



New Tashkent International Airport - Uzbekistan

Environmental and Social Impact Assessment

Volume 2: ESIA Main Text

Vision Invest

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SLR Sustainable Environmental Consultancy L.L.C S.O.C

Al Wasl Building, Sheikh Zayed Rd, Al Was, Dubai,
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Project Manager	Shiraz Khalid
Project Manager Email	shiraz.khalid@slrconsulting.com
Author	ESIA Team
Reviewer	Ken Wade
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Basis of Report

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Acronyms and Abbreviations

Abbreviation	Definition
ACI	Airport Council International
AFFF	Aqueous Firefighting Foam
AoI	Area of Influence
AOP	Airport Operating Partner
APM	Automated People Mover
APU	Auxiliary Power Unit
ASL	Above Sea Level
ATC	Air Traffic Control
ATM	Air Traffic Movement
BHS	Baggage Handling System
BMEP	Biodiversity Monitoring and Evaluation Program
BOD	Biochemical Oxygen Demand
BS	British Standard
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
C&D	Construction and Demolition
CAA	Civil Aviation Authority
CCIA	Climate Change Impact Assessment
CESMP	Construction Environmental & Social Management Plan
CFR	Code of Federal Regulation
CFU	Colony Forming Unit
CHA	Critical Habitat Assessment
CHSS	Community Health Safety and Security
CICA	Convention on International Civil Aviation
CLO	Community Liaison Officer
CMS	Convention on Migratory Species
COD	Commercial Operation Date
COM	Cabinet of Ministers
CRPD	Convention on the Rights of People with Disabilities
CSM	Conceptual Site Model
DAFOR	Dominant, Abundant, Frequent, Occasional, Rare
dB	Decibels
DFC	Development Finance Corporation
DFIs	Development Finance Institutions
DMRB	Design Manual for Roads and Bridges

Abbreviation	Definition
E&S	Environmental & Social
EAAA	Ecologically Appropriate Area of Analysis
EBRD	European Bank for Reconstruction and Development
EHS	Environmental, Health & Safety
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EP	Equator Principles
EPA	Environmental Protection Agency
EPC	Engineering, Procurement and Construction
EPFIs	Equator Principles Financial Institutions
EPPO	European and Mediterranean Plant Protection Agency
EPRP	Emergency Preparedness and Response Plan
ESG	Environment and Social Governance
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESP	Environmental and Social Policy
ESR	Environmental and Social Requirements
EU	European Union
FAA	Federal Aviation Administration
FAO	Food and Agriculture Organisation
FAR	Federal Aviation Regulations
FATO	Final Approach and Take-off
FGD	Focus Group Discussion
FWT	Folding Wing Tip
GA	General Aviation
GBIF	Global Biodiversity Information Facility
GBVH	Gender Based Violence and Harassment
GHG	Green House Gas
GIIP	Good International Industry Practice
GoU	Government of Uzbekistan
GPN	Bank Good Practice Note
GPU	Ground Power Unit
GSE	Ground Support Unit
GSE/GSV	Ground Support Equipment / Ground Support Vehicle

Abbreviation	Definition
HGV	Heavy Goods Vehicle
HIV	Human Immunodeficiency Virus
HPZ	Health Protection Zone
HR	Human Resources
HRIA	Human Rights Impacts Assessment
HVAC	Heating Ventilation Air Conditioning
HW	Hazardous Waste
IAQM	Institute of Air Quality Management
IBAs	Important Bird & Biodiversity Areas
IBAT	Integrated Biodiversity Assessment Tool
ICAO	International Civil Aviation Organisation
IEMA	Institute of Environmental Management and Assessment
IFC	International Finance Corporation
ILO	International Labour Organization
ILS	Instrument Landing System
IMF	International Monetary Fund
IMMI	Noise Modelling Software
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organisation for Standardisation
IUCN	International Union for the Conservation of Nature
JBIC	Japan Bank for International Corporation
JSC	Joint Stock Company
KBA	Key Biodiversity Area
KEXIM	Export-Import Bank of Korea
LCA	Landscape Character Area
LEED	Leadership in Energy & Environmental Design
LI	Landscape Institute
LNTP	Limited Notice to Proceed
LRP	Livelihood Restoration Plan
LTO	Landing and Take-Off
MAP	Million Annual Passengers
MEEPCC	Ministry of Ecology, Environmental Protection and Climate Change
MEP	Mechanical, Electrical and Plumbing
MPC	Maximum Permissible Concentration

Abbreviation	Definition
MRO	Maintenance, Repair and Overhaul
MSDS	Material Safety Datasheet
MSW	Municipal Solid Waste
NBT	Nazar Business Technology
NCECC	National Committee on Ecology and Climate Change
NDC	Nationally Determined Contribution
NEXI	Nippon Export and Investment Insurance
NGO	Non-Governmental Organisation
NPR	Noise Preferential Route
NTS	Non-Technical Summary
OECD	Organisation for Economic Co-operation and Development
OESMP	Operational Environmental and Social Management Plan
OHS	Occupational Health and Safety
OHTL	Overhead Transmission Line
OSHA	Occupational Safety & Health Organisation
PA	Protected Areas
PAP	Project Affected Person
PBV/PBF	Priority Biodiversity Value / Priority Biodiversity Feature
PC/PEC	Project Contribution / Predicted Environmental Contribution
PFAS	Per- and polyfluoroalkyl Substances
PPE	Personal Protective Equipment
PS	Performance Standards
PSD	Particle Size Distribution
PV	Photovoltaic
RAP	Resettlement Action Plan
REPN	Regional Electric Power Network
RUz	Republic of Uzbekistan
SanR&N	Sanitary Rules & Norms
SEA	Sexual Exploitation and Abuse
SEE	State Environmental Expertise
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SLM	Sound Level Meter
SPV	Special Purpose Vehicle
SPZ	Sanitary Protection Zone

Abbreviation	Definition
TAA	Tashkent Airport Alliance
TAS	Tashkent International Airport
TBT	Toolbox Talk
TPH	Total Petroleum Hydrocarbon
UA	Uzbekistan Airports
UN/UNDP	United Nations/United Nations Development Program
UNFCCC	UN Framework convention on Climate change
UST	Underground Storage Tank
UzRDB	Uzbekistan Red Data Book
VEC	Valued Environmental Components
VOC	Volatile Organic Compound
VPs	Vantage Points
WBG	World Bank Group
WHO	World Health Organisation
WWTP	Wastewater Treatment Plant
ZTV	Zone of Theoretical Visibility

1.0 Introduction

1.1 Background Information

The proposed new Tashkent International Airport ('the Project') will be developed jointly by Vision Invest (also referred to as 'the Client'), Sojitz Corporation, Incheon International Airport Corporation, and Korea Overseas Infrastructure & Urban Development Corporation (together "the Sponsors"), appointed by JSC Uzbekistan Airports of the Republic of Uzbekistan (also referred to as "the Public Partner"). The Project is aimed at boosting tourism and accelerating economic growth in Uzbekistan and involves the design, construction, financing, operation, and maintenance of a new international airport in Tashkent city.

The Sponsors have been appointed by the Public Partner to design, construct, finance, operate and maintain the new Tashkent International Airport under a Public-Private Partnership Agreement (PPPA), governing the development, financing, construction, operation and maintenance of the Project.

The Sponsors are in process of establishing Tashkent Airport Alliance ("TAA") as the Special Purpose Vehicle (SPV) for the development and operation of the Project. Once the TAA is incorporated the PPPA will be transferred by Sponsors to TAA. The Sponsors and Public Partner will be shareholders of the TAA. Construction is scheduled to start in 2026, with a projected completion time of 48 months from Notice to Proceed. Commercial operations are anticipated to commence in 2030.

The Sponsors are currently engaging with various Development Finance Institutions and commercial banks ('lenders') for participation in project financing.

5 Capitals – Part of SLR (5 Capitals) has been engaged by the Client to undertake the independent assessment of potential environmental and social impacts, as well as certain other environmental & social related scope. 5 Capitals has partnered with a locally based consultant, 'Nazar Business Technology – part of Oqtavia (NBT)' (Tashkent, Uzbekistan) to undertake certain elements of the scope, including baseline surveys, consultations and preparation and submission of the National EIA to the National Committee on Ecology and Climate Change (NCECC) of the Republic of Uzbekistan, the regulatory authority for environmental affairs in Uzbekistan.

This Environmental and Social Impact Assessment (ESIA) report has been prepared for the purpose of the lenders review and approval. It has been prepared based on the scope detailed in the E&S Scoping Report that was prepared by 5 Capitals in July 2025 and approved by the lenders.

A separate standalone EIA prepared in line with the specific local requirements in Uzbekistan has been prepared by NBT and submitted to the national regulator as part of the national permitting purpose. A positive conclusion together with a conditional construction permit was issued on the 20th April 2026 (see section 1.5 for further details).

An organisation chart showing the main parties involved in the development of the Project are illustrated in Figure 1-1.

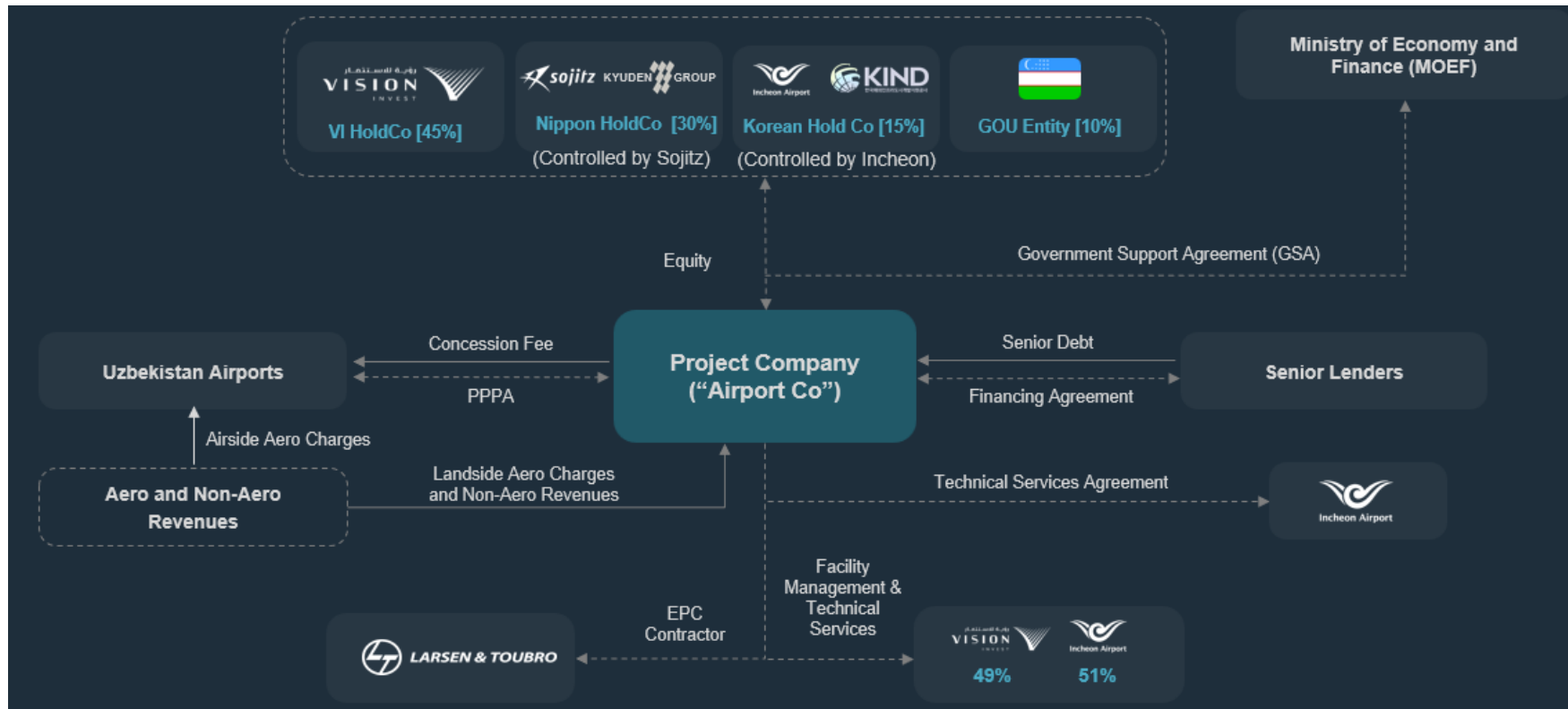


Figure 1-1 Overall Project Development Organisation Structure

1.2 Project Rationale

The Republic of Uzbekistan is in the process of developing the new Tashkent International Airport in order to replace the current Tashkent International Airport (TAS). This new greenfield airport is part of the strategic infrastructure developments that contribute to the rapid transition Uzbekistan is undergoing as it is opening to the world as a regional connection and leading destination in Central Asia.

The rationale for developing this new international airport is driven by several economic, strategic, and logistical factors aimed at transforming the region into a major transit and trade hub while supporting the nation's growing tourism and business sectors.

The key objectives of this Project are:

- to provide airport services for Tashkent and to serve as a global gateway connecting Uzbekistan to various international destinations;
- to contribute to economic development of Tashkent and Uzbekistan;
- to provide in safe and compliant, state of the art airport facilities;
- long term financial sustainability for the airport, its shareholders and stakeholders.

The key motivations and expected benefits highlighting the significant impact such a development could have on the country's position in Central Asia and the global economy are the following.

Economic Growth and Diversification

Uzbekistan has experienced steady economic growth, and the government is focused on diversifying its economy. A new international airport in Tashkent would attract foreign direct investment, boost trade, and promote tourism, contributing to the country's GDP. As Uzbekistan increasingly positions itself as a gateway between Asia and Europe, improving air transport infrastructure is vital to accommodate rising passenger and cargo traffic, which traditional facilities may struggle to manage efficiently.

Strategic Geolocation and Regional Connectivity

Tashkent's strategic location in Central Asia gives it significant potential as a regional air transit hub. The new airport could establish Uzbekistan as a prime transit point between Europe and Asia, fostering closer economic and cultural ties with neighbouring countries. The project aligns with Uzbekistan's vision to integrate into the global transport network and capitalize on its location, supporting both regional cooperation and broader connectivity initiatives such as China's Belt and Road Initiative.

Modernisation and Capacity Enhancement

The existing Tashkent International Airport, though functional, lacks the capacity and modern facilities to handle anticipated growth in passenger and cargo volumes. A new airport will provide Uzbekistan with state-of-the-art infrastructure, incorporating advanced technology and modern logistics systems, essential for improving efficiency and safety. Expanding capacity would allow Tashkent to host more airlines, increasing the frequency of flights and providing more travel options for passengers and businesses.

Development of Tourism Sector

Uzbekistan's historical and cultural sites, including the ancient cities of Samarkand, Bukhara, and Khiva, attract international tourists, but inadequate air infrastructure has been a barrier. A new international airport could facilitate tourism, bringing in more visitors, lengthening their stays, and boosting the hospitality and retail sectors. The airport project would help fulfil Uzbekistan's aim of increasing its tourism footprint, enhancing international awareness of the nation's heritage, and diversifying the local economy.

Sustainability and Environmental Considerations

The new airport project presents opportunities to incorporate environmentally sustainable practices, a priority for modern airport developments. Energy-efficient infrastructure, waste management systems, and green spaces can set a new standard for future construction in Uzbekistan, aligning the country with global environmental best practices and attracting eco-conscious airlines and travellers. Integrating sustainability into this project would bolster Uzbekistan's commitment to environmental responsibility while also potentially reducing operational costs.

Job Creation and Human Capital Development

Constructing and operating a new international airport would generate thousands of jobs, from the construction phase through to long-term airport operations. This influx of employment opportunities supports human capital development, allowing Uzbekistan's workforce to acquire skills in logistics, hospitality, aviation management, and engineering. In turn, the airport's development would benefit communities by raising living standards and potentially stimulating growth in other industries, such as hospitality, retail, and real estate.

National Image and Global Competitiveness

A modern international airport enhances Uzbekistan's global image, showing its commitment to progress, openness, and readiness to compete in the global marketplace. For foreign investors and international businesses, improved accessibility to Tashkent can make Uzbekistan a more attractive destination for corporate expansion. As a symbol of progress, the airport can help to change global perceptions of Uzbekistan, signalling its ambitions as an emerging regional power.

1.3 Purpose and Objective of the ESIA

In accordance with the national environmental regulatory requirements in Uzbekistan, the Project will require an Environmental Impact Assessment (EIA) to be completed and approved by the environmental authority prior to commencement of the Project construction activities.

The Project Company is also seeking an amount of project finance from financial Institutions who have their own internal environmental & social investment policies/standards or may be members of voluntary agreements such as the Equator Principles. At this stage, it is understood that in addition to IFC, other lenders which include EBRD, US DFC, JBIC, NEXI and KEXIM are also involved in discussions relating to provisions of finance. Based on the requirements of these institutions, a process for undertaking an ESIA to assess potential impacts and determine suitable mitigation measures will be necessary as a process to reach financial close.

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 Uzbekistan 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 and the undertaking of environmental 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 siting alternatives;
- 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

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.

1.5 National EIA

A Project specific Stage I EIA (ZVOS) was submitted to the National Committee on Ecology and Climate Change (NCECC) of the Republic of Uzbekistan (which replaced the earlier Ministry of Ecology, Environmental Protection and Climate Change as the national environmental permitting agency) by 5 Capitals' sub-consultant, NBT with support from the Public Partner. The Stage I EIA received a Positive Conclusion from the Ministry of Ecology and Climate Change, (MOECC) State Ecological Expertise (SEE) on 20 April 2026, confirming the environmental acceptability of the Project at the first stage of the national EIA process and permitting the start of construction works. The permit is valid for 3 years. The approval requires the preparation and subsequent submission of the Stage II Statement on Environmental Impact (EIS) to the SEE, together with the conditions specified in the approval. In addition, the approval specifies that construction activities associated with land acquisition, demolition and impacts on environmental components may only commence following completion of compensation procedures, implementation of the Resettlement Action Plan (RAP), and receipt of the necessary permits in accordance with applicable legislation. A copy of the national EIA approval is included in Appendix 1.

As part of the national EIA process, planned activities of certain types of projects in Uzbekistan are subject to public hearings which is a requirement since December 2020. Such recommendations are described in the Resolution of the Cabinet of Ministries of the Republic of Uzbekistan 541 "On further improvement of the mechanism for assessing the environmental impact". A public hearing and consultation session as per the local regulation was conducted

for the project during 17th February 2026, and the protocol of the public hearing formed part of the documentation submitted to NCECC.

Following completion of the detailed design and Stage II EIA, a Stage III Statement on Environmental Consequences is required to be submitted and approved prior to commencement of Project operations.

2.0 Project Description

2.1 Project Overview

The planned new Tashkent International Airport will be developed under Presidential Decree PQ-353, issued 25th November 2025, as a replacement for the current Tashkent International Airport (TAS), marking a significant step in Uzbekistan's strategic infrastructure development. Once the new airport becomes operational and the transition of services is completed, commercial airport operations are expected to cease at the existing airport.

The scope of impact assessments has therefore been undertaken on the basis that airport operations will transfer from the existing airport to the new airport following commissioning of the new facility. The closure and future use of the existing airport site are not part of the proposed Project and are therefore outside the scope of this ESIA.

This new greenfield airport is a key part of the country's rapid transition as it seeks to establish itself as a regional connection and leading destination in Central Asia. The project aims to provide modern, safe, and compliant airport services for Tashkent, contribute to the economic development of the city and the country, and ensure the long-term financial sustainability of the airport and its stakeholders.

The airport will initially accommodate up to 20 million annual passengers (MAP), with planned expansions over the concession term to reach an ultimate capacity of 46 MAP. The scope of the ESIA is limited to the development of the initial phase (for up to 20MAP) of the airport only.

