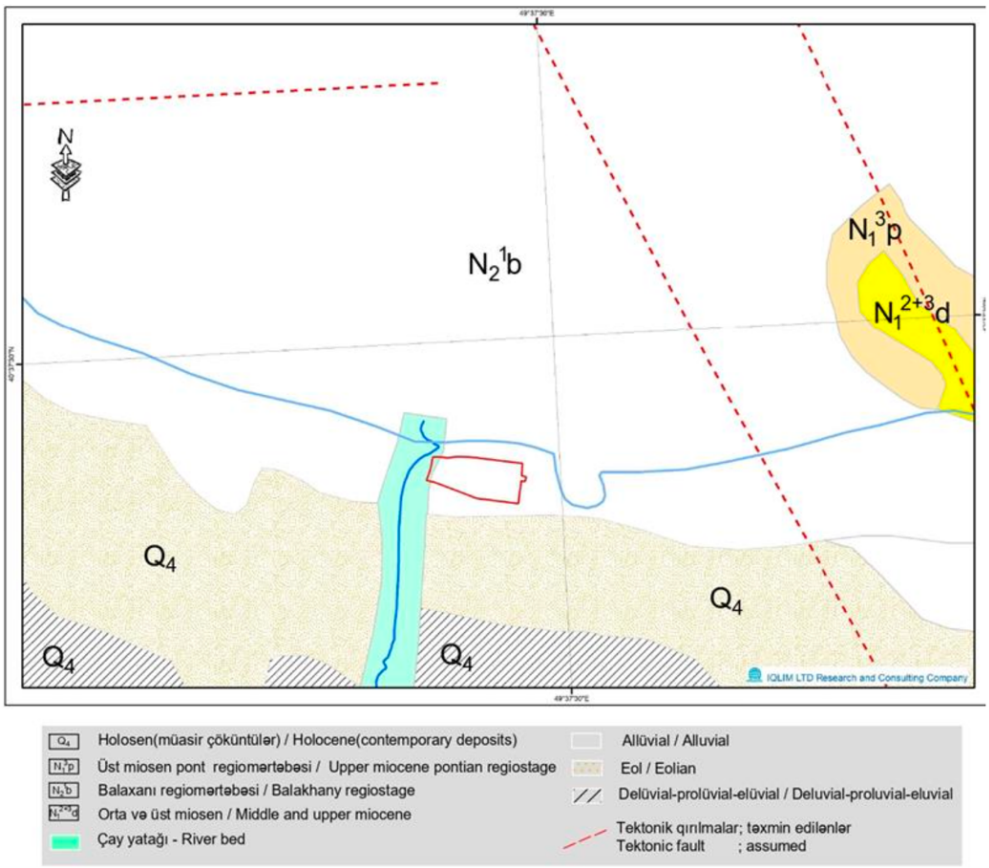


Figure 9-3 Geological Map of the project location (source: IQLIM ESIA)

9.2.3 Soil Quality

9.2.3.1 Introduction

This section presents the baseline conditions for soils within the Project area, including historical land use context, soil stratigraphy, and the results of the intrusive soil investigation and laboratory analyses undertaken as part of the IQLIM ESIA. Additional soil and groundwater sampling and analyses were also conducted by the Project implementation team to characterise soil quality and potential contamination. Investigation activities commenced in July 2024 and are ongoing at the time of preparing this ESIA.

As outlined earlier in this report, the Project site is located within the footprint of a former wastewater treatment plant that ceased operation in 2010. There is no intact natural soil layer across much of the site due to historical industrial use and subsequent filling activities.

9.2.3.2 Scope of Field Investigation Works

Soil investigation was conducted over the entire 26.8 ha Project area at a sampling density of approximately 1 borehole per hectare (100 m × 100 m grid). The following field activities were undertaken:

- 27 soil boreholes were drilled across the Project area.
- One additional borehole (SW1) was drilled outside the main footprint to characterise background (natural) soil conditions.
- Borehole depths ranged from 3 to 6 m, depending on site conditions and groundwater table depth.
- Soil samples were collected at 1 m intervals, beginning at 0.5 m below ground level (bgl) and extending to the base of the unsaturated zone (groundwater table).
- A total of 77 soil samples were analysed for VOCs by profile.

Drilling was performed using direct core drilling techniques, without the use of drilling fluids or lubricants, to prevent sample alteration. Field screening for VOCs was performed using a Photoionization Detector (PID). The field PID measurements were later compared with laboratory analytical results.

9.2.3.3 Historic Land Use

As noted earlier in this report and based on the ESIA prepared by the local consultant IQLIM, the Project site is located within the footprint of a former wastewater treatment plant that ceased operations in 2010 (see Figure 9-4). Following its closure, the area has reportedly been used for the informal disposal of wastes including C&D materials, as well as surplus soil.

Although the main structures of the former facility have been dismantled, concrete foundations and residual waste materials, primarily rubble, remain on site. These historical land uses have influenced the current site conditions and are relevant to the assessment of baseline soil quality and potential contamination.



Figure 9-4 Project Area in 2010 (Source: IQLIM ESIA)

9.2.3.4 Soil Investigation Activities

Soil sampling was conducted in July 2024 for 27 boreholes (including one control location off-site to study the natural soil profile), which covered a project are of 26.8 ha. Borehole locations are indicated in Figure 9-5.

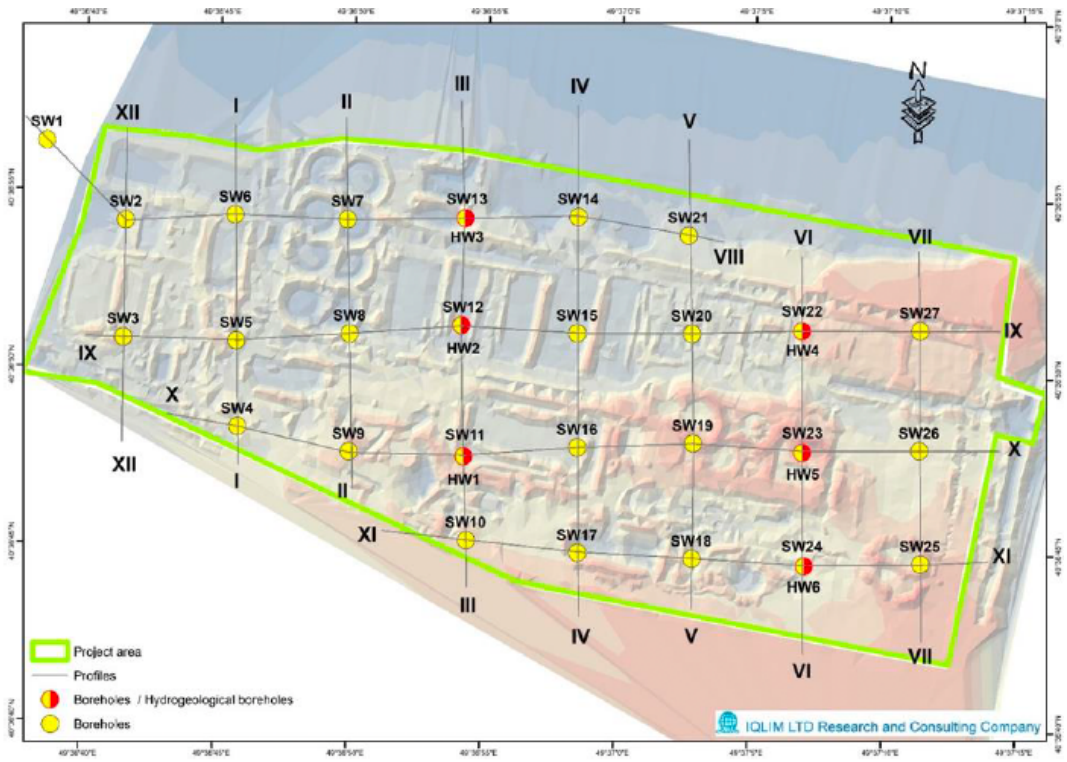


Figure 9-5 Soil sampling locations (Source: IQLIM ESIA)

The samples were collected from each borehole at 1 m intervals, with the depth starts from 0.5 meter to the base of the unsaturated zone (to the groundwater table). The depth of the soil samples was between 3 m and 6 m, depend on physical conditions and the groundwater table depth. The drilling was performed using direct core drilling techniques without the use of drilling fluids, lubricants, which may influence quality analysis.

A noticeable chemical odor and oil contamination was detected in multiple boreholes. In wells SW1, SW2, and SW14, oil contamination was observed at different depths, while only chemical odor was observed in wells SW18 and SW20. A summary of the soil analyses results based on data provided in IQLIM's ESIA is discussed below.

Table 9-2 Soil Quality Analysis Suite

Parameter	Analytical Method	Preparation Method
pH	USEPA 9045D	USEPA 5021
Total Petroleum Hydrocarbons (TPH)	USEPA 8015	USEPA 5021
Heavy Metals: Calcium, Magnesium, Aluminum, Arsenic, Vanadium, Boron, Tin, Antimony, Zinc, Nickel, Cobalt, Chromium, Barium, Molybdenum, Cadmium, Silver, Selen, Lead, Beryllium, Sodium, Mercury, Potassium, Copper, Strontium	USEPA 6010 D or USEPA 6020A	Acid Extraction: USEPA 3051A or 3050B
Volatile Organic Compounds (VOC)	EPA 8260B	USEPA 5021
SVOC (PAH)	USEPA 3550C, SEPA 3630C	USEPA 8270E (Analytical)

(Source: IQLIM ESIA)

9.2.3.5 Soil Investigation Results

The laboratory analytical program included testing for the following parameters:

- Total petroleum hydrocarbons (TPH),
- Polycyclic aromatic hydrocarbons (PAHs),
- Volatile organic compounds (VOCs),
- Semi-volatile organic compounds (SVOCs), and
- Heavy metals.

For the purposes of the assessment, the adopted evaluation criteria included a reference value of 1 mg/kg (1000 µg/kg) for the sum of VOCs and SVOCs, 1000 mg/kg for TPH, and 40,000 µg/kg for PAHs. National Maximum Allowable Concentrations (MACs) under SanPiN 42-128-4433-87 were also considered, noting that these standards are general sanitary criteria and are not differentiated by soil type or regional geological conditions.

PH

Analysis of soil pH indicated moderately to strongly alkaline conditions across the site. Measured values generally exceeded the upper threshold of the national standard (6.5 - 8.5), with several samples approaching a pH of 10.

Total Petroleum Hydrocarbons (TPH)

TPH was detected in all soil samples. In most cases, concentrations ranged between 14 and 487 mg/kg (0.1–0.5 MAC), remaining below the recommended norm of 1000 mg/kg. However, localised contamination was identified in borehole SW2, located in the western part of the Project area. At depths between 2.5 m and 3.0 m, TPH concentrations reached 6,271 mg/kg (6.3 MAC) which also exceeded the limits as per Dutch Intervention Value of 5,000 mg/kg. Elevated TPH concentrations were also recorded in the selected background comparison area at depths of 0.5–3.0 m (2,180 mg/kg; 2.2 MAC).

Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs were detected in all soil samples, with concentrations ranging from 14 to 3200 µg/kg (0.001–0.08 MAC), which are below the recommended limit of 40,000 µg/kg. Elevated but still compliant concentrations were observed in several locations in the western, southern and north-eastern parts of the site (including SW2, SW4, SW5, SW10, SW17, SW19, SW27, HW5 and HW6) at depths of approximately 2.5–3.0 m.

Volatile Organic Compounds (VOCs)

Exceedances of VOC thresholds were identified only in soil profile SW2, at depths between 2.5 m and 5.5 m. Concentrations ranged from 11,813 to 158,083 µg/kg, equivalent to 11.8–158 MAC. This profile also exhibited elevated TPH concentrations, indicating localised hydrocarbon contamination. Field PID measurements corresponded with laboratory results, with the highest VOC readings recorded in SW2.

Semi-Volatile Organic Compounds (SVOCs)

The SVOC analysis of selected samples indicated that concentrations in soil profile SW2 exceeded the adopted MAC by approximately 11.2 times, while other tested samples remained within acceptable limits.

Heavy Metals

Laboratory analyses indicate that zinc, nickel, cobalt, chromium and cadmium concentrations exceed national MAC values in multiple samples across the Project area. However, when compared with Dutch intervention values, concentrations fall within acceptable limits. It is also noted that naturally elevated concentrations of these metals are

common in the Absheron Peninsula and adjacent coastal zones, including in undisturbed areas. This is attributed to the geological history of the region, where Quaternary mud volcanic deposits contributed to soil formation.

Given this regional geogenic context and the lack of spatial patterns indicative of site-specific releases, the elevated heavy metal concentrations are considered representative of natural background conditions rather than anthropogenic contamination associated with the former site use.

9.2.3.6 Baseline Summary

According to the ESIA prepared by IQLIM, the Project site is characterised by an average 2.3 m thick anthropogenic fill layer overlying barren soils and Quaternary sands, with localised clay deposits in the eastern portion of the site. The total estimated volume of fill material is reported to be approximately 614,000 m³. Natural soil profiles are preserved only outside the main disturbed footprint.

The ESIA reports that soil quality investigations identified localised hydrocarbon contamination (including TPH, VOCs and SVOCs), primarily in the western part of the site, particularly at borehole SW2 and sampling locations 1 and 2, at depths of approximately 2.5–5.5 m. In this area, the middle sampling layer reportedly exhibited significantly higher hydrocarbon concentrations compared to other sampled intervals. VOCs were measured at the well head and were detected at all locations, with the highest concentrations recorded in the western sector.

Across the broader site, the ESIA indicates that TPH and total PAH concentrations are commonly in the hundreds of mg/kg range, with PAH concentrations remaining below recommended limits. Elevated heavy metal concentrations are reported to be consistent with regional background conditions. These findings, as presented in the referenced ESIA, form the basis for the impact assessment and soil management approach described therein.

Comparison between Local and Dutch Standards

Where local standards/guidelines are not available, the Dutch Standards are referred to as a good international practice, the standards identify target and intervention values for soils and groundwater.

Table 9-3 Selected Key Soil Comparison

Selected Parameters	Maximum Concentration Detected on-site (mg/kg)	Dutch Intervention Value (mg/kg)	Dutch Target Value (mg/kg)	Local Standard (MPC) (mg/kg)
PAH	158	40	-	-
TPH	6,271	5,000[1]	-	≤500
VOCs (by PID)	158	-	-	0.5
Benzene	545	1.1	-	300
Cobalt	21	190	9	5
Chromium	49	380	100	6
Cadmium	1.9	13	0.8	0.5
Zinc	195	720	140	23
Lead	37	530	85	32
Mercury	2.3	36	0.3	2.1

[1] Mineral oil

9.2.4 Groundwater Quality

9.2.4.1 Regional Groundwater

The region has eighteen hydrogeological basins featuring various types of water resources: porous-stratal, porous-fractured, and fractured. The Project area is situated within the Kur-Araz Lowland's geo-structural region and falls under the hydrological basin of the Shirvan porous-stratal water basin. The following figure shows the hydrogeological zones in Azerbaijan, including the project location.

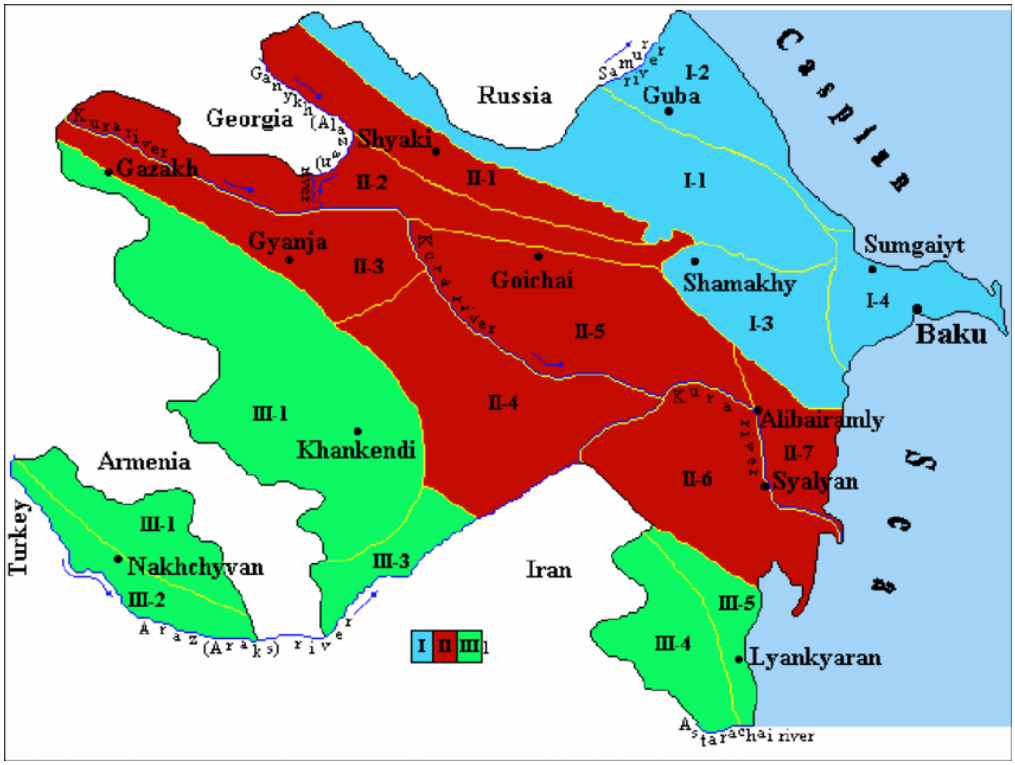


Figure 9-6 Scheme of Hydrogeological Zoning of Azerbajan (Alakbarov, nd)

9.2.4.2 Groundwater Quality at Project Site

Groundwater is present at varying depths across the site. The general flow direction is from the south-west to the north-east, towards the Caspian Sea, indicating a potential pathway for contaminant migration from groundwater into the marine environment. Analysis of groundwater quality in the project area shows that the water is salty (6.83-10.5 g / l), hard, hydrochloride-sulfate. Groundwater is not suitable for drinking or industrial use.

As part of the ESIA prepared by IQLIM, groundwater quality samples were collected in July 2024 from six locations across the project site (HW1 to HW6), using wells drilled to depths of up to 15 m. These were analysed for a suite of organic and inorganic pollutants.

The IQLIM ESIA report includes the results and confirms that groundwater beneath the site is contaminated with both organic and inorganic substances, hence posing potential risks to the environment and human health. Subsoil contamination extends into the groundwater saturation zone, located approximately 6 m below ground level, according to the IQLIM ESIA as indicating a high probability of aquifer pollution. This is supported by the chemical analysis of groundwater samples.

VOCs, PAHs and TPH were detected in the groundwater, with the highest concentrations observed at well HW-6. Groundwater at HW-5 was notably alkaline, with a pH of 10.61. Ammonium and manganese exceeded the limits specified in the national standard (AZS

929:2023) at most sampling locations. Analysis of groundwater quality in the project area shows that the water is salty (6.83-10.5 g / l), hard, hydrochloride-sulphate. Groundwater is not suitable for drinking or industrial use. No contamination with heavy metals or organic compounds was detected.

In addition to the groundwater investigations undertaken as part of the IQLIM ESIA, further rounds of groundwater sampling and laboratory analysis were conducted using the existing monitoring wells (HW3, HW4, HW5 and HW6), installed during the earlier investigation programme. The most recent sampling campaign was completed at the end of December 2025 to confirm the presence and extent of contaminants in groundwater.



Figure 9-7 Groundwater Sampling (December 2025)

9.2.4.3 Groundwater Quality Results

A summary of the analytical results are presented in the following tables. Samples with exceedances against known Dutch Intervention Values are highlighted. Detailed laboratory analyses results are included in Appendix.

Table 9-4 Groundwater Test Results for Heavy Metals

Parameter	Unit	HW3	HW4	HW5	HW6
Antimony (Sb)	ug/L	0.268	0.321	<0.2	<0.2
Arsenic (As)	ug/L	3.23	7.44	19.4	12
Beryllium (Be)	ug/L	<1	<1	<1	<1
Cadmium (Cd)	ug/L	<0.1	<0.1	<0.1	<0.1
Copper (Cu)	ug/L	<1.1	<1.1	<1.1	<1.1
Lead (Pb)	ug/L	<0.1	<0.1	<0.1	<0.1
Mercury (Hg)	ug/L	<0.05	<0.05	<0.05	<0.05
Nickel (Ni)	ug/L	15.8	12.3	13.4	14.8
Selenium (Se)	ug/L	1.12	2.27	1.7	2.08
Silver (Ag)	ug/L	0.112	<0.1	<0.1	<0.1
Titanium (Ti)	ug/L	<0.49	<0.49	<0.49	<0.49
Zinc (Zn)	ug/L	1.8	1.78	1.76	3.13
Chromium (Cr)	ug/L	<0.2	<0.2	<0.2	<0.2
Chromium III (Cr3)	ug/L	<0.1	<0.1	<0.1	<0.1

Table 9-5 Groundwater Test Results for TPH

Parameter	Unit	HW3	HW4	HW5	HW6
TPH (C9-C36)	ug/L	321	690	114	761
Aliphatic low (C9-C12)	ug/L	<20	<20	<20	34.7
Aliphatic medium (C13-C18)	ug/L	90	146	<20	94.2
Aliphatic high (C19-C36)	ug/L	225	491	51.01	248
Aromatic low (C11-C16))	ug/L	<20	45.8	42.03	239
Aromatic medium (C17-C22)	ug/L	<20	<20	<20	145
Aromatic high (C23-C32)	ug/L	<20	<20	<20	<20

Table 9-6 Groundwater Test Results for VOCs

Parameter	Unit	HW3	HW4	HW5	HW6
(C6-C9) Aromatics	ug/L	1.35	9.59	26.7	13.2
(C6-C9) Aliphatics	ug/L	<1	4.26	3.15	5.34
GRO (C6-C10)	ug/L	5.92	30.5	35.5	23.7
Vinyl Chloride	ug/L	<0.1	<0.1	<0.1	3.97
trans-1,2-Dichloroethene	ug/L	1.57	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	6.069	6.885	4.98	29.89
Chloroform	ug/L	1.64	<1	1.56	<1
Benzene	ug/L	1.35	9.595	22.2	4.11
1,2-Dichloroethane	ug/L	1.43	1.96	2.19	1.17
Trichloroethene	ug/L	<1	<1	<1	1.07
1,2-Dichloropropane	ug/L	<1	<1	1.12	<1
n-Octane	ug/L	<1	1.76	1.77	2.87
Chlorobenzene	ug/L	<1	2.13	12.2	42.3
Ethylbenzene	ug/L	<1	<1	2.79	7.91
m+p-Xylene	ug/L	<1	<1	1.7	1.2
n-Nonane	ug/L	<1	2.5	1.37	2.47
n-Propylbenzene	ug/L	<1	<1	1.06	1.169
n-Decane	ug/L	1.086	<1	1.044	<1
1,3-Dichlorobenzene	ug/L	1.949	<1	3.63	<1
n-Undecane	ug/L	<1	<1	<1	1.07
n-Dodecane	ug/L	<1	2.394	5.48	2.65
1,2,4-Trichlorobenzene	ug/L	<1	<1	2.14	<1
1,2,3-Trichlorobenzene	ug/L	1.255	<1	<1	<1

Table 9-7 Groundwater Test Results for BTEX

Parameter	Unit	HW3	HW4	HW5	HW6
Benzene	ug/L	1.35	9.595	22.2	4.11
Toluene	ug/L	<1	<1	<1	<1

Parameter	Unit	HW3	HW4	HW5	HW6
Ethylbenzene	ug/L	<1	<1	2.79	7.91
m+p-Xylene	ug/L	<1	<1	1.7	1.2
o-Xylene	ug/L	<1	<1	<1	<1

Table 9-8 Groundwater Test Results for PAHs (only those with detections)

Parameter	Unit	HW3	HW4	HW5	HW6
Naphthalene	ug/L	0.013	0.024	0.06	0.05
Acenaphthylene	ug/L	0.018	0.052	1.637	13.7
Acenaphthene	ug/L	<0.01	<0.01	0.061	0.627
Fluorene	ug/L	<0.01	<0.01	0.256	2.312
Phenanthrene	ug/L	<0.01	<0.01	0.025	0.022
Anthracene	ug/L	<0.01	<0.01	0.019	0.727
Fluoranthene	ug/L	<0.01	<0.01	0.021	0.522
Pyrene	ug/L	<0.01	<0.01	0.039	1.15
Benzo(a)anthracene	ug/L	<0.01	<0.01	<0.01	0.381
Chrysene	ug/L	0.014	<0.01	0.026	0.313
Benzo(b)fluoranthene	ug/L	<0.01	0.01	0.013	0.642
Benzo(k)fluoranthene	ug/L	<0.01	<0.01	0.01	0.184
Benzo(a)pyrene	ug/L	<0.01	<0.01	0.02	1.029
Indeno(123cd) pyrene	ug/L	<0.01	<0.01	0.054	0.168
Benzo(ghi)perylene	ug/L	<0.01	<0.01	0.597	0.204
Dibenzo(ah)anthracene	ug/L	<0.01	<0.01	<0.01	0.056
Total EPA 16	ug/L	0.074	0.13	2.844	22

Groundwater samples collected from monitoring wells HW3, HW4, HW5 and HW6 indicate the presence of hydrocarbons and selected dissolved constituents at varying concentrations across the site.

Heavy Metals

Most analyzed heavy metals were either not detected or were present at low concentrations. Arsenic was detected in all wells, ranging from 3.23 to 19.4 µg/L, with the highest concentration recorded in HW5. Nickel was consistently detected across all wells at concentrations between 12.3 and 15.8 µg/L. Selenium was present at low concentrations (1.12–2.27 µg/L). Other metals, including cadmium, lead, mercury, chromium and copper, were below laboratory detection limits in all samples. Zinc was detected at low levels (1.76–3.13 µg/L). Overall, heavy metals were present at relatively low concentrations and within their applicable Dutch Intervention Values.

Total Petroleum Hydrocarbons (TPH)

TPH (C9–C36) was detected in all monitoring wells, with concentrations ranging from 114 µg/L in HW5 to 761 µg/L in HW6. For screening purposes, comparison has been made against the most relevant Dutch intervention value for mineral oil in groundwater of 600 µg/L.

Measured concentrations in HW4 (690 µg/L) and HW6 (761 µg/L) exceed the Dutch intervention value, while concentrations in HW3 (321 µg/L) and HW5 (114 µg/L) remain below this threshold. These results indicate that dissolved petroleum hydrocarbon

concentrations in groundwater exceed the intervention value in two of the four monitoring wells, suggesting more elevated conditions in the vicinity of HW4 and HW6.

Volatile Organic Compounds (VOCs)

A range of volatile organic compounds (VOCs) was detected in groundwater across the monitoring wells, including aromatic hydrocarbons (e.g., benzene, chlorobenzene, ethylbenzene) and chlorinated solvents. Concentrations were generally higher in wells HW5 and HW6 compared to HW3 and HW4.

1,2-Dichloroethene was detected in all wells and reached a maximum concentration of 29.9 µg/L in HW6. This concentration exceeds the applicable Dutch intervention value for this pollutant in groundwater. Lower concentrations were recorded in the remaining wells, but detections were consistent across the site, indicating the presence of chlorinated solvent impacts within the groundwater system.

Other VOCs, including benzene and chlorobenzene, were detected at varying concentrations; however, 1,2-Dichloroethene represents the most significant exceedance of the Dutch intervention criteria among the analyzed VOC parameters.

BTEX

Within the BTEX group, benzene was consistently detected in all wells. Ethylbenzene and xylenes were detected at lower concentrations, primarily in HW5 and HW6. Toluene and o-xylene were below detection limits in all samples.

Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs were detected in groundwater at all monitoring locations, with total EPA 16 PAH concentrations ranging from 0.074 µg/L (HW3) to 22 µg/L (HW6). The highest overall concentrations were recorded in HW5 and HW6.

Comparison with Dutch intervention values indicates that several individual PAH compounds exceed applicable screening criteria, particularly in well HW6. These include compounds such as benzo(a)pyrene, benzo(b)fluoranthene and indeno(1,2,3-cd) pyrene. Elevated concentrations of acenaphthylene, fluorene and pyrene were also observed in HW5 and HW6, contributing to the higher total PAH concentrations in these wells.

Overall, while PAHs are present at relatively low or below their minimum detection limits in HW3 and HW4, exceedances of Dutch intervention values for several higher molecular weight PAHs in HW5 and especially HW6 indicate localised groundwater impacts requiring further consideration in the impact assessment.

9.2.4.4 Overall Observations

Groundwater beneath the site contains dissolved petroleum hydrocarbons, VOCs (including BTEX and chlorinated compounds), and varying levels of PAHs. Concentrations are generally higher in wells HW5 and HW6 compared to HW3 and HW4, suggesting spatial variability in contaminant distribution. Heavy metals are present at low concentrations and are not a dominant feature of groundwater contamination.

These results confirm the presence of hydrocarbon-related contamination in groundwater at the site and provide the basis for further assessment of potential risks and management measures.

9.2.5 Surface Water

9.2.5.1 Sumgaitchay River

The Sumgaitchay River flows from south to north and discharges into the Caspian Sea. The river is located immediately west of the Project site and represents the primary surface water feature in the vicinity.

The Sumgaitchay River is characterised as an intermittent (seasonal) watercourse. During dry periods, the river channel frequently runs dry and flow is largely confined to a man-made canal section. Rainfall constitutes the principal source of flow, and surface runoff is directly dependent on precipitation within the upstream catchment.

For much of the year, the river may exhibit little to no measurable discharge. Depending on annual rainfall patterns and soil moisture conditions within the catchment area, the duration of active flow varies considerably, ranging from approximately 2 to 231 days per year.



Figure 9-8 Location of Sumgaitchay River and its watershed area (source: IQLIM ESIA)

The Sumgaitchay River has an average long-term annual water resource estimated at approximately 47.6 million m³/year. In high-water years, total annual flow may reach up to 185 million m³/year, whereas in low-water years it can decrease significantly to approximately 1.89 million m³/year, reflecting substantial interannual variability. There are no reservoirs or major hydraulic control structures along the river; consequently, river flow remains unregulated and is fully dependent on natural hydrological conditions.

Water Quality

According to the ESIA prepared by IQLIM, two monitoring stations (WQ1 and WQ2) were established to assess the water quality of the Sumgaitchay River within the vicinity of the Sumgait industrial zone. The IQLIM study identified approximately 28 wastewater discharge sources entering the river along the monitored stretch.

Analytical results of samples collected for several months during July to December 2024 indicate that, overall, river water quality is generally satisfactory. However, compared to background conditions, elevated microbiological contamination was recorded (highlighted in the following table), particularly with respect to Escherichia coli (E. coli) and total coliform bacteria. In addition, slight increases in ammonium and zinc concentrations were observed. Water samples were collected from both the upper reaches (WQ2, considered as background quality) and lower reaches (WQ1) of the industrial zone, and the analytical results are presented in Table 9-9.

Table 9-9 Laboratory Analyses Result of River Water Samples

Parameter	WQ2 (background)						WQ1					
	21.07.24	08.08.24	23.09.24	17.10.24	16.11.24	13.12.24	21.07.24	08.08.24	23.09.24	17.10.24	16.11.24	13.12.24
pH	8,35	8,78	7,96	8,16	7,95	7,86	8,64	8,45	8,31	8,31	7,82	8,11
Temperature, °C	21,6	23,5	21,9	21,4	12,6	8,2	23,3	21,2	20,8	20,8	11,7	7,1
Turbidity, NTU [1)]	9,27	12,46	8,96	6,89	8,74	12,48	29,53	49,68	38,68	38,68	42,19	51,56
Dissolved oxygen, mg/l O2	8,9	8,5	9,1	8,6	8,4	8,9	8,9	8,6	8,9	8,9	9,3	9,1
TDS, mg/l	620	680	780	710	805	419	610	720	650	650	678	476
Conductivity, µS/cm	1241	1320	1513	1398	1596	842	1235	1465	1295	1295	1353	950
Eh / redox potential, mV	-75,6	-99,8	-53,48	-65,6	-52,89	-48,1	-84,9	-82,36	-74,1	-74,1	-47,61	-61,9
TSS, mg/l	42	25	32	23	30	21	45	169	94	94	127	96
Nitrates, mg/l NO3-N	<0.5	<0.5	<0.5	<0.5	<0.5	<0,5	<0.5	<0.5	<0.5	<0.5	<0.5	<0,5
Nitrites, mg/l NO2-N	<0.005	<0.005	<0.005	<0.005	<0.005	<0,005	<0.005	<0.005	<0.005	<0.005	<0.005	<0,005
Ammonium, mg/l NH4-N	0,3	<0.03	0,4	0,2	<0.03	0,045	1,9	1,2	0,9	0,9	2,4	1,6
Phosphates, mg/l PO4-P	0,12	0,09	0,07	0,11	0,12	0,11	0,027	0,18	0,21	0,21	0,083	0,05
Chlorides, mg/l	291	502	323	336	340	196	309	352	296	296	415	386
Sulphates, mg/l SO4	686	1520	980	768	1250	588	540	576	499	499	578	712
Sulphides, mg/l S #	<0.02	<0.02	<0.02	<0.02	<0.02	<0,02	<0.02	<0.02	<0.02	<0.02	<0.02	<0,02
Carbonates (CO3), mg/l	<20	40	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Hydrogen carbonates (HCO3), mg/l	164	227	113	156	208	114	169	215	194	194	247	338
BOD, mg/l	51	15	37	29	23	19	22	45	63	63	18	35
COD, mg/l	29	6,4	11	7,4	6,1	7,8	9,1	28	18	18	14	27
Hardness, mg/l CaCO3	578	900	865	715	838	476	497	472	469	469	375	518

Parameter	WQ2 (background)						WQ1					
	21.07.24	08.08.24	23.09.24	17.10.24	16.11.24	13.12.24	21.07.24	08.08.24	23.09.24	17.10.24	16.11.24	13.12.24
Calcium, mg/l	91	149	83	118	155	104	97	76	101	101	71	89
Magnesium, mg/l	86	128	74	92	149	58	62	81	75	75	43	112
Potassium, mg/l	16	22	15	21	20	21	13	12	15	15	14	25
Sodium, mg/l	455	697	476	537	675	295	341	229	306	306	372	618
Aluminium, mg/l	0,39	0,11	0,06	0,23	0,15	0,2	0,05	0,07	0,04	0,04	0,06	0,13
Arsenic, mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0,01	<0.01	<0.01	<0.01	<0.01	<0.01	<0,01
Cobalt, mg/l	<0.008	<0.008	<0.008	<0.008	<0.008	<0,008	<0.008	<0.008	<0.008	<0.008	<0.008	<0,008
Cadmium, mg/l	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0,0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0,0015
Chromium, mg/l	<0.005	0,006	<0.005	<0.005	<0.005	<0,005	<0.005	<0.005	<0.005	<0.005	<0.005	<0,005
Iron, mg/l	0,08	0,02	0,05	0,04	0,03	0,024	0,25	0,07	0,06	0,06	0,18	0,32
Manganese, mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0,005	0,15	0,11	0,12	0,12	0,1	<0,005
Mercury, mg/l	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0,00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0,00005
Lead, mg/l	<0.008	0,08	<0.008	0,08	<0.008	<0,008	<0.008	<0.008	0,08	0,08	<0.008	<0,008
Nickel, mg/l	<0.008	0,016	<0.008	0,016	<0.008	<0,008	<0.008	<0.008	0,016	0,016	<0.008	<0,008
Copper, mg/l	<0.008	<0.008	<0.008	<0.008	<0.008	<0,008	<0.008	<0.008	<0.008	<0.008	<0.008	<0,008
Zinc, mg/l	<0.008	<0.008	<0.008	<0.008	<0.008	<0,008	0,18	<0.008	<0.008	<0.008	0,09	0,015
Oil and grease, mg/l	<0,5	<0,5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
E. coli (per 100ml)	380	220	310	270	207	429	12500	6700	2320	2320	168	685
Total Coliforms (per 100ml)	4150	2920	3980	3430	994	1351	33500	11890	9150	9150	490	2869

9.3 Area of Influence and Receptors

9.3.1 Area of Influence

The area of influence for soils, surface water and groundwater vary. For soils the area of influence is generally limited to the construction footprint, while surface water and groundwater extend further due to their mobility.

9.3.2 Receptors

The following receptors have been identified which are assigned level of sensitivities as shown in Table 9-10.

Table 9-10 Soils, Surface Water and Groundwater Sensitive Receptors

Receptor	Sensitivity	Justification
Soil	**Low**	The soils within the Project site have been significantly disturbed and are already affected by historical contamination associated with past industrial activities. The site comprises predominantly anthropogenic fill material rather than intact natural soil profiles. The ecological and agricultural value of the soil resource is limited.
Groundwater	**Medium**	Local groundwater has been identified as containing hydrocarbons, VOCs and PAHs, with exceedances of intervention values in certain monitoring wells. The area is industrial in character and groundwater is not identified as a potable supply source within the immediate vicinity. While contamination is already present, groundwater remains a mobile environmental medium with potential connectivity to the marine environment.
Surface water	**Medium**	The Sumgaitchay River is an intermittent and unregulated watercourse located adjacent to the Project site. Baseline data indicate generally satisfactory water quality, although the river receives multiple wastewater discharges within the industrial zone and exhibits elevated microbiological indicators. Its intermittent flow regime reduces ecological sensitivity during dry periods; however, it remains a hydrologically connected receptor that ultimately discharges into the Caspian Sea. Given its environmental function and potential linkage to marine waters, a medium sensitivity classification has been assigned.
Caspian Sea (for indirect impacts)	**Medium**	The Caspian Sea is of high regional ecological and economic importance; however, the nearshore area adjacent to the Project site is industrialised and subject to existing discharges. Given its ecological value but high dilution capacity and modified local setting, the sea is considered to have medium sensitivity as an indirect receptor to potential dewatering discharge.
Construction Workers	**Medium**	Workers could be exposed via dermal contact, accidental ingestion of soil, or incidental contact with shallow groundwater during excavation, dewatering, or handling of contaminated materials. Although construction workers are a defined human receptor and highly sensitive to chemical exposure, their exposure is generally limited in duration and controlled through standard occupational health and safety measures, including the use of personal protective equipment (PPE), hygiene practices, and site management protocols

9.4 Potential Impacts, Mitigation, Management & Residual Impacts

9.4.1 Construction Phase

Baseline groundwater investigations identified the presence of dissolved petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), including chlorinated solvents such as cis-1,2-Dichloroethene, and polycyclic aromatic hydrocarbons (PAHs). Exceedances of Dutch intervention values were recorded in selected monitoring wells, particularly HW4 and HW6 for TPH, HW6 for 1,2-Dichloroethene, and several higher molecular weight PAHs in HW5 and HW6. Heavy metals were generally detected at low concentrations.

Given these baseline conditions, potential project-related impacts are primarily associated with construction-phase activities, particularly groundwater dewatering, excavation works, and worker exposure during subsurface activities. The Project is a desalination plant located adjacent to the coastline; therefore, interactions with shallow coastal groundwater are anticipated during construction.

9.4.1.1 Groundwater Dewatering

Construction of intake structures, pipelines, foundations, and underground utilities may require temporary groundwater dewatering. Dewatering could involve abstraction of shallow groundwater from excavations extending into the saturated zone.

Mobilisation of Contaminants

Dewatering may induce local hydraulic gradients that could mobilise dissolved contaminants, particularly in areas where TPH, VOCs, and PAHs are present at elevated concentrations.

Pumping could potentially:

- Draw contaminated groundwater toward excavation zones.
- Increase lateral migration within shallow aquifers.
- Temporarily alter plume geometry.

However, given the coastal setting and the likely hydraulic connection to the sea, groundwater flow is expected to be predominantly toward the marine environment. Dewatering is therefore unlikely to significantly expand the overall footprint of contamination but may locally redistribute dissolved constituents. Magnitude of potential impacts are therefore assessed to be moderate adverse.

Management of Abstracted Water

As outlined earlier in this report, dewatering during construction will be handled by installing temporary dewatering wells to control groundwater ingress into excavations. Extracted groundwater will be subject to routine sampling and laboratory analysis to determine its suitability for discharge and to ensure compliance with applicable environmental standards.

Where analytical results demonstrate that groundwater quality meets the relevant discharge criteria, the water may be discharged directly to the sea in accordance with regulatory approvals. In cases where groundwater does not meet the required standards, it will be directed to a purpose-built sedimentation basin designed specifically for the treatment of dewatering effluent. This basin will be separate from any offshore sedimentation facilities used for dredged materials. Following treatment, and subject to verification monitoring, the water may be discharged to the sea if compliant with standards, or alternatively conveyed via wastewater pipelines or transported by tanker truck to an appropriately licensed wastewater treatment facility for further management.

This approach is intended to prevent uncontrolled release of contaminated groundwater and to minimise potential impacts on marine and coastal water quality during construction.

Dewatering is anticipated to last for approximately 5 months. Abstracted groundwater may contain TPH, VOCs and PAHs at concentrations exceeding screening values. Uncontrolled discharge could result in:

- Secondary contamination of soil or surface water.
- Direct discharge of hydrocarbons or chlorinated solvents to the marine environment.
- Vapour emissions from storage or handling areas.

Indirect Impacts on Caspian Sea and Other Surface Water Bodies

Untreated or inadequately treated discharge of contaminated groundwater to the Caspian Sea could result in localised and short-term deterioration of nearshore water quality, particularly with respect to dissolved hydrocarbons, VOCs and PAHs identified in baseline investigations. Although the marine environment has a high dilution capacity, direct release without prior treatment could temporarily elevate contaminant concentrations in the immediate mixing zone, potentially affecting water quality and marine organisms in the vicinity of the discharge point. Proper treatment and compliance monitoring would therefore be required to prevent adverse indirect impacts.

Given the presence of dissolved hydrocarbons and chlorinated compounds in groundwater, uncontrolled discharge could result in:

- Localised hydrocarbon sheen formation.
- Introduction of VOCs or PAHs into coastal waters.
- Potential ecological effects in confined nearshore zones.

However, given the high dilution capacity of the marine environment and the relatively moderate concentrations detected, impacts would likely be localised and temporary.

Without mitigation, the potential impact would be of high significance due to exceedances of intervention values in certain wells.

9.4.1.2 Worker Exposure During Construction

Construction workers may be exposed to contaminated groundwater and saturated soils through:

- Dermal contact during excavation and handling.
- Inhalation of vapours (particularly VOCs such as benzene and 1,2-Dichloroethene).
- Inhalation of aerosols generated during pumping or spraying.
- Confined space entry into excavations where vapours may accumulate.

Given the detection of VOCs and chlorinated solvents, vapour exposure is a relevant consideration, particularly in deeper excavations intersecting groundwater.

The highest VOC and chlorinated solvent concentrations were identified in HW6, with 1,2-Dichloroethene exceeding Dutch intervention values. While concentrations are in the µg/L range, volatilisation during active pumping or agitation could create short-term vapour risks in poorly ventilated areas.

Open-air construction conditions and the coastal setting provide natural dispersion, which reduces inhalation risk under normal working conditions. However, considering the existing site conditions, magnitude of potential impacts is assessed to be Moderate.

Implementation of occupational health and safety measures (PPE, air monitoring, ventilation where necessary) would reduce the significance of residual impacts.

9.4.1.3 Accidental Spills and Leaks

During the construction phase, various construction materials, fuels, lubricants and chemicals will be transported to, stored and used within the Project site. In addition, wastes will be generated from construction activities and from the operation and maintenance of heavy machinery. These activities present a risk of accidental spills and leaks, particularly within storage areas, refuelling zones, access roads and off-loading areas.

Given that baseline investigations have already confirmed the presence of hydrocarbon contamination in soil and groundwater, any additional spills, even of relatively small volume, could exacerbate existing contamination and contribute to cumulative impacts. Contaminants released to soil could infiltrate through the anthropogenic fill layer and migrate vertically to groundwater, particularly in areas where shallow groundwater has been identified. Although direct spills to groundwater are unlikely, secondary impacts may occur through leaching and downward migration.

Concrete washout generated during civil works represents a specific risk. Concrete wash water is highly alkaline and can significantly increase soil pH if discharged directly onto the ground. Inappropriate disposal may therefore result in localised soil degradation and, through infiltration, indirect impacts to groundwater quality. Similarly, areas designated for heavy equipment maintenance and temporary workshops pose a risk of hydrocarbon and lubricant leaks, which could contribute to additional soil contamination and subsequent groundwater impacts.

While the likelihood of large uncontrolled releases is relatively low under standard construction management practices, the presence of pre-existing contamination increases the sensitivity of the site to additional inputs. Consequently, in the absence of mitigation, the magnitude of impact associated with accidental spills and leaks is assessed as moderate, due to the potential to aggravate existing soil and groundwater conditions.

9.4.1.4 Temporary Waste Storage (Including Sewage and Hazardous Waste)

Construction activities will generate both solid and liquid wastes, including non-hazardous construction debris and smaller quantities of hazardous waste such as waste oils, chemical containers and contaminated materials. Temporary on-site storage areas will be established for waste segregation and handling prior to off-site disposal.

Although the hazardous fraction is expected to represent a relatively small proportion of total construction waste, it carries a higher contamination potential. Inadequate storage, such as the absence of impermeable surfaces, secondary containment or weather protection, could result in leachate formation and direct soil contamination. Given the existing hydrocarbon and solvent impacts identified in baseline investigations, additional contamination from poor waste management could compound groundwater quality issues through infiltration pathways.

Sanitary wastewater, including greywater from washing facilities and blackwater from toilets, will be generated from temporary site offices, worker rest areas and accommodation camps. Portable toilets equipped with sealed collection tanks are expected to be used, consistent with standard construction practice. If properly maintained and regularly emptied by licensed contractors, the risk of soil or groundwater contamination is low. However, leakage, overflow or improper handling of sewage could result in localised soil contamination and potential microbiological impacts to shallow groundwater.

In the absence of appropriate mitigation measures, impacts arising from improper temporary waste storage and sewage management would likely remain confined to the Project site.

Nevertheless, considering the existing contamination baseline, any additional pollutant loading could contribute to cumulative soil and groundwater degradation. Therefore, robust waste management procedures will be required to minimise further environmental deterioration.

9.4.2 Operational Impacts

The desalination plant operation is not expected to interact directly with contaminated shallow groundwater, as process water will be derived from seawater intake. Therefore, operational-phase impacts on groundwater quality are anticipated to be minimal.

Provided that no additional subsurface contamination sources are introduced during operation, the Project is not expected to exacerbate existing groundwater contamination.

9.4.2.1 Accidental Spills and Release

Potential contamination is primarily associated with accidental releases, which are considered unlikely but cannot be entirely ruled out due to the storage and handling of chemicals required for plant operations and maintenance. Potential sources of contamination include stored diesel for emergency generators, operational chemicals, waste oils such as oily sludge or spent maintenance oils, and solvents or cleaning fluids.

The majority of the plant area will be paved, limiting infiltration and reducing the likelihood of chemical seepage into the subsurface. Dedicated storage areas for fuels and chemicals will be designed with containment measures, including chemical-resistant bunded areas capable of retaining at least 110% of the largest tank's volume. Offloading points for fuel and chemicals will also be equipped with containment systems to capture accidental spills. Consequently, in the unlikely event of a release, impacts are expected to be confined within the Project site and will be temporary, as remediation measures can be implemented to restore soil and groundwater quality.

Regarding wastewater and sludge management, all effluent will be contained within sealed structures, most of which will be underground, preventing contact with soil or groundwater. The likelihood of spills or leaks is minimal, though potential failure points include connection leaks, blockages, or overflow incidents. Standard operational and maintenance procedures, combined with routine monitoring, are expected to minimise such risks. Special care will be required due to the proximity of the Sumgaitchay River; any uncontrolled stormwater or wastewater overflow could reach the river, representing a potential indirect pathway for environmental impact.

Overall, operational-phase impacts are assessed as unlikely, localised, and reversible, provided that the designed containment and management systems are implemented and maintained.

9.4.3 Cumulative Impacts

The site is located within an industrial area with historical activities. Existing groundwater contamination appears to be partly attributable to legacy conditions. The Project has the potential to temporarily influence groundwater flow during construction but is not expected to represent a significant new source of contamination if appropriate environmental management measures are implemented.

Table 9-11 Soils, Surface Water and Groundwater impact Significance, Mitigation Measures and Residual Impacts

Potential Impact	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Mitigation and Management Measures	Residual Impact
Construction						
Groundwater dewatering – mobilisation of contaminants	Moderate	Groundwater	Medium	Moderate	• Install dewatering wells with controlled pumping rates to minimise drawdown and limit contaminant mobilisation • Regularly monitor groundwater quality during dewatering any unexpected changes • Implement phase dewatering where feasible to reduce the area affected at any one time.	Minor
Discharges of untreated groundwater to sea and surface water bodies	Major	Caspian Sea	Medium	Major	• Treat all groundwater that does not meet the discharge limits before release. • Use onsite sedimentation basin to collect groundwater with contaminants until discharge to an offsite treatment facility. • Use purpose-built containment and sedimentation system separate from dredged material basins. • Verify water quality compliance with relevant local and international environmental standards prior to discharge • Maintain records of monitoring results and adjust treatment methods as necessary.	Moderate
Workers exposure during construction	Moderate	Construction workers	Medium	Moderate	• Provide and enforce the use of PPE including gloves, boots and protective clothing to workers. • Masks to be provided to protect against VOCs, PAHs, TPH • Conduct training for workers on handling contaminated soil and groundwater and recognising potential hazards. • Implement hygiene protocols, including handwashing facilities and controlled eating areas.	Minor

Potential Impact	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Mitigation and Management Measures	Residual Impact
Accidental spills and leaks	Moderate	Soil	Low	Minor	• Establish designated storage areas with bunding and impermeable surfaces for fuels, chemicals and construction materials. • Provide spill kits and emergency response plans at all identified high-risk areas • Regularly inspect storage tanks, pipelines and equipment for leaks and damage. • Implement concrete wash out containment areas to prevent soil and water contamination.	Negligible
Operation						
Accidental spills/leaks of fuels, chemicals, and hazardous materials	Minor	Soil	Low	Negligible	• All chemicals and fuel tanks should be placed within chemical-resistant bunded areas capable of containing 110% of the largest tank volume. • Drainage systems within storage areas to direct any accidental spills to containment facility. • Ensure proper PPE is worn; to include at a minimum: gloves, safety shoes, and safety google • Prompt and effective action be initiated to stop the spillage/leakage and its pollution at source. • After the spillage or leakage has been contained, the contaminated material and the absorbent material should be placed within the disposal bags available in the spill kit and properly enclosed with tape or twist ties. Disposal bag shall be removed and treated as hazardous waste. • Make sure that the used spill kits are replaced with new ones and that enough absorbing materials are available for future potential environmental accidents. • Implement and regularly train staff on spill response procedures, including the use of spill kits and immediate containment measures.	Negligible
		Groundwater	Medium	Minor		Negligible
		Surface Water	Medium	Minor		Negligible

9.5 Management of Soil Contamination during Construction

As outlined earlier, baseline investigations shows that soils within the Project site contain localised hydrocarbon contamination, primarily associated with TPH, volatile VOCs, and SVOCs. While the majority of the site exhibits concentrations below applicable reference criteria, elevated levels have been identified in discrete areas, particularly within the western portion of the site, where both TPH and VOCs exceed screening thresholds. PAHs are generally present at low concentrations, and elevated heavy metals were also detected, including those considered representative of natural background conditions.

In line with international good practice, a risk-based soil management approach will be adopted during construction. This approach prioritises the management of exposure pathways rather than the wholesale removal of all impacted soils, recognising that contamination is largely localised and can be effectively controlled through engineering measures.

A key component of this strategy is the reuse of excavated and imported fill material to raise site levels, thereby forming a protective capping layer across the Project footprint. This engineered fill layer will act as a physical barrier, preventing direct contact between underlying soils and human receptors, including construction workers during later phases of development and future operational personnel.

During site preparation works:

- Excavated soils will be classified based on visual inspection, field screening (e.g. PID), and laboratory data;
- Clean and marginally impacted soils will be reused within the site where appropriate;
- Soils exhibiting elevated hydrocarbon concentrations, particularly within identified hotspot areas, will be selectively managed, either through controlled encapsulation beneath the fill layer or removal for off-site disposal where required;
- Highly contaminated soils (e.g. those significantly exceeding reference values) will be segregated and handled separately to prevent cross-contamination.

The capping and site raising system will be implemented as follows:

- Placement of a continuous layer of clean fill material of sufficient thickness to provide an effective barrier;
- Installation of a geotextile or marker layer at the interface between existing ground and fill, where required, to prevent mixing and to provide a clear delineation of the capped surface;
- Compaction and grading of the fill layer to ensure long-term stability and to prevent erosion or exposure of underlying soils;
- Construction of hardstanding, pavement, or concrete surfaces in operational areas, providing an additional permanent barrier.

This approach effectively mitigates the primary exposure pathways associated with contaminated soils, including direct contact, ingestion, and inhalation of dust or vapours. In particular, the capping layer will significantly reduce the potential for vapour emissions from VOC impacted soils to affect surface receptors.

During construction, any temporary exposure risks will be controlled through standard measures, including:

- Use of personal protective equipment (PPE);
- Dust suppression (e.g. water spraying);

- Controlled excavation practices;
- Real-time monitoring (e.g. PID instruments) in areas of known or suspected VOC contamination.

Overall, this strategy reflects a practical and widely adopted risk-based approach to contaminated land management, whereby soils are safely retained and managed in situ through encapsulation and controlled reuse.

The proposed capping and in situ management approach also avoids the need for extensive off-site transportation and disposal of impacted soils, which would otherwise introduce additional environmental and social impacts. Large-scale excavation and haulage of contaminated materials could result in increased emissions, traffic disturbance, and risks of spillage or dispersion during transport, potentially leading to secondary contamination along transport routes. Furthermore, disposal of significant soil volumes at external facilities may transfer the environmental burden to another location, placing pressure on landfill capacity and potentially affecting receiving environments. From a sustainability perspective, minimising off-site disposal aligns with good international practice by reducing the project's overall environmental footprint, while also avoiding substantial logistical and cost implications associated with excavation, transport, and disposal.

9.6 Management of Contaminated Groundwater during Dewatering

Groundwater investigations indicate the presence of hydrocarbon-related contamination, including TPH, VOCs (notably BTEX and chlorinated compounds), and PAHs, with localised exceedances of screening and intervention values observed in certain areas of the site. These findings confirm that groundwater beneath parts of the Project area is impacted and requires appropriate management during construction, particularly where dewatering is required for excavation works.

A Groundwater Management Plan will be developed prior to the commencement of dewatering activities, detailing the proposed management measures, treatment systems, and a monitoring programme to characterise groundwater quality and verify compliance with applicable discharge standards. All dewatering activities will be undertaken within a controlled management framework, ensuring that extracted groundwater is appropriately characterised, treated where necessary, and only discharged once compliant with applicable standards. Dewatered groundwater will initially be directed to temporary on-site storage and/or dedicated sedimentation basins, where it will undergo primary settling to remove suspended solids and allow for initial separation of any entrained sediments or hydrocarbons.

Where monitoring indicates the presence of contaminants above acceptable discharge limits, additional treatment measures will be implemented. These may include:

- Oil-water separation systems for removal of free-phase hydrocarbons;
- Filtration and settlement processes to reduce turbidity and particulate-bound contaminants;
- Activated carbon adsorption units (or equivalent technologies) for removal of dissolved hydrocarbons, VOCs, and organic compounds;
- Other appropriate treatment systems, depending on the specific water quality characteristics encountered during construction.

Following treatment, groundwater will be tested prior to discharge to confirm compliance with regulatory requirements. Only water meeting these criteria will be discharged, and discharge will be controlled to prevent erosion or localised impacts to receiving environments.

In cases where groundwater quality does not meet discharge criteria despite treatment, water will be retained for further treatment, reused within construction activities where feasible, or transported off-site to a licensed facility for disposal.

This approach ensures that groundwater dewatering activities are managed in accordance with a precautionary and risk-based framework, preventing the release of untreated contaminated water and avoiding secondary impacts on marine water and sediment quality.

9.7 Monitoring

Table 9-12 Soils, Surface Water and Groundwater Monitoring Requirements

Monitoring	Parameter	Frequency & Durations	Monitoring Location	Responsibility
Construction				
Soil, surface water and groundwater quality	Visible spills & leaks of hydrocarbons and other potentially hazardous or chemicals	Daily during construction as part of the daily walkdown	The entire project area during construction	EPC Contractor
Dewatered Effluent	Monitoring for pH, TPH, PAH, Heavy Metals, VOCs during storage and prior to discharge to the sea	Weekly for first month and then monthly thereafter.	Dewatered effluent storage pond	
Soil quality	TPH, PAH, Heavy Metals, VOCs	At least once prior to shipment of soil to site and thereafter randomly	Soil borrow area source location	
Operation				
Soil, surface water and groundwater quality	Visible spills and leaks of chemicals/ waste	Daily during operations	Storage and maintenance areas	O&M Company
Storm water or any other discharge to Caspian Sea (excluding brine/process effluent)	Monitoring for pH, TPH, PAH, Heavy Metals, VOCs prior to discharge to the sea	As per each storm event in first year, thereafter at least one annual storm event	Storm pipe and storage pond	

10.0 Terrestrial Ecology and Avifauna

10.1 Applicable Requirements & Standards

10.1.1 National Regulations

National laws that govern protection of biodiversity include:

- Law of the Azerbaijan Republic on Specially Protected Natural Territories and Objects No. 840-IQ;
- Law of the Azerbaijan Republic on Fauna No. 675-IQ;
- Law of the Republic of Azerbaijan on Specially Protected Natural Areas and Objects;
- Law of the Republic of Azerbaijan on Addition to the Law of the Republic of Azerbaijan "On Specially Protected Natural Areas and Objects"; and
- Law of the Republic of Azerbaijan on accession to the European Convention for the Protection of Wildlife and the Natural Environment of Europe.

A "Red book" of Azerbaijan Republic is carried out according to the law No. 675-İQ dated on June 4, 1999 of Azerbaijan Republic "On animal world" and the law No. 678-İQ dated on June 8, 1999 of Azerbaijan Republic "On protection of environment". According to existing legislation, animal and plant species that live in natural condition in country's territory, and which considered rare and have the threat of extinct of generation are specially protected and entered into "Red book" of Azerbaijan Republic. "Red book" of Azerbaijan Republic, being official document, reflects in itself the condition of animal and plant species (subspecies, populations), their existence and protection measures in all territory of Azerbaijan Republic, as well as section of the Caspian Sea that belongs to Azerbaijan Republic.

10.1.2 Lender Requirements

The assessment of impacts upon terrestrial ecology is required with due consideration to IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Natural Resource Management which establishes requirements for protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources. When avoidance of impacts is not possible, measures to minimise impacts and restore biodiversity and ecosystem services should be implemented. Specifically, it is necessary to determine baseline conditions and categorise the project's habitats as 'critical', 'modified', or 'natural' to undertake the necessary assessment. The Performance Standard defines the different habitats as follows:

- Natural Habitat: "Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition";
- Critical Habitat: "Critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes"; and
- Modified Habitat: "Modified habitats are areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species

composition. Modified habitats may include areas managed for agriculture, forest plantations, reclaimed coastal zones, and reclaimed wetlands".

10.2 Baseline Conditions

10.2.1 Ecological Context

The Project landscape lies along the Caspian Sea coastline, within the Caucasus Biodiversity Hotspot, which is recognised as one of the world's most biologically rich yet threatened regions. The region supports a diverse range of ecosystems, including coastal wetlands, semi-arid grasslands, and steppe habitats that provide important feeding and breeding grounds for migratory and resident species. The Caucasus hotspot has the greatest biological diversity of any temperate forest region in the world. It shelters 6,500 species of vascular plants, at least 1,600 of which (~25%) are unique to the region, and a number of endemic animals, including the East and West Caucasian Turs, Armenian Mouflon and Caucasian Salamander. The 2010 IUCN Red List identifies 50 species of globally threatened animals in the Caucasus[13].

10.2.1.1 Site Conditions

The site has previously been used for industrial chemical water treatment operations and therefore consists largely of hard-standing and other habitats of very low ecological importance or value. The local area surrounding the site is predominantly industrial or residential. Therefore, the habitat is classified as "Modified Habitat".

Based on the review of satellite imagery, the proposed Product water pipeline (which is an Associated Facility) follows existing major road corridors and passes through a landscape that is mostly urban and industrial. The habitat is considered to be highly modified and has low ecological value.

10.2.1.2 Areas of Ecological Importance Near Project Site

In order to support environmental and ecological assessment, an IBAT (Integrated Biodiversity Assessment Tool) report for the Project was generated. IBAT is a screening tool that compiles globally recognized biodiversity datasets, including Protected Areas, Key Biodiversity Areas, and species of conservation concern. It helps identify the presence and proximity of internationally and nationally designated protected areas near a Project site, which serves as a credible basis for assessing potential biodiversity constraints.

The IBAT screening indicates that 8 Key Biodiversity Areas (KBAs) and 1 Protected Area (PA) are located within a 50 km radius of the Project site, but no KBA or PA are present within a 10 km radius. The Table 10-1, Figure 10-1 and Figure 10-2 provide further information about these areas and their proximity.

[13] https://www.caucasus-naturefund.org/ecoregion/caucasus-hotspot/

Table 10-1 Areas of Ecological Importance

SN	Category	Name	KBA/IBA Trigger Criteria/Species	Approximate Distance from Project Site
1	KBA	Gobustan area	NA	40 km
2	KBA	Mount Kargabazar and Mount Gush-gaya	NA	30 km
3	KBA	Sangachal Bay	NA	32 km
4	KBA	Yashma Island	D1a for Slender-billed Curlew (Numenius tenuirostris)	20 km
5	KBA	Red Lake	A1a, A1c, D1a for White-headed Duck (Oxyura leucocephala)	15 km
6	KBA	Sahil settlement - Shelf factory	A1d, D1a for Common Pochard (Aythya farina) and Red-crested Pochard (Netta rufina)	20 km
7	KBA	Alat Bay - Baku archipelago	NA	40 km
8	KBA	Krasnoye Lake and Absheron Waterbodies	NA	16 km
9	Protected Area	Qobustan	Emerald Network of Areas of Special Conservation Interest	35 km

The locations of the reserves relative to the Project site is presented in the figures below:

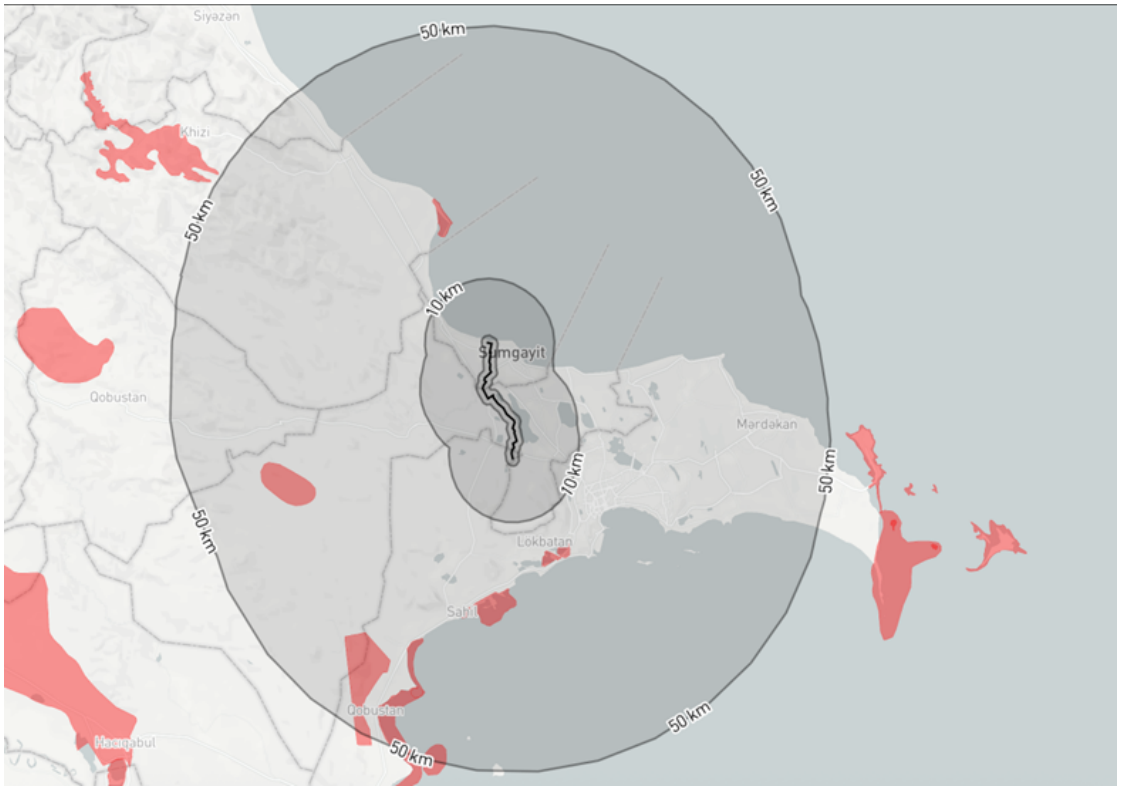


Figure 10-1 Locations of the Key Biodiversity Areas (KBAs) in relation to Project Site

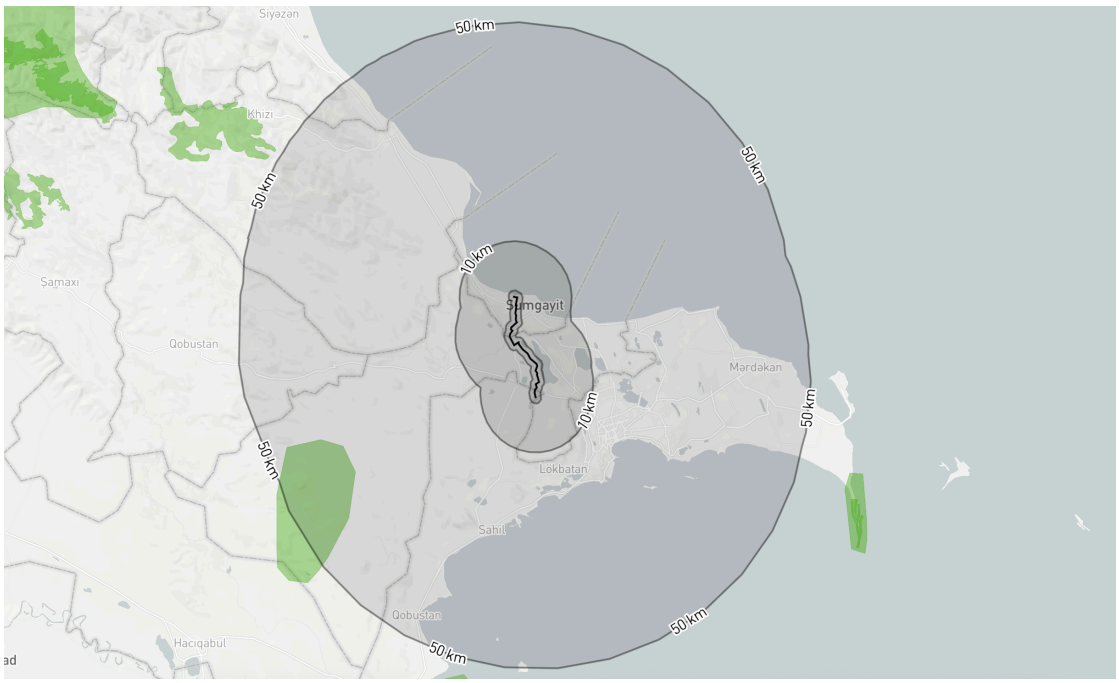


Figure 10-2 Location of the Protected Areas (PAs) in relation to Project Site

10.2.2 Baseline Surveys

The following baseline surveys were conducted for terrestrial ecology during July to October 2024, to inform the ESIA prepared by IQLIM. A field reconnaissance survey was undertaken along the new planned pipeline route to understand the environmental conditions and land

use as well as review of online databases and available literature was conducted to gather information for the pipeline corridor.

Note: All biodiversity baseline survey data presented in the following sections are sourced from the IQLIM ESIA (2025) with no additional targeted biodiversity surveys conducted for this ESIA.

Table 10-2 Details of the Baseline Surveys

Survey	Date	Expert Lead
Floral survey	3 -14 July, 2024	Yusif Abiyev
Amphibians and reptiles survey	27 July, 2024	Associate Prof. Bunyatova S.N.
Mammal survey	21 and 28 July, 2024	PhD., Hasanov N.A.
Ornithological survey	12 August, 2024 26-27 October, 2024 16 February 2025 6-7 April 2025	PhD., Abidin Abbasov

10.2.2.1 Flora

According to the scientific literature data, about 185 species (including subspecies) are distributed along Coast of Caspian Sea and Coast of Sumgayit River. 125 annual, 10 biennial, 27 perennial, 10 subshrub, 16 shrub, 5 tree species were classified. However, the Project area is under heavy anthropogenic influence, and vegetation of almost the entire area is degraded.

The survey for plant species was carried out along the transects according to the characteristics of generative and vegetative organs and based on the keys indicated in the books Flora of Azerbaijan, volumes I-VIII. The identification and status of rare and endangered plants were carried out based on the Red Book of Azerbaijan.

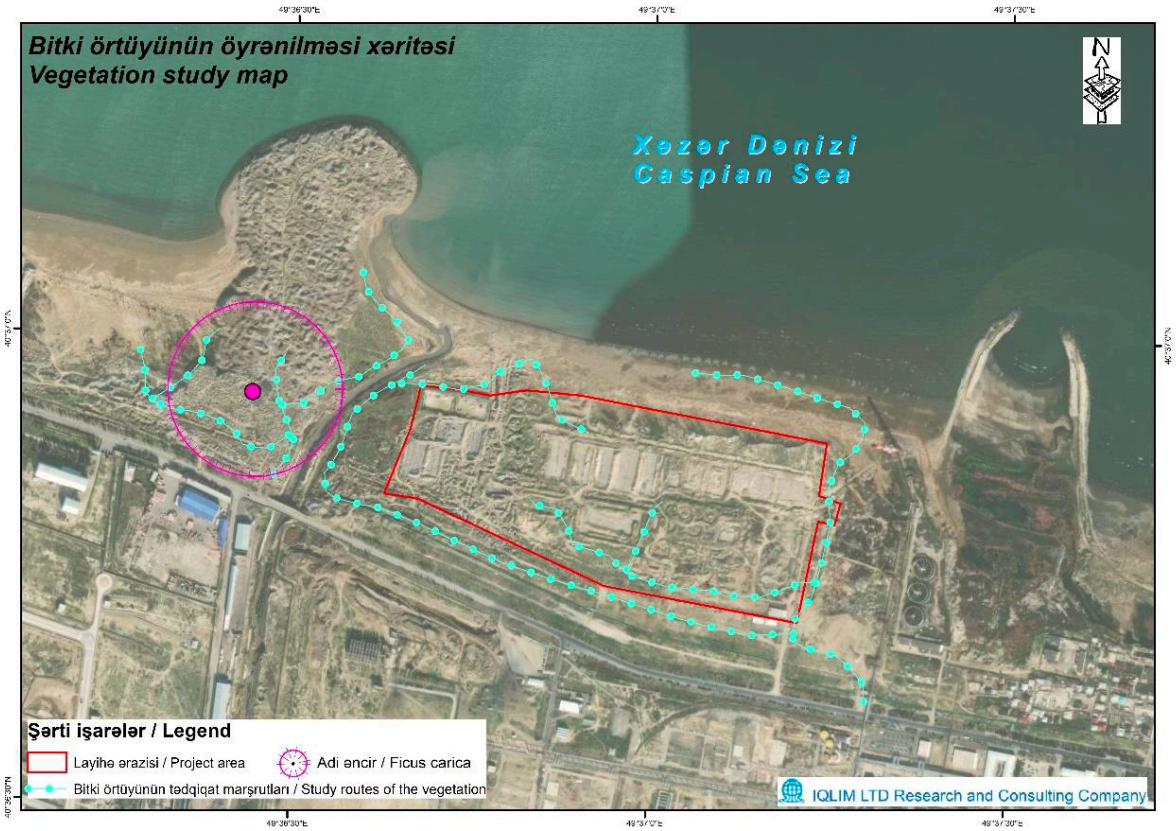


Figure 10-3 Floral Survey Transects (Source: IQLIM ESIA)

Photographs of all plants were taken and specimens were collected when necessary. The plants were identified using literature and herbariums in the laboratories of the Institute of Botany of Azerbaijan National Academy of Sciences (ANAS). The locations of rare plant coordinates were recorded using a Garmin GPS navigator.

The Project Area is largely situated on previously developed and degraded land associated with former industrial use. The soil piles, remnants of demolished infrastructure, etc. in the area have resulted in uneven topography and widespread disturbed ground conditions. Large portions of the Project area lack continuous vegetation cover, with plant growth mainly occurring in isolated patches. These patches are primarily colonised by ruderal and ephemeral species typical of disturbed habitats. Vegetation within and around the Project Area is generally sparse. More developed plant communities occur outside the main footprint, particularly along the Sumgayitchay River valley to the west and within roadside green belts to the south. Overall, the vegetation within the Project Area is predominantly secondary and has developed through natural succession on degraded substrates. No rare or protected plant species were recorded during the survey (IQLIM ESIA, 2025).

During the survey, 85 floral species were identified, including 53 herbaceous species, 8 shrubs, 6 subshrubs, 2 climbers and 16 trees plant species. Very little of the Project area has vegetation, and most vegetation was found to be on the coast, riverside and green strips. Two introduced plant species viz. *Ulmus parvifolia* and *Melia azedarach*, were identified during the survey.

The assessment of rare species is based on the 2023 edition of the Red Book of the Republic of Azerbaijan. No species with a conservation status was identified.

Natural vegetation in and around the Project area is sparse and typical of the arid Caspian coastal zone, dominated by ephemeral grasses and shrubs such as *Tamarix ramosissima, Halocnemum strobilaceum, Artemisia annua, Artemisia fragrans, Caroxylon nodulosum*, and

Caroxylon dendroides. Coastal sandbanks support *Juncus acutus, Calidium caspicum, Nonea caspica,* and saltwort species. The green strip in the southeast corner of site includes 23 planted species for landscaping, comprising fruit and ornamental plants such as Chinese elm, Iranian melia, Common fig, Quince, Apricot, Pomegranate, Pine, and various shrubs.

Photographs of some of the plant species observed during baseline survey have been provided in Figure 10-4.

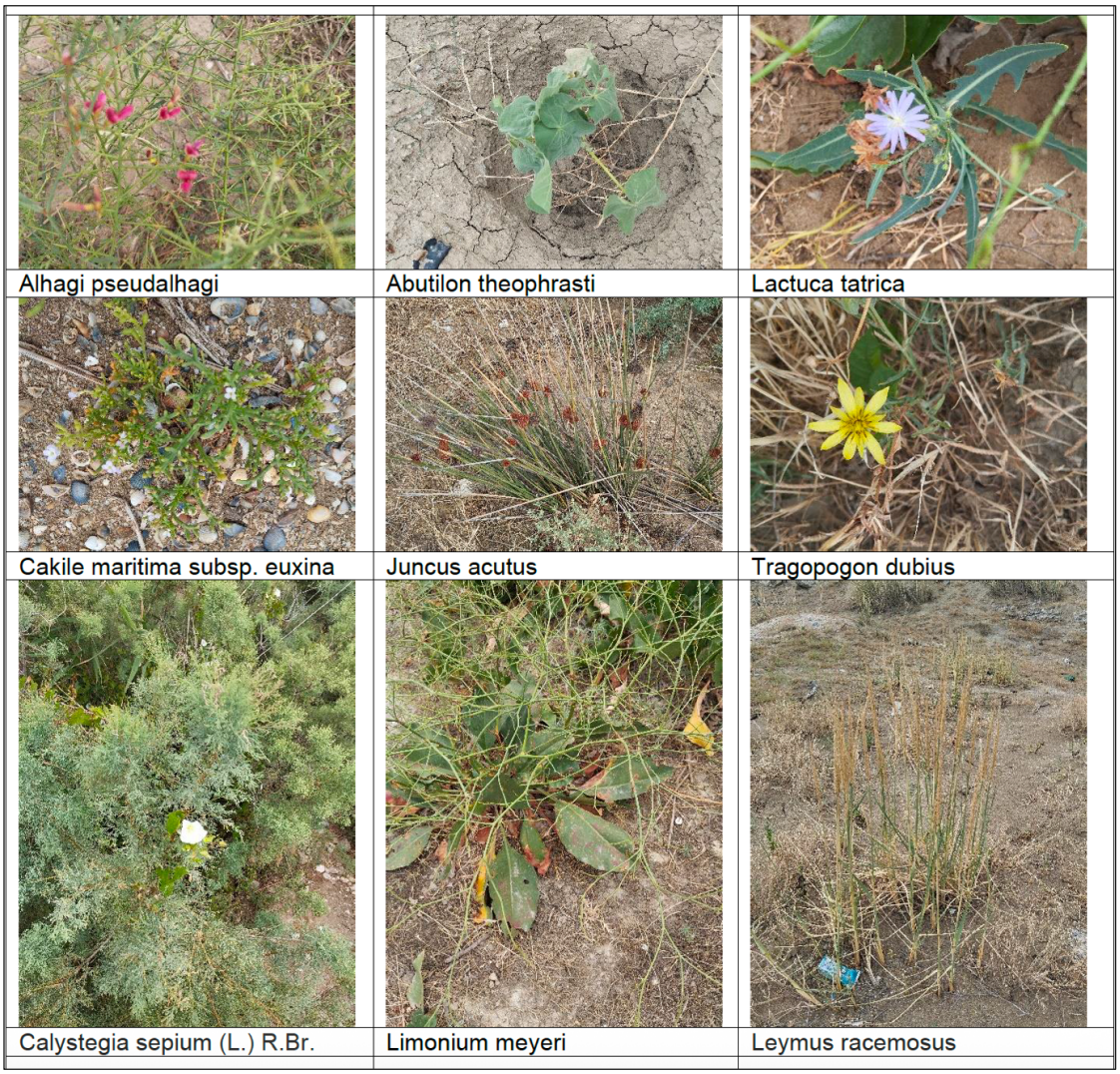


Figure 10-4 Some of the plant species identified during the floral survey (IQLIM ESIA, 2025)

10.2.2.2 Amphibians and Reptiles

The scientific literature review examined research conducted in the northern coastal areas of the Caspian Sea, the Absheron Peninsula, around the city of Sumgait, as well as in the Sumgayitchay River. Based on the review, the saline semi-desert landscape of the Caspian Sea coastal strip in Sumgait is home to 15 species of reptiles, including 3 species of Turtles (*Mauremys caspica, Emys orbicularis, Testudo graeca*), 5 species of Lizards (*Tenuidactylus caspius, Eumeces schneiderii, Ophisops elegans, Eremias velox, Eremias arguta*), and 7 species of snakes (*Xerotyphlops vermicularis, Eryx jaculus, Natrix tessellata, Dolichophis schmidti, Eirenis collaris, Malpolon insignitus, Macrovipera lebetina*).

Herpetological survey in the Project area and immediate surrounding was conducted on July 27, 2024 along the transects. During the survey, conducted in the daylight hours, the air temperature was favorable for reptile activity, reaching 31°C. Five species of reptiles were observed during the survey.

The survey transects and the findings have been indicated in Figure 10-5.



Figure 10-5 Herpetofauna Survey route and findings (IQLIM ESIA, 2025)

Several habitats/micro habitats were identified in the Project area, including wormwood and saline semi-desert, coastal sands, flowing and stagnant water bodies, and coastal reed beds. Two species (*T. caspius, E. velox*) were recorded in the wormwood and saline semi-desert and the coastal sands, and three species (*E. orbicularis, M. caspica, N. tessellata*) in the flowing and stagnant water bodies and coastal reed beds. None of the recorded species are listed as IUCN Threatened (CR/EN/VU) or nationally protected.

Further details on the five reptile species observed in the Project area are provided below:

- **European Pond Turtle (*Emys orbicularis* Linnaeus, 1758):** It is widespread in the freshwater basins of the plains and foothills regions of Azerbaijan. It prefers stagnant water bodies with a dense reed vegetation cover. During the baseline survey, the species was recorded in Sumgaitchay and its surrounding reed beds.
- **Caspian Turtle (*Mauremys caspica* Gmelin, 1774):** The Caspian Turtle is primarily distributed in stagnant and flowing water bodies on plains in Azerbaijan. In the project area, two dead individuals of the Caspian turtle were recorded in the water and on the shore of the Sumgaitchay River. No live individuals were encountered.
- **Caspian Bent-toed Gecko (*Tenuidactylus caspius* Eichwald, 1831):** The specie is generally found in semi-desert and steppe landscapes in shady places, rock

crevices, gaps between stones, building walls, and various animal burrows. During the baseline survey, it was recorded once under stones in an old building.

- **Rapid Racerunner (*Eremias velox* Pallas, 1771):** In Azerbaijan, this lizard species is distributed in semi-desert landscapes. It was recorded in biotopes with tamarisk, saline, and wormwood vegetation on the sandy coastal areas of the Caspian Sea during baseline survey.
- **Dice snake (*Natrix tessellata* Laurenti, 1768):** Dice snake is one of the most widely distributed snake species in Azerbaijan, found both in lowland areas and mountainous regions at altitudes up to 2200 meters above sea level, primarily near freshwater bodies, along the sea coast, and on the coastal islands of the Caspian Sea[14]. It was recorded in the reed beds along the shore of the Sumgaitchay River and on the coast of the Caspian Sea.

Among the reptiles, the European pond turtle (*Emys orbicularis*) is listed as Near Threatened (NT) on the IUCN Red List globally. The other 4 species have a lower conservation status (LC). No species listed in the Red Book of the Republic of Azerbaijan were recorded in the Project area.

The species known from the region and observed during surveys are listed in Table 10-3.

Table 10-3 Herpetofauna reported from the region and observed during surveys

SN	Common Name	Scientific Name	IUCN Status (v.2025-2)	Literature sources (Known from the region)	Species observed during baseline survey
1	*Caspian Turtle*	*Mauremys caspica*	NA	+	+
2	*European Pond Turtle*	*Emys orbicularis*	NT	+	+
3	*Common Tortoise*	*Testudo graeca*	VU	+	-
4	*Caspian Bent-toed Gecko*	*Tenuidactylus caspius*	LC	+	+
5	*Orange-tailed Skink*	*Eumeces schneiderii*	LC	+	-
6	*Snake-eyed Lizard*	*Ophisops elegans*	LC	+	-
7	*Central Asian Racerunner*	*Eremias velox*	LC	+	+
8	*Steppe-runner*	*Eremias arguta*	LC	+	-
9	*Eurasian Blind Snake*	*Xerotyphlops vermicularis*	LC	+	-
10	*Javelin Sand Boa*	*Eryx jaculus*	LC	+	-
11	*Dice Snake*	*Natrix tessellata*	LC	+	+
12	*Red-billed Racer*	*Dolichophis schmidti*	LC	+	-
13	*Collared Dwarf Snake*	*Eirenis collaris*	LC	+	-
14	*Eastern Montpellier Snake*	*Malpolon insignitus*	LC	+	-
15	*Levantine Viper*	*Macrovipera lebetinus*	LC	+	-

[14] Novruzov N., Ahmadov B. Morphology, Bioecology, and Behavior of the Water Snake (*Natrix tessellata*) in Azerbaijan. "Muallim Publishing House," Baku, 2021, 90 Pages

SN	Common Name	Scientific Name	IUCN Status (v.2025-2)	Literature sources (Known from the region)	Species observed during baseline survey
		Total		**15**	**05**

Abbreviations: VU: Vulnerable, NT: Near Threatened, LC: Least Concern, NA: Not Assessed



Figure. 1. *E.orbicularis* dead female, with eggs (Sumgaitchay shore, July 27, 2024)

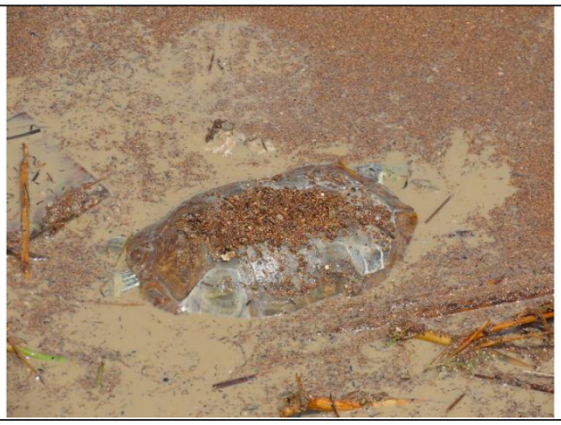


Figure 2. *Mauremys caspica* dead individual (Sumgaitchay, July 27, 2024).