The first phase of the Project includes the construction of key infrastructure to accommodate up to 20 MAP. The development encompasses a passenger terminal building with a gross floor area of 208,364m² developed over 5 district levels for the opening year, equipped with modern systems such as: Passenger Boarding Bridge (PBB), a Baggage Handling System (BHS), and comprehensive Mechanical, Electrical, and Plumbing (MEP) systems. The air traffic control (ATC) tower, standing at 77 meters, will house essential ATC systems and a meteorology centre, serving as a landmark for the airport.

Support buildings include facilities for aircraft rescue and firefighting, a central utility centre, ground handling, and various operational and emergency services integrated within the passenger terminal. The airside infrastructure features two 4000-meter runways with associated taxiways, aprons, and lighting systems, supported by advanced navigational aids and meteorological systems.

The landside infrastructure is divided into passenger and support areas, with separate access roads for the terminal, and general aviation terminals, as well as for cargo and maintenance facilities. Comprehensive site-wide utilities will be installed, including heating and cooling plants, a power supply network, a fuel farm, water and wastewater systems, fire safety infrastructure, solid waste management, and a telecommunication network, ensuring the airport meets both local and international standards.

NACO, an international aviation consultancy, appointed by the Sponsors is undertaking the master planning and infrastructure design for the Project. The Sponsors has appointed Larsen & Toubro as the Engineering, Procurement and Construction (EPC) Contractor to handle the design, procurement, and construction services for the Project landside. The airside construction will be carried out by a separate EPC Contractor appointed by the Public Partner which is not confirmed at the time of preparing this ESIA report.

2.2 Project Development Scenario and Assessment Basis

As outlined earlier, the Project assessed in this ESIA comprises the proposed new Tashkent International Airport as currently defined for the initial development phase, with an operational capacity of up to 20 MAP. The Project footprint, associated land acquisition requirements and

resettlement impacts assessed in this ESIA are based on this initial development phase and the currently defined Project boundary.

The airport masterplan envisages the potential future expansion of the airport to an ultimate capacity of approximately 46 MAP. This future expansion is expected to occur within the approved airport masterplan area and based on the current masterplan, does not require expansion beyond the currently defined Project footprint or additional land acquisition outside the Project boundary. The future expansion does not currently form part of the Project seeking financing and approvals and will be subject to separate planning, design and, where required, environmental and social assessment as the detailed scope and implementation programme are defined.

Notwithstanding the above, certain infrastructure components, including the potable water supply network, wastewater collection and treatment systems and selected utility infrastructure, have been intentionally designed to accommodate the ultimate masterplan capacity of 46 MAP. This design approach has been adopted to avoid inefficient future reconstruction, minimise operational disruption and provide sufficient long-term infrastructure capacity. Accordingly, these infrastructure elements have been assessed based on their ultimate design capacity where relevant.

Similarly, certain operational assessments have considered the potential implications of the ultimate masterplan capacity where this provides a more robust assessment of long-term environmental and social effects. For example, aircraft noise modelling has included both the opening year and future operational scenarios to support establishment of the Sanitary Protection Zone (SPZ), while utility demand and selected operational infrastructure assessments have considered the ultimate design capacity where appropriate.

For other environmental and social topics, including construction impacts, land acquisition and resettlement, biodiversity, traffic during construction and other impacts directly attributable to the currently proposed Project, the assessment has been undertaken based on the initial 20 MAP development, reflecting the defined scope of the Project for financing and permitting purposes.

The cumulative impact assessment presented in this ESIA is proportionate to the level of design available for the Project and is based on the committed Phase 1 development. In accordance with IFC Performance Standard 1 and EBRD Environmental and Social Requirement 1, the assessment also considers the potential implications of the ultimate airport masterplan qualitatively where sufficient information is available.

The ultimate masterplan (approximately 46 MAP) has been considered as a future development scenario to identify the key environmental and social receptors that may be subject to increased pressures as airport activity expands. At this stage, however, the scale, timing, layout, operational characteristics and mitigation measures associated with future expansion phases have not been defined sufficiently to support meaningful quantitative assessment or modelling.

Accordingly, the ESIA does not present detailed quantitative predictions for the ultimate masterplan scenario, as these would be subject to a high degree of uncertainty and could be misleading. Future expansion phases will be subject to separate design development, environmental and social assessment, and applicable regulatory and lender review processes. These future assessments will update the cumulative impact assessment using the detailed information available at that time, including, where appropriate, quantitative modelling of air quality, greenhouse gas emissions, landscape and visual impacts, socio-economic effects, traffic and infrastructure capacity, and any other relevant environmental and social aspects.

Responsibility for undertaking future cumulative impact assessments rests with the Project Company / SPV as the Project developer and operator. Prior to the implementation of any future airport expansion phase beyond the currently assessed phase of the development, the

Project Company will review the proposed development against the requirements of the applicable national environmental legislation and the environmental and social requirements of the Project lenders. Where required, the cumulative impact assessment will be updated using the detailed design, operational forecasts and baseline information available at that time to evaluate the incremental and cumulative environmental and social impacts associated with the proposed expansion, taking into account other relevant existing, committed and reasonably foreseeable developments.

The updated cumulative impact assessment will be undertaken as part of the environmental and social assessment process for the relevant expansion phase and will be completed sufficiently in advance of construction to inform project design, mitigation measures and stakeholder engagement. The scope of each assessment will be proportionate to the nature and scale of the proposed expansion and will incorporate quantitative modelling and technical studies where appropriate. Any additional mitigation measures or management commitments identified through the assessment will be incorporated into the relevant Environmental and Social Management Plans (ESMPs) and other Project management documents, as applicable.

2.3 Project Location and Scale

The proposed Project site is located approximately 23 kilometres south of Tashkent city and about 20km from the existing Tashkent International Airport, in a predominantly flat rural area within the territory of the Tashkent Province, Urta-Chirchik and Kuyi-Chirchik districts. Location of the Project on a national and regional context are shown in Figure 2-1 and Figure 2-2 respectively.

The airport will span a 1,300-hectare plot, adjacent to the village of Yangitosh to the south, with several small villages nearby. The Project site is predominantly flat and is currently characterised by agricultural land, including cultivated fields and an established network of irrigation channels used for growing cotton and various other crops and fruits. The site spans 6km in length and 2.2km in width and area of approximately 13km², roughly in the shape of a parallelogram with approximately 70-degree orientation from true north. The land is primarily agricultural, with some identifiable structures visible on satellite imagery and intersected by various roads.

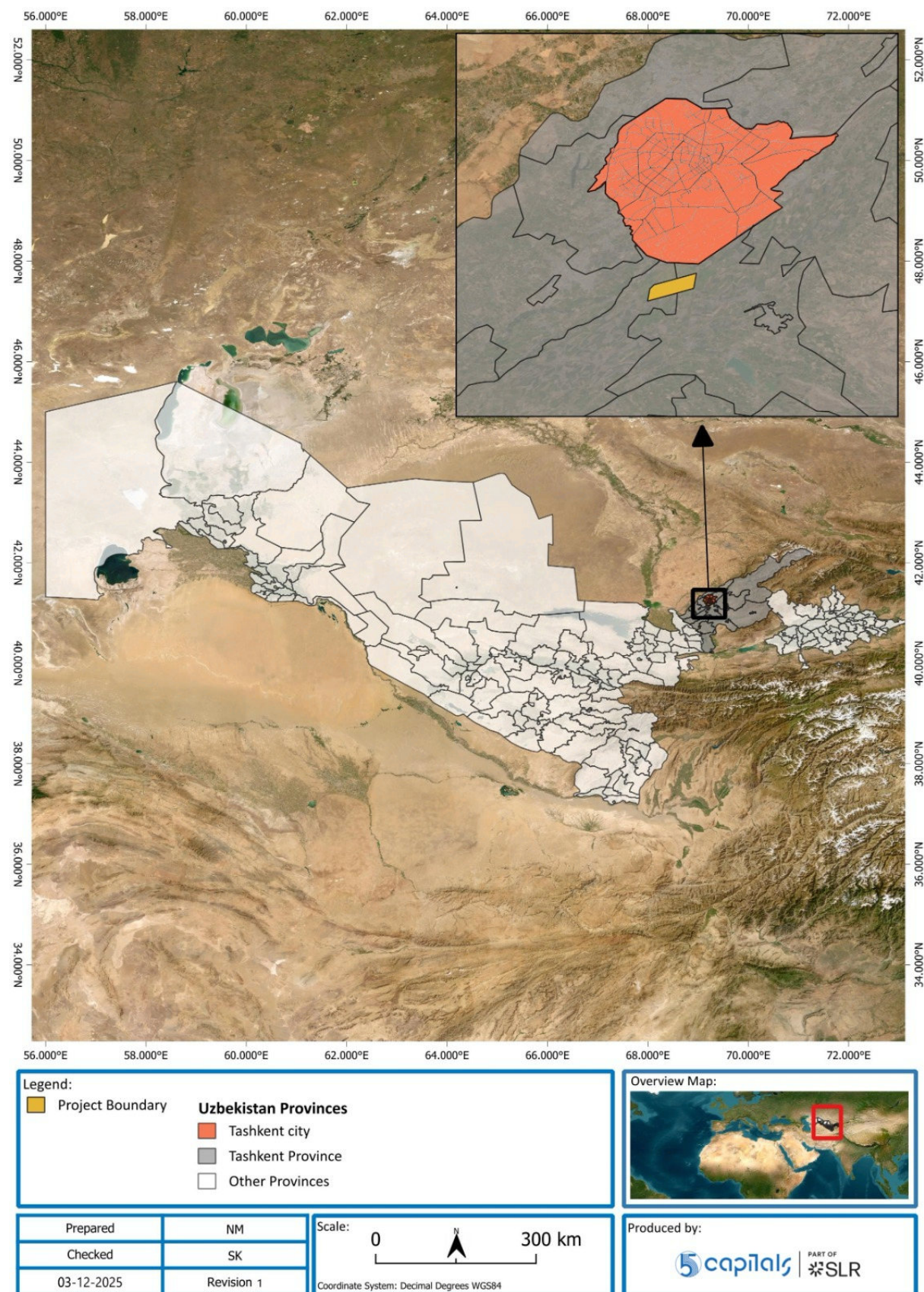


Figure 2-1 Project Location (National Context)

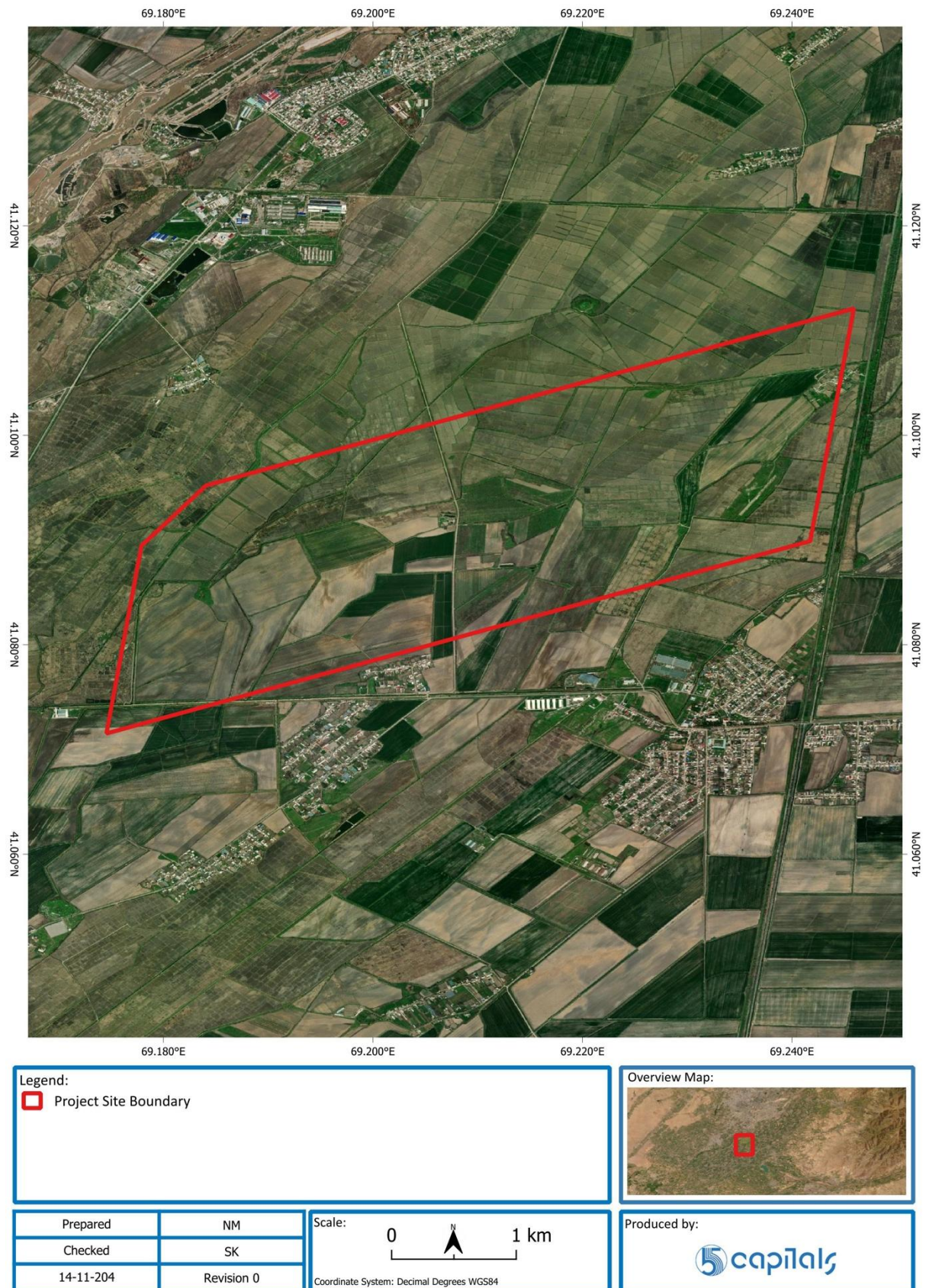


Figure 2-2 Project Location (Local Context)

2.4 Land Use and Site Conditions

2.4.1 Land Ownership

The land ownership structure in Uzbekistan is in accordance with the 1998 Land Code of the Republic of Uzbekistan, which stipulates that all land in Uzbekistan is owned by the State. However, the State permits the private individuals such as farmers to lease certain land areas from the State for economic benefits and housing. The Project site is currently being used by such individual parties who has leased the land mainly for arable farming and animal grazing activities (outside of the crop growing season).

Necessary agreements, specifically, a Land Lease Agreement (LLA) will be established with the government that will allow the Client to use the land without any interruption from the Government or any person claiming land ownership. However, the current land users who are potential Project Affected Persons (PAP) will have to be compensated based on their type of use, which are discussed later in more detail in this ESIA Report and detailed in the Resettlement Action Plan (RAP) document.

2.4.2 Land Use and Site Conditions

The proposed Project will be developed on a plot approximately 1,300 Ha in area. At present, almost the entirety of the site is used for agricultural purposes, as can be observed in Figure 2-3. The Project site is mainly used for cultivation of crops such as rice as well as cotton, pulses and vegetables. In addition to the cultivated fields, there are patches of land used for growing fruit trees, mostly located towards the central portion of the site. Herds of cattle were also observed grazing on the site.

In addition to the farmlands, there is also a small residential community which is part of the Xalqobod Mahalla, located towards the northeastern part of the Project site, part of which is located within the footprint of the Project area. There are also few small structures noted at three locations which includes one which used by a local farmer, an old building likely to be used for storing equipment in the past as well as an abandoned building scattered within the Project site. Based on GIS data provided by the Client there are four small areas identified as graveyards located within the site. The largest of these is approximately 1.3 Ha in area.

A network of smaller irrigation canals and drainage water collectors exist within the Project site and wider local area. There are also some Overhead Transmission Lines (OHTL) and internal access roads that passes through the Project site.

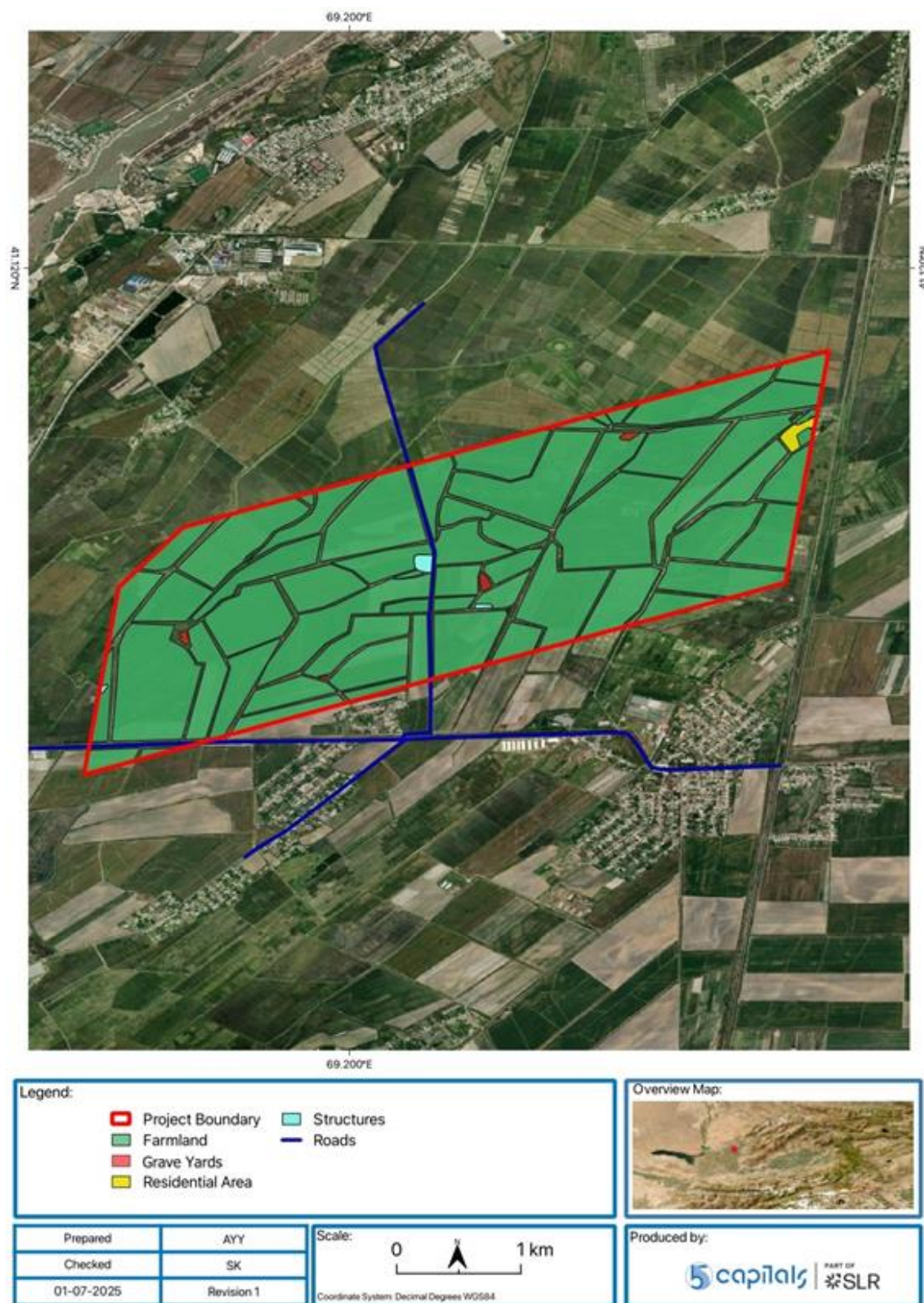


Figure 2-3 Site Land Use

Photographs taken during the course of the ESIA, showing the key features of the Project site land use and conditions are shown in following figures (Figure 2-4 to Figure 2-10).