Figure 3. *E.velox* recorded in coastal sands (Caspian Sea coast, July 27, 2024)



Figure 4. *T.caspius* recorded in rocky areas (Sumgait desalination plant area, semi-desert landscape, July 27, 2024)

Figure 10-6 Photographs of reptiles and habitats during the survey (IQLIM ESIA, 2025)

10.2.2.3 Mammal Survey

The mammal survey was conducted on 21 July 2024 (daytime) and 28 July 2024 (night observations) within and in the immediate vicinity of the Project area. Fieldwork covered three transect routes (0.80–0.86 km each) representing the main habitat types in the area:

- Route 1: along the right bank of Sumgaitchay,
- Route 2: along the coastal area of the Caspian Sea
- Route 3: along its diagonal inside the field

Surveys were carried out in the form of searches for signs of mammal activity and roosting, including visual search and bioacoustics.

As part of the literature review, previously conducted studies covering the northern coastal areas of the Caspian Sea, the Absheron Peninsula, the vicinity of Sumgait city, and the Sumgaitchay River were examined.

According to previous research by N.A. Hasanov[15], a total of 26 species of mammals have been recorded in Absheron peninsula, in the areas close to the Project area. These include 3 species of Insectivora, 6 species of bats (Chiroptera), 8 species of rodents (Rodentia), 1 species of lagomorphs (Lagomorpha) and 6 species of predators (Carnivora).



Figure 10-7 Mammal Active Search Routes

A total of 9 mammal species were recorded within the Project area and surroundings through direct sightings, indirect signs, and bat acoustic monitoring. The area supports mostly common, adaptable, and synanthropic species, reflecting anthropogenic nature of the area. Bat activity (particularly *P. kuhlii*) was associated with built structures (bridge, buildings), indicating use of artificial roosting sites.

None of the 9 mammal species recorded in the survey area has either a global conservation status according to the IUCN Red List or a local conservation status according to the latest edition of the Red data Book of Azerbaijan Republic. The list of all the species reported from the landscape and recorded during the survey has been provided in Table 10-4.

Mammal distribution across the habitat type varies according to their ecological characteristics and species-specific habitat preferences. The survey results indicate that four species (*H. auritus, L. europaeus, M. libycus,* and *V. vulpes*) were recorded in the wormwood and saline semi-desert habitats. Three species (*R. ferrumequinum, P. kuhlii,* and *V. vulpes*) were observed in the coastal sand dune areas. The highest diversity was recorded in the mixed riverine biotopes, where the presence of six species (*R. ferrumequinum, P. kuhlii, L. europaeus, A. elater, M. musculus,* and *V. vulpes*) was recorded.

Further information of the recorded species is provided below:

[15] Hasanov N.A. Dynamics of Absheron-Gobustan theriofauna and ecological characteristics of background species. PhD. scientific degree thesis

abstract. Baku, 2011. (in Az)

- **Long-eared Hedgehog (*Hemiechinus auritus* Gmelin, 1770):** The eared hedgehog is distributed in desert and semi-desert areas within its range. It is found across the entire territory of the Absheron peninsula. On the night of July 28, a single individual was recorded on the highway bordering the Project area.
- **Greater Horseshoe Bat (*Rhinolophus ferrumequinum* Schreber, 1774):** It is a sensitive species, very widespread in Azerbaijan and has been recorded in almost all landscapes, but not common. The ultrasounds of this species were recorded during the baseline survey.
- **Kuhl's Pipistrelle (*Pipistrellus kuhlii* Schreiber, 1774):** This species accounts for more than 70% of bats recorded in Azerbaijan and has been documented in over 170 locations nationwide. It readily uses buildings and other structures as temporary roosting sites. During the survey, droppings were observed on the walls of the bridge over the Sumgaitchay River, and ultrasonic calls were recorded during night monitoring on 28 July 2024.
- **Libyan Jird (*Meriones libycus* Lichtenstein, 1823):** One of the most common rodent species in Absheron and eastern Gobustan, occurring across foothill and lowland habitats, including agrocenoses. It typically inhabits open semi-desert environments. On 21 July 2024, isolated burrow entrances were observed within the saline semi-desert areas of the survey area.
- **Small five-toed jerboa (*Allactaga elater* Licht, 1825):** The southern slopes of the Greater Caucasus mark the northern limit of its distribution. The species has been recorded in most natural habitats of the Absheron-Gobustan region. During the baseline survey, burrows were documented at one location, and individuals were observed during night surveys.
- **House mouse (*Mus musculus* Linnaeus, 1758):** A typical synanthropic species distributed from sea level up to 2,500–3,000 m a.s.l., commonly associated with buildings, agricultural lands, and other human-modified habitats. Its presence in the study area is linked to nearby structures. Droppings were recorded in riverine habitats. It is a pest species and considered one of the most common rodents in lowland and built-up areas.
- **European Hare (*Lepus europaeus* Pallas, 1778):** Widespread throughout Azerbaijan and common in most natural regions. During the survey, excrements were recorded at one location and an under-bush shelter was identified at another point.
- **Red Fox (*Vulpes vulpes velox* Linnaeus, 1758):** Distributed across the entire country, preferring open areas, semi-deserts, and foothill landscapes. Due to its high adaptability and omnivorous diet, it readily occupies urbanized environments. It was observed at two locations during the baseline surveys.
- **Golden Jackal (*Canis aureus* Linnaeus, 1758):** In Azerbaijan, this species primarily inhabits plains and lowland forests and may occur up to 1,700 m a.s.l. along valleys. It typically avoids open spaces, favoring dense shrubs, reed beds, and forest edges. The species is mainly crepuscular and nocturnal, and howling is commonly heard prior to hunting. During baseline survey, vocalizations were recorded at night; however, as these calls likely originated outside the immediate Project area, the species is not included in the cadastral map or habitat distribution table.



Figure 10-8 Locations of mammal survey findings (IQLIM ESIA, 2025)

Table 10-4 Mammals reported from the region and recorded during the survey

SN	Common Name	Scientific Name	IUCN Status (v. 2025-2)	Reported in Literature	Recorded During Survey
1	Southern White-breasted Hedgehog	*Erinaceus concolor*	LC	+	
2	Long-eared Hedgehog	*Hemiechinus auritus*	LC	+	+
3	Güldenstädt's White-toothed Shrew	*Crocidura gueldenstaedtii*	LC	+	
4	Greater Horseshoe Bat	*Rhinolophus ferrumequinum*	LC	+	+
5	Lesser Mouse-eared Bat	*Myotis blythii*	LC	+	
6	Whiskered Bat	*Myotis mystacinus*	LC	+	
7	Nathusius' Pipistrelle	*Pipistrellus nathusii*	LC	+	
8	Kuhl's Pipistrelle	*Pipistrellus kuhlii*	LC	+	+
9	Serotine Bat	*Eptesicus serotinus*	LC	+	
10	European Hare	*Lepus europaeus*	LC	+	+
11	Eurasian Red Squirrel	*Sciurus vulgaris*	LC	+	
12	Small Five-toed Jerboa	*Allactaga elater*	LC	+	+
13	Brown Rat	*Rattus norvegicus*	LC	+	

SN	Common Name	Scientific Name	IUCN Status (v. 2025-2)	Reported in Literature	Recorded During Survey
14	House Mouse	*Mus musculus*	LC	+	+
15	Witherby's Field Mouse	*Apodemus witherbyi*	LC	+	
16	Grey Hamster	*Cricetulus migratorius*	LC	+	
17	Libyan Jird	*Meriones libycus*	LC	+	+
18	Social Vole	*Microtus socialis*	LC	+	
19	Grey Wolf	*Canis lupus*	LC	+	
20	Golden Jackal	*Canis aureus*	LC	+	+
21	Red Fox	*Vulpes vulpes*	LC	+	+
22	Least Weasel	*Mustela nivalis*	LC	+	
23	Marbled Polecat	*Vormela peregusna*	LC	+	
24	European Badger	*Meles meles*	LC	+	

Abbreviation: LC: Least Concern



Fig. 3. *M.musculus* - excrements



Fig. 4. *P.kuhlii* excrement on bridge column



Fig. 5. Expert in the field



Fig. 6. Newly digged burrow – rodent



Fig. 7. Footprints– rodent



Fig. 8. *P.kuhlii* - bridge roost for bats



Fig. 9. *L.europaeus* – excrement

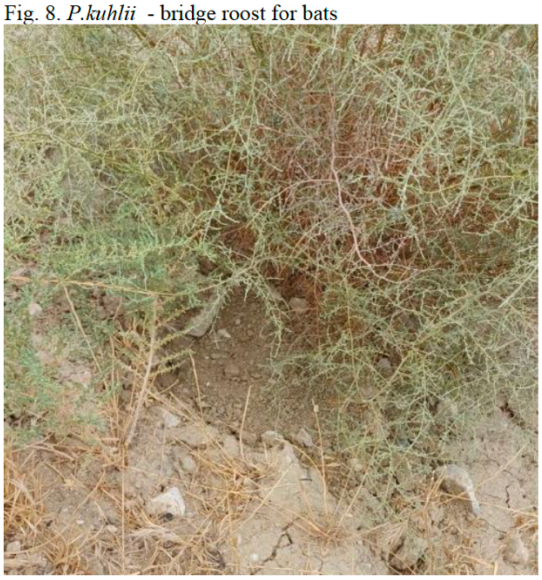


Fig. 10. *L.europaeus* – shlter under bush

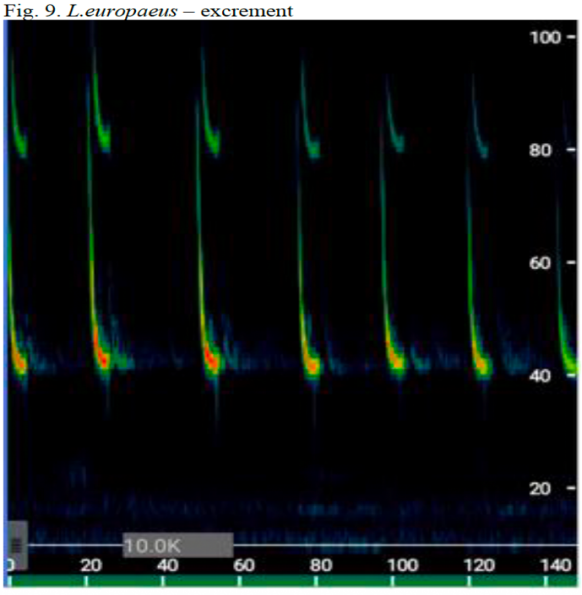


Fig. 11. *P.kuhlii* – ultracall spectogramme

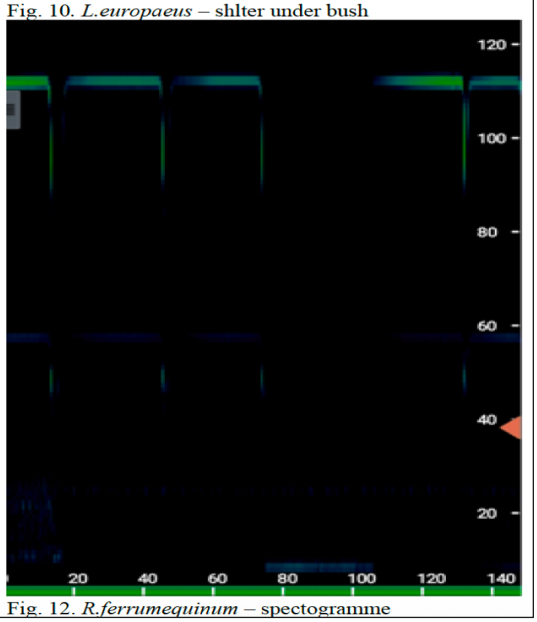


Fig. 12. *R.ferrumequinum* – spectogramme

Figure 10-9 Photo Documentation During Mammal Survey (IQLIM ESIA, 2025)

10.2.2.4 Avifauna

The seasonal ornithological surveys were conducted by an ornithologist during key seasons:

- Nesting period: August 2024
- Autumn migration period: October 2024
- Wintering period: February 2025
- Spring migration period: April 2025

Field observations were conducted along selected survey routes within as well as in the immediate surrounding of the Project site. The transects were conducted at a moderate pace, both on foot and by vehicle. Observations covered a distance of approximately 100–300 m on either side of each route. All bird species detected visually or acoustically were identified and counted. Local, wintering, and migratory species, as well as their abundance, were recorded.



Figure 10-10 Survey routes for the August survey (IQLIM ESIA, 2025)



Figure 10-11 Survey routes for October, February and April survey (IQLIM ESIA, 2025)

During the summer survey, conducted at the end of the nesting season, no active bird nests were identified within the Project area and surroundings. However, a notable number of juvenile individuals were observed, indicating recent breeding activity in the broader area. In total, 409 individuals representing 26 species were recorded.

During the autumn survey, the majority of recorded species were observed migrating from north to south toward their wintering grounds. A total of 8,451 individuals from 27 species were documented. Two species, the Dalmatian Pelican (*Pelecanus crispus*) (IUCN: Vulnerable; ARDB: Vulnerable) and the Northern Lapwing (*Vanellus vanellus*) (IUCN: Near Threatened; ARDB: Endangered), are included in the ARDB Red List.

The winter survey indicated that most recorded species were concentrated along the coastline and in the adjacent open sea. A total of 7,183 individuals representing 31 species were recorded. Among these, the Common Pochard (*Aythya ferina*) (IUCN: Vulnerable; ARDB: Near Threatened) is listed in the ARDB Red List.

During the spring survey, the majority of species were observed along the coast, over the open sea, and in flight during active migration. A total of 1,490 individuals representing 42 species were recorded. The Dalmatian Pelican (*Pelecanus crispus*) is listed as Vulnerable in the ARDB Red List.

Overall, a total of 56 bird species were recorded during four seasonal surveys within and in the surrounding of the Project area. Species richness and abundance varied seasonally, with the highest numbers observed during the autumn migration period, when large flocks of gulls, cormorants, rooks, starlings, and waterfowl were recorded. Winter surveys were dominated by coastal and marine species, particularly ducks, grebes, cormorants, and gulls, while summer records included fewer species and individuals. Spring observations reflected active migration and coastal use. Most recorded species are classified as Least Concern (LC) under the IUCN Red List, three species of conservation importance were documented.

The species with national conservation status were also included for Critical Habitat Screening/Assessment.

Migration Context

The Project area is situated in the vicinity of international bird migration corridor extending along the Caspian coastline and the foothills of the Main Caucasus Range. Approximately 55 km to the north, the Beshbarmag Isthmus forms a major regional migration bottleneck. Data from Trektellen.org demonstrate the high intensity of migration within this corridor, with 183 species and 936,994 individual birds recorded between 11 October and 1 November 2024, predominantly migrating southwards. Significant movements of Little Bustards, larks, raptors, gulls, and waterfowl were documented during peak migration. A proportion of these birds continue southward over the Project area and adjacent marine waters, particularly waterfowl migrating toward wintering grounds along the southern Caspian coast and inland wetlands of Azerbaijan.

However, within the Project footprint, the terrestrial and marine components comprise relatively small and narrow strips of land that do not constitute important feeding, resting, or breeding habitats. The area functions primarily as part of the broader flyway, with birds typically passing over rather than concentrating or interacting with the physical area. No high-altitude structures or aviation-related activities are planned that could interfere with migratory flight paths. Given the limited habitat value and absence of critical bird areas within the Project area, significant impacts on bird migration are not anticipated.

The map provided below, (sourced from Heiss & Gauger, 2011[16]), illustrates the main migration routes (in red). The barrier effect of the Greater Caucasus Mountains and the Caspian Sea results in a concentration of migrating birds in this area. The dotted line indicates a minor migration route through the Greater Caucasus, the thick line represents the primary migration route across the lowlands, and the thin line shows the coastal waterbird migration route.

[16] Coastal Bird Migration at the Caspian Shore of the Azerbaijan Republic in October 2007. Michael Heiss1 & Kai Gauger. PODOCES . 2011. Vol. 6, No. 1. Journal homepage: www.wesca.net

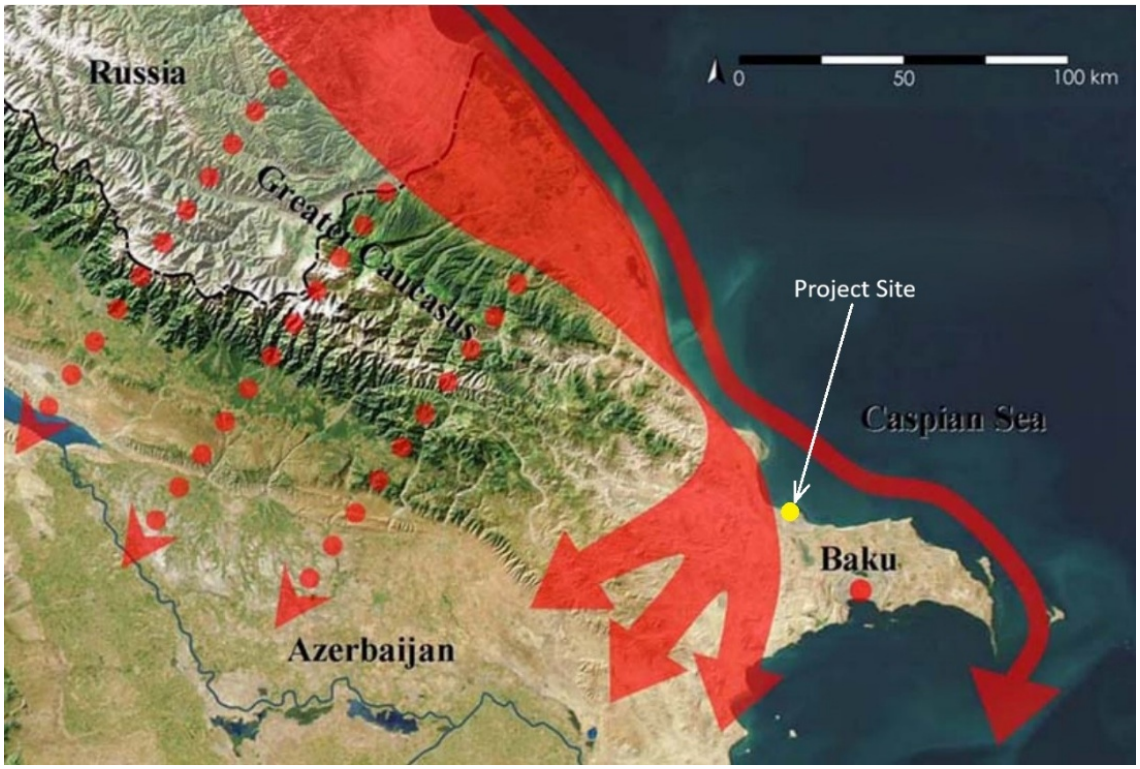


Figure 10-12 Main Bird Migration Routes in the Region

Table 10-5 Avian Species Recorded During the Baseline Surveys

SN	Common Name	Scientific Name	IUCN Status (v.2025-2)	Azerbaijan Red Data Book	Aug-24	Oct-24	Feb-25	May-25
1	Barn Swallow	*Hirundo rustica*	LC		-	-	-	60
2	Black-headed Gull	*Chroicocephalus ridibundus*	LC		63	2400	1370	370
3	Black-necked Grebe	*Podiceps nigricollis*	LC		2	-	14	6
4	Caspian Gull	*Larus cachinnans*	LC		110	1250	765	87
5	Collared Dove	*Streptopelia decaocto*	LC		-	-	-	4
6	Common Chaffinch	*Fringilla coelebs*	LC		-	85	12	16
7	Common Chiffchaff	*Phylloscopus collybita*	LC		-	-	-	2
8	Common Coot	*Fulica atra*	LC		-	-	-	4
9	Common Gull	*Larus canus*	LC		-	60	16	6
10	Common Kestrel	*Falco tinnunculus*	LC		-	1	5	-
11	Common Mallard	*Anas platyrhynchos*	LC		-	-	130	6
12	Common Moorhen	*Gallinula chloropus*	LC		1	-	8	8
13	Common Pochard	*Aythya ferina*	VU	NT	-	-	95	-
14	Common Ringed Plover	*Charadrius hiaticula*	LC		-	-	-	4
15	Common Sandpiper	*Actitis hypoleucos*	LC		4	-	-	6
16	Common Shelduck	*Tadorna tadorna*	LC		-	11	25	-
17	Common Swift	*Apus apus*	LC		-	-	-	18
18	Crested Lark	*Galerida cristata*	LC		-	3	10	9
19	Dalmatian Pelican	*Pelecanus crispus*	NT	VU	-	10	-	21
20	Duck Sp.	*Anas sp.*	NA		-	350	-	-
21	Eurasian Hoopoe	*Upupa epops*	LC		2	-	-	-
22	Eurasian Skylark	*Alauda arvensis*	LC		-	-	75	12

SN	Common Name	Scientific Name	IUCN Status (v.2025-2)	Azerbaijan Red Data Book	Aug-24	Oct-24	Feb-25	May-25
23	Eurasian Sparrowhawk	*Accipiter nisus*	LC		1	1	1	1
24	Eurasian Starling	*Sturnus vulgaris*	LC		12	650	1760	183
25	European Goldfinch	*Carduelis carduelis*	LC		-	-	-	6
26	Finsch's Wheatear	*Oenanthe finschii*	LC		1	-	-	-
27	Gray Headed Swamphen	*Porphyrio poliocephalus*	LC		-	-	2	4
28	Great Cormorant	*Phalacrocorax carbo*	LC		35	1200	1550	155
29	Great Crested Grebe	*Podiceps cristatus*	LC		-	-	55	12
30	Grey Heron	*Ardea cinerea*	LC		1	25	14	6
31	Gull-Billed Tern	*Gelochelidon nilotica*	LC		1	-	-	5
32	Hooded Crow	*Corvus cornix*	LC		8	16	63	24
33	House Sparrow	*Passer domesticus*	LC		35	45	87	77
34	Isabelline Wheatear	*Oenanthe isabellina*	LC		1	-	-	4
35	Kentish Plover	*Anarhynchus alexandrinus*	LC		1	-	-	2
36	Laughing Dove	*Streptopelia senegalensis*	LC		-	-	-	2
37	Lesser Kestrel	*Falco naumanni*	LC		4	-	-	8
38	Little Egret	*Egretta garzetta*	LC		5	6	7	4
39	Little Grebe	*Tachybaptus ruficollis*	LC		-	-	8	8
40	Little Ringed Plover	*Charadrius dubius*	LC		4	-	-	-
41	Little Stint	*Calidris minuta*	LC		4	-	-	18
42	Magpie	*Pica pica*	LC		-	-	-	3
43	Northern Lapwing	*Vanellus vanellus*	NT	EN	-	5	-	-
44	Pygmy Cormorant	*Microcarbo pygmaeus*	LC		-	-	25	-
45	Reed Bunting	*Emberiza schoeniclus*	LC		-	4	32	10

SN	Common Name	Scientific Name	IUCN Status (v.2025-2)	Azerbaijan Red Data Book	Aug-24	Oct-24	Feb-25	May-25
46	Rock Dove	*Columba livia*	LC		-	350	385	245
47	Rook	*Corvus frugilegus*	LC		-	1700	132	-
48	Sand Martin	*Riparia riparia*	LC		75	-	-	-
49	Sanderling	*Calidris alba*	LC		16	-	-	25
50	Slender-billed Gull	*Chroicocephalus genei*	LC		8	120	-	12
51	Spanish Sparrow	*Passer hispaniolensis*	LC		-	-	65	25
52	Tufted Duck	*Aythya fuligula*	LC		-	-	450	-
53	Wader sp.	*Calidris sp.*	NA		-	125	-	-
54	Western Marsh Harrier	*Circus aeruginosus*	LC		1	2	4	3
55	White Wagtail	*Motacilla alba*	LC		8	25	14	9
56	Wood Sandpiper	*Tringa glareola*	LC		6	4	4	-

Abbrevations: EN: Endangered, VU: Vulnerable, NT: Near Threatened, LC: Least Concern, NA: Not Applicable.



Figure 5. *Egretta garzetta* – Little egret



Figure 6.*Ardea cinerea* – Grey heron



Figure 7.*Larus cachinnans* – Caspian gull



Figure 8.*Chroicocephalus ridibundus* – Black headed gull



Figure 9.*Larus canus* – Common gull



Figure 10.*Falco tinnunculus* – Common kestrel

Figure 10-13 Birds Observed along Survey Routes (Autumn) (IQLIM ESIA, 2025)



Photo 1. *Pelecanus crispus* – Dalmatian pelican



Photo 2. *Phalacrocorax carbo* – Great cormorant



Photo 3. *Fulica atra* – Common coot



Photo 4. *Porphyrio poliocephalus* – Gray headed swamphen



Photo 5. *Egretta garzetta* – Little agret



Photo 6. Circus aeruginosus – Western marsh harrier

Figure 10-14 Birds Observed along Survey Routes (Spring) (IQLIM ESIA, 2025)

10.2.2.5 Ecosystem Services

Ecosystems provide services that result in beneficial human impacts. A decline or loss of any of these services and their benefits can result in socio-economic impacts that extend beyond environmental damages.

Ecosystems services are divided into four categories (World Resources Institute, 2013 and also consistent with the four types outlined in IFC PS6):

- “Provisioning services are the goods or products obtained from ecosystems, such as food, timber, fibre, and freshwater.

- Regulating services are the contributions to human well-being arising from an ecosystem's control of natural processes, such as climate regulation, disease control, erosion prevention, water flow regulation, and protection from natural hazards.
- Cultural services are the nonmaterial contributions of ecosystems to human well-being, such as recreation, spiritual values, and aesthetic enjoyment.
- Supporting services are the natural processes, such as nutrient cycling and primary production, that maintain the other services."

IFC PS6 outlines that ecosystem services valued by humans are often underpinned by biodiversity and hence impacts to biodiversity can adversely affect the delivery of ecosystem services.

The ecosystem services from the present Project site are negligible as the site is a brownfield and the pipeline route passes through a landscape that is mainly urban and industrial, and there is no known land use by local communities. Therefore, there would be minimal loss in ecosystem services, and the impact significance is considered to be negligible.

10.2.3 Critical Habitat Assessment (CHA)

Preliminary screening for any triggers of a CH and SBV determination was conducted following the most recent guidance for such issued by IFC. The Project area does not have any highly unique or threatened ecosystem types or distinctive evolutionary processes that could result in a CH determination under IFC CH criteria 4 or 5, hence the CH/SBV (Significant Biodiversity Value) screening was then accordingly limited to species, and multi-species groupings of biological taxa. A master list of potential CH/SBV trigger species was first compiled by reviewing the IBAT report[17], the IUCN red list of threatened species[18], the eBird database[19], Plants of the World Online[20], and the national redlist (ARDB)[21]. From this master list, species falling into the following categories were considered to have negligible likelihood of being affected by the Project, and were eliminated:

- species that are extinct from the country/region;
- species that occur in Azerbaijan only as extreme rarities (i.e. vagrants or accidentals);
- Species with no geographic and/or ecological overlap with the Project area.

For the final CHA, the list of potential CH/SBV trigger species was revised and updated, based on the results of baseline biodiversity surveys and additional research. Then, a set of distinct Ecologically Appropriate Area of Analyses (EAAAs) were developed for different potential CH/SBV trigger species, based on their ecology, dispersal, and use of space.

With the EAAAs defined, all of the data from baseline surveys and desk-based materials was reviewed against the specific CH and SBV definitions and criteria in IFC PS6.

The description and justification of the different EAAAs used in the assessment and the results of the assessment are presented in Table 10-6 and Table 10-7. And the map of the EAAAs is provided in Table 10-6.

[17] IBAT PS6 & ESS6 Report. Generated under licence 53454-95147 from the Integrated Biodiversity Assessment Tool on 03 November 2025 (GMT). www.ibat-alliance.org

[18] https://www.iucnredlist.org/

[19] https://ebird.org/home

20 https://powo.science.kew.org/

[21] Republic of Azerbaijan (in prep.). Red Book of the Republic of Azerbaijan.

Table 10-6 Description and Justification of the EAAAs

EAAA	Applicable species	Description	Rationale
1	Marine species: Ship Sturgeon, Stellate Sturgeon, Persian Sturgeon, Beluga, Bulatmai Barbel, *Dreissena caspia, Ponticola goebelii*	Marine footprint of the entire Project area buffered by 5 km.	Used for all marine fauna that have been scoped in during Critical Habitat Screening. The selection of entire project footprint and a 5 km radius as EAAA is typical for mobile marine fauna to ensure that all potential direct and indirect impact pathways are adequately captured. This spatial extent reflects the high mobility of marine fauna and the potential for project-related effects to extend beyond the immediate project footprint. The 5 km buffer is considered sufficient to encompass the likely zone of influence for construction and operational activities while remaining proportionate to the scale of the Project and the local hydrodynamic conditions of the nearshore Caspian Sea. The approach is particularly well-suited for addressing marine species with extensive or poorly mapped distribution ranges, ensuring that ecological evaluations remain comprehensive even in the face of spatial uncertainty.
2	Terrestrial plant species	Terrestrial footprint of the entire Project area buffered by 1 km.	This EAAA, defined to encompass the Project site's actual footprint plus a modest 1 km buffer, reflects the sessile nature of plant species. It is designed to capture all areas where these species could be affected by permanent or temporary soil and vegetation disturbance or modification resulting from the construction and operation of the Project.
3	Migratory and/or congregatory bird species (Gulls, cormorants, migratory ducks, Bustard, waders, etc.)	Terrestrial and marine footprint of the entire Project area buffered by 5 km.	This EAAA is defined to cover both the terrestrial and nearshore marine components of the Project with a 5 km buffer to capture potential disturbance, displacement, and behavioural effects on migratory and congregatory bird species with intermediate dispersiveness. Most of these species use the wider coastal zone for transit during migration, while some of the species use nearshore waters for foraging. This is justified by the guidance in paragraph GN59 of IFC GN6[22] which states, "For some wide-ranging species, critical habitat may be informed by areas of aggregation, recruitment, or other specific habitat features of importance to the species."

[22] International Finance Corporation (IFC), 2019. Guidance Note 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources. June 27, 2019, World Bank Group, Washington, DC, paragraph GN59.

EAAA	Applicable species	Description	Rationale
4	Caspian Seal	Entire extent of Caspian Seal Transitory Migration and Feeding Area IMMA	The Caspian Seal Transitory Migration and Feeding Area is an Important Marine Mammal Area (IMMA) in the Caspian Sea. This area covers approximately 164,136 km² of the Caspian Sea and partially overlaps with the marine components of the Project.

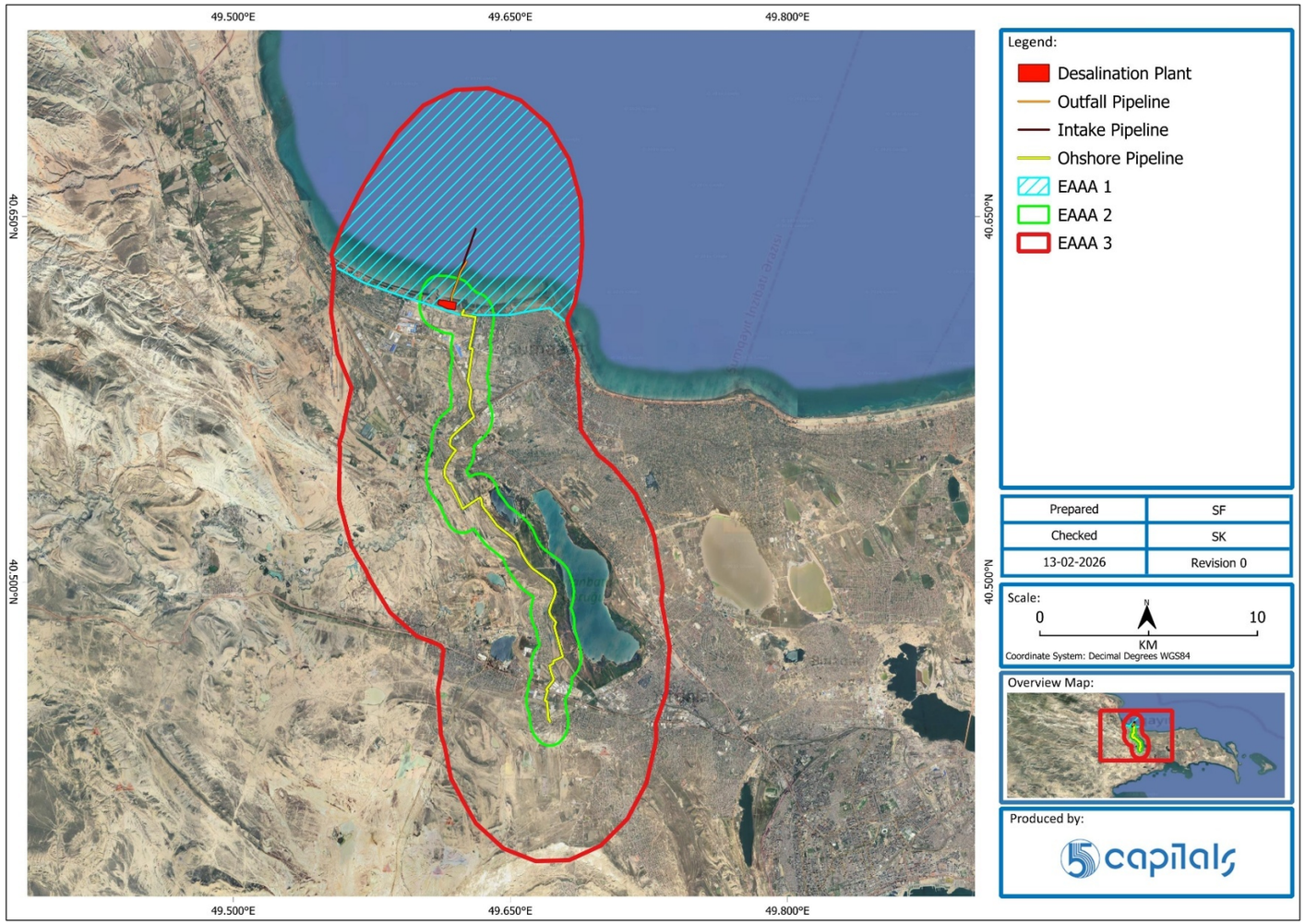


Figure 10-15 Ecologically Appropriate Areas of Analysis (EAAAs)

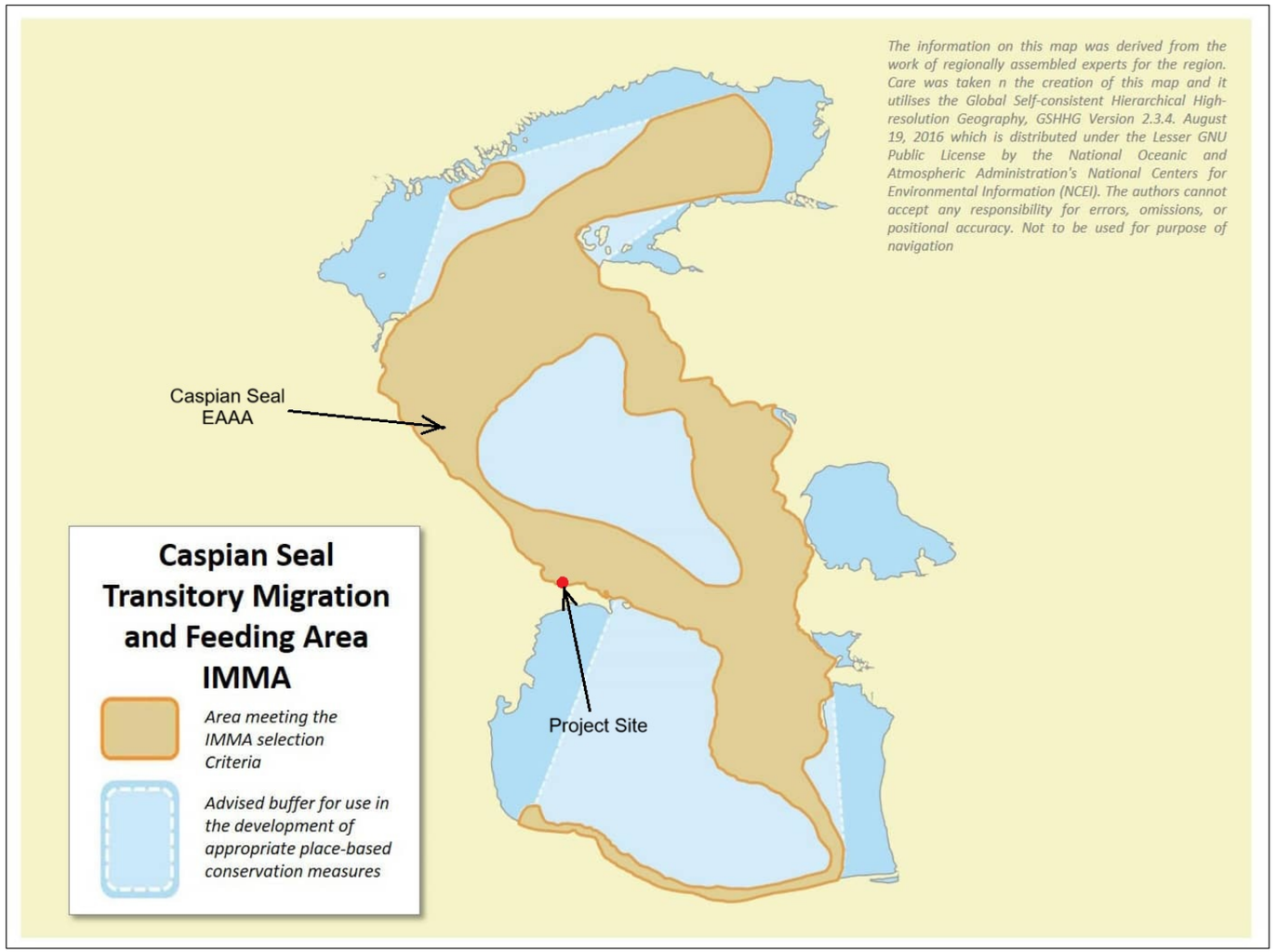


Figure 10-16 Caspian Seal EAAA

Table 10-7 CH Assessment

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
Ship Sturgeon (*Acipenser nudiventris*)	Fish	CR	CR	X			1	100 mature individuals	SBV	Ship Sturgeon is considered possibly extinct in the wild across much of its historical Caspian range[26]. Wild subpopulations of Ship Sturgeon have vanished from the Aral Sea basin, the Azov Sea basin and the Black Sea basin as well as from the Caspian Sea basin where the last river for natural reproduction was the Ural. Also, Daskin, J. (2020) indicates that the species is extirpated from the entire Azerbaijani coastal waters[27]. Stellate Sturgeon and Persian Sturgeon are also dependent on riverine spawning grounds. Stellate Sturgeon still spawns in the Ural, Volga, and Sefid rivers in the Caspian Sea basin. There is no more recorded reproduction of this species from other areas[28]. Wild populations of Persian Sturgeon have almost disappeared, apart from a very small spawning population in Iran[29].
Stellate Sturgeon (*Acipenser stellatus*)	Fish	CR		X			1	Not available (305 tonnes of catch in Caspian Sea in 2003)	SBV	
Persian Sturgeon (*Acipenser persicus*)	Fish	CR		X			1	200 mature individuals	SBV	
Beluga (*Huso huso*)	Fish	CR		X			1	Not available (Global catch of 33 tonnes in 2007)	SBV	

[23] https://www.iucnredlist.org/

[24] Ministry of Ecology and Natural Resources of the Republic of Azerbaijan, (in prep.). Red Book of the Republic of Azerbaijan

[25] https://www.iucnredlist.org/

[26] https://www.iucnredlist.org/species/225/227579266#geographic-range

[27] Daskin, J. (2020). Species Status Assessment for Russian, ship, Persian, and stellate sturgeon. U.S. Fish and Wildlife Service.

[28] https://www.iucnredlist.org/species/229/135062806#geographic-range

[29] https://www.iucnredlist.org/species/235/135063465#geographic-range

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
										Beluga is believed to spawn only in the Ural and the Volga Rivers[30] The baseline marine surveys and eDNA analysis did not confirm the presence of any sturgeon species within the Project area. Additionally, the benthos surveys indicate that species diversity and biomass of benthic organisms within and around the Project area are low. Sturgeons being the benthic feeders, are thus unlikely to be utilizing this area as a primary or key foraging area. Consultation with the Department of Fisheries and the Aquaculture Centre confirmed that Ship sturgeon, along with other sturgeon species and Beluga are only rarely observed in the Sumgait coastal area, and no stable or resident populations are known from this part of the Azerbaijani coast. Historically, the area formed part of broader regional migration routes; however, the EAAA is not associated with any known spawning, feeding, or aggregation areas of these species. In line with PS6 GN6, recruitment or aggregation sites, as well as breeding and foraging areas, may inform the designation of CH. However, based on the available baseline data and consultation inputs, and given the absence of any key spawning or foraging areas within the

[30] https://www.iucnredlist.org/species/10269/135087846#geographic-range

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
										EAAA, the area is unlikely to support globally significant concentrations of these species that would trigger CH designation. Furthermore, in the absence of population estimates, the species' distribution ranges have been used as a proxy for population; these indicate that the EAAA represents only a very small fraction of their overall range, and is therefore unlikely to meet CH thresholds. However, given the conservation status and sensitivity of these species, a precautionary approach will be adopted. This will include re-sampling using eDNA within the Project's AoI, complemented by consultations with regional experts and/or relevant organizations to inform appropriate mitigation measures and minimize potential impacts on these species.
Dreissena caspia	Bivalve Mollusc	CR		X			1	Not available	NA	This species was not recorded during the project-specific benthic survey. The surveyed seabed is characterised by low-complexity soft sediments with sparse invertebrate assemblages. Additionally, the species is thought to be extinct in both the Caspian and the Aral Sea. It has not been recorded in the Caspian Sea since the 1940s (Rosenberg and Ludyanskiy 1994, Starobogatov and Andreeva 1994)[31]

[31] https://www.iucnredlist.org/species/188971/8669278#population

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
										In the absence of records, it is highly unlikely that the area supports a globally significant concentration of the species.
Caspian Seal (*Pusa caspica*)	Mammal	EN		X	X	X	4	104,000 to 168,000 individuals (68,000 mature individuals)	CH	According to the Marine Mammal Protected Areas Task Force (MMPATF) mapping of Important Marine Mammal Areas (IMMAs) in the Caspian Sea, the Project overlaps the Caspian Seal Transitory Migration and Feeding Area IMMA, which has also been considered am EAAA for the species. As the IMMA does not function as primary breeding area for the species, Criteria 1a and 2a are unlikely to meet. The IMMA encompasses the primary areas used by Caspian seals for feeding and seasonal migration throughout the Caspian Sea basin, connecting key areas used for breeding, moulting, hauling out and foraging[32]. It covers approximately 164,136 km², representing about 41% of the species' Area of Occupancy (396,016 km²)[33] [34]. Satellite telemetry studies revealed that around 60% of tagged seals migrate through this area from April to mid-May, following coastal routes along the east and west mid-Caspian[35]. Although population estimates within the IMMA are unavailable, these movement patterns

[32] https://www.marinemammalhabitat.org/factsheets/caspian-seal-transitory-migration-and-feeding-area-imma/
[33] Caspian Seal Transitory Migration and Feeding Area IMMA - Marine Mammal Protected Areas Task Force
[34] https://www.iucnredlist.org/species/41669/45230700#geographic-range

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
										suggest that the area likely supports regular or cyclical use by at least 1% of the global population (approximately 1,040 individuals). Thus, the IMMA, being the species EAAA, likely meets the quantitative thresholds under Criterion 3a and the CH designation has been triggered on precautionary basis for the wider area. In the Project context, the marine component does not intersect the Caspian seal's primary spring migratory corridor, feeding grounds, or key aggregation areas. Although there is some overlap with the IMMA, its boundary reflects the species' broad basin-wide range and does not denote specific primary concentration zones. The Project's AoI represents only around 0.05% of this Seal EAAA. The nearest designated Seal Moulting and Haul-Out site is located approximately 55 km southeast of the Project Site[35]. Baseline ecological surveys conducted within the Project area did not record the presence of Caspian seals. Nevertheless, local fishermen indicated that seals are occasionally observed in offshore waters during the spring and autumn migration periods. Consultation with the Fisheries Department confirmed that no haul-out sites, breeding areas, or permanent feeding grounds occur near the Project area. Only occasional observations of

[35] https://www.marinemammalhabitat.org/factsheets/caspian-seal-moulting-and-haul-out-areas-imma/

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
										seals in transit or opportunistic foraging have been reported. Overall, the IMMA, in its entirety, constitutes Critical Habitat by virtue of meeting the quantitative threshold under Criterion 3a. Although no primary aggregation areas, breeding sites, or haul-out locations occur within the Project's AoI, the marine component of the Project spatially overlaps this designated Critical Habitat. **Note:** Species experts at the Azerbaijan Museum of Natural History and Caspian Seal Project have been contacted for the consultation, and their response is currently awaited. Additionally, consultation email has also been sent to Dr Goodman from University of Leeds, who is the Director of the Caspian seal Darwin Initiative project. If any additional insights or expert input are received, they will be incorporated in this report as appropriate.
Albanian Astragalus (*Astragalus albanicus*)	Plant	EN		X	X		2	Not available	SBV	The southern section of the onshore pipeline route partially overlaps with the species' known distribution range. According to the IUCN assessment, the species is extremely rare and has been recorded from only a limited number of locations. Based on 5Capital/SLR's previous project experience in the region, as well as insights from earlier expert consultation, the species has been identified at six locations within the Absheron Peninsula. And none of these locations are situated within 20 km of the Project area.

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
										Also, considering highly modified habitats within the Project footprint and the EAAA, it is unlikely that the EAAA contains significant number of individuals to trigger CH.
Bulatmai Barbel (*Luciobarbus capito*)	Fish	VU		X		X	2	Not available	SBV	According to the IUCN assessment, migratory individuals of this species typically forage in coastal areas of the Caspian Sea, including estuarine habitats. In addition, several stable, landlocked subpopulations occur in artificial reservoirs along the Kura River and its tributary, the Alazani River. These river systems and associated reservoirs are located in western Azerbaijan and along the Georgia border. Within the Kura River basin, the species' range extends into eastern Georgia, Armenia, and northeastern Türkiye[36]. The species was not recorded during the baseline surveys. Considering its broad distribution across Azerbaijan, parts of Georgia, Türkiye, Iran, and the entire Caspian Sea, the EAAA represents only a very small proportion of its overall range. In the absence of any known spawning grounds within the EAAA, it is unlikely that the area supports concentrations of the species at a level where its loss would result in an status uplisting on the global IUCN Red List. It is thus unlikely to trigger CH.
Wedge-leaved Meadow	Plant	VU		X	X		2	Not available	SBV	*Seseli cuneifolium* is an extremely rare and range-restricted species, known from only six

[36] https://www.iucnredlist.org/species/135687/135110991#geographic-range

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
Saxifrage (*Seseli cuneifolium*)										locations[37]. The presence of the species was not confirmed during the baseline surveys. In the absence of reliable population estimates, the species' known distribution range has been used as a proxy for population, in line with IFC PS6 guidance and standard approach. Even when considering the full extent of its potential range, the terrestrial EAAA represents only a very small fraction of this distribution. The EAAA is also largely composed of modified and disturbed habitats, which are not consistent with the species' known ecological preferences. On this basis, it is highly unlikely that the EAAA supports ≥10% of the species' global population or range, and therefore the species is unlikely to meet the threshold for Critical Habitat under Criterion 2a. Similarly, the highly modified landscape across the EAAA is unlikely to hold sufficient numbers that its loss would result in an uplisting of the species' IUCN conservation status. Therefore, the species is unlikely to trigger criticality under Criterion 1b.
Coastal Bastard Toad-flax (*Thesium maritimum*)	Plant	VU		X	X		2	Not available	SBV	The species is endemic to Azerbaijan. According to IUCN assessment, it occurs in Gobustan near the villages of Puta (approximately 15 km south of EAAA) and Sangachal (approximately 29 km southwest of EAAA). On the Absheron Peninsula, it is found in the vicinity of Mardakyan (approximately 35 km east of EAAA), Novkhany

[37] https://www.iucnredlist.org/species/200501/2664646#population

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
										(approximately 8 km east of EAAA), and Bilgya (approximately 30 km east of EAAA)[38]. The species is currently known from only 6–8 locations. It was not recorded during the baseline survey, and targeted floral surveys were not conducted along the onshore pipeline route. In the absence of detailed population data, a review of the species' estimated distribution range (approximately 21,000 km²) indicates that the EAAA encompasses only about 0.2% of this range. Furthermore, none of the IUCN-reported occurrence locations fall within the EAAA. Based on this information, it is unlikely that the EAAA supports a population of sufficient size that its loss would result in an uplisting of the species' IUCN conservation status. Therefore, the species is unlikely to trigger criticality.
Migartory and congregatory bird species (Gulls, cormorants, migratory ducks, Bustard, waders, etc.)	Aves	Mixed (LC to NT)	Mixed (None to EN)	X		X	3	NA	SBV	Baseline surveys and review of literature indicate that the Project area lies along a regional migratory flyway, with birds primarily using the airspace over the coastal and inland landscapes during seasonal movements. However, no major roosting sites, breeding colonies, or significant feeding aggregations were recorded within the terrestrial or marine EAAA. In line with paragraph GN59 of IFC PS6 GN6, Critical Habitat for migratory or wide-ranging species is determined based on areas of aggregation rather than transit corridors. As the EAAA functions primarily as a

[38] https://www.iucnredlist.org/species/200558/2668966#geographic-range

Species/ Group of Species	Higher Taxon	IUCN global status[23]	Azerbaijan RDB status[24]	Applicable CH criterion			EAAA	IUCN minimum global population estimate[25]	Determination	Rationale
				Criterion 1	Criterion 2	Criterion 3				
										passage zone and does not support significant congregations, it is unlikely to hold globally significant concentrations of migratory birds. Moreover, the four-season baseline surveys recorded species such as Common Pochard (IUCN: VU; peak count of 95 individuals), Caspian Gull, Black-headed Gull (both IUCN: LC; peak counts ranging from 1,250 to 2,400 individuals), and Great Cormorant (IUCN: LC; peak count of 1,550 individuals) among others. However, the recorded concentrations do not exceed the 1% quantitative threshold under Criterion 3 for any of these species. Some of these species are also nationally threatened such as Dalmatian Pelican (IUCN NT, AzRDB VU; peak count of 21), Northern Lapwing (IUCN NT, AzRDB EN; peak count of 5) do not represent nationally significant populations within the EAAA. Thus, these two bird species have been identified as SBVs.

10.2.3.1 CH Conclusion

In conclusion, the CHA identified a total of 10 Significant Biodiversity Values (SBVs) associated with the Project. The Caspian Seal triggers a Critical Habitat determination under IFC PS6 Criterion 3a, by virtue of the Project's spatial overlap with the Caspian Seal Transitory Migration and Feeding Area IMMA, which meets the quantitative threshold for CH designation at the wider area level.

It should be noted that all the SBVs were not confirmed during the baseline surveys. However, based on their distribution and potential of occurrence within the Project area or EAAA, they have been identified as SBVs on a precautionary basis.

As noted earlier, a precautionary approach will be adopted for sturgeon species and the Caspian seal through targeted stakeholder consultation and engagement. Relevant Caspian Sea institutions and subject-matter experts will be consulted to validate species status and inform suitable mitigation measures. In parallel, eDNA re-sampling will be undertaken for sturgeon species to verify their presence or absence within the Project AoI. The findings from these activities will be used to develop and refine appropriate mitigation and management measures, which will be incorporated into the Biodiversity Management Plan (BMP).

10.3 Area of Influence and Receptors

10.3.1 Area of Influence

The Area of Influence (AoI) is the area within which project activities may affect receptors. Since each impact type may extend across different spatial ranges, the AoI varies accordingly, for example, with regards to habitat loss, vegetation loss, displacement, and direct mortality would be generally confined to the entire construction and operational footprint of the project, including the pipeline route.

Disturbance impacts, however, may extend beyond the immediate footprint of the project. The extent of such impacts depends on the behavioural sensitivity of affected fauna. For instance, birds near the Project area or along the pipeline route may be disturbed by human activity or vehicle movement at distances of several hundred meters.

Impacts related to the introduction or spread of invasive species may extend from several hundred meters to several kilometres beyond the project footprint, potentially affecting the wider landscape.

10.3.2 Receptors

The following table groups the ecological receptors into distinct receptor groups for use in the impact assessment:

Table 10-8 Terrestrial Ecology and Avifauna Sensitive Receptors

Receptor	Sensitivity	Justification
Rare and endemic plant species	**High**	No floral species of conservation significance were recorded during the baseline surveys, with the majority of the project footprint comprising highly modified habitats. However, a few rare and endemic plant species are known to potentially occur within the broader region (IBAT screening). In the absence of detailed floristic surveys along the pipeline corridor, the ecological sensitivity has been precautionarily assessed as High.
Terrestrial fauna including small	**Low**	No species of conservation importance was found to be present in baseline surveys, and the Project site and pipeline route habitats have low biodiversity value in general.

Receptor	Sensitivity	Justification
mammals and reptiles		
Avifauna	**High**	Large numbers of birds have been observed during baseline surveys, including a few species of national conservation importance.

10.4 Potential Impacts, Mitigation, Management & Residual Impacts

10.4.1 Construction Phase

Construction of the desalination plant, intake and outfall structures, and associated onshore pipelines will involve site preparation, excavation, trenching, marine works, movement of heavy equipment, establishment of temporary construction areas, etc. These activities will generate a range of temporary and permanent biodiversity impacts.

10.4.1.1 Habitat and Vegetation Loss

Construction activities associated with the desalination plant and pipeline installation will result in localised and largely permanent habitat loss within the footprint of the desalination plant and pipeline footprint. The impact of habitat loss would be minimal considering that the Project site is a brownfield and the onshore pipeline mainly passes through urban and industrial areas. While the onshore pipeline route primarily follows existing transport corridors, urban and industrial areas, sections of the route may cross farmland edges, roadside verges, small semi-natural patches, etc. Within these areas, construction activities such as trenching, vehicle movement, soil stockpiling, and temporary laydown areas may result in:

- Clearance of roadside and agricultural edge vegetation.
- Soil disturbance and compaction.
- Temporary degradation of habitat quality in the vicinity due to dust deposition.
- Disruption of linear features such as drainage channels or irrigation margins that may support opportunistic vegetation

These impacts are expected to be narrow in spatial extent and largely temporary, given the linear nature of the pipeline and the reinstatement of the corridor following construction. Most affected habitats consist of common, widespread, and disturbance-tolerant plant communities, which are expected to recover naturally or through active restoration.

However, although no IUCN-threatened or nationally protected plant species were recorded during the baseline surveys, literature sources and IBAT screening indicate that a few rare, endemic, or restricted-range plant species may occur within the wider region. Both the desalination plant site and onshore pipeline route are located within highly modified habitats, no dedicated floral survey has been undertaken along the pipeline route to confirm the absence of species of conservation significance.

Accordingly, a pre-construction survey will be required to identify any such species within the pipeline corridor. If individuals of any species of conservation importance are confirmed, appropriate mitigation measures such as seed collection, translocation, etc. will be required to minimise impacts.

10.4.1.2 Impact on Waterbody

The Jeyranbatan Reservoir is located approximately 500 m from southern section of the pipeline corridor and is a significant freshwater body in the project landscape. Although the pipeline does not cross or directly intersect the reservoir, its proximity introduces pathways for indirect impacts during the construction phase.

The two main potential impact pathways during the construction phase are:

Sediment runoff and increased turbidity

Earthworks, trenching, soil stockpiling, and vehicle movements will expose bare soil along the corridor. During rain events, erosion can generate sediment-laden runoff that flows through existing drainage channels or overland toward the reservoir. This could temporarily increase turbidity in nearshore areas, smother benthic habitats, deposit fine sediment on substrates, and stress aquatic organisms (fish, zooplankton, phytoplankton, and macroinvertebrates). However, the impacts will be short-term and localized to littoral.

Accidental spills and chemical contamination

Fuel storage, machinery refuelling, hydraulic fluids, concrete washout, etc. carry a risk of unintended releases. If spills occur and are not contained, contaminants could enter surface drainage pathways and reach the reservoir. This may affect water quality, form surface films, exert toxicity to aquatic life.

These impacts are, however, indirect, temporary, limited to the construction period and preventable by implementation of standard construction best practices.

10.4.1.3 Disturbance to fauna

Construction activities are anticipated to result in temporary disturbance to both terrestrial and avian fauna. The main mechanisms of disturbance include continuous noise from heavy machinery, ground vibration, vehicle movement along access roads, and the presence of construction personnel. Night-time construction lighting, if used, may further influence local fauna by altering natural behaviours such as foraging, movement, and predator avoidance.

However, as the habitats within the Project site and along the pipeline corridor are heavily modified, terrestrial fauna, as indicated by baseline survey, comprises mostly common, disturbance-tolerant species, such as small rodents (e.g., *Mus musculus*), synanthropic mammals, and generalist reptiles. Construction may result in temporary displacement, short-term changes in foraging or sheltering behaviour, and occasional direct mortality, particularly for slow-moving reptiles or small mammals during site clearance and machinery movement.

For avifauna, the coastal zone in the Project region forms part of migratory corridors. While the desalination plant site itself does not provide key breeding or roosting habitat, nearshore construction activities may cause temporary avoidance behaviour in species such as waterfowl, gulls, terns, and waders. Disturbance is expected to be localised and short-term.

10.4.1.4 Invasive Species

Construction activities may increase the risk of introducing or spreading invasive or opportunistic plant species through soil movement, vehicle traffic, and imported construction materials. Disturbed ground along pipeline corridors and access routes may provide suitable conditions for invasive species establishment if not properly managed. This impact can be mitigated through appropriate biosecurity and site management measures.

10.4.1.5 Pest Attraction

Improper management of construction waste, food scraps, or standing water may attract pest species such as rodents, feral animals, or nuisance insects. Increased pest presence could indirectly affect habitats and local fauna, particularly in peri-urban and agricultural areas along the onshore pipeline route.

Table 10-9 Terrestrial Ecology Impact Significance, Mitigation and Management Measures and Residual Impacts - Construction

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Habitat and Vegetation Loss	Minor	Flora and Fauna	High	Moderate	• A pre-construction clearance survey will be conducted and along the pipeline route to identify any threatened or restricted-range plant species present within or near the construction footprint. If presence is confirmed, mitigation measures such as protection, seed collection, translocation, etc. will be required. Translocation will be undertaken following a translocation protocol which outlines the safe handling, and relocation of plant species to suitable nearby habitats. • No encroachment shall occur beyond the Project footprint, designated laydown areas, site access roads, or construction access routes. All activities shall be strictly confined to these demarcated areas. • All vehicles, plant, and construction equipment shall operate exclusively within the defined Project boundaries and designated access routes. Off-road driving and unauthorised access to adjacent areas shall be strictly prohibited. • Clearing of vegetation shall be limited to the approved Project footprint. No vegetation removal, disturbance, or damage shall occur outside the demarcated work areas. • Waste management measures shall be implemented in accordance with the approved Waste Management Plan to minimise the risk of environmental contamination and pollutant exposure. • Restore temporary use and disturbed terrestrial areas such as temporary storage or access areas outside the permanent footprint, etc. upon completion of construction by de-compacting soil and landscaping with appropriate native plant species.	Minor

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Impact on waterbody	Minor	Aquatic fauna and flora	High	Moderate	• Install silt fences, sediment traps along drainage channels leading toward the reservoir. • Locate all soil stockpiles, excavated material at least 50 m away from any drainage lines or low-lying areas that slope toward the reservoir. Cover soil stockpiles with tarpaulins or plastic sheeting during rainfall events. • Conduct regular inspections of erosion control measures, particularly after rainfall, to ensure sediment barriers remain intact and functional. • Use of spill kits (absorbent pads, granules, etc.) stationed at all refuelling locations, machinery parking areas, and concrete batching sites. • Designate concrete washout areas at least 100 m from natural drainages. Prohibit any discharge of concrete washout water to the ground or drainages.	Minor
Disturbance to Fauna	Minor	Fauna	High	Moderate	• Pre-construction inspections of the footprint areas shall be undertaken to identify any terrestrial fauna. A Chance Find Procedure will be followed in case of any encounters of fauna. • All construction contractors shall receive training on the relevant components of the HSSE Management System, including ecological protection requirements and procedures for ecological chance finds. • All construction workers and persons on site will be given instructions on how to report sightings of relevant fauna during construction and not to harm any animals if encountered but allow the animals to retreat into the neighbouring areas outside footprints. • Only well-maintained vehicles and equipment shall be permitted on site to minimise noise emissions. Equipment and vehicles shall be switched off when not in active use. • Artificial lighting shall be designed and directed to minimise light spill beyond camp areas and Project boundaries.	Minor

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
					• Hunting, trapping, or intentional harm to wildlife by Project personnel shall be strictly prohibited. • Any fauna mortality or injury observed on site, including incidents involving construction vehicles, shall be recorded and formally reported by the EPC Contractor's HSSE team on the day of occurrence. • A maximum speed limit of 20 km/h shall be enforced within the construction site to reduce the risk of fauna mortality from vehicle collisions.	
Invasive Species	Minor	Flora	Low	Minor	• Vehicle and equipment hygiene measures shall be implemented, including inspection and cleaning of machinery, vehicles, and tools prior to mobilisation and when moving between work areas, to prevent the spread of invasive species. • Certified clean materials, including fill, aggregates, and landscaping materials shall be used to ensure they are free of invasive species seeds or plant fragments. • If needed, progressive rehabilitation and revegetation of disturbed areas shall be implemented as soon as practicable using native or locally appropriate species to reduce the likelihood of invasive species establishment.	Negligible
Pest and Synanthropic Species Attraction	Minor	Flora and Fauna	Low	Minor	• Good housekeeping practices shall be maintained at all construction and camp sites, including regular removal of food waste, appropriate storage of materials, and prevention of standing water accumulation. • Waste shall be stored in covered, pest-resistant containers, collected regularly, and disposed of at approved facilities to prevent scavenging and pest proliferation. • Water management controls shall be implemented to prevent ponding and leakage from water storage tanks, pipelines, and sanitation facilities, thereby reducing breeding opportunities for mosquitoes and other disease vectors.	Negligible

10.4.2 Operation Phase

10.4.2.1 Habitat Alteration and Fragmentation

During the operational phase, the desalination plant footprint, associated infrastructure, and pipeline will result in the permanent alteration of terrestrial habitats. These areas will remain largely maintained in a cleared condition, preventing natural vegetation recovery. This impact is considered to be limited given that the Project site is brownfield and the inland pipeline sections traverse predominantly modified landscapes where ecological functions are already substantially altered.

Permanent infrastructure associated with the Project, including pipelines, access tracks, and fenced operational areas, may create minor movement barriers for small terrestrial fauna. In inland areas already fragmented by roads and development, the additional barrier effect of project infrastructure is anticipated to be negligible.

10.4.2.2 Pest and Synanthropic Species Attraction

Operational facilities may attract pest or synanthropic species, such as rodents or scavenging birds, particularly if food waste, standing water, or sheltered structures are present. An increase in such species could indirectly affect local flora and fauna if not effectively managed. With the implementation of standard operational controls, including waste management, drainage maintenance, and site housekeeping, pest attraction is expected to remain limited.

Table 10-10 Terrestrial Ecology Impact Significance, Mitigation and Management Measures and Residual Impacts - Operation

Potential Impacts	Magnitude of Impact	Receptor	Receptor Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Habitat Alteration and Fragmentation	Negligible	Habitat and Ecosystems	Low	Negligible	• Restoration and stabilisation of temporarily disturbed areas along the pipeline corridor shall be maintained during operation to ensure no ongoing habitat loss or edge effects. • Maintenance activities shall be restricted to the existing pipeline right-of-way and access routes, avoiding any encroachment into adjacent land uses or remnant vegetation patches. • Use of existing roads and access corridors shall be prioritised for operational access to prevent the creation of new linear disturbances or further fragmentation. • On a case-by-case basis (depending on the species) to ensure that chance finds of fauna on site during operations are provided with relevant protection to allow suitable habitation, or relocation off-site. • Vehicles and equipment are to be regularly checked and maintained so as to prevent any spillages on the site.	Negligible
Pest and Synanthropic Species Attraction	Negligible	Flora and Fauna	Low	Negligible	• Domestic and food waste management to avoid improper disposal in the surrounding habitats. All waste will be stored in separate labelled and closed/sealed containers, with regular disposal as per the regulatory requirements for waste.	Negligible

10.5 Monitoring

The Project parties will undertake terrestrial ecology monitoring during the construction & operational phase respectively. The minimum expected requirements for monitoring are outlined in the table below.

Table 10-11 Terrestrial Ecology - Monitoring Requirements

Monitoring	Parameters	Frequency & Duration	Monitoring Location
Construction			
Fauna **Flora**	• Fauna species observed on the site; • Plant species observed on the site • Implementation of Chance Find Procedure and Translocation Protocol for any encounters	• On-going visual observations and documentation through videos and photographs of live fauna and burrow locations at the commencement of working activities; • Pre-construction survey before site mobilisation and translocation if necessary.	In all working area requiring land grading or earthworks.
Operation			
Flora and Fauna	• Ecological Chance Finds	• During walkovers and through ongoing observations from day-to-day activities incidental sightings will be recorded.	Sitewide

11.0 Marine Biodiversity

11.1 Applicable Requirements & Standards

11.1.1 National Regulations

The national regulations listed within Section 9.1 Terrestrial Ecology are also applicable for marine ecology. In addition, there are the following laws and regulations with regard to the marine environment:

Water Code of the Republic of Azerbaijan (No. 418-IQ, 1997) governs the use and protection of all water bodies, including surface and groundwater. It regulates discharge of effluents to water bodies, wastewater permits, and water quality standards. Discharges that may affect marine water quality or coastal ecosystems such as seagrasses and fish nurseries are subject to the Water Code's permitting and compliance provisions.

Azerbaijan is also a Party to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran Convention) and its related protocols, which reinforce national legal obligations to prevent pollution, protect biological resources, and coordinate monitoring and marine ecosystem management among Caspian littoral states.

11.1.2 Lender Requirements

The lender requirements listed within Section 9.1 Terrestrial Ecology are also applicable for marine ecology. In addition, the IFC / WBG EHS Guidelines for Water and Sanitation includes some industry specific guidance on certain items namely:

- Design of water intake structures to minimise impact on aquatic life;
- Treat and disposal of reject streams, including brine, to be consistent with national and local requirements;
- Recycle filter backwash into the process if possible;
- Minimise the amount of chlorination chemicals stored on site while maintaining a sufficient inventory to cover intermittent disruptions in supply.

11.2 Baseline Conditions

11.2.1 Ecological Context

The Project is located along the Azerbaijani coastline of the Caspian Sea, a large, enclosed brackish water body of high ecological significance and sensitivity. The Caspian Sea is the world's largest inland body of water and supports a unique assemblage of marine and brackish-water ecosystems. Due to its limited flushing capacity, the Caspian Sea is particularly vulnerable to cumulative impacts from coastal infrastructure, abstraction, and effluent discharges.

The marine ecosystem of the Caspian Sea is internationally recognised for its biodiversity value, particularly for endemic and threatened species. It supports several species of Sturgeon (*Acipenseridae*), which are Critically Endangered and of high conservation importance, as well as other commercially and ecologically important fish species. The Caspian Sea is also home to the Caspian Seal (*Pusa caspica*), the only marine mammal in the basin and listed as Endangered on the IUCN Red List. Coastal waters, in general, and nearshore areas are therefore ecologically important migration corridors and feeding grounds.

11.2.2 Baseline Surveys

Benthos survey

According to the desktop review of published research, the Caspian Sea is home to 420 species of macrobenthos animals, most of them endemic[39].

Benthic ecological investigations were conducted at 10 sampling locations within the marine area adjacent to the Project site (Refer Figure 11-1). Benthic samples were collected from the sea area in front of the Project territory and surrounding waters. Laboratory analyses focused on macrozoobenthos, including determination of species composition, abundance (N, individuals/m²), and biomass (B, g/m²).

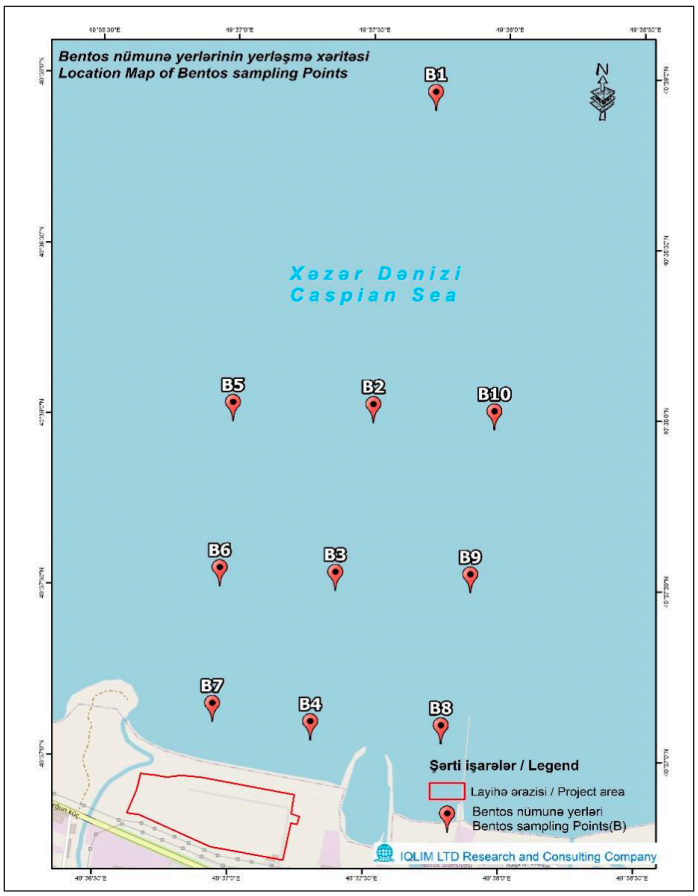


Figure 11-1 Benthos survey sampling locations (IQLIM ESIA, 2025)

The results (Table 11-1 and Table 11-2) indicate that species diversity and biomass of benthic organisms within the study area are relatively low. This is likely attributable to the open marine conditions, where the seabed is subject to continuous hydrodynamic disturbance and turbulence. In addition, the predominantly sandy substrate provides limited habitat stability and reduced suitability for the development and persistence of diverse benthic communities.

Of the total recorded taxa within the survey area, representation across major taxonomic groups was limited. Polychaetes were represented by one taxon, occurring in samples at B3, B4, B6, B7, and B9, where it was recorded in relatively high abundance. Bivalves were

[39] Kasimov A.G. 1994. Ecology of the Caspian Sea. Baku. Publishing house “Azerbaijan”

represented by two taxa, identified in samples at B1, B3, and B9, and generally observed in low abundance.

Biomass was determined as blotted wet weight (g/m²), and the results are presented in Table 11-2.

Table 11-1 Macrofaunal Species recorded during the Survey

Phylum	Class	Species	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Annelida	Polychaeta	*Nereis diversicolor*	0	0	507	594	0	559	667	0	521	0
Mollusca	Bivalvia	*Abra ovata*	21	0	21	0	28	0	0	0	21	0
Mollusca	Bivalvia	*Cerastoderma romboides*	0	0	21	0	0	0	0	0	21	0

Table 11-2 Biomass of Major Taxonomic Groups (g/m², blotted wet weight)

Taxonomic Group	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	% of Total Biomass
Nematoda & Turbellaria	0	0	0	0	0	0	0	0	0	0	0
Polychaeta	0	0	0.1	0.1	0	0.1	0.1	0	0.1	0	1.28
Oligochaeta	0	0	0	0	0	0	0	0	0	0	0
Balanus & Ostracoda	0	0	0	0	0	0	0	0	0	0	0
Cumacea	0	0	0	0	0	0	0	0	0	0	0
Amphipoda	0	0	0	0	0	0	0	0	0	0	0
Isopoda	0	0	0	0	0	0	0	0	0	0	0
Decapoda	0	0	0	0	0	0	0	0	0	0	0
Bivalvia	0.21	0	22.7	0	0	0	0	0	23.3	0	98.72
Total Biomass (g/m²)	**0.21**	**0**	**22.8**	**0.1**	**0**	**0.1**	**0.1**	**0**	**23.5**	**0**	**100**

11.2.2.1 Ichthyological Survey

Ichthyological investigations were undertaken in the coastal waters of the Caspian Sea near the mouth of the Sumgait River to establish baseline conditions for the proposed seawater desalination project. The study aimed to:

- Determine fish species composition and diversity within the Project area;
- Identify species of national and international conservation importance;
- Assess the presence and distribution of endemic species;
- Compare field findings with available literature data.

Fieldwork was conducted on 23 July 2024 at seven sampling points within the coastal and nearshore marine area. Fish were sampled in shallow coastal waters (approximately 1.0–1.2 m depth) using a 25 m trawl net. In addition, environmental DNA (eDNA) analysis was applied by collecting 1-liter water samples from depths of 2 m, 5 m, and 10 m in the open

sea. Filtered samples were preserved and analyzed in a laboratory to determine fish species presence based on mitochondrial DNA sequences. Fishes, as well as other organisms, release their characteristic DNA residues into the water through their bodies or excretions. These residues can remain in the water for 20-25 days at low temperatures (8-15 °C) and for 3-7 days at higher temperatures (30-39 °C).

Supplementary information was obtained from local fishermen and published scientific literature. According to published sources, 59 fish species and subspecies are known to occur in the broader region. These include commercially important species (e.g., Shads, Mullets, Gobies, Kutum), migratory species (e.g., Sturgeons), and numerous endemic Caspian taxa.

Of these, 20 species are endemic to the Caspian Sea, one species (Kura Shad) is endemic to Azerbaijan, and one species (Danube Bleak) is endemic to the Caucasus region. Nine species recorded in literature have special protection status under the Red Book of the Republic of Azerbaijan, including sturgeon species, Caspian trout, Sea Pikeperch, and others.



Figure 11-2 Sampling points for the ichthyological survey (IQLIM ESIA, 2025)

During the baseline survey, trawl net sampling recorded 15 species and subspecies in the coastal zone. Of these:

- 5 species were abundant (e.g., Caspian Roach, Caspian Kutum, Golden Grey Mullet, *Atherina caspia*, Caspian Sand Goby);
- 6 species were moderately abundant;
- 4 species were rare during the survey period.

Environmental DNA (eDNA) analysis identified a broader assemblage of 32 species and subspecies within the area, including pelagic, demersal, and gobiid species. A total of 32 species were therefore confirmed during the study, with 15 occurring in shallow coastal waters and the remainder primarily associated with depths exceeding 2 m.

Several species known from literature were not detected during field sampling or DNA analysis. This is attributed primarily to seasonal migration patterns, as many Caspian fish species move through the area for spawning, feeding, or wintering.

Among all species known from the literature, nine species occurring in the broader region have protected status under the Red Book of Azerbaijan. None of these protected species were recorded during the baseline survey. Literature indicates that these species are rare in the Project area and are highly migratory, with breeding grounds located outside the Project area. The majority of species recorded are common and widely distributed in the western Caspian coastal zone. The area functions primarily as a transit and feeding zone for migratory and marine species rather than as a critical spawning habitat. (IQLIM ESIA, 2025).

Consultation with Department for Fisheries and Aquaculture Center, Ministry of Agriculture, Azerbaijan

A consultation was undertaken in December 2025 with representatives of the Department of Fisheries and the Aquaculture Centre, to obtain baseline information relevant to aquatic biodiversity in the Project area. The outcomes of the consultation indicate that no officially designated sensitive or protected aquatic habitats have been identified near Sumgait coast. Certain fish species may use sections of the coastal zone seasonally for feeding and migration, however, primary spawning grounds are located outside the Project footprint area.

Historically, the Sumgait coastal waters formed part of regional sturgeon migration routes; however, Critically Endangered species such as Ship Sturgeon (*Acipenser nudiventris*), Stellate Sturgeon (*A. stellatus*), Russian Sturgeon (*A. gueldenstaedtii*), Persian Sturgeon (*A. persicus*), and Beluga (*Huso huso*) are currently only rarely observed in the region, and stable local populations are not known to occur. Early life stages of fish (eggs and larvae), benthic organisms, and species utilizing nearshore habitats were identified as the most sensitive biodiversity receptors due to their vulnerability to changes in salinity, temperature, and turbidity.

The consultation further confirmed that monitoring data for fish, migratory routes, and marine mammals such as the Caspian seal (*Pusa caspica*) are limited. Existing data are primarily based on regional and episodic observations, and no permanent aggregation areas or designated Caspian seal haul-out sites have been recorded near the Sumgait coast and only occasional observations of transit or feeding have been reported.

The list of fish species reported in the literature for the region, along with those recorded during the baseline surveys, is presented in Table 11-3.

Table 11-3 Fish species recorded during baseline surveys or known from literature

SN	Common Name	Scientific Name	IUCN Status	Literature	Trawl net	Environmental DNA
1	Beluga Sturgeon	*Huso huso*	CR	+	–	–
2	Ship Sturgeon	*Acipenser nudiventris*	CR	+	–	–
3	Persian Sturgeon	*Acipenser persicus*	CR	+	–	–
4	Stellate Sturgeon	*Acipenser stellatus*	CR	+	–	–
5	Caspian tyulka	*Clupeonella caspia*	LC	+++	–	•
6	Caspian Shad	*Alosa caspia caspia*	LC	++	–	•
7	Sara şişqarını	*Alosa caspia knipowitschi*	LC	+	–	–
8	Big-eyed Shad	*Alosa saposchnikowii*	DD	++	+	•
9	Caspian marine shad	*Alosa brashnikovi brashnikovi*	NA	+	–	–
10	Agrachan Herring	*Alosa brashnikovi agrachanica*	NA	++	–	–
11	Sara Herring	*Alosa brashnikovi sarensis*	NA	+	–	–
12	Big-eyed Herring	*Alosa brashnikovi autumnalis*	NA	++	–	–
13	Caspialosa kisselevitshi	*Alosa brashnikovi kisslevitichi*	NA	+	–	–
14	Clupea	*Alosa brashnikovi grimmi*	NA	+	–	–
15	Kura Shad	*Alosa curensis*	DD	+	–	–
16	Black-spined herring	*Alosa kessleri*	LC	++	–	•
17	Volga Shad	*Alosa volgensis*	EX	+	–	–
18	Caspian Trout	*Salmo caspius*	NA	+	–	–
19	Caspian Roach	*Rutilus caspicus*	LC	++	+++	•
20	Caspian kutum	*Rutilus kutum*	NA	+++	+++	•
21	Red-lipped Asp	*Aspius aspius taeniatus*	LC	+	–	•
22	Stone moroko	*Pseudorasbora parva*	LC	+	+	•
23	Bulatmai barbel	*Luciobarbus capito*	VU	+	–	–
24	Caspian Barbel	*Luciobarbus caspius*	LC	+	–	–
25	Danube Bleak	*Alburnus chalcoides*	LC	++	++	•
26	Eastern Bream	*Abramis brama orientalis*	LC	+	+	•
27	White-eye bream	*Ballerus sapa bergi*	LC	+	–	–
28	Caspian Vimba	*Vimba vimba persa*	LC	+	–	•
29	Saber Fish	*Pelecus cultratus*	LC	+	–	–
30	European carp	*Cyprinus carpio*	LC	+	–	•
31	Gibel Carp	*Carassius auratus gibelio*	LC	++	+	•
32	Wels Catfish	*Silurus glanis*	LC	+	–	•
33	Three-spined Stickleback	*Gasterosteus aculeatus*	LC	+++	++	•
34	Southern Ninespine Stickleback	*Pungitius platygaster*	LC	+	–	•

SN	Common Name	Scientific Name	IUCN Status	Literature	Trawl net	Environmental DNA
35	Caspian Pipefish	*Syngnathus caspius*	LC	+	++	•
36	Golden Grey Mullet	*Chelon auratus*	NT	+++	+++	•
37	Leaping mullet	*Chelon saliens*	NT	+++	++	•
38	Atherina	*Atherina caspia*	LC	+++	+++	•
39	Zander	*Sander lucioperca*	LC	+	–	–
40	Sea Pikeperch	*Sander marinus*	LC	+	–	–
41	Volga Pike-perch	*Sander volgensis*	LC	++	–	•
42	Caucasian Dwarf Goby	*Knipowitschia caucasica*	LC	+	–	•
43	Longtail Dwarf Goby	*Knipowitschia longecaudata*	LC	+	–	•
44	Ilyin Goby	*Knipowitschia iljini*	DD	+	–	–
45	Round Goby	*Neogobius melanostomus affinis*	LC	+++	++	•
46	Caspian Goby	*Neogobius caspius*	LC	++	–	–
47	Caspian Sand Goby	*Neogobius pallasi*	LC	++	+++	•
48	Tubenose Goby	*Babka macrophthalma*	NA	+	–	–
49	Deepwater Goby	*Chasar bathybius*	LC	+	–	–
50	Caspian Bighead Goby	*Ponticola gorlap*	LC	++	++	•
51	Caspian Syrman Goby	*Ponticola syrman eurystomus*	LC	+	–	–
52	Ratan Goby	*Ponticola goebelii*	DD	+	–	–
53	Marbled Goby	*Proterorhinus marmoratus*	NT	++	–	•
54	Caspian tadpole goby	*Benthophilus macrocephalus*	LC	+	–	•
55	Tadpole Goby	*Benthophiloides leptocephalus*	NA	+	–	•
56	Spiny pugolovka	*Benthophilus spinosus*	LC	+	–	•
57	Baer Pugolovka	*Benthophiloides baeri*	NA	++	–	•
58	Granular pugolovka	*Benthophiloides granulosus*	NA	+	–	•
59	Grimmi pugolovka	*Benthophiloides grimmi*	NA	+	–	•

Note: – not recorded; – + rare fish; + present in small numbers; ++ present in average numbers; +++ numerous fish; • Fish identified through DNA residue.



Figure 11-3 Ichthyological Survey Photographs (IQLIM ESIA, 2025)

11.2.2.2 Caspian Seal

The only marine mammal species found in the Project area and entire Caspian Sea is the Caspian Seal. The species is endemic to the Caspian Sea and has been listed on the IUCN Red List as 'Endangered' since October 2008.

The population of Caspian Seal has decreased by more than 90% since the start of the 20th century and continues to decline, considered to be due to a combination of commercial hunting, habitat degradation (through introduction of invasive species), disease, industrial development, pollution and fishing operations using nets. Caspian seals are observed in many regions of the Caspian Sea as they undertake annual migrations between breeding locations in the north and feeding locations in the south. For the southern migration, most travel along the east coast of the Caspian Sea while the remainder either travel south along the west coast or remain in waters to the north of the Absheron peninsula.

The IUCN Marine Mammal Protected Areas Working Group has developed the Important Marine Mammal Areas (IMMA) initiative, which is a key activity of the Marine Mammal Conservation Task Force (MMPATF), established in 2013 by the International Committee on Marine Mammal Protected Areas (ICMMPA) of IUCN. MMPATF promotes effective spatial solutions and best practices for the conservation of marine mammals in MMPAs. MMPATF has produced a map of Important Marine Mammal Areas in the Caspian Sea.