Figure 2-4 Typical Farmland at Project Site



Figure 2-5 Fruit Trees



Figure 2-6 Grazing Observed at Site



Figure 2-7 Drainage Collector within Project Site



Figure 2-8 Irrigation Canal



Figure 2-9 One of the Existing Buildings within Project Site



Figure 2-10 Existing Road

2.5 Surrounding Area

Communities

Majority of the land surrounding the Project area is farmland similar to what is currently found at the Project site. There are patches of rural communities around the site, with the closest approximately 70m from the southern project site boundary, within the planned future extension area of the airport. The nearest building structure within this community is located approximately 70m south of the Project boundary.

Roads and Railway

An existing electrified railway line passes along the eastern edge of the Project site, serving as a passenger route. The closest major highway is the A373, a dual carriage way with the nearest section located approximately 6km from the eastern part of the site boundary. Additionally, there are minor local roads that primarily serve nearby communities including the one that passes along the southern part of the Project site.

Water Bodies

The Chirchik river (a tributary of the Syr Darya river), flows along the western and northern parts of the project site, situated approximately 2 km or more from the project site boundary.

Utilities

In terms of existing utility infrastructure, there is a gas pipeline located to the west of the site, approximately 750 meters from the western boundary, aligned in a north-south orientation.

Additionally, there is an overhead transmission line (OHTL) and an unpaved access path originating from outside the site, crossing a minor section of the southwestern corner as indicated in Figure 2-22.

Located east, south, and west of the site are medium/low-voltage transmission systems and medium-voltage distribution lines. As outlined above, one of these electrical power lines traverses the southern tip of the site and will need to be relocated before the construction commences. Site visits have revealed that birds (storks) use the electrical pylons for nesting. In addition to the mentioned relocations, some of the overhead powerlines will need to be buried or relocated to mitigate the safety risk posed by birds to aircraft operations.

The main features surrounding the Project site are indicated in following figures (Figure 2-11 to Figure 2-17) and Table 2-1.



Figure 2-11 Railway Line to the East of Project Site



Figure 2-12 Existing Public Road to South of the Project Site



Figure 2-13 Canal to the South of the Project Site



Figure 2-14 Residential Community to the South of the Project Site



Figure 2-15 Gas Pipeline to the West of the Project Site



Figure 2-16 Access Road and OHTL to the West of the Project Site



Figure 2-17 Chirchiq River

2.6 Receptor Identification

Potential sensitive receptors have been identified based on initial site visit conducted during October 2024 and review of satellite images. The human receptors are listed in Table 2-1 and their locations including identified potential ecological receptors are indicated in Figure 2-18.

2.6.1 Human Receptors

Table 2-1 lists the identified human receptors that may be potentially affected by the planned construction and operation of the new airport. Individual identifiers are provided to each receptor for ease of reference.

Table 2-1 Identified Closest Human Receptors (with distances to Project Boundary)

ID	Proximity to Project	Description
H1	70 m	Residential community
H2	2.14 km	Residential community
H3	1.2 km	Residential community
H4	430 m	Residential community
H5	710 m	Residential community
H6	1.8 km	Residential community
H7	2.7 km	Residential community
H8	1.1 km	Residential community
H9	4.4 km	Residential community
H10	3.6 km	Residential community

ID	Proximity to Project	Description
H11	4.6 km	Residential community
H12	1.9 km	Residential community
H13	3.8 km	Industrial / Commercial
H14	5.7 km	Residential community
H15	5.6 km	Residential community
H16	1.6 km	Residential community
H17	2.7 km	Residential community
H18	3 km	Residential community
H19	2.2 km	Industrial / Commercial
H20	975 m	Residential community
H21	1.3 km	Residential community
H22	4.1 km	Residential community
H23	5.5 km	Residential community
H24	3.3 km	Residential community
H25	3.7 km	Residential community
H 26	4.4 km	Residential community
H27	6.2 km	Residential community
H 28	5.9 km	Residential community
H 29	3.4 km	Residential community
H 30	3.2 km	Residential community

2.6.2 Ecological Receptors

There are no Legally Protected Areas (National Parks, Nature Reserves, etc.) or Internationally Recognized Areas (Key Biodiversity Areas (KBAs), Important Bird and Biodiversity Areas (IBAs), etc.) that overlap with the Project site. In addition, review of online databases has not identified any such areas within the 10 km search radius.

During the site visit, the areas near the Project site were identified as modified habitats used for residential, commercial, industrial and agricultural purposes. Even though not a designated ecological area of importance, the Chirchiq river which is approximately 2 km to the west of the Project site is considered as an ecological receptor.

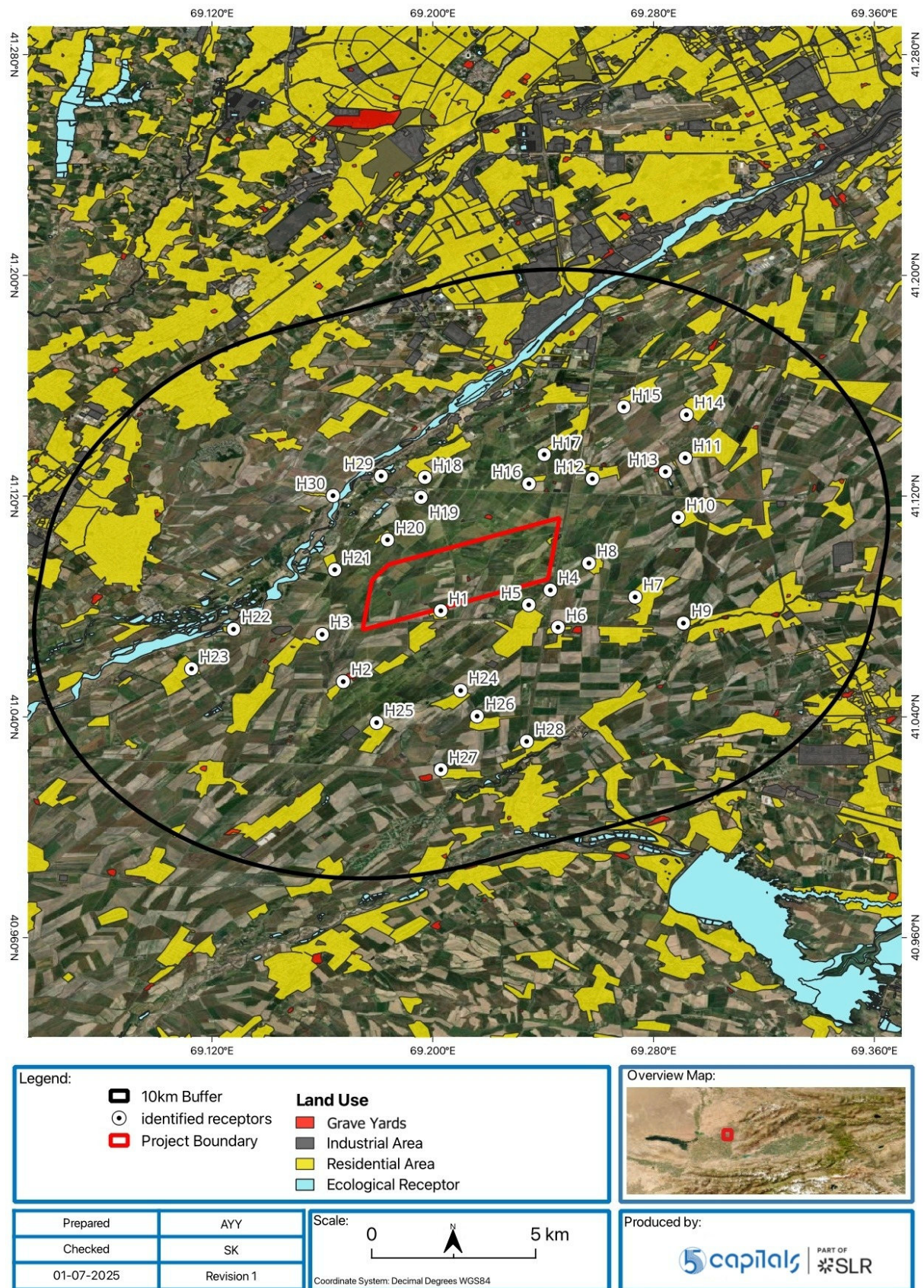


Figure 2-18 Initial Receptor Identification

2.6.3 Cultural and Archaeological Receptors

As outlined earlier in this report, four small areas within the Project site have been identified as graveyards, based on GIS data provided by the Client. Stakeholder consultations undertaken during the ESIA has shown that these graves belong to Muslim and Orthodox Christian communities

In addition to these, there are other active burial grounds in the vicinity of the Project site, the closest of which is located just south of the site boundary, approximately 230 metres away.

2.7 Project Facilities

The project facilities for the new airport include a wide range of components to support its operations. The main facilities feature: a passenger terminal, general aviation facilities (to be confirmed), a cargo facility, an aircraft maintenance facility, and parking and commercial areas.

The main support facilities include: a hotel (planned for future), fire training facilities, main and satellite RFF stations, an air traffic control tower, and various maintenance facilities. The project also encompasses essential utilities such as glycol storage, potable water and wastewater treatment, heating and cooling systems, a fuel farm, and a data centre.

Additionally, the airport will be equipped with navigational aids including surface movement radar, localizers, glide paths, and weather radar.

The runway system includes: two 4000-meter-long runways, taxiways, aircraft aprons, and a road network connecting the terminal and support areas. Special airport systems are also part of the infrastructure. These are presented with further details as following bulleted lists.

- **Main Facilities**
 - o Passenger Terminal
 - o Business and General Aviation (GA) Terminal
 - o General Aviation facilities (to be confirmed)
 - o Cargo Facility
 - o Aircraft Maintenance Facility
 - o Parking and Commercial Area
- **Support Facilities**
 - o Hotel
 - o Fire Training Facilities
 - o Business Hanger
 - o RFF Main Station
 - o RFF Satellite Station
 - o Air Traffic Control Tower
 - o GSE Maintenance Facility
 - o Airport Maintenance Facilities
- **Utilities**
 - o Glycol Storage
 - o Aircraft Sewage and Potable Water

- o GSE Staging areas
 - o Potable Water Storage
 - o Potable and Wastewater Treatment
 - o Heating and Cooling
 - o Fire Water Tank
 - o Sub Stations
 - o APM Maintenance Station
 - o Data Centre
 - o Power Intake
 - o Fuel Farm
 - o Bowser Filling Station
- **Navigational Aids**
 - o Surface movement radar
 - o Localizer 24R
 - o Glide Path 06L
 - o VDB Antenna
 - o Glide Path 24R
 - o Localizer 06L
 - o Weather Radar
 - o PSR/SSR
 - o Localizer 24L
 - o Glide Path 06R
 - o Glode Path 24L
 - o Localizer 06R
- **Runway System**
 - o 2x 4000 m long Runways with 1,700 m separation
 - o Taxiway System and Aircraft Aprons
- **Road Network to the Terminal Area and to Support Area,**
- **Special Airport Systems**

2.8 Project Masterplan

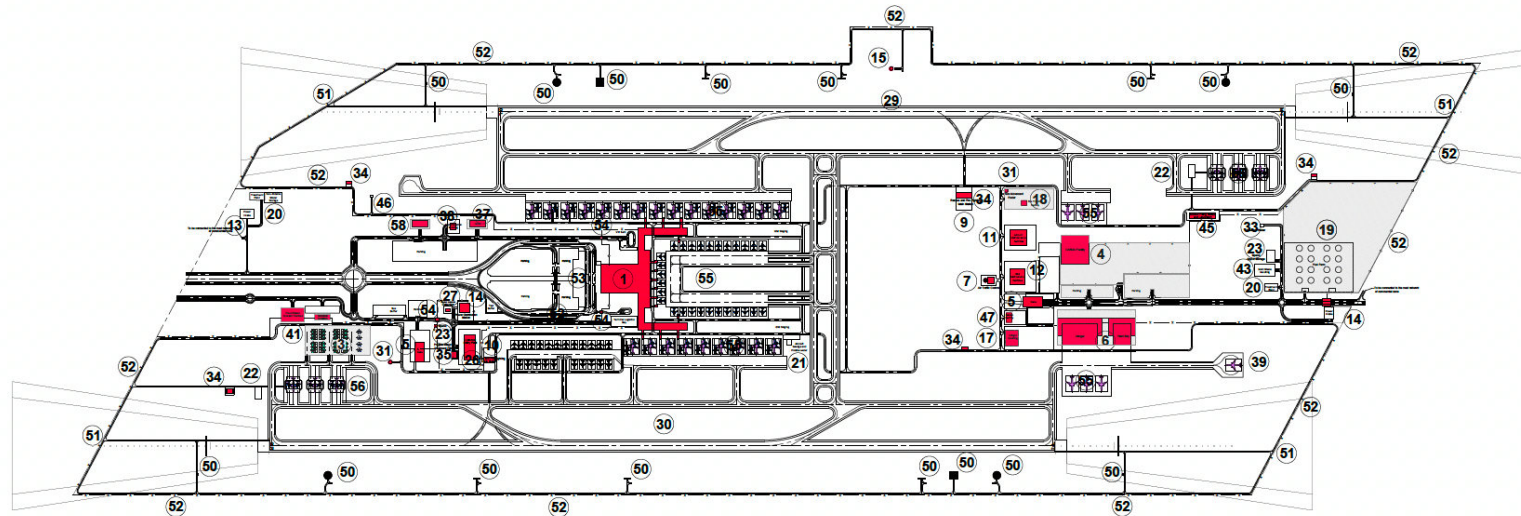
As outlined earlier in this report, the Project will be developed in phases, with the initial phase (which is the scope of this ESIA) designed to accommodate up to 20 MAP. However, certain infrastructure or facilities will have to be designed for the ultimate development stage right from the start.

The following sections present the salient features of the design of the Project, which is classified into different topics as follows:

- Airport Infrastructure
- Support Facilities
- Utilities
- Aviation Safety Features

In terms of the design, it should be noted that Uzbekistan is a member of the International Civil Aviation Organization (ICAO). For this reason, the regulatory framework set by ICAO will be used as the basis for the design of the aviation related facilities at the airport.

The Project masterplan is illustrated in Figure 2-19. The overall Project layout and surrounding infrastructure is shown in Figure 2-20.



LEGEND:

- | | |
|---|---|
| 1. Passenger terminal (Including Presidential Apron) | 27. Solid Waste Collection |
| 2. Not Used | 28. Not Used |
| 3. General Aviation facilities / Helipads (Including General Aviation Terminal, Not in EPC Scope) | 29. Runway 1 (06L/24R) |
| 4. Cargo terminals (Not in EPC Scope) | 30. Runway 2 (06R/24L) |
| 5. Gate | 31. Surface Movement Radar |
| 6. Aircraft maintenance facilities (Not in EPC Scope) | 32. Not Used |
| 7. Air Traffic control (Shell & core) | 33. Weather Radar (Not in EPC Scope) |
| 8. Not Used | 34. Airfield Ground Lighting Sub-Station (4 nos) |
| 9. Rescue and Fire Fighting Main Station + AGL Substation (34) | 35. Potable Water Treatment Facility |
| 10. Rescue and Fire Fighting Sub station | 36. Not Used |
| 11. Airport maintenance facilities | 37. Hotel (Not in EPC Scope) |
| 12. GSE maintenance facilities (Shell & core) | 38. Administration Building + Secondary Data Centre + Main Operational Equipment Room + Main Equipment Room |
| 13. Power Intake (1-nos) | 39. Engine Run-Up Bay / Isolation pad |
| 14. Power Distribution Station (2-nos) | 40. Not Used |
| 15. Doppler VHF Omni Directional Range (DVOR) | 41. Fixed Based Operator Facilities (Not in EPC Scope) |
| 16. Not Used | 42. Not Used |
| 17. In-flight Catering Facility (Not in EPC Scope) | 43. Solid Waste Handling Facility |
| 18. Fire Training Facility (Not in EPC Scope) | 44. Not Used |
| 19. Fuel Farm (Not in EPC Scope) | 45. Bowser Filling Station and Laboratory (Not in EPC Scope) |
| 20. Wastewater Treatment Plant and Non-potable Water Storage (ug) | 46. Bomb Disposal Unit |
| 21. Aircraft Sewage and Potable Water | 47. Meteo Facility |
| 22. Glycol Storage | 48. not used |
| 23. Spent Glycol Storage Facility | 49. not used |
| 24. Not Used | 50. NavAids Equipment (Not in EPC Scope) |
| 25. Not Used | 51. Crash Gate |
| 26. Common Utility Plant (Potable Water Storage + Fire Pump Room + Chiller Plant) | 52. Boundary Fence |
| | 53. Forecourt |
| | 54. Security Check Post |
| | 55. Apron |
| | 56. De-icing Apron |
| | 57. not used |
| | 58. Training Center |

Asset Not in EPC Scope

Figure 2-19 Project Masterplan for Phase 1 (February 2026)

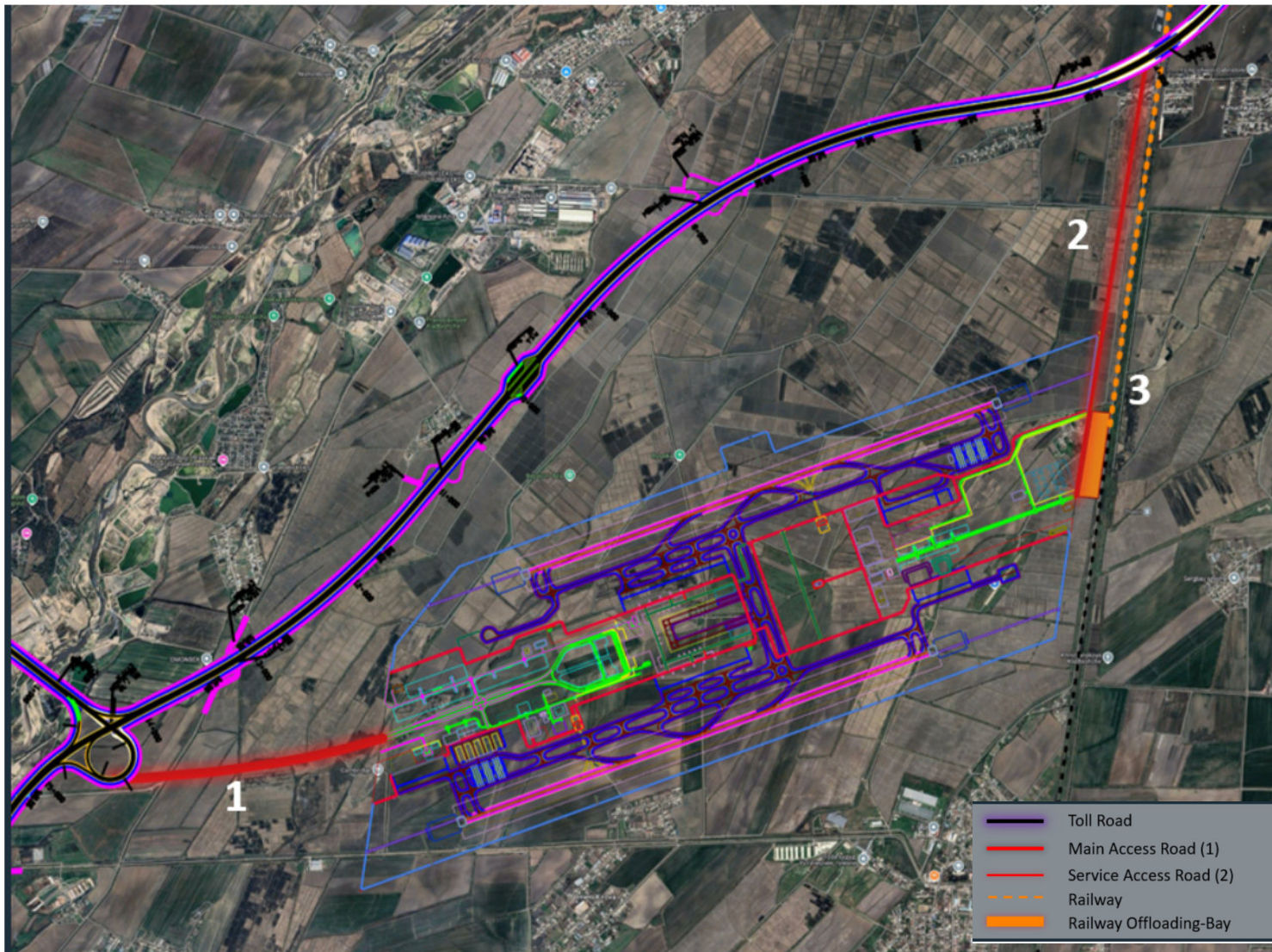


Figure 2-20 Project Layout and Surrounding Infrastructure

2.9 Aviation Safety and Obstacle Control

The Presidential Decree-353 prohibits any building or activities that could pose a risk to the airport infrastructure from being located within the adjacent area. Additionally, the Tashkent Regional Administration and the Ministry of Construction and Housing and Communal Services are responsible to ensure that the height parameters and placement of buildings and structures to be constructed at a specified distance from the new airport's aerodrome control point are coordinated with the Civil Aviation Agency (CAA) in accordance with the established procedure and complying with ICAO requirements.