In Figure 11-4, Map A illustrates the extent of the Caspian seal transitory migration and feeding area, shown in orange. This area covers approximately 164,136 km² of the Caspian Sea[40] and partially overlaps with the marine components of the Project. Map B presents the species' spring and autumn migration routes. The secondary spring migration route follows the western coastline of the Caspian Sea and may occur in proximity to the Project's area of influence.

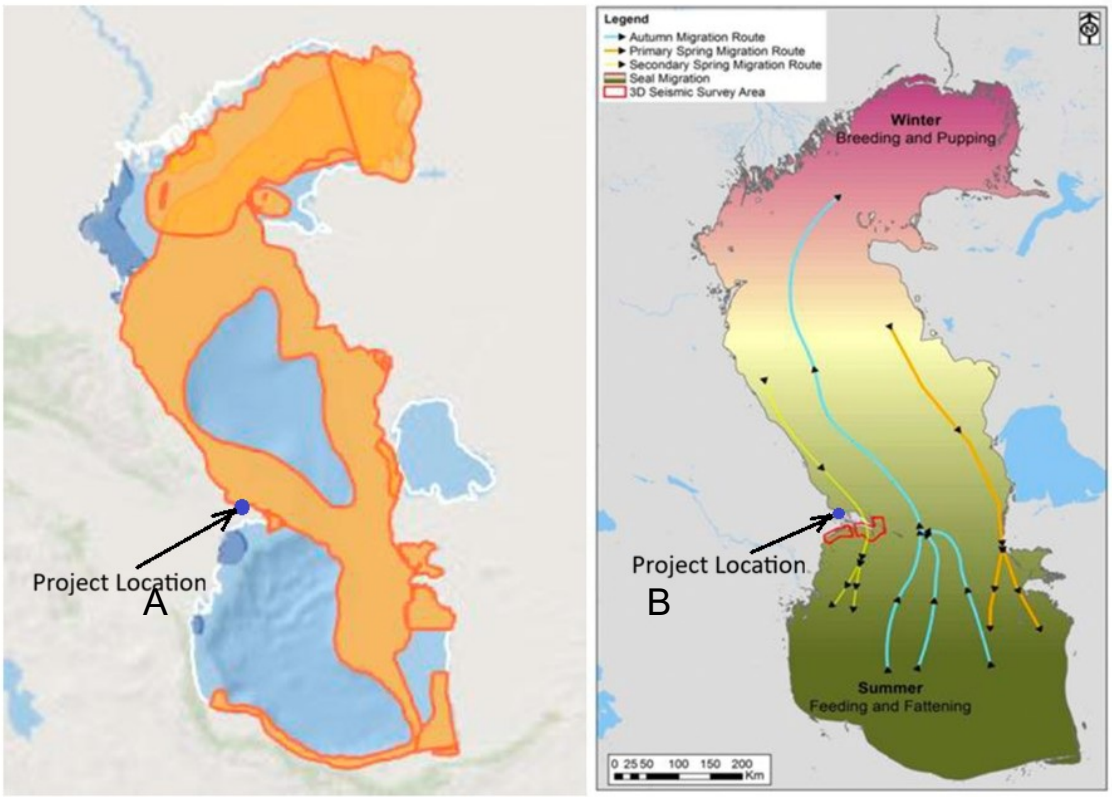


Figure 11-4 Map of Important Marine Mammal Areas (left) and Caspian Seal migration route (right)

The following Figure 11-5 depicts Caspian seal moulting and haul-out areas along the Azerbaijani coast. No Project components overlap with these areas, which are located more than 50 km southeast of the Project area.

[40] https://www.marinemammalhabitat.org/factsheets/caspian-seal-transitory-migration-and-feeding-area-imma/

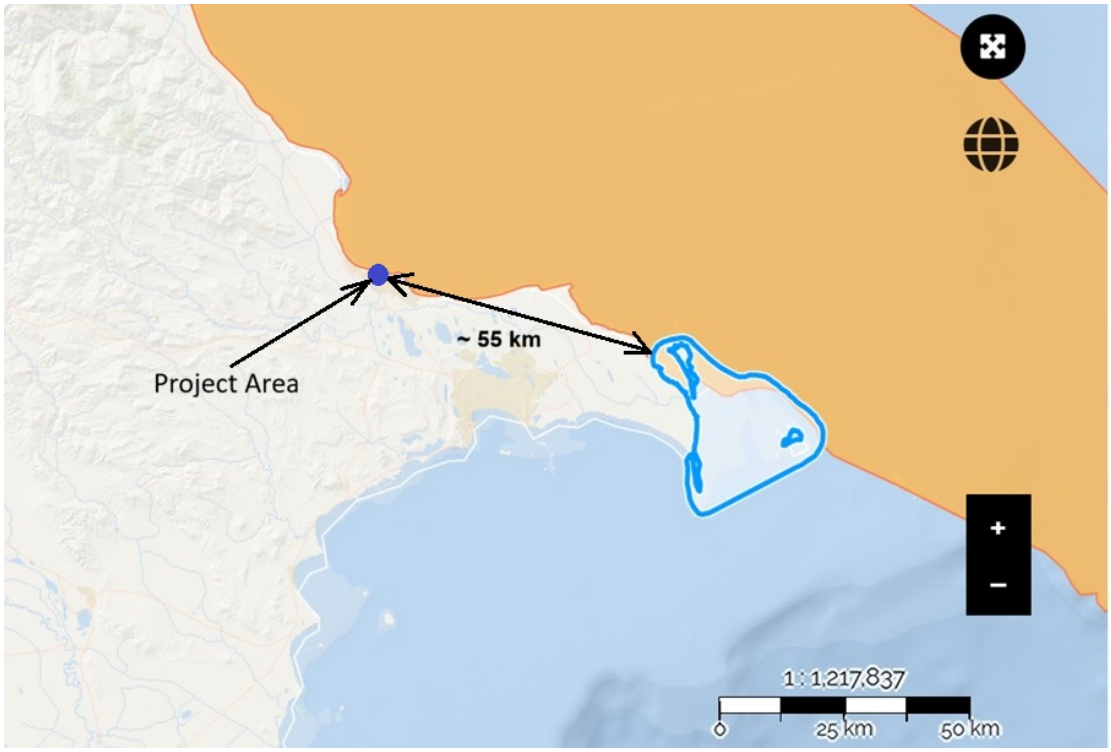


Figure 11-5 Caspian Seal Moulting and Haul Out Area[41] (in blue)

The 2024 baseline surveys did not record any Seal sightings within the Project area. However, based on local fisher observations, Seals are typically seen in offshore waters approximately 4-5 km from the coast during spring (April) and autumn (October–November), occasionally resting on coastal rocks. Therefore, literature data and local knowledge indicate that seals may occur in the offshore areas of the Project during spring, summer, and early autumn.

11.3 Area of Influence and Receptors

11.3.1 Area of Influence

During construction, the marine ecological area of influence encompasses zones subject to temporary seabed disturbance, increased turbidity, underwater noise, and vessel activity, which may affect benthic habitats, fish, and other marine fauna in the immediate vicinity. During operation, the area of influence extends to the mixing and dispersion zone of the brine discharge, where elevated salinity, temperature, and residual treatment chemicals may influence water quality and associated biological communities before conditions return to baseline levels. The spatial extent of influence is governed by local hydrodynamics, bathymetry, wave climate, and freshwater inputs, and is expected to be largely confined to the nearfield environment, with effects diminishing rapidly with distance from the intake and outfall and becoming negligible at the broader coastal scale.

Note: The Critical Habitat Assessment and EAAA definition are presented in Section 9.2.3.

[41] https://www.marinemammalhabitat.org/factsheets/caspian-seal-moulting-and-haul-out-areas-imma/

11.3.2 Receptors

Table 11-4 Marine Environment- Receptors

Receptor	Sensitivity	Justification
Marine microfauna	**Low**	The marine area to be impacted has a relatively low biodiversity value due to sandy and rocky bottom.
Marine megafauna	**Very High**	Caspian Seal is present in the area. Additionally, although not confirmed during the baseline studies, the possibility of very occasional occurrence of IUCN Critically Endangered (CR) fish species cannot be entirely ruled out.

11.4 Potential Impacts, Mitigation, Management & Residual Impacts

11.4.1 Construction Phase

11.4.1.1 Direct Disturbance to Benthic Habitats

Construction of the marine intake and outfall structures along the Sumgait coastal zone will require seabed excavation, trenching, drilling, and placement of pipelines and associated infrastructure within shallow, nearshore waters of the Caspian Sea. These works will disturb the upper sediment layer and cause temporary sediment redistribution and settlement in adjacent areas.

The nearshore seabed in the Project area is characterised by soft, fine-grained sediments supporting low-diversity benthic communities dominated by polychaete worms, small crustaceans, and molluscs adapted to variable salinity and turbidity conditions. Consultation with the Department of Fisheries and the Aquaculture Centre confirmed that no designated sensitive or protected aquatic habitats occur within the immediate vicinity of the Project footprint, and that primary spawning grounds for commercially important fish species are located outside the Project area.

Despite the low-sensitivity nature of the habitat, construction activities may directly affect sessile and low-mobility benthic organisms within the intake and outfall footprint. Organisms such as bivalves, amphipods, polychaetes, and other invertebrates will be displaced or lost where trenching and seabed preparation occur. Sediment plumes generated during excavation may also temporarily smother adjacent benthic substrates.

Early life stages of fish likely present seasonally in nearshore waters, represent the most sensitive receptors. Species that may use the coastal zone for feeding or migration include commercially important or regionally occurring species such as Caspian roach (*Rutilus caspicus*), kutum (*Rutilus frisii*), mullets (*Chelon spp.*), and gobies (*Gobiidae*). These species may experience short-term habitat disturbance or local displacement during peak construction activities.

However, the spatial footprint of seabed disturbance will be limited to the immediate intake and outfall alignment. Thus, impacts will be localised, temporary, and reversible following the completion of construction works and natural sediment re-stabilisation.

11.4.1.2 Disturbance to Mobile Marine Fauna

Construction activities associated with intake and outfall installation will generate underwater noise, vibration, increased turbidity, increased vessel traffic, and diver presence, which may temporarily disturb mobile marine fauna such as fish and larger invertebrates, potentially

affecting species with high conservation value such as marine megafauna. These stressors may cause behavioural responses in mobile marine fauna such as avoidance, changes in swimming patterns, or temporary displacement from preferred feeding or shelter areas.

Fish species moving along the Sumgait coastline for feeding or seasonal migration may temporarily avoid the construction area due to noise and increased turbidity. These responses are expected to be short-lived and limited to the immediate construction zone, as similar habitats remain available along the adjacent coastline.

Historically, the Sumgait coastal waters formed part of migration routes for sturgeon species. However, as indicated in earlier section, consultation with fisheries authorities confirmed that these species are now only rarely observed in the region, and no stable local populations or spawning grounds are known to occur along the Sumgait coast. Thus, the likelihood of direct interaction between construction activities and sturgeon species is considered low.

Construction vessel movements may also temporarily disturb the Caspian seal. Consultation results and available monitoring data indicate that no haul-out sites or permanent aggregation areas occur near the Sumgait coast, and seal presence in the area is limited to occasional transit or opportunistic feeding. Potential impacts would therefore be restricted to short-term behavioural responses, such as avoidance of vessels and temporary displacement from the immediate work area or temporary disturbance along the migration corridor. There is a low but theoretical risk of vessel collision with marine mammals. (Lutcavage *et al*., 1997).

In the absence of mitigation measures, and based on the activity level of marine vessels, it is predicted that the vessel operations could result in an overall impact of moderate negative significance to the marine mammals. Once the construction phase is completed and vessels are demobilized from the site, there is no further risk of marine mammal impacts from collision with project construction vessels.

The Caspian Seal Transitory Migration and Feeding Area IMMA was designated on the basis of three primary criteria - Criterion A (Endangered species), Criterion C2 (key feeding habitat), and Criterion C3 (key migration corridor).

Direct mortality attributable to vessel collision is expected to be negligible after the implementation of vessel speed restrictions, and Marine Mammal Observer requirements during active marine works. Seal presence in the Project area is limited to occasional transiting individuals; no aggregation or congregation occurs. The probability of a fatal vessel strike under the proposed mitigation regime is therefore remote. Accordingly, the Project is not expected to result in a measurable net reduction in the global or regional Caspian Seal population, estimated at approximately 168,000 individuals (IUCN, 2020), over any reasonable assessment timeframe.

Satellite telemetry data indicates that Caspian Seals migrating through the mid-Caspian follow coastal routes, and as learnt from the fisher consultations at distances typically exceeding 4-5 km offshore, with the primary spring migration corridor oriented along the mid-Caspian shelf. The Project's marine works are confined to the immediate nearshore, which is peripheral to and spatially distinct from the main migratory transit corridor. The Project's AoI intersects the outer, lower-use fringe of the mapped IMMA, rather than the primary migration axis. Temporary displacement of individual transiting seals is possible but would not impair connectivity or the functionality of the migration corridor at the population level. Construction works will additionally be scheduled outside the peak spring (April–May) and autumn (October–November) migration windows wherever practicable, further reducing the probability of interaction.

The nearshore Sumgait coastal zone is not considered primary foraging habitat for Caspian Seals. Consultation with the Fisheries Department confirmed no known seal feeding

aggregations in the Project vicinity. The Project is therefore not anticipated to measurably alter the availability or quality of feeding habitat relevant to the IMMA designation.

Certain construction activities at the shoreline, including vibro-compaction, excavation, and material handling, may generate localised underwater vibration and noise. This may lead to temporary avoidance behaviour by Caspian Seal and short-term displacement from portions of the migratory corridor adjacent to active works. However, due to the shallow and constrained nature of the nearshore work area, sound propagation is expected to be limited, and noise levels may attenuate rapidly with distance from the source. This will restrict the spatial extent of disturbance to a relatively small area around the construction zone.

Construction activities may disrupt local ecological connectivity in nearshore waters. Movement of fish and invertebrates along the coastline may be temporarily constrained. Increased vessel density, diver presence, etc. may contribute to the disturbance effects for Seal. However, these effects will be limited in duration and spatial extent and are not expected to result in long-term fragmentation of marine habitats.

Accordingly, biodiversity offsets are not considered necessary for the Project. No measurable adverse impacts on the biodiversity values or ecological processes underpinning the IMMA designation, including the migration corridor, feeding habitat, and Endangered species population integrity, are anticipated following implementation of the mitigation and management measures. Residual impacts are expected to be minor, short-term, and limited to behavioural disturbance of occasional transiting individuals, with no anticipated population-level effects.

11.4.1.3 Spread of Non-Native and Invasive Species via Marine Works

The use of imported marine vessels, equipment, and construction materials during the installation of intake and outfall infrastructure presents a credible pathway for the introduction or spread of non-native and potentially invasive aquatic species to the Caspian Sea. Invasive species may alter local benthic and pelagic communities through competition or habitat modification, potentially leading to reduced native biodiversity and changes in ecosystem structure and function.

Potential introduction pathways for invasive species include biofouling on the hulls, anchor chains, and other submerged surfaces of construction and supply vessels mobilised from external ports or other Caspian coastal facilities. There is also the potential for invasive species to be transported via attachment to imported pipes, structural material, or equipment.

The risk is considered low, given that vessels operating within the Caspian Sea are landlocked and cannot arrive from outside the basin via marine routes. However, vessels mobilised from other Caspian ports may carry species or life stages not currently established in the Azerbaijani coastal zone.

11.4.2 Operation Phase

11.4.2.1 Entrainment and Impingement

During operation, the seawater intake system will draw water from the nearshore environment into the desalination plant. This process may result in entrainment and impingement of marine organisms.

Entrainment will primarily affect small, weakly swimming organisms such as plankton, fish eggs, larvae, and early life stages of invertebrates present in the intake zone. These organisms may include the early developmental stages of coastal fish species.

Impingement may occur when larger organisms, such as juvenile or adult fish and crustaceans, become trapped against intake screens by intake velocities. Species potentially

affected include small fish, gobies, and juvenile mullets present within the immediate intake area.

These effects are expected to be highly localised, typically within a few hundred metres of the intake structure, and will primarily affect common, abundant coastal species.

11.4.2.2 Discharge of Brine Effluent

During operation, the desalination plant will discharge concentrated brine through the marine outfall into the nearshore Caspian Sea. The brine may contain elevated salinity and trace concentrations of residual treatment chemicals used in the desalination process including antifouling agents. Antifouling agents represent a distinct chemical stressor to the marine environment if discharged in high concentrations. The brine dispersion modelling (see section 12.4.2.1) demonstrates that the selected diffuser design achieves effective near-field dilution and restricts measurable impacts to a limited area of the seabed environment.

According to Gupta et. al. (2026)[42], brine discharge from desalination plants can affect marine ecosystems through elevated salinity, increased temperature, reduced dissolved oxygen, and the toxicological effects of residual treatment chemicals, particularly at and near the point of discharge.

The primary effect of brine discharge will be the formation of a localised zone of increased salinity and density near the outfall diffuser. This may temporarily alter near-bottom water quality and sediment conditions, potentially affecting benthic organisms such as polychaetes, small crustaceans, and molluscs in the immediate vicinity of the discharge point.

Fish species using the coastal zone may temporarily avoid areas where salinity or temperature is elevated. Any such avoidance behaviour is expected to be limited to the immediate outfall mixing zone, as surrounding coastal waters are expected to remain suitable for feeding and movement.

For the Caspian Seal, the credible indirect mortality pathway via brine discharge may operate through two mechanisms i.e. degradation of prey availability in the mixing zone through benthic community impacts, and direct physiological stress or avoidance responses in individual seals entering the mixing zone.

The mixing zone will be highly localised and confined to the immediate nearshore vicinity of the outfall diffuser. The benthic and pelagic communities within this zone do not constitute primary foraging habitat for Caspian Seals. Any localised reduction in prey density within the mixing zone is therefore not expected to measurably affect the foraging success of transiting individuals.

Regarding direct physiological effects, the probability of a seal voluntarily entering or remaining within the high-salinity core of the mixing zone is considered very low, given the species' avoidance of unfavourable environmental conditions.

Antifouling chemicals used in the desalination process will be managed in accordance with best-practice dosing protocols to minimise residual concentrations in the discharge. Following near-field dilution at the outfall, chemical concentrations at the edge of the mixing zone are not expected to reach levels that would pose a risk of harm to marine mammals, including the Caspian Seal.

Indirect effects may also occur if long-term changes in nearshore benthic conditions influence the distribution of prey species for higher trophic levels, including the Caspian seal which transits offshore but does not rely on the nearshore Project area. Given the absence

[42] https://www.sciencedirect.com/science/article/pii/S2468584425001023

of known seal haul-out or aggregation areas near the Project site, the limited spatial extent of the mixing zone, and the ability of seals to avoid unfavourable conditions, impacts on the Caspian seal are expected to be minor and restricted to temporary avoidance of the immediate outfall area, if individuals are present.

With appropriate outfall design and operational controls, changes in water quality are expected to remain localised, within regulatory thresholds, and of minor ecological significance.

Table 11-5 Marine Ecology Impact Significance, Mitigation and Management Measures and Residual Impacts – Construction

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Construction Phase						
Direct Disturbance to Benthic Habitats	Moderate	Flora and Fauna	Low	Minor	• Optimise the intake and outfall alignment to minimise the seabed footprint and avoid any identified patches of higher benthic diversity. • Clearly demarcate the marine construction footprint and restrict seabed disturbance to designated work zones only. • Install temporary sediment control measures (e.g. silt curtains) around nearshore works where technically feasible, particularly in shallow zones where suspended sediments could affect benthic invertebrates and juvenile fish. • Minimisation of seabed disturbance through reduction of trench width, working area, and duration of seabed exposure. • Scheduling of construction works to avoid ecologically sensitive periods, such as spawning or recruitment seasons, where practicable. • Progressive reinstatement and stabilisation of disturbed seabed following installation. • Monitoring of turbidity and sedimentation during construction, with adaptive management measures implemented if thresholds are exceeded.	Negligible
Disturbance to Mobile Marine Fauna	Minor	Fauna	Very High	Moderate	• Schedule marine construction activities outside the spring migration period of the Caspian seal, to minimise disturbance to individuals transiting along the Sumgait coastline. • Scheduling disruptive marine construction activities to avoid peak migration or spawning periods of important local fish species (e.g., sturgeon, kutum), where feasible. • Limitation of vessel movements and construction activities to designated corridors and work areas to reduce disturbance.	Minor

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
					• Implementation of vessel speed restrictions in nearshore areas to avoid any collision risk with Caspian seal. • Establish a marine fauna observation protocol during marine works, with trained personnel conducting pre-start visual checks for seals within a defined safety radius around active works. • Temporary suspension of construction activities if sensitive or protected species are observed within defined exclusion zones. • Avoidance of unnecessary night-time works to reduce disturbance from noise and artificial lighting, where feasible. • Use of low-noise construction techniques and well-maintained equipment to minimise underwater noise emissions. • Prohibit discharge of any untreated wastewater, solid waste, or oily residues from construction vessels into coastal waters. • Provision of workforce environmental awareness training on marine fauna sensitivity and response procedures.	
Spread of Non-Native and Invasive Species via Marine Works	Minor	Flora and fauna	Very High	Moderate	• Ensure all vessels mobilised for marine construction works have hulls cleaned and inspected for biofouling prior to mobilisation to the Project area. • Adopt Best Practice management for the ballast water management (including adhering to the provisions of the Ballast Water Management Convention (BWM 2004). • Inspect imported pipes, structural components, and equipment with submerged surfaces for biological material prior to deployment. • Minimize unnecessary vessel movements between different Caspian ports during the works, avoiding prolonged idle periods that promote fouling, and implementing good housekeeping practices for equipment storage and handling.	Minor
Operational Phase						

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Entrainment and impingement	Minor	Fauna	Very High	Moderate	• Design the intake structure with low approach velocities (typically ≤0.15 m/s at the screen face) consistent with international good practice to allow mobile organisms, including juvenile fish and larger invertebrates, to escape. • Appropriately designed intake screens with regular inspection, including fine mesh sizing, wedge-wire or cylindrical screens, to minimise entrainment of early life stages and prevent injury to larger organisms. • Optimise intake depth and orientation to reduce the entrainment risk to planktonic life stages. • Monitoring of entrainment and impingement, through periodic surveys or intake observations, to verify effectiveness of mitigation measures. • If monitoring indicates elevated entrainment or impingement rates, review intake velocities, screening arrangements, or operational schedules to reduce impacts. • Consider fish deterrent systems at intakes if monitoring indicates significant impingement of sensitive species.	Minor
Discharge of Brine Effluent	Minor	Fauna	Very High	Moderate	• Design of outfall structures with multi-port diffusers to promote rapid dilution and dispersion of brine effluent. • Optimisation of discharge location and depth to avoid sensitive habitats and promote mixing within high-energy water bodies. • Ensure that salinity, temperature, and any residual treatment chemicals at the edge of the defined mixing zone meet applicable national and international water quality standards. • Development of hydrodynamic and dispersion modelling to inform outfall design and define the mixing zone. • Adopt best-practice antifouling agent management. Use lowest effective concentration of antifouling agents, with preference for intermittent over continuous dosing where operationally feasible.	Minor

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
					• Implementation of operational monitoring programmes to measure salinity, temperature, dispersion of brine, residual antifouling substances and key water quality parameters (Refer Marine Water and Sediment section). • Any observed mortality event or unexpected decline in benthic or fish species abundance within the monitoring grid shall trigger a targeted ecological investigation and a review of discharge parameters.	

11.5 Monitoring

Caspian Seal

In accordance with IFC PS6 requirements applicable to projects located within Critical Habitat, the Project shall develop and implement a Long-Term Biodiversity Monitoring Plan for the Caspian Seal. It will extend across construction and initial 3 years of operation phase of the Project. It will be built incorporating seasonal survey protocols, qualified personnel requirements, and defined ecological indicators relevant to the IMMA designation criteria. Monitoring findings will be reviewed annually, reported to the lender, and used to inform adaptive management decisions.

Additionally, in recognition of the Project's location within Critical Habitat designated for the Caspian Seal, a Biodiversity Action Plan (BAP) shall be developed and implemented demonstrating NG for CH trigger species. The BAP will define responsibilities, stakeholder engagement, implementation timescales, and performance indicators for each measure, and will be subject to periodic review in conjunction with the Long-Term Biodiversity Monitoring Plan.

More broadly, the Project will also develop and implement a Biodiversity Management Plan (BMP), which will address biodiversity risks and impacts across all relevant receptors and habitats, along with the Caspian seal and Sturgeon species. The BMP will integrate the requirements of the BAP and monitoring commitments and will provide the overarching framework for biodiversity mitigation and management.

The further monitoring requirements for marine ecology have been provided in the table below:

Table 11-6 Marine Ecology – Monitoring Requirements

Monitoring	Parameters	Frequency & Duration	Monitoring Location
Construction[43]			
Mammals, (incidental sightings) and Avifauna survey	• Marine megafauna observed within the Project area • Dalmatian Pelican count • Seabirds, including gulls and terns count and species	• On-going visual observations and documentation of marine megafauna through videos and photographs formally logged in register • Quarterly survey of coastal seabirds at 5 locations (1 day/site) within 5km of the project site	Nearshore waters within 5km of the Project site
Caspian Seal	• Presence/absence of Caspian Seal within defined safety radius around active works • Behavioural responses (avoidance, direction of travel, re-sighting frequency).	• During all active marine construction works occurring within or adjacent to the migration corridor. • During spring (April–May) and autumn (October–November) migration periods.	Active marine construction zone and a safety radius around works; nearshore waters within 5 km of Project site.

[43] Surveys to be undertaken by qualified specialists for duration of construction and commissioning

Monitoring	Parameters	Frequency & Duration	Monitoring Location
	• All sightings formally logged with date, time, GPS location, number of individuals, and behavioural state.		
Fish	• E-DNA samples at 5 locations sampled previously for the baseline	• Quarterly frequency	Nearshore waters baseline sampling grid 5 locations
Benthic Fauna (Van Veen grab) and Plankton (tow net vertical and horizontal)	• Benthic species count • Phytoplankton species and count • Zooplankton species and count	• Quarterly frequency	Nearshore waters baseline sampling grid 5 locations
Invasive species	• Presence of known or suspected invasive species in benthic and plankton samples.	• Invasive species screening incorporated into quarterly benthic and plankton surveys.	Nearshore waters
Operation[44]			
Mammals, (incidental sightings)	• Marine megafauna such as Caspian Seal observed within the Project area of influence	• Ongoing observations from day-to-day activities incidental sightings will be recorded. •	Nearshore waters, intake and outfall points and within 5km
Impingement and Entrainment	• Fish, sea snakes, terrapins, macro-benthos	• Monitoring of impingement through quarterly surveys at intake (drop down camera). • Monitoring of entrainment through inspection of drum screens	Quarterly inspection Monthly log of fish, reptile and macro-benthic fauna on intake drum screens
Fish	• E-DNA samples at 5 locations sampled previously for the baseline	• Six-monthly frequency	Nearshore waters baseline sampling grid
Benthic Fauna (Van Veen grab) and Plankton (tow net	• Benthic species count • Phytoplankton species and count	• Six-monthly frequency	Nearshore waters baseline sampling grid 5 locations

[44] Surveys to be undertaken by qualified specialists for minimum of three years of operations

Monitoring	Parameters	Frequency & Duration	Monitoring Location
vertical and horizontal)	• Zooplankton species and count		
Ecosystem Services (Fisheries & Water Quality)	• Residual chlorine and total oxidant concentrations in the mixing zone • Ecotoxicity indicators (e.g. indicator species response where feasible) • Supporting indicators: fish abundance/diversity trends from eDNA and catch observations (if available)	• Quarterly monitoring of physico-chemical parameters and residual chlorine during operation • Annual ecotoxicity testing with specific focus on chlorine-based compounds • Long-term monitoring with periodic review against ESIA predictions	At safe distance from the outfall discharge point and defined mixing zone; Gradient at increasing distance from outfall

12.0 Marine Water and Sediment Quality

12.1 Applicable Requirements & Standards

12.1.1 National Regulations

Azerbaijan has the following regulations for the marine environment:

- Water Code of the Republic of Azerbaijan (No. 418-IQ, 1997) governs the use and protection of all water bodies, including the Caspian Sea. It regulates discharge of effluents to water bodies, wastewater permits, and water quality standards. Discharges that may affect marine water quality or coastal ecosystems such as seagrasses and fish nurseries are subject to the Water Code's permitting and compliance provisions.
- "Permissible Norms of Harmful Impact on Fishing Water Bodies" provides a list of permissible levels for marine water quality. It was approved by the decision of the Cabinet of Ministers of the Republic of Azerbaijan No. 146 on September 6, 1999.[45]
- Azerbaijan is also a Party to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran Convention) and its related protocols, which reinforce national legal obligations to prevent pollution, protect biological resources, and coordinate monitoring and marine ecosystem management among Caspian littoral states.

In addition, Azerbaijan has adopted a suite of AZS (Azerbaijan Standards) aligned with ISO/EN environmental measurement methods that are applicable to marine and surface water monitoring[46], including:

- AZS ISO 603.4-2011 – Rules for sampling sea waters.
- AZS 603.2-2011 – Rules for sampling sediments (applicable to marine sediment quality monitoring).
- AZS ISO 7027-1:2023 / AZS ISO 7027-2 – Turbidity and transparency measurement procedures.
- AZS ISO 15923-1:2022 – Discrete analysis of key water quality parameters (ammonium, nitrite, nitrate, chloride, etc.).
- AZS ISO 7887 / AZS ISO 8288 – Methods for metal and general water quality parameter determination.
- Additional AZS standards for pH measurement, ion chromatography, organic compounds, etc.

These standards define how to collect, analyse, and report water quality and sediment parameters to be used in monitoring and reporting programmes.

12.1.1.1 Marine Water and Sediment Quality Standards

Marine Water Quality

Marine water quality assessment has been undertaken with reference to applicable national and internationally recognised standards. In particular, the "List of permissible concentrations of harmful substances in water bodies of fishery importance" approved under

[45] https://faolex.fao.org/docs/pdf/aze110773E.pdf

[46] https://eco.gov.az/az/nazirlik/ekologiya-uzre-standartlarin-siyahisi

Resolution No. 146 of the Cabinet of Ministers of the Republic of Azerbaijan dated 6 September 1999 has been adopted as the primary national benchmark. This regulation establishes Maximum Permissible Concentrations (MPCs) for a range of pollutants in waters designated for fisheries use and is directly applicable to the Caspian Sea, providing a conservative basis for the protection of aquatic ecosystems. In addition, reference has been made to SanPiN No. 4630-88, *Sanitary Rules and Norms for Protection of Surface Waters from Pollution* which continues to be widely used in the region to supplement available national criteria and provide additional parameter coverage where required.

Table 12-1 Water Quality Standards for Protection of Water Bodies

Parameter	Unit	SanPiN No. 4630-88	Resolution No. 146
pH		6.5 - 9.5	6.5 - 8.5
Turbidity	NTU	<3	
Dissolved Oxygen	mg/L O_2	5	6
Conductivity	µS/cm	<2500	
Nitrates	mg/L	45	
Nitrites	mg/L	3	
Ammonium	mg/L	2	1.2
Phospates	mg/L	3.5	
Sulphates	mg/L	500	
Sulphides	mg/L	0.05	
BOD	mg/L	6	6
COD	mg/L	30	
Magnesium	mg/L		50
Aluminium	mg/L	0.5	
Arsenic	mg/L	0.05	0.05
Cobalt	mg/L	0.1	0.05
Cadmium	mg/L	0.001	0.005
Chromium	mg/L	0.05	
Iron	mg/L	0.3	
Manganese	mg/L	0.1	

Marine Sediment Quality

At present, there are no specific or consolidated national standards in the Republic of Azerbaijan that define numerical threshold values for marine sediment quality. While existing regulations provide general guidance on the protection of aquatic environments, they do not establish Maximum Permissible Concentrations (MPCs) or equivalent criteria for contaminants in marine sediments. In the absence of applicable national standards, the assessment of sediment quality for the Project has therefore been undertaken with reference to internationally recognised benchmarks. In particular, the Dutch intervention values for aquatic sediments, as published in the Dutch Staatscourant of 8 April 2009 as part of the “Amendment of the Circular concerning the remediation of sediments (2008)”, have been adopted as a screening and benchmarking tool. These values (selected parameters only) are listed in following table.

Table 12-2 Dutch Intervention Values for Aquatic Sediments (selected parameters)[47]

Substance (group)	Intervention value sediment (mg/kg.d.s)
Metals	
Antimony (Sb)	15
Arsenic (As)	85
Cadmium (Cd)	14
Chrome (Cr)	380
Cobalt (Co)	240
Copper (Cu)	190
Mercury (Hg)	10
Lead (Pb)	580
Molybdenum (Mo)	200
Nickel (Ni)	210
Zinc (Zn)	2000
Polycyclic Aromatic Hydrocarbons (PAH)s	
PAH Total (sum of 10)	40

12.1.2 Lender Requirements

In addition to compliance with the Equator Principles, the Project has been assessed against the applicable requirements of the IFC Performance Standards (2012), as well as the World Bank Group Environmental, Health and Safety (EHS) Guidelines, including both the General EHS Guidelines (2007) and sector specific EHS Guidelines for Water and Sanitation (2007).

The EHS Guidelines for Water and Sanitation provide specific guidance relevant to desalination facilities, including seawater intake and discharge, brine management, chemical handling, and the operation and maintenance of potable water treatment and distribution systems.

12.2 Baseline Conditions

12.2.1 National Context

The Caspian Sea is the world's largest enclosed inland water body, characterised by limited water exchange and strong sensitivity to land-based pollution inputs. The Azerbaijani sector of the Caspian Sea, particularly along the Absheron Peninsula and near major river mouths, is subject to cumulative anthropogenic pressures including urbanisation, industrial activity, oil and gas development, agriculture, and wastewater discharges. These factors, combined with the Caspian Sea's semi-enclosed nature, influence marine water and sediment quality and result in spatially heterogeneous environmental conditions.

Marine water quality in Azerbaijan's coastal zone is also strongly influenced by riverine inflows, most notably rivers such as the Kura system and smaller rivers including the Sumgait River. These rivers transport suspended sediments, nutrients, organic matter, and

[47] Guidance Document for Sediment Assessment. Ministry of Infrastructure and the Environment - DG Water. 2010. (https://sednet.org/download/guidance_document_for_sediment_assessment.pdf)

contaminants from upstream agricultural, urban, and industrial catchments into nearshore marine waters. As a result, elevated turbidity, nutrient concentrations, and episodic pollutant loading are commonly observed in coastal waters adjacent to river mouths, particularly following heavy rainfall events or during seasonal high flows.

Sediment quality in the Azerbaijani sector of the Caspian Sea reflects both natural sedimentation processes and historical accumulation of contaminants. Fine-grained sediments in nearshore and low-energy environments tend to act as sinks for heavy metals, hydrocarbons, and persistent organic pollutants, particularly in areas influenced by long-term industrial and oil-related activities[48] [49]. In coastal zones near urban and industrial centres, sediments may show elevated concentrations of petroleum hydrocarbons and metals, whereas sediments further from shore or in less disturbed areas are typically closer to natural background levels.

12.2.2 Bathymetry and Topography of the Seabed

Bathymetric data for the Project area were collected through site-specific surveys undertaken by Advanced Geo Solutions. These data define the baseline seabed conditions and are referenced to Caspian Datum 2008, derived from the EGM2008 vertical datum. These bathymetric data have also been used as input to the hydrodynamic modelling (by DHI) described later in this report

The spatial coverage of the survey data is presented in Figure 12-1. To provide broader spatial context and ensure continuity beyond the immediate Project area, the survey data were supplemented with regional bathymetric information from an existing Caspian Sea dataset from DHI's existing model of the entire Casoian Sea. The combined dataset provides a consistent representation of seabed conditions across both the Project area and the wider offshore environment.

[48] Abbasov et al. Environmental impact and analytical characterization of water samples from the Caspian Sea. 2025. SOCAR Proceedings Special Issue 001-008.

[49] De Mora et al. An assessment of metal contamination in coastal sediments of the Caspian Sea. 2004. Marine Pollution Bulletin, 48(1-2).

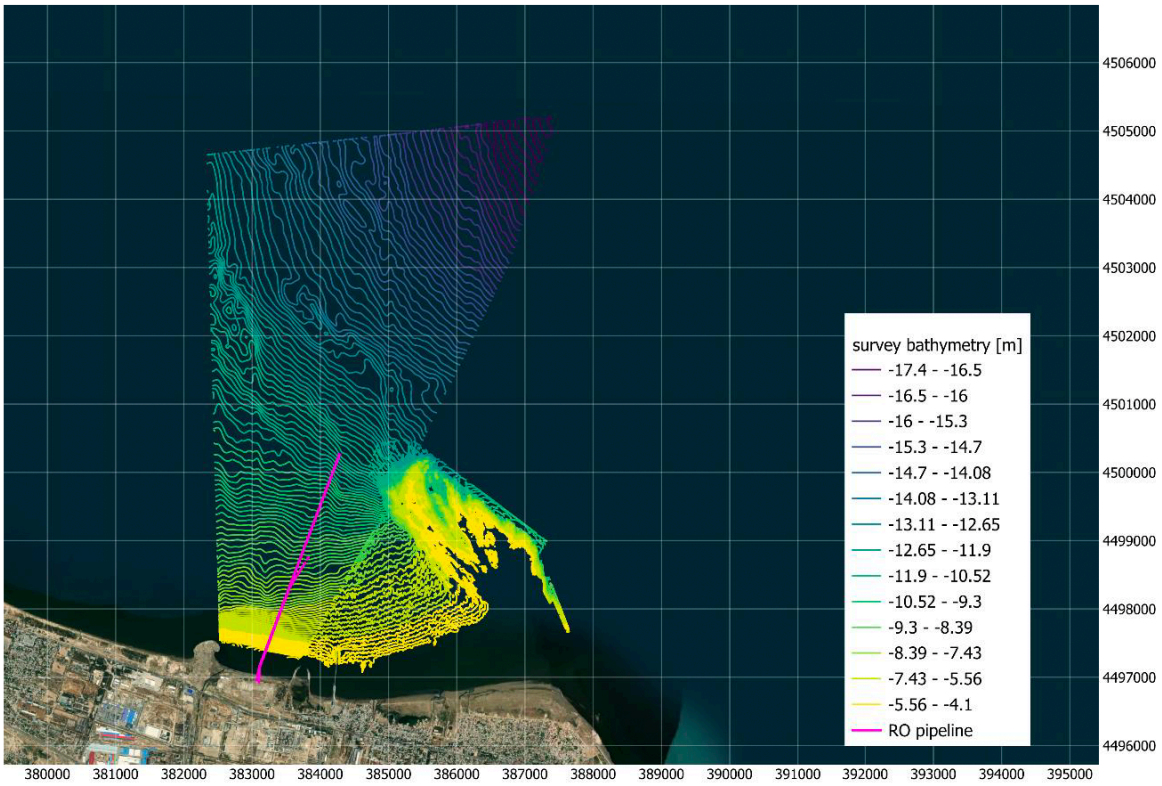


Figure 12-1 Local Bathymetry Data (Advanced Geo Solutions, 2026)

The seabed in the Sumgait coastal area is characterised by a shallow, gently undulating morphology, typical of a low-energy depositional environment. Nearshore sediments are predominantly sandy with a high shell content, transitioning with increasing depth into mixed sand and silt substrates. This gradation reflects sediment settling processes under relatively calm hydrodynamic conditions.

Localised occurrences of coarser material, including small rocks and isolated stone blocks, have been identified in limited areas along the coastline, particularly near the Tagiyev settlement and parts of the Sumgait shoreline. In addition, bathymetric surveys indicate the presence of rocky substrates within the offshore Project area, although these are not extensive.

No significant underwater infrastructure (e.g. pipelines or cables) has been identified within the surveyed area. Similarly, no mud volcanoes or associated features (e.g. griffins) were recorded within the immediate offshore project footprint. Regional data indicate that such features are present at greater distances offshore, including mud volcanoes located approximately 13 km to 30 km from the coastline, and onshore features located both north and south of the Project area.

The overall seabed profile remains relatively uniform and gently sloping, with no major obstructions or geomorphological features that would significantly constrain marine construction activities.

Figure 12-2 presents the regional distribution of seabed features and mud volcanoes, while Figure 12-3 illustrates the localised rocky substrates within the offshore Project area (IQLIM ESIA, 2025).

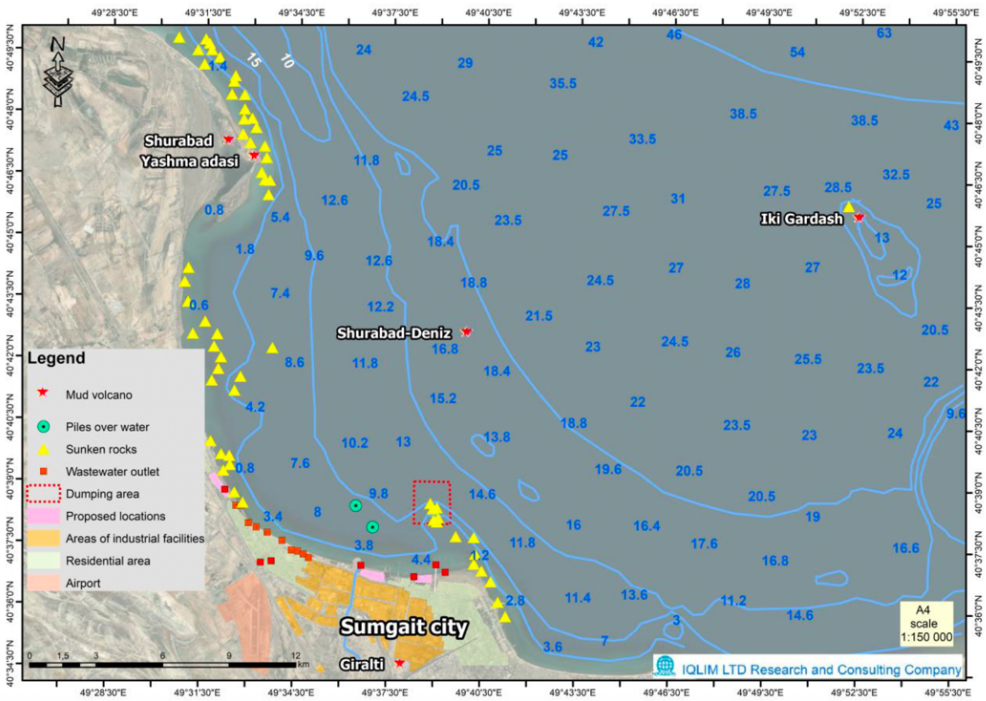


Figure 12-2 Location of Seabed Objects and Mud Volcanoes (IQLIM ESIA, 2025)

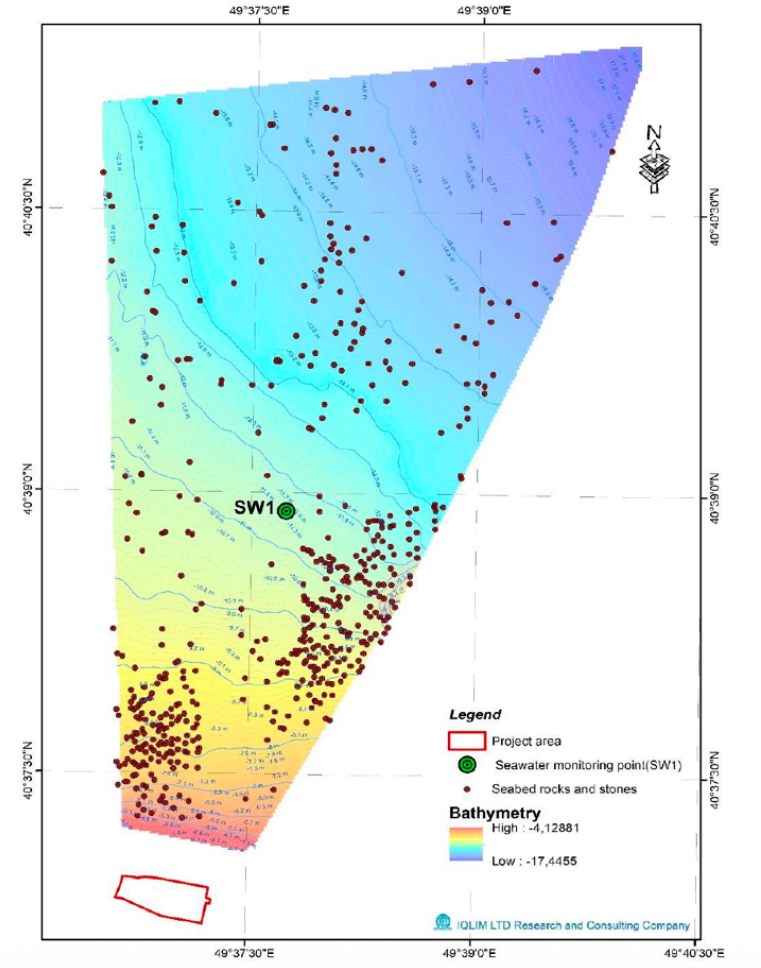


Figure 12-3 Location of Seabed Rocks at Offshore Areas (IQLIM ESIA, 2025)

12.2.3 Caspian Sea Level Change, Waves, and Currents

The level of the Caspian Sea is subject to a certain periodicity, but these cycles are quite long and can reach 200-300 years. In general, the Caspian Sea has repeatedly experienced strong increases and decreases in water levels as illustrated in Figure 12-4.

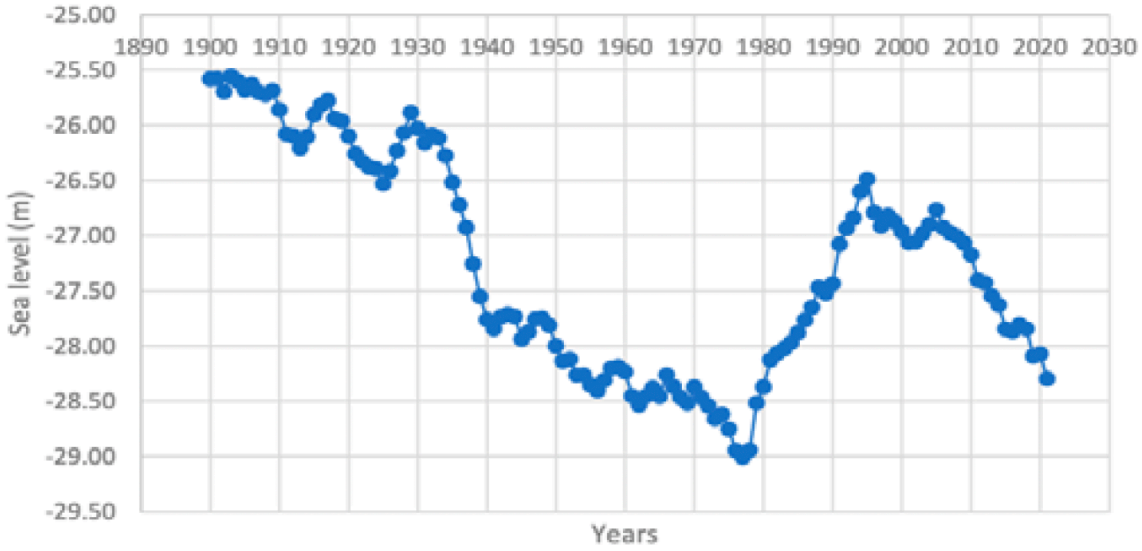


Figure 12-4 Changes in Caspian Sea Levels (from Mahachcala Hydrological Station, 2024)

Annual changes in the internal level range from 22 to 40 cm (average 30 cm). It is observed that the level increases and reaches a maximum in April-July and decreases from August and decreases to a minimum in December.

However, due to high levels of uncertainty, there is no reliable long-term forecast of the Caspian Sea level. Literature recommends that for planning economic activities in the sea and near the coast, Caspian Sea levels can be taken to vary between -30 m and -25 m BD. That is, below 1 m from the observed minimum sea level in 1977 (-29.0 m BD) and above 1 m from the observed maximum level in 1995 (-26.0 m BD) (IQLIM ESIA, 2025).

Wind waves are the predominant feature of the Caspian Sea. According to the zoning of the wind regime of the Caspian Sea, the Sumgait zone belongs to the Absheron region. Here, the greatest number of days per year with a wind speed of more than 15 m/sec varies from 55 to 145 days. Storm winds with a speed of more than 25 m/sec are also common in this area. Northern winds prevail in all seasons, with an average annual recurrence of 55% (northern 24%, north-eastern 13%, north-western 18%). With a normal wind, the wave height off the coast of Sumgait usually does not exceed 1 meter. With a strong wind, the wave height off the coast is 1-2 m, and on the open part of the coast 2.5-3.0 m.

In the area of the Sumgait coast, surface currents change direction and speed during the year. In early March, strong northern currents can be observed, which later in the summer are replaced by small areas of counterclockwise circulation near the coast. Stronger southern currents resume in November, at the beginning of winter. The speed of currents, depending on the speed and duration of the prevailing winds, fluctuates from 10-20 cm / sec to 30-50 cm / sec in shallow water, and in open water within 50-100 cm / sec. There are no closed systems of sea currents in this area and the currents formed in all wind directions are subject to the general regime of the Caspian Sea currents. (IQLIM ESIA, 2025)

12.2.4 Baseline Surveys

12.2.4.1 Seawater Quality

Seawater quality was analysed based on the results of weekly and monthly monitoring conducted in the coastal zone of the Project area, along the coastline and in the area of water intake for the desalination. Samples were analysed for parameters including physical and chemical properties. Parameters such as temperature, pH, total dissolved solids (TDS), electrical conductivity (EC), and salinity were measured on-site.

The monitoring locations are indicated in Figure 12-5. The location of SW1 is close to the water intake site. The remaining monitoring stations were organized for the purpose of seasonal assessment of the environmental situation in a two-kilometer part of the coastal waters of the SW2, SW3, SW4 zone.

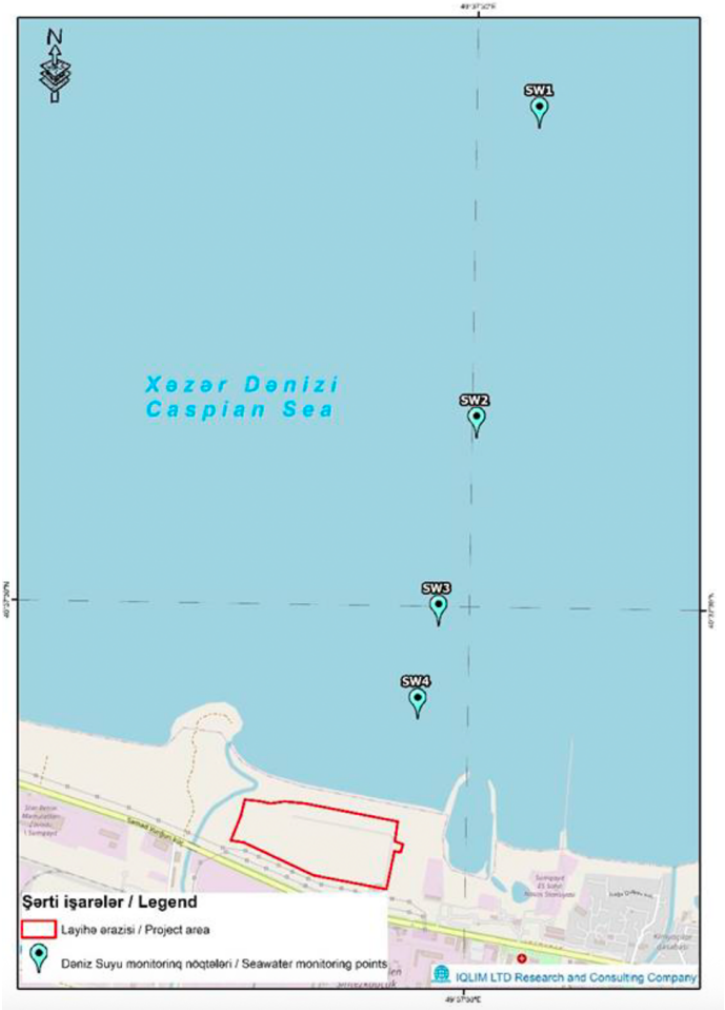


Figure 12-5 Marine Water Quality Sampling (IQLIM ESIA, 2025)

Since the Caspian Sea is a closed water basin, the mineral composition and physical parameters of its water differ from those in the seas connected to the World Ocean. The results of monitoring conducted in the marine area included in the project impact area were compared with the norms and standards in force in Azerbaijan. The obtained results show that the sea water is not polluted with chemical and biogenic substances and heavy metals. The most recent water quality monitoring results SWI are summarized in Table 12-3. Detailed lab reports are included in the Appendix and discussed below.

pH: The pH values of the seawater samples were slightly alkaline and ranged from 8.0 to 8.37.

Salinity: According to long-term data, the salinity of the sea in the Middle Caspian, where the project area is located, is 10-12‰. Since 15th July 2024, weekly measurements of physical parameters of water were carried out, including the salinity of sea waters at water intake sites (40°38'54.00" N and 49°37'44.00" E) in the territory of the studied water depth of 5 m. During July 2024 to March 2025, the salinity of the sea was measured to be at 9.5-10.9‰.

Total Suspended Solids (TSS): TSS values in seawater samples were between 12 and 23 mg/L. TSS in all samples complied with the national standard (100 mg/L).

Nitrates (NO_3) and Nitrites (NO_2): Nitrate and nitrite concentrations were normal and significantly below the standards.

Ammonium (NH_4): Ammonium concentration was significantly below the required standards.

Phosphates: All 20 water samples had phosphate concentrations above the required standard (3.5 mg/l) and ranged from 0.0027 to 0.0103 mg/L.

Oil Pollution: The concentration of hydrocarbons in all water samples is below the standards (0.50 mg/l).

E-coli and total coliforms: Microbiological contamination was detected in most water samples. The amount of coliforms in many places exceeds the accepted sanitary standard (100 units/l), increasing to 950 units/l in the coastal zone and up to 530 units/l in the open sea.

Algae: The number of algae in seawater is at the level of the Middle Caspian; in the samples taken, the number of algae at a distance of 4 km from the coast is 11-68 million ekz./m^3, and at the coastal border - 56-90 million ekz/m^3. The algae abundance is comparable with the typical levels of Middle Caspian.

Table 12-3 Seawater Quality Analyses Results, IQLIM ESIA, 2025

Parameter	Standards		40°38'54.00"N 49°37'44.00"E	40°38'54.00"N 49°37'44.00"E	40°38'54.00"N 49°37'44.00"E	40°38'54.00"N 49°37'44.00"E	40°38'54.00"N 49°37'44.00"E	40°38'54.00"N 49°37'44.00"E	40°38'54.00"N 49°37'44.00"E
	standards	reference	SW1(WSG84)	SW1(WSG84)	SW1(WSG84)	SW1(WSG84)	SW1(WSG84)	SW1(WSG84)	SW1(WSG84)
Data			**12.09.24**	**10.10.24**	**15.11.24**	**20.12.24**	**21.01.25**	**18.02.25**	**11.03.25**
Temperature at 5 m depth, °C	Not required		23,4	19,7	12,2	8,2	9,1	5,2	6,5
Temperature above sea level, °C	Not required		26,3	20,2	12,8	8,9	9,5	5,7	7
pH	6,5-9,5	SanPiN 4631-88 and Standard for fishing[109]	8,16	8,14	8,17	8,17	8,26	8,01	7,96
Total Chlorine, mg/l	Not required		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Turbidity, NTU	Not required		5,74	7,23	5,94	8,45	8,23	8,02	7,32
Conductivity @ 20°C, mS/cm	Not required		19,01	18,13	17,46	16,87	18,45	17,61	18,27
Total Dissolved Solids, g/l	Not required		10,87	10,33	9,91	9,55	10,52	10,01	10,19
Total Suspended Solids (TSS), mg/l	Not required		7,6	16	11	14	13	26	<2
Total hardness, mg/l	Not required		3614	3973	4267	3840	3740	3860	3960
Total Alkalinity, mg/l	Not required		197	178	175	175	176	185	174
Carbonate, mg/l	Not required		<20	<20	<20	<20	<20	<20	<20
Bicarbonate, mg/l	Not required		197	178	175	175	176	185	174
Calcium, mg/l #	Not required		321	344	389	365	376	390	400
Magnesium, mg/l #	Not required		683	756	800	710	680	700	720
Ammonium, mg/l NH4-N #	0,05	Standard for fishing	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Chloride, mg/l	Not required		5600	6490	5530	5145	4090	5300	5290
Nitrites, mg/l NO2-N	3,0	SanPiN 4631-88 and Standard for fishing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrates, mg/l NO_{2+3}-N	40	Standard for fishing	<0.01	<0.01	0,06	0,05	0,36	0,44	<0.01
Sulphate, mg/l SO4	Not required		3500	2996	3155	3140	2890	2550	2600
Aluminum, mg/l #	0,08	Standard for fishing	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0,09
Arsenic, mg/l #	0,05	Standard for fishing	<0.01	<0.01	<0.01	<0.01	0,03	<0.01	<0.01
Vanadium, mg/l #	0,1	Standard for fishing	<0.008	<0.008	<0.008	<0.008	0,93	0,45	1
Boron, mg/l #	10,0	Standard for fishing	5,9	4,6	4,1	1,9	2,7	2,9	2,8
Dissolved Iron, mg/l #	0,1	Standard for fishing	0,015	0,01	0,04	<0.01	<0.01	<0.01	0,01
Total Iron, mg/l #	0,05	Standard for fishing	0,018	0,06	0,08	<0.01	<0.01	0,08	0,07
Dissolved Manganese, mg/l #	5,0	SanPiN 4631-88 and Standard for fishing	0,006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Manganese, mg/l #	50,0	Standard for fishing	0,008	0,005	<0.005	<0.005	<0.005	<0.005	<0.005
Gallium, mg/l #			<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Tin, mg/l #	0,04	Standard for fishing	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony, mg/l #	0,05	Standard for fishing	<0.01	<0.01	<0.01	<0.01	0,07	<0.01	0,01
Titan, mg/l #			<0.01	<0.01	<0.01	<0.01	0,01	<0.01	<0.01
Zinc, mg/l #	0,01	Standard for fishing	<0.008	<0.008	<0.008	<0.008	0,014	<0.008	<0.008
Nickel, mg/l #	0,01	Standard for fishing	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0,012
Cobalt, mg/l #	0,01	Standard for fishing	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Chromium, mg/l #	0,05	Standard for fishing	<0.005	<0.005	<0.005	<0.005	0,006	<0.005	<0.005
Barium, mg/l #	2,0	Standard for fishing	<0.005	<0.005	<0.005	<0.005	0,006	<0.005	0,31
Molybdenum, mg/l #	0,012	Standard for fishing	<0.005	<0.005	<0.005	<0.005	0,04	0,02	0,02
Cadmium, mg/l #	0,005	Standard for fishing	<0.0015	<0.0015	<0.0015	<0.0015	0,011	<0.0015	<0.0015
Silver, mg/l #			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selen, mg/l #	0,0016	Standard for fishing	<0.008	<0.008	<0.008	<0.008	0,11	<0.008	<0.008
Lead, mg/l #	0,1	Standard for fishing	<0.008	<0.008	<0.008	<0.008	0,048	<0.008	<0.008
Beryllium, mg/l #			<0.01	<0.01	<0.01	<0.01	0,017	<0.01	<0.01
Sodium, mg/l #	Not required		3269	2450	2760	3100	2790	2900	3100
Lithium, mg/l #			0,19	0,29	0,3	0,35	0,2	0,09	0,16
Potassium, mg/l #	Not required		101	110	102	107	109	98	116
Copper, mg/l #	0,01	Standard for fishing	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Dissolved as SiO2, mg/l #			<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
Total as SiO2, mg/l #			0,23	0,45	<0.2	<0.2	<0.1	<0.2	<0.2
Strontium, mg/l #	10,0	Standard for fishing	7,5	8,2	8,6	5,8	8,5	4,5	8,7
Free Cyanides, mg/l #	100	Standard for fishing	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Anionic Surfactants (MBAS), mg/l #	0,05	Standard for fishing	0,26	0,45	0,36	0,44	0,16	0,23	0,26
Dissolved orthophosphate, mg/l PO4-P	0,5	Standard for fishing	<0.006	<0.02	<0.02	<0.0065	<0.0065	<0.0065	<0.0065
Total orthophosphate, mg/l PO4-P	0,01	Standard for fishing	0,007	0,03	<0.02	<0.0065	<0.0065	<0.0065	<0.0065
Fluoride, mg/l #	0,1	Standard for fishing	0,31	0,87	0,87	0,74	0,94	0,91	0,76
Hydrogen sulphide, mg/l #	1,5	AZS 929-2023	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Oil products and grease, mg/l	50	Standard for fishing	<5	<5	<5	<5	<5	<5	<5
Stronsium-^{90}Sr mBq/L	14.8 Bq/l	Standard for fishing	MDA= 612	986±157	MDA = 692	MDA = 623	MDA = 615	MDA = 692	MDA = 653
Mercury, mg/l #	0,0001	NRB-76/87 "Radiation safety standards"	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Thallium, mg/l #	0,0001	Standard for fishing	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total organic carbon (TOC), mg/l			25,6	32,4	39,9	7,8	6,7	7,3	8,1
								6,8	7,7
								14	8,2
Volatile organic carbon (Benzene, Carbon Tetrachloide, CIS-1,2 D), ug/l			<0.05	<0.05	<0.05	<0.05	<0.5	<0.5	<0.5
Total Coliform Bacteria, cfu/100 ml #	≤100	Standard for fishing	13	140	1000	190	6	5	11
E.Coli, cfu/100 ml #	10,0	SanPiN 4631-88	1	67	300	84	0	0	0
Enterococci, cfu/100 ml	10,0	Standard for fishing	0	0	0	0	0	0	0
Total viable count at 22°C, cfu/ml #			800	13600	5300	2200	2000	300	350
Total viable count at 37°C, cfu/ml #			600	7500	2400	1200	700	350	227
Faecal coliform, cfu/100 ml #	1000	SanPiN 4631-88	2	5	60	80	1	0	0
Chlorophyl-A, ug/l #	Not required		3,1	<0.1	3,4	3,4	6,1	9,5	4,7

12.2.4.2 Sediment Quality

Marine bottom sediments are a depositing medium, and their chemical composition reflects long-term patterns. The priority pollutants of bottom sediments include heavy metals and compounds of organic origin.

The marine sediments in the coastal part of the Project area mainly consist of sand with different grain sizes and shell composition, with local deposits of silt. As part of the monitoring program, marine sediment samples were collected from 10 locations within the Project area. The samples were analysed for parameters covering physical and chemical characteristics. The sediment sampling locations are indicated in Figure 12-6.

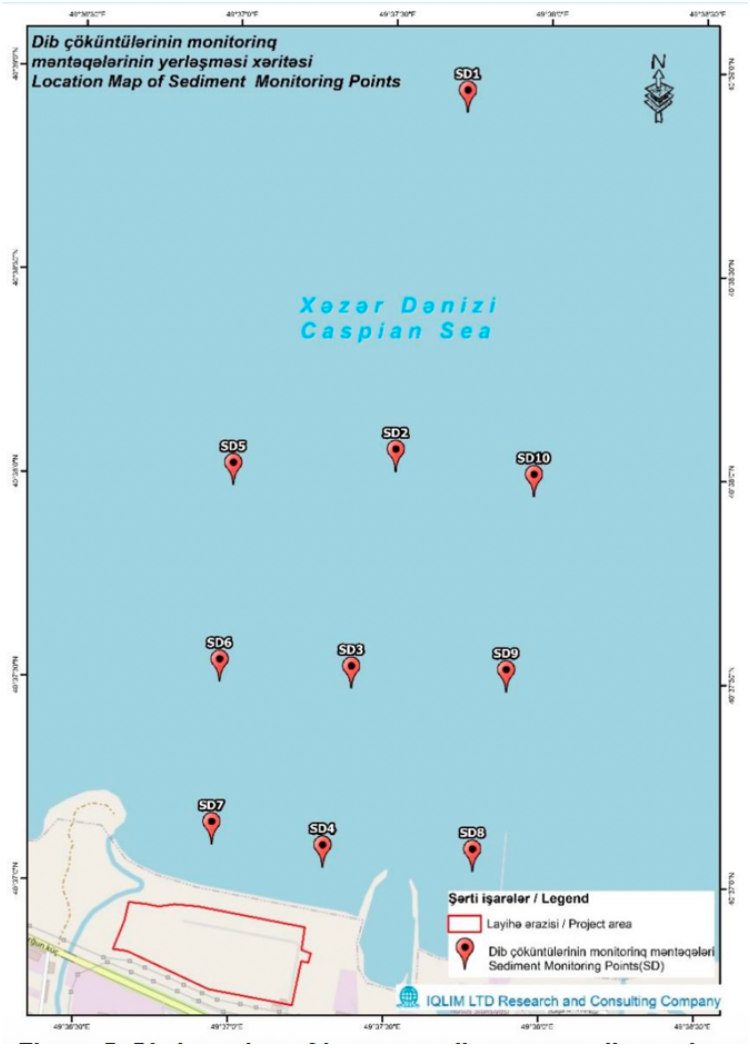


Figure 12-6 Sampling Locations for Marine Sediment Quality (IQLIM ESIA, 2025)

A summary of the laboratory analyses results of marine sediments are shown in Table 12-4. The sediment analysis results indicate that concentrations of heavy metals across all sampling locations (SD1–SD10) are consistently well below the applicable Dutch intervention values, suggesting no evidence of significant contamination. Total Petroleum Hydrocarbons (TPH) concentrations are also very low relative to the adopted screening benchmark, indicating negligible hydrocarbon impact within the surveyed sediments.

Polycyclic Aromatic Hydrocarbons (PAHs), including both total EPA 16 PAHs and the derived Dutch PAH (10) fraction, were detected at low concentrations across all samples. The calculated PAH (10) values are substantially below the Dutch intervention threshold of 40,000 µg/kg, confirming the absence of significant PAH contamination. Overall, the results

demonstrate that sediment quality within the Project area is generally consistent with background conditions and does not indicate contamination of environmental concern.

Table 12-4 Sediment Analyses Results (IQLIM ESIA, 2025)

Parameter	Dutch Intervention Value (mg/kg)	SD1	SD2	SD3	SD4	SD5	SD6	SD7	SD8	SD9	SD10
Arsenic, mg/kg	85	15	16	18	13	16	14	14	15	16	17
Chromium, mg/kg	380	62		30	34	41	32	27	31	26	58
Copper, mg/kg	190	36	36	34	31	30	35	28	30	26	35
Lead, mg/kg	580	32	14	12	23	15	14	18	9.5	7.3	12
Nickel, mg/kg	210	51	50	53	49	48	45	48	42	44	53
Cadmium, mg/kg	14	0.26	1.1	<0.08	0.52	0.94	0.27	0.31	<0.08	<0.08	1.4
Mercury, mg/kg	10	0.078	0.206	0.21	0.196	0.193	0.19	0.166	0.21	0.18	0.224
Aluminium, mg/kg	-	23400	13150	11520	9590	15830	9590	8180	9240	8900	15920
Boron, mg/kg	-	87	88	92	86	89	90	85	88	89	90
Iron, mg/kg	-	24400	27550	31470	25300	30280	27750	24700	23930	25280	29340
Manganese, mg/kg	-	787	1040	1260	1920	1170	1340	1530	1060	1120	1180
Selen, mg/kg	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
TPH, mg/kg dry weight	5000[1]	7.2	11.4	12.6	21	10.8	15	24	13.8	11.9	18
PAHs, µg/kg dry weight											
naphthalene	**-**	**2.8**	**3.3**	**2.3**	**1.9**	**3**	**2.2**	**1.6**	**1.4**	**2.6**	**3.7**
acenaphthylene	-	<0.5	1	0.9	2.5	0.8	1.1	3.4	3.6	0.8	1.5
acenaphthene	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
flourene	-	0.9	1.9	1.6	0.8	1.7	1.2	0.6	0.5	1.3	1.7
phenanthrene	**-**	**3.5**	**5.8**	**4.3**	**2.5**	**5.2**	**3.2**	**2.2**	**2**	**4**	**6.9**
anthracene	**-**	**<0.5**	**2**	**2.2**	**2.1**	**2.1**	**1.9**	**2.3**	**2.7**	**1.7**	**2.5**
fluoranthene	**-**	**1.3**	**3.5**	**3.2**	**3.3**	**3.4**	**2.3**	**2.8**	**2.4**	**2.8**	**3.1**

Parameter	Dutch Intervention Value (mg/kg)	SD1	SD2	SD3	SD4	SD5	SD6	SD7	SD8	SD9	SD10
pyrene	**-**	**1.4**	**7**	**5.1**	**6.8**	**5.9**	**5.1**	**6.5**	**5.8**	**4.6**	**7.6**
Benzo(a)anthracene	**-**	**<0.5**	**2.2**	**2**	**3.1**	**2.1**	**2.1**	**2.9**	**2.5**	**1.6**	**2.4**
chrysene	**-**	**1.4**	**3.2**	**2.9**	**2.5**	**3.7**	**2.3**	**2.4**	**2.9**	**2.4**	**3.8**
Benzo(b+k) fluoranthene	**-**	**0.7**	**3.6**	**1.9**	**3.5**	**3.4**	**2**	**3.2**	**2.8**	**1.6**	**4.1**
benzo(a)pyrene	**-**	**<0.5**	**3.6**	**1.8**	**5.6**	**3.2**	**1.6**	**4.9**	**5.3**	**1.4**	**3.9**
indeno(1,2,3-cd) pyrene	-	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	0.9	0.7	<0.5	<0.5
benzo(ghi)perylene	**-**	**<0.5**	**1.1**	**0.5**	**1.5**	**1.2**	**0.7**	**1.1**	**1.1**	**0.5**	**1.4**
Dibenzo(ah)anthracene	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total EPA 16 PAH	-	12	38.3	28.7	37.3	35.7	25.7	34.7	33.7	25.3	42.6
PAH (Total, Sum of 10)[2]	40,000 µg/kg	11.1	35.3	26.2	32.8	33.2	23.4	29.9	28.9	23.2	39.4

[1] Mineral Oil
[2] Selected PAHs only (in bold) for comparison with Dutch Standards

12.3 Area of Influence and Receptors

12.3.1 Area of Influence

The area of influence on marine water and sediment quality extends beyond the immediate footprint of the intake, outfall, and nearshore construction works. During construction, the zone of influence is expected to encompass the nearshore coastal area where seabed disturbance, trenching, and marine works may cause temporary increases in turbidity, suspended sediments, and localised sediment resuspension, with effects potentially extending alongshore and offshore depending on currents, wave action, and proximity to the Sumgaitchay River plume.

During operation, the area of influence is primarily associated with the dispersion of the brine discharge and associated trace chemicals from treated effluent at the outfall. The extent of the influence will depend on the dilution and dispersion characteristics of the receiving environment, including local hydrodynamics and bathymetry. Potential effects are expected to be localised to the vicinity of the discharge zone and may include changes in salinity.

12.3.2 Receptors

Based on the surveys performed, the table below outlines identified receptors in the vicinity of the project site.

Table 12-5 Marine Environment- Receptors

Receptor	Sensitivity	Justification
Coastal and offshore marine water quality	Low	The receiving environment is characterised by relatively low ecological sensitivity, with no designated protected areas or critical habitats in the immediate Project vicinity. Water quality is already influenced by existing industrial activities in the Sumgayit coastal area.
Seabed sediments (nearshore and offshore)	Low	Sediments are predominantly sandy to silty with limited ecological complexity and low benthic biodiversity. No sensitive or unique benthic habitats have been identified within the Project footprint.
Seawater Level (Caspian Sea)	High	The Caspian Sea is a closed inland water body with no connection to the global ocean. Sea level is highly sensitive to changes in basin water balance and is already experiencing climate-driven decline associated with increased evaporation and changes in river inflows. Continued reductions in sea level have the potential to affect coastal habitats, navigation, infrastructure and regional socio-economic activities across the Caspian basin.

12.4 Potential Impacts, Mitigation, Management & Residual Impacts

12.4.1 Construction Phase

During the construction phase, several activities have the potential to affect marine water and sediment quality within the Project area. These mainly include:

- Dredging of marine sediments for the installation of the outfall pipeline
- Installation and backfilling of the pipeline trench using gravel and dredged material
- Discharge of supernatant water from onshore sedimentation basins
- Installation of intake tower
- Discharge of groundwater from onshore dewatering activities.
- Discharge of stormwater runoff

12.4.1.1 Impacts from Marine Dredging Activities

Dredging within the intake and outfall pipeline corridor and excavation works associated with the intake structure will result in the disturbance and mobilisation of seabed sediments. Based on the current design, approximately 285,500 m³ of material will be dredged, comprising both sand and fine dredged sludge. This process is expected to generate suspended sediment plumes, leading to temporary increases in turbidity and suspended sediment concentrations within the water column. Fine-grained sediments, including silts and very fine sands, may remain in suspension for extended periods and be transported by local currents beyond the immediate work area prior to settling.

Elevated turbidity may reduce light penetration and could affect marine organisms, particularly filter feeders and photosynthetic species, through increased sediment deposition and potential smothering. However, these effects are anticipated to be temporary and localised, with turbidity levels expected to return to baseline conditions following the completion of dredging activities.

Sediment Plume Dispersion Modelling

A sediment plume dispersion assessment was undertaken by DHI to evaluate the potential extent and magnitude of suspended sediment concentrations and deposition associated with dredging activities for the intake and outfall pipeline installation. The modelling included a range of sediment spill scenarios representing optimistic (2%), realistic (5%), and pessimistic (10%) conditions considering the following:

- A total dredging volume of approximately 285,000 m³
- Cutter Suction Dredger (CSD) operating at a rate of 300 m^3/hr
- Dredged material contains 100% fines (i.e. silt/clay soil)
- Floating silt curtain is used at the dredging area with 90% retention with average clearance at the bottom of 0.5m
- Continuous 24-hour dredging operations
- Overflow discharge (from sedimentation basin) of 1.17 kg/s for 40 days duration

As listed above, the modelling incorporated conservative (worst-case) assumptions and accounted for site-specific hydrodynamic conditions, including wave action and wind-driven currents. Mitigation measures, such as the use of silt curtains with an assumed retention efficiency of approximately 90%, as well as controlled overflow discharge from sedimentation

basins, were explicitly integrated into the modelling scenarios. Further details of the modelling methodology, assumptions, and results are provided in the relevant Appendix.

The results indicate that sediment deposition is largely confined to the dredged trench footprint, with bed level changes predominantly occurring within the trench itself. Outside the trench, deposition thickness rapidly decreases to negligible levels (typically less than 1 cm), even under pessimistic spill conditions. This suggests that the potential for widespread smothering of seabed habitats is limited.

Modelled result for a realistic scenario (5% sediment spill at the CSD head) for 99th percentile is illustrated in Figure 12-7. Further details including full modelled scenarios are included in Appendix.

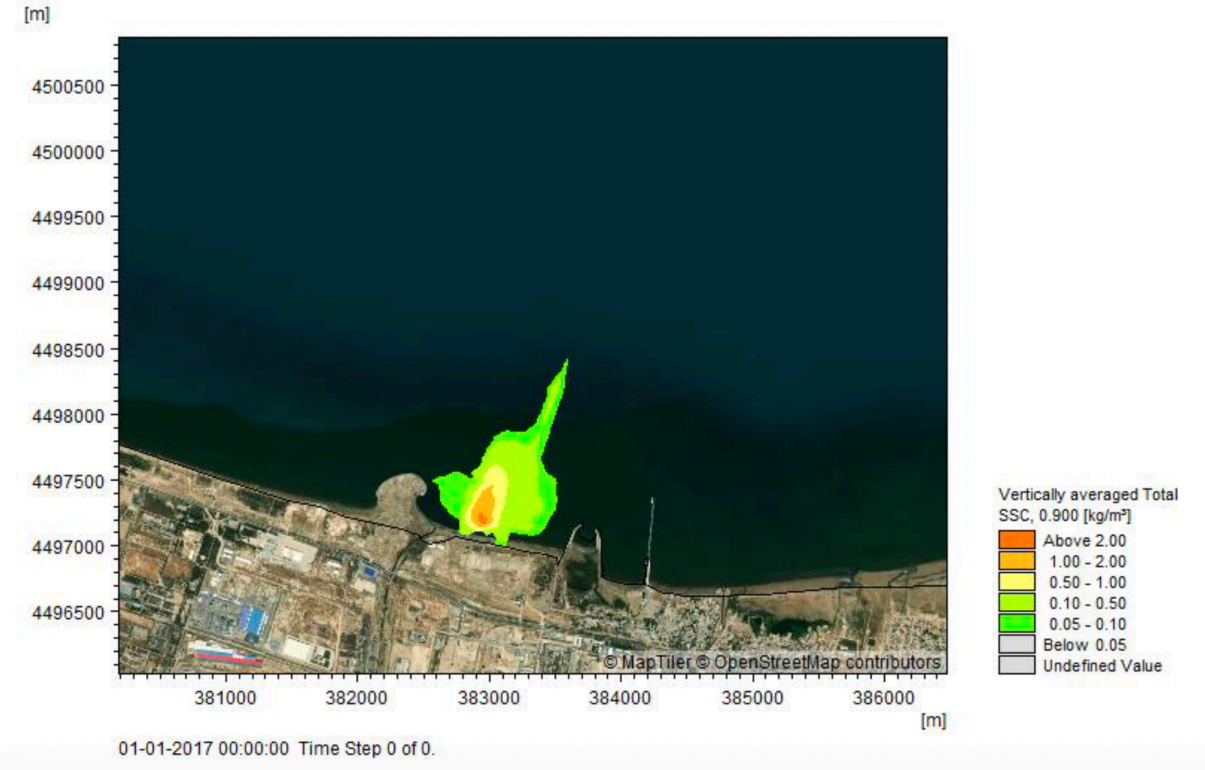


Figure 12-7 Sediment Plume Modelling Result – 5% Spill at CSD, 90th Percentile (DHI, 2026)

With respect to suspended sediment concentrations, the modelling shows that elevated turbidity levels are primarily associated with the overflow discharge point from the sedimentation basins, rather than the moving dredger itself. Peak suspended sediments concentrations (up to approximately 2,000 mg/l under higher percentile conditions) are predicted to occur locally at the discharge point, with concentrations decreasing rapidly to around 50 mg/l within approximately 100 m of the source. The contribution of the dredging vessel itself to water column turbidity is comparatively minor and does not result in significant plume dispersion.

Overall, the modelling demonstrates that sediment plumes are expected to remain localised, with rapid dilution and limited spatial extent under typical operating conditions. However, the findings also highlight that the sedimentation basin overflow represents the dominant source of turbidity, reinforcing the importance of effective sediment management, adequate retention time, and controlled discharge to minimise potential impacts on marine water quality.

As indicated by the hydrodynamic and dispersion assessment, sediment plumes are predicted to remain largely confined to the immediate surrounding area.

The potential for contamination-related impacts associated with sediment disturbance is considered low. Sediment quality analyses indicate that concentrations of heavy metals, total petroleum hydrocarbons (TPH), and polycyclic aromatic hydrocarbons (PAHs) are consistently below applicable international screening benchmarks, including Dutch intervention values. This suggests that dredged materials are generally representative of natural background conditions and do not contain significant levels of contaminants that could pose a risk to marine water quality upon resuspension.

Baseline surveys further indicate that the seabed within the Project footprint is predominantly composed of sandy and rocky substrates with relatively low ecological sensitivity and limited benthic biodiversity. No sensitive or protected habitats have been identified within the immediate area of influence. Accordingly, the magnitude of impact associated with dredging-induced sediment disturbance is considered to be low, with effects limited in spatial extent and duration.

It is anticipated that construction of the outfall pipeline will be undertaken using appropriate sediment control measures, including the deployment of silt curtains, where practicable, to isolate the active construction area and minimise the uncontrolled dispersion of suspended sediments during dredging, pipelaying, and associated marine works.

Based on established understanding of sediment plume behaviour and associated ecological responses, three indicative impact zones can be defined, reflecting a gradient of decreasing impact with distance from the dredging area. This zonation approach is consistent with published studies on sedimentation impacts on marine habitats (e.g. Purkis and Riegl, 2007) and commonly applied ESIA practice.

Zone 1: up to 100 m from the dredged channel (high impact zone);

Zone 2: 100 to 350 m (moderate impact zone);

Zone 3: 350 to 900 m (low impact zone).

Beyond approximately 900 m from the dredging activities, impacts are expected to be negligible under typical hydrodynamic conditions.

Considering the construction methods and the predominance of subtidal sand and silt habitats within the Project area, the expected impacts and recovery potential are summarised in Table 12-6. The evaluation is based on a combination of project-specific baseline data, expert judgement, and relevant scientific literature.

Table 12-6 Impact Evaluation of Dredging

Habitat Type	Zone 1	Zone 2	Zone 3
Subtidal Silt and Sands	**Impact**		
	Loss of macrobenthos and benthic microalgae production. Reduction in biodiversity, community shift towards benthos adapted to mud environments	Minor to moderate deterioration: reduced growth, minor reduction of biodiversity and shift in community associated flora and fauna	Negligible or no impact
	Potential for Recovery		
	Macrobenthic community biomass may partially recover	Benthos may fully recover	Not applicable

12.4.1.2 Impacts from Discharge of Supernatant Water from Sedimentation Basins

The management of dredged material will involve hydraulic transport of dredged slurry to onshore sedimentation ponds. Due to the high water content of the dredged sludge, the total volume of slurry requiring management is estimated at approximately 1,530,000 m³ over a construction period of approximately six months as outlined earlier in this report. Following settlement within the sedimentation basins, clarified supernatant water will be discharged back to the marine environment at a controlled outlet location.

The potential impact associated with this activity relates to the release of residual suspended sediments and any dissolved constituents remaining in the supernatant water. However, the sedimentation system has been designed to provide sufficient retention time and staged settling across multiple basins to promote effective removal of suspended solids prior to discharge. As such, the supernatant water is expected to have substantially reduced turbidity relative to the incoming slurry. The use of controlled overflow structures and, where necessary, silt curtains at the discharge point will further minimise the dispersion of fine sediments into the receiving waters.

Given the low contaminant concentrations identified in the dredged sediments, the potential for chemical impacts associated with supernatant discharge is considered minimal. Residual effects, if any, are expected to be limited to minor and localised increases in turbidity in the immediate vicinity of the discharge point. These effects are expected to dissipate rapidly due to dilution and natural dispersion processes under prevailing hydrodynamic conditions.

Overall, despite the relatively large volume of water managed through the sedimentation system, the controlled discharge of supernatant water is not expected to result in significant adverse impacts on marine water or sediment quality, provided that the sedimentation system operates as designed and appropriate control measures are implemented.

12.4.1.3 Discharge of Groundwater from Dewatering

On-shore excavations for foundation and other substructure works may require dewatering of groundwater, which may need to be discharged to the marine environment. Groundwater investigations undertaken at the Project site indicate the presence of dissolved hydrocarbons, Volatile Organic Compounds (VOCs), including BTEX and chlorinated compounds, and polycyclic aromatic hydrocarbons (PAHs).

In the absence of appropriate management measures, the discharge of such groundwater to the marine environment could result in localised deterioration of marine water quality, including the introduction of dissolved hydrocarbons, organic contaminants, and trace pollutants. These substances may contribute to short-term increases in contaminant concentrations in the water column and, over time, could partition to sediments, particularly in low-energy environments, potentially affecting benthic organisms.

However, as part of the Project design and environmental management strategy, no contaminated groundwater will be discharged to the marine environment. Groundwater identified as containing elevated concentrations of hydrocarbons or other contaminants will be subject to appropriate treatment prior to any discharge, to ensure compliance with applicable regulatory standards and international good practice. Treatment processes will be designed to effectively remove hydrocarbons, VOCs, and other contaminants of concern, such that discharged water meets required quality criteria.

Accordingly, the potential impacts on marine water and sediment quality associated with groundwater discharge are expected to be negligible. Any residual effects would be limited to compliant, treated effluent and would be rapidly diluted within the receiving marine

environment, with no measurable accumulation in sediments or adverse effects on marine receptors anticipated.

12.4.1.4 Impacts from Discharge of Contaminated Stormwater Runoff

Construction activities across the Project site have the potential to generate stormwater runoff that may mobilise contaminants present within surface soils and shallow subsurface layers. Baseline investigations indicate the presence of localised hydrocarbon contamination (including TPH, VOCs, and SVOCs), particularly in the western portion of the site, as well as elevated concentrations of certain heavy metals consistent with regional background conditions. In addition, groundwater beneath the site contains dissolved hydrocarbons,

During rainfall events, stormwater runoff may interact with exposed soils, stockpiled materials, and disturbed ground surfaces, potentially entraining suspended sediments and associated contaminants. This may result in the transport of hydrocarbons, organic compounds, and fine particulates to the marine environment, leading to short-term and localised increases in turbidity and contaminant concentrations in nearshore waters. Fine sediments may also settle in low energy marine environments, potentially contributing to minor and localised changes in sediment quality.

Given the nature of construction activities and the open site conditions, complete containment and control of stormwater runoff is not feasible. As such, there is potential for some discharge of stormwater containing low levels of contaminants to occur during construction. However, it is important to note that the presence of hydrocarbons and other contaminants in soils and groundwater represents an existing baseline condition and is not attributable to the Project. Therefore, any mobilisation of these contaminants via stormwater runoff would largely reflect redistribution of pre-existing contamination rather than the introduction of new pollutant sources.

Notwithstanding the above, construction environmental management measures following good international good practices will be implemented to minimise the risk of contaminated runoff. These include the controlled storage and handling of fuels, oils, and chemicals; the designation of bunded areas for refuelling and maintenance activities; and the implementation of good housekeeping practices to prevent spills and leaks. These measures will ensure that construction activities do not introduce additional sources of contamination to stormwater.

Overall, potential impacts associated with stormwater discharge are expected to be minor, localised, and temporary, with any residual effects reflecting pre-existing site conditions rather than Project-induced contamination. Rapid dilution and dispersion in the receiving marine environment are expected to further limit the extent and duration of any water quality or sediment quality effects.

Table 12-7 Marine Water and Sediment Quality - Impact Significance, Mitigation Measures and Residual Impacts- Construction

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Marine dredging activities	Moderate	Marine Water and Sediment Quality	Low	Minor	• A dredging method statement will be prepared including mitigation and monitoring requirements. • Silt curtains will be deployed to contain sediment plumes and facilitate settlement. • Dredged material will be managed onshore and reuse for backfilling the trench where feasible. • Dredging will be carried out using a cutter suction dredger, pumping dredge material ashore to a dedicated settlement pond and no side casting or disposal at sea will be carried out. • All vessels to reduce speed below 5 knots within nearshore environments to minimise turbidity generation caused by propeller wash; • On-site refuelling of marine vessels will be prohbited • All wastes from vessels to be collected and disposed off-site • Dredging activities will be scheduled considering currents, tides and weather conditions. • Turbidity and suspended sediments will be monitored during dredging to ensure compliance. • Dredged material will be stored ≥100 m from the shoreline.	Negligible
Discharge of supernatant water from sedimentation basins	Moderate	Marine Water Quality	Low	Minor	• Multi-stage sedimentation basins will be constructed and operated to allow adequate settling of suspended solids. • Clarified supernatant water will only be discharged after sufficient retention time. • Silt curtains will be installed at the discharge point, where required.	Negligible

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
					• Discharge water quality will be monitored to ensure compliance with applicable standards. • Discharge rates will be controlled to minimise plume formation at the sea.	
Discharge of groundwater from dewatering	Minor	Marine Water Quality	Low	Minor	• Contaminated groundwater will not be discharged without prior treatment. • Treatment systems will be implemented to remove hydrocarbons, VOCs and other contaminants prior to discharge. • • Settlement systems will be used to reduce suspended solids. • • Treated effluent will be monitored prior to discharge to ensure compliance with applicable standards. • • Discharge will only occur once compliance criteria are met.	Negligible
Impacts from stormwater run off	Minor	Marine Water and Sediment Quality	Low	Minor	• Site drainage controls (e.g. diversion channels and sediment traps, where practicable) will be implemented. • Fuels, oils and chemicals will be stored and handled in designated bunded areas. • Refuelling and maintenance activities will be undertaken in controlled areas with spill prevention measures. • A spill management plan will be implemented, and spill kits will be provided and maintained. • Good housekeeping practices will be maintained to minimise contamination. • Hazardous materials will not be stored within 100 m of the shoreline. • Stormwater discharges will be monitored, where feasible, particularly during rainfall events.	Negligible

12.4.2 Operation Phase

12.4.2.1 Impacts from Discharge of Brine - Hydrodynamic Modelling

This section provides a summary of the brine dispersion modelling undertaken for the Project to assess potential impacts on marine water and sediment quality. During operation, the primary potential impact of the desalination plant arises from the continuous discharge of concentrated brine via the outfall. The brine is characterised by elevated salinity and density relative to ambient seawater and may contain trace concentrations of residual treatment chemicals. In the near-field zone around the outfall, these characteristics may result in localised increases in salinity and density, which, if not adequately diffused, could influence planktonic communities and benthic organisms in the immediate vicinity of the discharge.

Operational activities may also influence marine sediment quality, primarily through the settling of denser brine and any associated particulate matter in the vicinity of the outfall. Over time, this may result in minor and localised changes in sediment salinity and geochemical conditions. These effects are expected to remain localised and reversible, provided that chemical dosing is optimised and discharge complies with applicable permit conditions and international good practice.

To assess these potential impacts, brine dispersion modelling was undertaken by DHI (2026), integrating climatology assessment, near-field jet analysis, and three-dimensional hydrodynamic modelling to evaluate the behaviour and environmental influence of the brine plume under conservative operating conditions. The modelling incorporates key design elements of the outfall system, including diffuser configuration and discharge characteristics, to ensure a realistic representation of operational conditions. The following sections present a summary of the modelling results, including the predicted spatial extent, dilution characteristics, and salinity distribution of the plume. The full modelling report is included in Appendix.

Outfall and Diffuser Design

The desalination plant will discharge brine through a dual-pipeline diffuser system consisting of 45 ports. These ports are positioned 1.7 metres above the seabed and spaced at six-metre intervals to ensure effective distribution of the discharge. Based on optimisation through jet analysis, the vertical jet inclination has been set at 45 degrees, providing better dilution. The horizontal discharge orientations are aligned at 125 and 305 degrees from north to allow for opposing directional dispersion. The brine will be released at a salinity of 51 PSU (Practical Salinity Unit) with an exit velocity of approximately 5.19 m/s, and the total brine discharge volume will reach 128,893 m^3/day.

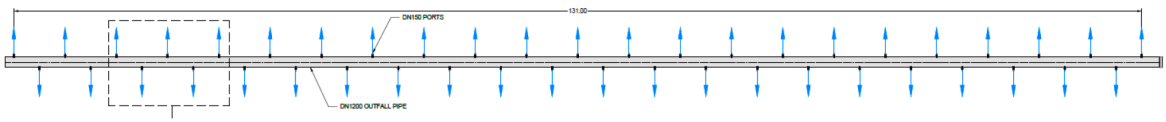


Figure 12-8 Diffuser Design (DHI, 2026)

Modelling Approach

The modelling approach followed a structured sequence beginning with the identification of representative ambient marine conditions. A climatology assessment covering the period 2015 to 2020 determined that 2017 was the most suitable representative year. Winter conditions, particularly January 2017, were selected as the most conservative period due to lower water levels and reduced current speeds, both of which limit natural dispersion processes.

A near-field jet analysis was then carried out to determine the behaviour of the brine plume immediately after discharge. The analysis demonstrated that winter conditions produce lower initial dilution than summer months. It also confirmed that the adoption of a 45 degree vertical inclination provides improved dilution efficiency, supporting its selection for the final diffuser design.

Hydrodynamic and dispersion modelling was subsequently undertaken using the MIKE 3 FM three-dimensional model. The simulation covered a 29-day winter period from 3 to 31 January 2017 and incorporated boundary conditions for currents, salinity, temperature, wind, atmospheric pressure and heat exchange. The computational mesh was refined around the diffuser to accurately resolve brine plume dynamics as illustrated in Figure 12-9.

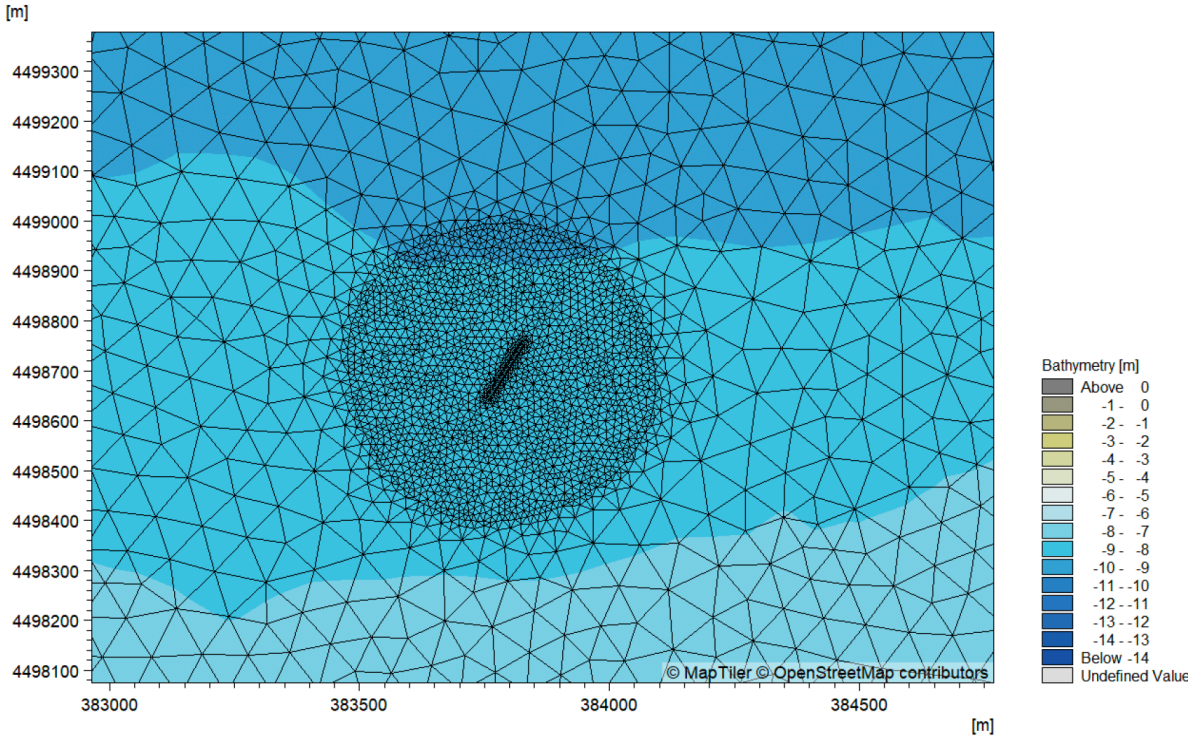


Figure 12-9 Calculation Mesh Near RO Discharge (DHI, 2026)

Model validation was performed using acoustic Doppler current profiler (ADCP) data from two monitoring stations measured in early 2026. Although the modelled and measured periods differ, the comparison confirmed that the model adequately reproduced current magnitudes and directions for the purpose of conservative impact assessment.

Environmental Impact Assessment Results

The modelling indicates that the brine plume remains largely confined to near-bottom waters, consistent with the higher density of the discharged brine. Excess salinity values in the bottom layer show that median increases of one PSU extend up to approximately 300 metres from the diffuser, while maximum simulated increases reach up to 500 metres. In contrast, mid-water and surface layers exhibit negligible increases in salinity throughout the simulation period, demonstrating that impacts remain restricted to the seabed environment.

A time-series analysis of salinity levels at several points surrounding the outfall (see Figure 12-10) showed no evidence of long-term accumulation of brine. This confirms that the receiving environment is characterised by adequate flushing, allowing for effective dissipation of the plume over time.

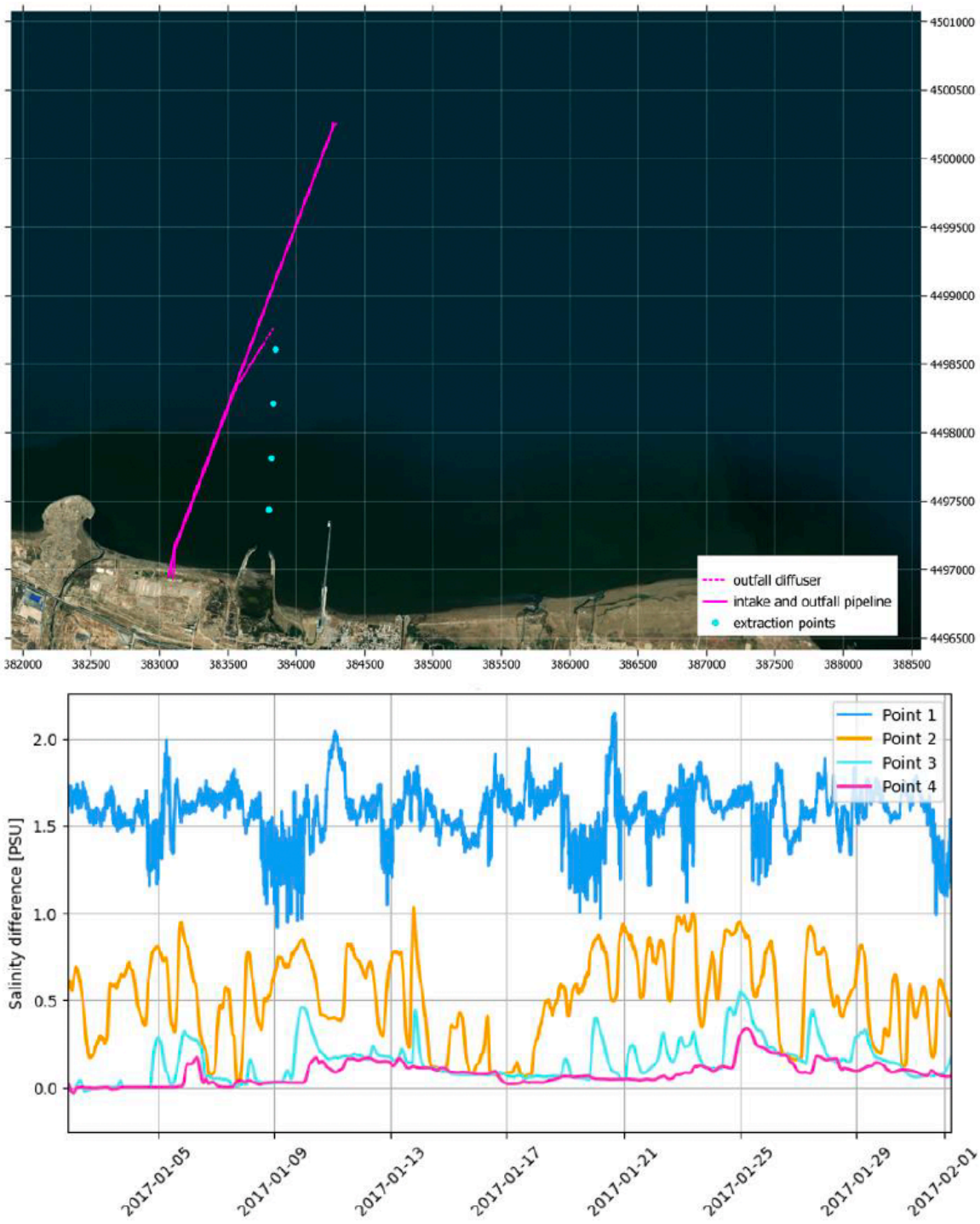


Figure 12-10 Time Series of Modelled Salinity differences at Four Points Near Outfall

Recirculation at the intake location was also assessed, with maximum excess salinity reaching approximately 0.6 PSU. This value is considered low and does not pose risks to plant performance or marine water quality.

Assessment of the one-PSU excess salinity threshold indicates that this value is exceeded for more than 90 percent of the simulation period within roughly 300 metres of the diffuser line in the bottom layer as illustrated in Figure 12-11. Mid-depth and surface waters show minimal exceedances, once again confirming that impacts are restricted to deeper waters close to the discharge.

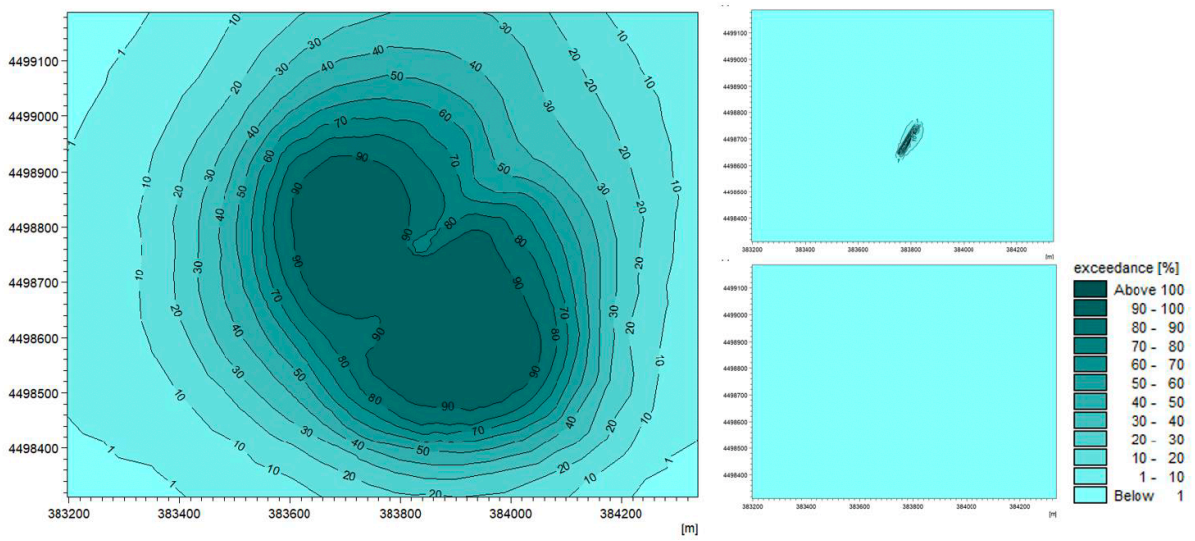


Figure 12-11 Exceedance Time of the I PSU Threshold Level in Salinity Difference

Conclusions

The brine dispersion modelling demonstrates that the selected diffuser design achieves effective near-field dilution and restricts measurable impacts to a limited area of the seabed environment. There are no significant effects predicted for mid-water or surface marine ecosystems, and the modelling shows no accumulation of salinity over time. Overall, the brine discharge impacts are localised, predictable and manageable with standard environmental monitoring and operational controls.

12.4.2.2 Seawater Level Decline

Operation of the SWRO plant will abstract seawater from the Caspian Sea, with the majority of the intake flow returned to the sea as concentrated brine. Consequently, the potential effect on basin-scale seawater level is governed by the net withdrawal (i.e. freshwater production), rather than the total seawater abstraction. The Project-specific assessment conducted by DHI which is included as an appendix to the ESIA, conservatively assumes that 100% of the freshwater produced is permanently removed from the Caspian Sea system, representing a worst-case assessment.

The assessment estimates a net withdrawal of approximately 2.08×10^8 m³/year (approximately 7 m³/s), equivalent to an average Caspian Sea level reduction of approximately 0.06 cm/year. This represents less than 1% of the observed historical annual sea level decline of approximately 9.13 cm/year, which is primarily driven by climate-related changes in evaporation, precipitation and river inflows.

Over the 25-year operational life of the Project, the cumulative contribution from the SWRO plant would be approximately 1.5 cm, compared with approximately 2.3 m of sea level decline if historical climate-driven trends were to continue. The DHI assessment therefore concludes that the Project's contribution to basin-scale Caspian Sea level decline is immaterial, even under conservative assumptions.

Although the receptor sensitivity is High because the Caspian Sea is already undergoing significant climate-driven water level decline, the magnitude of the Project contribution is Negligible. The resulting operational impact significance is therefore assessed as Minor Adverse.

Table 12-8 Marine Water and Sediment Quality - Impact Significance, Mitigation Measures and Residual Impacts - Operation

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
Increase in ambient salinity and density due to brine discharge	Moderate	Marine water and sediment quality	Low	Minor	• Multiple outfall and diffuser design scenarios have been assessed to ensure compliance with applicable standards and international good practice. • Hydrodynamic and dispersion modelling has demonstrated rapid dilution and no long-term salinity build-up. • Outfall design (including diffuser configuration) will be implemented to maximise dilution and dispersion. • Regular and event-based monitoring of brine discharge will be implemented to confirm compliance with applicable standards.	Negligible
Discharge of treated effluent (trace chemicals, cleaning and backwash streams)	Minor	Marine water and sediment quality	Low	Minor	• All wastewater streams will be treated, neutralised, and controlled prior to discharge or otherwise reused or disposed off-site. • Untreated discharge of process water, sludge, or chemical wastewater will be prohibited. • Residual oxidants (e.g. chlorine) will be controlled within applicable standards. • Chemical dosing will be optimised to minimise residual concentrations. • Monitoring of discharge quality and treatment performance will be undertaken to ensure compliance.	Negligible
Accumulation of trace contaminants in sediments (from	Minor	Sediment quality	Low	Minor	• Discharge concentrations will comply with applicable standards and good international practice.	Negligible

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impacts
brine and treated effluent)					• Diffuser design and discharge conditions will ensure rapid dilution, limiting deposition potential. • Periodic sediment quality monitoring will be conducted, where required, to confirm no accumulation of contaminants.	
Seawater Level Decline	Negligible	Caspian Seawater Level	High	Minor	• The SWRO plant has been designed to maximise water recovery and minimise the net volume of freshwater removed from the Caspian Sea. • Concentrated brine will be returned to the Caspian Sea via the designed marine outfall, thereby substantially reducing the net abstraction compared with the total intake volume. • Water losses within the treatment process will be minimised through optimisation of plant operation and maintenance to maximise recovery efficiency. • The intake and outfall systems will be operated in accordance with the approved operational procedures to ensure efficient water use.	Negligible

12.5 Management of Dredged Sediments

Dredging activities associated with the intake and outfall pipelines will generate both coarse sediments and fine, high-moisture dredged sludge, which may contain adsorbed hydrocarbons or other trace pollutants, consistent with the baseline marine and terrestrial contamination profile.

All dredged material will be hydraulically transferred to onshore sedimentation ponds, where it will undergo controlled settling and dewatering. The management process will include:

- Segregation of sand and reusable materials from fine dredged sludge;
- Retention within lined and bunded sedimentation basins designed to prevent seepage to underlying soils;
- Progressive settlement and consolidation to reduce water content and facilitate handling.

Supernatant water generated during this process will be retained for sufficient residence time to allow sediment settlement and will be tested prior to discharge. Where required, additional treatment (e.g. filtration or oil removal) will be applied to ensure compliance with discharge standards.

Any dredged sediments identified as contaminated beyond acceptable reuse criteria will be segregated and disposed of at licensed facilities, in accordance with regulatory requirements.

As outlined earlier in this report, a key principle of the dredging and marine works design is to maximise the beneficial reuse of dredged material, thereby minimising the need for off-site disposal. In accordance with the proposed construction methodology, sediments excavated during trenching for the intake and outfall pipelines will, where suitable, be temporarily stored, conditioned, and reused as backfill material following the offshore pipeline installation. Coarser fractions (e.g. sands and gravels) will be prioritised for direct reuse in trench reinstatement, while finer materials will be managed through the onshore sedimentation system to allow dewatering and consolidation prior to reuse, where feasible.

Material suitability for reuse will be determined based on geotechnical properties and contamination status, supported by pre-dredging and, where necessary, confirmatory testing during construction. This approach will be implemented through a controlled sequence of dredging, pipe installation, and progressive backfilling to ensure trench stability and minimise sediment dispersion. Where dredged material is found to be unsuitable for reuse (e.g. due to contamination or unfavourable physical characteristics), it will be segregated and disposed of at approved facilities in accordance with regulatory requirements.

12.6 Monitoring

The following monitoring programme has been developed to assess and verify potential impacts on marine water and sediment quality during both the construction and operational phases of the Project. The programme focuses on key impact pathways identified in this assessment, including dredging activities, discharge of supernatant water, stormwater runoff, and operational brine and treated effluent discharges. Monitoring is designed to ensure compliance with applicable regulatory requirements and international good practice, as well as to confirm the effectiveness of implemented mitigation measures. It should be noted that monitoring related to groundwater dewatering is addressed separately within the Soil and Groundwater section of this ESIA.

The final monitoring methodology with specific details (i.e. locations, frequencies, durations, parameters etc.) will be developed in a specific ‘Environmental Monitoring Plan’.

Table 12-9 Marine Environment - Monitoring Requirements

Monitoring	Parameters	Frequency & Duration	Location	Responsibility
Construction				
Marine Water Quality (general)	pH, TSS, TDS, Heavy Metals, Nutrients, Residual chlorine, Oil & Grease, TPH, Microbial parameters	Monthly	Baseline survey locations, reference location	EPC Contractor
Water quality during dredging	Turbidity /Suspended sediments, Visual plume extent	Continuous during dredging Daily spot checks	Near-field around dredging area, outside silt curtain, reference locations	EPC Contractor
Discharge from sedimentation basins	Turbidity /Suspended sediments, Visual plume extent	Daily during discharge events	Discharge outlet and outside silt curtain	EPC Contractor
Stormwater runoff	Visual inspection (oil sheen)	Dring rainfall events and periodic inspections	Site drainage outfalls to marine environment	EPC Contractor
Marine sediments	TPH, PAH, Heavy Metals	Monthly	Baseline survey locations, reference location	EPC Contractor
Operational				
Operational Discharge Monitoring	Residual Chlorine	Daily sampling and analysis.	From outfall discharge	O&M Company
	Range of parameters including physical, heavy metals, bacteriological (ref. to ESIA baseline suite).	Monthly sampling and laboratory analysis.	From outfall discharge	O&M Company
Marine Water Quality	pH, TSS, TDS, Heavy Metals, Nutrients, Residual chlorine, Oil & Grease, TPH, Microbial parameters	Quarterly	Baseline survey locations, reference location	O&M Company

13.0 Landscape and Visual Amenity

13.1 Applicable Requirements & Standards

13.1.1 National Regulations

Specific legislation regarding landscape and visual impacts is not known to exist in Azerbaijan, however, Azerbaijan is a signatory member of the European Landscape Convention of 2000, which promotes the protection, management, and planning of the landscapes, and organises international co-operation on landscape issues. Azerbaijan ratified the convention in 2011.

13.1.2 Lender Requirements

In terms of lender requirements, the following Performance Standards are considered relevant collectively for biodiversity and landscape:

- IFC PS 3: Resource Efficiency and Pollution Prevention - which considers that the term ‘pollution’ includes potential visual impacts, including light; and
- IFC PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources – which considers project-related impacts across the potentially affected landscape.

Reference to the guidelines set out by the UK Landscape Institute ‘Guidelines for Landscape and Visual Impact Assessment 3rd Edition’ (2013) has been used for this assessment. As such, the ‘Landscape and Visual Assessment’ presented herein will distinguish between:

- Effects on landscape as a resource in its own right; and
- Effects on specific views and general visual amenity experienced by people.

13.2 Baseline Conditions

Landscape character could be defined as "a distinct, recognisable and consistent pattern of elements, be it natural (soil, landform) and/or human (for example settlement and development) in the landscape that makes one landscape different from another, rather than better or worse" (Natural England, 2014).

It is understood that the Project site is located on the land of a former wastewater treatment plant, that was closed in 2010. The previous facility has been dismantled, but their concrete foundations and discarded waste (mainly rubble) remain. The Project is located within a typical landscape of an industrial zone.

Given the current landscape character around the project area, the development is likely to induce a modification to the area’s landscape and visuals as it will be a low-story concrete structure.

13.3 Area of Influence and Receptors

13.3.1 Receptors

The potential landscape and visual receptors and its sensitivity are presented in the table below:

Table 13-1 Potential Landscape and Visual Amenity Receptors

Receptor	Sensitivity	Justification
Residents	**Medium**	Residential receptors are generally considered to have a moderate sensitivity to changes in visual amenity due to the importance of views from homes and outdoor living spaces. In this case, the project site and associated low-rise buildings will be partially visible from certain viewpoints; however, existing urban/industrial elements and screening reduce the overall visual prominence.
Workers within the industrial zone	**Low**	Industrial/commercial receptors typically have lower sensitivity to visual change as views are not the primary focus of the location and viewers are generally engaged in work-related activities. The project will be seen within an existing industrial context where built infrastructure is characteristic of the baseline environment. Visual exposure would be incidental and tolerance to change is high; therefore, sensitivity is considered Low.

13.4 Potential Impacts, Mitigation, Management & Residual Impacts

The objective of the landscape and visual impact assessment is to assess the key impacts on the existing landscape and visual resource of the area and establish the overall significance of these impacts arising from the Project.

13.4.1 Construction Phase

13.4.1.1 Visual Nuisance

The visual amenity of the area is already impacted in the wider industrial landscape. Project construction activities will introduce additional impacts in the form of visual nuisance to surrounding receptors as a result of the movement of heavy construction vehicles such as trailers, cement trucks, graders, excavators, loaders, water trucks, waste removal trucks to and from the Project site. Earthworks and construction activities can potentially result in dust generation and a resulting temporary haze causing disturbance to the current visual envelope of receptors, by affecting their visual amenity and/or blocking their views.

Impacts to the visual envelope of surrounding receptors will also occur at night where the addition of lighting during construction will illuminate the Project area. The use of lighting across the site will result in a night time light haze likely to be visible for several kilometres from the Project area.

Visual impacts due to the presence of construction plant and equipment even though only temporary, are largely unavoidable. Magnitude of potential impacts will be moderate.

13.4.1.2 Change in Landscape Character

The Project site is located within an established industrial area and comprises a previously developed brownfield plot formerly used as a wastewater treatment plant, including areas historically disturbed and used for waste disposal. The baseline landscape character is therefore already industrial and modified, with limited natural or scenic value.

Given that the site is already heavily disturbed and industrial in character, construction activities would not represent a material change to the prevailing landscape typology.

Table 13-2 Impact Assessment Summary – Landscape & Visual during Construction

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Significance of Impact	Mitigation and Management Measures	Residual Impact
Visual nuisance to residents with direct views to the Project site.	Moderate	Residential properties & neighbourhoods	Medium	Moderate	• Construction laydowns and working areas of the site will be screened to reduce the visual intrusion to existing off site receptors. • Any temporary structures constructed along the access road into the site will be removed immediately after use. • Mitigation and management measures relating to the generation of dust will be implemented to minimise visual impacts during construction activities on site and along the access road. • Equipment or machinery not in use will not be stored outside of the Project boundary. • Minimise construction works at night-time to only those strictly required and approved by the relevant authorities through issuance of night permits. • Any flood lights required during nighttime construction activities will be directed onto the working areas, with a maximum position angle of30º from vertical, and back spill shields. • No lights will be installed facing any of the receptors including the access road south of the site.	Minor
		Industrial area receptors	Low	Minor		Negligible
Changes in landscape character	No Change	Residential properties & neighbourhoods	Medium	Neutral	• Land clearance will be limited to the area within the Project boundary of the Projects site. • Where appropriate, construction work areas will be screened with stockpiles to reduce the visual intrusion to the off-site receptors. • All temporary construction facilities will be removed once this phase is complete.	Neutral
		Industrial area receptors	Low	Neutral		Neutral

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Significance of Impact	Mitigation and Management Measures	Residual Impact
					• The laydown areas will be restored to or close to their original condition after the completion of the construction phase.	

13.4.2 Operation Phase

13.4.2.1 Impacts on Visual Amenity and Landscape Character

The Plant will ultimately result in further changes to the existing visual setting to a limited extent in the Project landscape. The addition of new buildings, structures, and any associated facilities will impact the views onto the site from overlooking receptors.

During the operational phase, the presence of new buildings and associated infrastructure would be consistent with the surrounding industrial context. The development would not introduce a new or contrasting land use, nor would it alter key landscape features or valued views.

Potential operational effects are expected to be neutral overall; however, redevelopment of the currently derelict brownfield land may result in a minor beneficial effect through site remediation and visual tidying of previously disturbed areas.

13.4.2.2 Impacts from Night-Time Operations

Impacts due to lighting may result in considerable changes to the night-time views of the site. This will be minimised through the compliance with UK CIBSE Lighting Guidance (or international equivalent) to avoid unnecessary sky glow glare or light spill into dark areas.

14.0 Archaeology and Cultural Heritage

14.1 Applicable Requirements & Standards

14.1.1 National Regulations

Cultural heritage, archaeological remains, and artefacts are legally protected in the Republic of Azerbaijan by national legislation which is supported by the various international conventions and recommendations ratified and/or acceded by the Republic. These include the Convention on Protection of World Cultural and Natural Heritage (Paris, 1972), the European Convention on the Protection of the Archaeological Heritage (Valletta, 1992), and UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions.

The Ministry of Culture and Tourism of the Republic of Azerbaijan is responsible for the cultural heritage and safeguarding of intangible cultural heritage at national level. The following laws are relevant to the protection of cultural heritage in Azerbaijan:

- Ministerial Decree No. 266 on approval of the rules regarding protection, restoration and use of cultural heritage; and
- List of Immovable Historical and Cultural Monuments of National Importance, approved by the Resolution of the Cabinet of Ministers of the Azerbaijan Republic dated 02.08.2011 No. 132.

14.1.2 Lender Requirements

14.1.2.1 IFC Performance Standards

The assessment will refer to applicable IFC Performance Standards on Social and Environmental Sustainability, specifically with due consideration of Performance Standard 8 – Cultural Heritage. PS8 aims to protect the adverse impacts of project activities and support its preservation and to promote equitable sharing of benefits from the use of cultural heritage.

IFC Performance Standard 8 – Cultural Heritage aims to protect the adverse impacts of project activities and support its preservation and to promote equitable sharing of benefits from the use of cultural heritage. Cultural heritage in this standard refers to:

- Tangible forms of cultural heritage, such as tangible moveable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values;
- Unique natural features or tangible objects that embody cultural values, such as sacred groves, rocks, lakes, and waterfalls; and
- Certain instances of intangible forms of culture that are proposed to be used for commercial purposes, such as cultural knowledge, innovations, and practices of communities embodying traditional lifestyles.

14.1.2.2 AIIB Environmental and Social Framework

The AIIB ESF recognises the importance of identifying, avoiding, minimising, and managing potential impacts on cultural heritage resulting from project activities. AIIB's requirements under ESS 1 require borrowers to assess risks and impacts related to cultural heritage as part of the environmental and social assessment process. Where cultural heritage resources are identified, appropriate mitigation measures shall be implemented in accordance with applicable national legislation and good international industry practice, including measures

for avoidance, preservation, documentation, consultation with relevant stakeholders, and management of chance finds.

The Project will implement a Chance Finds Procedure (CFP) during construction to manage any previously unidentified archaeological, historical, or cultural heritage resources encountered during earthworks or other ground-disturbing activities. The CFP will ensure that work is temporarily suspended in the affected area, the relevant authorities are notified, and appropriate assessment and management measures are undertaken before activities resume.

14.2 Baseline Conditions

Sumgait, established in 1944 as an industrial city near the Caspian Sea, has limited deep archaeological layers compared to ancient Azerbaijani centers (e.g., Gobustan or Baku's Icherisheher), as it was largely built in the Soviet period with planned urban expansion from the mid-20th century. Despite its modern foundation, the municipality includes older settlements such as Jorat and Haji Zeynalabdin, which encompass historical and pre-modern features that reflect earlier habitation patterns in the region.

A notable historic archaeological structure in the region is the Haji Majid Bath (Hacı Məcid hamamı), a 16th-century hammam in the Jorat area. This building illustrates early architectural heritage in the broader Sumgait territory but currently suffers from abandonment and deterioration because it is not formally registered or protected under national monument status. The western shores of the Caspian Sea have historically been rich in settlement sites from the Late Bronze Age through to the Medieval period. The main factors that determined settlement in these areas in ancient times were the region's location along maritime and overland caravan trade routes, as well as the dominant role of hunting, fishing, and pastoralism in the livelihoods of ancient populations.

During the construction of nearby factories in the 1970s–1980s, archaeological artefacts dating to the 11th–15th centuries were also discovered. These artefacts—ceramic vessels, various tools, and decorative items—are currently exhibited in the permanent collection of the Sumgayit History Museum and largely reflect the characteristic features of urban culture.

Sumgait's heritage portfolio demonstrates local and regional cultural significance, mainly through historical museums, monuments, and community landscapes. While these do not currently align with UNESCO World Heritage criteria (which emphasize outstanding universal value and deep historical continuity as seen in Gobustan or Baku), the city's assets contribute to national heritage narratives and provide baseline data for future research, documentation, and potential nomination of relevant sites or cultural landscapes within Sumgait.

Cultural heritage assets—whether of global, national, or local significance—are all considered highly sensitive receptors. Although there may be no known archaeological monuments within the project area, the discovery of archaeological artefacts remains possible. These considerations are regarded as key conditions for ensuring the protection of heritage.

14.2.1 Archaeological Sites

A desktop review and site visits have not identified any archaeological sites or artefacts in proximity to the Project site. Desk study review was focused on the analysis of reliable data as well as existing literature regarding possible archaeological and cultural sites at Project site or surrounding areas, i.e., Key Informant Interviews (KII) with Institute of Archaeology and Anthropology, Azerbaijan National Academy of Sciences, as well as data of report of UNESCO "World Heritage Sites in Azerbaijan".

Furthermore, question related to specific physical cultural resources or other intangible and tangible cultural objects in Project area were discussed during ESIA public consultations with community representatives as well as local community members by means of carrying out Focus Group Discussion (FGD).

The Project is located within a highly urbanised area, reducing the likelihood of encountering archaeological remains[50]. Nonetheless, a chance find procedure will be developed and implemented during construction activities, should any encounters or findings be recorded.

Potential impacts on historical and cultural heritage are expected to be confined largely to the construction phase.

- Accidental discovery and disturbance of subsurface archaeological remains (chance finds): Earthworks associated with construction activities such as excavation for foundations and pipeline installation present a low risk of encountering and inadvertently damaging previously unidentified archaeological materials or features. While the site's prior use as a treatment plant reduces this risk, it cannot be fully ruled out.
- Wear, tear, or accidental damage to unidentified roadside features of local significance: Increased movement of construction vehicles transporting materials and equipment (e.g., from the Gizildash quarry) may result in minor damage to previously undocumented roadside cultural features of local importance.
- Considering that settlement has existed in the area since ancient times, the presence of historically significant cemeteries, "ovdans" (traditional water wells), and remains of residential structures cannot be entirely ruled out.

14.2.2 Azerbaijani Intangible Cultural Heritage

Intangible heritage is defined as the practices, representations, expressions, as well as the knowledge and skills (including instruments, objects, artefacts, cultural spaces), that communities, groups and, in some cases, individuals recognise as part of their cultural heritage. It is sometimes called living cultural heritage and it includes oral traditions and expressions, including language performing arts, social practices, rituals and festive events, knowledge and practices concerning nature and the universe, and traditional craftsmanship (UNESCO, 2003).

Azerbaijan has the following elements of intangible cultural heritage listed by UNESCO.

Table 14-1 Intangible Cultural Heritage in Azerbaijan

Element	Description	Recognised Region
Craftsmanship and performing art of balaban/mey	Balaban (in Azerbaijan) or Mey (in Türkiye) is a centuries-old woodwind instrument made up of three parts: a body, a wide and flat double reed and a clip.	Azerbaijan and Türkiye
Craftsmanship of mother of pearl inlay	Mother of pearl inlay is the practice of inserting mother of pearl pieces into wooden objects such as Koran cases, desks, chests, chairs, mirrors, jewel cases and musical instruments.	Azerbaijan and Türkiye

[50] However, it should be noted that a Bronze Age necropolis (necropolis – an ancient burial ground) located 3–5 km north of Sumgayit city is included in the list of "Immovable Historical and Cultural Monuments of National Importance" by the Cabinet of Ministers of the Republic of Azerbaijan, Decision No. 132 dated 2 August 2001, under inventory number 571.

Element	Description	Recognised Region
Art of illumination	Illumination is a centuries-old decorative art practised on the pages of manuscripts, calligraphic texts and miniatures.	Azerbaijan, Iran, Tajikistan, Türkiye and Uzbekistan
Iftar and its socio-cultural traditions	Iftar is observed by Muslims at sunset in the month of Ramadan (the ninth month in the lunar calendar), upon completion of all religious and ceremonial rites.	Azerbaijan, Iran, Türkiye and Uzbekistan
Culture of Çay (tea), a symbol of identity, hospitality and social interaction	Tea culture in Azerbaijan and Türkiye is an important social practice that shows hospitality, builds and maintains social ties, and is used to celebrate important moments in the lives of communities.	Azerbaijan and Türkiye
Pehlevanliq culture: traditional zorkhana games, sports and wrestling	Pehlevanliq culture in Azerbaijan includes games and sports, such as wrestling, and individual performances.	Azerbaijan
Telling tradition of Nasreddin Hodja/ Molla Nesreddin/ Molla Ependi/ Apendi/ Afendi Kozhanasyr Anecdotes	he Telling Tradition of Nasreddin Anecdotes refers to the social practices and festivals around the telling of anecdotes attributed to Nasreddin, a philosopher and wiseman recognized for his wisdom and humorous analyses and representations of society and life experiences.	Azerbaijan, Kazakhstan, Kyrgzystan, Tajikistan, Türkiye, Turkmenistan and Uzbekistan
Sericulture and traditional production of silk for weaving	In sericulture and the traditional production of silk for weaving, farmers care for the silkworms through their entire lifecycle, growing the mulberry trees that provide leaves upon which the worms feed and produce silkworm eggs.	Afghanistan, Azerbaijan, Iran, Turkiye, Tajikistan, Turkmenistan and Uzbekistan
Nar Bayrami - traditional pomegranate festivity and culture	Inscribed in 2020 on the Representative List of the Intangible Cultural Heritage of Humanity. '*Nar Bayrami is an annual festival in October/November in Azerbaijan's Goychay region that celebrates the pomegranate and its traditional uses and symbolic meaning. Pomegranate culture is a set of practices, knowledge, traditions, and skills related to the cultivation of the fruit, which is used not only in a range of culinary contexts, but is also referred to in crafts, decorative arts, myths, storytelling and other creative outlet*s.'	Azerbaijan's Goychay region
Art of Miniature	A type of two-dimensional artwork that involves the design and creation of small paintings on books, papier-mâché, rugs, textiles, walls, ceramics, and other items using raw materials such as gold, silver, and various organic substances.	Azerbaijan, Iran, Turkey, and Uzbekistan
Yalli (Kochari, Tenzere), traditional group dances of Nakhchivan	Traditional group dance typically performed in a circle, chain, or line involving elements of games, pantomime (bird or other animal imitations), physical exercises, and movements.	Across Azerbaijan
Heritage of Dede	This includes folk tales and music of Dede Qorqud/Korkyt Ata/Dede Korku. They are based on twelve heroic legends, stories, and tales, and thirteen traditional musical compositions shared and transmitted across the generations through oral	Azerbaijan, Kazakhstan, and Türkiye

Element	Description	Recognised Region
	expressions, performing arts, cultural codes, and musical composition. The element encompasses social, cultural, and moral values, and contains profound knowledge about the history and culture of Turkic-speaking communities.	
Dolma making	Set of knowledge and skills relating to the preparation of the traditional meal 'dolma', which takes the form of small fillings (containing meat, onion, rice, peas, and spices) wrapped in fresh or pre-cooked leaves, or stuffed in fruits and vegetables.	Across Azerbaijan
Art of crafting and playing with Kamantcheh/Kamancha	Kamantcheh is a bowed string musical instrument which has existed for over 1,000 years. In Iran and Azerbaijan it constitutes a major element of classical and folkloric music, and performances occupy a central place in a wide number of social and cultural gatherings.	Azerbaijan and Iran
Novruz	This marks the beginning of new year on 21st March when a variety of rituals, ceremonies, and other cultural events take place for a period of approximately two weeks. It includes spending time with family, friends, exchanging gifts, street performances, public rituals, and traditional sports etc. These practices are passed through generations by observation and participation.	Afghanistan, Azerbaijan, India, Iran (Islamic Republic of Iran), Iraq, Kazakhstan, Kyrgyzstan, Uzbekistan, Pakistan, Tajikistan, Turkmenistan, and Türkiye
Flatbread making and sharing culture: Lavash, Katyrma, Jupka, Yufka	This includes making and sharing flatbread which carries social functions that have enabled it to continue as a widely practiced tradition. This involves family members (at least 3 people) and also neighbours.	Azerbaijan, Iran (Islamic Republic of Iran), Kazakhstan, Kyrgyzstan, and Türkiye
Copper craftsmanship of Lahij	Copper craftsmanship of Lahij is the traditional practice of making and using copperware concentrated in the Lahij community in the Caucasus. It's a tradition transmitted within families.	Azerbaijan - Lahij
Traditional art and symbolism of Kelaghayi - making and wearing women's silk headscarves	A tradition found along the Silk Road that consists of several stages: fabric weaving, dyeing, and woodblock decoration. '*The art of Kelaghayi making is transmitted through non-formal apprenticeship only and is primarily a family occupation. Each family has its own stylistic features and patterns of decoration. The traditional practice of making and wearing headscarves is an expression of cultural identity and religious traditions and a symbol of social cohesion, reinforcing the role of women and strengthening the cultural unity of Azerbaijani society*.'	Azerbaijan: - City of Sheki - Basgal settlement
Chovqan, a traditional Karabakh horse-riding game in the Republic of Azerbaijan	It is a is a traditional horse-riding game played on a flat, grassy field by two competing teams of players mounted on Karabakh horses.	Across Azerbaijan
Craftsmanship and the performance art	The Tar is a long-necked plucked lute, traditionally crafted and performed in communities throughout	Across Azerbaijan

Element	Description	Recognised Region
of the Tar, a long-necked string musical instrument	Azerbaijan. The making of the Tar and performance play a significant role in shaping the cultural identity of Azerbaijanis.	
Traditional art of Azerbaijani carpet weaving	The carpet patterns are characteristic of Azerbaijan's many carpet-making regions	Across Azerbaijan
Art of Azerbaijani Ashiq	It combines poetry, storytelling, dance, and vocal and instrumental music into a traditional performance art that stands as a symbol of Azerbaijani culture.	Across Azerbaijan
Azerbaijani Mugham	A traditional musical form, characterized by a large degree of improvisation. The Mugham, though a classical and academic art, draws upon popular bard melodies, rhythms, and performance techniques and is performed in many venues throughout the country.	Across Azerbaijan

As outlined earlier in the report, KIIs were conducted with representatives from settlement of Kimyachilar, Khazri, Haji Zeynalabdin Tagiyev and Khazar Baghlari Municipalities, as well as the Sumgait Executive Powers and Institute of Archaeology and Ethnography to collect information on intangible cultural practices in the project affected communities. Additionally, socioeconomic household surveys were administered to sample households within the local communities to gather further information.

The representative from Sumgait Executive Powers and Institute of Archaeology and Ethnography stated that various customs and traditions are practiced at the settlement's community centre, in schools, and within the community.

The findings from the interviews and household surveys revealed the presence of the following intangible cultural heritage practices in the local settlements:

- Eid al-Fitr,
- Eid al-Adha,
- Iftar,
- Novruz,
- Flatbread making,
- Culture of Çay (tea drinking) at tea rooms (chaykhana), and
- Folk dancing.

14.3 Area of Influence and Receptors

14.3.1 Area of Influence

The AOI for archaeology and cultural heritage is the project site itself, and it was previously a wastewater treatment plant itself until 2010. While the Project area has been previously disturbed, there is always a remote possibility of encountering unknown subsurface archaeological materials during excavation activities.

14.3.2 Receptors

Table 14-2 E&S impact receptors – Archaeological & Cultural Heritage

Receptor	Sensitivity	Justification
Unknown buried artefacts and sites of tangible heritage value	Low	Accidental discovery of previously unknown archaeological or cultural heritage sites during construction works.
Intangible cultural heritage	Medium	The Proposed project site is located in proximity to a number of local communities that have highlighted a number of intangible cultural heritage practices.

14.4 Potential Impacts, Mitigation, Management & Residual Impacts

14.4.1 Construction Phase

The Project site is located within an urban area of Sumgait City, where, based on desktop studies, the presence of archaeological remains is not anticipated. However, there remains a possibility that unknown buried artefacts may be encountered during excavation works. If deemed necessary, the Project will develop and implement a Chance Find Procedure. In the event that any potential artefacts are discovered, the Project must immediately report the finding to the relevant authorities and temporarily suspend construction activities until appropriate actions are taken.

14.4.1.1 Direct Impact to Unknown Buried Archaeology

As consulted with the Institute of Archaeology and Anthropology, Azerbaijan National Academy of Sciences and concluded that the Project area is not an archaeological risk zone. However, excavation and earthwork activities during construction can result in damage and destruction of undiscovered archaeological artefacts, most likely to occur mainly during the initial stages of construction.

Therefore, a Chance Find Procedure will be established as per the detail given below:

- Any worker or staff member (from EPC Contractor, subcontractor, security personnel, or other) who encounters any archaeological or cultural resources during the construction phase or suspected remains will immediately notify the EPC Contractor E&S Manager while taking immediate action to stop all construction activities within this area.
- The EPC Contractor E&S Manager will notify the Company E&S Manager immediately.
- The Company E&S Manager and the EPC Contractor E&S Manager will inspect the site and confirm whether the findings could potentially be an archaeological and cultural heritage site and/or a suspected site.
- The discovered area (along with the 20 m radius) will be delineated and marked using flags/ stakes and/or mesh plastic fence as appropriate.
- At this point, the Company E&S Manager shall inform Acwa Power Team within 24 hours.

In addition to the Chance Finds Procedure, an archaeologist will be present during the excavation activities of the construction phase.

Considering the area is not an archaeological risk zone, the impact magnitude is considered to be minor.

14.4.1.2 Impact on Intangible cultural Heritage

Intangible cultural heritage does not have a fixed location, or discrete boundaries and it is embedded in traditional residential and economic patterns and widely shared. Intangible culture can also be subject to loss under changing socio-economic conditions and if there is an influence from another culture.

In consideration of this, the Project could potentially induce social change and introduce new cultural influences especially from the workforce recruited from outside of Azerbaijan. This could result into tensions between the workers and locals.

However, this impact is expected to be negligible because the interaction between the workers and local communities will be limited and a code of conduct will be implemented to guide worker interaction with the local communities. In addition, the intangible culture elements are practiced across several areas of Azerbaijan and for many generations and the construction period is unlikely to change this.

The Project will also employ a portion of its workforce from Azerbaijan who will likely also practice some of these elements within their communities.

14.4.2 Operation Phase

The operational phase will not result in impacts to archaeology, as the site will be static and further excavations will not be required. Impact to intangible cultural heritage is also not anticipated during the operations phase due to the limited workforce and the fact that the majority of the workforce will be Azerbaijani.

Table 14-3 Archaeology and Cultural Heritage Impact Significance, Mitigation Measures and Residual Impacts

Potential Impact	Magnitude	Receptor	Sensitivity	Potential Impact Significance	Mitigation and Management Measures	Residual Impact
Construction and Operation						
Direct Impact to Unknown Buried Archaeology	**Moderate**	Unknown items of cultural or archaeological significance	**Low**	**Minor**	• An archaeologist will be present during the excavation activities of the construction phase. • A Chance Find Procedure will be established as detailed below: ○ Any worker or staff member (from EPC Contractor, subcontractor, security personnel, or other) who encounters any buried archaeological or cultural resources during the construction phase or suspected remains will immediately notify the EPC Contractor E&S Manager while taking immediate action to stop all construction activities within this area. ○ The EPC Contractor E&S Manager will notify the Company E&S Manager immediately. ○ The Company E&S Manager and the EPC Contractor E&S Manager will inspect the site and confirm whether the findings could potentially be an archaeological and cultural heritage site and/or a suspected site. ○ The discovered area (along with the 20 m radius) will be delineated and marked using flags/ stakes and/or mesh plastic fence as appropriate. ○ At this point, the Company E&S Manager shall inform ACWA Power within 24 hours. ○ Subsequently, the Project team will inform the Institute of Archaeology and Anthropology.	**Negligible**
Impact on Intangible Cultural Heritage	**Negligible Negative**	Intangible cultural heritage	**High**	**Minor**	• The workers Code of Conduct will include measures regarding respect of beliefs, customs, rituals of local communities. • Interaction between the workers and the local communities will be kept to a minimum in order to avoid misunderstandings or conflict. • The EPC Contractor will demonstrate that all efforts have been put in place to recruit workers from local communities and region i.e., advertising job opportunities locally, using local registered employment agencies etc.	**Negligible**

14.5 Monitoring

Monitoring	Parameter	Frequency & Durations	Monitoring Location
Construction			
Construction Archaeological Resources & Artefacts	Presence of archaeological remains and artefacts during excavation	Daily visual observations by site staff and the on-site archaeologist during excavation activities	Areas of active excavation, earthworks, or grading

15.0 Solid Waste and Wastewater Management

15.1 Applicable Requirements & Standards

15.1.1 National Regulations

The following national regulations are of relevant to waste management.

- Law No. 514-IQ on Waste (1998, amended by Law No. 928-VIQD in 2023) — Primary national waste management law. Defines state policy for preventing the harmful effects of waste on human health and the environment, reducing hazards, promoting recycling, and ensuring ecological balance. The 2023 amendment removed the terms “industrial and domestic” from the title and scope and introduced phased updates effective from 1 February and 1 September 2024.
- Ministerial Decrees Nos. 41 (2003), 13 (2008), 185 (2008), 228 (2016) — Cover hazardous waste permitting, inventory, collection, and storage.
- Law No. 723-IQ on Water Supply and Effluent Wastewater (1999) — Governs water supply and wastewater discharge, licensing, and service provider responsibilities, and sets water quality and effluent treatment standards.
- Law No. 159-IIQ on Water Economy of Municipalities (2001) — Establishes roles and regulations for municipal wastewater systems and watershed protection zones.
- Law No. 677-IQ on Ecological Safety (1999) and Law No. 678-IQ on Environmental Protection (1999) — Provide overarching environmental safety principles relevant to wastewater and waste management.
- Basel Convention (ratified by Azerbaijan in 2001) — Governs transboundary movements of hazardous waste and underpins national hazardous waste regulations.

15.1.2 Lender Requirements

15.1.2.1 IFC

PS3 on Resource Efficiency and Pollution Prevention and Control requires projects to manage waste in a manner that protects human health and the environment. This involves minimising waste generation where feasible and prioritizing the reuse, recycling, and recovery of waste materials. Hazardous wastes must be handled, transported, treated, and disposed of following recognized international guidelines and applicable national regulations. Projects must also ensure that any third-party waste contractors are licensed and operate according to Good International Practice (GIP), with appropriate documentation and monitoring in place to verify environmentally sound management and disposal. Additionally, the efficient use of water and management of wastewater through reduction, reuse, and treatment measures is encouraged to minimize environmental impacts.

15.1.2.2 IFC WBG EHS Guidelines

Section 1.6 of “General EHS Guidelines” is entitled Waste Management and is applicable to all projects that generate, store or handle any quantity of waste; whilst Section 1.5 of the IFC EHS Guidelines covers Hazardous Materials Management. The waste management guidelines state that facilities that generate and store wastes should practice the following:

- Establish waste management priorities at the outset of activities;
- Identify EHS risks and impacts and consider waste generation and its consequences;

- Establish a waste management hierarchy that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of wastes;
- Avoid or minimise the generation of waste materials, as far as practicable;
- Identify where waste generation cannot be avoided but can be minimized or where opportunities exist for, recovering and reusing waste; and
- Where waste cannot be recovered or reused, identify means of treating, destroying, and disposing of it in an environmentally sound manner.

15.2 Baseline Conditions

15.2.1 National Context

Waste and wastewater management remain significant environmental challenges in Azerbaijan, despite past efforts and international support. World Bank-funded initiatives have aimed to improve solid waste infrastructure and environmental conditions, yet systemic shortcomings persist across the country, particularly outside of Baku. In many rural areas, fundamental waste management services, such as collection, transportation, and disposal, are largely absent.

In parallel, wastewater management is also limited. Only a small proportion of the country's total wastewater is treated, resulting in pollution of inland waters and the Caspian Sea (ZOI Environment, 2013). Azersu OJSC, established in 2004 by Presidential Order, is responsible for organizing the collection, transportation, treatment, and disposal of wastewater nationwide.

15.2.2 Local Context

The following information is based on data presented in the IQLIM ESIA.

15.2.2.1 Solid Waste Management

Municipal solid waste management in Sumgait is administered by the Sumgait City Housing and Communal Services Union, which is responsible for collection, transport, and disposal of domestic waste generated within Sumgait city and nearby settlements, including Jorat and Haji Zeynalabdin. The service area covers an estimated population of approximately 420,000 to 430,000 residents.

According to the IQLIM ESIA data, the average monthly generation of solid domestic waste in Sumgait and adjacent settlements is estimated at approximately 1,800 to 2,300 m³. Collected waste is transported to the municipal landfill situated on the western outskirts of the city, approximately 9.3 km from the Project site via accessible road routes.

The municipal landfill, originally commissioned in the 1950s and rehabilitated in 2022, occupies approximately 110 hectares. Disposal practices are described as conventional landfilling, with limited on-site sorting and periodic combustion activities reported. The facility is enclosed by perimeter fencing and includes a controlled entry point.

15.2.2.2 Hazardous Waste Management

The hazardous industrial and medical waste generated in Sumgait, the Absheron Peninsula, and the Greater Baku area is transported to a specialised hazardous waste landfill located near Sumgait. The facility is operated by “Waste Management Centre” LLC, established in 2004 under the MENR, initially to manage mercury-contaminated soils originating from Sumgait’s industrial zone.

The Centre has since expanded its mandate and currently accepts a range of hazardous waste streams from across Azerbaijan, excluding explosive and radioactive materials. Waste types handled include drilling sludge, contaminated soils, expired food products, medical waste, and similar hazardous materials. The company also operates a dedicated unit for the treatment and removal of polychlorinated biphenyls (PCBs) from transformer oils.

The hazardous waste facility occupies approximately 50 hectares, the majority of which comprises the operational landfill area. The site is divided into four disposal cells, two of which have reached capacity and been capped, while two remain operational. Plans for the construction of additional cells have been reported to accommodate future demand. The distance between the Project site and the hazardous waste landfill is approximately 21 km via accessible roads.

15.2.2.3 Wastewater Management

The majority of the Sumgait metropolitan area is connected to a centralised sewage network. Wastewater generated within the city and surrounding settlements is conveyed to a wastewater treatment plant (Azarsu Sumgait Wastewater Treatment Plant) located on the western outskirts of Sumgait, about 7 km from the Project site.

The ESIA prepared IQLIM indicates that nearly all potentially affected communities are connected to the municipal sewerage system. Limited exceptions were noted in certain individual residential properties in the Kimyachilar area, where wastewater is discharged either to septic systems or, in some cases, via pipelines to the Caspian Sea. Additionally, some seasonal residences in the Khazar Baghlari area rely on septic pits due to the absence of centralized sewer connections.

15.3 Area of Influence and Receptors

15.3.1 Area of Influence

In the context of waste, the Project area of influence is the site level for construction workers and neighbouring land-users, and it extends up to the regional level when considering the wider assimilative capacity of waste management infrastructure or systems.

15.3.2 Receptors

The table below provides a list of receptors that could be potentially impacted by waste and wastewater management within the Project's area of influence.

Note: this section considers the management of solid waste and wastewater and not its impacts to environmental receptors (such as soil, groundwater, ecology etc.).

Table 15-1 Impact Receptor of Project's Waste Management

Receptor	Sensitivity	Justification
Existing waste infrastructure	**Medium**	The waste and wastewater management facilities are still developing in Azerbaijan. The capacity is also limited.

15.4 Potential Impacts, Mitigation, Management & Residual Impacts

15.4.1 Construction Phase

15.4.1.1 Strain on Existing Waste Infrastructure

The construction phase (approximately 24 months) will involve site preparation, civil and mechanical works, material delivery, installation activities, and workforce presence. These activities will generate a range of solid and liquid waste streams, including non-hazardous, hazardous, and wastewater effluents.

Given the availability of established municipal and hazardous waste management infrastructure in Sumgait (including the municipal solid waste landfill, the hazardous waste landfill operated by Waste Management Centre LLC, and the Azersu Sumgait Wastewater Treatment Plant), the majority of construction-related waste can be managed through existing licensed facilities.

Non-Hazardous Solid Waste

Non-hazardous wastes expected during construction include:

- Packaging materials:
  - Cardboard
  - Wooden pallets
  - Plastic wraps. including plastic bags
- Concrete waste and rubble
- Scrap metal
- Glass
- Food wastes from workers
- General refuse.

A proportion of these materials (particularly metals, pallets, and certain packaging materials) has reuse or recycling potential either on-site or through licensed recycling operators.

Non-hazardous construction waste is largely inert; however, improper handling, storage, or disposal could result in:

- Soil and groundwater contamination (if mixed with contaminants),
- Surface water pollution through runoff,
- Dust, odour, and visual nuisance,
- Attraction of pests,
- Occupational health and safety risks.

The EPC Contractor will enter into a formal agreement with a licensed waste management company for regular collection and off-site disposal. Domestic waste generated by the workforce will be transported to the Sumgait municipal solid waste landfill, which serves the wider metropolitan area.

Hazardous Wastes

Limited quantities of hazardous waste are anticipated during construction. Potential hazardous waste streams include:

- Empty fuel and lubricant containers,
- Oily rags and absorbents,
- Waste oils and hydraulic fluids,
- Paints and paint containers,
- Chemical drums,
- Used spill kits,
- Cleaning solvents and thinners,
- Minor quantities of contaminated soil (if spills occur),
- Maintenance-related wastes from plant and equipment.

Although hazardous wastes are expected in relatively small volumes compared to non-hazardous wastes, they present a higher environmental risk if improperly managed as a result of improper segregation, storage, or handling of hazardous materials may result in soil and groundwater contamination, surface water pollution etc.

All hazardous waste will be stored in designated, bunded, and labelled areas on-site prior to collection by a licensed contractor. Based on Project information, the EPC Contractor will contract a licensed waste management company to transport hazardous waste to the Sumgait Hazardous Waste Landfill which is specifically designed to manage industrial and hazardous waste streams.

Wastewater

Construction-related wastewater may include:

- Domestic sewage from workforce sanitation facilities,
- Equipment and vehicle washing water,
- Concrete washout water,
- Minor quantities of liquid hazardous waste (e.g., waste oils, solvents).
- Contaminated groundwater

Temporary on-site sanitation facilities (toilets, wash basins, ablution units) will be installed for workers. These units will discharge to sealed septic holding tanks, which will be emptied regularly by an authorised contractor and transported to the existing Wastewater Treatment Plant.

Concrete washout water, which is alkaline and may have elevated pH, will be managed in designated, contained washout areas to prevent infiltration into soil or discharge to drainage systems.

Liquid hazardous wastes (e.g., waste oils, solvents) will not be discharged to sewer systems and will instead be collected and transported to the licensed hazardous waste facility described above.

Without proper controls, wastewater discharges could lead to soil contamination, elevated pH impacts from concrete washout, and surface and groundwater quality deterioration.

15.4.1.2 Contaminated Groundwater

Groundwater encountered on site may contain elevated concentrations of dissolved hydrocarbons due to historical industrial activities and the former use of the area. If dewatering is required during construction, the extracted groundwater will be sampled and analysed prior to any discharge. Where concentrations exceed applicable marine discharge standards, direct discharge to the sea will not be permitted.

Furthermore, disposal to a conventional municipal sewage treatment plant may not be feasible if the hydrocarbon content or associated chemical parameters (e.g. Volatile compounds) could interfere with biological treatment processes or exceed the plant's acceptance criteria. In such cases, alternative management options will be evaluated, including dedicated on-site pre-treatment (e.g., oil-water separation, activated carbon treatment, or other appropriate technologies) prior to discharge, or off-site disposal to a suitably licensed industrial wastewater treatment facility.

The selected management approach will be determined based on detailed water quality analysis prior to any discharge and regulatory requirements to ensure protection of marine environments, wastewater infrastructure, and public health.

15.4.2 Operation Phase

During operation, the seawater desalination plant will generate smaller and more predictable waste streams compared to the construction phase. These will comprise non-hazardous domestic and maintenance waste, hazardous and chemical waste associated with treatment processes, and liquid effluents specific to desalination operations.

Operational non-hazardous waste will mainly arise from the workforce and routine facility maintenance. This includes domestic waste (food waste, paper, packaging), office waste, and minor quantities of non-contaminated maintenance materials such as scrap metal or packaging.

Given the limited number of operational staff compared to construction, domestic waste generation will be minimal. These wastes will be segregated and collected by a licensed contractor for disposal at the Sumgait municipal solid waste landfill.

Considering the low volumes and the availability of established municipal disposal infrastructure, the magnitude of impact on existing waste facilities is assessed as minor impact.

15.4.2.1 Hazardous and Process-Related Waste

Hazardous and industrial wastes will primarily be associated with desalination plant operation and maintenance. These may include:

- Spent membranes and cartridge filters;
- Used chemical containers and residual chemicals from pre-treatment and cleaning processes;
- Waste oils, lubricants, batteries, cables, and maintenance-related materials;
- Contaminated absorbents or soils in the event of spills.

Although generated in moderate quantities over time, these wastes require controlled storage and off-site disposal due to their chemical characteristics. Hazardous solid wastes will be temporarily stored in designated bunded areas and transferred by licensed contractors to the Sumgait Hazardous Waste Landfill.

With appropriate segregation, containment, and contractor management in place, the impact magnitude is considered Minor.

15.4.2.2 Wastewater and Liquid Effluents

Operational liquid waste streams will include sanitary wastewater from staff facilities, process-related wastewater (e.g., filter backwash and cleaning solutions), oily water from mechanical areas, and concentrated brine generated by the desalination process.

Sanitary wastewater will be treated through dedicated sanitary treatment systems prior to discharge or off-site management. Oily water will be treated via an on-site oily water treatment unit. Process effluents and brine will be managed and discharged in accordance with the approved plant design and regulatory requirements. Where required, wastewater may be directed to the Azersu Sumgait Wastewater Treatment Plant subject to acceptance conditions.

Given the engineered design controls and the presence of established wastewater management infrastructure in Sumgait, the magnitude of wastewater-related impacts is assessed as Minor.

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Table 15-2Solid Waste and Wastewater Management Impact Significance, Mitigation Measures and Residual Impact

Potential impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and management measures	Residual impact
Construction						
Generation of solid waste during construction	Moderate	Existing Waste Management Infrastructure	Medium	Moderate	• Waste during construction will be managed in accordance with the Waste Management Plan within the Project HSSE-MS, which sets out monitoring and control measures consistent with GIIP. • Collection of waste to its final disposal location will be through the licensed waste collector. The licensed waste collector will be responsible for project waste management and act as a waste contractor and transport the waste to authorized recycling/recovery and /or final disposal facilities that are licensed according to national regulations. • Prior to start of construction works, there will be coordination with waste receiving facilities to ensure sufficient capacity is available for receiving construction wastes. • The EPC contractor will promote and implement a hierarchy of controls in managing wastes which include prevention, reuse, recycling, recovery and disposal in order of most preferred to least preferred option. • Domestic solid wastes to be segregated and identified from the other waste streams into separate waste containers/skips clearly to facilitate recycling. • Waste containers/skips will be clearly labelled and placed in designated waste storage locations. Labels will be waterproof, securely attached, and written in English and other languages as required. • Waste containers will have lids in order to mitigate wind dispersed waste. • For litter (food waste, domestic waste), an adequate number of covered bins will be strategically placed throughout the site at locations where construction workers and staff consume	Minor

Potential impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and management measures	Residual impact
					food. These will be regularly collected and taken to the main waste storage area. • Food waste will be stored within a sealed metal or plastic skip or bin to prevent pests from gaining access. • •Ongoing housekeeping training will be provided to all staff on the importance of the need to avoid littering.	
Generation of hazardous wastes and wastewater during construction	Moderate	Existing Waste Management Infrastructure	Medium	Moderate	• Undertake a pre-construction audit of local licensed hazardous waste facilities to confirm available capacity and avoid overloading existing infrastructure. • EPC contractors will enter into formal agreements with licensed waste contractors and disposal facilities (if needed) to secure allocated treatment/disposal capacity. • Segregate hazardous wastes at source (e.g., oils, fuels, solvents, paint residues, chemical containers, contaminated PPE) to minimize cross-contamination and reduce disposal volumes. • Limit on-site accumulation times in accordance with regulatory requirements and schedule regular off-site removal of hazardous wastes. • Maintain a hazardous waste inventory and manifest tracking system to monitor volumes and disposal routes. • A Groundwater Management Plan will be developed and implemented addressing potential dewatering and handling of contaminated groundwater. • Groundwater quality will be characterised prior to discharge or disposal. • Extracted groundwater will be treated on-site (e.g., filtration, oil-water separation, activated carbon) prior to discharge or tanker removal.	Minor

Potential impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and management measures	Residual impact
					• Coordinate with local wastewater authorities to confirm acceptance criteria and available capacity before disposal to municipal systems. • Dewatering volumes will be minimise through engineered controls (e.g., cutoff walls, phased excavation).	
Operation						
Operational waste generation	Moderate	Existing Waste Management Infrastructure	Medium	Moderate	• Prior to start of operation of the plant, the O&M Company will coordinate with the local municipality and waste receiving facilities to ensure sufficient capacity is available for receiving wastes. • The O&M Company will identify waste management companies who can accept and handle PV panel waste with a focus on material recovery and recycling. • Domestic solid wastes to be segregated and identified from the other waste streams into separate waste containers/skips clearly to facilitate recycling. • Waste containers/skips will be clearly labelled and placed in designated waste storage locations. Labels will be waterproof, securely attached, and written in English and other languages, as required. • For litter (food waste, domestic waste), an adequate number of covered bins will be strategically placed throughout the site at locations where operational staff consume food. These will be regularly collected and taken to the main waste storage area. • Food waste will be stored within a sealed metal or plastic skip or bin, to prevent pests from gaining access. • Only licensed waste transporters and waste management facilities will be engaged, and copies of the waste management licenses will be maintained on site. • Completed waste manifests will be maintained to show the chain of custody of the waste generated on-site, its	Minor

Potential impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and management measures	Residual impact
					transportation and treatment/disposal. All records will be maintained on-site. • Sanitary wastewater will be collected by a licensed contractor and taken to a a wastewater treatment plant. • Develop and maintain a hazardous waste inventory to document and track hazardous wastes generated, segregated, reused and consignments. • Segregate and identify hazardous waste from the other waste streams into separate waste containers/skips signed and labelled. • Store hazardous waste in allocated impervious hard standing areas in sealed containers stored with impermeable bases, sufficient containment and separation capacity, sun/rain shelter, separate drainage system, good ventilation and equipped with spill kits & spill response procedures. This area will be placed away from any sources of ignition. • Waste containers will be marked with appropriate warning labels to accurately describe their contents and detailed safety precautions. Labels will be waterproof, securely attached, and written in English and other languages as required. Wherever possible, chemicals will be kept in their original container.	

15.5 Monitoring

Table 15-3 Waste Management Monitoring

Monitoring	Parameter	Frequency	Monitoring Location
Inspect and monitor proper handling and storing of waste materials	Check storage areas containment and control procedures as per HSSE-MS	Daily	Storage areas at the site
Inspect and monitor third party waste contractors and disposal facilities	Ensuring engaged contractors, their vehicles and waste management facilities have applicable registrations/licenses at time of procurement	At procurement and annually thereafter	Contractors, transport vehicles and waste management facilities
Waste Transfers	Record keeping of waste transfer notes	On-going	As waste is transferred during construction and operational phases.

16.0 Socioeconomics

16.1 Applicable Requirements & Standards

16.1.1 National Regulations

Key legislative and regulations addressing socioeconomics and marine environment in the Republic of Azerbaijan include:

- The Constitution of the Republic of Azerbaijan (Adopted on 12 November 1995, revisions made on 18 March 2009); and
- Water Code of the Republic of Azerbaijan (No. 418-IQ, 1997).

16.1.2 Lender Requirements

16.1.2.1 IFC

The following Performance Standards are considered relevant for the Project:

- PS1: Assessment and Management of Environmental and Social Risks and Impacts,
- PS2: Labour and Working Conditions,
  - Including International Labour Organisation (ILO) Conventions
- PS4: Community Health, Safety, and Security,
- PS5: Land Acquisition and Involuntary Resettlement,
- PS7: Indigenous Peoples (note that this is not applicable to the Project because as per the criteria in PS7, there are no indigenous peoples within the project area of influence), and
- PS8: Cultural Heritage.

Additionally, the IFC Environmental, Health, and Safety Guidelines for Ports, Harbors, and Terminals (2017) are a technical reference, providing international good practice guidance for managing environmental, occupational, and community health and safety risks.

16.1.2.2 AIIB

The Project is required to align with the applicable requirements of the AIIB ESF which establishes the environmental and social requirements for projects financed by AIIB and aims to ensure that environmental and social risks and impacts are assessed, avoided, minimised, mitigated, and managed throughout the Project lifecycle.

The following ESS are considered relevant to the Project:

- ESS 1: Environmental and Social Assessment and Management- requiring the identification, assessment, and management of environmental and social risks and impacts, including socio-economic impacts, stakeholder engagement, and the implementation of an Environmental and Social Management Plan (ESMP).
- ESS 2: Involuntary Resettlement- requiring the assessment and management of risks associated with land acquisition, economic displacement, livelihood impacts, and physical displacement, where applicable.

The Project's socio-economic assessment and management measures have been developed considering the applicable requirements of the AIIB ESF, including the principles of meaningful stakeholder engagement, protection of vulnerable groups, labour and

community health and safety considerations, grievance management, and mitigation of potential socio-economic impacts associated with Project activities.

16.2 Socioeconomic Data Collection Methodology

The socioeconomic baseline data presented was gathered through a combination of secondary research and social surveys, including public meetings, key informant interviews (KIIs), focus group discussions (FGDs), door-to-door visits, and household survey. Project information brochures were distributed to community members during FGDs and to vulnerable households through the door-to-door visits, with all information provided in Azerbaijani. Additionally, relevant data was also taken from the IQLIM ESIA report dated 2025.

Based on the total number of households identified in the Iqlim ESIA Report (August 2025), an appropriate sample size for the Household Socio-Economic Survey was determined. The sampling framework covers the settlements of Kimyachilar, Khazar Baghlari, Khazri, and Haji Zeynalabdin located within the 5 km Project Area of Influence (AoI). The sample size was calculated to ensure adequate representation of households across the AoI and to support statistically robust analysis of baseline socio-economic conditions and potential project-related impacts. The combined number of households within the surrounding settlements is estimated at 19,001 (IQLIM ESIA Report, 2025). Statistical representativeness of the household survey was ensured by applying the Cochran sampling formula at a 95% confidence level with a ±5% margin of error. The resulting sample size was then allocated proportionately among the four settlements based on their respective household numbers.

Table 16-1 Summary of surveyed household data by settlement, 2026

Settlement	Total Household No.	Total sample size
Haji Zeynalabdin	10,768	92
Khazar Baghlari	2,533	81
Kimyachilar	4,400	104
Khazri	1,300	90
Total	19,001	367
No. of Fisherman Household		26
Grand Total		**393**

A total of 393 household-level socio-economic surveys were conducted as part of the assessment to ensure adequate representation of communities within the Project Area of Influence. Of these, 367 surveys were administered across four settlements selected based on their proximity to the Project site and potential exposure to project-related impacts, comprising 104 surveys in Kiyamchilar, 92 in Haji Zeynalabdin, 90 in Khazri, and 81 in Khazar Baghlari.

In addition, 26 surveys were undertaken with small-scale fisherman households operating from Pier 63, located approximately 1.5 km from the Project site, to capture livelihood-specific socio-economic conditions related to coastal and marine resource use. This stratified and targeted sampling approach ensured adequate spatial coverage and representation of socio-economic conditions, while specifically addressing livelihood impacts on fishing-dependent households.

Comprehensive details on survey methodologies and a summary of stakeholder inputs during the ESIA phase consultations are provided in the stand alone SEP.

16.3 Socioeconomic Baseline Conditions

16.3.1 Population and Demographics

16.3.1.1 National Overview

According to State Statistical Committee (2025), the total land area of Azerbaijan is 86,600 km^2, divided into 68 administrative districts. There are 78 cities, 12 urban districts, 263 settlements, 1,724 rural territorial units and 4,244 rural settlements. At the beginning of 2025, the population totalled 10,224,900, a 2.25% increase compared to the 2020 population. The number of households was estimated to be 2.14m in 2025[51]. The proportion of the population that resided in urban areas was 54.4%, and 45.6% lived in rural areas[52]. There were slightly more females than males, recorded at 50.2% (5,135,500) and 49.8% (5,089,400) respectively.

16.3.1.2 Sumgait City

According to data provided by Sumgait City EP, the total population of Sumgait and its settlements in 2025 was 428,100, comprising 213,600 males and 214,500 females. The population density was 3,563 persons per square kilometre. Approximately 379,400 people resided in Sumgait City Centre, including 185,400 males and 194,000 females (State Statistical Committee, 2025). According to KII data from Sumgait City EP (2026) and Jorat Municipality (2026), the population growth in Sumgait City was attributed to migrants from other regions of the country seeking employment in the construction and service sectors.

The figure below illustrates Sumgait's population by age group. Children and young people aged between 0-19 accounted for a substantial share of the population (31%), while individuals aged 50-59 represented the smallest proportion (10%).

[51] Statistica. 2025. "Socioeconomic indicators – Azerbaijan". Available in: https://www.statista.com/outlook/co/socioeconomic-indicators/azerbaijan.

[52] State Statistical Committee, 2025. "Population of Azerbaijan,2025". Available at: https://www.stat.gov.az/source/demography/ap/?lang=en.

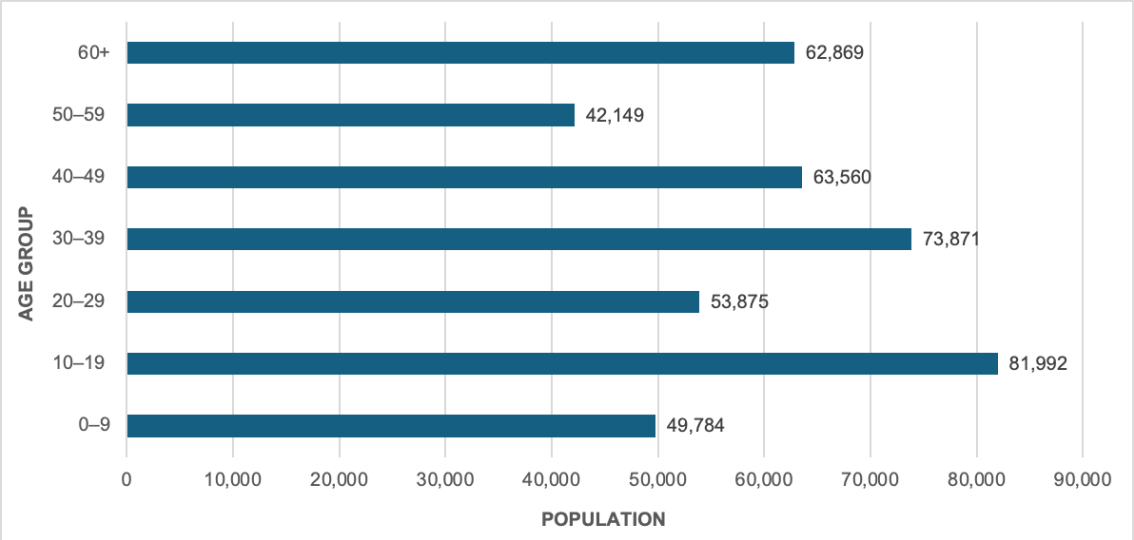


Figure 16-1 Sumgait Population by Age Group, 2025

16.3.1.3 Study Area

The population of the settlements in the study area in 2025 was 50,900 (Sumgait City EP, 2026). The table below summarizes gender-disaggregated population data for each settlement, ranked from the most to the least populous. Haji Zeynalabdin is the biggest settlement near the Project site.

Table 16-2 Population of local communities by Gender, 2025

Settlement	Total population	Male	Female
Haji Zeynalabdin	29,800	14,600	15,200
Khazar Baghlari	10,000	4,500	5,500
Kimyachilar	5,700	2,793	2,907
Khazri	5,400	2,600	2,800
TOTAL	50,900	24,493	26,407

The total number of surveyed households in the study area was 367, comprising of 1,417 household members. Only 17% of the total surveyed households were headed by females, while most (83%) were headed by males.

Table 16-3 Summary of surveyed household data by settlement, 2026

Type	Haji Zeynalabdin	Khazar Baghlari	Kimyachilar	Khazri	Total
Total surveyed households	92	81	104	90	367
No. male-headed households	74	65	88	77	304 representing 83%
No. female-headed households	18	16	16	13	63 representing 17%

Type	Haji Zeynalabdin	Khazar Baghlari	Kimyachilar	Khazri	Total
Total surveyed household members	376 representing 26%	307 representing 22%	369 representing 26%	365 representing 26%	1,417
No. of surveyed household members that are male	200	156	190	183	729 representing 51%
No. of surveyed household members that are female	176	151	179	182	688 representing 49%

16.3.1.4 Age of surveyed household heads (HHH)

The figure below presents the age data of all male-headed households (MHH) and female-headed households (FHH) in the surveyed settlements. Majority (27%) of MHHs and FHHs among all surveyed settlements are aged between 56-65, while 16% are aged 66 and above.

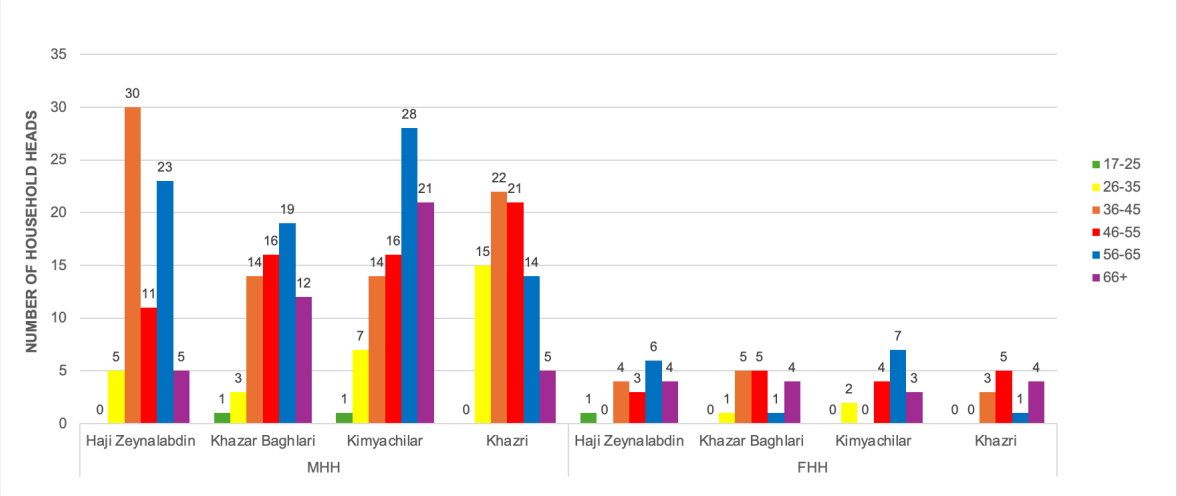


Figure 16-2 Surveyed HHH Age group by Gender, 2026

For both males and females, children aged 0-16 formed the largest share of surveyed household members across all settlements, followed by adults aged 36-45 years. This is illustrated in the figure below.