As part of the airport planning process, the Project Sponsors undertook consultation with the CAA during the site selection and master planning stage. A meeting was held with the CAA in July 2024 to confirm that the proposed airport site and master plan were aligned with aviation safety and operational requirements, including considerations related to the Aviation Safety Zone (ASZ). The clearance of existing obstacles located outside the EPC Contractor's scope will be managed by the relevant responsible authorities.

All buildings and structures to be constructed at the specified distance from the new airport must obtain permits for their height parameters through the process outlined in Appendix 51 of the Unified Regulations on the submission procedures for certain documents approved by the Cabinet of Ministers' Resolution No. 86, dated February 22, 2022, using the Special electronic system. The process for granting permits for activities that could jeopardize flight safety will be carried out based on the rules and conditions set by the permit issuance procedure. As per the Order of Cabinet Minister, approval from Uzbek Airport Authority and the CAA is required before the local administration office or the Kokhimiyat can issue building permit to the developer who intends to carry out any development activities in vicinity of the airport.

An Obstacle Survey (see Figure 2-21) was conducted during the Master Plan development phase within a 10 km radius of the proposed airport to identify existing and potential obstacles that could affect aircraft operations. Based on this assessment, aviation safety at and around the airport will be managed through the application of Obstacle Limitation Surfaces (OLS), which define height restrictions for structures, antennas, vegetation, and other objects in the vicinity of the aerodrome. The obstacle survey undertaken for the Project identified existing Overhead Transmission Lines (OHTL) within and surrounding the site that may penetrate protected airspace. OHTLs were identified passing through the southwestern corner of the Project site and two separate short sections outside of the site, to the south and east of the Project site. These features are presented in Figure 2-22 and are planned to be removed by the responsible authorities as part of the broader airport development programme to ensure compliance with aviation safety requirements.

While no fixed health or safety buffer zones restricting land use have been established around the airport, height limitations apply, and no object may penetrate the OLS in accordance with applicable aviation regulations. A review of the published Aviation Rules of the Republic of Uzbekistan, available through the CAA, confirms that national requirements focus primarily on flight safety considerations, including obstacle control and aerodrome safeguarding, consistent with ICAO Annex 14.

No explicit CAA-issued standards or guidance currently define health protection zones or residential exclusion areas around airports or along approach and take-off flight paths. Accordingly, aviation-related safety precautions for the project are centered on compliance with obstacle limitation requirements and height control measures to ensure safe aircraft operations, rather than land-use or community health buffer zones.

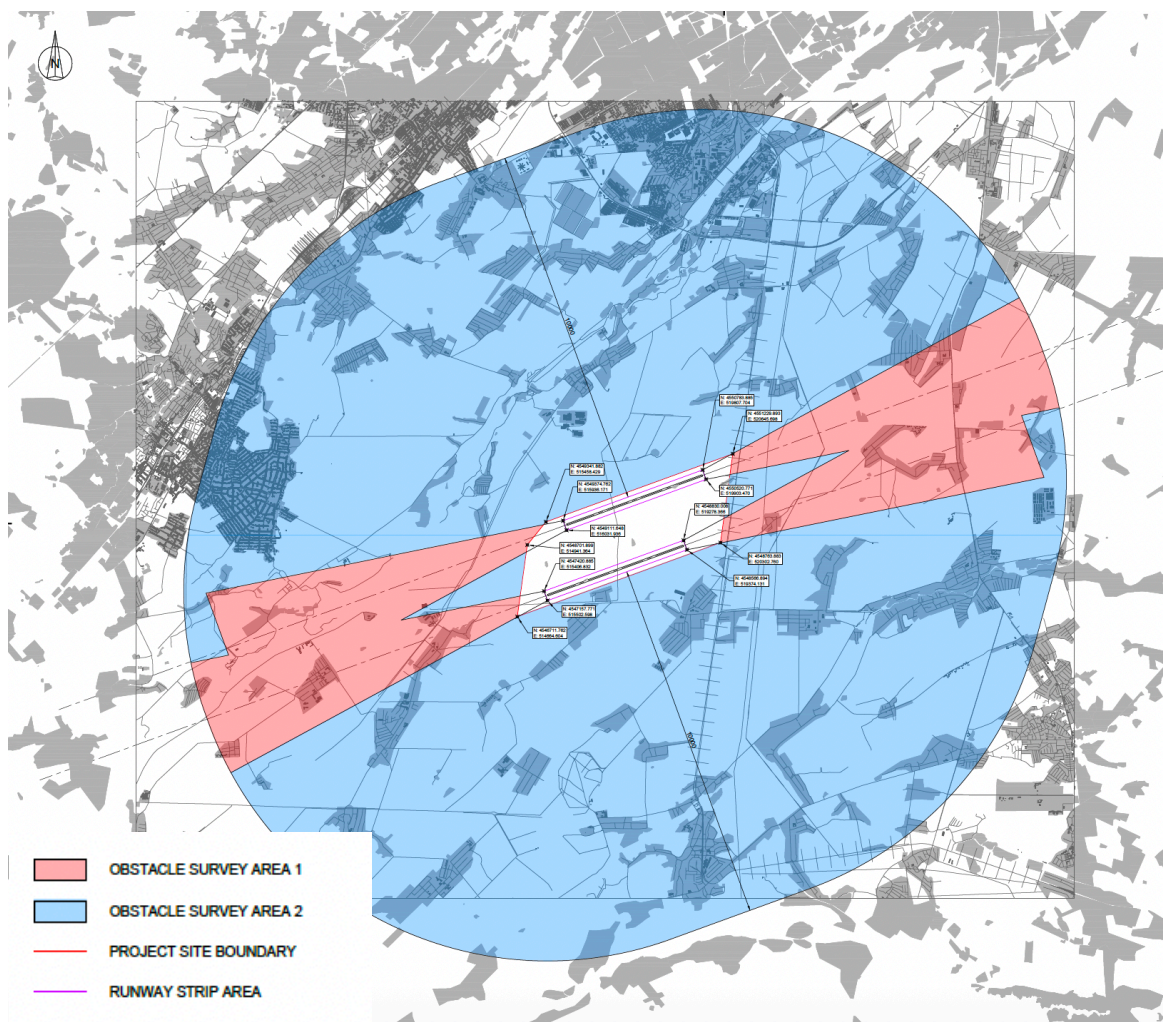


Figure 2-21 Aviation Obstacle Survey

Aviation safeguarding will consider not only physical obstacles to aircraft operations but also land uses and activities within the ASZ that could create potential hazards to aircraft operations. It will consider the applicable aviation safeguarding requirements, including the potential for existing and future land uses to interfere with aircraft operations, create physical or visual obstructions, attract birds or other wildlife, or otherwise affect aviation safety.

Agricultural activities are not expected to be generally prohibited within the ASZ. However, specific agricultural land uses or practices may be subject to aviation safety controls where they have the potential to create a hazard to aircraft operations. These may include, but are not necessarily limited to:

- Activities that attract birds or other wildlife, including land uses that provide food, nesting or roosting opportunities, or other conditions that could increase bird/wildlife strike risk;
- Planting of tall vegetation, trees or orchards that could, as they mature, penetrate applicable obstacle limitation surfaces or otherwise interfere with aircraft operations;
- Creation or expansion of large or persistent water bodies, including irrigation ponds, reservoirs or other standing-water features, where these could attract birds or other wildlife;

- Agricultural burning, crop residue burning or other activities that generate smoke, dust or atmospheric obscuration and could reduce visibility or otherwise affect aircraft operations;
- Other activities or structures associated with agricultural land use that may create physical obstacles, visual hazards or other aviation-safety risks, including temporary structures or equipment where relevant.

The applicability and extent of such controls will depend on the location, nature and scale of the activity and its relationship to the airport's operational areas and applicable safeguarding surfaces. The ASZ will therefore not necessarily impose a blanket restriction on land use; rather, land uses and activities will be subject to screening and, where necessary, specific controls or conditions to ensure that aviation safety is maintained.

The identified requirements will be addressed through the applicable aviation safeguarding, land-use planning, development control and permitting processes, in coordination with the CAA, Uzbek Airports Authority and other relevant government authorities. Where proposed developments or changes in land use have the potential to affect aviation safety, the relevant authorities will determine the applicable requirements, including any restrictions, conditions or approvals required before the activity can proceed.



Figure 2-22 Existing OHTL Identified within Project Area (Obstacle Survey)

2.10 Sanitary Protection Zone

SanPiN No. 0103-25 defines the SPZ as a territory intended to ensure that concentrations of atmospheric pollutants and levels of physical factors, including aircraft noise, are reduced to permissible levels for residential areas. Additional applicable standards include permissible environmental noise levels (SanPiN 0008-20), atmospheric pollutant concentrations (SanPiN 0053-23) and requirements for radio-technical structures (SanPiN 0019-21).

Noise has been a key consideration in both the airport siting assessment and the determination of the Sanitary Protection Zone (SPZ). Multiple technical consultations were undertaken with the Committee for Sanitary and Epidemiological Welfare and Public Health during the ESIA process to agree an appropriate methodology for establishing the SPZ. During meetings held between the Project team and Committee officials on 17 April 2026, and subsequently on 30 April 2026 with the Chairman of the Committee (also attended by representatives of the lenders), the competent authority confirmed that the SPZ should be established based on a project-specific assessment, taking into account aircraft noise modelling, runway configuration, flight procedures, operational characteristics and the distribution of sensitive receptors, rather than by applying generic separation distances. This approach is also consistent with the general regulatory approach for airport SPZs, whereby the boundary is supported by technical calculations based on expected airport impacts, including forecast aircraft movements, runway configuration, aircraft types and operating characteristics.

Following these consultations, the Committee for Sanitary and Epidemiological Welfare and Public Health has issued a formal Conclusion on the Establishment of the Sanitary Protection Zone (SPZ) for the Project which is included in the Appendix 2. The conclusion establishes the SPZ along the outer contour of the 60 dB (LAeq) aircraft noise contour, based on project-specific predictive aircraft noise modelling undertaken using internationally recognised methodologies and conservative operational assumptions. The assessment considered projected flight activity, aircraft characteristics, airport operating modes and the surrounding land uses.

The approved 60 dB SPZ contour is located very close to the Project site boundary. Importantly, the area enclosed by the approved 60 dB SPZ does not contain residential receptors. The absence of residential receptors within the approved SPZ is a significant factor in the assessment of potential sanitary and land-use impacts and means that establishment of the SPZ does not, in itself, require additional residential displacement or relocation.

The SPZ conclusion further defines a series of management zones based on predicted aircraft noise levels. Areas below 60 dB are considered a potentially permissible impact zone requiring targeted monitoring and possible noise mitigation measures, where appropriate, the 60–65 dB contour is designated as a controlled impact zone requiring implementation of noise reduction measures, while areas above 65 dB may be subject to additional sanitary, planning and organisational measures in accordance with national legislation.

The SPZ should be distinguished from other regulatory and planning controls that may apply around an airport, including aircraft-noise management zones, aerodrome and airport safety zones, obstacle limitation surfaces and wider land-use planning controls. These mechanisms have different purposes but will operate together to prevent incompatible development and manage exposure to airport-related impacts. The regulatory framework therefore provides for land-use restrictions and/or controls on sensitive development, including residential development and facilities such as schools, hospitals and kindergartens, where warranted by the applicable noise and sanitary criteria.

Based on the opening year and future operational aircraft noise modelling undertaken as part of this ESIA, establishment of the SPZ along the approved 60 dB contour does not result in any additional physical displacement beyond that already identified for the Project footprint. As noted above, the 60 dB SPZ is located close to the Project site boundary, and no residential

receptors are present within the approved SPZ. Consequently, no additional residential acquisition is currently anticipated as a consequence of the approved SPZ. Should future refinements to airport design or operations result in changes to the approved SPZ boundary or associated land-use restrictions, any resulting economic or physical displacement will be managed in accordance with the Resettlement Policy Framework (RPF) and applicable lender requirements.

The SPZ conclusion recognises that aircraft noise modelling may be refined as the airport design and operational parameters are further developed, including updates to flight procedures, aircraft fleet mix and operational assumptions. Accordingly, further aircraft noise modelling will be undertaken during the detailed design stage to confirm compliance with applicable national requirements and international lender commitments, with the SPZ being refined where necessary in accordance with the procedures established under national legislation.

Implementation of the SPZ will involve:

- Refinement of aircraft noise modelling as the airport design and operational assumptions are finalised
- Implementation of operational and technological noise mitigation measures where required
- Operational noise monitoring in accordance with the approved monitoring programme
- Periodic review of the SPZ should future design or operational changes materially alter the predicted aircraft noise environment.

Responsibility for establishing and enforcing the SPZ, including any associated land-use restrictions, rests with the Committee for Sanitary and Epidemiological Welfare and Public Health in coordination with other competent state authorities including the Kokhimiyat and the Ministry of Construction in accordance with national legislation. The Project Company will be responsible for undertaking the required aircraft noise modelling, implementing operational noise monitoring, demonstrating compliance with applicable standards, implementing project-specific noise mitigation measures where required, and providing monitoring information to the competent authorities to support their regulatory oversight.

On this basis, the ESIA concludes that the SPZ for the Project has been established using a project-specific, risk-based aircraft noise contour approach supported by detailed modelling and consultation with the competent authorities, rather than the application of generic separation distances.

The relationship between the SPZ approval and other environmental, sanitary and planning approvals, including the applicable ZVOS process, will be managed through the relevant national regulatory procedures. The SPZ is a sanitary/planning control established by the competent sanitary authorities and should not be considered a substitute for other environmental or planning approvals applicable to the Project. Where subsequent project approvals or design changes have implications for the approved SPZ, the Project Company will provide the relevant technical information to the competent authorities and comply with any resulting requirements.

Implementation of the SPZ will be an ongoing regulatory process throughout the operational life of the airport rather than a one-off approval. The SPV will periodically review the operational aircraft noise environment through the Airport Noise Management Framework, incorporating operational noise monitoring, updated aircraft movement data, fleet composition and any changes to flight procedures or airport infrastructure. Where these reviews identify material changes to the aircraft noise environment, updated aircraft noise modelling will be undertaken and submitted to the Committee for Sanitary and Epidemiological Welfare and Public Health for review. Any revision to the approved SPZ, together with any associated land-

use planning or management measures, will be determined by the competent authorities in accordance with the applicable national legislative process. The Project Company will implement any project-specific mitigation measures and monitoring requirements arising from this process and will continue to provide the technical information required to support the competent authorities in the ongoing administration and enforcement of the SPZ. The Project Company does not have authority to impose or enforce restrictions on third-party land development outside its legal control; its role is instead to provide the technical information and monitoring results required by the competent authorities and to implement project-specific measures within the Project's area of responsibility. However, The Project Company will also continue to engage with the relevant planning and local authorities, where appropriate, to support maintenance of the approved SPZ within the wider land-use planning framework. This will be particularly relevant if future development proposals arise in or immediately adjacent to the SPZ. Any proposed development that could result in incompatible land use within the SPZ would remain subject to the applicable national sanitary, planning and permitting requirements administered by the competent authorities.

2.11 Public Safety Zone

The Project will consider public and community safety risks associated with airport operations through appropriate airport side safety measures, land-use planning considerations and coordination with the relevant aviation, planning, local government and emergency-response authorities. The Public Safety Zone (PSZ) is intended as a land-use planning measure to protect people and communities from risks associated with aircraft taking off and landing, including aircraft accident risk, particularly in areas beyond the ends of the runways. The PSZ is not an ICAO-defined zone and, unlike the ASZ, is not governed by ICAO requirements. It will need to be developed in consultation with the relevant aviation, planning and local authorities as a public safety measure. The formal national regulatory basis, delineation methodology and approval mechanism for a standalone PSZ have not yet been fully confirmed. The Project therefore does not currently assume a formally established PSZ or prescribe specific land-use restrictions. Instead, the Project will support the relevant aviation, planning, local government and other competent authorities in developing an appropriate framework, taking into account the airport's operational characteristics, accident risk considerations, surrounding land uses and population distribution, as well as applicable national requirements and relevant international good practice.

Once a PSZ framework is formally established and approved, the applicable controls and requirements would be incorporated into land-use planning, development control, zoning, cadastral and permitting processes, particularly in locations where the type, density or scale of development could increase potential public-safety consequences associated with airport operations. Depending on the methodology and requirements established by the competent authorities, controls could include restrictions or conditions on certain land uses or high concentrations of people, development density or occupancy, and requirements for appropriate access, signage, emergency preparedness or other public-safety measures.

Potential PSZ considerations may be particularly relevant to residential development, schools and other facilities accommodating vulnerable populations, hospitals and healthcare facilities, public assembly areas, high-occupancy commercial or institutional developments, and other uses where a large number of people could be exposed to aircraft accident risk. The applicability of any such controls would be determined by the competent authorities based on the formally adopted PSZ methodology and risk criteria and would not constitute a blanket restriction on development outside the airport.

Depending on the requirements established by the competent authorities, and where appropriate with reference to relevant ICAO guidance and good international practice, PSZ related measures may include land-use and development controls, appropriate access and safety signage, community awareness and information, emergency response planning,

coordination with local emergency and public-safety authorities, and consideration of evacuation or emergency access requirements.

2.12 Process for Establishment and Implementation of the SPZ, ASZ and PSZ

The establishment and implementation of the SPZ, ASZ and PSZ will require coordination between the Private Partner (i.e., the SPV), Public Partner and relevant Government of Uzbekistan (GoU) authorities. The formal regulatory basis, delineation methodology, approval arrangements and detailed controls for the three zones remain subject to confirmation by the competent authorities.

The process currently understood is as follows:

1. **Provision of technical information:** The Private Partner will provide the relevant technical information and assessment outputs to the GoU, including noise modelling contours, updated air dispersion modelling and relevant airport operational information.
2. **Government guidance and criteria:** Relevant GoU agencies will establish and/or confirm the applicable regulatory requirements, criteria and methodologies for development of the SPZ, ASZ and PSZ, including applicable land-use and development controls.
3. **Zone delineation and mapping:** Based on the confirmed requirements and Project information, the relevant GoU agencies will prepare airport-specific SPZ, ASZ and PSZ maps, identifying the boundaries and applicable restrictions, conditions or prescriptions within each zone.
4. **Cadastral integration:** The approved zone boundaries and applicable requirements will be incorporated into relevant cadastral maps and land records, allowing restrictions or conditions to be identified against affected land parcels.
5. **Planning and permitting:** The relevant requirements will be integrated into construction, development and land-use change permitting processes, with the competent authorities applying the applicable controls when reviewing proposals within the designated zones.

The concerned GoU authorities will be responsible for implementation and enforcement of the applicable controls. The Private Partner will provide technical support and updated information where required.

2.12.1 Project Context and Technical Basis

For the new Tashkent International Airport, applying a fixed 30 km SPZ is not feasible due to the existing regional context, urban development patterns, and the strategic siting of the airport. In line with the agency's written response, the project therefore relies on technical modelling to define a scientifically based SPZ.

The project has already conducted detailed noise modelling and atmospheric dispersion modelling. Results are provided in the Noise and Air Quality chapters of this ESIA.

The agency's response also indicates that additional clarification may be provided during ongoing discussions concerning compliance with sanitary-epidemiological requirements for the protection of public health. This confirms that SPZ determination is an iterative process to be finalised through engagement with the Committee for Sanitary and Epidemiological Welfare and Public Health, the Ministry of Health, and other relevant authorities based on confirmed airport operational details including confirmed Air Traffic Movement (ATM) and flight path information.

The final SPZ will therefore be agreed through continued regulatory consultation, supported by completed updated technical modelling and aligned with both national sanitary-epidemiological frameworks and international environmental and social standards.

The new airport is intended to replace the existing airport. The operational noise assessment, SPZ development, and associated impact assessments have been undertaken on the basis that airport operations will transfer from the existing airport to the new airport following commissioning of the new facility.

2.13 Aircraft Types

The airport will be designed to accommodate the types of aircrafts outlined in the following sections.

2.13.1 Fixed Wing

For the new Tashkent International Airport, Code Number 4 has been selected because the reference field length of the aeroplanes operating at the new airport exceeds 1,800 meters. In line with the Project masterplan (NACO, 2024), the airfield geometry will be designed for ICAO Code E aircraft. However, the design geometry will also allow occasional Code F operations and will accommodate the folding wingtip (FWT) system of the Boeing 777-9.

To simplify the process of aligning airport facility characteristics with those of the aircraft intended to operate at the airport, the Aerodrome Reference Codes, as per ICAO standards, will be used. These are presented in Table 2-2.

Table 2-2 Aerodrome Reference Code (ICAO – Annex 14 Volume I, 2022)

Code	Wing Span	Outer Main Gear Wheel Span
A	Up to but not including 15m	Up to but not including 4.5m
B	15m up to but not including 24m	4.5m up to but not including 6m
C	24m up to but not including 36m	6m up to but not including 9m
D	36m up to but not including 52m	9m up to but not including 14m
E	52m up to but not including 65m	9m up to but not including 14m
F	65m up to but not including 80m	14m up to but not including 16m

2.13.2 Rotary Wing

Helicopter operations are part of General Aviation traffic. The design of the airside infrastructure follows the design standards and recommendations outlined in ICAO Annex 14. Helicopters will use the main runways for landing and take-off manoeuvres, as the general aviation apron designated for these aircraft will not be able to provide the Final Approach and Take-off (FATO) area.

The helicopter stands will be sized to accommodate the following types of helicopters (see Figure 2-23), with D-values in accordance with ICAO DOC 9261 - Heliport Manual, 5th edition, 2021, Table II-6-1.

- Mil Mi-8 D = 25.4m
- Airbus H-125 D = 13.0m
- Airbus H-130 D = 12.6m
- Airbus H-145 D = 13.7m



Figure 2-23 Mil Mi-8 and Airbus H-130

The helicopter apron will be designed with a D-value of 14 meters, accommodating most of the intended helicopter types. Additionally, a specific section of the helicopter apron will be designed with a D-value of 25.4 meters to accommodate the largest helicopter types. The helicopter stands will generally be spaced to allow for dependent hover-turn operations.

2.14 Airside Design Details

2.14.1 Airport infrastructure

Runways

The Aerodrome Reference Code for the new airport has been established at 4E, allowing occasional usage by Code 4F aircraft (see Figure 2-24). In accordance with the relevant ICAO Aerodrome Design Manual, the code number is determined based on the highest aeroplane reference field length among the aircraft for which the runway is intended. The aeroplane reference field length is defined as the minimum length required for take-off at the maximum certified take-off mass, under sea-level, standard atmospheric conditions, still air, and zero runway slope, as specified in the relevant aeroplane flight manual or equivalent data from the manufacturer. The paved length between the runway extremities is 4,000 meters for each runway.

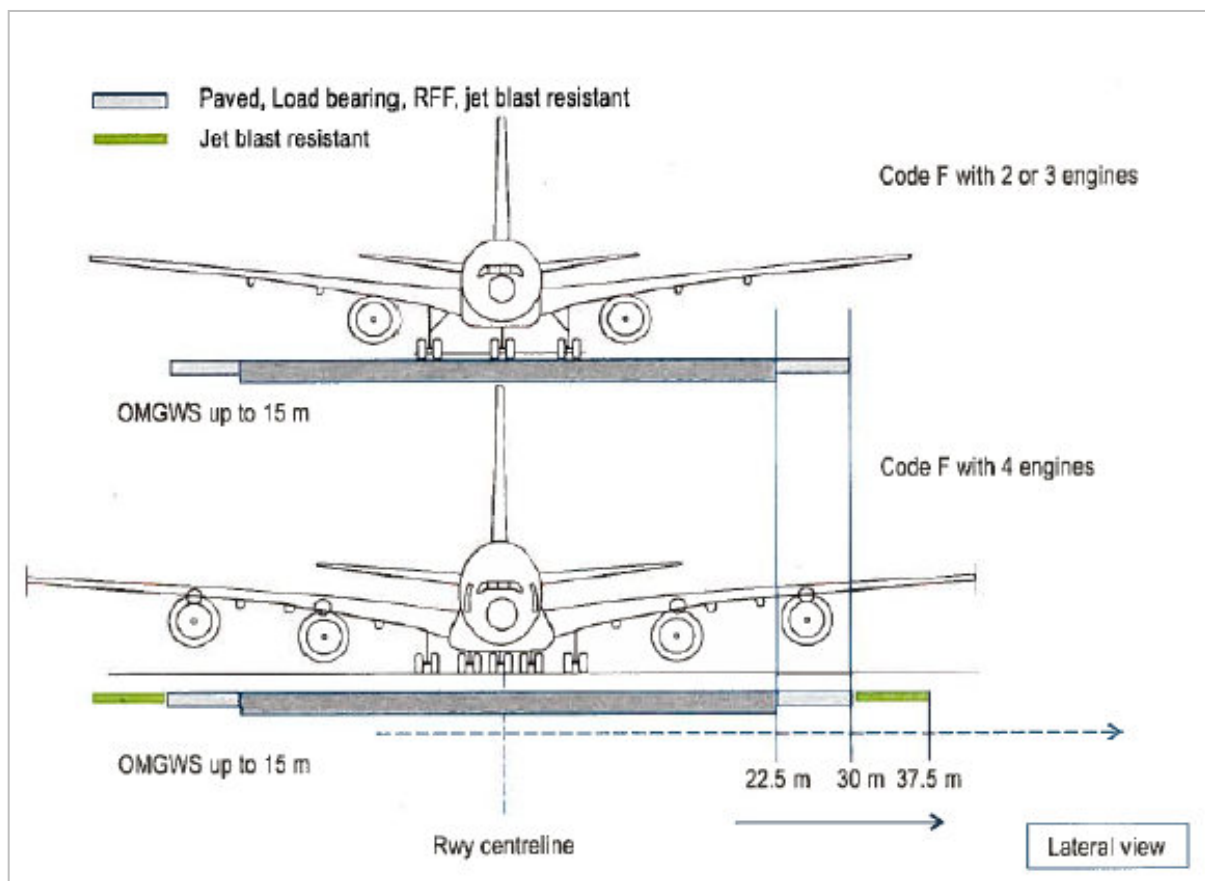


Figure 2-24 Runway Width ICAO Code 4F

Taxiways

The taxiway geometry is designed in accordance with the ICAO requirements for Code E. This is in line with the air traffic forecast which does not reflect any Code F movements. However, it is anticipated that the airport will occasionally be used by Code F aircraft. In order to accommodate these occasional movements, the following approach is adopted for the taxiway geometry:

- Separation distances between runway and parallel taxiway, between two parallel taxiways and between dual cross-taxiways: Code F compliant;
- Wingtip clearance to objects for parallel and cross taxiways: Code F compliant;
- Taxiway width for parallel and cross taxiways: Code F compliant;
- Overall width of taxiway including shoulders: Code E compliant;
- Open drainage channels outside Code E taxiway strip, within Code F taxiway strip.

By applying the above geometry principles, the taxiways parallel to the runways and the cross taxiways will provide unrestricted movement of Code F aircraft to the commercial apron and cargo apron. The remaining aircraft manoeuvring areas, such as the apron taxiways and aircraft stand taxi lanes will be dedicated for Code E (or Code C) operations.

Aprons

An apron provides dedicated space to park aircraft for the purpose of loading and unloading passengers, cargo or mail, fuelling, servicing, catering, over-night parking and/or maintenance.

The following types of aprons are planned for the Project:

- Commercial Apron
- Cargo Apron
- Maintenance Apron
- General Aviation & Rotary Wing Apron
- Aircraft Isolation Pad
- De-icing Apron

The Commercial and cargo aprons will be provided with a fuel hydrant network. The aircraft maintenance apron will be used for the parking of aircraft during Maintenance, Repair, and Overhaul (MRO) operations. The apron will accommodate up to ICAO Code E aircraft. While there will be no fuel hydrant network provided for the remaining aprons, the general aviation aprons will utilise fuel bowsers for fuelling activity.

Engine Run Up Facility

An engine run-up area has also been provided at the southeast end of the maintenance apron. An apron area of 130m x 100m has been designated for Code E aircraft, which is sufficient for conducting engine run-ups, typically undertaken by one aircraft at a time.

An engine run-up is necessary after certain types of maintenance procedures are performed on an aircraft. The aircraft will be towed to the planned location for the run-ups. At all times, the aircraft will be positioned to assure that the jet-blast from the back of the engine is directed away from any critical areas which are noise sensitive. Alternatively, if noise or jet blast is an issue, the jet blast could be shielded by means of jet blast barriers or concrete walls or sloped embankments. An example of an engine run up area is indicated in Figure 2-25.

This facility will also serve as an aircraft isolation pad to be used in case of any unlawful interferences requiring isolation from normal airport activities.



Figure 2-25 Example of an Engine Run-up Area at Istanbul Ataturk Airport

2.14.2 De-icing

As described in ICAO document 9640 – “Manual of aircraft ground De-icing/Anti-icing operations”; *all aeroplanes are designed to fly clean. When an aeroplane is affected by snow, slush or ice a potential safety hazard exists. It is therefore imperative that take-off cannot be attempted unless it has been ascertained that all critical surfaces of the aeroplane and all*

instrument probes are free of adhering snow, frost or ice formations. This vital requirement is known as clean aircraft concept (CAC)”.

In order to achieve the clean aircraft, the concept is to de-ice/anti-ice the aircraft prior to take-off. The de-icing/anti-icing process can take place at various locations on the airport; however, the following are the most common applied solutions:

- De-icing/Anti-icing on the aircraft stand at the terminal prior to departure.
- De-icing/Anti-icing on dedicated location(s) on the taxiway system prior to departure.
- De-icing/Anti-icing on dedicated de-icing aprons

Considering that the terminal building will be located centrally between both runways the average taxi distance between the terminal building and the departure thresholds is around 2,500m. Due to the relative long taxi distance it is decided that the de-icing/anti-icing operations will take place at dedicated de-icing aprons close to the thresholds. This is based on the assumption that powered up aircraft can be de-iced. De-icing apron's locations planned at the airport are indicated in Figure 2-26.

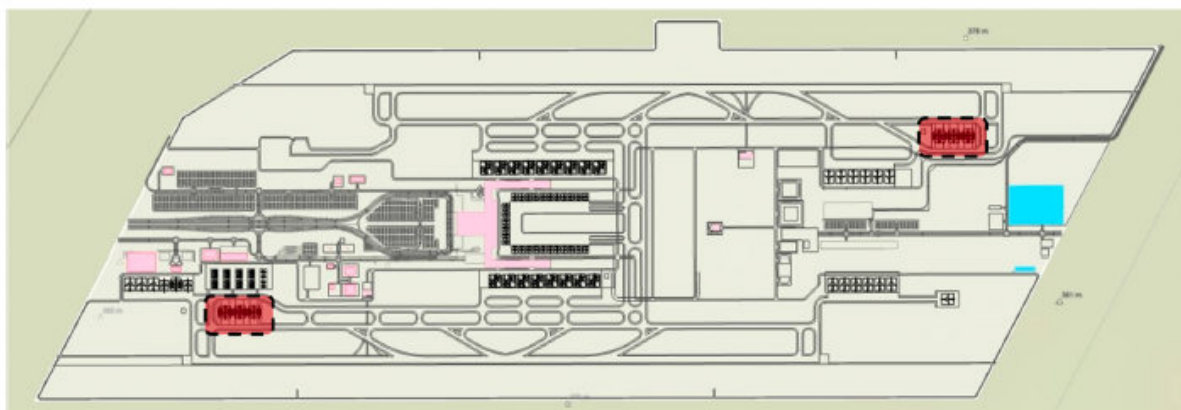


Figure 2-26 Planned De-icing Aprons Locations

2.14.3 Airside Service Roads

Airside service roads will provide access for Ground Support Equipment (GSE), such as catering trucks, ground handling equipment, maintenance vehicles, and buses, to apron stands and airside facilities. The design speed for these roads will be 30 km/h in apron areas and 50 km/h outside apron areas. In areas with space constraints, the design speed may be reduced for curves.

Additionally, a controlled perimeter access road, 6.0 meters wide, will run along the airport's perimeter fence. This road will allow two-way traffic for maintenance and security patrols around the site.

Airside roads leading to facilities and equipment will be designed for maintenance purposes. These roads will be 3.5 meters wide, considering their limited use and the types of maintenance vehicles anticipated.

2.14.4 Airside/Landside Perimeter Fence

The perimeter fencing system will consist of a combination of chain link or welded mesh fencing, concrete walls, and exterior walls of buildings along the airport's perimeter. The fence will be at least 4.0 meters high, topped with inclined barbed wire, and feature an anti-climb fabric for added security. The perimeter fence will be set back at least 5 meters from the perimeter road.

Additionally, a 3-meter-wide cleared area is recommended immediately outside the perimeter fencing. This area should be kept free of any objects that could aid climbing.

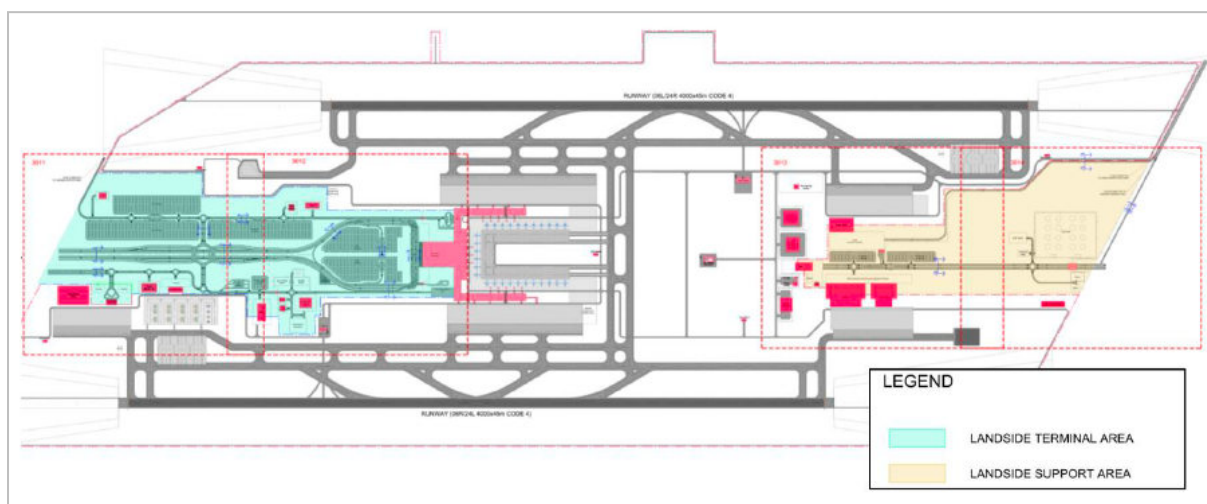
Controlled vehicle entry points/access gates will be placed at various locations to provide landside/airside access to the perimeter road.

2.15 Landslide Design Details

The landside design of the airport encompasses all infrastructure and facilities supporting passenger and vehicular movement outside the aircraft operations area. This section of the airport is critical in ensuring efficient access, circulation, and overall user experience for passengers and airport personnel. Following sections present the key information about the proposed design of the main landside facilities.

2.15.1 General Arrangement and Access to Terminal Area

The Landside Ground Access design strategy is to have quick access, minimise or eliminate conflicts and achieve optimal utilization of the proposed facilities. Design is based on the Master Plan layout which comprises of two main landside areas, as depicted in Figure 2-27. These areas include Landside Terminal Area on the West side of the site and Landside Support Area on the East side of the site. West and East landside areas are connected with the landside road running along the Airside-Landside fence on the north side of the site.



Note: Figure is indicative and subject to change

Figure 2-27 Landside Areas

Access to the terminal building will be provided from the west side of the airport. The main road providing access to the airport from Tashkent Metropolitan will be the newly planned Toll Road.

The main access to the support area will be provided from the East overpassing existing railway positioned along the east edge of the selected site. It is foreseen that eastern access will have direct connection to either the newly planned Toll Road, or the existing A373, eventually providing access to wider Tashkent regional area.

Landside Terminal Area

The main access to the Landside Terminal Area is provided by a one-way loop road, offering direct access to the Terminal Forecourt, including the arrival curb, departure curb, and parking facilities near the Terminal Building.

Non-terminal-related traffic is separated at a central interchange. This grade-separated interchange allows access to the landside facilities located to the north, including long-term passenger (PAX) parking, employee parking, a hotel, administration building, and VIP curb. It also connects to the landside facilities to the south, which include the general aviation area, utility zone, terminal logistics area, bus buffer, and airside/landside gates.

Landside Support Area

Main access to the Landside Support Area is provided by the Support Area Spine Road. This road has a function of collector distributor road providing direct access to various support facilities including Cargo complex, MRO, Fuel Farm, Solid Waste Treatment, staff parking and Airside-Landside gates.

Landside Support Area is illustrated in Figure 2-28, depicting main landside facilities.