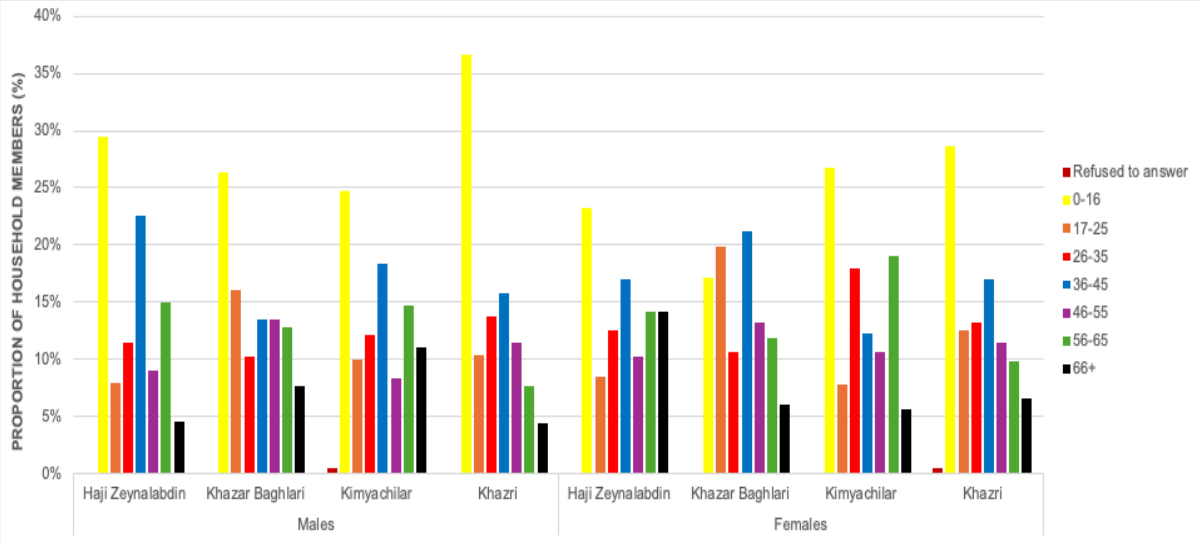


Figure 16-3 Surveyed Household Members (%) by Age Group and Gender, 2026

16.3.1.5 Marital Status

The household survey results show that while a substantial share (91%) of MHH across all surveyed settlements stated that they are married, FHHs are reportedly primarily widowed (70%) or divorced (25%).

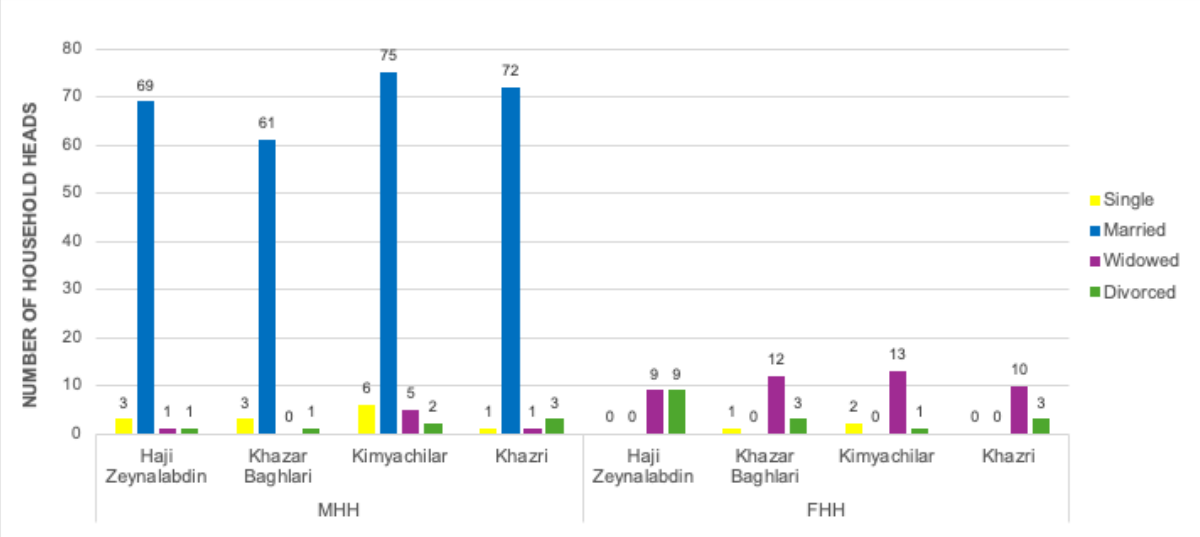


Figure 16-4 Marital Status of HHHs by Gender, 2026

16.3.2 Language and Ethnicity

A majority (95%) of the national population are Azerbaijani[53]. The Azerbaijanis' native language is Azerbaijani (also known as Azeri). Minority nationalities and ethnicities include Lezgis (1.7%), Talyshs (0.9%), and Russians (0.7%). Additionally, 5.7% of the population speak Russian, while 1.3% speak English (State Statistical Committee, 2024).

[53] State Statistical Committee. 2024. "Population: demographic indicators of Azerbaijan". Available in: https://www.stat.gov.az/source/demography/?lang=en.

Among the surveyed households, approximately 96.2% identified as Azerbaijani. Other nationalities and ethnic groups represented included Lezgis, Russians, Talyshs, Ingiloys, Turkishs, and Ukrainians, all accounting for a small proportion of the sample. Azerbaijani was the primary language spoken across all surveyed households.

16.3.2.1 Indigenous Peoples

According to the data reviewed from the International Work Group for Indigenous Affairs (IWGIA)[54], there are no Indigenous Peoples (IPs) or vulnerable ethnic groups in the region and the Project area. Additionally, consultations with the municipalities and District Executive Powers indicated that no IPs are presented within the districts and local communities near where the proposed Project will be located.

The assessment against the IFC PS 7 requirement for Indigenous Peoples demonstrates that none of the four criteria are met, as shown in the table below.

Table 16-4 Indigenous People's screening of the communities near the Project site

IFC PS 7: Indigenous People	Characteristics of local communities	ifc ps 7 criteria triggered?
Self-identification as members of a distinct indigenous cultural group and recognition of this identity bey others.	The household survey indicates that the Project area is predominately inhabited by ethnically Azerbaijani households (96.2%), and no households reported belonging to a culturally distinct group.	No
Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories.	The local communities have no attachment to the land allocated to the proposed project. It was noted during KIIs and FGDs that local community members do not conduct any livelihood activities within the Project site. Additionally, there are no nomadic users of the Project site.	No
Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture.	The local communities identified as Azerbaijani and therefore are part of the mainstream cultural, economic, social, and political institutions.	No
A distinct language, often different from the official language of the country of region.	Azerbaijani is the primary language spoken in the local communities and is the official language in the Republic of Azerbaijan.	No

While the assessment confirms that none of the four criteria under IFC Performance Standard 7 (Indigenous Peoples) are met in the Project area, it is noted that Internally Displaced Persons (IDPs) are present within the wider study area (refer to Section 16.3.10).

[54] International Work Group for Indigenous Affairs. 2025. “Countries,” The Indigenous World. Available in: https://iwgia.org/en/countries.html.

IDPs in Azerbaijan represent a vulnerable population group due to their displacement history, socio-economic conditions, and reliance on state support. However, based on the IFC PS 7 definition, IDPs do not qualify as Indigenous Peoples, as they do not exhibit distinct cultural, social, or institutional characteristics separate from the dominant Azerbaijani population, nor do they maintain collective attachment to ancestral territories within the Project area.

Accordingly, IFC PS 7 is not triggered. Nevertheless, the presence of IDPs has been considered under the assessment of vulnerable groups (see section 16.3.11), and their specific needs and potential project-related impacts are addressed through targeted stakeholder engagement and mitigation measures in line with IFC Performance Standard 1.

16.3.3 Religion

Information on religious affiliation was not collected as part of the household survey given the sensitive nature of the topic in the Azerbaijan and in line with good practice regarding the handling of personal and potentially sensitive data. However, based on secondary sources, 96% of the population of Azerbaijani nationality is understood to be Muslim[55]. The remaining 4% of the population consists mostly of Russian Orthodox, Armenian Orthodox, Jews, followers of other Christian groups, and nonbelievers.

16.3.4 Education

16.3.4.1 National Overview

The national adult literacy rate has remained stable at 99.8% since 2009, with minimal gender disparity; 99.8% for males and 99.7% for females (State Statistical Committee, 2025). In 2025 approximately 7,933 people aged 15 and above had attained higher, specialized secondary, vocational or general secondary education.

Table 16-5 Educational attainment of national population (State Statistical Committee, 2025)

Years	Total population aged 15 and above	Higher education	Specialized secondary	Vocational	Completed secondary education	General secondary
2019	7,434	1,212	695	414	4,355	758
2022	7,607	1,250	711	421	4,452	773
2025	7,933	1,336	741	440	4,626	790

16.3.4.2 Sumgait City

The table below presents the types of education facilities in Sumgait City and the number of students that were enrolled in the 2023-2024 academic year. Sumgait also 97 public libraries. KII data from Sumgait City (2026) shows that population growth in the region has been attributed to the increasing demand for public services including schools.

[55] The Association of Religion Data Archives. 2026. ”National and regional profile”. Available in: https://www.thearda.com/world-religion/national profiles?u=16c#:~:text=There%20were%20no%20reliable%20statistics,other%20Christian%20groups%2C%20and%20nonbelievers.

Table 16-6 Education facilities by type and number of students in 2023-2024 (IQLIM ESIA report, 2025)

Education facility	Number of facilities	Number of students
Preschools	60	7,048
General education	52	66,483
Vocational	3	1,039
Specialized secondary	3	2,944
Special needs	1	726
University	1	6,444
Total	**120**	**84,684**

16.3.4.3 Study Area

The table below presents the secondary education facilities and the total number of students enrolled in the study area (Iqlim ESIA report, 2025). Haji Zeynalabdin has 4 non-IDP secondary schools, while Kimyachilar and Khazri have 5 IDP schools combined. Additionally, Haji Zeynalabdin has an arts school attended by 287 students.

Sumgait and Haji Zeynalabdin Municipalities reported that they do not have gender-disaggregated literacy and education attainment data of the settlements in the study area.

Table 16-7 Secondary education facilities and number of students in the study area (Iqlim ESIA report, 2025)

Settlement	Secondary education facility	Number of facilities	Number of students
Haji Zeynalabdin	• Secondary school #19 • Secondary school #32 • Secondary school #6 • Secondary school #40	4	4,642
Kimyachilar	• Secondary school of Mardanli village (Gubadli district) • Secondary school of Suleymanli village (Jabrayil district) • Secondary school #5 (Jabrayil town) • Secondary school #6 (Jabrayil town)	4	557
Khazri	Secondary school of Khalaj village (Gubadli district)	1	800

The figures below present the secondary school infrastructure in the study area.



Figure 16-5 Secondary school of Mardanli village (IQLIM ESIA report, 2025)



Figure 16-6 Secondary school #5 of Jabrayil (IQLIM ESIA report, 2025)



Figure 16-7 Secondary school #6 (IQLIM, 2025)

The figure below presents education attainment levels of surveyed household heads, disaggregated by gender. All the surveyed HHHs have attained formal education beyond primary education. More than 50% of both MHHs and FHHs have 'completed secondary education'; however, this proportion is lower among FHHs in Kimyachilar, at 38%. Only a small share of surveyed household heads has attained tertiary education, with MHHs in Khazar Baghlari recording the highest proportion (22%). In contrast, a higher proportion of FHHs have attained 'specialized secondary or technical/vocational education', with Kimyachilar showing the highest share at 44%.

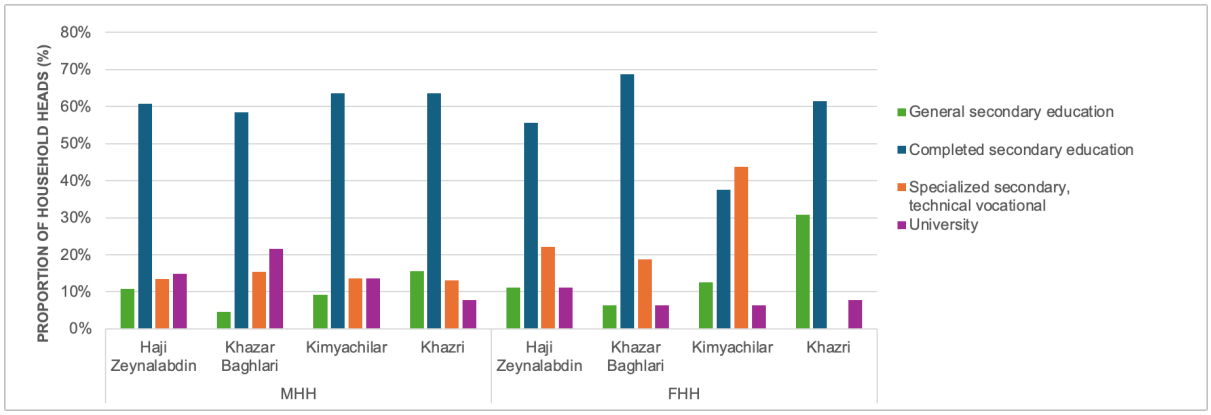


Figure 16-8 HHHs Education Attainment by Gender, 2026

Similarly, most surveyed male and female household members have 'completed secondary education'. Male household members in Khazar Baghlari have the highest proportion of individuals who cannot read or write (12%).

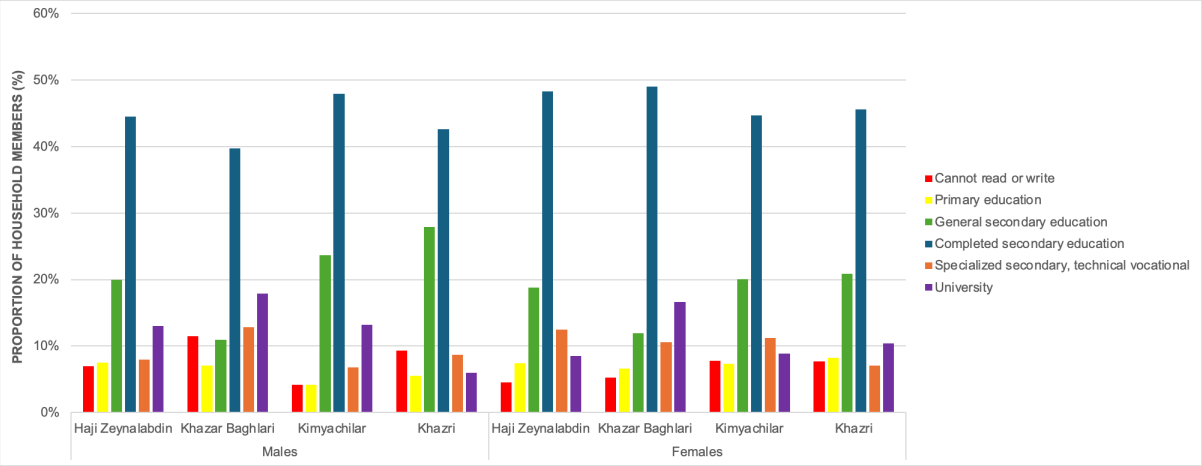


Figure 16-9 Household Members' Highest Education by Gender, 2026

A majority (57%) of surveyed households using primary education facilities rated them as good, while only 5% rated them as poor. Similarly, most households using secondary education facilities rated them positively, with 51% describing them as good and 41% as fair.

16.3.5 Economy and Employment

16.3.5.1 National Overview

Following its national independence in 1991, the Republic of Azerbaijan began benefitting from its rights to pursue an independent economic policy. The core objectives of this policy included the development of a diversified, multi-sectoral economy, the transition from a centrally planned to a market economy, and integration into the global economic system. Between 2005 and 2015, Azerbaijan emerged as one of the fastest growing economies, driven by rapid economic expansion, rising living standards, and infrastructure development. Over this period, real economic growth reached 10.6%, nominal GDP increased 7.6 times, and GDP per capita rose 6.5 times. Azerbaijan's global economic ranking improved form 134th in 2005 to 79th in 2015, while the poverty rate declined sharply from 40.2% to 4.9%.

According to the World Bank Atlas classification, Azerbaijan transitioned from a low-income country prior to 2004 to a lower-middle-income country in 2005–2008, and to an upper-middle-income country from 2009 onwards[56]. The economy is dependent on natural resources, in particular, the oil and gas sector, accounting for 48% of the GDP and over 91% of the export revenue[57]. The country is actively working to diversify its economy beyond hydrocarbons by expanding sectors such green energy, agriculture, logistics, tourism, and information communication technology sectors (International Trade Administration, 2023).

In 2023, value added in the oil and gas sector declined by 1.6%, while the non-oil and gas sector grew by 2.7%[58]. Key GDP contributors included industry (33%), trade and vehicle repair (11.3%), transport and warehousing (7.1%), construction (6.5%), and agriculture, forestry, and fishing (5.9%), with the remaining sectors and net taxes accounting for the balance.

[56] World Bank, 2022. "Azerbaijan: Country Economic Memorandum". Available at: https://documents1.worldbank.org/curated/en/099100009222236784/pdf/P17532606988e2056084e603c9c48ddc618.pdf.

[57] International Trade Administration. 2023. "Azerbaijan: Country Commercial Guide". U.S. Department of Commerce. Available in: https://www.trade.gov/country-commercial-guides/azerbaijan-market-overview.

[58] State Statistical Committee, 2026. "Production of Gross Domestic Product in 2025". Available in: https://www.stat.gov.az/news/index.php?lang=en&id=6590.

A summary of Azerbaijan's most recent economic data is presented in the table below.

Table 16-8 Summary of Azerbaijan Economic Data (Statistica, 2025 & State Statistical Committee, 2024)

Criteria	Data (2025 estimates unless otherwise stated)
GDP (Official Exchange)	AZN 134.08 billion
GDP (Purchasing Power Parity)	AZN 388.62 billion
GDP per Capita	AZN 12,602.20
GDP Real Growth Rate	4%
Industrial Production Growth Rate	-2.2%
Labour Force	Total workforce: 5,249,700 (2023) Female: 2,535,000; 48% Male: 2,714,700; 52%
Employment Rate	65.23%
Unemployment Rate	Total unemployed: 286,400; 5% (2023) Female: 159,400; 3.59% Male: 127,000; 4.66%
Exports	AZN 45.13 billion (2024)
Imports	AZN 35.79 billion (2024)

According to State Statistical Committee (2024), the sector employing the largest share of the workforce in 2023 was agriculture, forestry, and fishing, with 1,777,400 people (36%). This was followed by trade and vehicle repair (14%), construction (8%), and manufacturing (6%).

16.3.5.2 Sumgait City

Sumgait is the industrial center of Azerbaijan. The city's economic structure includes enterprises in the chemical and petrochemical, metallurgy, machine-building, electric power, food and light industries, and the production of building materials. The number of industrial enterprises in Sumgait increased from 124 in 2025 to 327 in 2025[59]. The total value of manufactured products in Sumgait reached AZN 5.1 billion in 2025, six times more than AZN 850 million in 2015 (Report.az. 2025). Approximately 190,000 individuals are employed in Sumgait.

Sumgait Chemical Industrial Park was established under Decree No. 548 of December 2011 of the President of the Republic of Azerbaijan. The park was renamed to Sumgait Industrial Park by the Decree of the President dated September 8th, 2025. According to the masterplan, 38 enterprises operate within the park's total area of 94.13ha.

Sumgait City EP (2026) reported that approximately 6,221 individuals in Sumgait were unemployed in 2025. According to Jorat Municipality (2026), the population in Sumgait has led to increased competition for jobs as opportunities are higher in Baku and Sumgait compared to other regions of the country.

Findings from FGDs with female and male youth in Sumgait City Centre highlighted a lack of employment opportunities among both genders. Participants reported that available jobs are

[59] "Industrial output in Azerbaijan's Sumgayit surged eightfold over past decade", Report.az. Available at: https://report.az/en/industry/industrial-output-in-azerbaijan-s-sumgayit-surged-eightfold-over-past-decade.

primarily concentrated in the service sector, such as restaurants and retail shops, where youth are employed as cooks, cleaners, waiters, shop assistants, and tellers, as well as in small scale fishing.

16.3.5.3 Study Area

Site visit and KII results with Sumgait City EP and Sumgait Municipality, as well as community members confirmed that there are no herding or livestock activities undertaken within the Project site. Site visit results also revealed fishing activities at Pier 63, located 1,500 m away from the Project area. FGD and KII findings further showed that five boats are operated at Pier 63 on a seasonal basis (September-May) for fishing activities.

Findings from KIIs in Sumgait Municipality (2026) reveal a gendered pattern of employment, where males are concentrated in industrial, fishing, construction, and transport sectors, whereas females are primarily engaged in services, trade, education, healthcare, and domestic work. The gender commissions representative of Sumgait Municipality (2026) further explained that women's participation is limited in construction, maritime engineering, mechanical, and heavy industry sectors due to occupational stereotypes and limited access to technical training. Conversely, men are underrepresented in care- and social-oriented fields, such as education, healthcare, and social work, largely because of traditional gender roles and societal expectations.

The figure below presents the employment status of surveyed household heads disaggregated by gender. A significant proportion of both MHHs and FHHs are formally employed either in the government or private sector, particularly in Haji Zeynalbdin. An equal share (11%) of household heads in both MHHs and FHHs were unemployed and seeking work. Retirement was more prevalent among female-headed households (33%) compared to male-headed households (20%).

Khazri has the highest share of self-employed household heads among both males and females. Informal work reported among MHHs includes supervision in construction projects, taxi driving, livestock rearing, and quarry work, while FHHs were engaged in activities such as baking, selling products, and childcare.

Male and female FGD participants from the surveyed settlements reported employment opportunities in government, agricultural, industrial and construction sectors. Participants also noted the informal sector as their primary source of livelihood, stating activities including private tutoring, seasonal small-scale fishing, and gardening. Female participants further indicated their temporary employment in hair salons and bakeries, while their male counterparts work at factories. Participants indicated that secondary livelihoods are limited and largely limited to seasonal cultivation of fruits and vegetables. In addition, some households receive social support provided through government social assistance program. The community members stated that key barriers to employment identified included a lack of job-relevant skills, inadequate access to transportation to major employment areas including Baku, and limited employment opportunities for persons with disabilities.

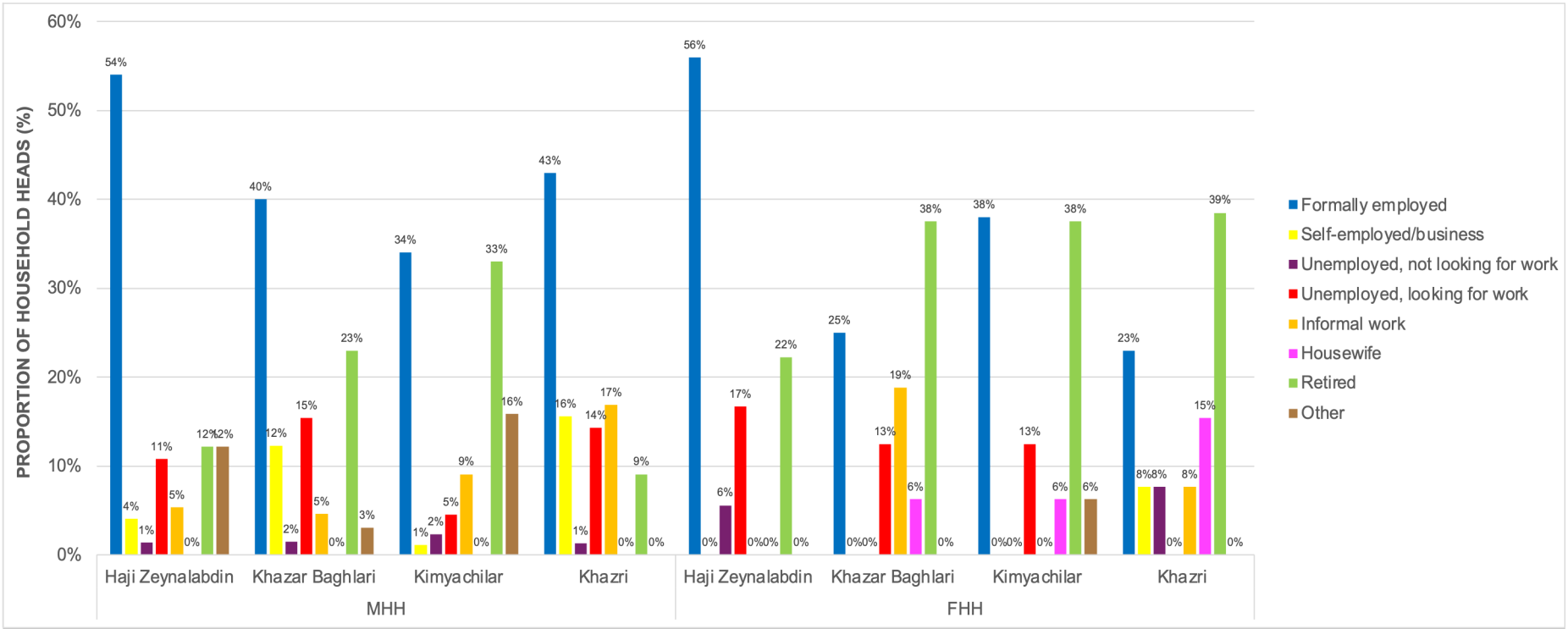


Figure 16-10 Employment status of HHHs by Gender, 2026

16.3.6 Income and Expenditure

According to the State Statistical Committee (2024) the average monthly income and wage for women and men in Azerbaijan was AZN 735.70 and AZN 1,069.30 respectively[60]. It is noted that high income sectors such as the mining, oil and processing industries inflate the average wage data. Average income and wage data therefore does not accurately reflect the lived experiences of most people, and the absence of data hinders a comprehensive understanding of income inequality[61]. Effective 1st January 2025, the minimum wage for employees was set at AZN 400[62], equivalent to USD 176.47.

According to 2020 data presented by the World Population Review (2025), the median monthly income for Azerbaijan was AZN 2,368.10. The cost of living in Azerbaijan for one person is AZN 1,218 per month[63]. Sumgait City EP (2026) reported that the average monthly wage in Sumgait was AZN 931.30 in 2025.

16.3.6.1 Study Area

According to Sumgait Municipality (2026) representatives, gender-disaggregated employment and income data are not collected at municipal level. However, limited resources, lack of land, and insufficient professional skills were reported as the main livelihood challenges in the study area (Sumgait Municipality Gender Commissions Representative, 2026). Unpaid care and household work limit women's participation in employment and income opportunities, increasing economic dependency (Sumgait Gender Commissions Representative, 2026). Surveyed households' primary source of income is presented in the figure below. Most of the surveyed households (54%) reported that they primarily rely on salary income. The number of household heads receiving salary income was 200, including 68 in Haji Zeynalabdin, 48 in Khazar Baghlari, 48 in Kimyachilar, and 36 in Khazri. Approximately 55% of male-headed households, and 52% of FHHs receive salary income.

Approximately 11% of the households rely on casual work as their primary source of income, while 7% depend on fishing. Other main sources of income include small-scale street trading and remittances. Only 2% of the surveyed households reported social assistance as their primary source of income.

[60] State Statistical Committee. 2025. "Average monthly nominal wages by economic activity and sex". Accessed at: https://www.stat.gov.az/source/labour/?lang=en.

[61] Baku Research Institute. 2025. "Economy: What are the median incomes and wages in Azerbaijan?". Baku Research Institute website. Available in: https://bakuresearchinstitute.org/en/what-are-the-median-incomes-and-wages-in-azerbaijan/.

[62] Ministry of Labour and Social Protection. 2024. "Minimum wage for employees cannot be less than 400 manats starting from January 1, 2025". Republic of Azerbaijan. Available in: https://sosial.gov.az/en/media/news/the-minimum-wage-for-employees-cannot-be-less-than-400-manats-starting-from-january-1-2025.

[63] Living Cost. 2023. "Cost of living in Azerbaijan". Available at: https://livingcost.org/cost/azerbaijan.

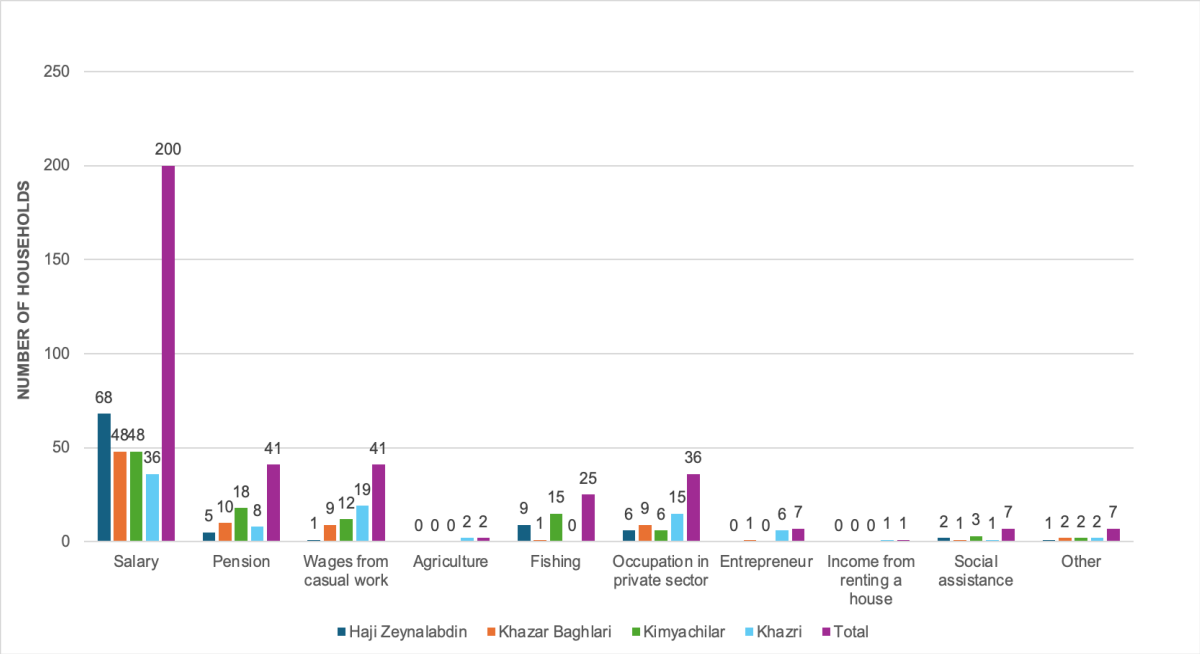


Figure 16-11 Surveyed HHHs primary source of income by settlement, 2026

The table below summarizes the average monthly income data for all surveyed households. The average monthly income was AZN 333.72, which is AZN 597.58 less than the average income in Sumgait. Additionally, the average monthly income among MHHs and FHHs is lower than the average monthly income in Sumgait.

Table 16-9 Gender-disaggregated monthly income data for surveyed households, 2026

Average monthly income	AZN	USD
All surveyed households	333.72	19.84
MHH	790	464.71
FHH	544	320

Male-headed households reported a higher average monthly income compared to the female-headed households. Among surveyed male-headed households, fishing generated the highest reported monthly income (AZN 1,510), while delivery of tutoring and childcare generated the highest monthly income among female-headed households.

Approximately 48% of male-headed households in the surveyed communities assessed their household income as *sufficient only to meet food needs*, and 32% stated that it was *adequate to cover all household needs*. Among female-headed households, 38% reported that their *income was sufficient only for food*, whereas 30% assessed it as *adequate to meet all household needs*.

Approximately 57% of the total surveyed households reported that there is no economic or social inequality within the community. However, some households identified low-income levels and poverty as the main drivers of inequality.

16.3.6.2 Access to Social Assistance from Government

The government of Azerbaijan has established various social grants to support its citizens[64]. These grants relate to IDP support, old-age, disability, childcare, low-income families etc. The breakdown of social grants received in each surveyed community is as follows:

- A total of 7 households (8%) out of in 92 household in Haji Zeynalabdin receive social grants.
- 17 households out of 81 households in Khazar Baghlari.
- 19 households out of 104 households in Kiyamchilar.
- 18 households out of 90 households in Khazri.

16.3.6.3 Household Expenditure

The table below presents the average household expenditure among surveyed households, including spending on household goods, utilities, health, and education. The highest monthly expenditure was related to fishing activities, averaging AZN 1,655, while spending on cooking fuel was the lowest. According to KII data from Sumgait City EP (2026), there has been a moderate increase in the price of rent and food.

Both male-headed and female-headed households indicated the increase of monthly household expenditure due to illness and lack of income. Surveyed households also reported rising food prices, which have resulted in a reduction in the quantity of food purchased. Approximately 86% of the surveyed households reported borrowing money to cope with unexpected household expenses.

Table 16-10 Summary of household monthly expenses (in AZN), 2026

Type of Expenditure	Average monthly amount (AZN)
Food	367
Education	112
Cooking fuel	9
Rent	169
Mortgage	484
Medical	102
Public transport	49
Gas/fuel for own vehicle	402
Taxes	50
Clothing	120
Agricultural	140
Fishing	1,655
Social functions	175

16.3.6.4 Loans and Savings

According to KII data from the Gender Commissions representative in Sumgait Municipality (2026), women have limited access to credit and financial resources as many work in lower-income jobs or choose employment with shorter working hours due to household responsibilities.

Approximately 42% of the surveyed households reported that they obtained loans through formal banking institutions. Reliance on family and friends is minimal among the surveyed households, at 1%, whereas 7% have received a loan from informal lenders. Surveyed

[64] Ministry of Labour and Social Protection of Population. 2025. “Monthly social benefits”. Accessed at: https://dost.gov.az/en/page/ayliq-sosial-muavinetler.

households reported seeking loans primarily for housing repairs, medical treatment, and the purchase of household goods and appliances, including food, refrigerators, and televisions.

The average loan amounts vary by source, as follows:

- Bank loans: AZN 5,928.26 (USD 3,487.21),
- Informal lenders: AZN 2,216.96 (USD 1,304.09), and
- Family and friends: AZN 1,550 (USD 911.76).

- Among households that did not seek loans, cited reasons included old age, lack stable employment or regular income, and difficulties repaying previous loans.

- Approximately 1% of the surveyed households reported that they have savings, both of which were male-headed households. Only one of the households mentioned their total saving of AZN 400 (USD 235.29). The reasons cited for lack of savings among the surveyed households were low household income, unemployment, and the lack of employment.

16.3.7 Fishing Activities near the Project site

In accordance with IFC PS 5 and AIIB ESS 2 a Livelihood Restoration Framework (LRF) is generally required where Project activities are expected to result in physical or economic displacement leading to loss of land, access to natural resources, or significant adverse impacts on livelihoods.

The socioeconomic assessment undertaken for the Project considered the potential for impacts on fishing activities, employment, access to marine resources, and other livelihood sources within the Project Area of Influence. The assessment included targeted household surveys with 26 fishing households, focus group discussions with fishermen, consultations with the State Border Service Personnel at Pier 63, municipal authorities, and the Department of Fisheries and Aquaculture, together with review of the Project design and offshore infrastructure layout.

The assessment concluded that the Project is not expected to result in economic displacement requiring implementation of an LRF for the following reasons:

- Project does not require acquisition of privately owned agricultural land, commercial land, fishing facilities, or community livelihood assets;
- No permanent loss of access to fishing grounds, landing sites, navigation routes, or marine resources is anticipated;
- Pier 63 will remain operational throughout construction and operation;
- Fishing grounds used by local fishermen are located approximately 10 km east of Pier 63, whereas the Project marine infrastructure is located substantially closer to shore and outside the areas normally used for fishing;
- Consultation findings confirmed that existing fishing activities are already naturally separated from the Project area by operational restrictions associated with existing SOCAR cooling water infrastructure;
- No households are expected to experience permanent loss of income or productive assets as a consequence of Project activities; and
- Any temporary construction-related restrictions on marine access are expected to be localized, short-term, and capable of being managed through advance notification, marine traffic coordination, and stakeholder engagement.

Based on the above findings, the Project is not expected to cause livelihood displacement of a scale or nature that would trigger preparation of an LRF. Overall, the site visit findings suggest that existing fishing practices are well established and largely separate from the Project area as indicated in Figure 16-12 and Figure 16-13.

Nevertheless, the Project will implement precautionary livelihood management measures through the contractor's CESMP, the Marine Traffic Management Plan, and the Stakeholder Engagement Plan. These measures will include:

- Advance notification of planned marine construction activities;
- Continued engagement with fishermen and relevant government agencies throughout construction;
- Monitoring of any Project-related livelihood complaints through the Project GRM;
- Investigation of any verified Project related economic losses; and
- Implementation of corrective measures, including compensation where required under applicable national legislation and lender requirements should unforeseen Project induced livelihood impacts occur.

Accordingly, livelihood risks associated with the Project are not anticipated and manageable through the Project's existing ESMS without requiring preparation of a separate Livelihood Restoration Framework.

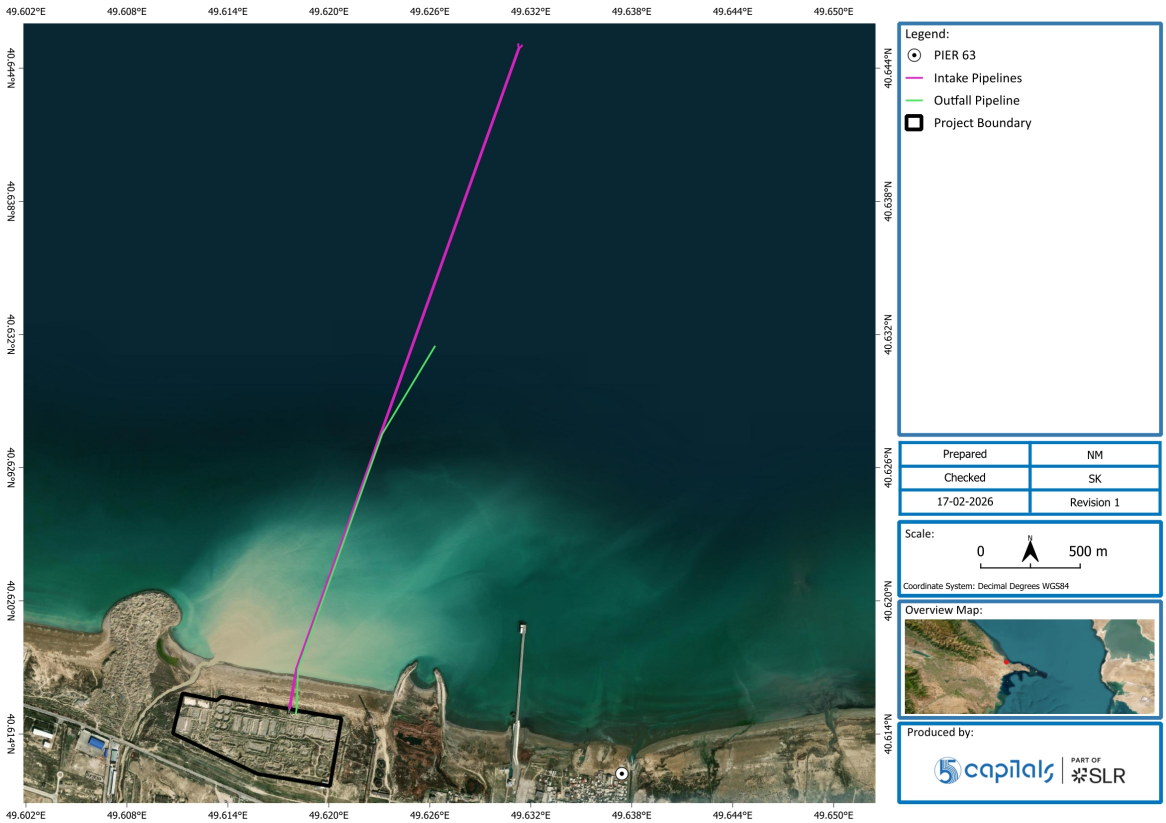


Figure 16-12 Location of Pier 63 in relation to the Project facilities

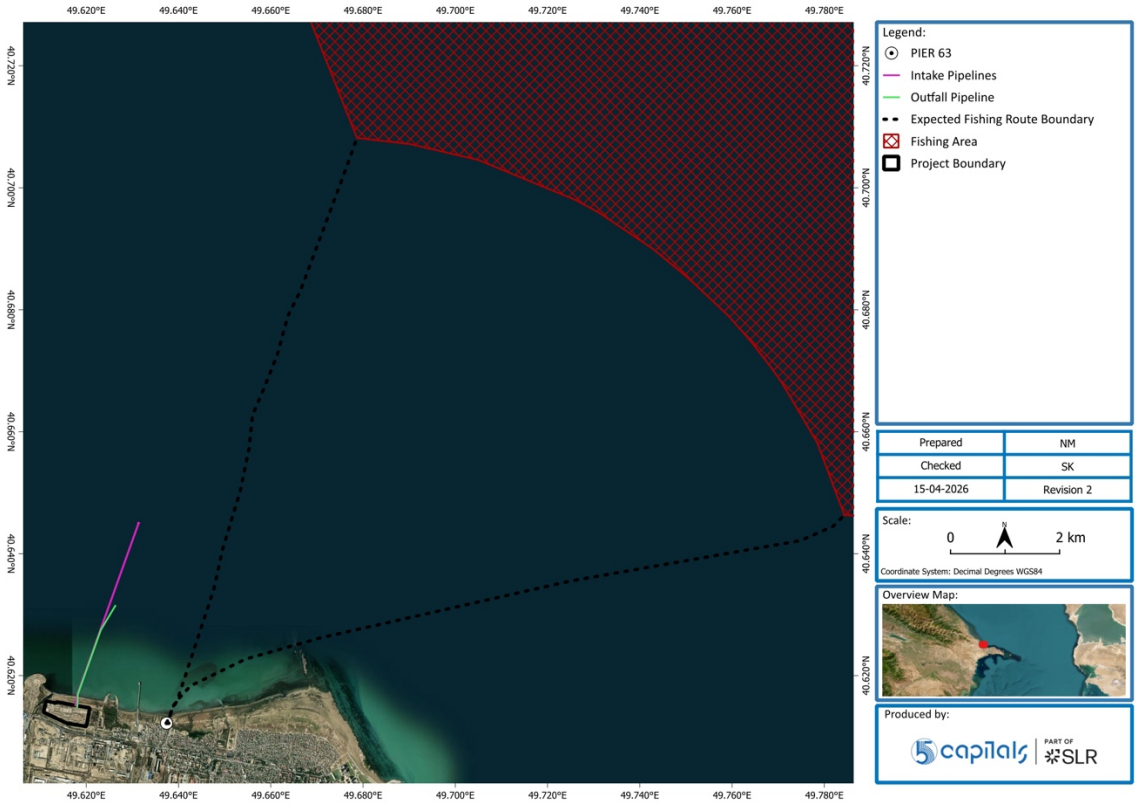


Figure 16-13 Indicative Fishing Area and Route

Household findings reveal that the surveyed fishermen originate from 3 settlements within the study area, namely; Haji Zeynalabdin, Kimyachilar, Khazar Baghlari, as well as 2 cities outside the study area, Baku and Sumgait. All 26 surveyed fishermen are male; no women were reported to be engaged in fishing activities at Pier 63. Seven (27%) out of the 26 surveyed fishermen own a boat, while the remaining 19 (73%) fishermen crew on someone else's boat.

Table 16-11 Surveyed fishermen's place of residence, 2026

No. of Fishermen	Haji Zeynalabdin	Khazar Baghlari	Kimyachilar	Baku/Sumgait
	1	3	14	8

Survey, KII, and FGD findings reveal that fishing is the primary source of livelihood for fishermen. The surveyed fishermen reported that they hold fishing permits from the State Border Service. A consultation letter was sent to SBS to request information on fishing permits, vessel routes, and authorized fishing grounds; however, no response has been received to date.

Fishermen further reported that fishing activities are organized under territorial system agreed upon by fishermen, whereby each fisherman maintains a designated fishing area. Reported catches include Black-spined herring, Caspian roach, Caspian kutum, Flathead grey mullet, carp, and bream. The surveyed fishermen's roles in fishing activities are reported in the table below.

The socio-economic survey recorded 26 individuals engaged in fishing-related livelihoods in the Project area. These include five boat owners, three crew members, two fishmongers, and three individuals involved in fishing net making and repair, alongside three others

engaged in related activities. This profile reflects the small-scale and diversified nature of local fishing livelihoods, encompassing both direct fishing activities and essential support roles.

Table 16-12 Surveyed fishermen's role in fishing activities, 2026

Total Fisherman	Boat owner	Crew Member	Fishmonger	Fishing net maker/ repairer	Other
26	5	3	2	3	3

The figure below presents the reported channels through which surveyed fishermen sell their fish catch. Approximately 80% of surveyed fishermen reported their direct sale of daily catch to individuals at the landing site or along the seashore, while 20% reported selling to middlemen or at urban markets. Fishermen stated that prices are either set independently, negotiated with buyers or determined by market conditions.

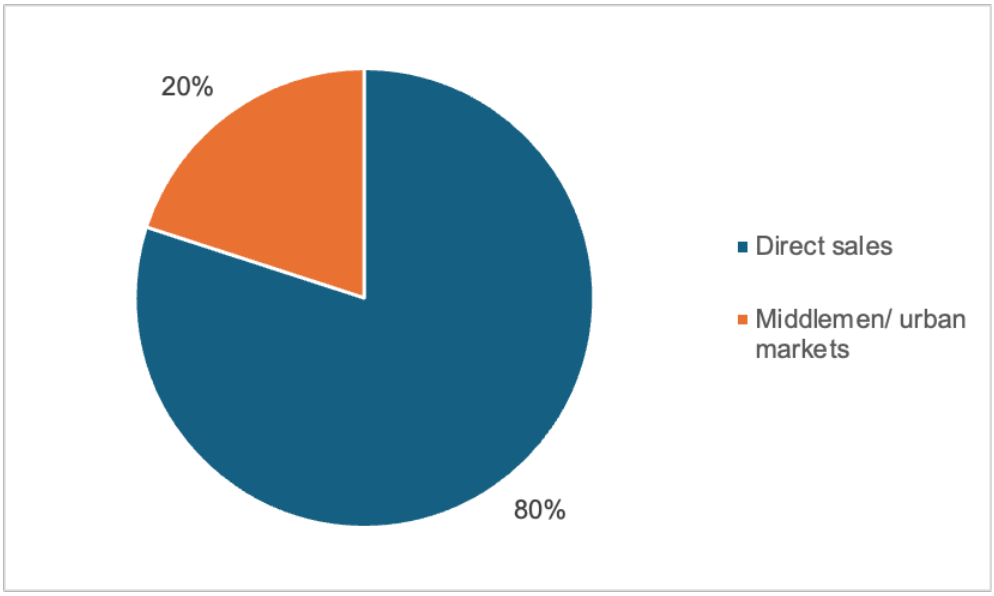


Figure 16-14 Channels of fish catch sales, 2026

Nearly all surveyed fishermen (95%) observed a decrease in catches over the last 5-10years, with the remainder reporting stable trends or that they were unsure. The reported decrease is reportedly believed to be caused by the receding shore, industrial pollution and increased number of fishermen (Fishermen FGD in Haji Zeynalabadin, 2026). During a KII, the Department of Fisheries and Aquaculture reported that changes in fish stocks are primarily linked with anthropogenic pressures and environmental changes.

Surveyed fishermen reported a moratorium from 1st May to 1st July during the spawning season, followed by restrictions allowing only recreational fishing with a limited catch of 5 kg from July to September. The prohibition of commercial fishing during the summer months reportedly contributes to the decline in fishing income.



Figure 16-15 Landing site at Pier 63





Figure 16-16 Pier 63



Figure 16-17 SBS guard office at Pier 63

16.3.8 Accommodation, Living Conditions and Household Amenities

The study area consists of urban settlements that function as outskirts and satellite areas of Sumgait city. Nearly half of Haji Zeynalabdin is characterized by multi-apartment buildings. Kimyachilar is predominantly composed of private houses, with a smaller number of dormitory and adjacent industrial and administrative buildings reflecting its original urban plan. Khazar Baghlari is a planned area of summerhouses developed over different periods on small plots. Finally, Khazri comprises a loosely planned mix of summerhouses and private yards, largely shaped during the Soviet period and the 1990s following the influx of IDP families.

Most surveyed households (56%) reported having lived in their respective settlements for 21 years or more. Only a small number of households, two households in Khazri and five households from Kimyachilar, reported a residence period of less than a year. The remaining households indicated that they have lived in the settlements for 11-20 years.

The figures below show the types of accommodation and living conditions in the study area. In Sumgait, the apartment sizes vary depending on the building age and type. Soviet era dwellings range from 45 to 90 m^2, depending on the number of rooms, while recently constructed buildings offer larger apartments ranging from 60 to 150 m^2 (Iqlim ESIA report, 2025). Dormitory apartments in Kimyachilar are generally small with the areas making up 30-45 m^2 (Iqlim ESIA report, 2025). In Haji Zeynalabdin, apartments tend to be small to medium sized, ranging from 30 to 80 m^2, as no new multi-apartment buildings have been constructed in the settlement (Iqlim ESIA report, 2025).

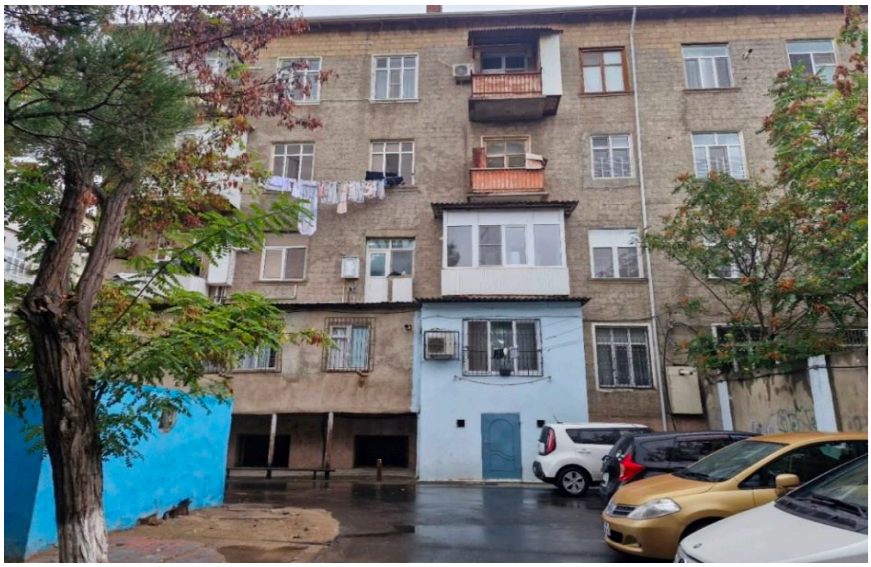


Figure 16-18 Multi-apartment building in central Sumgait (IQLIM ESIA report, 2025)



Figure 16-19 Street in Khazar Baghlari (IQLIM ESIA report, 2025)



Figure 16-20 Yard in Haji Zeynalabdin (IQLIM ESIA report, 2025)



Figure 16-21 IDP houses in Khazri (IQLIM ESIA report, 2025)



Figure 16-22 Dormitory in Kimyachilar (IQLIM ESIA report, 2025)

Only a small proportion of surveyed household reported holding a title deed or lease, whereas 58% indicated that they do not have formal ownership of their home. Among male-headed households, the highest proportion without formal ownership documentation was found in Khazri, while households with formal ownership documentation were concentrated mainly in Haji Zeynalabdin. Among female-headed households, a substantial majority in Khazar Baghlari (94%) reported not having formal ownership of their dwellings.

Approximately 28% all surveyed households cited better livelihood opportunities as the primary for residing in the settlements. Other reasons included displacement due to conflict (10%), better infrastructure (18%), affordable housing (7%), and proximity to family and friends (3%). Additional reasons mentioned were being born in the area, employment-related factors, and access to government housing assistance.

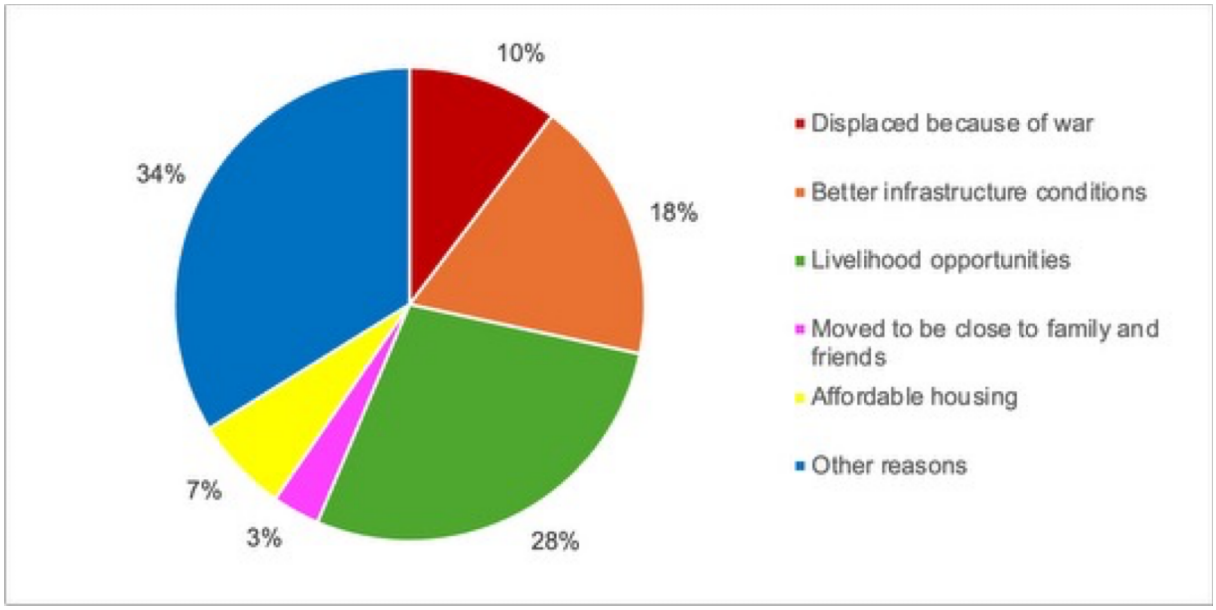


Figure 16-23 Reasons for residence in study area, 2026

16.3.8.1 Access to centralized water supply

According to Sumgait City EP (2026) all the settlements in the study area have access to drinking water. All surveyed households also indicated having access to centralized water supply. However, 19% of the surveyed households reported experiencing water shortages, typically once or twice a year, citing old infrastructure, maintenance issues, and increased demand as the main causes. Sumgait City EP (2026) stated that water pressures are low during Summer.

16.3.8.2 Access to electricity

Almost all the surveyed households in the study area have access to electricity, apart from one household in Khazri. Only 19% household experienced electricity shortages, citing increased demand as the primary cause.

16.3.8.3 Access to central sewage system

Approximately 74% of the households in the study area are connected to the central sewage system, while 26% rely on individual septic tanks (Sumgait City EP, 2026). Access is highest Haji Zeynalabdin (94%), Khazar Baghlari (95%), and Kimyachilar (89%), whereas most households in Khazri (93%) lack access to the centralized system.

The majority (78%) of surveyed households have access to an indoor toilet, while 13% use pit latrines. The remaining households, primarily in Kimyachilar, reported using of their neighbour's toilets.

16.3.8.4 Access to solid waste system

A large majority of surveyed households reported access to municipal solid waste collection, including 83% in Haji Zeynalabdin, 86% in Khazar Baghlari, 90% in Kimyachilar, and 86% in Khazri.

16.3.8.5 Access to centralized heating system

Only 3 surveyed households from Haji Zeynalabdin reported access to the centralized heating system.

16.3.8.6 Areas for improvement

The figure below shows the key areas for improvement identified by surveyed households. The top five priority areas for improvement are road infrastructure (94%), employment opportunities (87%), health facilities (70%), youth facilities (69%), and childcare facilities (56%). Kiyamchilar stands out, with the largest number of households highlighting road infrastructure, youth facilities, health facilities, and employment opportunities.

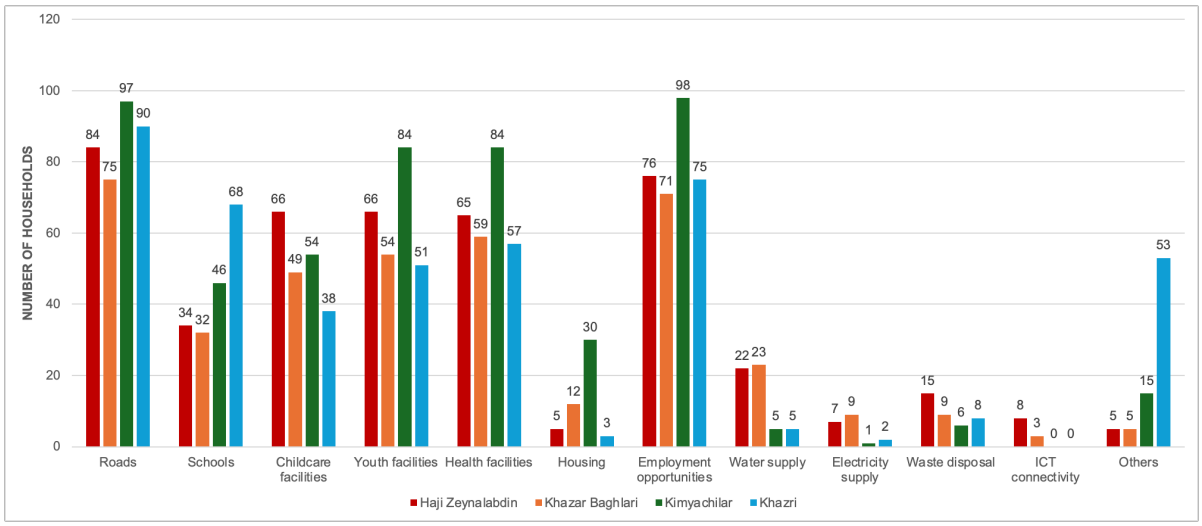


Figure 16-24 Key areas for improvement by surveyed settlement, 2026

16.3.8.7 Ownership of household amenities

Data on household amenities provides valuable insight into the economic status, living conditions, and access to information and communication technology (ICT) within households. The following table illustrates the various household amenities owned by the surveyed households. Male-headed household own more household items compared to the female-headed households.

According to the Gender Commissions representative in Sumgait Municipality (2026), traditional norms and family pressures often limit women's property ownership, despite legal rights. Weak legal awareness and financial dependency further restrict their control, although stronger institutional support can help overcome these barriers.

Table 16-13 Surveyed HHHs' ownership of household items by Gender, 2026

Household Item	Male-headed households				Female-headed households			
	Haji Zeynalabdin	Khazar Baghlari	Kimyachilar	Khazri	Haji Zeynalabdin	Khazar Baghlari	Kimyachilar	Khazri
Total HHHs	74	65	88	77	18	16	16	13
Television	72	64	84	74	18	16	16	13
Cell phone	73	64	86	76	17	15	15	13
Personal computer	16	13	7	12	4	2	1	1
Radio	0	0	0	0	0	1	0	0
Satellite dish	37	42	74	58	12	9	14	8
Solar panel	0	0	1	0	0	0	0	0
Internet – WiFi	73	62	77	68	16	16	15	9
Washing machine	71	63	82	69	16	16	12	9
Refrigerator	72	65	86	77	17	16	16	13
Car	30	28	23	33	5	1	1	5
Motorcycle	0	0	0	0	0	0	0	0
Bicycle	6	6	1	5	1	1	0	1
Fishing boat	0	0	3	0	1	0	0	0
Fishing rod	3	1	11	0	0	0	0	0
Fishing net	3	0	11	0	0	0	0	0

16.3.9 Health

16.3.9.1 National Overview

In 2023, the national life expectancy at birth for women and men was 77.13 years and 71.56 years respectively[65]. The total number of deaths in Azerbaijan was 58,909 deaths in 2024, of which 32,436 (55%) were males, and 26,473 (45%) were females. The leading causes of deaths in 2024 were heart diseases (57%), cancer and neoplastic diseases (16%), and traumas, poisonings, and other external factors (5%)[66].

The figure below presents the number of deaths recorded by age group[67]. The three age groups accounting for the highest share of deaths (73%) were individuals aged 60-69, those aged 80 and above, and those aged 70-79, with 15,802, 14,791, and 12,555 deaths, respectively. Individuals aged 0-19 recorded the lowest deaths (5%).

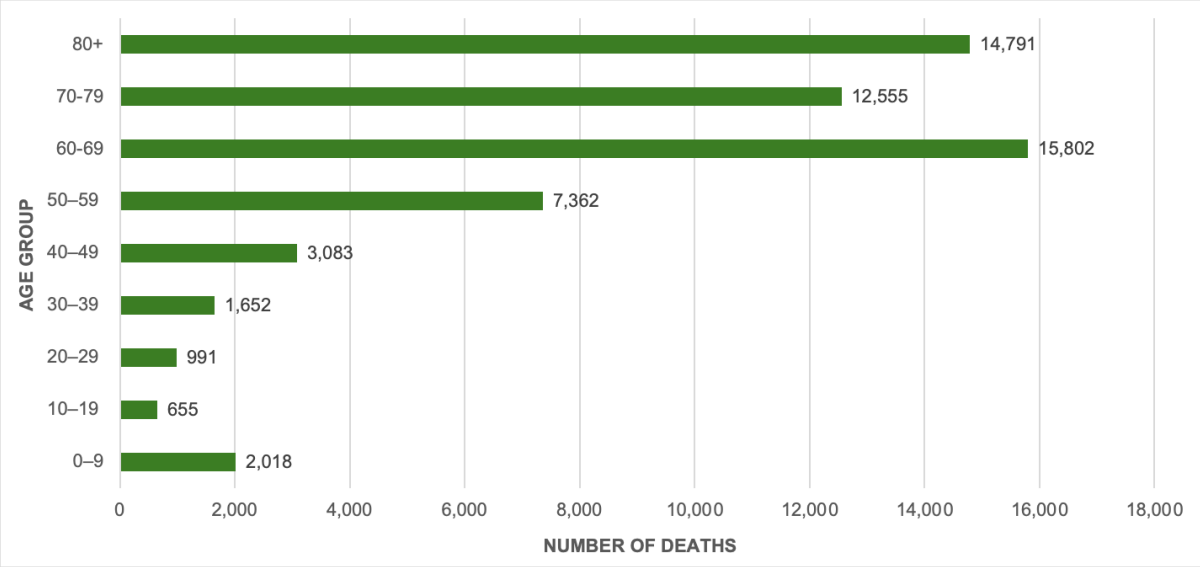


Figure 16-25 Number of deaths in Azerbaijan by Age Group in 2024 (State Statistical Committee, 2025)

National infant mortality rose from 1,242 deaths in 2020 to 1,420 deaths in 2024 among infants aged one year and below[68].

The national maternal mortality count increased from 20 deaths in 2020 (15.8 per 100,000 live births) to 29 deaths in 2024 (28.3 per 100,000 live births)[69].

[65] Statistica, 2023. “Azerbaijan: Life expectancy at birth from 2013 to 2023, gender”. Available in: https://www.statista.com/statistics/970407/life-expectancy-at-birth-in-azerbaijan-by-gender/.

[66] State Statistical Committee, 2025. “Number of deaths by main causes”. Available in: https://www.stat.gov.az/source/demography/.

[67] State Statistical Committee, 2025. “Number of deaths by age group, economic regions, and administrative-territorial units of the Republic of Azerbaijan in 2024”. Available in: https://www.stat.gov.az/source/demography/.

[68] State Statistical Committee, 2025. “Infant mortality by economic regions and administrative territorial units of the Republic of Azerbaijan.” Available in: https://www.stat.gov.az/source/demography/.

[69] State Statistical Committee, 2025. “Maternal deaths”. Available in: https://www.stat.gov.az/source/demography/.

16.3.9.2 Sumgait City

The total mortality in Sumgait City was recorded at 2,018 people in 2024, with higher deaths among males (1,155 individuals) compared to females (863 individuals)[70]. The figure below presents the number of deaths in Sumgait City by age group (State Statistical Committee, 2025). The three age groups accounting for the highest share of deaths (73%) were individuals aged 60-69, those individuals aged 70-79, and those aged 80 and above, with 590, 486, and 399 deaths, respectively. In contrast, individuals aged 0-19 recorded the lowest deaths (4%).

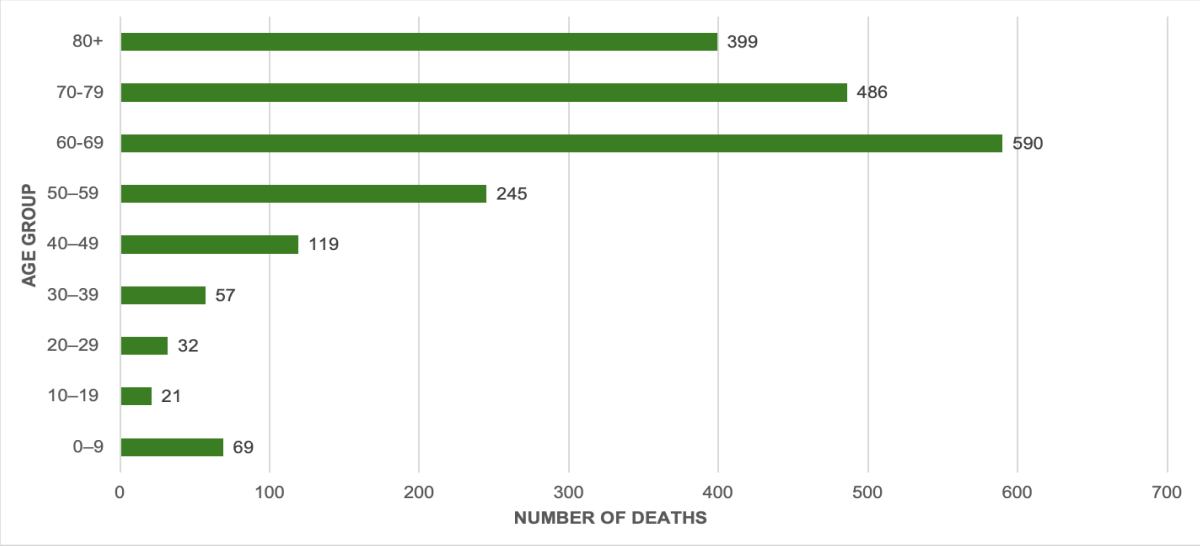


Figure 16-26 Number of deaths in Sumgait City by Age Group in 2024 (State Statistical Committee, 2025)

Maternal mortality in Sumgait City remained stable between 2020 and 2024, with one death recorded in both years (State Statistical Committee, 2024).

The infant mortality in Sumgait City increased from 50 deaths in 2020 to 55 deaths in 2024 (State Statistical Committee, 2024).

16.3.9.3 Health Profile of Surveyed Households

According to Sumgait City EP and local community representatives, the following healthcare facilities operate in the study area:

- Sumgait City Rehabilitation Centre – operating since 2005 for the rehabilitation of the social status of disabled people and their integration into the society. The centre is located near Khazar Baghlari.
- Family Health Centre #7 – operating in Haji Zeynalabdin, consisting of 20 ambulatory rooms.
- Hospital #3 – operating in the eastern entrance of Haji Zeynalabdin, offering 40 beds and 104 medical personnel.
- There are several pharmacies operating in Haji Zeynalabdin and Kimyachilar.

[70] State Statistical Committee, 2025. “Natural increase of the population, births and deaths by sex, economic regions and administrative territorial units of the Republic of Azerbaijan in 2024”. Available in: https://www.stat.gov.az/source/demography/.

KII data from Sumgait City (2026) shows that population growth in the region has attributed to the increasing demand for public services including healthcare facilities.



Figure 16-27 Family health centre and pharmacy in Haji Zeynalabdin (IQLIM ESIA report, 2025)



Figure 16-28 Sumgait City Rehabilitation Centre (IQLIM ESIA report, 2025)

A majority (46%) of surveyed households using health facilities rated them as good, while only 36% rated them as fair. Only 5% of the surveyed households rated them as poor.

The figure below presents the gender-disaggregated data on disease prevalence among the surveyed households. Male-headed households reported a substantially higher prevalence of members living with health conditions (54%) compared to female-headed households (25%).

In addition, the prevalence of hypertensive heart disease and diabetes was higher among MHHs than FHHs. Other health conditions reported by surveyed households include rheumatism, gastrointestinal diseases, and allergies.

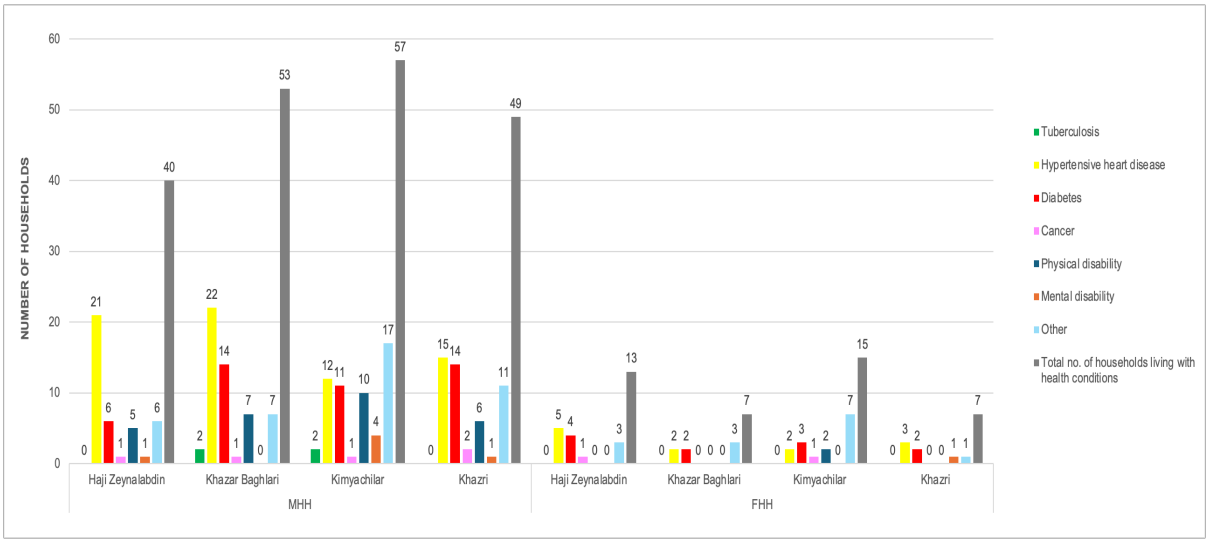


Figure 16-29 Disease prevalence among surveyed households by gender, 2026

The average monthly health expenditure among the surveyed households was AZN 102.

16.3.10 Internally Displaced Peoples

Azerbaijan has one of the highest concentrations of IDPs globally, comprising 6% of the country's population[71]. There were approximately 700,000 individuals and 175,034 families that that have been living in displacement since the first Nagorno-Karabakh war from 1988 to 1994, and the Second Karabakh War in 2020 (World Bank, 2023; JIPS, 2023). A significant proportion of the IDP population is considered among the country's most vulnerable groups as they live in poor housing conditions and lack financial resources due to their limited access to stable employment and high-income professions[72].

Since 1998, the Government of Azerbaijan and the World Bank have partnered to improve living conditions of IDPs, resulting in the Social Fund for the Development of Internally Displaced Persons (SFDI). Many IDP families continue to rely heavily on government support for housing and grants. A 2022 household survey of 2,000 IDPs, 87% of households receiving allowances ranked IDP allowance among their top two most important income sources, underscoring its critical role in their livelihoods. Additionally, IDPs often remain segregated from the host population in terms of access to various public services, including education, highlighting ongoing challenges in integration of equality of opportunity (World Bank, 2023). Most residents of the study area are permanently registered in their respective settlements (Iqlim ESIA report, 2025).

16.3.10.1 Sumgait City

The table below presents gender-disaggregated IDP population data in Sumgait City and settlements. Females comprise 56% of the IDP population.

[71] JIPS, 2023. "Strengthening the data systems and capacities of the IDP Committee in Azerbaijan". Available in: https://www.jips.org/news/strengthening-the-data-systems-and-capacities-of-the-idp-committee-in-azerbaijan/#_ftn1.

[72] World Bank. 2023. "Internally Displaced Persons in Azerbaijan: Livelihoods, Services and Intentions". Washington, DC: World Bank.

Table 16-14 IDP population in Sumgait City and settlements in 2025 (Sumgait City EP, 2026)

Sumgait City and settlements	Total population	Males	Females
	50,664	22,089 representing 44%	28,575 representing 56%

The gender-disaggregated IDP population by age group in Sumgait City is presented in the figure below (Sumgait City EP, 2026). Females comprise the majority of the IDP population across individuals aged 6-14, individuals aged 15-65, as well as those aged 65 and above.

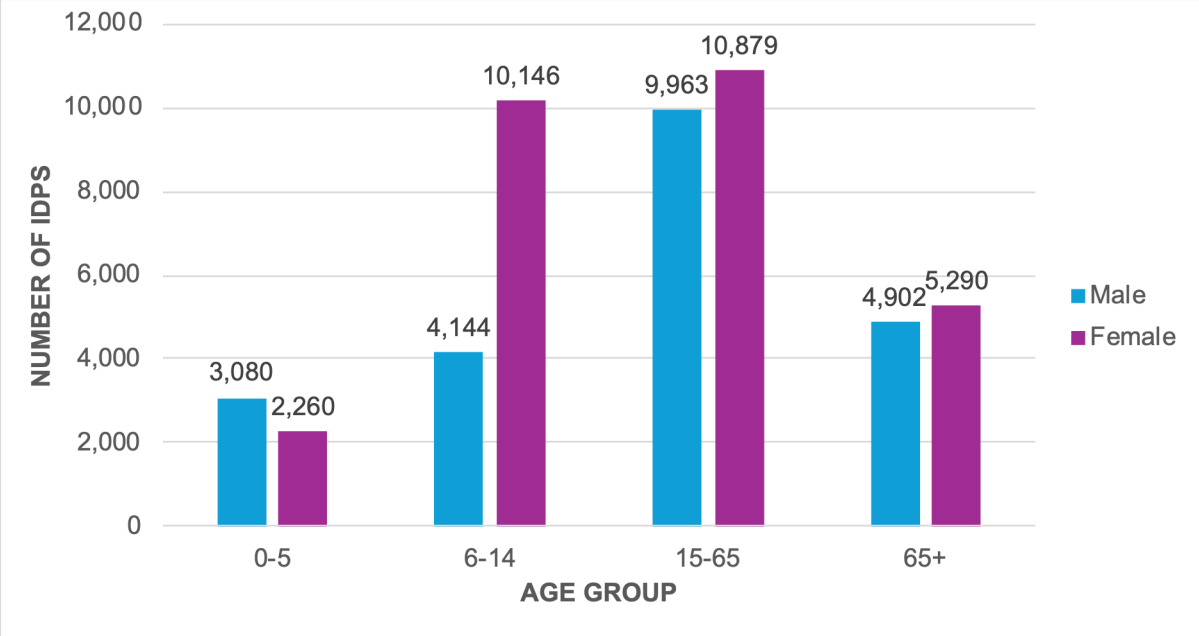


Figure 16-30 IDP Population in Sumgait by age group, 2025

16.3.10.2 Study Area

KII data from the State Committee for Refugees and IDPs (2026) and Sumgait City EP (2026) revealed that several IDP families are currently settled in the study area, with the majority residing in Kimyachilar (235 families and 914 individuals, of which 540 are female). Khazri has 73 IDP families, comprising of 300 individuals. Khazar Baghlari has 25 IDP families, comprising 110 individuals.

These IDP families primarily originated from Gubadli, Lachin and Jabarayil districts. In line with national reconstruction and resettlement plans for the liberated territories, most IDP families are expected to return to Garabagh and Eastern Zangezur over the coming years[73].

IDP families represent account for approximately 10% of households across the surveyed settlements, with male-headed households comprising 8% and female-headed households accounting for 2%.

[73] State Committee for Affairs of Refugees and Internally Displaced Persons of the Republic of Azerbaijan. 2025. "About the works done by the State Committee for Affairs of Refugee and Internally Displaced Persons". Accessed at: https://idp.gov.az/en/law/105/parent/15.

16.3.11 Vulnerable Groups

16.3.11.1 Sumgait City

According to Sumgait City EP, the following vulnerable groups were reported in Sumgait City and its settlements in 2025:

- 5,168 households that have lost a breadwinner,
- 425 individuals with war-related disabilities,
- 7,166 individuals aged 60 and above,
- 5,150 veterans, and
- 428 households with matyrs.

16.3.11.2 Study Area

Sumgait and Haji Zeynalabdin Municipalities reported that they do not have records of vulnerable groups in settlements of the study area. However, Sumgait City EP provided the following vulnerability data in the study area, apart from Haji Zeynalabdin settlement.

Table 16-15 Number of vulnerable households in the study area in 2025

Settlement	Vulnerable group	Number of households
Kiyamchilar	IDPs	235 (comprising 914 individuals)
	Single-parent households	114
	Child-headed households	3
	Female-headed households	358
	Elderly-headed households (60+)	214
	Households headed by persons with disabilities	72
	Marginalised-headed households	74
Khazri	IDPs	73 (comprising 300 individuals)
	Single-parent households	30
	Child-headed households	25
	Female-headed households	30
	Elderly-headed households (60+)	205
	Households headed by persons with disabilities	5
Khazar Baghlari	IDPs	25 (comprising 110 individuals)
	Single-parent households	109
	Child-headed households	30
	Female-headed households	85
	Elderly-headed households (60+)	600
	Households headed by persons with disabilities	250

Kiyamchilar recorded the highest proportions single-parent households (45%) and female-headed households (75%) in the study area. Khazar Baghari had the highest shares of child-headed households (52%) and households headed by persons with disabilities (75%).

Based on the household survey, the determination of vulnerable groups in the surveyed settlements was undertaken using the following criteria:

- Households with a monthly income that is below the national minimum wage of AZN 400.
- Households with female headship.
- Households with one or more members living with physical and/or mental disability.
- Households with one or more chronically ill members.
- Households with child headship.
- Elderly members (aged 50 and above) living without immediate family support.
- Households with IDPs.
- Households with war veterans (Gazi).

The table below presents the number of surveyed households by vulnerability criteria. None of the total surveyed households are child-headed. The surveyed households with war veterans[74] and households with one or more members living with a physical or mental disability were only recorded among the male-headed households.

Table 16-16 Surveyed Households by Vulnerability criteria, 2026

Vulnerability Criteria	Haji Zeynalabdin	Khazar Baghlari	Kimyachilar	Khazri	Total
Households with a monthly income that is below the national minimum wage of AZN 400	9	9	8	5	31
Households with female headship	16	10	13	10	49
Households with one or more members living with physical and/or mental disability	4	2	3	8	17
Households with one or more chronically ill members	1	1	0	0	2
Households with child headship	0	0	0	0	0
Elderly members (aged 50 and above) living without immediate family support	13	4	7	11	35
Households with IDPs	2	16	10	8	36
Households with war veterans (Gazi)	0	0	2	0	2

16.3.12 Gender Equality

Since Azerbaijan's 2015 commitment at the United Nations Global Leaders' Meeting on Gender Equality and Women's Empowerment, the government has been active in

[74] Kiyamchilar was the only settlement that recorded households with war veterans.

mainstreaming gender quality in state programmes and legislation. It has also implemented initiatives focused on stakeholder and public education in areas such as combating violence against women and girls, protecting women and children with disabilities, human trafficking prevention, promotion of women's reproductive health, and improving women's economic participation.

Additionally, the Government has set up the State Committee for Family, Women and Children Affairs as the executive body mandated to implement and regulate state policy on the family, women's and children's issues under the Cabinet of Ministers[75].

Despite these efforts, challenges remain, results of a survey conducted in 2018 "International Men and Gender Equality Survey" revealed that Azerbaijan is a patriarchal society, sustained by gender and social norms[76]. Respondents stated their preference for a greater number of sons than daughters as sons are seen as custodians of the family lineage, primary providers of financial support for parents in old age, and key role players in family ceremonies. Additionally, men in Azerbaijan are traditionally viewed as primary breadwinners in households, and women have the primary responsibility of caregiving and day-to-day domestic tasks. However, there are men who share in the household chores[77].

Women have also been recorded to have limited decision-making power on important matters that affect them and lack economic agency in the household. Men make majority of decisions on large household purchases and dictate when their wives can visit their family and relatives (UNFPA, 2023). In some instances, women do not have the final say on decisions about their own health (UNFPA, 2023; UN Azerbaijan, 2020).

16.3.12.1 Study Area

According to the Gender Commissions representative in Sumgait Municipality (2026), there has been a shift in gender roles overtime, as women are increasingly active in professional, economic, and public spheres, and men are more involved in caregiving and household work. It was further explained that while traditional roles remain in some areas, the overall trends point toward greater gender equality. Cultural norms and stereotypes linking women to caregiving and men to breadwinning reportedly limit women's participation in education, employment, leadership, and property ownership, while restricting men's role in household work. Despite legal guarantees of equality, changing these mindsets requires awareness-raising, education, and institutional support.

Findings from FDGs with women from the surveyed settlements highlighted persistent workplace gender disparities where men dominate technical and leadership positions, receive higher pay and promotions, while women are largely restricted to non-technical roles and often traditionally viewed as mothers.

It was reported that culture shapes society's values, behavioural norms, and ways of thinking (Haji Zeynalabdin Municipality, 2026). Management of household finances, land use, and property ownership are legally determined by the named owner, but in practice are often controlled by the household head, usually men or elders (Sumgait Municipality, 2026). Although legislation guarantees equal rights, intra-family traditions often shape actual control (Sumgait Municipality, 2026).

[75] State Committee for Family, Women and Children Affairs of Azerbaijan. "About Us". Available in: https://family.gov.az/en/pages/haqqimizda.

[76] UNFPA. 2023. "Fact sheet: Azerbaijan". Every Girl Counts: Addressing Son Preference and Daughter Aversion. Available in: https://eeca.unfpa.org/sites/default/files/pub-pdf/unfpa_azerbaijan_factsheet_3.pdf.

[77] Promundo, et. al. 2018. "Gender equality and gender relations in Azerbaijan: current trends and opportunities". Findings from the Men and Gender Equality Survey (IMAGES). Baku: UNFPA, Baku, Azerbaijan.

Most surveyed households (85%) reported that men and women are treated fairly in the workplace and community, whereas 15% indicated that they are not. Surveyed male household heads generally expressed the view that women's rights are upheld, household decisions are made jointly, and that no discrimination exists, emphasizing rights for all. Other views expressed include the perception that men have more work responsibilities and that their opinions carry greater authority. The spouses of male-household heads reported that although some rights are equal, men are often given preference in society, and women are discouraged from speaking.

16.3.12.2Gender equality in households

Approximately 63% of surveyed households reported that the head of the household is the primary financial decision-maker, while 35% reported that financial decisions are made jointly by the HHH and spouse. Only 2% reported that the spouse holds as the sole decision-maker.

Survey findings indicate that 12% of women own assets, while the vast majority (88%) do not own assets. Among women who reported asset ownership, 33 own a house or apartment, 9 own land, and 4 own cars.

16.3.13 Existing Infrastructure near the Project Area

The proposed desalination plant is located along the Caspian Sea coastline within an industrially zoned area of Sumgait Industrial Park. The surrounding land use is predominantly industrial, and the site visit conducted by 5 Capitals on 2 July 2025 found that no residential buildings are located within the Project boundary. Access to the Project site is provided via existing paved internal road (Samad Vurgun street) within Sumgait Industrial Park, which connects to the main road network serving Sumgait city. These roads are currently used for industrial traffic and nearby settlements. As detailed in Section 2, nearby human receptors within a 5 km radius of the Project area include settlements, individual residence, commercial, and industrial facilities.

In addition, a KII meeting with the State Border Service guard at Pier 63 confirmed the presence of industrial cooling infrastructure belonging to SOCAR Polymer LLC, as depicted in the figure below. A consultation letter was sent to SOCAR however their response is pending to date.



Figure 16-31 SOCAR cooling system located behind the green SBS security post at Pier 63

16.3.14 Anticipated Project Impacts

The anticipated positive and adverse impacts on local communities include the following:

- Potential provision of internships and employment opportunities through the Project.
- Increased water supply and improve access to clean water.
- Enhanced water availability supporting agricultural activities in other regions of the country.
- Potential air and noise impacts from desalination plant activities, with possible effects on community health.
- During construction and operation, access to recreational areas, navigation routes, and fishing grounds will be maintained to support the continued use by fishermen and to prevent potential conflicts.
- No anticipated project-related GBVH/SEA risks, as similar activities have previously been implemented without reported incidents.

16.4 Area of Influence and Receptors

16.4.1 Area of Influence

The area of influence for socioeconomic impacts varies depending on the nature of the Project's direct and indirect impacts. The area of influence of each potential impact is presented in the table below.

Table 16-17 Project AoI by Impact

Impact	Area of Influence
Employment and economics	Sumgait City and its settlements, as well as other parts of Azerbaijan
Training and dissemination of skills	Sumgait City and its settlements, including other parts of Azerbaijan from which workers will be recruited
Impact on existing public infrastructure and services	Nearby communities, including Haji Zeynalabdin, Khazar Baghlar, Kimyachilar, and Khazri
Disproportionate impacts on women and vulnerable groups	Nearby communities, including Haji Zeynalabdin, Khazar Baghlar, Kimyachilar, and Khazri

16.4.2 Receptors

Table 16-18 Socioeconomic impacts - receptors

Receptor	Sensitivity	Justification
Employment market	**Medium**	The development of the Project is expected to generate employment opportunities for local and regional communities, particularly during construction. The Project will also facilitate skills development and knowledge transfer, contributing to long-term workforce capacity in the region.
Welfare of local population/Project-affected communities	**Medium**	Changes to infrastructure, population dynamics, or regional resource flows may result in potential positive or adverse socioeconomic impacts on nearby settlements, due to their dependence on public infrastructure and services, as identified in the baseline study.
Vulnerable groups & women	**Medium**	Vulnerable groups & women may face disproportionate socioeconomic impacts from the Project relative to the broader community.
Livelihood activities	**Low**	Consultations undertaken reveal that fishing activities are conducted 10 km east from Pier 63. Pier 63 is located 1,500 m away from PLANT site boundary.
Local rental market	**Low**	The location of the workers accommodation has not been finalised. However, if such facilities are established within adjacent communities, this could create upward pressure on rental prices, potentially affecting local residents.
Existing infrastructure	**Medium**	Impact on existing infrastructure, including public transport systems

16.5 Potential Impacts, Mitigation, Management & Residual Impacts

16.5.1 Construction Phase

16.5.1.1 Employment and Economics

The main economic impact during construction is likely to be temporary employment opportunities for unskilled and applicably skilled workers. This is anticipated by the nearby communities as a positive Project impact. Local workers will be hired where possible to reduce the risk of conflict with migrants based on their skill set and Project requirements.

In addition to the direct monetary uplift to the families of those employed, money paid to workers may also stimulate the local economy via the multiplier effect, whereby money earned on the Project expended locally re-circulates within the local economy.

It is noted that the anticipated number of workers during peak construction is 1,800. As a result, employment opportunities will be limited, and the Project will need to manage the local communities' expectations and ensure implementation of a transparent recruitment process. This process will clearly define the various jobs roles, including the required skill sets and qualifications including how to apply.

Additionally, some of the workforce will come from other countries and this could result in the repatriation of wages and a reduction in the benefit to the local economy of wage expenditure. The magnitude of this impact is therefore determined to be minor.

16.5.1.2 Training and Dissemination of Skills

Beyond direct employment benefits form construction phase employment, the Project may facilitate skills transfer from expatriate workers to the local labour force, enhancing local skill sets and future employability.

While this capacity building can support long-term economic development, the relatively small scale and short duration of local employment limit the overall impact, which is considered minor.

16.5.1.3 Impact on Existing Public Infrastructure and Services

The construction phase is expected to generate approximately 1,800 temporary employment opportunities, which may result in an influx of migrant workers from other regions of Azerbaijan. Where skilled labour is not available locally, the Project will recruit workers from outside the nearby communities. This influx, including the collective demand from workers associated with multiple industrial facilities in Sumgait city could place a cumulative demand for local infrastructure and services in nearby settlements, potentially straining transport systems, utilities, healthcare, and waste management systems. The magnitude of this impact is assessed to be moderate**.**

16.5.1.4 Assessment of Project Impacts on Local Fishing Livelihoods

As documented in the IQLIM ESIA Report (2025), a local fishing brigade comprising 28 individuals was previously identified as operating in proximity to the Project area. This ESIA has updated this baseline and identified a total of 35 local fishermen residing within nearby settlements. To robustly assess the potential for Project-related impacts on fishing-based livelihoods, the ESIA team undertook in-depth stakeholder engagement, including Key Informant Interviews (KIIs), Focus Group Discussions (FGDs), and 26 household-level surveys with fishermen and fishing-dependent households.

The assessment focused on potential physical displacement, economic displacement, loss of access to marine resources, changes in fish availability, and occupational safety risks.

Based on consultations with local authorities, including the Executive Power of Sumgayit and the Minsitry of Agriculture in Azerbaijan, and stakeholder engagement undertaken as part of the ESIA process, the marine area within and surrounding the Project site is formally designated as a restricted coastal zone under applicable national regulatory frameworks governing the Caspian Sea. In accordance with Azerbaijani legislation on maritime safety, coastal protection, and industrial/security exclusion zones (including provisions typically applied around strategic infrastructure and port/industrial developments), unauthorised marine activities, such as fishing, navigation, and resource extraction are prohibited within delineated nearshore buffer zones. This regulatory restriction has been consistently confirmed by relevant authorities during consultations, including discussions with lenders and other project stakeholders.

While a limited number of individuals reported occasional fishing activity in the vicinity of the Project area, these activities appear to be informal, sporadic, and undertaken outside the scope of legally permitted fishing operations. Available evidence indicates that fishing in this restricted zone is neither formally licensed nor recognized as a primary livelihood activity. Furthermore, where fishing permits are issued in broader coastal areas, they typically specify low allowable catch volumes and are subject to seasonal, climatic, and ecological constraints, which further limit their economic reliability as a sustained income source.

Stakeholders have predominantly expressed their interest in employment opportunities associated with the Project, indicating a preference for access to stable, project-related income rather than compensation for loss of fishing-based livelihoods, further indicating the supplementary and non-dependent nature of such activities.

In line with IFC PS and Good International Industry Practice (GIIP), the Project has adopted a proportionate and evidence-based approach to livelihood considerations. This includes a commitment to prioritise local employment opportunities, including individuals engaged in informal or supplementary income-generating activities, subject to meeting required skills and qualifications. This measure is considered appropriate given the regulatory prohibition of fishing within the Project area and the absence of demonstrable economic dependence on such activities.

Accordingly, taking into account (i) the legally established restriction on fishing within the Project's coastal zone, (ii) the informal and non-primary nature of reported fishing activities, and (iii) the nature of grievances received, no significant adverse impacts on formal or primary livelihoods related to fishing are anticipated as a result of the Project. The Project will, however, continue to monitor stakeholder feedback and maintain an accessible Grievance Redress Mechanism (GRM) to address any emerging concerns in accordance with IFC requirements.

Overall, based on the findings of the baseline studies, stakeholder consultations, and impact assessment, the following conclusions have been reached:

- No physical displacement of fishermen is anticipated, as the Project does not require relocation of coastal communities, landing areas, or fishing-related infrastructure. Similarly, economic displacement is not anticipated because of the Project as the established fishing routes and routine fishing activities do not overlap with the intake and outfall pipeline corridors, nor do they fall within the Project Area of Influence. As a result, the Project will not restrict access to fishing grounds, disrupt navigation routes, or affect fishing-related livelihoods. Existing fishing practices are expected to continue without interruption throughout both the construction and operational phases of the Project.

- During Focus Group Discussions and participatory mapping exercises during the Household Survey, fishermen were asked to indicate all locations where they commonly fish. None of the identified areas overlapped with the location of the marine intake, outfall pipelines, or associated marine works. All 26 surveyed households and key informants confirmed that traditional fishing grounds are located outside the Project AoI. Fishing activity is concentrated in areas beyond the reach of construction or operational zones.
- The marine intake and outfall pipelines have been sited outside established and traditionally used fishing areas and routes, as confirmed through FGDs and participatory mapping exercises with local fishermen. Construction-phase marine works may require temporary safety or exclusion zones; however, these zones are limited in spatial extent, duration, and timing, and do not overlap with commonly used fishing routes or grounds. During construction, silt curtains and clearly visible marker buoys will be installed to delineate the offshore works area and ensure that the construction zone is readily identifiable to fishermen and other marine users, thereby reducing the risk of accidental entry into active work areas. As such, no long-term or material restriction of access to fishing areas is anticipated during either construction or operation.

On this basis, local fishermen do not meet the IFC criteria for directly affected stakeholders in relation to the intake and outfall components of the Project, as there is no reasonable likelihood of significant, project-induced adverse impacts on their livelihoods, access to resources, or safety. The magnitude of this impact is therefore determined to minor.

Engagement with local fishermen will continue through ongoing information disclosure, consultation, inclusion in broader stakeholder engagement activities, and access to the Project Grievance Redress Mechanism (GRM), in accordance with the Stakeholder Engagement Plan (SEP).

16.5.1.5 Workers Accommodation Facilities

Approximately 10% of surveyed households reported increased rental prices attributed to worker influx in the settlements, while 3% indicated concerns related to overcrowding. Approximately 14% of surveyed households reported that no impacts associated with worker influx have been experienced in the settlements.

The location of the workers accommodation has not been finalised. Accommodating Project workers, including sub-contractor personnel in Sumgait city and nearby settlements may increase demand for housing and place upward pressure on housing costs. Given the relatively low household incomes identified in the household survey, increased rental prices may disproportionately affect local residents. Due to the size of the construction workforce and the size of Sumgait, this impact is considered to be of negligible magnitude.

16.5.1.6 Purchase of Construction Materials and Food Products Locally

Construction phase spending on local and imported goods and services may provide minor economic benefits. Local suppliers may benefit from increased demand for food products and daily necessities from the construction workforce, potentially boosting the local economy. However, competition among local suppliers to meet this demand, combined with the presence of an existing industrial workforce in Sumgait Industrial Park, could limit supply and drive-up prices for essential goods, potentially affecting households with low incomes. Additionally, some suppliers may not meet the required quality or safety standards, restricting their ability to benefit. Overall, the impact is considered **minor**.

16.5.1.7 Disproportionate Impacts to Vulnerable Groups and Women

Employment and Economic Opportunities

Data from Sumgait City EP revealed that there are 327 households that are headed by people living with disabilities. The FGD findings also revealed that people living with disabilities do not have access to employment opportunities. The Gender Commissions representative of Sumgait Municipality (2026) further explained that women's participation is limited in construction, maritime engineering, mechanical, and heavy industry sectors due to occupational stereotypes and limited access to technical training.

Women and persons with disabilities in the Project communities may face unequal access to employment opportunities due to gender norms and discrimination during recruitment processes. Cultural expectations, as reflected in the household survey, indicate that women are generally expected to be homemakers, which may further limit their participation in the Project's workforce.

Gender-based Violence and Harassment (GBVH) and Community Safety

The combined presence of Project workers, and other existing workers in Sumgait, may be associated with potential risks related to GBVH, and labour-related issues, particularly for women and children. These risks arise from the overall increase in the workforce within nearby settlements.

Findings from FGDs with women and female youth in the study area indicate that participants generally feel safe in the settlements and in Sumgait city, despite the regular presence of migrant workers from Baku and Sumgait. No safety incidents linked to migrant workers were reported.

The most commonly reported social issues among surveyed households in the study area were petty theft (43%), house break-ins (9%), and alcohol and drug abuse (48%). Key safety concerns reported by women FGD participants relate to drug users, high-speed traffic, harassment in crowded areas, inadequate street lighting, limited surveillance, and unwanted attention toward young women. Night-time was perceived as less safe, particularly due to the presence of drug users (Sumgait State University female youth FGD, 2026).

Only one GBVH case was reported from Khazar Baghlari through the household survey, while no GBVH cases were reported by the FGD participants. Participants were aware of available GBVH reporting channels, including the police, GBVH and domestic violence hotline, and other support mechanisms. The female youth group indicated that they do not feel comfortable reporting incidents through formal channels and typically inform their families instead (Sumgait State University female youth FGD, 2026). Participants noted that their families are supportive, responsive, and actively assist in addressing any issues that arise.

According to the Gender Commission representative of Sumgait Municipality (2026), domestic violence is common but underreported due to fear of retaliation, job loss, social stigma, and reputational harm. While project activities are not expected to directly increase GBVH or SH incidents, workforce influx and social changes during construction and operation may create indirect risks, particularly where oversight is weak (Gender Commissions representative of Sumgait Municipality, 2026). Women, especially low-income women, are the most vulnerable due to economic dependency, unpaid care burdens, greater exposure to public safety risks, and limited access to reporting and support mechanisms (Gender Commissions representative of Sumgait Municipality, 2026).

For more information, refer to the Community Health, Safety, and Security (CHSS) and Labour & Working Conditions sections.

Children and Safety Risks

Children in nearby settlements may face safety risks due to increased traffic and movement of heavy machinery during construction and operation. Potential safety hazards include vehicle collisions and reduced visibility along the Main Road (Samad Vurgun Street), located 87 m from the Project site. The Main Road provides an important connectivity between industrial facilities, nearby settlements, and access roads leading to the Project site. Based on site visits and KII findings, educational facilities are present near the Project site, namely; Kindergarten No. 6 located approximately 1,800 m away, Jabrayil District Secondary IDP School No. 5, 750 m away, and Gudadli District Khalaj Village Secondary IDP School around 2,700 m away.

Although the Project will not use the community access roads, the cumulative presence of existing traffic from industrial activities in Sumgait Industrial Park combined with Project-related construction vehicles may increase overall traffic volumes near the Project site. Despite this, the risk to children is assessed as low due to the dedicated gravel access road to the Project site.

Barriers to Consultation and Participation

The KIIs with Sumgait City EP, door to door visits with vulnerable groups, and household surveys identified a number of households that are headed by people living with disabilities or with household members who have disabilities. These disabilities may limit their ability to attend meetings or actively participation in meetings, including their capacity to access the Grievance Redress Mechanism (GRM).

16.5.2 Operation Phase

16.5.2.1 Employment and Economics

The operation of the PLANT will create employment opportunities, although these will be fewer than the construction phase. Whilst the size of the required workforce is significantly smaller, the type of work and the increased timescales involved offer an opportunity for greater dissemination of skills. A targeted system of local recruitment and investment in the human capital of the local workforce will enhance this process and consequently increase the benefit to the local economy.

16.5.2.2 Livelihood Activities

No operation phase impacts on livelihoods of local fishermen are anticipated, as intake and outfall structures are located outside traditional fishing grounds, and normal operations are not expected to restrict access or reduce fish stocks. Nevertheless, ongoing stakeholder engagement remains essential to monitor potential concerns, address any unforeseen issues, and ensure fishermen continued safe access to fishing grounds. Regular communication, information disclosure, and use of the GRM will maintain trust, manage expectations, and prevent potential conflict, ensuring that the livelihoods of local fishermen are protected throughout the operation phase.

16.5.2.3 Improved Drinking Water Supply

The Project aims to meet the growing demand for potable water in Baku and surrounding urban areas, reduce reliance on traditional river and reservoir systems, and enhance the long-term sustainability and resilience of the public drinking water supply system. Consultations with regional and local authorities as well as nearby communities indicate strong support and positive anticipation that the Project will improve access to drinking water for nearby settlements and surrounding regions.

Table 16-19 Socioeconomic Impact Significance, Mitigation Measures and Residual Impacts

Potential Impact	Magnitude	Receptor	Sensitivity	Potential Impact Significance	Mitigation and Management Measures	Residual Impact
Construction						
Employment opportunities	**Minor**	Local communities and households in nearby settlements	**Medium**	**Minor**	• Development and implementation of a Local employment management plan as part of the Labour and Working Conditions Management Plan (LWCMP). The Plan will prioritize the employment of qualified individuals from communities in the AoI, i.e. Sumgait City and settlements, as well as promote fair and transparent hiring. • The EPC Contractor will prioritize local hiring while employing unskilled and semiskilled labour from the Project area. • The EPC Contractor will undertake local community consultations with EP representatives during the recruitment process to identify potential candidates. • The EPC Contractor will provide equal employment opportunities to women and preference will be given to local women and people living with disabilities, where applicable, for unskilled and semi-skilled labour positions.	**Minor**
Purchase of Construction Materials and Food Products Locally	**Minor**	Local/Regional Economy	**High**	**Minor**	• The EPC Contractor will purchase goods and materials from the local/regional economy where available. • Establish market network between the Project workers and the local people in consultation with the community leaders. • The EPC Contractor will publish procurement opportunities in local media and notice boards, ensuring equal access for all interested suppliers. • The EPC Contractor will promote partnership between local suppliers and subcontractors to ensure consistent supply chain for Project workers. • The EPC Contractor will establish clear supplier selection and give preference to capable local suppliers while maintaining standards.	**Negligible**
Training & dissemination of skills	**Minor**	Local/Regional Economy	**High**	**Minor**	• All project employees and contracted workers will have equitable access to relevant on-the-job trainings, which will enable the dissemination of specialist and transferable skills within the Project's construction phase. • Toolbox talks will be conducted before work on each day to ensure workers are reminded of key topics.	**Neglibible**

Potential Impact	Magnitude	Receptor	Sensitivity	Potential Impact Significance	Mitigation and Management Measures	Residual Impact
					• Cultural awareness training for all foreign workers and those coming from other regions in Azerbaijan as applicable.	
Impact on existing public infrastructure and services	**Minor**	Existing public infrastructure and services within the Project AoI	**Medium**	**Moderate**	• The EPC will undertake additional consultations with nearby stakeholders, including SOCAR Polymer LLC, local schools, and neighbouring plants and factories once the design of the Project facilities has been finalised and prior to the commencement of construction. These consultations will help to identify potential conflicts, coordinate access, and minimize impacts on existing public infrastructure and services. • Implement the technical conditions including the required buffer zones (if any) based on the outcome of consultations. • The EPC will develop and implement a construction phase Occupational Health and Safety Management System including an Occupational Health Management Plan.	**Minor to negligible**
Livelihood activities	**Minor**	Local fishermen within the Project AoI	**High**	**Minor**	• Continue implementation of the SEP, including regular engagement with fishermen throughout construction. • Provide advance notification of marine construction activities, temporary exclusion zones, and vessel movements through locally appropriate communication channels. • Maintain safe navigation corridors wherever practicable and minimise the duration and spatial extent of temporary marine exclusion zones. • Record and investigate any livelihood-related grievances through Project GRM and implement corrective actions where required. • Monitor fishing access, fishing activity, and stakeholder feedback throughout construction to verify the ESIA conclusions. • Where monitoring identifies unforeseen Project-attributable livelihood impacts, the Project Company shall undertake a supplementary livelihood assessment and implement proportionate mitigation, and livelihood restoration measures consistent with the lender requirements. • The livelihood monitoring programme will form part of the ESMP and Contractor ESMPs and will be periodically reviewed during construction.	**Minor to negligible**
Disproportionate Impacts to Vulnerable Groups and	**Minor**	Vulnerable Groups, including children,	**High**	**Moderate**	• Implementation of the SEP including the engagement and consultations of vulnerable groups during the implementation of the project.	**Minor**

Potential Impact	Magnitude	Receptor	Sensitivity	Potential Impact Significance	Mitigation and Management Measures	Residual Impact
		people living with disabilities & women			• The HSSE Management System will address worker influx risks including those related to misconduct of workers and risk of GBVH. • The Project will implement engagement approaches such as oral presentations, use of visual materials and the option for verbal submission of grievances etc, in accordance with the SEP. • The EPC Contractor will engage local authorities and school management to identify high-risk areas, provide regular updates on construction schedules, as well as conduct road safety awareness campaigns targeting children, parents, and school staff about construction hazards, vehicle movement, and safe routes. • The EPC Contractor will implement the Traffic Management Plan to restrict construction and heavy vehicle traffic to dedicated access routes, avoiding community access roads near schools and residential areas, as well as coordinate vehicle schedules to minimize peak traffic periods near schools. • Local communities and other stakeholders will be informed of the existence of the GRM, how to access it, the resolution timelines etc in accordance with the SEP.	
Impact from worker's accommodation facilities	**Negligible**	Local Rental Market	**High**	**Minor**	• Consultations will be undertaken with relevant stakeholders including local leaders and communities before finalization of location of workers accommodation facilities. This will also include the assessment of potential impacts on rental prices and mitigate any related labour influx risks such as nuisance, safety and increased demand for local services. • Implement a Worker's Accommodation Management Plan compliant with the applicable IFC/EBRD Guidelines. • The Project will implement a Grievance Redress Mechanism which local communities can use to express their concerns or comments in relation to the location of workers accommodation facilities.	**Negligible**
Operation						
Employment opportunities	**Minor**	Employment Market	**Medium**	**Minor**	• Provide targeted training programs, apprenticeships, and on-the-job mentoring to equip local workers with the technical skills required PLANT operations. • Collaborate with local vocational schools and university to build a pipeline of qualified local candidates for long-term employment.	**Negligible**

Potential Impact	Magnitude	Receptor	Sensitivity	Potential Impact Significance	Mitigation and Management Measures	Residual Impact
					• Conduct consultations with nearby communities prior to commencement of operational phase regarding operational employment opportunities as well as to manage expectations.	
Livelihoods	**Minor**	Local fishermen within the Project AoI	**High**	**Minor**	• Continue periodic engagement with fishermen and local communities through implementation of the SEP. • Maintain unrestricted access to traditional fishing grounds outside operational safety areas. • Continue operational marine water quality monitoring including salinity, temperature and other parameters as defined in the Marine Monitoring Programme. • Monitor stakeholder feedback and livelihood-related grievances throughout operation. • Periodically verify that Project operations are not creating unforeseen restrictions to fishing access or affecting fishing livelihoods. • Should Project-related livelihood impacts be identified through monitoring or the GRM, undertake additional investigations and implement proportionate corrective actions consistent with lender requirements.	**Negligible**
Sustainable water supply	**Moderate**	Local and regional communities	**High**	**Moderate**	• Ensure continuous water quality monitoring systems to ensure compliance with national and international drinking water standards. • Ensure implementation of the Project GRM and provide timely responses to grievances.	**Negligible**

16.6 Monitoring

The following table summarises the monitoring requirements related to socioeconomic during construction and operation.

Table 16-20 Socioeconomic Monitoring Requirements

Monitoring	Parameter/Activity	Monitoring Methodology	Monitoring Schedule
Construction Phase			
Livelihoods	• Continued access to fishing grounds and navigation routes. • Livelihood-related grievances. • Stakeholder perception regarding Project impacts. • Evidence of unforeseen livelihood impacts attributable to Project activities	• Periodic consultation with fishermen and relevant authorities. • Review of Project GRM records. • Verification during site inspections and marine monitoring. • Review of Contractor monthly reports	As per the SEP
Adaptive Livelihood Management	• Verification that no Project-induced economic displacement has occurred	• Review monitoring results • Review grievances • Consultation with affected stakeholders • Review of access restrictions and navigation arrangements	Quarterly
Local Employment	• Number of persons employed from the communities near the Project site (gender disaggregated) • Number of skilled/unskilled local Workers • Number of workers trained • Types of training delivered	• Review of employment records • HR site audits • Review of training records • Toolbox talk attendance logs	Monthly during construction
Fair and inclusive recruitment	Participation of women and vulnerable groups in employment	• Review of recruitment records. • Consultations with EPC Contractor HR	Quarterly
Local Procurement	% of project goods/services sourced from local suppliers	• Review of procurement and supplier records • Contractor reporting	Quarterly during construction
Skills development	Delivery of on-the-job training and toolbox talks	• Review of training logs, attendance records, and training materials	Monthly

Monitoring	Parameter/Activity	Monitoring Methodology	Monitoring Schedule
Community consultations	Engagement with local communities, fishermen, and vulnerable groups	• Review of SEP implementation records, meeting minutes, attendance lists	Quarterly and as required
Impacts on public infrastructure	Complaints or disruptions related to utilities, access roads, schools, or services	• Review of grievance records. • Stakeholder feedback. • site inspections	Monthly
Third Party Grievances	Number of the grievances received, response period, close-outs	Review of GRM logs and grievance tracking system	Ongoing
Operational Phase			
Local Employment	• Number of persons employed from the communities (gender disaggregated) • training and capacity building completed	• HR records review • Periodic site verification	Biannually or as needed
Livelihoods	• Continued access to fishing grounds. • Livelihood-related grievances. • Stakeholder satisfaction. • Verification of absence of Project-related livelihood impacts	• Stakeholder meetings with fishermen • GRM review • Field monitoring of plant operations	Biannually during the first two years of operation and thereafter as required
Capacity building	Implementation of training, apprenticeships, and mentoring programs	• Review of training plans, attendance records, and partnerships with institutions	Annually
Third Party Grievances	Number of the grievances received, response period, close-outs	GRM log review and follow-up	Ongoing

Note: Based on the ESIA findings, no physical or economic displacement of livelihood-dependent households is anticipated. Accordingly, a Livelihood Restoration Framework (LRF) is not necessary. Livelihood management will instead be implemented through adaptive monitoring, stakeholder engagement, the Project GRM, and the ESMP. Should monitoring identify unforeseen Project-attributable livelihood impacts during construction or operation, additional assessment and proportionate livelihood restoration measures will be developed in accordance with the Project lender requirements.

17.0 Community Health, Safety, and Security

17.1 Applicable Requirements & Standards

17.1.1 National Regulations

The law of the Azerbaijan Republic on the Protection of Public Health No. 360-IQ sets the regulations for public health protection and the health care system. The law stipulates the liability and compensation requirements in the event of damage to health that results from a polluted environment.

17.1.2 Lender Requirements

17.1.2.1 IFC

IFC Performance Standard 4 establishes requirements to safeguard local communities from potential risks associated with the Project including impacts associated with introduction of communicable disease, site access and operation, material use etc. The key objectives of PS4 are:

- To anticipate and avoid adverse impacts on the health and safety of the Affected Community during the project life from both routine and non-routine circumstances.
- To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the Affected Communities.

World Bank Good Practice Note on Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) in Investment Project Financing Involving Major Civil Works

The World Bank GPN is structured around three key steps that cover project preparation and implementation. These steps include:

- Identifying and assessing the risks of SEA/SH, including social and capacity assessments.
    - Undertaking social risk assessment of community-level risks.
    - Assess capacity and availability, safe and ethical services of survivors.
    - Review ability of the client to respond to SEA/SH risks.
    - Rate project for overall risk using several Bank tools including the SEA/SH Risk Assessment Tool.
    - Establish procedures to review and update risk assessment during the project implementation.
- Establishment of mitigation, reporting and monitoring measures.
    - Based on risks identified, identify the corresponding mitigation measures and implement actions suggested to mitigate project related risks of GBV in the project area.
    - Monitor effectiveness of the mitigation measures and adapt as appropriate.
- Project response actions for GBV cases.

- Provide essential services for survivors.
- Report case through the GM as appropriate keeping survivor information confidential and anonymous.
- Document and close cases brought through the GM.

IFC, EBRD and CDC Group[78] Guidance on Gender Based Violence and Harassment (GBVH)

According to the guidance, addressing GBVH can build relationships and provide a Project with a social license to operate in communities. This can result from regular dialogue to understand and track project GBVH risks as well as the effective use of measures to prevent and respond to GBVH. In addition, it broadens the pool of potential workers that companies can draw upon, including women workers from nearby communities because of lower perceived risk of GBVH.

IFC Guidance on Gender Based Violence and Harassment (GBVH) in the Construction Sector

The assessment, prevention, monitoring and response measures in regards to GBVH should be underpinned by the following principles:

- Survivor Centred: The rights of GBVH survivors need to be consistently prioritised and used as the starting point for all decisions on efforts to assess, prevent, monitor and respond to GBVH.
- Safe: Survivors, witnesses and those who report and seek to address GBVH can be at risk of retaliation, including threatening and violent behaviour, often from those who do not like their position of power being challenged. Companies should prioritise the safety of those who have experienced, witnessed and reported GBVH.
- Context specific: All measures need to be rooted in a thorough understanding of the local context. Investors and companies should understand the legal and social context and identify the support mechanisms that are in place.
- Collaborative: Companies should seek inputs from a range of internal and external stakeholders to increase the likelihood of broader buy-in and make GBVH prevention more effective.
- Inclusive: Companies should recognise the heightened risks of GBVH faced by certain groups who are subject to discrimination and marginalisation. High risk groups often include people with disabilities, single parents, migrants and ethnic minorities and sexual and gender minorities. The system should also account for illiterate or non-literate people who may not be able to access written information on GBVH reporting mechanisms.
- Integrated: Processes, efforts to assess, prevent, monitor and respond to GBVH needs to be integrated as much as possible into existing processes and management systems, such as occupational health safety, security management systems, ESMS and human resources (HR) policies and procedures.

[78] CDC Investment Group has formally renamed as “British International Investment (BII)” on 4th of April 2022. BII’s mission is to support the building of businesses throughout Africa and South Asia, to create jobs, and to make a difference to people's lives in some of the world' poorest places.

- Non-discriminatory: All survivors need to be listened to and treated equally and promote diversity in the work place.
- Well-informed: Companies should draw on relevant expertise when developing prevention and response measures. The grievance mechanism and investigation procedures should be set up to ensure they are appropriate, relevant and safe in the local context.

According to the guidance, the benefits of addressing GBVH include:

- Improves workers' physical and emotional wellbeing and strengthens occupational health and safety.
- Avoids reputational damage, financial risks and legal liabilities for companies, investors and construction contractors.
- Builds relationships and social license to operate in communities. This can result from regular dialogue to understand and track project GBVH risks as well as the effective use of measures to prevent and respond to GBVH.
- Broadens the pool of potential workers that companies can draw upon, including women workers from nearby communities because of lower perceived risk of GBVH.

17.1.2.2 AIIB

In accordance with AIIB ESF requirements, the ESIA has assessed potential community health and safety risks associated with Project activities, including construction-related hazards, traffic and road safety, labour influx, communicable disease risks, emergency preparedness and response, hazardous materials management, and interactions between the Project workforce and surrounding communities.

Mitigation measures and management procedures have been incorporated into the ESMP and associated management plans, including Community Health, Safety and Security Management measures, Traffic Management Plan, Emergency Response Plan, Labour Management Plan, and Stakeholder Engagement Plan. These measures will be implemented and monitored throughout the Project lifecycle to avoid, minimise, and manage potential adverse impacts on affected communities.

17.1.2.3 ADB

The ESIA has also been prepared considering the requirements of the ADB, particularly ESS 4: Health, Safety and Security, together with the relevant provisions of ESS1: Assessment and Management of Environmental and Social Risks and Impacts and ESS10: Stakeholder Engagement and Information Disclosure. These standards require the identification, assessment and management of potential risks to the health, safety and security of project workers, affected communities and other stakeholders throughout the Project lifecycle.

In accordance with the ADB ESF, the ESIA has assessed potential community health and safety risks associated with Project activities, including construction-related hazards, traffic and road safety, labour influx, communicable disease risks, emergency preparedness and response, hazardous materials management, sexual exploitation, abuse and harassment, security risks, and interactions between the Project workforce and surrounding communities.

17.2 Baseline Conditions

17.2.1 Community Health and Access to Healthcare Services

The geographical scope of the community health assessment covers the Project site and the surrounding settlements of Kimyachilar, Khazar Baghlari, Khazri, and Haji Zeynalabdin, located within a 5 km Project Area of Influence. The assessment considers potential community health conditions and risks associated with both the construction and operational phases of the Project

Based on a review of available secondary data, healthcare services for Sumgait City and the surrounding settlements of Kimyachilar, Khazar Baghlari, Khazri, and Haji Zeynalabdin are delivered through the public healthcare system under the administration of the Ministry of Health of the Republic of Azerbaijan. Healthcare provision includes urban polyclinics in Sumgait City, complemented by settlement-level primary healthcare facilities that provide basic outpatient care, preventive services, and referral to higher-level facilities where required. However, secondary sources do not provide settlement-specific information on the condition, capacity, or recent upgrades of healthcare infrastructure in Kimyachilar, Khazar Baghlari, Khazri, and Haji Zeynalabdin. As a result, the baseline assessment is limited to confirming the availability of primary healthcare services within the Project Area of Influence, rather than a detailed evaluation of service adequacy or performance.

17.2.2 Gender-based Violence, Harassment & Exploitation

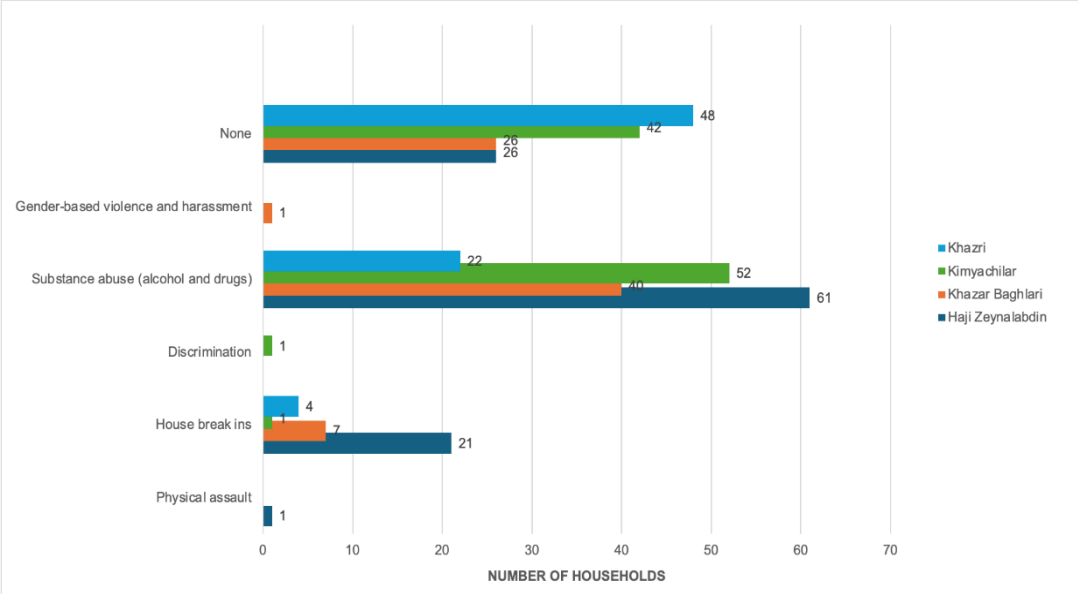
Azerbaijan has implemented initiatives focused on stakeholder and public education in areas such as combating violence against women and girls, protecting women and children with disabilities, human trafficking prevention, promotion of women's reproductive health, and improving women's economic participation. This is in accordance with its 2015 commitment at the United Nations Global Leaders' Meeting on Gender Equality and Women's Empowerment.

The State Committee for Family, Women and Children Affairs (SCFWCA) serves as a coordinating body for the National Action Plan to Combat Domestic Violence. SCFWCA works closely with the United Nations Population Fund (UNFPA) in implementing the GBVH related programs[79]. According to the UNFP draft Country Programme document for Azerbaijan (2021-2025), a gender equality survey conducted in 2018 showed that approximately one in three men (32.5%) reported perpetrating and almost a similar number of women reported experiencing (32.1%) physical violence. The report also notes that the patriarchal social norms contribute to multiple forms of violence and discrimination against women. Additionally, UNFPA notes that there is an underdeveloped multisectoral cooperation and coordination frameworks and the lack of institutional capacities to prevent or respond to GBV.

In relation to Sumgait City and the nearby settlements, where the Project is located, official Government statistics indicate that a recorded number of domestic violence-related incidents occurred in 2024 within the wider administrative area covered by Sumgait's jurisdiction. According to officially published figures from the Azerbaijan State Statistical Committee's crime database, Sumgait City recorded approximately 102 victims of crimes resulting from domestic violence in 2023, of whom the majority were women (around 90 victims) and a smaller number were men and minors — aligning with broader national patterns where women constitute a significantly larger share of reported victims in domestic violence cases.

[79] https://www.unfpa.org/azerbaijan-cpd-2021-2025-dpfpacpdaze5

During the ESIA study, a socio-economic survey was carried out for the sample households for the nearby communities and some of the key findings is presented below on the kind of social ills prevalent in the nearby communities.



Source: Socio-Economic Survey, ESIA Study (December 2025-January, 2026)

Figure 17-1 Types of Social Issues

Data collected as part of the ESIA through Key Informant Interviews (KII) suggests that reported cases of gender-based violence and harassment (GBVH) within the nearby settlements are infrequent. The review of secondary data and findings from KIIs did not identify specific sub-groups of women facing heightened or disproportionate GBVH risks in these communities.

Law enforcement presence is established within or near Kimyachilar, Khazar Baghlari, Khazri, and Haji Zeynalabdin settlements. Victims can report incidents directly to local police representatives, through anonymous complaint drop boxes where available, or by contacting the national police emergency hotline at '102'.

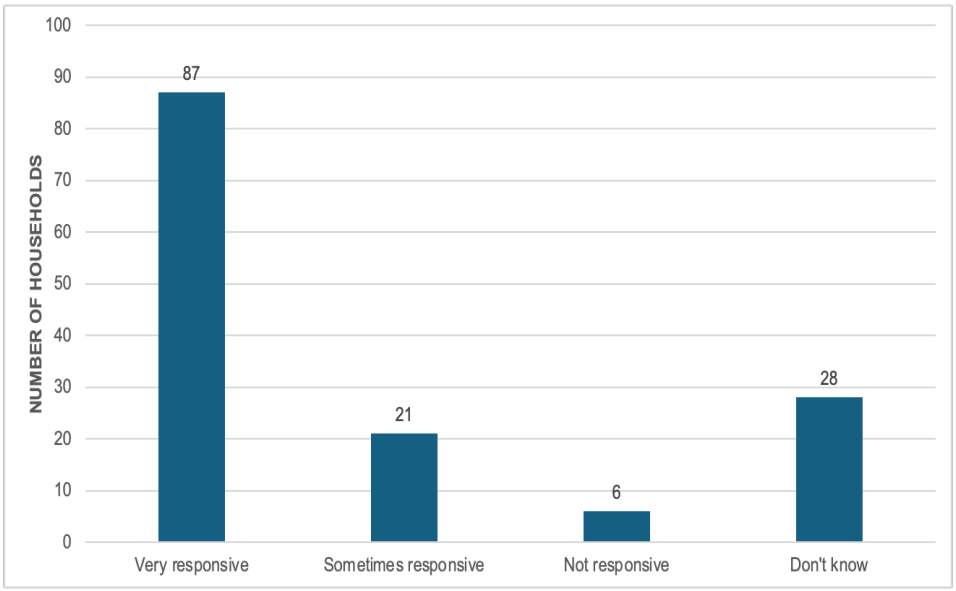
17.2.3 Crime & Security

Azerbaijan's primary law enforcement body is the Ministry of Internal Affairs (MIA), responsible for public order, criminal investigation, and general population safety. MIA oversees the police force who are present across the communities in Azerbaijan.

Article 10 of the Law on Police encourages local public institutions and citizens to assist the police particularly in reporting crimes or preventing antisocial behaviour. Citizens can also be recruited on a voluntary basis to support community safety efforts, organised through "social councils".

Based on available official government data and Key Informant Interviews (KIIs), there are no consolidated or publicly published official crime statistics disaggregated specifically at the community or settlement level for Sumgait City (including settlements such as Kimyachilar, Khazar Baghlari, Khazri, and Haji Zeynalabdin). The Government of Azerbaijan does not maintain or release detailed crime figures at the neighbourhood or settlement scale in publicly accessible formats; official reporting focuses on city- and national-level statistics.

According to the Azerbaijan Ministry of Interior and Prosecutor General's Office[80], the total number of registered crimes in Azerbaijan has shown a general declining or stable trend in recent years, with high clearance rates: for example, in 2025 there were 31,852 registered criminal cases nationwide with a high crime solution (clearance) rate of over 90 percent, including strong detection rates for serious and especially serious crimes.



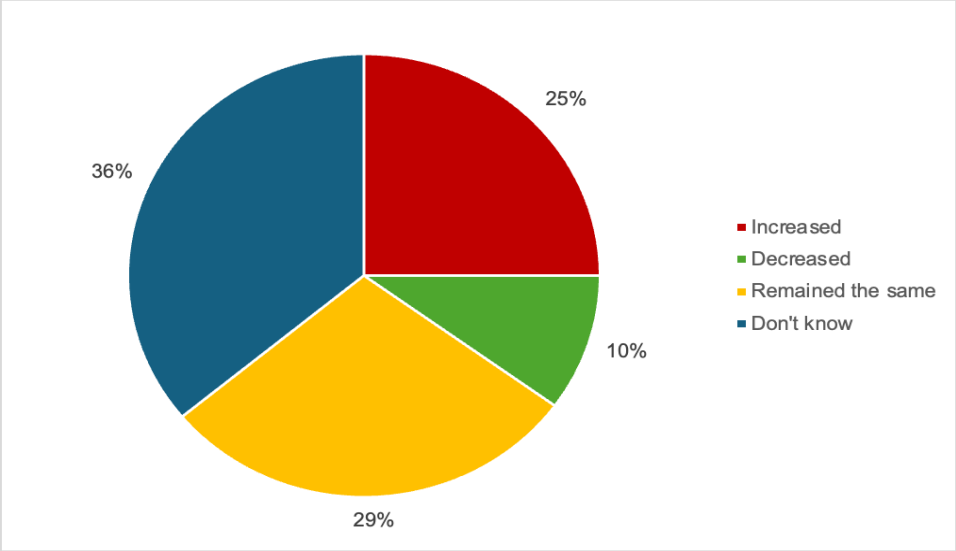
Source: Socio-Economic Survey, ESIA Study (December 2025-January, 2026)

Figure 17-2 Responsiveness of Police Services, 2026

The figure above shows that most households (about 87) perceive the concerned authority or service as very responsive. A smaller number (around 21) reported it as sometimes responsive, while very few (about 6) considered it not responsive. Additionally, around 28 households selected "don't know", indicating limited awareness or interaction.

In earlier official reporting, there were 33,379 crimes recorded in 2024 with an 87.6 percent clearance rate, reflecting a 9.3 percent decrease in total crimes compared with 2023. Despite the absence of community-level official figures, respondents from the Sumgait area consistently reported in KIIs that they have not observed any notable increase in crime rates in recent years. Community representatives described local security as generally stable and consistent with the national trend of low or decreasing crime.

[80] https://report.az/en/incident/azerbaijan-s-interior-ministry-crime-clearance-rate-exceeded-90-in-2025



Source: Socio-Economic Survey, ESIA Study (December 2025-January, 2026)

Figure 17-3 Changes in Crime in Past 2-3 years

The figure shows mixed perceptions among respondents regarding changes in the assessed condition. About 36% of respondents indicated “don’t know”, suggesting limited awareness or uncertainty. Nearly 29% reported that the situation has remained the same, while 25% perceived an increase. A smaller proportion (10%) indicated a decrease.

Official law enforcement presence exists within Sumgait City and its surrounding settlements through standard policing structures. Sumgait is covered by formal police stations and patrol units under the jurisdiction of the Ministry of Internal Affairs. In smaller settlements where a permanent police station is not located within the settlement itself, law enforcement maintains presence via regular patrols, scheduled visits by assigned officers, and call-out responses to community requests. These arrangements are consistent with general policing practices in Azerbaijan, where patrol services and community policing are used to ensure public order across both urban and peri-urban localities.

17.3 Area of Influence and Receptors

17.3.1 Area of Influence

The geographical scope of this assessment includes the project site, associated backfill material transport routes, and nearby communities of Kimyachilar, Khazar Baghlari, Khazri, and Haji Zeynalabdin, covering both construction and operation phases. The assessment focuses on potential impacts to community health, safety, and security arising from project activities. While secondary impacts related to air quality, noise, wastewater, and waste are addressed in other sections of the ESIA, this chapter emphasizes emergency risks, security measures, and prevention of trespass or malicious intrusions. Its primary purpose is to identify and assess foreseeable risks to the local community and outline corresponding mitigation and management measures to safeguard health, safety, and security.

17.3.2 Receptors

In addition to the above site-specific area of influence, the area of impact for the community health impact assessment also considers potential areas or communities affected by cumulative or indirect impacts.

Table 17-1 E&S impact receptors

Receptor	Sensitivity	Justification
Nearby residential Communities near the Project site and along the water distribution pipeline route, residential and commercial clusters are identified.	**High**	High sensitivity due to the presence of permanent residents, including vulnerable groups, and the proximity of schools, health facilities, and other community receptors that may be exposed to project-related air emissions (e.g. dust and exhaust) over extended periods.
Samad Vurghun Road users	**Medium**	Medium sensitivity due to regular public use and potential short-term exposure to construction related fugitive dust emissions, vehicle-related emissions and dust from increased project traffic.

17.4 Potential Impacts, Mitigation, Management & Residual Impacts

17.4.1 Construction Phase

During the construction phase of the project, it is expected to generate temporary, localised impacts on the surrounding community, primarily from dust, noise, and minor odours. Nearby community members and road users may experience minor increases in particulate matter, noise, and dust along haul routes and access roads. Gaseous emissions and VOCs are predicted to be negligible at nearby community locations due to dispersion and limited quantities. Ground vibration impacts are not expected to be perceptible beyond the immediate site. Overall, with standard dust, noise, odour, and traffic management measures in place, these impacts are short-term, reversible, and unlikely to result in significant long-term effects on the community.

17.4.1.1 Worker Influx, Community Health and Crime

Construction of the Project will require a temporary workforce comprising EPC personnel, contractors, subcontractors and specialist workers. At peak construction, approximately 1,800 workers are expected to be employed over the anticipated 30-month construction period. The final composition of the workforce, including the proportion of locally recruited and non-local workers, will be confirmed by the EPC Contractor during detailed engineering and mobilisation.

At this stage, the location of the workers' accommodation has not been confirmed. Depending on the Contractor's mobilisation strategy, workers may be accommodated within existing facilities in Sumgayit, Baku or other suitable locations, or within a purpose-built temporary workers' camp if required. Once confirmed, all worker accommodation facilities will be designed, constructed and managed in accordance with applicable national legislation, IFC/EBRD guidance on workers' accommodation, and the Project's Labour Management Procedures (LMP) and Workers Accommodation Management Plan.

The temporary influx of workers has the potential to result in a range of environmental and social impacts on surrounding communities. The nature and significance of these impacts will depend on the number of non-local workers, accommodation arrangements, duration of employment, existing community capacity and the effectiveness of management measures implemented by the EPC Contractor.

Potential impacts associated with worker influx include:

- Increased interaction between Project workers and local communities, potentially resulting in social tension or conflict where differences in cultural practices, beliefs or behaviours exist;
- Increased demand on local infrastructure and services, including healthcare, water supply, sanitation, waste management, transport and local accommodation where community facilities are utilised;
- Increased traffic associated with worker transport and construction logistics;
- Risks associated with inappropriate worker behaviour, including anti-social behaviour, gambling, alcohol or drug misuse, prostitution, nuisance, and non-compliance with local customs or Project requirements;
- Increased risks of gender-based violence, sexual exploitation and abuse, sexual harassment (GBV/SEA/SH) and violence against children if workforce behaviour is not effectively managed;
- Increased transmission of communicable diseases, including respiratory diseases and sexually transmitted infections, affecting both workers and neighbouring communities;
- Potential increase in petty crime associated with population growth and inward migration of job seekers, although baseline studies indicate that crime levels within the surrounding communities are currently low; and
- Community dissatisfaction where employment opportunities are perceived to be inequitable or recruitment processes lack transparency.

Conversely, the Project is also expected to generate positive socio-economic benefits through direct and indirect employment, procurement of local goods and services, skills development and increased economic activity, particularly where local recruitment and sourcing are maximised.

Given the anticipated peak workforce of approximately 1,800 personnel, the potential magnitude of worker influx is considered moderate, while the sensitivity of surrounding communities is considered medium, resulting in a Moderate adverse (potentially significant) impact prior to mitigation.

The Project has adopted a management hierarchy that prioritises avoidance and prevention of labour influx impacts. Local recruitment will be maximised wherever practicable to reduce the number of non-local workers requiring accommodation. All workers will receive induction and cultural awareness training, together with mandatory compliance with a Workers' Code of Conduct covering acceptable behaviour, respect for local customs, prohibition of harassment, discrimination, violence and exploitation, and compliance with Project health, safety and environmental requirements. Transparent recruitment procedures and accessible grievance mechanisms will be implemented for both workers and community members.

Worker accommodation, where required, will be managed in accordance with the Workers Accommodation Management Plan, including appropriate standards for welfare, sanitation, waste management, healthcare and security. An on-site medical clinic and arrangements with regional healthcare providers will be established to minimise pressure on local health services. Community health and safety risks, including communicable diseases and GBV/SEA/SH risks, will be managed through implementation of the Community Health and Safety Management Plan, Labour Management Procedures, Influx Management Plan, GBV Prevention Plan, Security Management Plan and Stakeholder Engagement Plan. Ongoing engagement with local communities and monitoring through the Project Grievance Mechanism will enable any emerging concerns to be identified and addressed promptly.

With implementation of these mitigation and management measures, the residual impact associated with worker influx is anticipated to be Minor adverse. This conclusion is based on the temporary nature of construction activities, the relatively modest workforce compared with the population of the wider Sumgayit-Baku metropolitan area, the commitment to maximise local recruitment where practicable, and the comprehensive labour and community management measures that will be implemented throughout the construction phase.

17.4.1.2 Public/Community Safety

Potential impacts on community health associated with the project arise primarily during the construction and marine works phases, with limited and indirect pathways during operation. Construction activities will include site preparation, earthworks, erection of buildings and structures, installation of civil and mechanical infrastructure, operation of heavy construction equipment, and transportation of materials and personnel. These activities may result in temporary and localized increases in noise and dust, as well as physical hazards associated with construction traffic, interaction with heavy machinery, and open work areas.

The Project site is located outside residential areas of Sumgait City and maintains a physical separation from the nearest settlements. As a result, routine exposure of local communities to on-site construction activities is limited and largely confined to public roads and designated access routes used by construction traffic.

During the construction phase, significant volumes of materials will be transported to and from the site, including approximately 260,000 m³ of fill material sourced from external quarries located within the wider Absheron region (anticipated within approximately 40–50 km of the Project site). In addition, construction will utilise off-site facilities such as concrete batching plants within the Sumgait and Baku industrial areas, as well as licensed hazardous and non-hazardous waste management facilities, including the Sumgait municipal landfill and the Hazardous Waste Management Centre. These facilities will be accessed via the existing regional road network.

The primary transport routes are expected to utilise major highways, including the M1 and M4 corridors, before connecting to the Project site via Samad Vurgun Road. These routes already experience relatively high traffic volumes and are characterised by an industrial setting. However, sections of the access road and certain connecting routes may pass in proximity to sensitive receptors, including scattered residential properties, local service buildings, and areas used by pedestrians. While no schools or hospitals are located in the immediate vicinity of the Project site, such receptors may be present along parts of the wider transport network, particularly closer to urban areas.

Construction activities will result in a temporary increase in traffic volumes, particularly during peak periods associated with earthworks and material delivery. This may include a substantial number of heavy goods vehicle (HGV) movements per day, in addition to light vehicle movements associated with workforce commuting. Although the exact number of daily vehicle trips will be confirmed in the Traffic Management Plan (TMP) to be prepared by the EPC Contractor, the increase in traffic has the potential to elevate risks related to road safety, including vehicle collisions and interactions with pedestrians and other road users.

Potential community health and safety impacts are therefore assessed as low to moderate in magnitude, short-term, and localised, with the primary risk pathway related to construction traffic rather than on-site activities. Sensitive receptors during the construction phase include road users, pedestrians, and any communities located along access routes. In the absence of mitigation, increased traffic volumes and the presence of HGVs could increase the likelihood of traffic-related incidents, resulting in a moderate unmitigated risk.

To address these risks, a detailed Traffic Management Plan will be developed and implemented. This will include defined haul routes, scheduling of deliveries to avoid peak

traffic periods where practicable, driver training and induction, speed restrictions, and the deployment of trained flagmen at key locations such as site entrances and junctions. Additional measures will include appropriate signage, road maintenance, and coordination with local authorities as required. With the implementation of these measures, the residual risk to community health and safety is assessed as low.

During operation of the plant, community health risks are limited due to the controlled nature of plant processes and the absence of routine public access to operational areas. Although the facility will store and handle treatment chemicals and operate high-pressure systems, these activities will be contained within secured areas and do not present routine exposure pathways to surrounding communities. In the event of an unplanned incident, localized off-site effects could occur; however, the likelihood of such events is considered low and will be managed through engineered safeguards, operational controls, and emergency preparedness measures.

Community health risks across all project phases will be managed through the implementation of a Project-specific Health, Safety, Security, and Environmental Management System (HSSE-MS), supported by a Traffic Management Plan and an Emergency Preparedness and Response Plan (EPRP). With these controls in place, risks to community health associated with the Project are assessed as low, localized, and acceptable, and consistent with international good practice for infrastructure projects of comparable scale and complexity.

17.4.1.3 Public/ Community Security

During the construction phase of the project, site-based security services will be required to protect Project assets, including equipment, materials, machinery, and temporary offices, and to control access to active construction areas. These measures are intended to prevent unauthorized entry, reduce the likelihood of accidents involving members of the public, and minimize the risk of damage to construction infrastructure. All security personnel deployed at the site will be unarmed.

Notwithstanding the need for security presence, there is a recognized risk that security personnel, due to their position of authority, may misuse their power, potentially resulting in harassment, intimidation, or gender-based violence and harassment (GBVH) affecting workers or members of surrounding communities, thereby infringing on human rights.

To manage these risks, a Security and Human Rights Management Plan will be developed and implemented by the EPC Contractor, informed by an appropriate security risk assessment. Security arrangements will be aligned with international standards and good practice, including the United Nations Code of Conduct for Law Enforcement Officials, the IFC Good Practice Handbook on the Use of Security Forces: Assessing and Managing Risks and Impacts, and the Voluntary Principles on Security and Human Rights.

In addition, all security personnel will receive mandatory training on human rights, GBVH prevention, appropriate conduct, grievance reception and referral procedures, and culturally appropriate engagement with workers and local communities. These measures will help ensure that security services are provided in a manner that is proportionate, respectful, and consistent with the Project's commitments under IFC Performance Standards.

17.4.1.4 Gender-Based Violence, Harassment, and Sexual Exploitation & Abuse (GBVH/SEA)

The construction workforce for the project is expected to be largely composed of young male workers, recruited from other regions of Azerbaijan and potentially from abroad. Being away from their families and usual social networks, these workers may face heightened peer pressure, which could contribute to involvement in inappropriate or unlawful behaviours. Such behaviours could include harassment or intimidation of local women and children, as

well as women working within the Project. These incidents could result in exploitative sexual relationships, unwanted advances, and other forms of harassment. There is a potential for these actions to negatively impact household and community relationships in areas surrounding the Project.

Regarding economic impacts on local women, opportunities for women to earn income, whether through direct employment with the Desalination Plant or via indirect economic benefits, may unintentionally increase household tensions. Men who feel threatened by shifts in traditional economic roles may respond with harassment or violence toward women, both within their households and in the wider community. This dynamic underscore the need for targeted mitigation measures to support women's economic participation while minimizing potential risks.

Certain male workers responsible for transporting Project machinery, equipment, and materials may undertake long-distance travel, including cross-border routes. During these trips, there exists a potential for GBVH-related incidents to occur along transport routes or at associated stops, even outside the immediate Project boundaries.

To address these risks, the EPC Contractor will conduct a comprehensive GBVH risk assessment prior to commencing construction activities. This assessment will be led by the Project's designated GBVH focal point, supported by a gender specialist with knowledge of the local context. The results of the assessment will guide the development of targeted mitigation measures, which will be incorporated into the Project's Gender Management Plan and monitored throughout the construction phase.

17.4.1.5 Site Security, Emergency Preparedness, and Operational Controls

The project will be fully secured with fencing and controlled access points to prevent unauthorized entry. This is a critical measure to protect community members, particularly children, from potential hazards within both the construction site—such as open excavations and heavy machinery—and the operational plant, which contains chemicals, electrical equipment, and open water basins including Dissolved Air Flotation (DAF) units and storage tanks. Maintaining strict site security reduces the likelihood of accidents involving members of the local community.

Although the risk of major incidents such as fires, chemical spills, or explosions is low for a reverse osmosis desalination facility, the Project incorporates comprehensive emergency preparedness and response planning. These measures ensure that any unlikely off-site consequences are rapidly addressed, mitigating potential impacts on the health and safety of nearby communities.

Access to project areas will be appropriately restricted to protect the public while minimizing disruption to local activities. On land, permanent access restriction applies to the 26.86-hectare project site. The site's previous use as a treatment plant, coupled with its current vacant state within an industrial zone, means that restrictions are unlikely to affect community livelihoods significantly. Marine works, including the construction of the seawater intake and brine outfall pipelines, will involve temporary access restrictions. The ESIA consultation process indicates that local fishermen anticipate minimal disruption during these works, and operational-phase measures such as the outfall buoy are designed to prevent conflicts with marine users.

Exterior lighting will be installed to support safe and efficient construction and operational activities. While this contributes positively to site safety, lighting will be designed to minimize spill and nuisance impacts on nearby residential settlements.

Finally, proper waste management is essential to preventing indirect community health risks. Improper disposal of construction or operational waste could create breeding grounds for vectors or lead to contamination. The Project will implement a waste management plan

aligned with international good practice, ensuring that risks to surrounding communities remain low and manageable.

Overall, these measures—comprising site security, emergency preparedness, controlled access, appropriate lighting, and systematic waste management—work together to protect the health and safety of local communities throughout both construction and operational phases of the Project.

To protect community health and safety, the project will implement comprehensive mitigation measures throughout construction and operation. The site will be fully secured with fencing, controlled access points, warning signage, and regular security patrols to prevent unauthorized entry and exposure to hazards. Emergency preparedness will be addressed through a Project-specific Emergency Preparedness and Response Plan (EPRP), including coordination with local authorities, staff training, and fire and spill containment systems. Temporary restrictions during marine works and permanent land access controls will minimize risks to the public, while operational-phase navigation aids and safety zones will prevent conflicts with marine users. Exterior lighting will be designed to provide safety while minimizing light spill to nearby settlements, and a Waste Management Plan (WMP) will ensure proper handling and disposal of construction and operational waste to prevent contamination or vector-borne risks. Traffic management measures, community awareness programs, and a grievance mechanism will further support the protection of nearby communities.

17.4.1.6 Water Supply Pipeline

During the construction of the product water supply pipeline, there is potential for temporary impacts on the health, safety, and security of communities located in proximity to the pipeline corridor. These risks are primarily associated with increased construction traffic, excavation activities, and the presence of heavy machinery and a temporary workforce. Residents and other local receptors may be exposed to elevated levels of dust, noise, and vibration, as well as safety hazards arising from open trenches, material stockpiles, and road crossings. In addition, construction activities may temporarily disrupt local access routes and increase the risk of traffic-related incidents, particularly at interfaces with public roads and pedestrian areas. The presence of construction personnel may also lead to perceived or actual security concerns if access to work areas is not adequately controlled. However, given that the pipeline alignment largely follows existing infrastructure corridors within industrial and mixed-use areas, and with the implementation of appropriate traffic management, site safety controls, and worker conduct measures, construction-phase impacts on community health, safety, and security are expected to be temporary, localized, and manageable.

Table 17-2 Community Health Safety: Impact Significance, Mitigation & Management Measures and Residual Impacts – Construction

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
Worker Influx & Community Health	**Moderate**	Local communities in nearby settlements; vulnerable groups (women, elderly, youth).	**High**	**Moderate**	• Develop and implement a Recruitment Procedure as part of the Labour & Working Conditions Management Plan (LWCMP) to promote the recruitment of local workforce. • The LWCMP will also include the relevant HR policy and a code of conduct which the workers will be provided with in the language most understandable to them. This will also include the explicit prohibition of any form of harassment, violence including GBVH. • Develop and implement a Workers Accommodation Plan which is compliant with the EBRD and IFC Workers' Accommodation: Processes and Standards. • Workers will be provided with mandatory cultural sensitisation training programmes regarding engagement with local communities. • The EPC Contractor will provide recreational facilities within accommodation areas to minimise the need for workers to use local community facilities. • EPC Contractor will provide regular substance abuse prevention and management programs. Regular and sporadic site checks with regards to substance abuse will also be conducted at accommodation camps whilst respecting workers' freedom of movement rights. • EPC Contractor will undertake campaigns and awareness training on sexually transmitted illnesses to workers and local communities in coordination with local officials (in a culturally appropriate manner). • During construction, staff will have access to medical professionals and suitable medical facilities, which will aim to prevent the spread of diseases internally and externally. Site personnel will only be cleared for work with a medical fitness certificate from an authorised medical centre.	**Negligible to Minor**
Public / Community Health & Safety (Safety risks to communities from construction activities,	**Moderate**	Nearby communities, marine users, road users.	**High**	**Moderate**	• The EPC will develop and implement a standalone Community Health & Safety Management Plan or as part of the HSSE MS which will include measures to avoid or limit risks to, and impacts on health safety and security of the local communities during the construction phase of the Project.	**Negligible**

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
marine works, hazardous materials, waste, noise, and restricted access areas)					• The EPC will develop and implement an Emergency Preparedness and Response Plan which will include details of the emergency scenarios, response protocols, training requirements, roles & responsibilities, internal and external communication protocols etc. The EPRP will also be communicated to all the relevant stakeholders. • Awareness campaigns will be undertaken in the local settlements including with children (based on the consent of their guardians) on the safety risks of trespassing active construction areas and internal access roads. • All high-risk areas including fuel storage areas will be secured with internal fencing and will be patrolled by security throughout the day. • Manage marine works to minimize noise and water quality impacts and restrict access temporarily where needed. • Install exterior lighting to ensure safety while minimizing nuisance to nearby settlements. • Implement a Waste Management Plan to prevent indirect health risks from improper disposal. • Smoking will be prohibited at chemical and fuel storage areas.	
Community Security	**Minor to Moderate**	Local communities, visitors, and workers.	**Medium**	**Moderate**	• The EPC Contractor will prepare a Security & Human Rights Management Plan for the Project to include the procedures on conducting a security risk assessment, screening of security personnel, code of conduct, type of training to be provided, process of investigating security incidents, GRM to submit grievances about security personnel etc. • All security personnel will be required to sign the Code of Conduct before they are engaged by the Project. • Project personnel will only be provided access to the construction site with valid ID cards and permits to work in line with HSE requirements. • The security personnel will be regularly trained on GBVH/SEA/SH code of conduct including how to handle grievances related to GBVH/SEA/SH from the community. • All vehicles entering the site will require pre-approved clearance and will need to be registered. Project security will record all instances of incoming vehicles.	**Negligible**

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
					• Use ID cards, permits, CCTV, and lighting at gates to monitor access and enhance security. • Deploy unarmed security personnel to control access, protect assets, and reduce risks to the public.	
GBVH / SEA Risks (Increased risk of GBVH/SEA associated with worker influx and power imbalances)	**Moderate (Adverse)**	Women, girls, vulnerable community members, and female workers.	**High**	**Moderate**	• A GBVH risk assessment will be undertaken before the start of the construction phase. • A Gender Management Plan will be developed & implemented by the Project. This Plan will include the provisions for GBVH safeguards, and it will be disclosed to the employees, security personnel and contractors. • Develop and implement a GBVH incident reporting procedure, training materials and implement a confidential GRM for making reports (including anonymously) on sexual harassment and violence. • The Project will engage a third-party competent gender/GBVH advisor prior to the start of the main construction works to provide training on GBVH issues and how to address any cases. • Assign and train a GBVH focal points (including women) to deal with GBVH incidents and grievances. Based on the training, these focal point persons will be required to establish a referral system for GBVH cases. • Develop the support mechanisms for survivors such as referral to support services etc.	**Minor**
Transportation, Access & Road Safety	**Moderate**	Local communities, road users, pedestrians, livestock owners.	**Medium**	**Moderate**	• Develop a Traffic & Transport Management Plan in consultation with authorities and local stakeholders. • Communicate construction traffic plans to local communities. • Coordinate material deliveries to reduce congestion and comply with permits for heavy loads. • Clearly mark construction access roads and provide alternative routes if closures occur. • Record, investigate, and report traffic incidents; coordinate with authorities for corrective measures and compensation for any affected livestock.	**Negligible**

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
Emergency Preparedness & Operational Controls	**Moderate**	Workers, communities, marine users.	**Medium**	**Moderate**	• Implement a Project-specific Emergency Preparedness and Response Plan (EPRP) coordinated with local authorities, including training, fire and spill response systems. • Maintain strict access control to the construction site (26.86 ha) and temporary restrictions during marine works. • Operational measures, including secured areas, prevent public exposure to chemicals, high-pressure systems, and open water basins. • Ensure proper waste management to prevent contamination and vector-borne risks.	**Negligible**
Grievance Mechanism	**Moderate**	Local communities, workers, vulnerable groups.	**High**	**Minor**	• The Project will implement an appropriate system to allow external parties to raise grievances in regard to the Project. • The Grievance Mechanism will be clearly defined, transparent and accessible to identified stakeholders at no cost or risk of retaliation. • EPC Contractor will appoint a community liaison officer preferably from the local community who will maintain communication with the local leaders and community members. • Implement a confidential GRM for making reports (including anonymously) on sexual harassment and violence.	**Negligible**

17.4.2 Operation Phase

During the operational phase, the desalination plant is not expected to generate significant air quality or noise impacts. Noise emissions are primarily associated with high-pressure pumps and operational traffic, but key equipment is enclosed and traffic movements are limited, resulting in minimal propagation beyond the site. Overall, given the plant's location within an established industrial park and the small scale of operational activities, air quality, odour, VOC, and noise impacts are expected to be negligible to minor, and no significant adverse effects on surrounding receptors are anticipated.

17.4.2.1 Community Health

During the operational phase, the project will be managed by a fully trained workforce operating under strictly controlled conditions. Unlike the construction phase, which involves large-scale activities with higher exposure risks, plant operations will consist primarily of routine and well-regulated water treatment processes. Potential impacts on community health are expected to be low due to several key mitigating factors. Access to operational areas, including chemical storage zones, electrical rooms, and high-pressure treatment units, will be strictly restricted, preventing routine public exposure and ensuring the safety of surrounding communities. Chemicals used in the treatment process, including coagulants, anti-scalants, and chlorine, will be stored and handled within enclosed systems, significantly minimizing the risk of accidental exposure. Any potential chemical spills or leaks will be promptly contained and managed through established emergency response procedures, in line with the Project's Environmental, Health, and Safety (EHS) protocols.

The quality of desalinated water supplied to the community will be continuously monitored to ensure compliance with national drinking water standards, thereby preventing health risks associated with waterborne contaminants. Operational waste, including brine, sludge, and spent chemicals, will be managed according to the Plant's Waste Management Plan, preventing contamination of surrounding soils, surface water, or groundwater resources. An on-site medical facility will continue to provide occupational health services for staff, while any potential public health incidents will be promptly reported and coordinated with local health authorities to ensure timely intervention. The Project will also maintain ongoing community engagement and communication mechanisms to ensure that community members are informed about operational activities and potential health risks, and that their concerns are addressed proactively.

17.4.2.2 Public Safety

During the operational phase, public safety risks are generally low and are effectively managed through a combination of engineering controls, administrative measures, and operational protocols. Physical hazards are primarily associated with secured plant equipment, storage tanks, and open water basins. These areas are designed with restricted access, physical barriers, and prominent safety signage to prevent unauthorized entry, minimizing the likelihood of accidents involving community members. Operational procedures include regular inspections, maintenance, and emergency response drills to ensure that equipment and storage facilities remain safe and functional.

Traffic-related risks during operation are substantially lower than those encountered during construction, as the majority of traffic is limited to routine supply deliveries and staff commuting. The existing Traffic Management Plan continues to guide safe vehicle movement on-site and along access routes, with measures such as speed limits, designated vehicle pathways, and driver training to mitigate potential impacts on local communities.

Marine users are also protected through strict adherence to demarcated safety zones around the seawater intake and brine outfall. The project maintains navigation aids, clear markings, and communication protocols to prevent interference with local fishermen or

recreational users. Periodic monitoring ensures that these zones remain clearly visible and effective in preventing unauthorized access or accidental interactions.

Residual public safety risks during operation are therefore considered low and are managed in accordance with recognized best practices. By combining engineering controls, operational management, safety signage, access restrictions, and routine monitoring, the project ensures a safe environment for both the workforce and surrounding communities while minimizing the potential for incidents.

In addition, the project implements a comprehensive emergency preparedness and community awareness program. This includes clearly defined emergency response procedures, coordination with local emergency services, and regular drills to test the readiness of both staff and community responders. Public awareness initiatives, such as information sessions and distribution of safety guidance, will be conducted to inform nearby residents about potential hazards and safe behaviour in the vicinity of the plant. These proactive measures ensure that, in the unlikely event of an incident, risks to the public are minimized and the community is prepared to respond safely and effectively.

17.4.2.3 Public/Community Security

During the operational phase, the Project will continue to prioritize both the protection of its assets and the safety and rights of surrounding communities. Security personnel will actively monitor all controlled access points and conduct regular patrols across the facility, ensuring that unauthorized entry is prevented while maintaining a respectful and non-threatening presence. All security staff will remain unarmed and will be specifically trained in human rights, community engagement, and non-confrontational practices, reflecting the Project's commitment to safety, accountability, and trust.

As with the construction phase, there is a potential risk that security personnel, tasked with protecting workers, could misuse their authority and engage in acts of gender-based violence, harassment, or exploitation (GBVH/SEA) toward the workforce or local community members. To address this, the Operations and Maintenance (O&M) Contractor will conduct a comprehensive security risk assessment to determine the appropriate level of security for operations. Security arrangements will follow international standards, including the UN Code of Conduct for Law Enforcement Officials, the UN Basic Principles on the Use of Force, and the Voluntary Principles on Security and Human Rights, with detailed requirements outlined in the Project's Security and Human Rights Management Plan.

Operational staff will also maintain clear and accessible channels for the community to raise concerns related to security, safety, or environmental matters, ensuring that all issues are addressed promptly, transparently, and respectfully. With a smaller workforce and limited public interaction compared to construction, the risk of GBVH/SEA is substantially reduced; however, robust monitoring and reporting procedures will remain in place to ensure that any incidents are identified and managed appropriately. Overall, security-related risks during operations are considered low, due to the controlled size of the workforce, established operational protocols, and strict adherence to international standards. By combining effective safeguards with proactive community engagement and transparent grievance mechanisms, the Project seeks to create a secure, respectful, and cooperative environment for both staff and neighbouring communities.

17.4.2.4 Emergency Preparedness and Operational Controls

Although the operational phase of the facility generally presents lower hazards compared with the construction phase, a comprehensive framework of emergency preparedness and operational controls will be maintained to ensure the safety of personnel, contractors, and surrounding communities. The facility will implement and sustain robust emergency response measures, including fire suppression systems, chemical spill containment

procedures, and alarms, all of which will be regularly inspected, tested, and maintained to guarantee immediate readiness. Personnel will undergo regular training and drills to ensure they are familiar with emergency protocols and can respond effectively under various scenarios, including fire, chemical release, or accidental spill incidents. Coordination with local authorities and emergency services will be fully integrated into the facility's Emergency Preparedness and Response Plan (EPRP), enabling rapid mobilization of external support and alignment with regional disaster response procedures. Routine monitoring and inspections will be conducted on all operational equipment, chemical storage areas, and marine outfall systems to proactively identify hazards and prevent accidental releases. In addition, exterior lighting and clear signage will be maintained to support safe daily operations while minimizing light spill and disturbance to nearby settlements.

The facility will also engage with local communities to raise awareness of emergency procedures, including contact points, evacuation routes, and communication channels, ensuring that residents are informed and confident in the event of an incident. Collectively, these emergency preparedness and operational control measures are designed to minimize residual risks, ensuring that any operational incidents are managed swiftly and effectively, with negligible impact on local communities and the surrounding environment.

17.4.2.5 Gender-Based Violence, Harassment, and Sexual Exploitation & Abuse (GBVH/SEA)

Even though there will be reduced workforce during the operational phase of the Project, the risk of GBVH/SEA will remain especially towards women and children. There will still be a limited level of interaction between the operational phase team and the local communities. As a result, measures will be put in place to ensure that exploitative sexual relationships and unwanted aggressive advances and harassment are prevented and addressed.

Table 17-3 Community Health Safety: Impact Significance, Mitigation & Management Measures and Residual Impacts – Operation

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
Community Health Risks from Plant Operations (chemical handling, water quality, waste management)	Moderate	Local communities in the vicinity of the plant	Medium	Moderate	• Restricted access to operational areas (chemical storage, electrical rooms, high-pressure units). • Enclosed chemical storage and handling systems. • Implementation of EHS procedures and emergency response protocols. • Continuous monitoring of desalinated water quality to meet national drinking water standards. • Waste Management Plan for brine, sludge, and spent chemicals. • On-site medical facility and coordination with local health authorities. • Ongoing community engagement and information disclosure	Negligible to Minor
Public Safety Risks (physical hazards, traffic, marine navigation)	Low	Nearby residents, road users, marine users	Medium	Minor	• Secured facility design with fencing, barriers, and safety signage • Restricted access to hazardous areas • Regular inspections, maintenance, and safety audits • Continued implementation of Traffic Management Plan (speed limits, driver training, designated routes) • Demarcated marine safety zones around intake and outfall • Navigation aids, clear markings, and communication protocols • Periodic monitoring of marine exclusion zones	Negligible to Minor
Public / Community Security Risks	Moderate	Local communities, workforce (including women and vulnerable groups)	High	Moderate	• Security risk assessment by O&M Contractor. • Unarmed security personnel trained in human rights and community engagement. • Compliance with UN Code of Conduct for Law Enforcement Officials, UN Basic Principles on the Use of Force, and Voluntary Principles on Security and Human Rights.	Negligible

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
					• Security and Human Rights Management Plan. • Accessible grievance mechanism for security-related concerns. • Monitoring and reporting procedures for GBVH/SEA incidents	
Emergency Events (fire, chemical spills, accidental releases)	Moderate	Plant workers, nearby communities, marine users	High	Moderate	• Emergency Preparedness and Response Plan (EPRP). • Fire detection and suppression systems. • Chemical spill containment and alarms. • Regular inspections, testing, and maintenance of emergency systems. • Routine training and emergency drills. • Coordination with local emergency services and authorities. • Community awareness on emergency procedures and contact points	Negligible
Gender-Based Violence, Harassment, and Sexual Exploitation & Abuse (GBVH/SEA)	Moderate	Women, children, vulnerable community members, workforce	High	Moderate	• Enforcement of Code of Conduct for all operational staff and security personnel. • GBVH/SEA awareness training and induction. • Zero-tolerance policy with disciplinary measures. • Confidential and accessible reporting and grievance mechanisms. • Continued monitoring despite reduced workforce size. • Community engagement to raise awareness and prevention	Negligible

17.5 Monitoring

Table 17-4 Community Health, Safety and Security Monitoring Measures

Indicator	Means of verification	Frequency
Local workforce recruitment promoted	Recruitment and HR records; LWCMP reports	Monthly (construction); annually (operation)
Workers' Code of Conduct communicated and signed	Signed Code of Conduct forms; induction records	Prior to mobilisation; refreshers annually
Worker accommodation meets EBRD/IFC standards (construction)	Accommodation inspection reports; audit records	Quarterly during construction phase
Cultural sensitisation training delivered	Training attendance sheets; toolbox talk records	Upon induction and refresher course in every 6 months
STI/communicable disease awareness activities conducted	Campaign materials, attendance lists and coordination records	Annually
Community Health & Safety Management Plan implemented	Approved plan Internal audit and inspection reports	Ongoing the life of the Project
Emergency Preparedness and Response Plan (EPRP) in place and communicated	Approved EPRP Training and drill reports	Ongoing the life of the Project
Marine and coastal activities managed to protect public safety	Marine access permits Exclusion zone records Inspection reports	During marine works and quarterly during operation stage
Chemical storage, handling, and spill response compliant with EHS standards	Chemical inventories, inspection reports, spill logs	Monthly
Operational waste managed in accordance with Waste Management Plan	Waste tracking records	Monthly
Traffic & Transport Management Plan implemented	Approved plan, Traffic monitoring records	Ongoing the life of the Project
Number & nature of trainings on GBVH/SEA	Training materials, records & attendance sheets	As per the GBVH training plan during construction & operation
Number of GBVH/SEA grievances handled through a survivor centred approach	GBVH GRM Log	Ongoing the life of the Project
Number of conflicts (including type) between the workers and community members including any cases relating to sexual harassment	GRM log	Daily during construction and quarterly during operation
Record of incidents/accidents and near misses (involving external parties)	Records from daily monitoring procedures on site	Ongoing the life of the Project
Number of grievances closed out, average time for grievance processing and close out and trends, grievance topics	GRM Log	Quarterly during construction & bi-yearly during operation
Number and type of security incidences including how these are closed out	Security reports GRM Log	Ongoing the life of the Project
Record of any communicable diseases on site that could pose a risk to the local communities. This will include: No of cases recorded Type of disease Action taken	Project site clinic or HSE personnel	Ongoing the life of the Project

Indicator	Means of verification	Frequency
Number of community engagements and sensitization on road safety.	MoMs and attendance sheets of the awareness campaigns conducted by the EPC Contractor with local communities on road safety.	Before the delivery of project materials/equipment can start and thereafter if there is a considerable change to the delivery schedule
Permits & licenses in relation to transportation of Project materials, components & equipment	Validity and renewal of permits & licenses	As required by law
Community grievance mechanism accessible and operational. Record keeping in case of accidents or incidents or in case of any complaints from local communities.	GRM Log HSSE records	Construction and Operation phases

18.0 Labour and Working Conditions

18.1 Applicable Requirements & Standards

18.1.1 National Regulations

Pursuant to Article 35 of the Constitution of the Republic of Azerbaijan, labour is the basis of individual and public welfare. Every person has the right to freely choose an activity, profession, occupation, and place of work on the basis of their skills and abilities.

The Labour Code of the Republic of Azerbaijan (1999), as amended on 28-06-2024, and effective on 12-08-2024, is the main legislation in the Country that governs employment relationships between workers (employees) and employers. It also governs other legal relations between employees and employers and established minimum requirements in regards to labour rights of persons and the implementation of these rights.

The Labour Code authorises the following:

- 'Employment, social and economic rights of employees and employers in the sphere of labour relations on the basis of the appropriate legal norms and a minimum level of proper guarantees relating to said rights'.
- 'Employment, social and economic rights of employees and employers in the sphere of labour relations on the basis of the appropriate legal norms and a minimum level of proper guarantees relating to said rights'.
- 'Principles and procedures ensuring the right to employment, rest and work under safe and healthy conditions and to other basic human rights and freedoms as stipulated in Section Two of the Constitution of the Republic of Azerbaijan'.

The labour code also specifies:

- Rights to work, rest, work in safe and healthy conditions, and other basic rights and human freedom.
- Termination of employment relationships and the protection of the rights of participants of these relations according to the international treaties signed by the Azerbaijan Republic which is the International Labour Organization Conventions and other international precepts of law.

18.1.1.1 Human Rights

The rights of people are guaranteed by the Constitution of Azerbaijan under Chapter III 'Basic Rights and Liberties of a Person and Citizen' which lists the main principles of these rights. The constitution states that "*The state guarantees equality of rights and liberties of everyone, irrespective of race, nationality, religion, language, sex, origin, financial position, occupation, political convictions, membership in political parties, trade unions and other public organizations. Rights and liberties of a person, citizen cannot be restricted due to race, nationality, religion, language, sex, origin, conviction, political and social belonging*."

Azerbaijan ratified the Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR) on 15 April 2002. Human right treaties ratified by Azerbaijan include (Treaty Body Database, 2020):

- Convention against Torture and Other Cruel Inhuman or Degrading Treatment or Punishment (ratified 16 August 1996);
- Optional Protocol of the Convention against Torture (ratified 28 January 2009);
- International Covenant on Civil and Political Rights (ratified 13 August 1992);

- Second Optional Protocol to the International Covenant on Civil and Political Rights aiming to the abolition of the death penalty (ratified 22 January 1999);
- Convention for the Protection of All Persons from Enforced Disappearance (signed 6 February 2007);
- Convention on the Elimination of All Forms of Discrimination against Women (ratified 10 July 1995);
- International Convention on the Elimination of All Forms of Racial Discrimination (ratified 16 August 1996);
- International Covenant on Economic, Social and Cultural Rights (ratified 13 August 1992);
- International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (ratified 11 January 1999);
- Convention on the Rights of the Child (ratified 13 August 1992);
- Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict (ratified 3 July 2002);
- Optional Protocol to the Convention on the Rights of the Child on the sale of children child prostitution and child pornography (ratified 3 July 2002); and
- Convention on the Rights of Persons with Disabilities (ratified 28 January 2009).

18.1.2 Lender Requirements

18.1.2.1 IFC

IFC Performance Standard 2 relates to Labour and Working Conditions, in accordance with the Standard there is a requirement to align with the following conventions:

- ILO Convention 29 on Forced Labor.
- ILO Convention 87 on Freedom of Association and Protection of the Right to Organize.
- ILO Convention 98 on the Right to Organise and Collective Bargaining.
- ILO Convention 100 on Equal Remuneration.
- ILO Convention 105 on the Abolition of Forced Labor.
- ILO Convention 111 on Discrimination (Employment and Occupation).
- ILO Convention 138 on Minimum Age (of Employment) which sets the minimum age specified as 15 years)
- ILO Convention 182 on the Worst Forms of Child Labor.
- UN Convention on the Rights of the Child, Article 32.1.

18.1.2.2 AIIB

AIIB's ESF requires borrowers to ensure that workers engaged for the Project are provided with fair and safe working conditions, including:

- Respect for workers' fundamental rights in accordance with applicable national labour laws and internationally recognised labour standards;

- Prevention of forced labour, child labour, discrimination, and harassment in employment;
- Provision of safe and healthy working conditions and implementation of appropriate occupational health and safety measures;
- Fair treatment, non-discrimination, equal opportunity, and appropriate terms and conditions of employment;
- Establishment of accessible grievance mechanisms for workers and ensuring that workers can raise concerns without fear of retaliation.

The Project's Labour Management Procedures (LMP) and associated labour-related measures have been developed to align with AIIB ESF requirements, IFC Performance Standard 2 (Labour and Working Conditions), and applicable national labour legislation.

18.1.2.3 ADB

ADB's ESS 2: Labour and Working Conditions, requires borrowers to promote fair treatment, non-discrimination and equal opportunity for project workers, while providing safe and healthy working conditions throughout the Project lifecycle. Key requirements include:

- Respect for workers' fundamental principles and rights at work, consistent with applicable national labour legislation and internationally recognised labour standards;
- Prohibition of forced labour, child labour, discrimination, harassment, and violence in the workplace;
- Provision of safe and healthy working conditions through the implementation of appropriate occupational health and safety measures;
- Fair terms and conditions of employment, including equal opportunity and protection of vulnerable workers;
- Respect for workers' rights to freedom of association and collective bargaining, where recognised under national law;
- Establishment of an accessible worker grievance mechanism that enables workers to raise concerns without fear of retaliation.