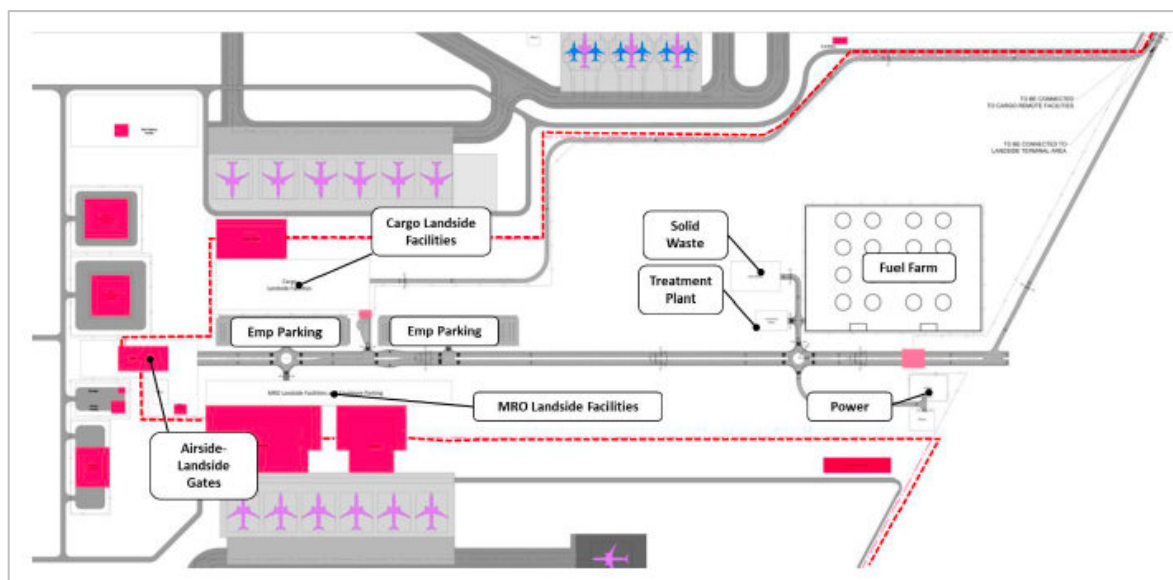


Figure 2-28 Landside Support Area

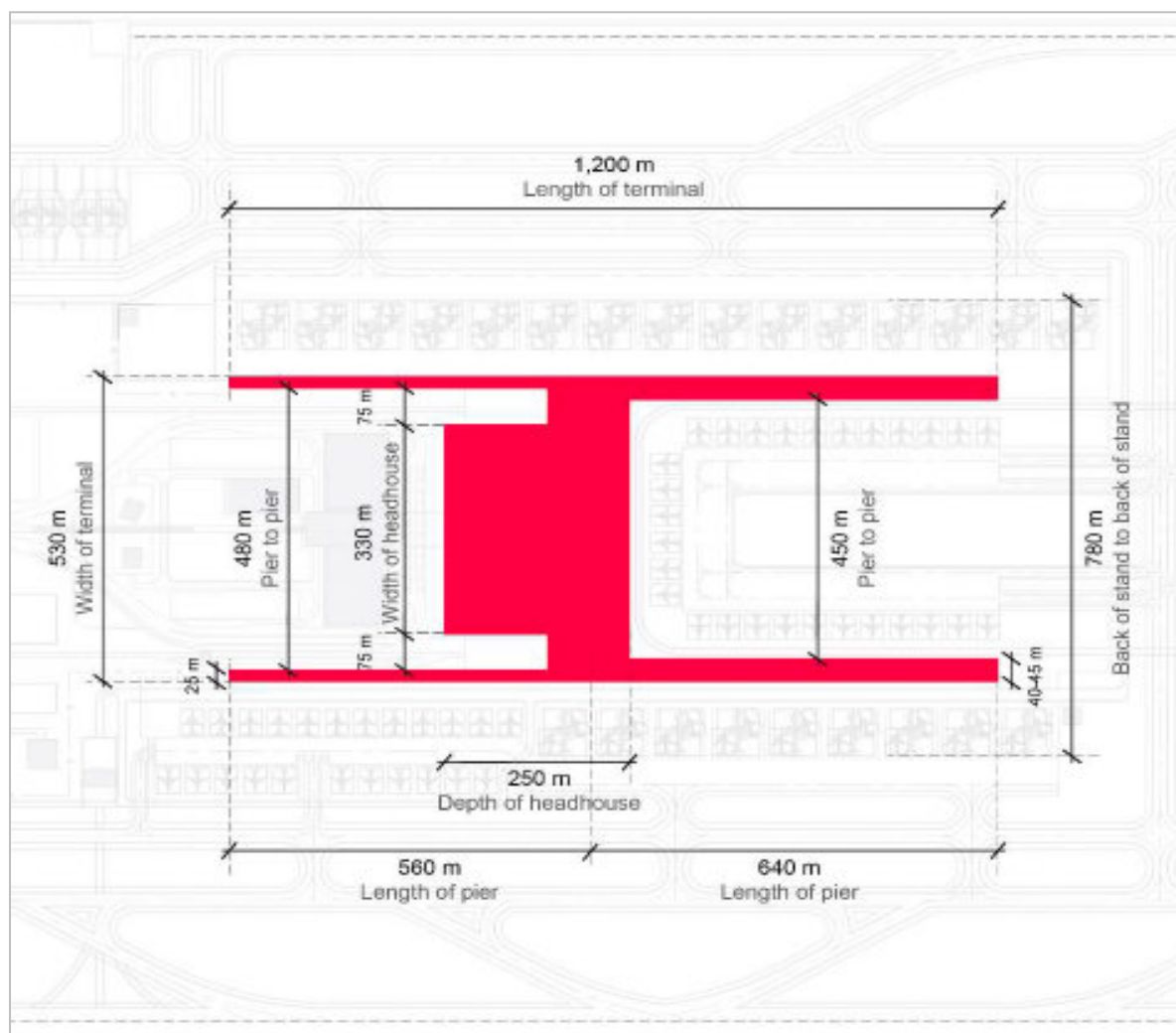
2.15.2 Passenger Terminal Building

This section presents the main elements and configuration of the passenger terminal building. The key input parameters for the terminal configuration are the future handling capacity in terms of passengers and flights. The first development phase of the passenger terminal building has a total Gross Floor Area (GFA) of approximately 208,364 m² including gate houses. As outlined earlier in this report, the terminal handling of the opening phase can accommodate up to 20 MAP which is equivalent to around 5,100 peak hour passengers.

The proposed terminal configuration is an H-shape with a central processor or headhouse¹ and four contact piers² (see Figure 2-29), each with a length of around 600 meters.

¹ The headhouse of an airport terminal building is the central area that serves as the main entry point and hub for passenger processing before they move to other parts of the terminal.

² A contact pier in an airport terminal is a structure extending from the main terminal building, allowing passengers to access multiple aircraft gates directly from a central area.



Note: This figure is for the ultimate phase. Dimensions mentioned are indicative and subject to change

Figure 2-29 Passenger Terminal Configuration and General Dimensions

Headhouse Levels

The terminal headhouse will have 5 floor levels as follows:

- Level 4: international business class lounge, offices, and MEP zone (mechanical/electrical/plumbing).
- Level 3: check-in, international departure controls (customs, emigration, security) and international airside departure lounge.
- Level 2: domestic departure controls (security), domestic airside departure lounge, and international arrival controls (immigration).
- Level 1: baggage reclaims, baggage handling area, arrival hall, and support functions incl. staff screening and storage & logistics.
- Basement: baggage conveyors connecting baggage off-load belts with the baggage reclaim carousels.

Pier Levels

All four contact piers will have 3 floor levels as follows:

- Level 3: Arrival corridors.
- Level 2: Departure (contact) gates.
- Level 1: Bus gate waiting areas, apron support, and (optional) bus gates at the gate houses of fixed links.

Typical section of the headhouse and pier is illustrated in Figure 2-30.

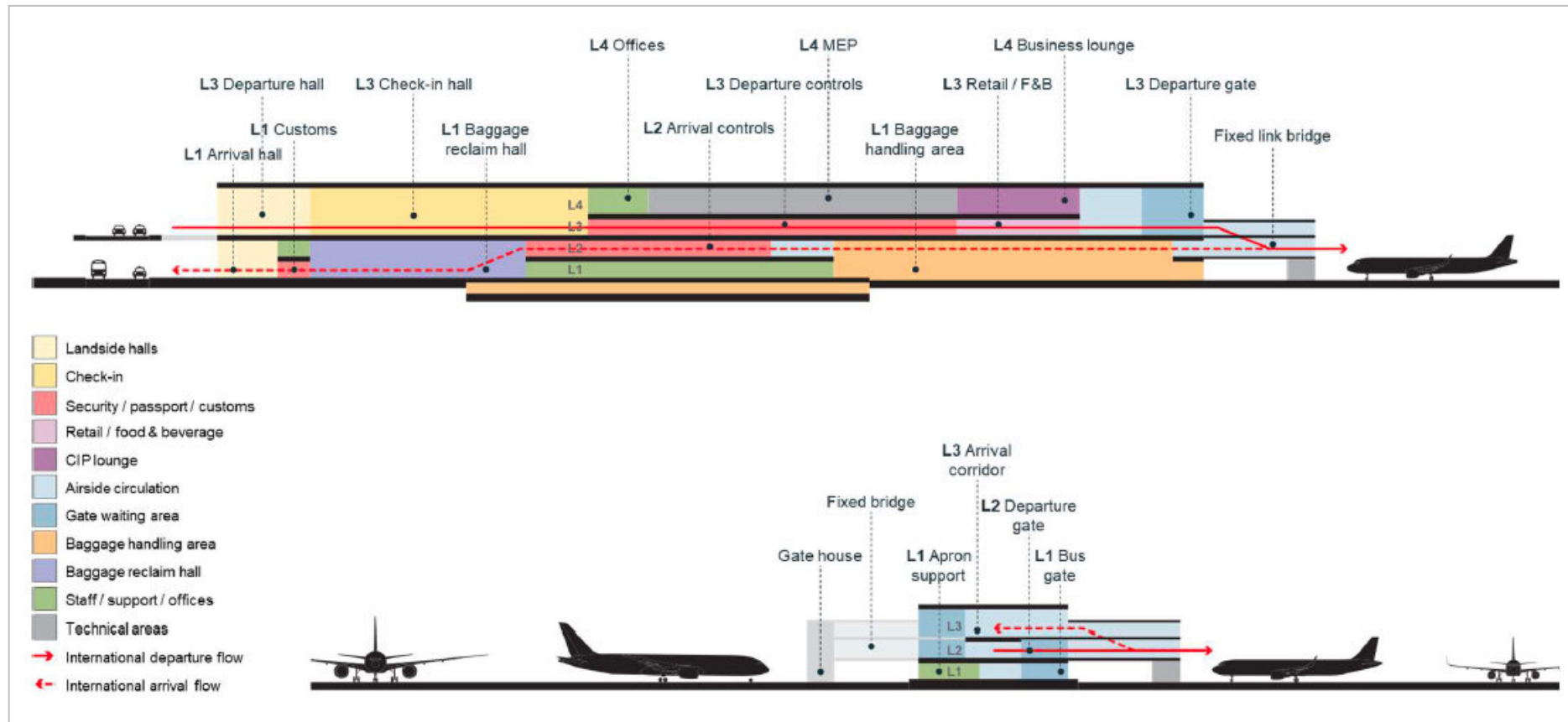


Figure 2-30 Typical Section of Headhouse and Piers

2.16 Airport Facilities

The following subsections presents the main airport facilities designed for the Project. References to earlier discussions in this report are provided for ease of understanding.

2.16.1 Main Facilities

Main facilities include the passenger terminal (refer section 2.10.2), where passengers travel through to be able to take their flights, cargo terminals, where goods are stored, processed and transported, maintenance areas for aircraft servicing and repairs, and general aviation facilities catering to private and small aircraft.

Cargo Facilities

The Project master plan includes a single first line general cargo handling facility proposed for the 2035 horizon with a footprint of 10,200 m². The placement for a first line general cargo terminal at the airport is along the landside-airside border. The planned location of the cargo facility is illustrated in Figure 2-31.

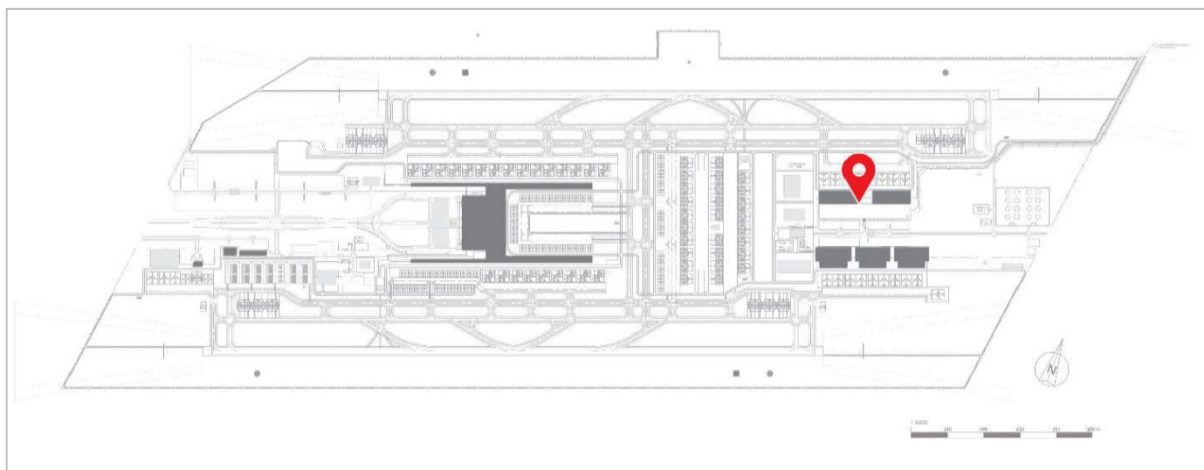


Figure 2-31 Proposed Location of the Cargo Facility

Aircraft Maintenance Facilities

To ensure aircraft operate within the specified limits set by manufacturers, airlines incorporate maintenance, repairs, and overhauls (MRO) as integral components of their operations at hub facilities.

The aircraft maintenance facilities are located in the southwestern corner of the airport support area. Adjacent to the hangars, the master plan includes a dedicated engine run-up bay, designed for engine testing. This facility allows for thorough evaluation of engine performance and identification of potential issues.

Figure 2-32 illustrates the location of the aircraft maintenance facilities in the master plan.

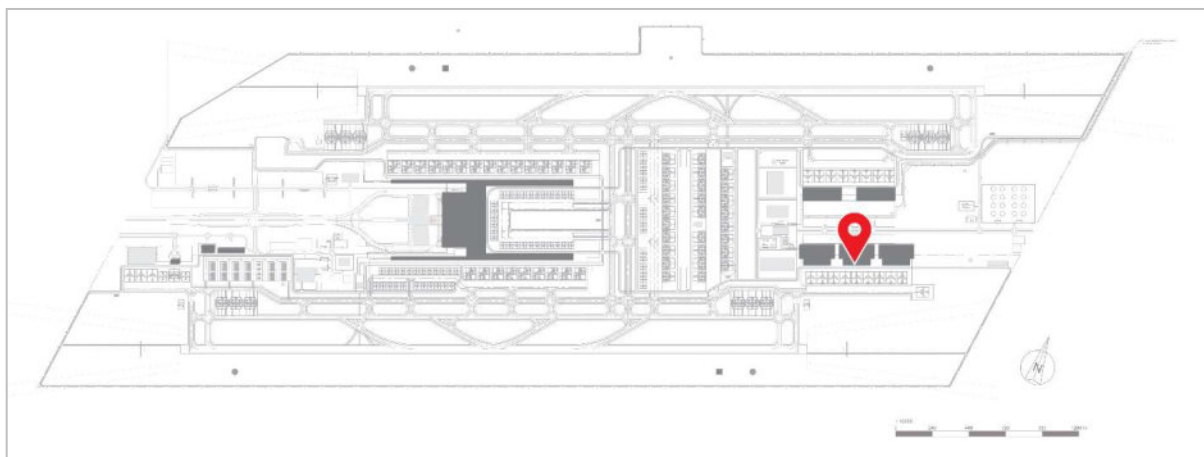


Figure 2-32 Planned Location of the Aircraft Maintenance Area

General Aviation Facilities

The master plan layout includes a 5,200 m² general aviation terminal (to be confirmed) located on the west side of the terminal, adjacent to the general aviation apron. This positioning provides direct access to both landside and airside operations. To the north of the facility, a shared landside parking area is designated to serve both the general aviation terminal and the fixed-base operator (FBO) facility, situated on the west side of the general aviation area.

Additionally, the master plan reserves space on the east side of the general aviation facility to accommodate potential future expansions for services related to general aviation activities.

Figure 2-33 illustrates the location of the general aviation facilities within the master plan.

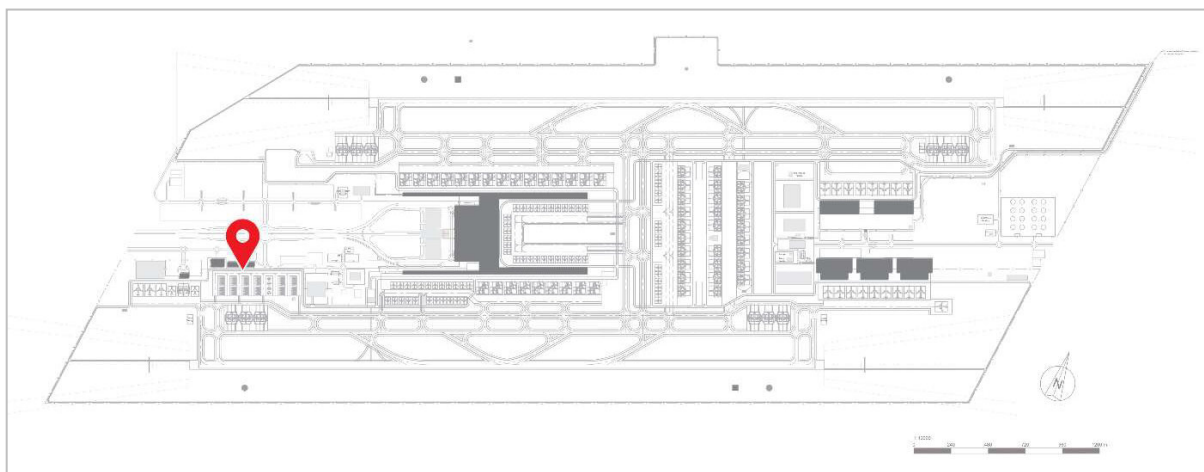


Figure 2-33 Proposed Location of the General Aviation Facilities

2.16.2 Support Facilities

Airport support facilities provide a wide range of essential services to ensure the efficient operation of airports. These include rescue and firefighting services, which ensure a prompt response to emergencies, and inflight catering facilities that deliver food services for passengers and crew. Ground support equipment and staging areas facilitate luggage handling, aircraft refuelling, and ground maintenance.

Airport maintenance facilities oversee the upkeep of infrastructure and equipment, ensuring safety and functionality. Consolidation centres manage the transfer of goods between airside

and landside operations. Police, security, and customs facilities play a crucial role in maintaining passenger safety and regulatory compliance.

Additionally, the airport includes hotel (planned for future) to provide convenience and accommodation for passengers. Together, these support facilities ensure the smooth functioning and safety of airport operations.

2.16.3 Utilities

Utilities are the essential systems and services that underpin an airport's infrastructure, enabling seamless operations, ensuring safety, and providing comfort for passengers and personnel. The efficient integration and functioning of these utilities are critical to supporting the diverse needs of the airport, from aircraft operations and passenger services to overall infrastructure functionality. As outlined earlier in this report, the scope and assessment presented in this ESIA is based on the Project's initial development phase (up to 20 MAP); however, certain utility infrastructure, including potable water supply and wastewater systems, have been designed from the outset to accommodate the ultimate masterplan capacity (up to 46 MAP) in order to avoid future reconfiguration and support long-term expansion.

An overview of the locations of utilities is illustrated in Figure 2-34.

This comprehensive network of utilities is vital for maintaining operational efficiency, upholding safety standards, and ensuring the smooth and secure movement of people and goods within the aviation industry.

The utility master plan establishes a framework to guide future strategic decision-making, incorporating strategies and concepts to support long-term planning. The utilities covered in this master plan include the following which are discussed further in the following sections:

- Electrical Power Supply
- Cooling & Heating
- Water Supply
- Wastewater
- Solid Waste
- Aviation Fuel
- De-Icing/Anti-Icing
- Telecommunications

Due to the location of the new airport as well as the lack of services in the area, most of the utilities will be fully or partly off-grid systems. This however excludes electrical power and fuel supply to the site. In addition, the airport is seen as a lifeline for aid and emergency services in a state of disaster (Seismic area). Considering this, a relatively high level of redundancy will be built into each of the utilities mentioned ensuring the airport can remain functional at all times.

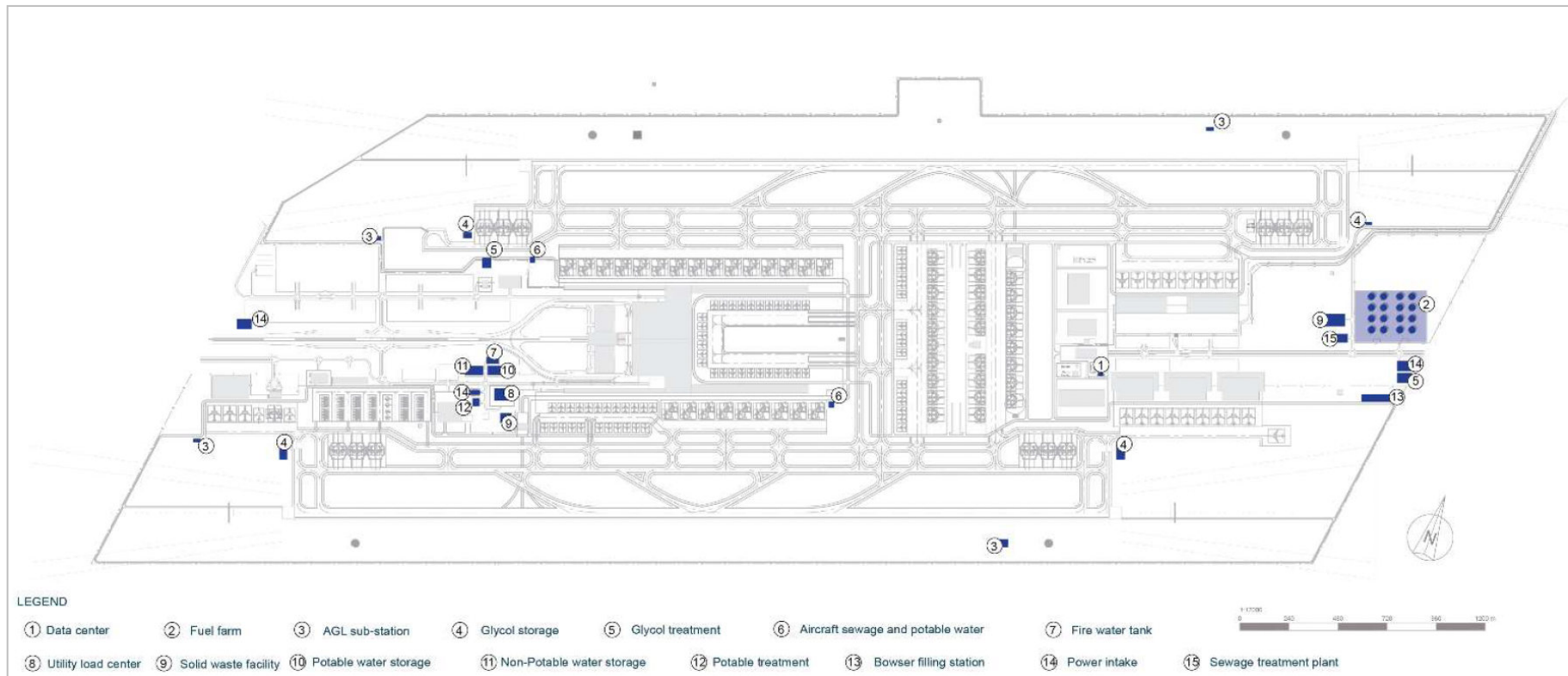


Figure 2-34 Overview of Utilities

Electrical Power Supply

An initial power demand assessment was undertaken to facilitate early communication and coordination with the local utility grid network operator Regional Electrical Power Network (REPN). A wide range of power demands have been estimated which will be further refined as the design progresses.

The initial electrical demand is estimated to range from approximately 21MW up to 39 MW which is expected to increase to between 45 MW to 70 MW by the end of the ultimate airport development phase. It is estimated that approximately 75Million KWh (i.e.,75GWh) of power will be required annually during the initial years of operation of the airport. The proposed system overview of power supply and distribution system is illustrated in Figure 2-35.

The airport will primarily receive its electrical power supply from the local utility grid. A main substation and power intake facility will be built within the Project boundary which will be fed via a 110kV cable provided with the national utility provider. Additionally, it will have a secondary source of electrical power from a 4,000 KWp onsite photovoltaic (PV) plant located at the short-term parking area (see Figure 2-36), enhancing its energy resilience and sustainability. In case of emergencies, power will be supplied by an onsite central medium-voltage generator and several distributed low-voltage generator systems.

Solar power generated on-site will be connected to the airport's local grid network. If the detailed design assessment indicates that the yield exceeds the airport's demand, arrangements will be made to supply the surplus power to REPN grid and/or onsite battery storage.

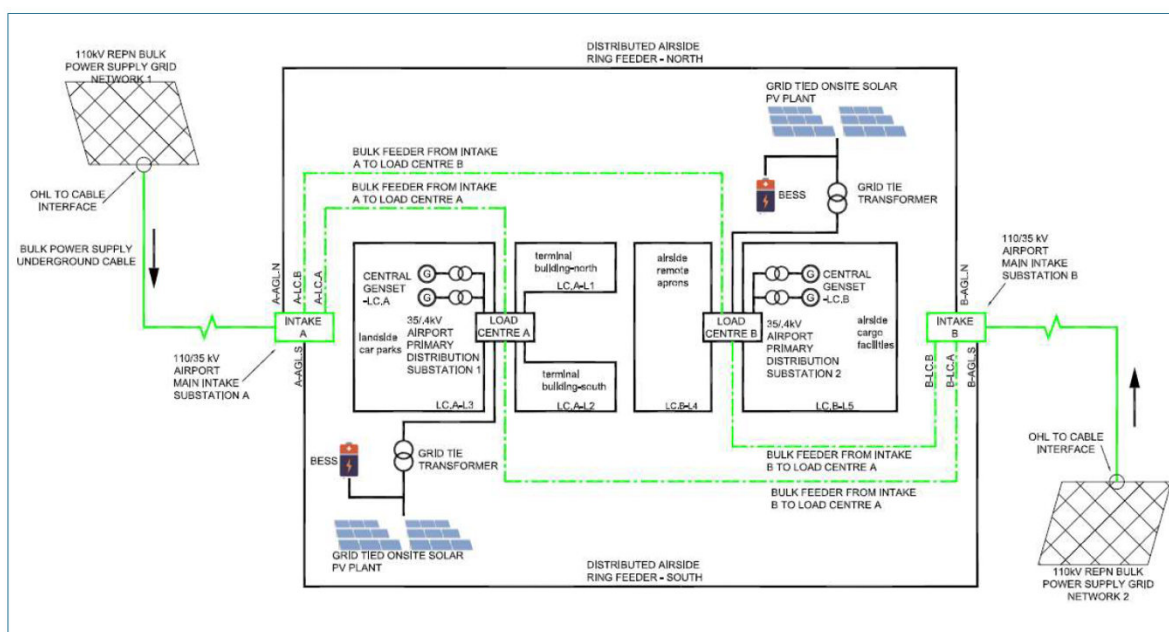


Figure 2-35 Bulk Power Supply Concept for the Project

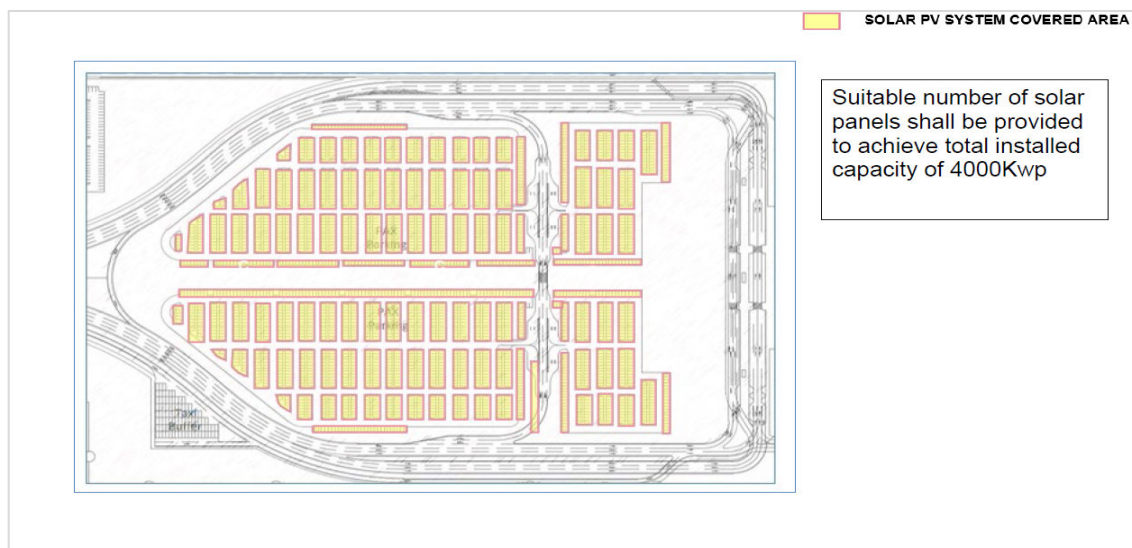


Figure 2-36 Solar Panel System at Parking Area

Cooling and Heating

Due to the climatic conditions, all facilities at the airport will need to be heated and cooled. No cooling and heating infrastructure is available near the Project site. Therefore, dedicated infrastructure for cooling and heating of the new airport facilities will need to be developed. Passenger Terminal Building facilities within the airport will be connected to the central system for heating and cooling while the rest will be served by independent systems.

Water Supply

Water Source

The Project site is situated in a rural area of the Tashkent province of Uzbekistan, surrounded by farmland. There is no existing utility-scale potable water infrastructure in the area that could be utilised. Surrounding the airport are several small farming villages that use groundwater as their primary water source. Raw water (non-potable water) sources in the area include surface water from irrigation canals, rivers, and streams. In addition, groundwater is also a potential raw water source.

Additionally, no plans have been identified to suggest that bulk water infrastructure will be installed in the foreseeable future, either before or beyond the Project timeline. Given these circumstances, a so-called 'off-grid' water supply system will need to be developed.

It is expected that the airport will be a catalyst for development in the area that surrounds the airport precinct. Bulk potable water supply infrastructure will inevitably be needed to meet these increased demands. Assuming the bulk supply will eventually be provided, an interim supply will be required.

During operation, the airport is estimated to require approximately 1,310 m³/day of potable water during the opening year, increasing to approximately 3,340 m³/day at the ultimate airport development. These estimates are preliminary planning-level values based on the current passenger forecasts and operational assumptions and will be refined during detailed design.

The current design proposes that the airport will obtain its water supply from a series of deep groundwater boreholes developed within the project area. Raw groundwater will be conveyed to a central Water Treatment Plant (WTP), where it will undergo conventional treatment comprising clarification, aeration, multimedia filtration and chlorination before being stored within central potable water storage tanks and distributed through a dedicated site-wide

potable water network. The system incorporates N+1 redundancy for boreholes and principal pumping equipment to maintain operational reliability, while the external potable water distribution network has been sized to accommodate both the opening phase and ultimate airport development. Separate non-potable water storage and distribution systems are also proposed to maximise the beneficial reuse of treated wastewater for irrigation, toilet flushing, aircraft washing, firefighting and other suitable operational purposes.

At the current stage of project development, detailed hydrogeological investigations are yet to be completed and the long-term regional bulk water supply strategy for the wider development area has not been finalised. Consequently, the proposed groundwater supply represents the current design basis for the opening phase, while the long-term water supply solution will be confirmed during detailed design. This process will include hydrogeological investigations to establish groundwater availability, sustainable abstraction rates and groundwater quality, together with ongoing consultation with the relevant authorities regarding the timing and availability of future regional bulk water supply infrastructure. The preferred long-term water supply strategy will be confirmed on the basis of these investigations and incorporated into the final design basis.

Water Treatment, Storage and Distribution

The raw water will be pumped from the wells to the WTP located within the airport precinct, where it will be treated such that, it meets international potable water quality standards. Treatment will include primary, secondary and tertiary treatment processes depending on the quality of raw water. The groundwater will also be used as a backup supply to the non-potable water storage tanks.

Once treated the potable water will be pumped to storage tanks. Necessary measures will be taken to prevent the water from freezing in the winter. A minimum of two days of storage, based on the annual average daily demand, will be provided.

The potable water from the tank will be supplied to all facilities within the airport precinct via the airport's potable water reticulation network. Figure 2-37 illustrates the operational schematic of the proposed potable water supply and distribution system.

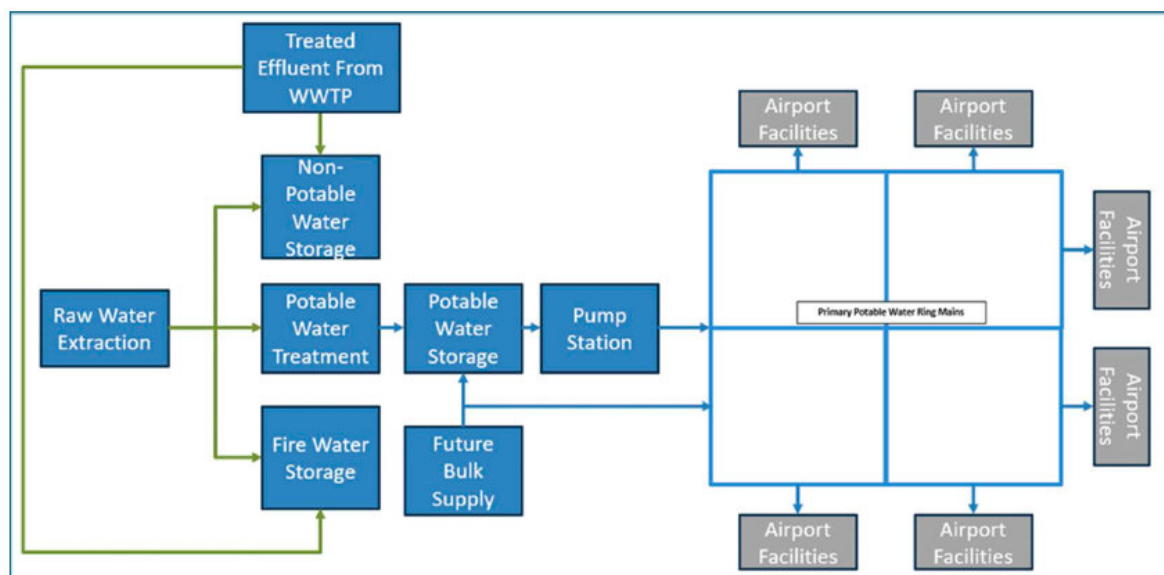


Figure 2-37 Schematic of Potable Water Network

Aircraft parked on the ground require their potable water tank(s) to be filled before departure. Potable water trucks will collect potable water from the dedicated potable water filling station located on airside and transport it to the aircraft where it will be pumped into the potable water tanks of the aircraft.

Wastewater

The Project is situated in a rural area surrounded by small farming villages. These villages are not connected to a water-borne sewage system or Wastewater Treatment Plant (WWTP). Septic tanks are used by the nearby communities to naturally treat the low volumes of wastewater they generate. As such a dedicated wastewater conveyance system will need to be developed to serve the new airport.

During operation, wastewater generated from temporary sanitary facilities, offices etc. will be collected and treated at a compact WWTP installed on-site. The installation, operation and discharge of effluents will be carried out in compliance with all applicable local permitting requirements and environmental regulations.

At the current stage of design, the wastewater generation rates represent preliminary planning level estimates developed to support the ESIA and utility planning. The estimates have been derived from the projected potable water demand using an assumed wastewater return factor of approximately 80%, recognising that a proportion of the potable water demand is consumed through irrigation, evaporation and other non-return uses. Based on the estimated potable water demand of 1,310 m³/day during the opening year and 3,340 m³/day during the ultimate phase, as outlined earlier, wastewater generation is estimated to be approximately 1,060 m³/day and 2,700 m³/day, respectively.

These estimates will be refined during detailed design as passenger demand, operational requirements, wastewater characteristics, treatment requirements, opportunities for treated effluent reuse, and final discharge arrangements are confirmed. The final WWTP capacity, treatment process and treated effluent management strategy will therefore be established during detailed design and documented in the final design basis.

A waterborne sanitation network will be used to convey wastewater generated at most of the airport facilities to the WWTP. However, wastewater from the aircraft sewage facility (Bluewater/titrator facility) which receives the wastewater from incoming aircraft as well as the runoff with concentrations of glycol from the de-icing aprons will be collected and treated outside of the airport facility via an approved third-party waste service provider. Glycol recovery vehicles (GRVs) will be deployed to reduce the concentration of glycol reaching the WWTP. A gravity sewer system will be used wherever possible to avoid operational and maintenance costs associated with pumping.

Facilities that are located in remote locations of the airport and which generate low volumes wastewater will be serviced by dedicated septic tanks, similar to how the remote facilities at the existing Tashkent International Airport currently operate. Desludging trucks will collect the contents when it is full and, thereafter transfer it to the on-site WWTP.

On-site WWTPs will be required on land side in the eastern and western part of the airport to avoid lifting stations and complicated sewage network. The WWTP will receive several types of wastewater from various locations within the airport, including but not limited to kitchens, restaurants, lavatories (aircraft and airport facilities), aircraft and ground vehicle washing and cleaning, aircraft maintenance and repair work, and spent de-icing fluids (if any). The WWTP will consist of a series of treatment stages that includes pre-treatment, secondary treatment, and tertiary treatment.

The wastewater from all the waterborne sanitation networks including from de-sludging trucks will be transferred to pre-treatment (for example screening, and sand-grit removal). After the pre-treatment, the wastewater will be collected in the equalization tank as a buffer, to reduce the fluctuations in the pollutant load and rate of the influent. From the equalization tank, a constant flow is transported to the secondary treatment (biological treatment), where the removal of organic pollutants occurs using biomass.

After secondary treatment, the wastewater will be transferred to the sedimentation process for separating sludge and treated effluent. The treated effluent will go to a clear water storage

tank, which can be discharged to a discharge point (e.g., surface water) or can be transferred to the tertiary treatment (for example sand/carbon filter, membrane filtration) for water reclamation.

The surplus sludge will be transferred to a Sludge Tank. The addition of polymer is needed in the Sludge Tank to assist the thickening process of the sludge which is then followed by a mechanical thickening and dewatering process. The supernatant water from the thickener will be returned to the equalization tank, while the sludge (which is hazardous solid waste) will be collected by an authorized agency.

The chosen WWTP options will aim to have a small footprint, and be able to meet the applicable effluent standard, and incorporate biological nutrient removal (removal of BOD, COD, ammonia, nitrate, phosphorus) which prevents eutrophication in discharge location i.e. surface water. The treatment system will be a closed system to avoid attracting birds or any hazardous wildlife (FAA. 2007. Hazardous Wildlife Attractants on/or Near Airports).

Stormwater Management

The Project has been designed with separate collection systems for stormwater, industrial wastewater and domestic wastewater to prevent cross-contamination and ensure that each wastewater stream is managed according to its characteristics and applicable treatment requirements. Untreated domestic or industrial wastewater will not be discharged to the stormwater drainage system.

The stormwater drainage network has been developed to provide organised collection and controlled discharge of runoff from both the airside and landside areas. For the eastern landside development, interface points have been established at the airside–landside boundary, with the landside drainage network connecting to these interface points before discharging through the dedicated airside stormwater system. For the western landside development, stormwater runoff will be conveyed directly to the designated stormwater outfall in accordance with the approved drainage strategy. The detailed hydraulic design includes assessment of stormwater runoff from the principal operational areas, including runways, taxiways, aprons, aircraft parking stands, landside roads, car parks, building roofs and other operational areas, to ensure adequate drainage capacity under the applicable design storm events. The current drainage strategy identifies defined interface flow rates and discharge locations for the integrated airport drainage network.

Runoff from operational areas with an elevated potential for contamination, including aircraft stands, fuelling facilities and maintenance areas, will be managed through dedicated collection and appropriate treatment measures prior to reuse or discharge. The detailed drainage design will also incorporate emergency isolation arrangements to enable containment of contaminated runoff arising from accidental fuel or chemical spills and prevent uncontrolled discharge to the surrounding drainage network.