18.2 Baseline Conditions

18.2.1 Labour in Azerbaijan

According to the State Statistical Committee of Azerbaijan[81], the labour market and the efficient use of the workforce have become key priorities of Azerbaijan's recent socio-economic policy.

As of 2024, the labour force in Azerbaijan reached 5.25 million people, an increase of 662.3 thousand compared to 2010. Of these, 4.96 million were employed in economic sectors, while 286.4 thousand were unemployed.

Reforms, especially the privatization of state-owned enterprises, led to notable shifts in employment distribution. In 2010, 26.4% of employed individuals worked in the state sector. By 2024, this figure had decreased to 21%, reflecting a 1.2-fold increase in non-state sector employment over the same period.

[81] State Statistical Committee. Labour statistics. Accessed: https://www.stat.gov.az/source/labour/?lang=en.

In 2024, 2.55 million people (52%) were employed in production sectors such as agriculture, fishing, industry, and construction, while 2.41 million (49%) worked in services. Employees (i.e., wage earners) accounted for 1.75 million people, or 35% of the total employed population, with the majority working in medium and large enterprises.

The Presidential Decree on "*Continuing Measures for Improving the Social Welfare of the Population*" issued in December 2024, raised the minimum wage in Azerbaijan from AZN 345 in 2024 to 400 AZN starting from January 2025.

18.2.2 Forced and Child labour

Azerbaijan Labour Code sets the minimum working age at 15 years though persons under the age of 18 years are prohibited from conducting hazardous work. This is in alignment with ILO Convention No. 182. Additionally, the government has committed towards the "Strategy for Children of the Republic of Azerbaijan, 2020-2030" which strengthens child protection systems and helps prevent child labour through education, reintegration and social support programs.

In relation to forced labour, Articles 35 of the Constitution, Section 17 of the Labour Code and Article 144 of the Criminal Code prohibits forced labour in Azerbaijan.

Despite the on-going efforts, the U.S Department on Labour reported that in 2024, Azerbaijan made only limited progress in eliminating the worst forms of child labour. While the number of labour inspectors increased, and awareness efforts were expanded, including training law enforcement and distributing educational materials, key enforcement gaps remain. The report noted that a moratorium on worksite inspections limits the ability to proactively detect violations, and reliance on desk reviews in response to complaints is insufficient. Additionally, pressure to meet agricultural production targets may encourage the use of exploitative labour, including children. In some cases, authorities treat child street labour as a domestic issue, preventing proper legal action.

In relation to the communities living near the Project site, consultations with the Kimyachilar, Khazar Baghlari, Khazri and Haji Zeynalabdin settlements revealed that no cases of child labour and/or forced labour have been reported or recorded in the area.

18.2.3 Access to Employment and Wage Gaps

Women are active in the labour force; however, they experience higher rates of unemployment and earn less than their men counterparts, in part due to a preference for flexible part-time jobs that enable them to manage household roles[82].

In rural Azerbaijan, the agricultural sector is one of the largest sources of informal employment, with men comprising the majority of the workforce. Informal work also constitutes unpaid work performed by family members, occurring in family farms and other enterprises for subsistence purposes (Guliyev, F. 2015). The scale of informal activities is difficult to determine due to the hidden nature of these activities and the unreliability of official statistics[83]. Women represent two-third of all contributing family workers, as compared with other categories of workers, across all sectors (FAO, 2022). Despite their involvement, women receive minimal renumeration and remain economically dependent on male relatives.

[82] ADB. 2019. "Azerbaijan: Country Gender Assessment". Available in: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf.

[83] Guliyev, F. 2015. "The informal economy in Azerbaijan". In *Caucasus Analytical Digest*, No. 75, pp. 7-10. Available in: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2633425.

Gender pay gaps persist across all economic activities, with women earning lower wages and salaries than men, except within the education sector, where women earn more than their male counterparts. This is clearly demonstrated in the table below as per the State Statistical Committee (2024).

Table 18-1 Average monthly wages and salaries of employees by types of economic activity and sex in Azerbaijan, 2023 (State Statistical Committee, 2024)

Economic Activity	Average monthly Wages and Salaries, Manat		Average Monthly Wages of Women as percent to average monthly nominal wages and salaries of men (%)
	Women	Men	
Agriculture, forestry and fishing	477.10	583.80	81.7
Mining	2,790.6	3,427.60	81.4
Manufacturing	583.0	933.20	62.5
Electricity, gas and steam production, distribution and supply	840.70	980.80	85.7
Water supply, waste treatment and disposal	584.30	777.90	75.1
Construction	798.40	1,083.90	73.7
Trade; repair of transport means	545.60	665.90	81.9
Transportation and storage	943.30	1,346.8	70.0
Accommodation and food service activities	600.20	779.2	77.0
Information and communication	1,267.4	1,614.8	78.5
Financial and insurance activities	1,600.1	2,751.5	58.2
Real estate activities	733.3	990.1	74.1
Professional, scientific and technical activities	1,032.7	2,001.2	51.6
Administrative and support service activities	481.0	606.8	79.3
Public administration and defence; social security	1,210.0	1,411.4	85.7
Education	684.5	793.8	86.2
Human health and social work activities	736.4	1,050.0	70.1
Art, entertainment and recreation	645.3	838.3	77.0
Other service activities	788.9	1,274.7	61.9
Total	735.7	1,069.3	68.8

18.2.4 Labour Influx

The Sumqayit Industrial Park (SIP), a key hub of Azerbaijan's industrial potential, prioritizes diverse manufacturing and processing activities. The Park's primary strategic sectors include the chemical industry (inorganic and organic chemicals, polymers, household, and pharmaceutical chemical products), mechanical engineering (electrical power equipment,

machine tools, automotive, and agricultural machinery), and metallurgy (ferrous and non-ferrous metals, metallurgical additives). Additionally, the Park hosts operations in construction materials, ICT products, light industry, and packaging. In terms of employment, the Park hosts 40 resident companies, which have collectively created 5,984 jobs. This reflects Park's significant role in both the regional industrial development and its substantial socio-economic impact.

As per the information collected from the State Labour Inspection Service (SLIS) and Economic Zones Development Agency through Key Informant Interviews (KIIs), there are Vocational Education Center (VEC) which is established under the "Sumqayit Industrial Park" LLC by Decree No. 68 of the Cabinet of Ministers of the Republic of Azerbaijan, dated April 19, 2013, to ensure the training of qualified personnel for industrial specializations. The Center's official opening took place on September 14, 2020.

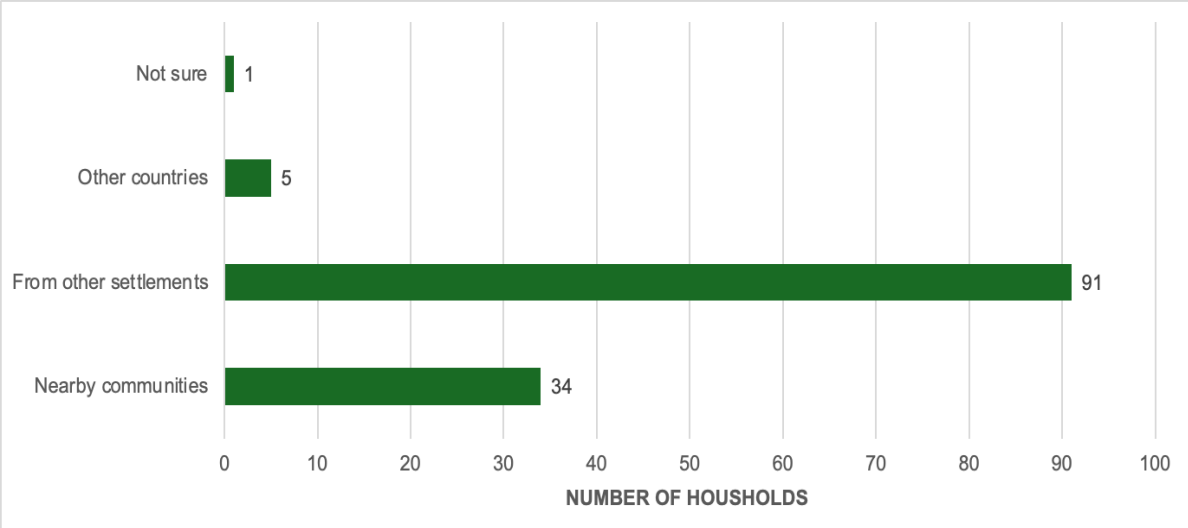
Instruction at the VEC is delivered through two tiers: Technical Vocational Education and High Technical Vocational Education.

- **Industrial Specializations:** The industrial stream includes training in the following fields: operation of automation systems; operation of electronics and communication systems; installation and operation of electrical equipment in industrial and civil buildings; operation of alternative energy installations and equipment; master technician programs in automation and electronics; electric and gas welding; computer numerical control (CNC) machine operation; lathe and milling machine operation; and maintenance of heating and cooling systems.
- **Information Technology (IT) Specializations:** The IT stream comprises programs in computer systems programming, graphic design, and ICT technician training.

The recruitment process within resident companies operating in economic zones falls entirely under the exclusive jurisdiction of those entities. Matters such as labour requirements, work permits, and terms of collective bargaining or trade union engagement are subject to the independent decision-making of the resident company. These companies organize their workforce and define recruitment and employment terms in strict accordance with the Labor Code of the Republic of Azerbaijan and other relevant national regulations.

it is understood that workers for existing industrial facilities are predominantly sourced locally or from other regions of Azerbaijan where labour mobility is common. Large scale external labour influx has historically been limited. Even at moderate levels, labour influx can exert pressure on local infrastructure, housing, labour markets, and social services.

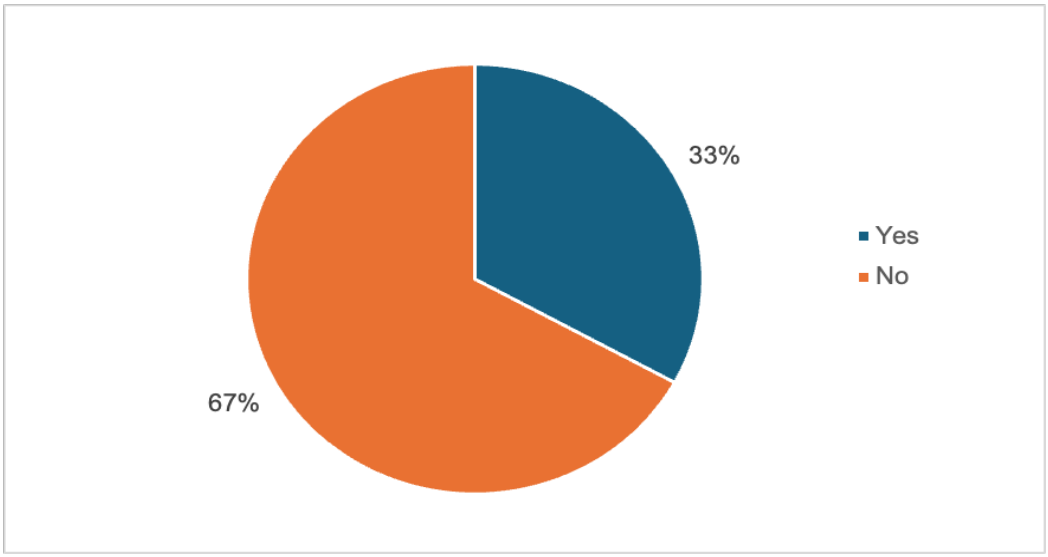
During the course of the ESIA study, socio-economic survey was also conducted among the settlements of Kimyachilar, Khazar Baghlari, Khazri and Haji Zeynalabdin to understand on the impact of the labour influx on the local communities.



Source: Socio-Economic Survey, ESIA Study (December 2025-January 2026)

Figure 18-1 Source of Migrant Workers

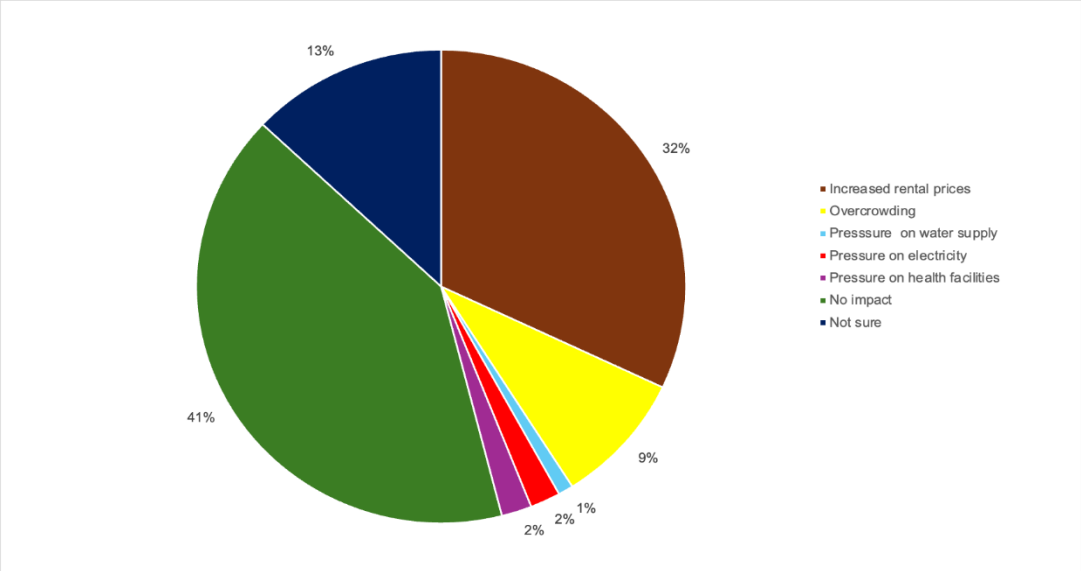
Out of the 131 households that responded to this question, 34 households reported that all migrant workers originate from the immediate surrounding communities, while 91 households indicated that migrant workers are drawn from nearby settlements within the wider Sumgait region. Only five households reported the presence of foreign workers.



Source: Socio-Economic Survey, ESIA Study (December 2025-January 2026)

Figure 18-2 Growth in Migrant Workers

Of the 131 households that responded, only 33% perceived an increase in the number of migrant workers, while 67% reported no growth in this workforce.



Source: Socio-Economic Survey, ESIA Study (December 2025-January 2026)

Figure 18-3 Social and Economic Impact of Labour Influx

The chart highlights that the most significant perceived social effect is the "No impact" category, though housing-related concerns follow closely.

- **No Impact (41%):** The largest segment of respondents indicated that there was no social impact.
- **Increased Rental Prices (32%):** Nearly one-third of participants identified rising rental costs as a primary social consequence.
- **Not Sure (13%):** A significant portion of the sample remained uncertain about the specific social effects.
- **Overcrowding (9%):** A smaller but notable group associated water supply issues with increased living density.

18.3 Area of Influence and Receptors

18.3.1 Area of Influence

The Area of Influence for labour and working conditions extends beyond the physical boundaries of the project site to include locations where project-related workforce and contractors are present, and where potential labour-related impacts may arise. For the Caspian Sea SWRO desalination project, the AoI includes:

- **Project Site**: The 20-hectare desalination plant site within the Sumgait industrial area.
- **Nearby Industrial Facilities** – Other companies within the Sumgait Industrial Zone whose operations may influence workforce movement, safety, or access to shared infrastructure.
- **Nearby Communities** – Settlements that may be indirectly affected by workforce presence and project activities, including Kimyachilar, Khazar Baghlari, Khazri, and Haji Zeynalabdin.

18.3.2 Receptors

The following table provides an overview of E&S impact receptors in the context of potential impacts relating to labour and working conditions.

Table 18-2 Sensitive Receptors for Labour and Working Conditions

Receptor	Sensitivity	Justification
Direct and contracted workers	**High**	Direct and contracted workers employed by the Project Company, EPC Contractors and sub-contractors have a potentially high sensitivity to risks associated with exploitative, abusive and harmful working terms and conditions, and those relating to indecent living conditions.
Local community members	**Medium**	Residents in nearby settlements (e.g., Kimyachilar, Khazar Baghlari, Khazri, Haji Zeynalabdin) may be indirectly affected by workforce presence through social interactions, increased demand on local services, or potential social conflicts.
Nearby industrial workforce	**Medium**	Workers from adjacent industrial facilities in the Sumgait Industrial Zone may indirectly interact with the project workforce, influencing cumulative occupational or social pressures, such as competition for labour, shared transport, and health and safety considerations.
Vulnerable groups	**High**	Workers or community members with particular vulnerabilities (e.g., women, young workers) may be disproportionately sensitive to unsafe or exploitative labour practices and limited access to grievance mechanisms.

18.4 Potential Impacts, Mitigation, Management & Residual Impacts

18.4.1 Construction Phase

The nature of construction work means that construction workers (especially unskilled, semi-skilled workers) will potentially be impacted by the Projects based on the working conditions they will be exposed to. The potential impacts are as discussed in the sections below.

18.4.1.1 Occupational health & safety

Construction of the desalination plant involves civil, mechanical, electrical, and marine works, which present various OHS risks. Key hazards include working at heights, lifting operations, excavation, vehicle interactions, noise, dust, vibration, welding fumes, hazardous substances, electrical risks, and marine-related activities such as working on piers, jetties, and intake structures, which may pose drowning risks. Poorly managed conditions may also result in heat stress, fatigue, ergonomic injuries, or exposure to communicable diseases. Additional OHS risks may arise from workforce transportation, shared access roads, and interactions with adjacent industrial operations within the Sumgait Industrial Zone.

To manage these risks, the Project will adhere to IFC Guidelines, applying the mitigation hierarchy. Measures include safe site design, segregation of pedestrian and vehicle routes, engineering and administrative controls, task-specific risk assessments, permit-to-work systems, and provision of appropriate PPE. Workers and contractors will receive mandatory induction and ongoing training, and emergency preparedness and response plans will be implemented. Health measures such as hygiene protocols and medical screening will minimize communicable disease risks. The Project will take all measures to manage

potential OHS risks including those related to site preparatory works with potential to have workers' exposure to contaminated soil or groundwater.

OHS performance will be overseen through a structured management system enforced across all contractors, incorporating incident reporting, inspections, audits, and worker engagement. With these measures, residual OHS impacts are expected to be low, site-specific, and manageable, ensuring worker safety and minimizing project disruptions.

18.4.1.2 Forced Labour

Article 35 of the Constitution of Azerbaijan guarantees the right to freely choose work, including profession, occupation, and place of employment. Article 9 of the Labour Code allows workers to enter employment contracts according to their qualifications and ensures safe and healthy working conditions, with the option to request changes or termination. Article 13 extends these rights equally to foreign and stateless persons. Azerbaijan has also ratified the ILO Convention on Forced Labour.

The Project will employ approximately 1,800 workers during construction, with preference for qualified local candidates. Potential forced labour risks may arise if workers are coerced, charged recruitment fees, or if foreign workers have passports withheld, limiting their freedom of movement. Forced labour risks may also arise where workers are dependent on employers or intermediaries for accommodation, transport, or legal documentation, particularly in the case of migrant workers.

However, the risk is considered low due to ACWA's Human Resources and Supply Chain Management Systems, which will apply to the EPC Contractor, subcontractors, and suppliers. The EPC Contractor must also implement a screening process for any intermediary recruitment agencies to ensure compliance with lender requirements.

18.4.1.3 Child Labour

During the construction phase, the Project will generate employment opportunities, including within the supply chain, some of which require minimal skills and wages. Positions of this nature, particularly informal roles such as loading/unloading materials at storage sites or transport depots, manual handling, or packaging of construction materials may attract unemployed individuals and out-of-school minors (under 18 years of age). In accordance with PS-2, children under 18 must not be engaged in hazardous work, consistent with Azerbaijan's Labour Code (Article 250) and ILO standards.

There is a potential risk of child labour within supply chain companies engaged by the EPC Contractor and its subcontractors. To address this, ACWA and the EPC Contractor will assess and manage supply chain risks in accordance with the Supply Chain Management System.

18.4.1.4 Supply Chain Risks

The project relies on goods, services, and subcontracted works from a diverse network of suppliers, creating potential labour and working condition risks. Key concerns include forced or child labour, inadequate occupational health and safety (OHS), and non-compliance with national labour laws or IFC Performance Standard 2, covering fair wages, working hours, non-discrimination, and freedom of association.

The lack of accessible grievance mechanisms within the supply chain could exacerbate these risks, leaving workers unable to raise concerns and increasing the likelihood of unresolved disputes. Supplier violations may also pose reputational and regulatory risks for ACWA.

To mitigate these risks, suppliers and contractors will undergo screening and due diligence before engagement, assessing compliance with labour laws, OHS standards, and IFC PS2

principles, particularly regarding forced and child labour. Ongoing monitoring and audits, including site inspections, will ensure adherence to labour and safety standards. Suppliers are required to implement grievance mechanisms aligned with the project's system, enabling safe and transparent issue reporting.

Supply chain labour risks will be managed through a formal Supply Chain Labour Management Plan, which defines roles and responsibilities across project management, procurement, and EHS teams. Documentation and reporting will capture supplier compliance, incidents, and corrective actions.

With these measures, residual risks are expected to be low to moderate. Minor non-compliances may occur but will be promptly addressed through corrective action.

18.4.1.5 Inadequate working conditions

Compulsory Overtime and Excessive Working Hours

Article 9, 89 & 90 of the Labour Code states that workers have the right to work in the working hours established by law which is no more than 8 hours a day and 40 hours per week with a working week set at five working days and two days off. In certain industries, the employer may impose a six-day working week; in such situations, the daily working time limits may not exceed 7 hours (if the weekly total is 40 hours), 6 hours (if the weekly total is 36 hours), or 4 hours (if the weekly total is 24 hours) a day. In addition, according to Article 99 overtime work may only be allowed with the consent of the employee. The amount of salary/wages/remuneration paid cannot be below the minimum amount established by law.

As such, the Project Company and the EPC Contractor will ensure that all workers, regardless of rank, gender or religious affiliation etc. are paid a fair wage and equal remuneration for work of equal value without discrimination. In addition, remuneration must be enough for workers to be able to live a decent life. In addition, any overtime hours will be agreed with the employee and compensated in accordance with the provisions in Article 165.

Job security for construction workers will only be for the period when construction is undertaken, and workers will be employed on contractual basis and as such no retrenchment is expected to occur. The Project Company and the EPC Contractor will ensure that all workers are informed on their rights under the law, nature of their contracts, duration so that they understand the start and end period.

Lack of Access to Workers' Grievance Mechanism

Workers contracted by the EPC Contractor and sub-contractors may not be able to freely express their opinions on the prevailing working conditions or seek remedy. This may be because they do not know that a grievance mechanism is available to them, how it works, or they are afraid of retribution.

18.4.1.6 Provision of Inadequate Accommodation Facilities

The EPC Contractor will provide accommodation facilities to the Project workforce, and it is noted that there will be requirements for workers to be accommodated in alignment with the benchmarks outlined in the IFC & EBRD Workers Accommodation: Processes & Standards (2009).

There is a potential risk that accommodation facilities may be inadequate vs. the aforementioned guidelines. Key risk areas are likely to be during the commencement of construction where accommodation camps may not be fully established, and all amenities may not be in place at the camp(s). This has the potential to include a lack of relevant facilities, welfare provisions on-site such as clean drinking water, hygienic and ample toilet

facilities, hand basins (with soaps/hand wash), temporary rest areas, food and other amenities necessary to the workers.

In the event that there are female workers, there is a potential risk that accommodation facilities may not fully meet requirements for separate and appropriate living and welfare arrangements.

18.4.1.7 Lack of Worker Representation and Restrictions on Trade Unions

Workers (both local & migrant workers) will be allowed to be involved in labour unions, public associations, organisations or labour collective in accordance with Article 19 and Article 25 of the Labour Code. The Project Company, EPC Contactor and associated subcontractors will not prevent workers from forming associations or joining trade unions depending on their preferences.

In addition, collective bargaining and freedom of association is allowed in Azerbaijan under Law No. 792 of 24 February 1994 on Trade Unions. The law allows organisation of unions and their fundamental rights including the right to conclude collective agreements and the right to hold mass events.

In order to ensure that the right to form and/or join trade unions or elect representatives is guaranteed, the Project Company and the EPC Contractor will include a clause in their Human Resources Policies and Procedures that allow workers to form or join a union and/or elect worker representatives without discrimination or risk of retaliation and the same communicated to workers during induction. It will also be permissible for workers to raise collective grievances via the Project's grievance mechanism.

18.4.1.8 Potential Gender Risks Associated with the Project

Gender Based Violence & Harassment

During the construction phase, workers will be vulnerable to various forms of harassment, exploitation and abuse, aggravated by a traditionally male working environment. GBVH/SEA/SH may be committed by co-workers or construction supervisors and can be attributed to gender stereotypes about female construction workers. In addition, income earning opportunities for women through direct employment during the construction phase or through indirect employment (workers' employment) may have the potential to increase household tensions and expose women to harassment and violence in their homes or communities. This is because some men may feel threatened when the women in their lives are more economically empowered and independent.

The Project security personnel may use disproportionate force during their interactions with their workers. Such force may include physical and/or verbal abuse. As such, the Project will require to implement a Security & Human Rights Management Plan to manage such risks.

Additionally, some of the male workers who will be transporting Project machinery, equipment and goods will also be involved in long distance travel which in some cases will be between different countries. There is a risk that they can also be involved in GBVH/SEA/SH on the routes they use and at track stops associated with the Project even if it is outside the Project boundary.

GBVH/SEA/SH in Accommodation Facilities

Accommodation will be provided for Project workers. Mixed-gender accommodation environments can present safety, privacy, and welfare risks, particularly for women workers, if appropriate provisions are not in place. These risks may relate to the use of shared spaces such as cafeterias or sanitation facilities. The EPC Contractor will ensure safeguards such as secure accommodation areas, lockable rooms, separate sanitation facilities, and the option of separate accommodation compounds where necessary. In recognition of local

cultural and religious practices, separate social and prayer facilities will also be provided for men and women.

Wage discrimination based on Gender

In 2006, the Azerbaijani Parliament passed a law on the 'Guarantee of Gender Equality (men and women). According to the Law, women and men are granted equal rights and responsibilities in respect of recruitment, promotion and wage remuneration (Articles 7–9). Further, to promote wage parity between men and women, the government of Azerbaijan ratified ILO's Convention No. 100 (Equal Renumeration for Men and Women Workers for Work of Equal Value). However, the issue remains that women tend to be concentrated in low-status sectors which leads to low-wage jobs. In addition, the construction industry is predominantly male, and women may only be offered low-paying jobs such as cooks, cleaners etc.

As such, the EPC Contractor and its sub-contractors will be required to provide equal access to recruitment opportunities for men and women based on their qualifications and also provide equal salaries. In addition, a policy of equal pay will be included in the Labour and Working Conditions Management Plan (LWCMP).

Discrimination based on employment benefits & Guarantees

Women who intend to pursue a career are still expected to balance between their job obligations and family life which ultimately affect their career paths. In addition, employers may potentially prefer to employ men over women because most of the employment family benefits and guarantees are associated to women. For instance, according to Article 125 of the Labour Code women employees are entitled to a full paid maternity leave for a period of 126 days. This includes 70 days given before the expected birth of the child and 56 days after the birth. In case of abnormal or multiple births, women will be granted a total of 140 days which are split equally before and after birth. Depending on the industry the women work, the total number of maternity leave day and the leave days before childbirth and after childbirth varies. Although men may be eligible for partially paid social leave as a single parent or when directly caring for a child, childcare (especially in rural areas) is still seen as a woman's job.

As such, women of childbearing age may face potential discrimination during the recruitment process because the EPC Contractor and its sub-contractors may want to avoid providing the benefits and guarantees relating to maternity or childcare. To mitigate this, the EPC Contractor and sub-contractors will be required to include the benefits and guarantees for both men and women in the LWCMP with a clear commitment to non-discrimination during the recruitment process.

Table 18-3 Labour and Working Conditions: Impact Significance, Mitigation & Management Measures and Residual Impacts – Construction

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
Occupational Health and Safety (OHS) Risks (working at heights, lifting, excavation, electrical, marine works, heat stress, fatigue, exposure to dust/noise/fumes)	Moderate	Construction workers (skilled, semi-skilled, unskilled, marine workers)	High	Moderate	• The EPC will develop and implement a construction phase Occupational Health and Safety Management System including an Occupational Health Management Plan. The provisions will include as a minimum: - Risk assessments - Activities & method statements register - HSE training matrix - Safety assessment. - Task specific toolbox talk topics - Controls for hazardous activities - Use of mobile and heavy construction equipment - Reporting unsafe acts and/or conditions - Stop work policy - Fire safety - Provision and enforcement of personal protective equipment (PPE) usage for all employees etc. • Ensure that all the requirements within the OHS MS and OHSMP are applied to all project workers including sub-contractors. • The EPC will develop and implement an Emergency Preparedness and Response Plan which will include details of the emergency scenarios, response protocols, training requirements, roles & responsibilities, internal and external communication protocols etc. The EPRP will also be communicated to all the relevant stakeholders. • The EPC will conduct regular planned and unplanned inspections of their sub-contractors to ensure construction activities are in line with the OHS MS and the OHSMP. • Access to the site will only be allowed to the employees with approved access cards.	Minor to Negligible

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
Forced Labour Risks	Moderate	Construction workforce, migrant workers, supply chain workers	High	Moderate	• Develop and implement a Labour and Working Conditions Management Plan (LWCMP) which will also include explicit prohibition of forced labour. • The Project Company will implement the Supply Chain Management System which will be used to identify, manage, and remedy supply chain risks. • The Project Company and EPC Contractor will develop a Project-specific Human Rights/ Forced Labour policy statement (that may be incorporated into an overarching HR/E&S Policy). The statement will underscore the definition and prohibition of various forms of forced labour and human trafficking. Practices constituting forced labour (e.g. deceptive recruitment, confiscation of personal belongings, withholding of accrued pay and illegitimate overtime requirements) will be strictly proscribed. • The EPC Contractor (and sub-contractors) will be required to develop a screening procedure if they use intermediary agencies to recruit workers to ensure they are compliant with the lenders' requirements. Additionally, the Project Company will undertake regular audits on these agencies to ensure compliance. • The Project Company will ensure that the EPC identifies the legal employer of all project workers and ensure compliance with the HSSE MS and the LWCMP. • The Project Company will develop and implement a Project GRM for all workers and maintain a GRM log. Additionally, the Project Company will ensure the same is cascaded down to the EPC and sub-contractors. • The Project Company will ensure that a HR data base will be established for the Project where the EPC and their sub-contractors will provide details of their workers including all official documentation such as work permits/visas, signed employment contracts, employee age, signed code of conduct, confirmations to work overtime etc.	Negligible
Child Labour Risks (particularly in informal supply chain activities)	Low to Moderate	Minors in supply chain	High	Moderate	• Develop and implement a LWCMP which will also include explicit prohibition of child labour • The Project Company will implement the Supply Chain Management System which will be used to identify, manage, and remedy supply chain risks. • A Human Rights Policy will be prepared for the Project or as part of the HSSE MS. The Policy will align with the lenders' requirement and include	**Negligible**

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
					a commitment to respecting and safeguarding the rights of the right holders. This Policy will be cascaded down to the EPC & their sub-contractors. • The Project Company will ensure that regular labour audits are undertaken to ensure compliance with the lenders' labour requirements. • A HR data base will be established for the Project where the EPC and their sub-contractors will provide details of their workers including all official documentation such as work permits/visas, signed employment contracts, employee age, signed code of conduct, confirmations to work overtime etc. • Access to the site will only be allowed to the employees with approved access cards.	
Supply Chain Labour and OHS Risks	Moderate	Supply chain workers	Medium	Moderate	• Pre-engagement due diligence of suppliers/contractors. • The Project Company will implement the Supply Chain Management System which will be used to identify, manage, and remedy supply chain risks. • Grievance mechanisms in place for supply chain workers. • Develop and maintain a Sub-contractor and Supplier Management Plan.	**Minor**
Inadequate Working Conditions – Excessive Working Hours & Compulsory Overtime	Moderate	Construction workers	High	Moderate	• The Project Company will develop and implement a Project specific Human Resource (HR) Policy and Management System in line with lenders' labour requirements. This will also be cascaded to the EPC Contractor and sub-contractors and will include a commitment to the following: - Equal employment opportunities - Non-discrimination - Equal wages for equal work performed between men and women - Workers benefits - Zero tolerance to retaliation against workers, sexual harassment and GBVH. - Fundamental principles related to workers' rights to form and join workers' trade unions/collective bargaining. - Conditions for contract termination i.e., misconduct, incapacity to meet their duties etc.	**Minor**

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
					- GRM • Develop and implement a LWCMP which will among other things include working hour provisions as specified in the Azerbaijan law. • Explicit consent will be documented for workers who work overtime including an outline of the compensation as per the Labour Code. • All workers will be provided with information about their labour rights under the law, nature of their contracts, duration of contract etc. • The Project Company will develop and implement a Project GRM for all workers and maintain a GRM log. Additionally, the Project Company will ensure the same is cascaded down to the EPC and sub-contractors. • The Project Company will ensure that a HR data base will be established for the Project where the EPC and their sub-contractors will provide details of their workers including all official documentation such as work permits/visas, signed employment contracts, employee age, signed code of conduct, confirmations to work overtime etc. • The workforce will be informed about the Workers' Grievance Mechanism during their site induction training, in employee handbooks and on posters across the site and in accommodation places. The implementation of the workforce Grievance Mechanism will be in accordance with the Project-specific SEP. • For the workers' grievance mechanism to be successfully implemented, it will be necessary to ensure that competent and trained staff are in place who can fully implement provisions, whilst ensuring compliance with the procedures and maintaining full integrity and privacy to the grievant. • Develop and implement a Workers Accommodation Plan which is compliant with the EBRD and IFC Workers' Accommodation: Processes and Standards. This will also include an accommodation and welfare audit plan. • The Project Company will ensure that regular audits are undertaken for the accommodation facilities.	

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
Lack of Access to Workers' Grievance Mechanism	Moderate	Construction and subcontractor workers	High	Moderate	• The Project Company will develop and implement a Project GRM for all workers and maintain a GRM log. Additionally, the Project Company will ensure the same is cascaded down to the EPC and sub-contractors. • Implement a confidential GRM for making reports (including anonymously) on sexual harassment and violence.	Negligible
Inadequate Worker Accommodation Facilities	Moderate	On-site workforce (including female workers)	High	Moderate	• Develop and implement a Workers Accommodation Plan which is compliant with the EBRD and IFC Workers' Accommodation: Processes and Standards. This will also include an accommodation and welfare audit plan. • The Project Company will ensure that regular audits are undertaken for the accommodation facilities.	Negligible
Restrictions on Freedom of Association and Worker Representation	Low	Construction workers	Medium	Minor to Moderate	• The Project Company will develop and implement a Project specific Human Resource (HR) Policy and Management System in line with ACWA HR Policy and lenders' labour requirements. This will be cascaded to the EPC Contractor & sub-contractors. • Workers will be informed of their right to join/form trade unions (or committees) during their induction. • Workers will have the right to submit collective grievances through the workers' GRM without intimidation and/or risk of retaliation.	Negligible
Gender-Based Violence, Harassment, SEA/SH	Moderate	Female workers, vulnerable workers	High	Moderate	• A GBVH risk assessment will be undertaken before the start of the construction phase. • A Gender Management Plan will be developed & implemented by the Project. This Plan will include the provisions for GBVH safeguards and it will be disclosed to the employees, security personnel and contractors. • Develop and implement a GBVH incident reporting procedure, training materials and implement a confidential GRM for making reports (including anonymously) on sexual harassment and violence. • The Project will engage a third-party competent gender/GBVH advisor prior to the start of the main construction works to provide training on GBVH issues and how to address any cases. • Assign and train a GBVH focal points (including women) to deal with GBVH incidents and grievances. Based on the training, these focal point persons will be required to establish a referral system for GBVH cases.	Negligible to Minor

Potential Impact	Magnitude	Receptor	Sensitivity	Impact Significance	Mitigation and Management Measures	Residual Impact
					• Develop the support mechanisms for survivors such as referral to support services etc. • The code of conduct and the reporting channels for grievances and GBVH contact information will be provided to workers during the induction and thereafter during on-going trainings. • A Security & Human Rights Management Plan will be prepared for the Project to include the procedures on conducting a security risk assessment, screening of security personnel, code of conduct, type of training to be provided, process of investigating security incidents, GRM to submit grievances about security personnel etc. • All security personnel will be required to sign the Code of Conduct before they are engaged by the Project.	

18.4.2 Operation Phase

18.4.2.1 Occupational Health and Safety

The risk associated with the operational phase of the desalination plant is anticipated to be significantly lower than during construction due to reduced site activity and the absence of heavy civil works and large machinery. During operations, workers may be exposed to hazards including high-pressure pumps and pipelines, rotating machinery, electrical panels, chemical dosing systems (e.g., chlorine, acids, and antiscalants), confined spaces, slips, trips and falls, ergonomic strain from repetitive tasks, heat stress in plant areas, and noise from operating equipment. Personnel involved in intake or outfall inspections are additionally exposed to marine hazards, including drowning or injuries from working on or near water.

Occupational health and safety (OHS) performance will be continuously monitored through inspections, incident reporting, audits, and safety meetings. Both direct employees and contractors will be required to adhere to the same safety standards. Mechanisms for reporting near-misses and hazards will ensure rapid corrective actions. Emergency response plans, including rescue protocols for marine operations, will be regularly reviewed and updated to reflect operational changes and lessons learned from incidents or drills. Workers will also be provided with appropriate personal protective equipment (PPE) and receive regular training for high-risk tasks, including chemical handling, confined space entry, and machinery operation. Periodic health monitoring will support early identification of potential occupational exposures.

With these measures in place, residual OHS impacts are expected to be minor and limited to specific operational tasks. Furthermore, a structured Grievance Redressal Mechanism (GRM) will be implemented at the project level, available in multiple languages and through both online and hardcopy channels, allowing workers to raise safety concerns anonymously. Effective management ensures that risks are controlled, worker health is protected, and plant operations continue safely and efficiently.

18.4.2.2 Labour Risks to Workers

Forced Labour and Child Labour

As the vast majority of staff will be direct employees of the Project Company and/or the O&M Company the potential risks associated with worker exploitation are expected to be limited due to consistent processes in place as part of the respective HR management systems, assuming they are appropriately designed and have adequate resources.

However, where there are agency/contract staff the risks of exploitation (particularly forced and child labour) may be more prevalent

Provision of Inadequate Accommodation Facilities

No long-term accommodation requirements are anticipated for the operational phase of the Project. However, as with construction, operational activities will need to plan for and enforce just and fair treatment of operation and maintenance staff (including any engaged sub-contractors) in accordance with lender requirements and relevant Azerbaijan national requirements.

18.4.2.3 Potential Gender Risks

Even though there will be reduced workforce during the operational phase of the Project, the risk of gender issues relating to GBHV/SEA/SH, wage discrimination and access to employment benefits etc will remain. However, as with construction, operational activities will need to plan for and enforce just and fair treatment of operation and maintenance staff

(including any engaged sub-contractors) in accordance with lender requirements and relevant Azerbaijan national requirements.

Gender needs will be considered for welfare facilities including sanitation, rest, recreational and medical facilities. All the mitigation and management for gender risks during the construction phase will also be applicable for the operational phase of the project. In addition, the Project Company and O&M Company will be required to develop and implement a Gender Management Plan.

Figure 18-4 Labour and Working Conditions: Impact Significance, Mitigation & Management Measures and Residual Impacts – Operation

Potential Impact	Magnitude	Receptor	Sensitivity	Potential Impact Significance	Mitigation and Management Measures	Residual Impact
Occupational injuries and health risks from operation of high-pressure pumps, rotating machinery, electrical panels, and chemical dosing systems	**Medium**	Operational workforce (direct employees and contractors)	**High**	**Moderate**	• Implement and maintain a robust Occupational Health and Safety Management System (OHSMS) aligned with ISO 45001 and IFC EHS Guidelines. • Enforce permit-to-work systems for high-risk activities (electrical work, confined spaces, chemical handling). • Provide task-specific training, competency certification, and refresher courses. • Use appropriate PPE, machine guarding, lock-out/tag-out procedures, and chemical safety protocols. • Regular inspections, audits, incident reporting, and near-miss tracking. • Emergency response plans reviewed and tested periodically.	**Minor**
Slips, trips, falls, ergonomic strain, heat stress, and noise exposure during routine operational tasks	**Low**	Operational workforce	**High**	**Moderate**	• Good housekeeping practices and clear walkways. • Ergonomic assessments and task rotation to reduce repetitive strain. • Heat stress management (ventilation, rest breaks, hydration). • Noise monitoring and provision of hearing protection where required. • Safety signage and continuous safety awareness programs.	**Negligible**
Marine safety risks for workers involved in intake/outfall inspections (drowning, slips, vessel-related injuries)	**Low**	Marine and inspection personnel	**High**	**Moderate**	• Marine safety procedures and method statements. • Mandatory use of life-saving appliances and marine PPE. • Training in water safety and emergency rescue. • Weather and sea-state monitoring prior to works. • Emergency response and rescue equipment readily available.	**Minor**

Potential Impact	Magnitude	Receptor	Sensitivity	Potential Impact Significance	Mitigation and Management Measures	Residual Impact
Labour risks related to forced labour or child labour through agency or subcontracted workers	**Low**	Contracted and agency workers	**High**	**Moderate**	• Enforce a Project Labour Management Plan (LMP) compliant with IFC PS2 and Azerbaijan labour law. • Develop an operation- phase Labour and Working Conditions Management Plan aligned with ESMS requirements and scaled to the reduced workforce. • Contractor due diligence and contractual clauses prohibiting forced and child labour. • Regular audits of contractors and labour suppliers. • Worker induction on rights and access to grievance mechanisms.	**Negligible**
Gender-based risks including GBHV/SEA/SH, wage discrimination, or unequal access to benefits	**Medium**	Female and male operational workers	**High**	**Moderate**	• Develop and implement a Gender Management Plan applicable to operations. • Zero-tolerance policy for GBHV/SEA/SH with clear reporting and disciplinary procedures. • Gender-sensitive welfare facilities (separate sanitation, rest, and medical facilities). • Equal pay for equal work and non-discriminatory HR practices. • Gender awareness and Code of Conduct training for all staff.	**Minor**

18.5 Monitoring

Table 18-4 Labour and Working Conditions Key Monitoring indicators

MONITORING	PARAMETER	FREQUENCY & DURATIONS	MONITORING LOCATIONS
Construction & Operations			
Worker Contracts & HR	Records of contracts, payments, receipt of benefits, leave entitlements, consent of overtime etc	On-going	Construction & Operation HR data base
Women employed in the Project	Number of women employed Positions held Pay parity compared to male counterparts	On-going	Construction & Operation HR data base
Workers' accommodation	Based on IFC, EBRD Guidance Note on Workers' accommodation	Quarterly during construction	At all such facilities on-site
Occupational Health & Safety (OHS)	Implementation of OHS Management System & OHSMP, risk assessments, task-specific toolbox talks, safety inspections, PPE compliance	Monthly audits and inspections; Weekly toolbox talks; Daily site checks	Construction site, plant site, workshops, marine works, accommodation facilities
GBVH/SEA/SH trainings	Number & type of trainings Participant attendance	As per the GBVH training plan	Training materials, records, & attendance sheets etc.
Forced Labour	Screening of recruitment agencies, compliance with forced labour prohibitions, monitoring overtime practices, HR database verification	Pre-engagement audits; Quarterly HR audits; Ongoing monitoring	EPC offices, contractor offices, site offices, accommodation facilities
Child Labour	Verification of worker ages, compliance with child labour prohibition, HR database checks	Pre-engagement screening; Annual HR audit	Construction site, plant site, contractor offices
Training of security personnel	Induction and refresher training on the code of conduct, use of force, human rights etc.	During induction & refresher training as per the Security & Human Rights MP	Training materials, records, & attendance sheets etc.
Security incidences	Number and type of security incidences Resolution & close out measures	On-going	Security reports GRM
Grievances including those relating to GBVH/SEA/SH	Number & type of GRMs received including those relating to GBVH Resolution timelines	On-going	GRM Log
Workers' ability for collective bargaining and trade union	Number of workers who are union members Presence of collective union agreements Number & type of workers collective GRMs on working conditions.	Bi-annually	HR data base records GRM log Workers interviews

Monitoring	Parameter	Frequency & Durations	Monitoring Locations
OH&S, Emergency Situations and Incidents	As per the requirements established in the OHS MS and the OHSMP including the ERMP		

19.0 Human Rights Impact Assessment

19.1 Applicable Requirements & Standards

19.1.1 National Regulations

The Constitution of the Republic of Azerbaijan (last amended in 2016) is an important tool for the protection and promotion of human rights. This includes the requirements for "*Fundamental Rights, Freedoms & Duties*" with Chapter III specifically detailing the rights and freedoms of Man and Citizen. The applicable Articles are provided in Table 19-1.

Table 19-1 Overview of the Basic Rights within the Constitution

Human Rights	Description
Article 24 – Main Principles concerning Human Rights and Civil Liberties	Article 24 is considered the main principle of human rights, emphasizing the protection and respect of human dignity. These right states that everyone, as from the moment of birth, enjoys inviolable and inalienable rights and freedoms.
Article 25 – Right to equality	States that all people are equal before the law and the courts, regardless of race, ethnicity, religion, language, gender, origin, property status, beliefs, political views, or affiliation.
Article 26 – Protection of rights and freedoms of a man and a citizen	Everyone has the right to protect their rights and freedoms by lawful means. This rights states that Individuals can defend their rights in court or through other legal processes if they believe their rights have been violated. Article 26 (II)emphasizes the duty of the state to protect individual rights and freedoms.
Article 27 – Right to life	Everyone has the right to life. This right is protected by law, and no one can be arbitrarily deprived of life. It establishes the inviolability of life, explicitly forbids the arbitrary taking of life, and in practice supports the abolition of the death penalty (as per international commitments).
Article 28 – Right to liberty	No one can be deprived of their liberty except under conditions specified by law (e.g., arrest by a court order). This right reinforces due process in arrest and detention.
Article 29 – Right to property	Everyone has the right to own property No one form of property shall take precedence over others. The right to property, including the right to private property shall be protected by law.
Article 31 – Right to live in safety	States that everyone has the right to live in safety. Article 31 (II) further prohibits the use of force against individuals.
Article 32 – Right to inviolability of private life	Everyone has the right to confidentiality of his/her private life. Except in cases prescribed by law, interference with private or family life is prohibited. Gaining, storing, using and spreading information about the person's private life without his/her consent is not permitted.
Article 33 – Right to inviolability of home	Everyone has the right to personal inviolability. No one shall be subjected to torture, inhuman, or degrading treatment or punishment. This right upholds human dignity and freedom from physical coercion, especially from state actors.
Article 35 – Right to work	Everyone has the right to freely choose their occupation, to work in safe and healthy conditions, to freely sign labor contracts, and to receive fair pay.

Human Rights	Description
Article 36 – Right to Strike	States that citizens have the right to strike individually or collectively to protect their labour rights, furthermore; employees have the right to strike in order to protect their interests, within limits defined by law. This Article prohibits the initiation of lockouts by employers during labour disputes.
Article 37 – Right to Rest	Citizens are entitled to rest, including limitations on working hours, paid holidays, and weekly days off.
Article 39 – Right to live in a healthy environment	Everyone has the right to live in a healthy environment. These rights further states that no one may threaten or damage the environment and natural resources beyond the limits prescribed by law.
Article 40 – Right to culture	States that everyone has the right to partake in cultural life, to use cultural institutions and cultural values. Historical, cultural, and spiritual values must be treated with respect, preserved and cultural monuments are to be protected.
Article 41 – Right to protection of health	Everyone has the right to protection of his/her health and to medical assistance.
Article 42 – Right to education	Every citizen has the right to education. The right to free and obligatory secondary education is guaranteed.
Article 46 – Right to protect honour and dignity	Everyone has the right to protect his/her honour and dignity. Dignity of a person shall be protected by the state. No circumstances can justify the humiliation of the dignity of a person.
Article 47 – Freedom of thought and speech	Everyone has the right of thought and speech.
Article 49 – Freedom of assembly	Everyone has the right to freely assemble with others.
Article 50 – Freedom to information	Everyone is free to legally seek, receive, impart, produce, and disseminate any information.
Article 58 – Right to Association	Everyone has the right to establish any association, including political party, trade union and other public association or to join an already existing association. Freedom of activity of all associations is guaranteed.
Article 60 – Administrative and judicial guarantee of rights and freedoms	Everyone is guaranteed protection of his/her rights and liberties through the administrative remedies and in court.

Labour Code of Azerbaijan

The Labour Code of the Republic of Azerbaijan (1999) as amended on 28-06-2024, and effective on 12-08-2024, is in pursuant of Article 35 of the Constitution of Azerbaijan which governs the citizens' right to work which is fundamental to both individual and public welfare. Furthermore, the Labour Code governs labour relations between employees and employers, establishing minimum requirements for labour rights and their implementation.

Chapter 2 of Section I which governs "*Basic Rights, Duties and Labour Relations of Parties to Employment Agreements and General Legal Guarantees in the Area of Labour Relation Regulations",* outlines the following laws applicable to the development of the Project.

Article 9: Basic Employee Rights under Employment Agreements

- Freedom of Employment: Employees have the right to freely choose their type of labour activity and place of employment in accordance with their qualifications, specialty, and profession.

- Contractual Changes and Termination: Employees can approach the employer to request changes to the conditions of the employment contract or its termination.
- Engagement in profit-earning Activities: Employees may engage in lawful profit-earning activities outside of working hours, provided these activities do not conflict with their employment obligations.
- Safe Working Conditions: Employees are entitled to work in conditions that ensure the protection of their life and health and can demand the creation of such conditions.
- Fair Compensation: Employees have the right to receive a salary not less than the minimum wage established by legislation, including additional pay for overtime work.
- Refusal of Non-Contractual Work: Employees can refuse to perform work not specified in their employment contract and, if such work is performed, they are entitled to appropriate additional compensation.
- Social Support: Employees may receive appropriate social assistance from the employer aimed at improving their housing and social conditions, including of their family members.
- Regulated Working Hours: Employees have the right to work within the working hours established by legislation, including provisions for shorter working days in certain professions.
- Rest and Leave: Employees are entitled to weekly days off and various types of leave, such as annual, social, unpaid, and educational leaves, with at least the minimum duration provided by the Code.
- Professional Development: Employees have the right to enhance their professional training, acquire new specialties, and improve their qualifications.
- Compensation for Damages: In case of damage to property or health during the performance of labour functions, employees can demand compensation.
- Social Insurance**:** Employees are entitled to compulsory social insurance, medical insurance, unemployment insurance, and insurance against loss of professional working capacity due to labour accidents and occupational diseases.
- Participation in Unions and Strikes: Employees can join labour unions and public associations, and participate in strikes, meetings, and other mass actions not prohibited by law.
- Legal Protection: Employees have the right to seek legal remedies for the protection of their labour rights.
- Access to Employment Information: Employees can obtain information about their employment contract and related data from the electronic information system in real-time.

In addition to the above, the labour law includes additional provisions aimed at safeguarding the rights of workers. These include the following:

- **Unacceptability of Discrimination in Labour Relations (Article 16)**: This right states that discrimination among employees is prohibited based on factors such as nationality, gender, race, belief, language, residence, property status, social origin, age, marital status, political views, union membership, official position, or other factors unrelated to professional qualities, skills, or work performance.
- **Prohibition of Child Labour (Article 42)**: Sets the minimum working age at 15 years though persons under the age of 18 years are prohibited from conducting hazardous work.

- **Cases where working of employees under the age of 18 is prohibited (Article 250)**: The employment of persons younger than 18 years old in jobs with difficult and hazardous work conditions[84].
- **Work where limitations on lifting of heavy loads by employees under the age of 18 is applied (Article 251)**: It explains that work duties of workers between the ages of 16 and 18 can include manual lifting and carrying of only the heavy objects which their total weight is within the limits specified below.
    - For males along with performing other duties, lifting by hand and carrying to another place of objects which their total weight is more than 15 kgs, also lifting to a height of more than one and a half meter of an object which its weight is no more than 10 kilograms.
    - For females along with performing other duties, lifting by hand and carrying to another place of objects which their total weight is no more than 10 kilograms, also lifting to a height of more than one and half meter of an object which its weight is no more than 5 kilograms.
- **Prohibition of Forced Labour (Article 17):** It is strictly forbidden to compel an employee to perform work or services not specified in their job description through any form of coercion. This includes threats of dismissal or any other form of pressure. Individuals found guilty of enforcing such forced labour are held accountable under the law.
- **The Right for Individual and Collective Employment Disputes and its Governance by Law (Article 18)**: This right enables employees, employers, labour collectives, and trade unions to initiate an individual or collective employment dispute in order to protect their rights and legal interests.
- **Trade Unions (Article 19):** A trade union may be established on a voluntary basis without discrimination among employers or without prior permission from employers. Furthermore, this right also states that employers may join or engage trade unions to protect their labour and socio-economic rights and legal interests.

In addition to the above, Article 13 includes provisions for foreigners and stateless persons who are present in Azerbaijan who are entitled to the same labour rights as Azerbaijani citizens.

Other Key Relevant Acts

Azerbaijan upholds the following laws and legislations which are applicable in the context of this report.

84 *Hazardous work conditions include underground tunnels, mines and other underground jobs, night clubs, bars and casinos, and also in places where alcoholic beverages, narcotic components and toxic materiel are carried, kept, or sold, and also where circulation of narcotic drugs, psychotropic agents and their precursors is performed.*

Table 19-2 Overview of other acts in Azerbaijan

Law/Regulations	Year of Issue/Amendment	Description
Law on Protection of the Environment (No. 678–IQ)	1999 (last amendment in 2014)	This Law governs the legal, economic, and social framework for environmental protection. The purpose of this Law is to guarantee environmental safety and the ecological balance of the environment, prevent the impact of socioeconomic and other activities, preserve biological diversity, and effectively manage the use of nature. This Law governs mutual relations between society and nature for the purpose of improving the quality of the environment, using and renewing natural resources efficiently, and enforcing environmental protection laws and legal procedures.
Law on obtaining information on the Environment (No. 270-IQ)	2002 (last amendment in 2023)	This Law regulates relations arising in connection with the timely receipt of complete, reliable, timely information about the state of the environment and the use of natural resources from state authorities and local self-government, as well as from responsible persons.
Law on Education of (No.833-IIIQ)	2009	Ensures the right to free and compulsory primary and secondary education. Promotes equal access to education without discrimination.
Law on the Rights of persons with Disabilities	2018	This law plays a vital role in guaranteeing equal treatment and non-discrimination in access to education, employment, healthcare, and public services in Azerbaijan. The law is based on the UN Convention on the Rights of Persons with Disabilities (CRPD), ratified by Azerbaijan.
Criminal Code of Azerbaijan	2000 (last amended in 2007)	This law serves the fundamental role of criminalizing violations of fundamental rights, such as sexual violence (Article 108), torture (Article 133), forced labour (Article 144), human trafficking, unlawful detention, racial/ethnic hatred, and violations of freedom of association or assembly.
Law on State guarantees of Equal Rights for Women and Men	2006 (last amended in 2024)	The law ensures gender equality by eliminating all forms of gender discrimination, creating equal opportunities for male and female participation in the political, economic, social and cultural spheres. Its key provisions include prohibition all forms of gender-based discrimination, sexual harassment in labour relations, and equal opportunities and protections in the workplace. This Law sets out the duties of the employer in preventing discrimination on the basis of sex and sexual harassment.
Law on Prevention of Domestic Violence	2010 (last amended in 2024)	The law establishes measures aimed at prevention of the violence committed by close-related relations. It also outlines provisions for legal assistance to victims of domestic violence, and for elimination of the circumstances leading to domestic violence.

19.1.2 International Human Rights ratified & adopted by Azerbaijan

Azerbaijan is party to international human rights instruments which are summarised in Table 19-3.

Table 19-3 International human rights instruments

Instrument	Date
International Covenant on Civil and Political Rights (ICCPR)	Ratified in 1992
International Covenant on Economic, Social, and Cultural Rights (ICESCR)	Ratified in 1992
International Convention on the Elimination of All Forms of Racial Discrimination (ICERD)	Accession in 1996
Convention of Persons with Disabilities (CRPD)	Ratified in 2009
Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)	Accession in 1995
Convention on the Rights of the Child (CRC)	Acceded in 1992
International Convention on the Protection of the Rights of all Migrant Workers and Members of their Families (CMW)	Acceded in 1999
European Convention on Human Rights (ECHR)	Ratified in 2002
European Social Charter	Ratified in 2004
Aarhus Convention (formally known as the UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters)	Accession in 2000
International Convention on the Elimination of all Forms of Racial Discrimination (CERD)	Acceded in 1996
United Nations Convention Against Torture and Other Cruel, Inhumane or Degrading Treatment or Punishment (CAT)	Acceded in 1996
Protocol to Prevent, Suppress and Punish Trafficking in persons, especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime	Ratified in 2003

In addition, Azerbaijan is party to various International Labour Organisation (ILO) conventions as provided in Table 19-4.

Table 19-4 ILO conventions ratified by Azerbaijan

Instrument	Date
Convention No 87 on Freedom of Association and Protection of the Right to Organise adopted on 17th June 1948	1992
Convention No 98 on the Right to Organise and Collective Bargaining adopted on 8th of June 1949	1992
Convention No 29 on Forced Labour adopted in 1930	1992
Abolition of Forced Labour Convention No.105, 1957	1992
Convention 138 on Minimum Age adopted 6th of June 1973	1992
Convention 182 on the Worst Forms of Child Labour adopted 17th June 1999	2004
Convention No 100 on Equal Remuneration adopted 6th of June 1951	1992
Convention 111 on Discrimination (Employment and Occupation) adopted 4th of June 1958	1992

19.1.3 Lender Requirements

The Project Company is seeking to secure project finance from international financial institutions that apply defined environmental and social (E&S) standards as part of their

investment decision-making processes. These institutions may either implement their own internal E&S policies and performance requirements or align with internationally recognised sustainability frameworks and development finance standards.

At this stage, IFC, AIIB, ADB, JBIC, and NEXI have expressed interest in, or are being considered for, providing financing and/or financial support to the Project. The environmental and social requirements of the other lenders are broadly aligned with the IFC Performance Standards, with only minor differences in terminology and certain topic-specific requirements. Accordingly, the following table only refers to the IFC Performance Standards as the primary benchmark, with any additional lender-specific requirements addressed separately where applicable..

Table 19-5 includes the IFC PS that are linked to human rights provisions and requirements.

Table 19-5 Applicable PSs in relation to human rights

Requirement	Description
PS 1 – Assessment and management of environmental and social risks and impacts	States that clients should respect human rights and address adverse human rights impacts that clients may cause or contribute to. It requires the assessment and management of environmental and social risks and impacts to workers, affected communities, environment, and those associated with the supply chain.
PS 2 – Labour and working conditions	PS 2 is guided by several ILO conventions Recognises that economic growth through employment creation and income generation should be accompanied by the protection of the fundamental rights of Project workers inclusive of supply chain workers. Outlines requirements for projects linked to Human Resource (HR) policies, management, working conditions as well as key processes for occupational health and safety (OHS) management and grievance redress. Additionally, where accommodation is provided to workers, it should be provided in a manner consistent with principles of non-discrimination and equal opportunity. Workers' accommodation facilities should not restrict workers' freedom of movement or of association.
PS 4 – Community health, safety and security	Establishes requirements for the safeguard of affected communities from risks and impacts, such as those related to the spread of communicable diseases, the loss of ecosystem functions, site access and operation, material use, etc. Requires clients to prevent or reduce the risks and impacts that project-related activities may have on vulnerable groups in respect to community health, safety, and security. PS4 states that the safeguarding of project workers and property should be carried out in accordance with relevant human rights principles.

In addition to the PSs, the following IFC guidelines are applicable to the proposed Project:

- IFC/WB Environmental, Health and Safety (EHS) Guidelines for Wind Energy (2015).
- IFC Guidance on Gender based violence and harassment in the construction sector (2020).
- IFC Good Practice Handbook on the Use of Security Forces: Assessing and Managing Risks and Impacts (2017).

- IFC Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets (2007).
- IFC's Good Practice Handbook on Land Acquisition and Involuntary Resettlement (2023).

➢ IFC Guidance on Gender Based Violence and Harassment (GBVH) in the Construction Sector

The assessment, prevention, monitoring, and response measures with regards to GBVH should be developed in line with the following principles:

- **Survivor Centred**: The rights of GBVH survivors need to be consistently prioritised and used as the starting point for all decisions on efforts to assess, prevent, monitor, and respond to GBVH.
- **Safe:** Survivors, witnesses, and those who report and seek to address GBVH can be at risk of retaliation, including threatening and violent behaviour, often from those who do not like their position of power being challenged. Companies should prioritise the safety of those who have experienced, witnessed, and reported GBVH.
- **Context specific**: All measures need to be rooted in a thorough understanding of the local context. Investors and companies should understand the legal and social context and identify the support mechanisms that are in place.
- **Collaborative:** Companies should seek inputs from a range of internal and external stakeholders to increase the likelihood of broader buy-in and make GBVH prevention more effective.
- **Inclusive:** Companies should recognise the heightened risks of GBVH faced by certain groups who are subject to discrimination and marginalization. High risk groups often include people with disabilities, single parents, migrants and ethnic minorities and sexual and gender minorities. The system should also account for illiterate or non-literate people who may not be able to access written information on GBVH reporting mechanisms.
- **Integrated**: Processes, efforts to assess, prevent, monitor, and respond to GBVH needs to be integrated as much as possible into existing processes and management systems, such as OHS, security management systems, environmental and social management systems (ESMS) and human resources (HR) policies and procedures.
- **Non-discriminatory**: All survivors need to be listened to and treated equally and promote diversity in the workplace.
- **Well-informed**: Companies should draw on relevant expertise when developing prevention and response measures. The grievance redress mechanism and investigation procedures should be set up to ensure they are appropriate, relevant, and safe in the local context.

According to the guidance, the benefits of addressing GBVH include:

- Improvement to workers' physical and emotional wellbeing and strengthening of OHS.
- Avoiding reputational damage, financial risks and legal liabilities for companies, investors, and construction contractors.

- Building relationships and social license to operate in communities. This can be achieved through regular dialogue to understand and track project GBVH risks as well as the effective use of measures to prevent and respond to GBVH.
- Broadening of the pool of potential workers that companies can draw upon.
- Including women workers from nearby communities because of lower perceived risk of GBVH.

19.1.4 United Nations Guiding Principles on Business and Human Rights

The United Nations Guiding Principles on Business and Human Rights (UNGPs) section II on “The corporate responsibility to respect human rights” recognises that it is the responsibility of businesses and corporations to respect human rights. It is a global standard of expected conduct for all business enterprises wherever they operate. It exists independently of a states’ ability and/or willingness to fulfil their human rights obligations and does not diminish those obligations. The Foundational principles to take into consideration are:

- Principle 11: Business enterprises should avoid infringing on the human rights of others and should address adverse human rights impacts with which they are involved.
- Principle 12: The responsibility of business enterprises to respect human rights refers to internationally recognized human rights – understood, at a minimum, as those expressed in the International Bill of Human Rights and the principles concerning fundamental rights set out in the International Labour Organization’s Declaration on Fundamental Principles and Rights at Work.
- Principle 13: The responsibility to respect human rights requires that business enterprises avoid causing or contributing to adverse human rights impacts through their activities and address such impacts when they occur.
- Principle 14: The responsibility of business enterprises to respect human rights applies to all enterprises regardless of their size, sector, operational context, ownership and structure. Nevertheless, the scale and complexity of the means through which enterprises meet that responsibility may vary according to these factors and with the severity of the enterprise’s adverse human rights impacts.
- Principle 15: Business enterprises should have policies and processes appropriate to their size and circumstances in place, including:
- Principle 16: Policy commitment
- Principle 17 to 21: Human rights due diligence
- Principle 22: Remediation

According to the UN Guiding Principles, when exercising human rights due diligence, businesses are required to consider, at minimum, the rights captured in the International Bill of Human Rights (comprising The Universal Declaration is codified in international law through the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the ILO’s eight core conventions outlined in the Declaration of Fundamental Principles and Rights at

Work (addressing non-discrimination, compulsory and forced labour, child labour, freedom of association, and a safe and healthy working environment).

19.2 Gap Analysis between Azerbaijan National & Lender Requirements

The gap analysis presented in Table 19-6 has been undertaken to assess alignment between the UN Guiding Principles on Business and Human Rights (UNGPs) and the legislative framework of the Republic of Azerbaijan. The UNGPs draw on core international standards, including those of the International Labour Organization (ILO) and the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights (ICCPR and ICESCR). Accordingly, the gap analysis focuses on the relevant provisions of Azerbaijan's legal framework, particularly the Constitution and the Labour Code, and other applicable national regulations relevant to labour and human rights.

Table 19-7 Gaps analysis between Azerbaijan Legislation and HRGP

Human Rights Issue	UNGPs (ILO & ICCPR/ICESCR)	Azerbaijan Legislation	Gaps and Measures to bridge the gaps
Child Labour	• ICCPR Article 24 'Rights of Protection for the Child' requires children to have special protection and must not be engaged in work that is hazardous or that which can cause physical or mental harm. • ILO Declaration on Fundamental Principles and Rights to Work calls for prohibition of child labour. • ILO C138 prohibits hazardous work for all persons under 18 years. It also prohibits labour for those under 15 years, with limited exceptions for developing countries. • ILO C182 obligates members to take immediate and effective measures to secure the prohibition and elimination of the worst forms of child labour as a matter of urgency.	• The Labour Code prescribes 15 years old as the minimum age whilst 14-year-olds may be allowed to work in light duty environments with consent. • For hazardous working environments, the Labour Code prescribes the minimum age of employment as 18 years old, where work for individuals under 18 years is banned. • The law on the Rights of the Child provides protection for children including protection against exploitation in work.	• The Azeri law aligns with the international requirements as a minimum. • The Project will develop and implement a Labour & Working Conditions Management Plan (LWCMP) for the construction & operation phases, which will include explicit prohibition of child labour. • The PC will implement the Supply Chain Management System which will be used to identify, manage, and remedy supply chain risks such as child labour. This will also include the implementation of the Subcontractor and Supplier Management Plan (MP). • The PC will ensure the establishment of a HR data base where the EPC, sub-contractors and O&M Company will provide details of their workers i.e., permits, age, employment contracts etc. • The commitment to respect and protect human rights will be integrated into the HSSE Management System and extended to the EPC Contractor, subcontractors, and O&M personnel.

Human Rights Issue	UNGPs (ILO & ICCPR/ICESCR)	Azerbaijan Legislation	Gaps and Measures to bridge the gaps
			• Regular labour audits will be undertaken to ensure compliance with the lenders' requirements. • A Grievance Redress Mechanism will be provided to external stakeholders and workers at no cost and without the risk of retaliation so they can submit any concerns. This will also include the option for making anonymous complaints.

Right to Work and Forced Labour	• ICCPR Article 8 'Right to not be Subjected to Slavery, Servitude or Forced Labour'. The fact that a person is paid does not mean that labour is not forced if the other elements of forced labour are not met.
	  • This also included any forms of bonded labour, compulsory labour and prison labour (permitted under certain circumstances), trafficking.
	• ICESCR Article 6 'Right to Work' recognizes the right of everyone to the opportunity to make their living by work, which they freely chose or accept. This implies no one should be forced to exercise or engage in employment and that potential workers have a right to access to a system of protection guaranteeing access to employment.
	  • Even if the prohibition of forced labour is not explicitly included it may be derived from the right to free choice of employment.
	  • Requires work to be decent which means that work respects the fundamental rights of the person as well as the rights
		The Azerbaijan constitution prohibits forced labour:
		• Article 35 'Right to Work' of the Constitution affirms that everyone has the right to work, to choose employment and further prohibits forced labour.
		• Provision for the right to work is also provided in Article 35 which states that everyone has the right to work in safe and healthy conditions and that remuneration should not be below the national minimum wage.
		• The Labour Code bans forced labour and established regulations to ensure fair employment conditions including protection against arbitrary dismissal.
			• The Azerbaijan legislation aligns with the ICCPR/ICESCR and ILO requirements on work and forced labour as a minimum.
			• The commitment to respect and protect human rights will be integrated into the HSSE Management System and extended to the EPC Contractor, subcontractors, and O&M personnel.
			• The Project will develop and implement a Labour & Working Conditions Management Plan (LWCMP) for the construction & operation phases, which will include explicit prohibition of forced labour.
			• The PC will implement the Supply Chain Management System which will be used to identify, manage, and remedy supply chain risks such as forced labour. This will also include the implementation of the

Human Rights Issue	UNGPs (ILO & ICCPR/ICESCR)	Azerbaijan Legislation	Gaps and Measures to bridge the gaps
	of worker in terms of conditions or work safety and remuneration. • The right to work also includes the prohibition of arbitrary dismissal. • ILO Declaration on Fundamental Principles and Rights to Work also calls for elimination of all forms of forced or compulsory labour. • ILO C029 and C105 Article 1 calls on members to suppress the use of forced labour or compulsory labour in all its forms.		Subcontractor and Supplier Management Plan (MP). • The PC will ensure the establishment of a HR data base where the EPC, sub-contractors and O&M Company will provide details of their workers i.e., permits, age, employment contracts etc. • EPC & sub-contractors will be required to develop a screening procedure if they use intermediary agencies to recruit workers to ensure compliance with lenders' requirements including those relating to forced labour. • A Grievance Redress Mechanism will be provided to external stakeholders and workers at no cost and without the risk of retaliation so they can submit any concerns. This will also include the option for making anonymous complaints.
Collective bargaining and freedom of association	• ICCPR Article 22 'Right to Freedom of Association' protects the right to form or join all types of associations such as political parties, religious societies, sporting and other recreational clubs, non-governmental organisations and trade unions. • ICESCR Article 8 'Right to Form Trade Unions & the Right to Strike' concerns the right of everyone to form trade unions and to join the trade union of their choice. • This right may only be restricted by States in circumstances are set down in	• Article 49 'Freedom of Assembly' of the Constitution governs freedom of assembly. It states that everyone has the right to freely assemble with others. • Article 36 'Right to Strike' of the Constitution states that everyone has the right to strike, both individually and together with others. • Article 58 'Right to Association' of the Constitutions guarantees the right to association and states that everyone is free to associate with others.	• The Azerbaijan law aligns with the international requirements as a minimum. • The PC will develop and implement a Project specific HR policy and management system. This will be cascaded to the EPC contractor, sub-contractors and O&M Company. It will include the commitment to worker's right to form and join workers' trade unions/collective bargaining.

Human Rights Issue	UNGPs (ILO & ICCPR/ICESCR)	Azerbaijan Legislation	Gaps and Measures to bridge the gaps
	law and are necessary to protect national security, public order, or the rights and freedoms of others. • ILO Declaration on Fundamental Principles and Rights to Work states that members have an obligation to promote freedom of association and the effective recognition of the right to collective bargaining. • ILO C098 Article 2 states that workers and employees without distinction shall have the right to establish and subject to the organization concerned, to join organisations of their own choosing without previous authorization. • In addition, workers should not be discriminated against because of trade union membership.	Additionally, the Labour Code guarantees freedom of association and the right to form trade unions.	• Workers will be informed about their rights to join/form trade unions during their induction. • The Project Company will develop and implement a Project GRM for all workers and maintain a GRM log. The PC will ensure that this is cascaded down to the EPC, sub-contractors and the O&M.
Non-discrimination	• ICCPR Article 26 'Right to Equality Before the Law, Equal Protection of the Law, and Rights of Non-Discrimination'. Prohibits discrimination of race, colour, gender, language, religion, political or other opinion, national or social origin, property, and birth or other status. • Non-discrimination is a fundamental and overarching principle of international human rights. Article 2 (1) obliges states to prohibit any distinctions, exclusions, restrictions and limitations by both public and private bodies. Article 3 states that the government should ensure the equal right of men and women to the enjoyment of all civil and political rights. • ILO Declaration on Fundamental Principles and Rights to Work calls for elimination of	• Article 25 'Right to Equality' governs the right to equality. It prohibits inequality and states that both men and women possess equal rights and freedoms. Additionally, Article 25(III) states that the State shall guarantee the equal rights and freedoms to everyone irrespective of race, ethnicity, religion, or other associations. • The Labour Code prohibits discrimination in employment.	• The Azerbaijan law aligns with the international requirements as a minimum. • The PC will develop & implement a Human Resource (HR) Policy and Management System, which includes the commitment to equal employment opportunities and non-discrimination. This policy and management system will also be cascaded to the EPC Contractor, sub-contractors and O&M Company. • The Project Company will develop and implement a Project GRM for all worker and maintain a GRM log. The PC will ensure that this is cascaded

Human Rights Issue	UNGPs (ILO & ICCPR/ICESCR)	Azerbaijan Legislation	Gaps and Measures to bridge the gaps
	discrimination in respect of employment and occupation. • ILO C111 requires Members to declare and pursue national policy designed to promote, by methods appropriate to national conditions and practice, equality of opportunity and treatment in respect to employment and occupation with a view to eliminate any discrimination based on race, colour, sex, religion, political opinion, national extraction or social origin.		down to the EPC, sub-contractors and the O&M.

Wages, working hours, benefits	• ICESCR Article 7 'Right to Enjoy Just and Favourable Conditions for Work' states that workers have the right to enjoy favourable working conditions.
	  • As such workers must be provided with remuneration with can include wages and other allowances such as health insurance, a fair minimum wage to provide workers with a decent living for themselves and their families.
	  • Workers should also be entitled to adequate time for rest and leisure including paid holiday leave.
	• ILO C095 Article 3 'Protection of Wages Convention' states that wages payable in money will be paid only in legal tender, and payment in the form of promissory notes, vouchers or coupons or in any other form alleged to represent legal tender shall be prohibited. Article 4 elaborates more on worker allowances and how this shall be enforced.
		• Article 35 'Right to Work' of the Constitution states that everyone has the right to freely choose activity, profession, occupation and place of work. Additionally, article 35 prohibits forced labour as it states that no one may be forced to work.
		• Article 9 'Basic Rights of Worker' of the Labour Code requires that employees receive at least the minimum wage set by law and receive additional payment for overtime.
		• Articles 89 & 90 of the Labour Code states that workers have the right to work in the working hours established by law which means no more than 8 hours a day and 40 hours per week with a working set at five working days and two days. There are also provisions for workers who work on six-day working week.
			• The Azerbaijan regulation aligns with the international requirements as a minimum.
			• The PC will develop and implement a Human Resource (HR) Policy and Management System which will also be cascaded to the EPC Contractor, sub-contractors and O&M Company for implementation.
			• The PC will ensure the establishment of a HR data base where the EPC, sub-contractors, and O&M Company will provide details of their workers i.e., permits, age, employment contracts etc.
			• The PC will develop & implement the LWCMP, which will among other things, include working hour provisions as specified in the Azerbaijani regulations.
			• All workers will be provided with information about their labour rights

Human Rights Issue	UNGPs (ILO & ICCPR/ICESCR)	Azerbaijan Legislation	Gaps and Measures to bridge the gaps
		• Article 99 of the same Code states that overtime work may only be allowed with the consent of the employee. • Additionally, Articles 125 provides the maternity leave provisions for women which includes full pay for a period of 126 days for normal births.	under the law, nature of their contracts, duration etc. • Explicit consent will be documented for workers who work overtime including an outline of the compensation as per the Labour Code. • The Project Company will develop and implement a Project GRM for all workers and maintain a GRM log. The PC will ensure that this is cascaded down to the EPC, sub-contractors and the O&M.
Freedom of movement	• ICCPR Article 12 'Right to Freedom of Movement' allows people who are in the country to move freely throughout the country and leave if they wish to do so. • Movement may be restricted to protect national security, public order, health or morals or the rights and freedoms of others.	• Article 28 'Right to Freedom' of the Constitution states that everyone has the right to liberty, to freely move, and to choose a place of residence.	• There is alignment of the national legislation with the international requirements. • In order to uphold freedom of movement for the Project workforce, the Project Company will ensure that workers' movements are not restricted and that their official documentation are not withheld from them by the EPC, sub-contractors or the O&M. • The Project Company will develop and implement a Project GRM for all worker and maintain a GRM log. The PC will ensure that this is cascaded down to the EPC, sub-contractors and the O&M.
Gender based violence & harassment, sexual	• ICCPR Article 7 'Right not to be subjected to torture, cruel, inhuman and/or degrading treatment or punishment' prohibits these acts including sexual violence and rape.	• Article 25(IV) 'Equality of rights and freedoms' of the Constitution states that no one may be harmed, granted advantages or privileges, or refused to	• Azerbaijan has legal frameworks for addressing domestic violence, sexual violence and sexual harassment in the workplace.

Human Rights Issue	UNGPs (ILO & ICCPR/ICESCR)	Azerbaijan Legislation	Gaps and Measures to bridge the gaps
exploitation & abuse, sexual harassment (GBVH/SEA/SH)		be granted advantages and privileges on the grounds of race, ethnicity, religion, or other public associations. • The law on Prevention of Domestic Violence (2010) establishes measures aimed at prevention of domestic violence and outlines provisions for legal assistance to victims of domestic violence. • Article 108 of the Criminal Code safeguards human rights by criminalizing acts of sexual violence and further prescribes penalties of imprisonment, including life imprisonment. • The Law on State Guarantees of Equal Rights for Women and Men's key provisions include prohibitions all forms of gender-based discrimination, sexual harassment in labour relations, and equal opportunities and protections in the workplace. This Law sets out the duties of the employer in preventing discrimination on the basis of sex and sexual harassment.	• A GBVH risk assessment will be undertaken before the start of the construction phase. • The Gender Management Plan will be developed and implemented by the Project to include provisions for GBVH safeguards, and it will be disclosed to all construction and O&M employees, security personnel and contractors. • A Security & Human Rights Management Plan will be prepared for the project construction and operation phase. This will include the procedures for conducting security risk assessment, screening security personnel, code of conduct etc. • The PC will develop and implement a confidential GRM for making reports (including anonymously) on GBVH for the construction and operation phase.
Security and Privacy	• ICCPR Article 9 'Rights to Liberty and Security of Person'. It prohibits unlawful or arbitrary arrest or detention of any kind and is set to ensure the right to security of person and protect individuals against physical or psychological injury, regardless of whether the victim is detained or non-detained. • Article 17 of the ICCPR 'Right to Privacy' protects against arbitrary unreasonable or	The Constitution has the following provisions: • Article 28 states that everyone has the right to liberty, safeguarding freedom from arbitrary detention and unlawful restrictions. • Article 31 states that everyone has the right to live in safety, recognizing the state's role in taking measures to	• Azerbaijan has legal frameworks to ensure personal security, liberty and privacy. • The EPC Contractor and O&M will develop and implement a Security & Human Rights MP to include the Security and Human Rights policies, procedures on conducting a security risk assessment, screening of

Human Rights Issue	UNGPs (ILO & ICCPR/ICESCR)	Azerbaijan Legislation	Gaps and Measures to bridge the gaps
	unlawful interference with people's privacy, home, correspondence, as well as unlawful attacks on their honour and reputation.	protect individuals from threats to their life and wellbeing. • Article 32 states that everyone has the right to the inviolability of private life, including personal data. • Article 38 governs the right to social security, recognising the state's role in ensuring the welfare and protection of all, including vulnerable groups. • Article 46 states that everyone has the right to protect their honour and dignity. It further states that the dignity of a person shall be protected by the state.	security personnel, code of conduct, type of training to be provided, process of investigating security incidents, and GRM for workers and communities to submit grievances about security personnel etc. • The EPC Contractor and the O&M will develop and implement a Community Health & Safety MP to avoid and mitigate potential risks and impacts on local communities' health, safety, and security.
Health	• ICESCR Article 12 'Right to Health' of ICESCR requires that companies ensure that their operations and products do not impact on the health of people such as workers. Workers should also have access to treatment and adequate infrastructure such as water and sanitary facilities and healthy working conditions and a healthy environment. • ILO C167 'Safety & Health in Construction Convention' states that all appropriate precautions shall be undertaken to ensure all workplaces are safe without risk of injury to the safety and health of workers.	• Article 41 of the Constitution governs the right to protection of health, states that everyone has the right to protect their health and the right to medical assistance. • Article 39 governs the right to live in a healthy environment, the right to information about environmental conditions and to seek compensation for damage caused to one's health and property due to violation of environmental requirements. • The labour Code mandates employers to implement safety and health measures to protect employees from occupational risks and hazards.	• Azerbaijan has legal frameworks to safeguard the health and wellbeing of workers and communities. • The PC, EPC Contractor (and sub-contractors), O&M will implement the environmental and social mitigation, management and monitoring measures in the ESIA. • The PC, EPC Contractor (sub-contractors) and O&M will implement the HSSE MS and associated plans and procedure during the construction and operation phases of the project.
Education	• ICESCR Article 13 & 14 'Right to Education' guarantee all children the right to free and compulsory primary education. The right also requires progressive steps from governments aimed at the provision of secondary and	• Article 42 of the Constitution governs the right to education. It states that every citizen has the right to education.	• The Azeri law aligns with the international requirements as a minimum.

Human Rights Issue	UNGPs (ILO & ICCPR/ICESCR)	Azerbaijan Legislation	Gaps and Measures to bridge the gaps
	higher education, including the provision of 'fundamental' education for those who could not complete primary education. • The right to education also includes the right of equal access to education and equal enjoyment of education facilities etc.		• The Project will develop and implement a Labour & Working Conditions Management Plan (LWCMP) for the construction & operation phases, which will include explicit prohibition of child labour. • The PC will implement the Supply Chain Management System which will be used to identify, manage, and remedy supply chain risks such as child labour. This will also include the implementation of the Subcontractor and Supplier Management Plan (MP). • The PC will ensure the establishment of a HR data base where the EPC, sub-contractors and O&M Company will provide details of their workers i.e., permits, age, employment contracts etc.

19.3 ACWA Human Rights Policies

ACWA is committed to respecting internationally recognised human rights and managing environmental and social risks associated with its activities in a manner consistent with applicable national laws, international standards, and lender requirements. This commitment is aligned with the United Nations Guiding Principles on Business and Human Rights (UNGPs), relevant International Labour Organization (ILO) Conventions, and the IFC Performance Standards, in particular Performance Standards 1 (Assessment and Management of Environmental and Social Risks and Impacts) and 2 (Labour and Working Conditions).

ACWA's human rights commitments are operationalised through corporate policies, governance frameworks, and management systems, which are implemented by the Project Company and contractually cascaded to EPC contractors, O&M contractors, subcontractors, and key suppliers for the full duration of the Project lifecycle. These requirements apply to both construction and operational phases.

19.3.1 Code of Conduct and Ethical Business Practices

ACWA has adopted a Code of Conduct that establishes the principles governing ethical behaviour, integrity, and responsible business practices across its operations. The Code defines expectations for employees and business partners in relation to compliance with applicable laws, respect for human rights, and avoidance of unethical conduct.

The Code includes commitments to:

- Conduct business in compliance with host country legal requirements and applicable international standards;
- Respect fundamental human rights and prohibit child labour, forced labour, human trafficking, and modern slavery;
- Promote respect, dignity, and non-discrimination in the workplace;
- Maintain safe and healthy working conditions for all personnel.
- Where host country legal requirements are more stringent than internal policies, the higher standard applies. The Code also requires the protection of individuals who raise concerns in good faith and prohibits retaliation.

19.3.2 Business Partner Code of Conduct

ACWA requires all business partners to comply with a Business Partner Code of Conduct that establishes minimum standards relating to ethics, labour practices, occupational health and safety, and human rights.

The Business Partner Code of Conduct requires business partners to:

- Respect internationally recognised human rights standards;
- Provide fair and equitable treatment to workers;
- Comply with applicable labour laws, including provisions on wages, working hours, leave, and occupational health and safety;
- Prohibit child labour, forced labour, passport retention, recruitment fees charged to workers, and any form of human trafficking.

Compliance with the Business Partner Code of Conduct is embedded into contractual arrangements. ACWA retains the right to undertake audits, require corrective actions, and suspend or terminate contracts in cases of material non-compliance.

19.3.3 Labour and Working Conditions Management

ACWA's approach to labour and working conditions is aligned with IFC Performance Standard 2 and applicable ILO conventions. The Project Company is responsible for ensuring that labour and working conditions for direct workers, contracted workers, and supply chain workers are managed in accordance with national law and international good practice.

Key commitments include:

- Non-discrimination and equal opportunity in recruitment, employment, and termination;
- Provision of clear, written employment contracts in a language understood by workers;
- Payment of wages and benefits in accordance with legal requirements and contractual terms;
- Implementation of measures to prevent harassment, abuse, and exploitation;
- Establishment of worker grievance mechanisms accessible to all categories of workers.

These commitments apply to both the Project workforce and relevant tiers of the supply chain, particularly where risks of forced labour or child labour are elevated.

19.3.4 Prevention of Forced Labour, Child Labour and Modern Slavery

ACWA applies a zero-tolerance approach to forced labour, child labour, and modern slavery. Recognising the risks associated with large infrastructure projects and global supply chains, ACWA implements a risk-based approach to identify, assess, and mitigate potential adverse impacts.

Measures include:

- Pre-engagement due diligence of contractors and key suppliers;
- Contractual prohibitions on forced labour practices, including passport retention and worker-paid recruitment fees;
- Monitoring of labour practices during construction and operation;
- Corrective action procedures and escalation mechanisms in cases of non-compliance.

Where credible risks are identified in supply chains, enhanced due diligence and monitoring measures will be applied in line with IFC and JBIC expectations.

19.3.5 Ethics and Compliance Governance

ACWA has established governance arrangements and internal controls to support compliance with ethical standards and applicable laws. These include policies addressing conflicts of interest, fraud prevention, financial integrity, and regulatory compliance.

The governance framework supports the identification, investigation, and remediation of unethical conduct and contributes to ongoing risk management and continuous improvement.

19.3.6 Grievance and Whistleblowing Mechanisms

ACWA maintains mechanisms through which employees, contractors, and external stakeholders can raise concerns or grievances related to:

- Breaches of laws or internal policies;
- Labour and working conditions;
- Health, safety, environmental, or social impacts;
- Harassment, discrimination, or abuse;
- Fraud, corruption, or unethical conduct.

The Project Company will implement a Project-level grievance mechanism consistent with IFC Performance Standard 1, ensuring accessibility, confidentiality, and protection against retaliation. Grievances will be tracked, investigated, and resolved in a timely manner.

19.3.7 Data Protection and Privacy

ACWA processes personal data in accordance with applicable data protection laws and principles of lawfulness, fairness, transparency, and confidentiality. Personal data collected for Project activities will be limited to what is necessary for legitimate purposes and safeguarded against unauthorised access or disclosure.

19.3.8 Anti-Bribery, Corruption and Fraud

ACWA prohibits bribery, corruption, and fraud in all forms. Policies govern gifts, hospitality, sponsorships, donations, and political engagement to ensure transparency and compliance with applicable laws and lender requirements.

19.3.9 Gender Equality and Non-Discrimination

ACWA promotes gender equality and non-discrimination across its workforce and Project activities. Measures are implemented to prevent gender-based discrimination, harassment, and unequal treatment, including provision of appropriate facilities and safeguards for female workers where applicable.

19.3.10 Health, Safety, Social and Environmental Management System

ACWA has established a Health, Safety, Social and Environmental Management System (HSSE-MS that provides the framework for managing E&S risks and impacts throughout the Project lifecycle.

The HSSE-MS supports:

- Compliance with legal and lender requirements;
- Protection of human rights and worker welfare;
- Stakeholder engagement and grievance management;
- Monitoring, reporting, and continuous improvement.

The Project Company will require EPC and O&M contractors to prepare and implement Project-specific management plans under the HSSE-MS, including:

- Labour and Working Conditions Management Plan;
- Worker Accommodation Management Plan;
- Occupational Health and Safety Management Plan;
- Security and Human Rights Management Plan;
- Stakeholder Engagement and Grievance Mechanisms.

These plans will be updated as necessary based on ESIA findings and Project implementation.

19.4 Baseline Conditions

19.4.1 Child Labour

The Government of Azerbaijan has committed to eliminate child labour. This commitment is expressed in the ratification of ILO Convention NO 138 concerning Minimum Age for Admission to Employment and ILO Convention No 182 concerning the Prohibition and Immediate Actions for the Elimination of the Worst of Child Labour. Nationally, this commitment is reflected in the Labour Code of Azerbaijan.

The enforcement of labour standards is mandated to the State Labour Inspection Service (SLIS) under the Ministry of Labour. The State Committee on Family, Children, and Women's Affairs also undertakes educational activities to prevent child labour and sexual exploitation, while the Ministry of Internal Affairs, in partnership with the International Organization for Migration (IOM) Azerbaijan, is involved in efforts to stop forced labour and human trafficking[85]. Despite these legal frameworks and institutional roles, challenges remain in the effective implementation and monitoring of child labour issues.

Additionally, since 2016, the government issued a moratorium on onsite labour inspections by the SLIS has been in place and continues to be extended[86]. Given that SLIS is responsible for monitoring compliance of all employers regardless of ownership[87], the moratorium extends across all sectors. It is reported that only tax audits and inspections are permitted in cases that pose a threat to human life and health, state security and economic interests[88]. While SLIS inspectors can perform desk reviews in response to complaints, the absence of routine onsite inspections raises concerns that cases of child labour may go undetected.

19.4.2 Forced Labour

Forced labour in Azerbaijan is closely linked to human trafficking and exploitative practices, particularly in sectors such as agriculture and construction. The government has taken steps to combat human trafficking, but enforcement remains limited (The Economist Intelligence Unit, 2021). Exploitative practices occur in the crop production sector exist (The Economist Intelligence Unit, 2021). According to the 2022 Trafficking in Persons (TIP) Report, Azerbaijan is ranked as a Tier 2 country which indicates that it does not fully meet minimum standards for the elimination of trafficking, although significant efforts are being made[89].

Some Azerbaijani men and boys are reportedly subjected to forced labour domestically and abroad, while some women and children face sex trafficking[90]. Forced labour also remains a concern in relation to migrant workers though data is limited. In one significant case, the European Court of Human Rights delivered a judgement in 2021, that documented violations of the rights of migrant workers employed in the construction sector (UNODC, 2021). The

[85] International Organization for Migration (IOM) Azerbaijan. "Counter-Trafficking in Persons Activity Project". Accessed at: https://azerbaijan.iom.int/counter-trafficking-persons-activity-project.

86 U.S Department of Labour. 2022. 2021 Findings on the Worst forms of Child Labour: Azerbaijan. Bureau of International Labor Affairs. Accessed at: https://www.dol.gov/sites/dolgov/files/ILAB/child_labor_reports/tda2021/Azerbaijan.pdf.

87 State Labour Inspection Service, Ministry of Labour and Social Protection of Population, Azerbaijan. "State Labour Inspection Service". Accessed at: https://sosial.gov.az/en/ministry/state-labour-inspection-service.

[88] ABC.az. 2024. "Moratorium on business inspection extended in Azerbaijan until end of 2025". Accessed at: https://www.abc.az/public/en/news/168271/moratorium-on-business-inspection-extended-in-azerbaijan-until-end-of-2025.

89 U.S. Department of State. 2022. "Trafficking in Persons Report: Azerbaijan". Accessed at: https://2021-2025.state.gov/reports/2022-trafficking-in-persons-report/azerbaijan/.

90 The Economist Intelligence Unit. 2021. "OC Index Profile: Azerbaijan". Accessed at: https://ocindex.net/assets/downloads/2021/english/ocindex_profile_azerbaijan_2021.pdf.

Court found that the workers' passports had been confiscated, and that they were living in inhumane conditions and physical abuse, and they were forced to work without pay[91].

According to Azerbaijan's 2025 national report[92] to the Committee of the Parties to the Council of Europe Convention on Action Against Trafficking in Human Beings, the current moratorium on inspections of business entities (extended until January 2026) does not apply to cases involving forced labour. Such cases fall under the purview of the Labour Relations Monitoring Center, operating under the State Agency for Citizen Services and Social Innovations. When violations are identified through monitoring, they are investigated by the SLIS and other relevant authorities, who are mandated to take corrective action.

19.4.3 Working Conditions

The Ministry of Labour operates the "Labour and Employment" electronic system, which requires all employment contracts to be entered into the system upon conclusion. The planned expansions of the electronic system will reportedly include a section on occupational health and safety[93]. Additionally, the Sustainable and Operational Social Security Agency, under the Ministry of Labour has established an online communication platform through its 142-call centre[94] and their website www.sosial.gov.az, where labour and workplace related inquiries and complaints can be made by citizens. This system is meant to prevent exploitation of workers by their employers and facilitate prompt responses to informative appeals, inquiries and complaints. People accessing the call center can listen to information through an audio menu during both working and non-working hours, without connecting to the operator. The interactive voice response service allows accessible and flexible responses to simple requests, frequently asked questions and calls that do not require direct operator assistance. In 2024, the Ministry of Labour reportedly responded to 1.2 million inquiries from rightsholders, with inquires including issues related to labour relations[95]. The average waiting for answering calls was reduced to 14 seconds, while the satisfaction levels of rightsholders was 93.4% (Ministry of Labour and Social Protection of Population, 2024). Since 1st October 2024, citizens can receive the result of the investigation of their appeals via SMS notification with their consent and request.

As of January 2025, the minimum wage in Azerbaijan was raised to 400 AZN based on the Presidential Order dated 23 December 2024. This wage is applicable to all the sectors of the economy[96]. However, it should be noted that the enforcement and compliance vary especially in sectors such as construction and agricultural where informal employment is prevalent. It is noted that informal employment increases vulnerability of exploitation and forced labour, as many workers lack formal contracts and legal protections (Abdurrahimli, F. 2019).

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91 UNODC. 2021. "Case of Zoletić and Others v. Azerbaijan". SHERLOC – Case Law Database. Accessed at: https://sherloc.unodc.org/cld/ar/case-law-doc/traffickingpersonscrimetype/aze/2021/case_of_zoletic_and_others_v._azerbaijan.html.

92 Council of Europe. "Report submitted by the authorities of Azerbaijan on measures taken to implement the Council of Europe Convention on Action against Trafficking in human beings. Accessed at: https://rm.coe.int/report-submitted-by-the-authorities-of-azerbaijan-on-measures-taken-to/1680b67551.

93 Ministry of Labour and Social Protection of the Population of the Republic of Azerbaijan. 2025. "The implementation of digital solutions in labour relations is expanding". Accessed at: https://sosial.gov.az/en/media/news/the-implementation-of-digital-solutions-in-labour-relations-is-expanding.

94 Ministry of Labour and Social Protection of the Population of the Republic of Azerbaijan. 2025. "142 Call center". Accessed at: https://www.sosial.gov.az/en/contact/call-center/142-call-center.

95 Ministry of Labour and Social Protection of Population, Azerbaijan. "12 million citizen appeals where answered by the 142-Call Center this year". Accessed at: https://sosial.gov.az/en/media/news/12-million-citizen-appeals-were-answered-by-the-142-call-center-this-year.

96 Ministry of Labour and Social Protection of the Population of the Republic of Azerbaijan. 2025. "The minimum wage for employees cannot be less than 400 manats starting from January 1, 2025". Accessed at: https://sosial.gov.az/en/media/news/the-minimum-wage-for-employees-cannot-be-less-than-400-manats-starting-from-january-1-2025.

As stated above, SLIS is mandated with undertaking labour inspections, however, the on-going moratorium on onsite labour inspections, in effect since 2016, continue to restrict proactive enforcement efforts.

19.4.4 Occupational Health and Safety

The Constitution of Azerbaijan guarantees the right to a safe and healthy working environment. This commitment is reflected in the Labour Code and the ratification of the ILO's Occupational Safety and Health Convention No. 155. The SLIS oversees the enforcement of OHS regulations in the country through conducting inspections, issuing orders for corrections, and levying penalties for non-compliance.

Additionally, the Government has collaborated with ILO in the implementation of the Decent Work Country Programme (DWCP), with two cycles completed and third currently going in development for the period 2022 -2026[97]. The Programme aims to promote decent work and occupational safety, among other objectives.

Azerbaijan recorded the highest incidence of workplace fatalities in the services sector[98], with 58 deaths per 100,000 people[99]. The key OHS challenges include reduced enforcement capacity following inspection moratoria, which has limited workplace oversight for several years, and emerging hazards linked to the construction of wind farms. These hazards such as working at height, heavy lifting operations, electrical risks, and remote or offshore working conditions are distinct from the risks traditionally faced in Azerbaijan's oil and gas or construction industries.

According to the Azerbaijan Health and Environment Scorecard (WHO, 2025), the country records about 14 deaths per 100,000 working-age people annually from work-related diseases and 4 deaths per 100,000 from occupational injuries, with 4% of workers exposed to long hours[100].

19.4.5 Collective Bargaining

The Constitution of Azerbaijan guarantees the right to freedom of association, including the formation and membership in trade unions. Additionally, Azerbaijan has ratified several of ILO conventions that uphold collective bargaining rights including C087 and C098. Trade unions in Azerbaijan are governed by the Law on Trade Unions (1994) and the Labour Code. In addition, the Azerbaijan Trade Unions Confederation (ATUC) serves as the primary national trade union center with member unions across the country.

Despite the robust legal and institution structure, there are some challenges in practice. A 2020 report by the Central European Labour Studies Institute (CELSI)[101] highlights that the trade union structure in Azerbaijan is highly centralized, limiting the formation and operation of independent unions. AUTC functions as the dominant union body, with close ties to both the government and employers, leaving little space for alternative representation. This centralized model is further weakened by challenges such as limited organizational resources and declining membership. Corruption and lack of societal support have also

97 Ministry of Labour and Social Protection of Population, Azerbaijan. 2025. "Azerbaijan has a close and successful cooperation experience with the International Labour Organization". Accessed at: https://dost.gov.az/en/news/1227.

98 This includes the customer service, healthcare, and transport services.

99 Mirkowski, J. 2021. "The world's most dangerous countries for workers". *Arinite Health and Safety*. Accessed at: https://www.arinite.com/the-worlds-most-dangerous-countries-for-workers.

100 World Health Organization. "Environmental Health Azerbaijan: 2025 Country Profile". WHO: Environment, Climate Change and Health (ECH). Accessed at: https://cdn.who.int/media/docs/default-source/country-profiles/environmental-health/environmental-health-aze-2025.pdf?sfvrsn=ecc6b048_6&download=true.

101 Celsi. 2021. Research Report No. 35: Challenges and opportunities in Modern Slavery and Human Trafficking. Accessed at: https://www.celsi.sk/media/research_reports/RR_35_d9jxqmA.pdf.

been noted as key obstacles, contributing to a steady erosion of trust in unions among workers and restricting their ability to advocate effectively for labour rights.

19.4.6 Gender Inequality and Discrimination

Since Azerbaijan's 2015 commitment at the United Nations Global Leaders' Meeting on Gender Equality and Women's Empowerment, the government has been active in mainstreaming gender quality in state programmes and legislation. It has also implemented initiatives focused on stakeholder and public education in areas such as combating violence against women and girls, protecting women and children with disabilities, human trafficking prevention, promotion of women's reproductive health, and improving women's economic participation. For instance, to improve the participation of women, legislation amendments to remove restrictions on women's involvement in heavy and hazardous work were implemented, resulting in the reduction in the number of professions prohibited to women from 700 to 200[102].

Additionally, the Government has set up the State Committee for Family, Women and Children Affairs as the executive body mandated to implement and regulate state policy on the family, women's and children's issues under the Cabinet of Ministers[103].

Despite these efforts, women in Azerbaijan continue to face structural and cultural barriers that hinder their full and equal participation in the labour market, including sectoral segregation, limited access to care services and wage disparities in the private sector[104]. According to the World Bank's 2024 report, *"Breaking Barriers to Women's Employment in Azerbaijan,"* women are more likely to work in lower-wage sectors such as health and education, while men predominantly occupy higher-paying fields like transport and storage, energy, and construction[105].

Additionally, lack of flexible working hours in technical roles especially those requiring shifts and overtime work present a barrier to female workers due to the difficulty in balancing with family responsibilities. Additionally, while the Labour Code provides 126 days of paid maternity leave, fathers only get 14 days following the birth of the child (Labour Code Articles 128 and 130). However, paternity leave is rarely used in practice due to persistent gender stereotypes that assign care work to women (World Bank, 2024).

The 2024 World Bank report also states that GVBH in the workplace is a significant barrier to women's employment, particularly in male dominated industries in Azerbaijan. Concerns about workplace harassment are reported to deter women from pursuing jobs in Azerbaijan's private sector, as well as contributing to family members reluctance to support women's employment in male-dominated teams and customer facing roles (World Bank 2024). In 2023, Azerbaijan experienced a 10% increase in appeals regarding domestic violence compared to 2022[106]. Around 14% of Azerbaijani women between the ages of 15 and 49 experience intimate partner violence (physical and/or sexual) at least once in their life (Promundo, et. al. 2018). It is important to note that these are statistics only reflect the reported domestic violence cases as some incidences go unreported due to the perception of physical violence as a family matter (Norwegian Helsinki Committee, 2020).

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102 Report News Agency. 2024. "Azerbaijan drafts bills to ensure gender equality", 23 December 2024. Accessed at: https://report.az/en/business/azerbaijan-drafted-laws-to-ensure-gender-equality.

103 State Committee for Family, Women and Children Affairs of Azerbaijan. "About Us". Available in: https://family.gov.az/en/pages/haqqimizda.

104 https://www.ilo.org/resource/news/gender-equality-takes-centre-stage-baku conference#:~:text=The%20Conference%20placed%20a%20strong,disparities%20in%20the%20private%20sector.

105 https://documents1.worldbank.org/curated/en/099101624174034921/pdf/P179715-053cf272-5f35-47e0-8828-75e5f0dd1aee.pdf

106 Report News Agency. 2024. "Appeals to State Committee on domestic violence up by 10%." Available in: https://report.az/en/sosial-security/appeals-to-state-committee-on-domestic-violence-up-by-10/

In 2024, a total of 102 domestic violence victims were recorded by the State Statistical Committee in Sumgait (Sumqayit) city, with women accounting for about 88% of the victims[107]. No cases of domestic violence against minors were recorded in the aforementioned districts; however, 11 minors were identified as victims of domestic violence at the national level. Women in the project affected communities can therefore be considered vulnerable due to GBVH.

19.4.7 Mechanism to Address Human Rights Complaints

There are different ways of reporting human rights complaints in Azerbaijan. The reporting mechanism largely depends on the nature of the rights violated. Table 19-8 provides an overview of the available mechanisms.

Table 19-8 Reporting mechanisms

Type of Complaint	Details
Labour dispute	Labour disputes can be filed with the SLIS which monitors labour law compliance. Complainants can also initiate court proceedings for judicial resolution. Complaints can be submitted via the following contacts: • Call centre: 142 • Online appeal: https://www.sosial.gov.az/en/contact/online-appeal In addition to the above, complaints can also be submitted in person to the Regional departments of the Labour Inspectorate.
Human rights violations	The Ombudsman is the main national human rights institution in Azerbaijan, authorized to investigate violations of constitutional rights and freedoms. Complaints can be made through the following channels. • Email: ombudsman@ombudsman.az • Hotline: 916 • Online forms: https://www.ombudsman.az/az/contact
GBVH	The State Committee for Family, Women and Children Affairs of the Republic of Azerbaijan provide support for victims of GBVH. Those who contact the Committee can get information about GBVH and get free legal and psychological counselling if needed. Submissions can be made through the following details: • Hotline: 860 (from Baku) • Other regions: 012 860 • Email; office@scfwca.gov.az Victims can also contact emergency services which include: • Police: 102 • Public ambulance: 103
Note: *Information about the existing mechanisms to address human rights violations and how to access them will be provided to all workers during the induction process and contact information posted in strategic areas across the site.*	

107 State Statistical Committee. 2024. “Victims of domestic violence in 2024”. Available in: https://www.stat.gov.az/source/crimes/?lang=en.

19.5 Stakeholder Identification & Engagement

The table below provides the main stakeholders and their role in ensuring that human rights are guaranteed during the construction and operational phases of the project.

Table 19-9 Human Rights – Project Stakeholders

Stakeholder Group	Stakeholder Bodies	Roles
Right Holders	Workers of firms located in Sumgait Chemical Industrial Plant	May be indirectly affected by shared infrastructure, cumulative industrial emissions, traffic, and utilities demand
	Communities near the project site • Haji Zeynalabdin • Khazar Baghlari • Khazri • Kimyachilar	Potentially affected by construction and operation impacts such as noise, traffic, air emissions, visual impacts, and emergency risks; beneficiaries of improved water supply; participants in disclosure, consultation, and grievance redress processes.
	Vulnerable groups in the communities near the Project site	May experience disproportionate impacts or barriers to participation; require inclusive and targeted engagement measures
	Fishermen located in the nearby settlements within the Project Area of Influence	Stakeholders with an interest in marine activities may be concerned about project-related impacts from construction and operation.
Local Government Authorities	Sumgait City Executive Power	Overall local government oversight; coordination of permitting, land use compatibility, and inter-agency engagement.
	Sumgait Municipality	Representation of municipal interests, Local interface with affected communities; facilitation of consultations, information dissemination, and feedback collection; coordination on local service impacts
	Haji Zeynalabdin Tagiyev Municipality	
	Jorat Municipality	
	Sumgait city Housing and Communal Management Union	Oversight and coordination of municipal water, energy, gas, wastewater, and communal services; engagement with the Project on infrastructure integration, capacity and safety requirements, continuity of services, reinstatement of affected assets, and emergency response during construction and operation.
	Sumgait city Water Department	
	Sumgait city Energy Supply and Sales Department	
	Sumgait city Gas Exploitation Area	
	Gender Commission representative in the Local Municipalities	Oversight of gender-responsive engagement and inclusion; input to ensure women's participation and equitable access to project benefits.
	Sumgait police station and police representatives in local communities	Coordination on traffic management, site security, community safety, and emergency response during construction and operation
	Ministry of Ecology and Natural Resources (MENR)	Primary environmental regulator; review and approval of ESIA; permitting of seawater intake and brine discharge;

Stakeholder Group	Stakeholder Bodies	Roles
Ministries & Government Agencies		monitoring of marine, coastal, and environmental compliance.
	Economic Zones Development Agency (EZDA), Ministry of Economy	Oversight of project development within the industrial zone; coordination on investment approvals, land allocation, and compliance with zone requirements.
	Azerbaijan State Water Resources Agency (ADSEA), Ministry of Emergency Situations	Regulation of water abstraction, discharge, and hydrotechnical structures; oversight of water safety and emergency water-related risks.
	Fisheries and Aquaculture Centre - Aquaculture Organization Department	Assessment of impacts on marine fisheries and aquatic resources.
	State Labour Inspectorate Service, Ministry of Labour and Social Protection of Population of the Republic of Azerbaijan	Oversight of labor conditions, worker welfare, and occupational health and safety during construction and operation.
	State Border Service (SBS)	Oversight of maritime and coastal security where intake/outfall infrastructure interfaces with controlled zones.
	State Maritime and Port Agency (SMPA)	National authority responsible for regulation and oversight of maritime transport, port operations, vessel safety, and compliance with international maritime and environmental conventions.
	Sumgait Regional Center, Ministry of Emergency Situations of the Republic of Azerbaijan	Emergency preparedness and response authority; review of emergency response plans related to industrial accidents, chemical handling, and marine incidents.
	Ministry of Culture and Tourism of Republic of Azerbaijan	Oversight of protection of tangible and intangible cultural heritage; stakeholder for chance-find procedures during construction.
	Institute of Archaeology and Ethnography, Azerbaijan National Academy of Sciences (ANAS)	Technical advisory role on archaeological surveys and chance-find management along coastal and pipeline alignments.
	Sumgait Territorial Department, Ministry of Economy, Property Issues State Service	Technical advisory role on archaeological surveys and chance-find management along coastal and pipeline alignments.
	Absheron-Khizi Education Department, Ministry of Science and Education	Coordination where educational facilities may be affected by construction traffic or noise; stakeholder for awareness and safety programs.
	Absheron DOST Service Centre	Provision of social services and employment support; coordination for vulnerable households and workforce recruitment initiatives.

Stakeholder Group	Stakeholder Bodies	Roles
	State Committee for Affairs of Refugees and Internally Displaced Persons	Oversight of IDPs potentially residing near the project area; stakeholder for targeted engagement and protection of vulnerable populations.
NGOs/PUs	Public Union of Disabled Veterans and Martyrs' Families "Ruzigar" Society Bankwatch	• Act as independent watchdogs to ensure that the rights of communities and workers are upheld. • Participation in the Project's ESIA disclosure process.
Media	Regional and local mass media	Dissemination of project information and public awareness
Other Relevant Stakeholders	Project Lenders	They serve to ensure that ACWA, the Project Company, EPC Contractor, and O&M Company are respecting and upholding the human rights of local communities and all Project workers and conducting associated Project activities in line with Azerbaijani law and international standards.

19.6 Relevant Consultations

Human rights consultations were undertaken by the Project during December 2025–January 2026 as part of the ESIA stakeholder engagement process within the Project's Social Area of Influence (AoI). The AoI comprises the residential communities of Kimyachilar, Khazar Baghlari, Khazri, and Haji Zeynalabdin, identified based on their proximity to the Project site and the likelihood of experiencing potential direct and indirect Project-related impacts.

The consultations were integrated with the socioeconomic baseline data collection and were carried out through a combination of ESIA public meetings, focus group discussions (FGDs), door-to-door visits to vulnerable households, key informant interviews (KIIs), and household socioeconomic surveys. Community engagement activities were conducted in Azerbaijani, and Project information brochures were distributed to community members during FGDs and through door-to-door visits to ensure accessible and consistent dissemination of Project-related information.

Key Informant Interviews were undertaken with representatives of relevant local government authorities and municipal bodies within the AoI, including officials with responsibility for social and gender-related matters. These interviews aimed to capture institutional perspectives on community conditions, vulnerabilities, and potential human rights risks associated with the Project.

The purpose of the human rights consultations was to support the Project's ongoing human rights due diligence process by identifying actual and potential adverse human rights impacts on communities within the AoI, with particular attention to risks linked to Project activities, as identified through the initial human rights gap analysis. In line with the UN Guiding Principles on Business and Human Rights (UNGPs) and their emphasis on meaningful and inclusive stakeholder engagement, separate ESIA public meetings and FGDs were conducted for men and women, where appropriate, to enable the effective participation of women who may face social or cultural barriers to engagement. A female local consultant facilitated women-focused discussions and supported the conduct of KIIs related to gender and social issues.

Prior to the commencement of all consultations and surveys, participants were informed of the principles of voluntary participation, confidentiality, and privacy. It was clearly communicated that no personal identifiers would be collected and that attendance records were used solely to document that consultation activities had taken place. To avoid causing harm or distress to participants, and in line with UNDP requirements to prevent human rights risks arising from the consultation process itself, sensitive topics related to gender-based violence and harassment (GBVH) were not addressed in public meetings or household surveys. Enumerators and facilitators were explicitly instructed not to solicit personal accounts of such experiences, thereby ensuring that engagement activities did not expose participants to additional vulnerability or risk of retaliation.

Overall, local government representatives demonstrated limited awareness of human rights issues at the community level, as reflected in their constrained responses to questions related to actual and potential human rights impacts of the proposed Project. Nevertheless, the following human rights–related issues were identified during KIIs and community consultations:

- Right to Information and Right to Participate in Public Life: Stakeholders emphasized the importance of transparent information sharing, trust-building, and securing community buy-in for the Project through ongoing engagement.
- Right to Life, Liberty and Security of Person, Right to Health, and Freedom from Cruel, Inhuman or Degrading Treatment: It was reported that incidences of domestic violence exist within some local households, highlighting broader social vulnerabilities within the AoI.
- Right to Equality and Non-Discrimination, Including Equality Between Men and Women
  A gender pay gap was identified, with men reportedly earning approximately AZN 400–500 per month, compared to around AZN 300 per month for women, reflecting existing socioeconomic inequalities within the communities.

During the stakeholder consultations and the surveys undertaken as part of the ESIA, it was evident that there is a low awareness of human rights as provided in the Constitution of Azerbaijan and other regulations. Despite the limited formal understanding on human rights, community members were still able to raise their concerns about the proposed Project even if these were not explicitly framed as human rights issues. These inputs remain valuable to the assessment.

19.7 Potential Impacts, Mitigation, Management & Residual Impacts

19.7.1 Construction Phase

The Project's construction phase presents a number of potential impacts (violation of) human rights held by project workers and community members. These impacts are identified in the summary table below and defined subsequently.

Table 19-10 Aspects and Impacts – Human Rights during Construction

Aspect	Activity	Impacts	Rights Holders
Project construction	Mobilization, construction and demobilization activities	Lacking access to employment opportunities and benefits due to discriminatory recruitment practices affecting the local surrounding communities.	Community members living within the nearby settlements

Aspect	Activity	Impacts	Rights Holders
		Forced labour	
		Child labour	Minors within local communities
		Gender-based exploitation, harassment and violence	Women within local communities
		Workplace harassment and assault	Project workers
		Poor working and living conditions	
		Occupational health and safety hazards	

Note: the zone of influence for most of the human rights impacts will be largely within the surrounding communities and areas within a 5km radius.

19.7.1.1 Occupational health & safety

Construction of the desalination plant involves civil, mechanical, electrical, and marine works, which present various OHS risks. Key hazards include working at heights, lifting operations, excavation, vehicle interactions, noise, dust, vibration, welding fumes, hazardous substances, electrical risks, and marine-related activities such as working on piers, jetties, and intake structures, which may pose drowning risks. Poorly managed conditions may also result in heat stress, fatigue, ergonomic injuries, or exposure to communicable diseases. Additional OHS risks may arise from workforce transportation, shared access roads, and interactions with adjacent industrial operations within the Sumgait Industrial Zone.

To manage these risks, the Project will adhere to IFC Guidelines, applying the mitigation hierarchy. Measures include safe site design, segregation of pedestrian and vehicle routes, engineering and administrative controls, task-specific risk assessments, permit-to-work systems, and provision of appropriate PPE. Workers and contractors will receive mandatory induction and ongoing training, and emergency preparedness and response plans will be implemented. Health measures such as hygiene protocols and medical screening will minimize communicable disease risks.

OHS performance will be overseen through a structured management system enforced across all contractors, incorporating incident reporting, inspections, audits, and worker engagement. With these measures, residual OHS impacts are expected to be low, site-specific, and manageable, ensuring worker safety and minimizing project disruptions.

19.7.1.2 Forced Labour

Article 35 of the Constitution of Azerbaijan guarantees the right to freely choose work, including profession, occupation, and place of employment. Article 9 of the Labour Code allows workers to enter employment contracts according to their qualifications and ensures safe and healthy working conditions, with the option to request changes or termination. Article 13 extends these rights equally to foreign and stateless persons. Azerbaijan has also ratified the ILO Convention on Forced Labour.

The Project will employ approximately 1,800 workers during construction, with preference for qualified local candidates. Potential forced labour risks may arise if workers are coerced, charged recruitment fees, or if foreign workers have passports withheld, limiting their freedom of movement. Forced labour risks may also arise where workers are dependent on employers or intermediaries for accommodation, transport, or legal documentation, particularly in the case of migrant workers.

However, the risk is considered low due to ACWA's Human Resources and Supply Chain Management Systems, which will apply to the EPC Contractor, subcontractors, and suppliers. The EPC Contractor must also implement a screening process for any intermediary recruitment agencies to ensure compliance with lender requirements.

19.7.1.3 Child Labour

During the construction phase, the Project will generate employment opportunities, including within the supply chain, some of which require minimal skills and wages. Positions of this nature, particularly informal roles such as loading/unloading materials at storage sites or transport depots, manual handling, or packaging of construction materials may attract unemployed individuals and out-of-school minors (under 18 years of age). In accordance with PS-2, children under 18 must not be engaged in hazardous work, consistent with Azerbaijan's Labour Code (Article 250) and ILO standards.

There is a potential risk of child labour within supply chain companies engaged by the EPC Contractor and its subcontractors. To address this, ACWA and the EPC Contractor will assess and manage supply chain risks in accordance with the Supply Chain Management System.

19.7.1.4 Supply Chain Risk

The project relies on goods, services, and subcontracted works from a diverse network of suppliers, creating potential labour and working condition risks. Key concerns include forced or child labour, inadequate occupational health and safety (OHS), and non-compliance with national labour laws or IFC Performance Standard 2, covering fair wages, working hours, non-discrimination, and freedom of association.

The lack of accessible grievance mechanisms within the supply chain could exacerbate these risks, leaving workers unable to raise concerns and increasing the likelihood of unresolved disputes. Supplier violations may also pose reputational and regulatory risks for ACWA.

To mitigate these risks, suppliers and contractors will undergo screening and due diligence before engagement, assessing compliance with labour laws, OHS standards, and IFC PS2 principles, particularly regarding forced and child labour. Ongoing monitoring and audits, including site inspections, will ensure adherence to labour and safety standards. Suppliers are required to implement grievance mechanisms aligned with the project's system, enabling safe and transparent issue reporting.

Supply chain labour risks will be managed through a formal Supply Chain Labour Management Plan, which defines roles and responsibilities across project management, procurement, and EHS teams. Documentation and reporting will capture supplier compliance, incidents, and corrective actions.

With these measures, residual risks are expected to be low to moderate. Minor non-compliances may occur but will be promptly addressed through corrective action.

19.7.1.5 Supply Chain Risk

Compulsory Overtime and Excessive Working Hours

Article 9, 89 & 90 of the Labour Code states that workers have the right to work in the working hours established by law which is no more than 8 hours a day and 40 hours per week with a working week set at five working days and two days off. In certain industries, the employer may impose a six-day working week; in such situations, the daily working time limits may not exceed 7 hours (if the weekly total is 40 hours), 6 hours (if the weekly total is 36 hours), or 4 hours (if the weekly total is 24 hours) a day. In addition, according to Article

99 overtime work may only be allowed with the consent of the employee. The amount of salary/wages/remuneration paid cannot be below the minimum amount established by law.

As such, the Project Company and the EPC Contractor will ensure that all workers, regardless of rank, gender or religious affiliation etc. are paid a fair wage and equal remuneration for work of equal value without discrimination. In addition, remuneration must be enough for workers to be able to live a decent life. In addition, any overtime hours will be agreed with the employee and compensated in accordance with the provisions in Article 165.

Job security for construction workers will only be for the period when construction is undertaken, and workers will be employed on contractual basis and as such no retrenchment is expected to occur. The Project Company and the EPC Contractor will ensure that all workers are informed on their rights under the law, nature of their contracts, duration so that they understand the start and end period.

Lack of Access to Workers' Grievance Mechanism

Workers contracted by the EPC Contractor and sub-contractors may not be able to freely express their opinions on the prevailing working conditions or seek remedy. This may be because they do not know that a grievance mechanism is available to them, how it works, or they are afraid of retribution.

19.7.1.6 Provision of Inadequate Accommodation Facilities

The EPC Contractor will provide accommodation facilities to the Project workforce, and it is noted that there will be requirements for workers to be accommodated in alignment with the benchmarks outlined in the IFC & EBRD Workers Accommodation: Processes & Standards (2009).

There is a potential risk that accommodation facilities may be inadequate vs. the aforementioned guidelines. Key risk areas are likely to be during the commencement of construction where accommodation camps may not be fully established, and all amenities may not be in place at the camp(s). This has the potential to include a lack of relevant facilities, welfare provisions on-site such as clean drinking water, hygienic and ample toilet facilities, hand basins (with soaps/hand wash), temporary rest areas, food and other amenities necessary to the workers.

In the event that there are female workers, there is a potential risk that accommodation facilities may not fully meet requirements for separate and appropriate living and welfare arrangements.

19.7.1.7 Lack of Worker Representation and Restrictions on Trade Unions

Workers (both local & migrant workers) will be allowed to be involved in labour unions, public associations, organisations or labour collective in accordance with Article 19 and Article 25 of the Labour Code. The Project Company, EPC Contactor and associated subcontractors will not prevent workers from forming associations or joining trade unions depending on their preferences.

In addition, collective bargaining and freedom of association is allowed in Azerbaijan under Law No. 792 of 24 February 1994 on Trade Unions. The law allows organisation of unions and their fundamental rights including the right to conclude collective agreements and the right to hold mass events.

In order to ensure that the right to form and/or join trade unions or elect representatives is guaranteed, the Project Company and the EPC Contractor will include a clause in their Human Resources Policies and Procedures that allow workers to form or join a union and/or elect worker representatives without discrimination or risk of retaliation and the same

communicated to workers during induction. It will also be permissible for workers to raise collective grievances via the Project's grievance mechanism.

19.7.1.8 Potential Gender Risks Associated with the Project

Gender Based Violence & Harassment

During the construction phase, workers will be vulnerable to various forms of harassment, exploitation and abuse, aggravated by a traditionally male working environment. GBVH/SEA/SH may be committed by co-workers or construction supervisors and can be attributed to gender stereotypes about female construction workers. In addition, income earning opportunities for women through direct employment during the construction phase or through indirect employment (workers' employment) may have the potential to increase household tensions and expose women to harassment and violence in their homes or communities. This is because some men may feel threatened when the women in their lives are more economically empowered and independent.

The Project security personnel may use disproportionate force during their interactions with their workers. Such force may include physical and/or verbal abuse. As such, the Project will require to implement a Security & Human Rights Management Plan to manage such risks.

Additionally, some of the male workers who will be transporting Project machinery, equipment and goods will also be involved in long distance travel which in some cases will be between different countries. There is a risk that they can also be involved in GBVH/SEA/SH on the routes they use and at track stops associated with the Project even if it is outside the Project boundary.

GBVH/SEA/SH in Accommodation Facilities

Accommodation will be provided for Project workers. Mixed-gender accommodation environments can present safety, privacy, and welfare risks, particularly for women workers, if appropriate provisions are not in place. These risks may relate to the use of shared spaces such as cafeterias or sanitation facilities. The EPC Contractor will ensure safeguards such as secure accommodation areas, lockable rooms, separate sanitation facilities, and the option of separate accommodation compounds where necessary. In recognition of local cultural and religious practices, separate social and prayer facilities will also be provided for men and women.

Wage discrimination based on Gender

In 2006, the Azerbaijani Parliament passed a law on the 'Guarantee of Gender Equality (men and women). According to the Law, women and men are granted equal rights and responsibilities in respect of recruitment, promotion and wage remuneration (Articles 7–9). Further, to promote wage parity between men and women, the government of Azerbaijan ratified ILO's Convention No. 100 (Equal Renumeration for Men and Women Workers for Work of Equal Value). However, the issue remains that women tend to be concentrated in low-status sectors which leads to low-wage jobs. In addition, the construction industry is predominantly male, and women may only be offered low-paying jobs such as cooks, cleaners etc.

As such, the EPC Contractor and its sub-contractors will be required to provide equal access to recruitment opportunities for men and women based on their qualifications and also provide equal salaries. In addition, a policy of equal pay will be included in the Labour and Working Conditions Management Plan (LWCMP).

Discrimination based on employment benefits & Guarantees

Women who intend to pursue a career are still expected to balance between their job obligations and family life which ultimately affect their career paths. In addition, employers

may potentially prefer to employ men over women because most of the employment family benefits and guarantees are associated to women. For instance, according to Article 125 of the Labour Code women employees are entitled to a full paid maternity leave for a period of 126 days. This includes 70 days given before the expected birth of the child and 56 days after the birth. In case of abnormal or multiple births, women will be granted a total of 140 days which are split equally before and after birth. Depending on the industry the women work, the total number of maternity leave day and the leave days before childbirth and after childbirth varies. Although men may be eligible for partially paid social leave as a single parent or when directly caring for a child, childcare (especially in rural areas) is still seen as a woman's job.

As such, women of childbearing age may face potential discrimination during the recruitment process because the EPC Contractor and its sub-contractors may want to avoid providing the benefits and guarantees relating to maternity or childcare. To mitigate this, the EPC Contractor and sub-contractors will be required to include the benefits and guarantees for both men and women in the LWCMP with a clear commitment to non-discrimination during the recruitment process.

19.7.1.9 Community Health, Safety and Security (HSS) Hazards

Potential impacts associated with this subject including assessments of risks are discussed in Chapter 17, Community Health, Safety and Security and therefore not discussed further in this section.

19.7.2 Impact Assessment Summary – Human Rights during Construction

A summary of potential impacts related to human rights including labour working conditions within the Project area during construction and their effects on identified receptors are presented in following table including suggested mitigation measures and residual impacts after implementation of mitigations measures.

Table 19-11 Impact Assessment Summary – Human Rights during Construction

Potential Impacts	Magnitude of potential impact	Rights holders (receptors)	Sensitivity	Significance of potential impact	Significance of residual impact
Occupational Health and Safety (OHS) Risks (working at heights, lifting, excavation, electrical, marine works, heat stress, fatigue, exposure to dust/noise/fumes)	Moderate	Construction workers (skilled, semi-skilled, unskilled, marine workers)	High	Moderate	Minor to Negligible
Forced Labour Risks	Moderate	Construction workforce, migrant workers, supply chain workers	High	Moderate	Negligible
Child Labour Risks (particularly in informal supply chain activities)	Low to Moderate	Minors in supply chain	High	Moderate	Minor
Supply Chain Labour Risks	Moderate	Supply chain workers	Medium	Moderate	Minor
Inadequate Working Conditions – Excessive Working Hours & Compulsory Overtime	Moderate	Construction workers	High	Moderate	Minor
Lack of Access to Workers' Grievance Mechanism	Moderate	Women within local communities	High	Moderate	Negligible
Inadequate Worker Accommodation Facilities	Moderate	Minors within local communities	High	Moderate	Negligible
Restrictions on Freedom of Association and Worker Representation	Low	Construction workers	Medium	Minor to Moderate	Negligible
Gender-Based Violence, Harassment, SEA/SH	Moderate	Female workers, vulnerable workers	High	Moderate	Minor to Negligible

Proposed Mitigation and Enhancement Measures

Mitigation measures against Occupational Health and Safety (OHS) Risks

- The EPC will develop and implement a construction phase Occupational Health and Safety Management System including an Occupational Health Management Plan. The provisions will include as a minimum:
  - Risk assessments
  - Activities & method statements register
  - HSE training matrix
  - Safety assessment.
  - Task specific toolbox talk topics
  - Controls for hazardous activities
  - Use of mobile and heavy construction equipment

Potential Impacts	Magnitude of potential impact	Rights holders (receptors)	Sensitivity	Significance of potential impact	Significance of residual impact
○ Reporting unsafe acts and/or conditions ○ Stop work policy ○ Fire safety ○ Provision and enforcement of personal protective equipment (PPE) usage for all employees etc. • Ensure that all the requirements within the OHS MS and OHSMP are applied to all project workers including sub-contractors. • The EPC will develop and implement an Emergency Preparedness and Response Plan which will include details of the emergency scenarios, response protocols, training requirements, roles & responsibilities, internal and external communication protocols etc. The EPRP will also be communicated to all the relevant stakeholders. • The EPC will conduct regular planned and unplanned inspections of their sub-contractors to ensure construction activities are in line with the OHS MS and the OHSMP. • Access to the site will only be allowed to the employees with approved access cards. <u>Mitigation measures for forced labour risks</u> • Develop and implement a Labour and Working Conditions Management Plan (LWCMP) which will also include explicit prohibition of forced labour. • The Project Company will implement the Supply Chain Management System which will be used to identify, manage, and remedy supply chain risks. • The Project Company and EPC Contractor will develop a Project-specific Human Rights/ Forced Labour policy statement (that may be incorporated into an overarching HR/E&S Policy). The statement will underscore the definition and prohibition of various forms of forced labour and human trafficking. Practices constituting forced labour (e.g. deceptive recruitment, confiscation of personal belongings, withholding of accrued pay and illegitimate overtime requirements) will be strictly proscribed. • The EPC Contractor (and sub-contractors) will be required to develop a screening procedure if they use intermediary agencies to recruit workers to ensure they are compliant with the lenders' requirements. Additionally, the Project Company will undertake regular audits on these agencies to ensure compliance. • The Project Company will ensure that the EPC identifies the legal employer of all project workers and ensure compliance with the HSSE MS and the LWCMP. • The Project Company will develop and implement a Project GRM for all workers and maintain a GRM log. Additionally, the Project Company will ensure the same is cascaded down to the EPC and sub-contractors. • The Project Company will ensure that a HR data base will be established for the Project where the EPC and their sub-contractors will provide details of their workers including all official documentation such as work permits/visas, signed employment contracts, employee age, signed code of conduct, confirmations to work overtime etc. <u>Mitigation measures for Child Labour</u> • Develop and implement a LWCMP which will also include explicit prohibition of child labour • The Project Company will implement the Supply Chain Management System which will be used to identify, manage, and remedy supply chain risks. • A Human Rights Policy will be prepared for the Project or as part of the HSSE MS. The Policy will align with the lenders' requirement and include a commitment to respecting and safeguarding the rights of the right holders. This Policy will be cascaded down to the EPC & their sub-contractors. • The Project Company will ensure that regular labour audits are undertaken to ensure compliance with the lenders' labour requirements. • A HR data base will be established for the Project where the EPC and their sub-contractors will provide details of their workers including all official documentation such as work permits/visas, signed employment contracts, employee age, signed code of conduct, confirmations to work overtime etc.					

Potential Impacts	Magnitude of potential impact	Rights holders (receptors)	Sensitivity	Significance of potential impact	Significance of residual impact
• Access to the site will only be allowed to the employees with approved access cards. <u>Mitigation measures for Supply Chain Risk:</u> • Pre-engagement due diligence of suppliers/contractors. • The Project Company will implement the Supply Chain Management System which will be used to identify, manage, and remedy supply chain risks. • Grievance mechanisms in place for supply chain workers. • Develop and maintain a Sub-contractor and Supplier Management Plan. <u>Mitigation measures for Inadequate Working Conditions – Excessive Working Hours & Compulsory Overtime</u> • The Project Company will develop and implement a Project specific Human Resource (HR) Policy and Management System in line with lenders' labour requirements. This will also be cascaded to the EPC Contractor and sub-contractors and will include a commitment to the following: • Equal employment opportunities • Non-discrimination • Equal wages for equal work performed between men and women • Workers benefits • Zero tolerance to retaliation against workers, sexual harassment and GBVH. • Fundamental principles related to workers' rights to form and join workers' trade unions/collective bargaining. • Conditions for contract termination i.e., misconduct, incapacity to meet their duties etc. • GRM • Develop and implement a LWCMP which will among other things include working hour provisions as specified in the Azerbaijan law. • Explicit consent will be documented for workers who work overtime including an outline of the compensation as per the Labour Code. • All workers will be provided with information about their labour rights under the law, nature of their contracts, duration of contract etc. • The Project Company will develop and implement a Project GRM for all workers and maintain a GRM log. Additionally, the Project Company will ensure the same is cascaded down to the EPC and sub-contractors. • The Project Company will ensure that a HR data base will be established for the Project where the EPC and their sub-contractors will provide details of their workers including all official documentation such as work permits/visas, signed employment contracts, employee age, signed code of conduct, confirmations to work overtime etc. • The workforce will be informed about the Workers' Grievance Mechanism during their site induction training, in employee handbooks and on posters across the site and in accommodation places. The implementation of the workforce Grievance Mechanism will be in accordance with the Project-specific SEP. • For the workers' grievance mechanism to be successfully implemented, it will be necessary to ensure that competent and trained staff are in place who can fully implement provisions, whilst ensuring compliance with the procedures and maintaining full integrity and privacy to the grievant. • Develop and implement a Workers Accommodation Plan which is compliant with the EBRD and IFC Workers' Accommodation: Processes and Standards. This will also include an accommodation and welfare audit plan.					

Potential Impacts	Magnitude of potential impact	Rights holders (receptors)	Sensitivity	Significance of potential impact	Significance of residual impact
• The Project Company will ensure that regular audits are undertaken for the accommodation facilities. Mitigation measures for Lack of Access to Workers' Grievance Mechanism: • The Project Company will develop and implement a Project GRM for all workers and maintain a GRM log. Additionally, the Project Company will ensure the same is cascaded down to the EPC and sub-contractors. • Implement a confidential GRM for making reports (including anonymously) on sexual harassment and violence. Mitigation measures for Inadequate Worker Accommodation Facilities: • Develop and implement a Workers Accommodation Plan which is compliant with the EBRD and IFC Workers' Accommodation: Processes and Standards. This will also include an accommodation and welfare audit plan. • The Project Company will ensure that regular audits are undertaken for the accommodation facilities. Mitigation measures for Restrictions on Freedom of Association and Worker Representation: • The Project Company will develop and implement a Project specific Human Resource (HR) Policy and Management System in line with ACWA HR Policy and lenders' labour requirements. This will be cascaded to the EPC Contractor & sub-contractors. • Workers will be informed of their right to join/form trade unions (or committees) during their induction. • Workers will have the right to submit collective grievances through the workers' GRM without intimidation and/or risk of retaliation. Mitigation measures for Gender-Based Violence, Harassment, SEA/SH: • A GBVH risk assessment will be undertaken before the start of the construction phase. • A Gender Management Plan will be developed & implemented by the Project. This Plan will include the provisions for GBVH safeguards and it will be disclosed to the employees, security personnel and contractors. • Develop and implement a GBVH incident reporting procedure, training materials and implement a confidential GRM for making reports (including anonymously) on sexual harassment and violence. • The Project will engage a third-party competent gender/GBVH advisor prior to the start of the main construction works to provide training on GBVH issues and how to address any cases. • Assign and train a GBVH focal points (including women) to deal with GBVH incidents and grievances. Based on the training, these focal point persons will be required to establish a referral system for GBVH cases. • Develop the support mechanisms for survivors such as referral to support services etc. • The code of conduct and the reporting channels for grievances and GBVH contact information will be provided to workers during the induction and thereafter during on-going trainings. • A Security & Human Rights Management Plan will be prepared for the Project to include the procedures on conducting a security risk assessment, screening of security personnel, code of conduct, type of training to be provided, process of investigating security incidents, GRM to submit grievances about security personnel etc. • All security personnel will be required to sign the Code of Conduct before they are engaged by the Project.					

19.7.3 Operation Phase

The Project's operations phase presents a number of potentially adverse impacts on human rights held by project workers and local community members, the majority of which are of a similar nature to construction-phase impacts on human rights. These impacts are identified in the summary table below and assessed subsequently.

Table 19-12 Aspects and Impacts – Human Rights during Operation

Aspect	Activity	Impacts	Rights Holders
Project operations	operations and maintenance	Occupational injuries and health risks from operation of high-pressure pumps, rotating machinery, electrical panels, and chemical dosing systems	Operational workforce (direct employees and contractors)
		Slips, trips, falls, ergonomic strain, heat stress, and noise exposure during routine operational tasks	Operational workforce
		Marine safety risks for workers involved in intake/outfall inspections (drowning, slips, vessel-related injuries)	Marine and inspection personnel
		Labour risks related to forced labour or child labour through agency or subcontracted workers	Contracted and agency workers
		Gender-based risks including GBHV/SEA/SH, wage discrimination, or unequal access to benefits	Female and male operational workers

Note: the zone of influence for most of the human rights impacts will be largely within the surrounding communities and areas within a 5km radius.

Table 19-13 Impacts Assessment Summary – Human Rights during Operation

Potential Impacts	Magnitude of Potential Impact	Rights Holders (Receptors)	Sensitivity	Significance of Potential Impact	Significance of Residual Impact
Occupational injuries and health risks from operation of high-pressure pumps, rotating machinery, electrical panels, and chemical dosing systems	Medium	Operational workforce (direct employees and contractors)	High	Moderate	Minor
Slips, trips, falls, ergonomic strain, heat stress, and noise exposure during routine operational tasks	Low	Operational workforce	High	Moderate	Negligible
Marine safety risks for workers involved in intake/outfall inspections (drowning, slips, vessel-related injuries)	Low	Marine and inspection personnel	High	Moderate	Minor
Labour risks related to forced labour or child labour through agency or subcontracted workers	Low	Contracted and agency workers	High	Moderate	Negligible
Gender-based risks including GBHV/SEA/SH, wage discrimination, or unequal access to benefits	Medium	Female and male operational workers	High	Moderate	Minor

Proposed Mitigation and Enhancement Measures

Mitigation measures against Occupational injuries and health risks from operation:

- Implement and maintain a robust Occupational Health and Safety Management System (OHSMS) aligned with ISO 45001 and IFC EHS Guidelines.
- Enforce permit-to-work systems for high-risk activities (electrical work, confined spaces, chemical handling).
- Provide task-specific training, competency certification, and refresher courses.
- Use appropriate PPE, machine guarding, lock-out/tag-out procedures, and chemical safety protocols.
- Regular inspections, audits, incident reporting, and near-miss tracking.
- Emergency response plans reviewed and tested periodically.

Mitigation measures for Slips, trips, falls, ergonomic strain, heat stress, and noise exposure during routine operational tasks:

- Good housekeeping practices and clear walkways.
- Ergonomic assessments and task rotation to reduce repetitive strain.
- Heat stress management (ventilation, rest breaks, hydration).
- Noise monitoring and provision of hearing protection where required.
- Safety signage and continuous safety awareness programs.

Mitigation measures for Marine safety risks for workers involved in intake/outfall inspections:

Potential Impacts	Magnitude of Potential Impact	Rights Holders (Receptors)	Sensitivity	Significance of Potential Impact	Significance of Residual Impact
• Marine safety procedures and method statements. • Mandatory use of life-saving appliances and marine PPE. • Training in water safety and emergency rescue. • Weather and sea-state monitoring prior to works. • Emergency response and rescue equipment readily available. <u>Mitigation measures for Labour risks related to forced labour or child labour:</u> • Enforce a Project Labour Management Plan (LMP) compliant with IFC PS2 and Azerbaijan labour law. • Develop an operation- phase Labour and Working Conditions Management Plan aligned with ESMS requirements and scaled to the reduced workforce. • Contractor due diligence and contractual clauses prohibiting forced and child labour. • Regular audits of contractors and labour suppliers. • Worker induction on rights and access to grievance mechanisms. <u>Mitigation measures for Gender-based risks including GBHV/SEA/SH:</u> • Develop and implement a Gender Management Plan applicable to operations. • Zero-tolerance policy for GBHV/SEA/SH with clear reporting and disciplinary procedures. • Gender-sensitive welfare facilities (separate sanitation, rest, and medical facilities). • Equal pay for equal work and non-discriminatory HR practices. • Gender awareness and Code of Conduct training for all staff.					

19.8 Monitoring

The following table presents a brief overview of monitoring requirements to assess actualized project impacts and mitigation and enhancement measures. The final monitoring methodology with specific monitoring details (i.e. locations, frequencies, durations, parameters etc.) will be developed as part of the specific 'Environmental and Social Monitoring Plan'.

Table 19-14 Human Rights Monitoring Requirements (Construction and Operations)

Indicator	Source of information	Frequency Construction /Operation
Structural H&S, HR and Gender Policies	Date of implementation & proof of top management commitment to respecting human rights.	At the start of construction and operation
Number of grievances pertaining to unfair recruitment within host communities	Community grievance log	Monthly during construction and operations
Number of grievances pertaining to unequitable access to employment benefits	Worker grievance log	Monthly during construction and operations
Number of grievances pertaining to indecent working conditions	Worker grievance log	Monthly during construction and operations
Number of significant H&S incidents and quarterly trends in total H&S incidents	Accident logs; Occupational health logs	Monthly during construction and operations
Number of grievances and/or observation of forced labour	Community grievance logs, worker grievance logs and labour audit logs	Monthly during construction and operations
Number of grievances and/or observation of hazardous child labour	Community grievance logs, worker grievance logs and labour audit logs	Monthly during construction and operations
Number of incidents involving harassment and violence against men and women within the project workforce	Community grievance logs, worker grievance logs	Monthly during construction and operations
Number of incidents involving harassment and violence of men and women within host communities by project personnel	Community grievance logs, worker grievance logs	Monthly during construction and operations

20.0 Impacts from Unplanned Events

20.1 Overview

Unplanned events refer to incidents arising from unexpected failures, malfunctions, human error, or external factors during any phase of the Project, including construction and operation. These events may result in environmental, health, and safety impacts if not appropriately managed.

Examples of accidental events include, but are not limited to:

- Failure of material;
- Failure of equipment;
- Non-conformance with following required procedures;
- unforeseen non-routine process upsets; and
- process equipment/processes not performing as per design parameters.

Typical examples of accidental incidents that may result in environmental impacts include, but are not limited to:

- Spills and leaks;
- Uncontrolled releases or emissions;
- Fires; and
- Explosions

Such events may occur due to equipment or material failure, deviations from established procedures, or unforeseen process upsets. In the context of the Project, particular attention is given to risks associated with marine discharges, dredging activities, and the handling of fuels and chemicals.

The Project will adopt a precautionary approach through design controls, risk assessments, and emergency preparedness measures. Construction risks will be addressed through the EPC Contractor's Construction Environmental and Social Management Plan (CESMP), while operational risks will be further evaluated through a formal Hazard and Operability (HAZOP) study and incorporated into the operational management system.

20.2 Potential Impacts during Construction

20.2.1 Fire Incidents

The main environmental risk from unplanned (accidental) activities associated with Project construction is from fire. Accidental liquid or solid fuelled fires during construction activities could lead to deterioration of ambient air quality in addition to potential injuries to workers. These fire(s) can be caused due to the presence of an ignition source in the vicinity of the fuel storage tanks or an electrical short-circuit taking place in the equipment' internal or external wiring connections.

In addition, ignition of flammable maintenance-related chemicals within the site temporary facilities or site, as well as occupation of the site offices and accommodation camps by construction personnel poses a risk of fire occurring within these buildings. Potential causal factors include human accidents involving ignition sources such as cigarettes as well as environmental factors such as build-up of high temperatures within the chemical storage areas due to high ambient temperatures.

Air quality impacts from the aforementioned events would be short-term in nature that is, only present until the fire is extinguished. Therefore, it is considered that the overall environmental impact to air quality in the Project area for this aspect due to construction activities is not significant. Significance of injuries from burns on workers and firefighters can be serious depending on the level of exposure to fire.

The CESMP will stipulate that flammable chemicals on site are stored in accordance with the manufacturers, and Material Safety Data Sheet (MSDS) requirements, in order to reduce the potential for an accidental fire occurring. The EPC contractor's H&S Plan will also enforce an indoor no-smoking policy within the site buildings to reduce the potential for human-induced fires occurring. Employees will be trained in the procedures to be followed in case a fire breaks out, so that it can be controlled soon after break-out and the risk to employees' health reduced.

The CESMP will include a project Emergency Response Plan, addressing appropriate emergency procedures to be followed in case of a fire occurring during construction works. This will ensure that a fire can be controlled soon after it breaks out and the risk of deterioration of ambient air quality and employees' health is reduced.

20.2.2 Release of Hazardous Materials

Construction stage will inevitably entail the storage and use of considerable quantities of fuel, mainly used for power generation and for onsite plant and equipment in addition to other types of toxic materials such as paint, thinners etc. While the implementation of Good International Industry Practice (GIIP) mitigation measures by EPC contractor as per the CESMP requirements are expected, there is still the potential for unplanned events due to various reasons that incudes human error. Major incidents that warrant support from external authorities for clean-up and remediation are however unlikely during construction stage considering the careful planning and control measures that will be implemented during construction. This will include among others, adequate number and properly built and maintained chemicals' storage areas, training of concerned workers, provision of sufficient number of spill clean-up materials at strategic locations etc.

Any major release of hazardous materials could potentially pollute soil and groundwater and could affect areas outside of the Project footprint including the marine environment, depending on the nature of such unplanned events. However, the likelihood of such major unforeseen events occurring will be unlikely. Minor spills and leaks from pipe connections, waste storage areas, fuel transfer locations etc. could occur which can be easily cleaned up by trained construction staff at the site following the CESMP and the established site Emergency Response Plan and procedures.

Additionally, natural and unplanned hazards such as extreme rainfall events and fire can lead to the generation of excessive stormwater and runoff of contaminated water during construction and operational stages.

20.2.3 Release of Turbid Water from Sedimentation Basins

Dredging activities associated with the installation of the intake and outfall pipelines represent one of the key construction phase activities with the potential to generate unplanned environmental impacts, particularly in relation to marine water quality. While dredging operations will be carried out in accordance with defined method statements and mitigation measures, there remains a risk of unintended releases of suspended sediments under certain conditions.

A primary risk relates to the uncontrolled release of turbid water resulting from inefficiencies or failure within the sediment management system. Dredged material will be hydraulically transported to onshore sedimentation basins designed to promote settlement of suspended solids prior to discharge of supernatant water. However, if these systems are not adequately

sized, operated, or maintained, or if they are overwhelmed during peak dredging periods or high inflow events, there is potential for the discharge of insufficiently settled, highly turbid water back to the marine environment.

Such an event could lead to elevated concentrations of suspended solids in nearshore waters, reducing light penetration and potentially affecting primary productivity. In addition, the settlement of fine sediments may result in smothering of benthic habitats in the immediate vicinity of the discharge point. While baseline studies indicate that the seabed in the Project area is characterised by relatively low ecological sensitivity, these impacts could still be locally significant if not properly controlled, particularly during prolonged or repeated discharge events.

Further unplanned impacts may arise from:

- Failure or improper installation of silt curtains, allowing sediment plumes to disperse beyond the intended containment area;
- Operational issues with dredging equipment, leading to excessive sediment disturbance or leakage of dredged slurry;
- Overtopping or structural failure of sedimentation ponds, particularly during extreme weather events;
- Inadequate retention time within sedimentation basins, reducing the effectiveness of sediment settling processes.

Notwithstanding these risks, such impacts are expected to remain short-term and reversible, provided that appropriate corrective actions are implemented promptly. The Project design incorporates staged sedimentation, controlled discharge points, and provision for adaptive management of dredging operations to minimise the likelihood of such events. In addition, monitoring of turbidity levels at discharge locations will allow early identification of inefficiencies and enable operational adjustments.

20.2.4 Road Accidents

Road infrastructure in the Project area is relatively limited, with site access expected to be provided via the nearby Samad Vurgun Road, which serves as the primary route connecting the Project site to the wider road network. The increase in vehicle movements, particularly HGVs associated with the transport of construction materials, has the potential to increase the risk of road traffic accidents affecting road users.

Given the industrial character of the surrounding Sumgait area, road users are generally accustomed to the presence of HGV traffic and associated risks. Nevertheless, the temporary increase in traffic during the construction phase may elevate the likelihood of incidents, particularly along local access roads and at key junctions.

To manage this risk, the EPC Contractor will prepare and implement a detailed Traffic Management Plan (TMP). This will include the enforcement of speed limits for Project vehicles on public and access roads, designated haul routes, and scheduling of vehicle movements to avoid peak periods where practicable. In addition, trained flagmen will be deployed at critical locations such as site entrances and junctions to control traffic flow and ensure safe interaction between construction vehicles and other road users. Drivers will receive adequate training and induction, including road safety awareness and defensive driving practices, prior to accessing the site.

Further measures will include regular inspection and maintenance of access roads, clear signage, and coordination of vehicle movements to minimise congestion and unsafe conditions. With the implementation of these controls, the likelihood of serious road traffic accidents is expected to be low, and risks to communities and road users will be effectively managed.

20.3 Impacts during Operation

During operation of the desalination plant, the principal risks relate to process upsets, handling of chemicals, and potential unplanned discharges to the marine environment. Although desalination plants are generally designed with high levels of redundancy and control, there remains a low probability of incidents such as fire, chemical release, or equipment failure.

Operational risks include the potential for accidental release of chemicals used in the treatment process, leakage of fuels or lubricants, and, in rare cases, fire or explosion associated with stored materials. Such events could pose risks to on-site personnel and, depending on severity, could affect areas beyond the site boundary. However, the plant is designed and will be operated in accordance with international engineering standards, incorporating containment systems, leak detection, and emergency shutdown mechanisms, significantly reducing the likelihood of such events.

A key project-specific risk is the potential for unplanned discharge of non-compliant effluent to the marine environment. This could arise from failure of treatment systems, process upsets, or malfunction of monitoring and control systems. In such cases, there is a risk of discharge of inadequately treated wastewater or brine outside design specifications, which could result in localised and temporary impacts on marine water quality and, to a lesser extent, sediment conditions near the outfall.

However, the plant design includes multiple safeguards, including storage capacity and holding systems to prevent discharge of non-compliant effluent, as well as continuous monitoring and automated control systems. These measures ensure that even under upset conditions, untreated or non-compliant effluent will not be discharged directly to the marine environment.

Overall, operational unplanned impacts are considered unlikely, and where they occur, are expected to be localised and reversible.

21.0 Cumulative Impact Assessment

In accordance with the IFC's Good Practice Handbook[108], cumulative impacts are defined as those that result from the successive, incremental, and/or combined effects of a project when added to other existing, planned, or reasonably foreseeable developments.

This Cumulative Impact Assessment (CIA) considers how the potential impacts of the Project may interact with existing industrial activities and environmental pressures within the wider Sumgait coastal area, including discharges to the Caspian Sea, industrial emissions, traffic movements, and existing infrastructure demand. The objective is to determine whether such interactions could result in material cumulative effects on Valued Environmental and Social Components (VECs) over time, and whether additional mitigation or management measures are required.

21.1 Scope of CIA

The CIA has been undertaken through a structured process involving the identification of key VECs, the review of existing and planned developments within the study area, and the evaluation of potential interactions between Project-related impacts and these external drivers.

Key VECs considered in this assessment include:

- Air quality
- Noise environment
- Marine water and sediment quality
- Traffic and transport
- Waste Management Infrastructure
- Community health, safety, and infrastructure
- Labour and Working Conditions

A qualitative assessment is carried out considering the presence of existing industrial facilities within the Sumgait Industrial Area, including power generation and other industrial operations, as well as ongoing traffic, marine discharges, and regional environmental conditions. Given the relatively modest scale and operational footprint of the Project, the CIA focuses on receptors where interaction with existing activities is most likely.

21.2 Assessment of Cumulative Impacts

21.2.1 Air Quality

The Project is located within an industrial setting where baseline air quality is already influenced by industrial emissions and vehicular traffic. Construction activities will generate emissions from machinery and vehicles; however, these will be temporary and dispersed within an open coastal environment, where prevailing winds promote rapid dilution.

Operational emissions will be minimal, limited to:

- Light vehicle movements;

[108] 2013. IFC. Good Practice Handbook, Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets

- Routine maintenance activities.

Importantly, the Project does not include any major combustion sources or continuous emission points, distinguishing it from existing industrial emitters in the area.

In cumulative terms, Project emissions will represent a negligible increment relative to existing sources. No measurable change in ambient air quality is anticipated, and cumulative impacts are therefore assessed as negligible.

21.2.2 Noise and Vibration

The existing acoustic environment within the Project area is characterised by elevated baseline noise levels, primarily influenced by:

- Continuous traffic along Samed Vurgun Street and adjacent highways
- Ongoing industrial activities (including operation of the styrene-propylene plant and associated flare tower), and
- Natural coastal influences such as wave action.

During the construction phase, additional noise will be generated from on-site activities including earthworks, dynamic compaction, foundation works, structural and mechanical installation, as well as increased heavy-duty vehicle movements associated with material transport along haul routes and access roads. Where these activities occur concurrently with existing traffic flows and industrial operations, cumulative noise levels may temporarily increase above ambient conditions, particularly at receptors located near the Project boundary, along access roads, and during periods of intensive construction activity.

However, the significance of cumulative noise impacts is limited by several factors. Construction noise will be temporary, phased, and confined to the construction period, with the most intensive activities occurring over relatively short durations rather than continuously. The majority of works will be undertaken during daytime hours, thereby avoiding sustained night-time disturbance.

Vibration impacts are expected to be minimal and highly localised, as vibration attenuates rapidly with distance and is unlikely to be perceptible beyond the immediate vicinity of active works or haul routes.

With the implementation of standard construction noise and traffic management measures, including equipment maintenance, scheduling of high-noise activities during daytime hours, routing controls, and good site practices, cumulative impacts will remain localised, short-term, and reversible. Upon completion of construction, noise and vibration levels will return to baseline conditions, with no permanent change to the acoustic environment.

During operation, noise sources will be limited and are not expected to contribute meaningfully to existing ambient noise levels. As such, cumulative noise impacts during operation are considered minor and not significant.

21.2.3 Marine Water and Sediment Quality

The Project is located within a heavily industrialised coastal zone in Sumgait, where the marine environment is already subject to multiple anthropogenic pressures. The Sumgaitchay River, which borders the Project site, conveys a significant pollution load from upstream industrial and municipal sources, including suspended sediments, nutrients, hydrocarbons, and other contaminants. In addition, the coastal waters of this part of the Caspian Sea receive discharges from nearby industrial facilities, including the Sumgait Thermal Power Plant (TPP) and other industrial operations, contributing to an existing baseline of cumulative environmental stress.

In this context, cumulative impacts on marine water and sediment quality have been considered, taking into account the combined effects of existing discharges and the proposed Project. During normal operation, the desalination plant will discharge concentrated brine as its primary effluent. This discharge is characterised by elevated salinity and density, with only trace concentrations of treatment-related constituents, and does not include significant contaminant loads such as hydrocarbons, nutrients, or heavy metals. Furthermore, no thermal discharge is associated with the Project.

Given these characteristics, the Project's discharge differs fundamentally from other existing sources in the area, which are typically associated with chemical contaminants, organic pollution, and thermal inputs. As such, the potential for additive or synergistic cumulative effects is limited. The primary interaction pathway is through localised increases in salinity in the vicinity of the outfall; however, these effects are predicted to be spatially confined and rapidly diluted, as demonstrated by the brine dispersion modelling.

With respect to sediment quality, the potential for cumulative impacts is also considered low. While existing industrial discharges may contribute contaminants that accumulate in sediments, the Project's brine discharge is not expected to introduce significant pollutant loads that would exacerbate these conditions. Any changes to sediment characteristics are expected to be minor, localised, and reversible.

Overall, the Project is not anticipated to result in significant cumulative impacts on marine water or sediment quality. The contribution of the Project to the existing cumulative impact scenario is expected to be negligible, given the nature of the discharge, the absence of contaminant and thermal loading, and the effective dilution and dispersion of the brine plume under prevailing hydrodynamic conditions.

21.2.4 Traffic and Transport

Construction activities will result in a temporary but notable increase in heavy vehicle movements, primarily associated with the transport of fill materials, equipment, and construction supplies. As outlined in this ESIA, the Project will require the import of up to approximately 260,000 m³ of fill material from external sources. While excavated materials and construction and demolition (C&D) waste generated on-site will be reused for backfilling to the extent practicable, a substantial proportion of material will need to be transported from an identified quarry located approximately 43 km from the Project site.

These activities will generate a series of heavy goods vehicle (HGV) movements over the construction period, particularly during the land preparation and ground-raising phases. The detailed logistics, including confirmed haul routes, trip generation rates, and scheduling of deliveries, will be defined within a Construction Traffic Management Plan (TMP) to be developed by the EPC Contractor prior to construction.

The primary transport corridors to the Project site are expected to utilise existing regional highways, notably the M4 and M1 motorways, which already accommodate high volumes of industrial and commercial traffic. In this context, the relative contribution of Project-related traffic to overall traffic volumes on these main routes is expected to be small, and any incremental increase in traffic flow, associated emissions, or noise levels will be minor and temporary.

However, more noticeable cumulative effects may occur at a local level. In particular, receptors located along the Project access road (e.g. Samad Vurgun Road) and designated haul routes may experience short-term increases in traffic volumes, noise, and disturbance, especially during peak construction periods when material deliveries are at their highest. These effects will be temporary and confined to the construction phase.

In cumulative terms, the Project's traffic will add to existing industrial and background traffic flows within the Sumgait area. Nevertheless, given the established use of these transport

corridors and the relatively limited duration of peak construction activities, the overall cumulative impact on traffic and transport infrastructure is expected to be minor and manageable, particularly with the implementation of appropriate traffic management measures.

During operation, traffic associated with the Project will be substantially lower and largely limited to routine activities, including employee commuting, periodic deliveries of consumables and chemicals, and waste collection. These movements will occur at low frequency and within the capacity of the existing road network. As such, operational traffic is not expected to contribute meaningfully to cumulative traffic volumes or associated impacts, and effects are considered negligible.

21.2.5 Caspian Sea Levels

The Caspian Sea is experiencing a long-term decline in water levels primarily due to climate-driven changes in the basin water balance, including increased evaporation and changes in precipitation and river inflows. These regional processes represent the dominant cumulative drivers of sea level decline and are expected to continue throughout the operational life of the Project.

The proposed SWRO plant will abstract seawater from the Caspian Sea, with the majority of the intake flow returned to the sea as concentrated brine. Consequently, the potential influence on basin-scale sea level is governed by the net freshwater withdrawal, rather than the total seawater abstraction. A project-specific assessment undertaken by DHI conservatively assumes that 100% of the freshwater produced is permanently removed from the Caspian Sea system, representing a worst-case assessment.

Based on this conservative assumption, the Project would result in a net withdrawal of approximately 2.08×10^8 m³/year (approximately 7 m³/s), equivalent to an average Caspian Sea level reduction of approximately 0.06 cm/year. This represents less than 1% of the observed historical annual sea level decline of approximately 9.13 cm/year, which is primarily driven by regional climate change. Over the assumed 25-year operational life, the Project would contribute approximately 1.5 cm to basin-wide sea level decline, compared with approximately 2.3 m of climate-driven decline if historical trends were to continue.

Accordingly, while continued reductions in Caspian Sea level represent a significant cumulative regional environmental issue, the Project's incremental contribution to this cumulative impact is considered negligible. The DHI assessment concludes that the Project does not constitute a material contributor to basin-scale Caspian Sea level decline, even under conservative assumptions. Consequently, the Project is not expected to result in a significant cumulative impact on Caspian Sea water levels, with cumulative effects remaining overwhelmingly dominated by regional climate change and hydrological processes.

21.2.6 Waste Management Infrastructure

During construction, the Project will generate a range of non-hazardous and hazardous waste streams, as well as wastewater. These will be managed using the existing waste infrastructure in Sumgait, including municipal and hazardous waste landfills and the wastewater treatment plant.

In cumulative terms, construction activities may lead to a temporary increase in demand on waste collection, treatment, and disposal systems, particularly when considered alongside other industrial operations in the area. However, the presence of established and licensed facilities, combined with the implementation of waste segregation, recycling, and controlled disposal practices, will ensure that these impacts remain manageable.

Special consideration is given to wastewater and contaminated groundwater, which will be subject to characterisation and, where necessary, on-site treatment prior to discharge or off-

site disposal. This approach avoids placing additional stress on municipal systems and prevents potential interference with treatment processes.

During operation, waste generation will be significantly lower and more predictable, consisting primarily of domestic waste, maintenance materials, and limited hazardous waste. These will be managed through existing systems without placing additional strain on infrastructure. Overall, cumulative impacts on waste management infrastructure are considered moderate prior to mitigation during peak construction, reducing to minor during construction and minor to negligible during operation.

21.2.7 Community Health and Safety

During construction, cumulative impacts may result from overlapping construction activities, increased heavy vehicle movements on shared roads, and the presence of multiple workforces. These factors may collectively increase road traffic accident risks, elevate community exposure to construction-related hazards, and place additional pressure on local emergency and public services.

With the implementation of mitigation measures which will include traffic management, worker codes of conduct, site access controls, emergency preparedness coordination, and community engagement, the cumulative impacts on community health, safety, and security are expected to be temporary, manageable, and of low residual significance during the construction phase. Continuous monitoring and adaptive management will be applied to address any emerging cumulative risks.

21.2.8 Labour and Working Conditions

During the construction phase, cumulative impacts on labour and working conditions may arise from the combined effect of the Project and other concurrent or reasonably foreseeable developments within the surrounding area as the project is located within the Sumgait Industrial area. These impacts are primarily associated with the scale and duration of construction activities, the influx of a large and diverse workforce, reliance on multiple contractors and subcontractors, and increased demand for local labour and accommodation facilities.

To manage cumulative impacts, the Project will implement labour and working condition measures aligned with national and international regulations which include a Labour Management Plan for all contractors and subcontractors. This will cover working hours, wages, non-discrimination, prohibition of child and forced labour, and compliance with national and international labour standards. Harmonized OHS procedures, mandatory training, fatigue management, and coordinated traffic and emergency arrangements will apply across the workforce.

Worker accommodation will meet international standards, with access to welfare facilities, healthcare, and transport. A project-wide, multilingual Grievance Redress Mechanism will allow confidential reporting and timely resolution of labour concerns. Regular audits and monitoring will ensure continuous improvement.

These measures are expected to reduce cumulative impacts during construction from moderate to minor and manageable, limited to temporary construction activities and controlled through proactive oversight.

22.0 Transboundary Impacts

Transboundary impacts refer to environmental or social effects of a project that extend beyond the national jurisdiction in which the project is located and have the potential to affect neighbouring countries. Such impacts may arise where shared resources or environmental receptors are involved, including transboundary water bodies, air quality, or migratory species.

The Project is located on the Caspian Sea, a shared water body bordered by several countries.

22.1 Tehran Convention

The Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran Convention) establishes the overarching regional framework for the protection of the Caspian Sea environment. The Convention entered into force in 2006 and is ratified by all five Caspian littoral states, including Azerbaijan.

The Convention requires Parties to prevent, reduce and control pollution from all sources, including land-based activities, offshore operations, and maritime transport. It also promotes the protection, preservation and restoration of marine biodiversity and the sustainable use of natural resources within the Caspian Sea.

In the context of the Project, the requirements of the Tehran Convention are particularly relevant to marine construction activities such as dredging, as well as the installation and operation of seawater intake and outfall infrastructure. The Convention emphasises the need for environmental impact assessment, implementation of mitigation measures to minimise impacts on water quality and marine ecosystems, and ongoing environmental monitoring.

The Project has been developed in alignment with the principles of the Convention, including the application of precautionary approaches, pollution prevention measures, and consideration of transboundary environmental effects, where relevant.

22.2 Impact Assessment

A transboundary impact assessment considers the potential for a project to cause environmental or social effects beyond the national jurisdiction in which it is located, particularly where shared resources such as marine environments are involved. For seawater desalination projects, potential transboundary concerns typically include impacts associated with brine discharge, water abstraction, marine ecology, fisheries, and indirect effects such as air emissions and climate change.

The Project is located on the western coast of the Caspian Sea near Sumgayit and is fully situated within the territorial waters of the Republic of Azerbaijan. In accordance with the Tehran Convention, which provides the overarching regional framework for preventing pollution and protecting the marine environment of the Caspian Sea, projects are required to ensure that activities do not result in environmental harm beyond national boundaries and that appropriate mitigation and monitoring measures are implemented.

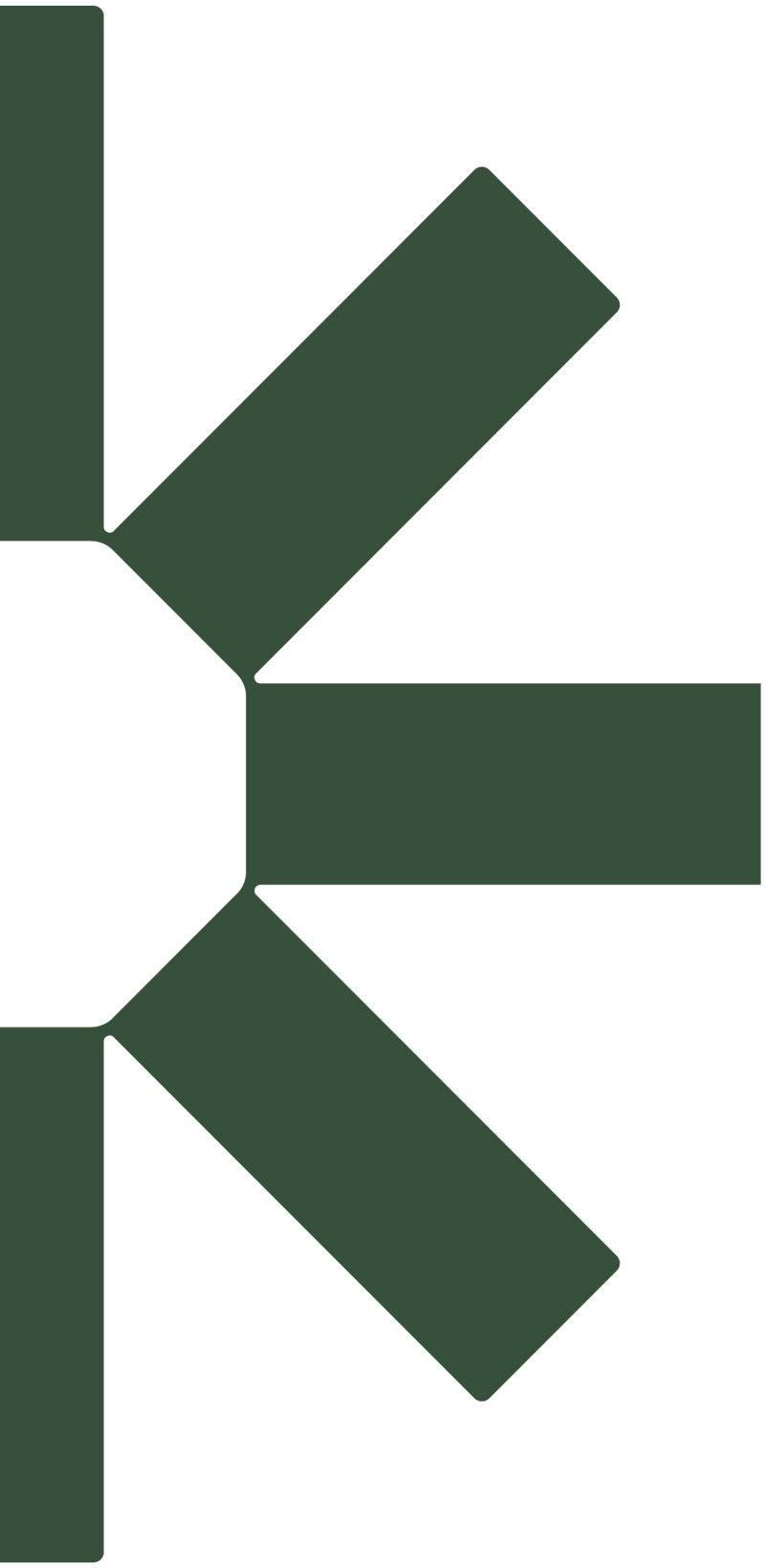
Based on the assessment of marine impacts presented in the water and sediment quality chapter, it is concluded that the Project will not result in transboundary impacts. This conclusion is supported by several key factors.

The spatial extent of the Project is limited, with all offshore activities confined to a nearshore area within a few kilometres of the coastline. The scale of seawater abstraction is negligible in the context of the overall Caspian Sea water balance and does not result in any measurable changes to regional hydrological conditions.

Brine discharge will occur via a diffuser located offshore, and hydrodynamic and dispersion modelling undertaken by DHI demonstrates rapid dilution and effective mixing of the discharge plume. The modelling confirms that any elevation in salinity is localised to a small area in the immediate vicinity of the outfall, with no measurable impact on the wider marine environment or potential for plume migration across national boundaries.

In addition, the offshore infrastructure consists of subsea linear installations located on or below the seabed, which do not create barriers to the movement or migration of marine fauna and do not affect ecological connectivity at a regional or transboundary scale.

Taking into account the localised nature of potential impacts, the effective dispersion of discharges, and the absence of pathways for impact propagation beyond national waters, the Project is not expected to result in any transboundary environmental or social effects.



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