The internal drainage infrastructure will collect runoff and convey it to treatment and control facilities, such as sediment traps, oil water separators, and retention or detention structures, where required. These measures will ensure that stormwater is free from notable contamination, including hydrocarbons, suspended solids, and other pollutants commonly associated with airport operations.

Only stormwater that meets relevant national environmental regulations and water quality discharge standards will be released from the site. Treated stormwater will be discharged via an external drainage system connected at the western boundary of the project site and directed to the Chirchiq River. This approach will prevent uncontrolled runoff, protect surface water quality, and ensure compliance with applicable environmental and water resource management requirements throughout both construction and operational phases of the airport.

The detailed design of the stormwater and wastewater systems, including runoff calculations, treatment processes, water quality monitoring requirements, emergency isolation measures and discharge criteria, will be finalised during the detailed design stage and implemented through the Operational Environmental and Social Management System.

Solid Waste Management

There is no solid waste infrastructure in close proximity to the proposed Project site. Therefore, dedicated infrastructure for the management of solid waste will need to be developed.

Construction activities such as site preparation, civil works, electrical and mechanical works, materials delivery, operation of labour camps will generate non-hazardous and hazardous waste streams. The majority of waste streams generated during construction will be collected and segregated, prior to controlled handover to licensed and municipal-approved waste management service provider(s). The EPC Contractor will prepare a Project-specific Waste Management Plan that follows good industry practice measures.

It is estimated that approximately 15.9 tonnes of solid wastes will be generated daily during the operation of the airport.

The two main types of solid waste types that are generated at the airport are the following which has been considered in the planned waste management system of the airport:

- Municipal solid waste (MSW)
 - o Everyday items that are used and discarded such as cans, bottles, plastic paper, and cardboard, and which are typically generated at most airport facilities.
 - o Deplaned Waste – waste removed from aircraft. Deplaned waste from international flights is handled separately from that coming from domestic flights.
 - o Compostable and biodegradable waste – food waste and waste from landscaping activities such as grass clippings, shrubs trees, etc.
- Hazardous waste (HW)
 - o Waste products such as oils, solvents, and other chemical waste from activities such as aircraft and ground vehicles washing and cleaning, fuelling operations, aircraft maintenance and repair including paintwork and metal work, etc. These types of waste are typically regulated by law and require special treatment when being stored, transported, and disposed of.
- Other less prominent waste types found at an airport include lavatory waste and construction and demolition waste.
 - o Lavatory waste is considered a special type of waste that is derived from the lavatory tanks of arriving aircraft, and which contains chemicals and pathogens that can present a risk to the environment and human health.
 - o Construction and demolition waste – this includes materials such as concrete, wood, metal, bricks etc. The handling of this waste type is typically dealt with on a case-by-case basis and therefore not included in this report.

All MSW generated at the airport will be segregated at source and maintained during collection and/or interim storage within the airport precinct to facilitate effective diversion, treatment and/or final disposal offsite. To facilitate the segregation of waste at source, recycling bins will be placed in most airport facilities, to collect recyclable materials such as food waste, plastic, metal, and paper.

The solid waste generated in the eastern support zone will be taken directly to the Central Waste-handling Facility (CWHF), located in the east part of the airport, for further segregation. This facility will be able to store and handle all MSW generated at the airport as well as all the

HW generated in the east. The tenants in this location will be responsible for the transportation of their waste (MSW and HW) to the CWHF. The HW at the CWHF will be collected by authorized agencies/third parties and transported directly off-site for immediate processing. This is done to keep handling and storage of the HW to a minimum to minimize the risk of spills and contamination. The treatment of the HW will be done based on the regulatory and statutory disposal methods of Uzbekistan. The disposal of which is typically carried out by the same authorized agencies/third parties which are also reasonable for its collection and transportation.

The solid waste generated on the landside in the west will be stored at one of two interim waste storage facilities (IWSFs). One will be integrated within the Terminal Building and the other will be located in the main utility area. The IWSF integrated within the terminal will exclusively serve the terminal building due to the significant volume generated there. The IWSF located in the utility area will service all other tenants located in the west. Both these IWSF's will be able to store and handle both MSW and HW generated in this area. The tenants in this location will be responsible for the transportation of their waste (MSW and HW) to the IWSF in the utility area. The airport operator will be responsible for the periodic collection and transportation of the MSW from both IWSFs in the west to the CWHF located in the east for further segregation. The collection and transportation of the MSW to the CWHF will only happen at off-peak times to minimize odour and traffic on the roads. The HW generated in the west will be handled the same as the HW generated in the east except the authorized agencies/third parties will collect the HW directly from the two IWSFs.

Solid waste generated by domestic airlines/flights and line maintenance operators must segregate cabin/deplaned waste into recyclables and general waste. This waste will be picked up and transported by the Airport Authority Waste Truck Fleet to the CWHF for temporary storage and further segregation.

From the CWHF, the following is suggested:

- Organic waste (food waste) is sent by the Municipal Waste Truck Fleet to an authorized composting site/plant and used as feedstock in the composting process.
- All plastic, paper, metal wastes, and other recyclable materials be either sent to countries' Cogeneration Plants or, they can be sent to nearby recycling facilities.
- The remaining non-recyclable materials will be disposed of at Municipal (Sanitary) Landfills. This should be considered as the last resort.

International waste (Primarily MSW) from international airlines/flights will be handled, transported, and processed offsite by a contracted certificated operator. The operational schematic presenting the fundamental principles for proposed solid waste management at the Project is illustrated in Figure 2-38.

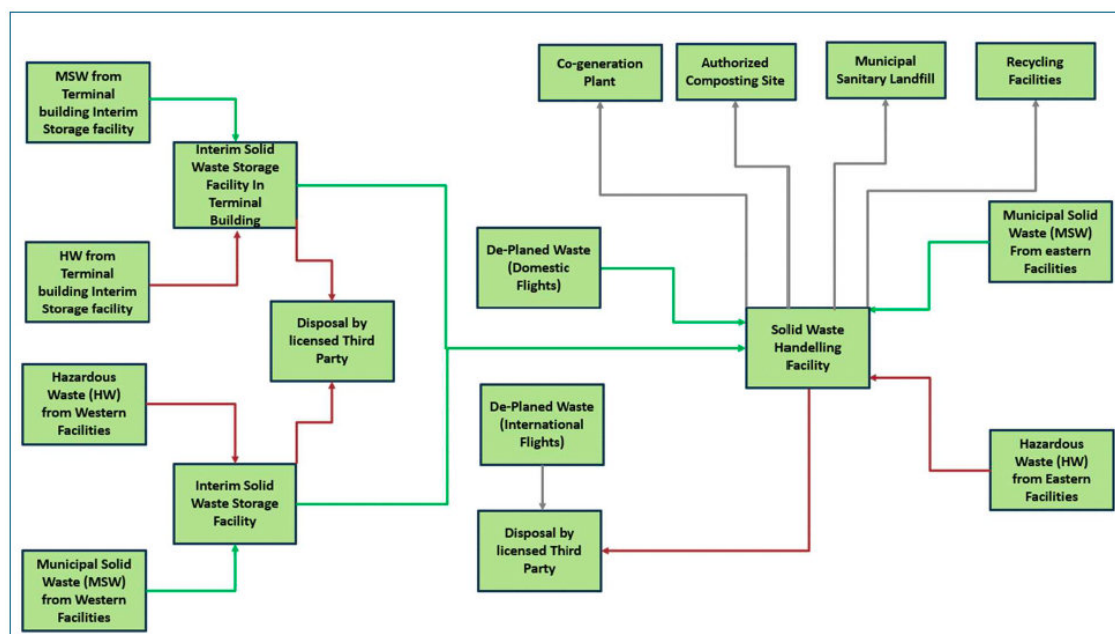


Figure 2-38 Operational Wastes Management Schematic Illustration

Aviation Fuel

The proposed Tashkent International Airport will be provided with a Fuel Farm (FF) located northwest of the main terminal building and runways. The opening phase of the airport will comprise 5x5,000 m³ and 4x400 m³ vertical tanks plus 4x80 m³ horizontal tanks as illustrated in Figure 2-41..

The fuel farm will be used to store different types of fuel, namely TS-1, Jet-A1 SSF, Jet-A1, Jet A-10 and RT. All fuel is supplied to the aircraft via fuel bowzers.

The primary mode of supply of fuel to the airport will be via rail and the secondary mode of supply will be via road tanker. Fuel will be supplied to a rail receipt facility, located approximately 140m to the east, off the airport premises, from where it will be pumped via an underground pipeline to the fuel farm. The fuel farm will be designed to have sufficient storage to mitigate supply disruptions. The most widely used fuel (Jet A-10 will be supplied to the stands via an underground fuel hydrant system. The new airport will make provisions to stock and handle Sustainable/Synthetic Aviation Fuel (SAF) in the future.

The proposed fuel farm will be designed to accommodate storage and distribution of multiple aviation fuel types, including conventional Jet A-1 and SAF blends, in line with evolving international decarbonization commitments and airline sustainability strategies.

The system will include:

- Dedicated storage tanks for different fuel types
- Segregated piping infrastructure to prevent cross-contamination
- Independent pumping systems or controlled manifold systems allowing simultaneous fuelling operations
- Quality control and fuel certification systems compliant with international aviation fuel standards
- Provision for future expansion to accommodate higher SAF blend ratios or 100% SAF, subject to regulatory approval

The fuel farm design incorporates adaptability for increasing SAF uptake in accordance with international aviation decarbonisation pathways, including alignment with:

- The ICAO Long-Term Aspirational Goal (LTAG)
- Airline net-zero commitments
- Emerging EU and regional SAF blending mandates (where applicable)

The infrastructure is designed to avoid technological lock-in and enable phased transition toward lower-carbon aviation fuels.

A schematic of the planned fuel supply system is shown in Figure 2-39.

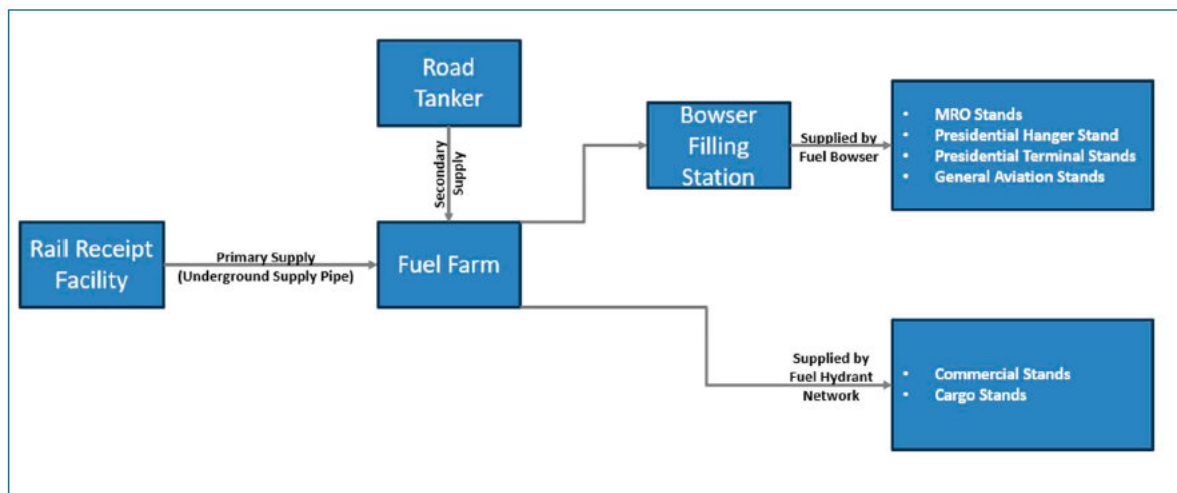


Figure 2-39 Schematic of the Planned Fuel Supply System

De-icing and Anti-icing

The process of de-icing and anti-icing is an essential aspect of aviation safety, especially in colder climates. The climatic conditions during winter season result in the accumulation of ice, frost, and snow on the parked aircraft. These will affect the aerodynamic properties of the aircraft if not removed which then poses a safety hazard, making de-icing and/or anti-icing of the aircraft essential before take-off.

De-icing is the process of removing snow, ice, or frost from an aircraft's fuselage and wings. The most common method involves spraying heated glycol-based fluids onto the aircraft melting and removing any ice, frost, or snow. To prolong the hold-over time, anti-icing may be required. Anti-icing is conducted immediately after de-icing and also involves the application of glycol-based fluids. This procedure involves applying an unheated fluid that is typically thicker than the de-icing fluid. The purpose of anti-icing is to prevent the formation of ice on the aircraft's surface for a certain period, particularly during critical phases such as take-off and initial ascent.

It is envisaged that there will be dedicated de-icing service areas on both ends of each runway. There will be one de-icing service area for each runway. One will be located on the eastern side of the northern runway and another on the western side of the southern runway.

The de-icing service zones located adjacent to each of the de-icing service areas will be equipped with above-ground storage tanks, filling points for de-icing vehicles, underground tanks for spent de-icing fluids. The de-icing vehicles will fill up with the de-icing or anti-icing fluids from the above-ground storage tanks and apply them to the aircraft parked in the de-icing aprons. The drainage networks at each of the de-icing service locations will be designed

to collect the mixture of snow, ice, and spent fluids from the pads. These fluids will not be discharged into the surrounding water courses considering their high levels of Biochemical Oxygen Demand (BOD). Instead, the drainage network will convey the collected runoff from the pads to an underground storage tank (Diversion chamber) adjacent to the de-icing aprons where the concentration of glycol in the collected fluid will be measured.

As an additional safety measure, Glycol Recovery Vehicles (GRV) will be deployed to remove any fluid left on the de-icing apron to minimize the chances of contaminating the surrounding environment. The collected fluid from the GRV will be discharged into the underground storage tanks adjacent to the de-icing pads and subsequently sent for treatment either at the onsite WWTP or to an external treatment facility via a licensed service provider.

2.17 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.'

Those associated facilities for the Project are listed below based on information provided by the Client.

- Access Roads
 - o A new connecting access road (Main access Road) to the west of the Project site, connecting to the planned future toll road or to the existing A373 Highway
 - o A new Service Road, connecting to the Eastern part of the Project Site, connecting to the planned future toll road to the north.
- Overhead transmission lines
- Fuel supply line between the Rail Receipt Pump Bay to the eastern Project boundary, about 140m long.
- Diverted irrigation canals and collectors.

At this stage, key design parameters for the Associated Facilities (including final alignments, technical specifications, and implementation arrangements) are not yet defined, and therefore a detailed environmental and social impact assessment is not currently feasible.

The ESIA has accordingly adopted a proportionate, high-level screening approach to identify potential risks based on available information which are discussed in following sections. Based on the nature and indicative siting of the Associated Facilities, it is not anticipated that physical displacement will be required. This will be confirmed once detailed design information becomes available.

As further details are developed, the Project will undertake a targeted environmental and social screening and, where necessary, a more detailed assessment of the Associated Facilities. This will be documented through an ESIA addendum or equivalent update, including any required management measures, in line with applicable national requirements and international standards.

The scope and timing of this additional assessment will be agreed with relevant stakeholders to ensure that any potential impacts are appropriately identified and managed prior to implementation.

2.17.1 Screening of Potential Railway and Metro

The Government of Uzbekistan has identified potential future high-speed rail and metro corridors within the wider Tashkent region, including alignments that may pass in the vicinity of the Project. However, these transport initiatives remain part of broader regional transport

planning and are independent of the proposed airport development. At the time of preparation of this ESIA, the proposed railway and metro schemes remain at a conceptual stage, with no confirmed alignment, design, implementation programme, funding commitment or construction schedule.

In accordance with the definitions of Associated Facilities under IFC Performance Standard 1 and EBRD Environmental and Social Requirement 1, the proposed railway and metro connections are not considered Associated Facilities for the Project. This conclusion is based on the following:

- The airport has been designed to operate independently of any future rail or metro connection, with road access providing the primary means of passenger, employee and freight access from the commencement of operations.
- The technical or commercial viability of the airport does not depend on the future construction or operation of the proposed rail or metro infrastructure;
- The proposed rail and metro corridors form part of wider national and regional transport strategies intended to serve multiple users, destinations and development areas, rather than being developed solely or primarily to support the airport.
- The proposed rail and metro schemes are subject to separate planning, environmental assessment, permitting and financing processes and may be implemented independently of the airport project or not proceed at all.

Accordingly, the proposed railway and metro connections are considered cumulative developments rather than Associated Facilities. Should any future rail or metro infrastructure become sufficiently defined during the Project lifecycle and its relationship with the airport change such that it meets the criteria for an Associated Facility under IFC PS1 or EBRD ESR1, its status will be re-evaluated as part of the Project's ongoing environmental and social management process.

2.17.2 Access Roads

As outlined earlier in this report, the airport will be served by two access roads located on the western and eastern sides of the project site. Both access roads will connect either to the planned toll road to the north or the existing A373 highway, eventually providing access to wider Tashkent regional area. These roads are integral to the operation of the airport and are therefore considered Associated Facilities. Based on the current project layout, the access roads are expected to be approximately 2 km and 3.5 km in length (see Figure 2-20). The proposed alignments will predominantly pass through agricultural land; however, a section of the service road is anticipated to overlap with a small residential community located near the planned toll road. While the airport will benefit from and rely on the proposed toll road mentioned above, this new highway from the city to Samarkand is not dedicated to the New Tashkent Airport and will serve wider transport needs and therefore not considered as an Associated Facility.

The development of the access roads is expected to be undertaken as a separate public private partnership (PPP) project and will be required to comply with all applicable national regulations and international environmental and social (E&S) standards.

2.17.2.1 Potential E&S Risks

From an environmental perspective, construction of the access roads will involve land clearance, soil stripping, earthworks, and paving activities. Given that the alignments predominantly traverse agricultural land, impacts are expected to include permanent conversion of farmland, soil compaction, and potential disruption to irrigation patterns. Construction activities may generate dust, noise, vibration and traffic emissions, which could temporarily affect nearby communities. In the operational phase, the roads will introduce

permanent traffic flows, with associated emissions and road traffic noise. Surface water runoff from paved areas may also carry hydrocarbons and sediments into adjacent agricultural land or drainage systems if not properly managed.

Social risks are particularly relevant where a section of the service road overlaps with a small residential community near the planned toll road (once the route is confirmed). Depending on final alignment and right-of-way width, physical displacement or economic displacement (e.g., loss of structures, land, or access) may occur. Even where displacement is limited, livelihood impacts may arise due to permanent land acquisition or temporary construction-related disruption. In addition, increased traffic volumes may create community health and safety risks, including higher accident risk, severance effects, and reduced pedestrian safety.

Under national legislation, land acquisition and compensation processes are governed by statutory procedures. However, international lender standards typically require compensation at full replacement cost, transitional assistance, livelihood restoration, meaningful consultation, and special consideration for vulnerable groups. Potential gaps between local regulatory practice and lender expectations may therefore arise in areas such as valuation methodology, treatment of informal land users, livelihood restoration measures beyond cash compensation, and post-resettlement monitoring. Should land acquisition or displacement occur, the PPP road developer may be required to prepare and implement a Resettlement Action Plan consistent with lender standards.

In addition, lenders may require that road safety audits, traffic impact assessments, and community health and safety management measures are aligned with international good practice, particularly given the scale of induced traffic associated with a major airport.

2.17.3 Overhead Transmission Lines

The national power utility provider (NEGU) will supply electricity to the Project via a 110 kV connection to a dedicated power intake facility which will be located near the western boundary of the Project site as indicated in Figure 2-40. At the time of preparation of this ESIA, the confirmed routing and technical specifications of the external power supply infrastructure, anticipated to be delivered via an overhead transmission line (OHTL) have not yet been finalised. Upon receipt of final alignment from NEGU, the potential E&S impacts will be assessed and documented in an addendum to the ESIA.

Electrical system – 110KV Supply Tap off Point at Site Boundary

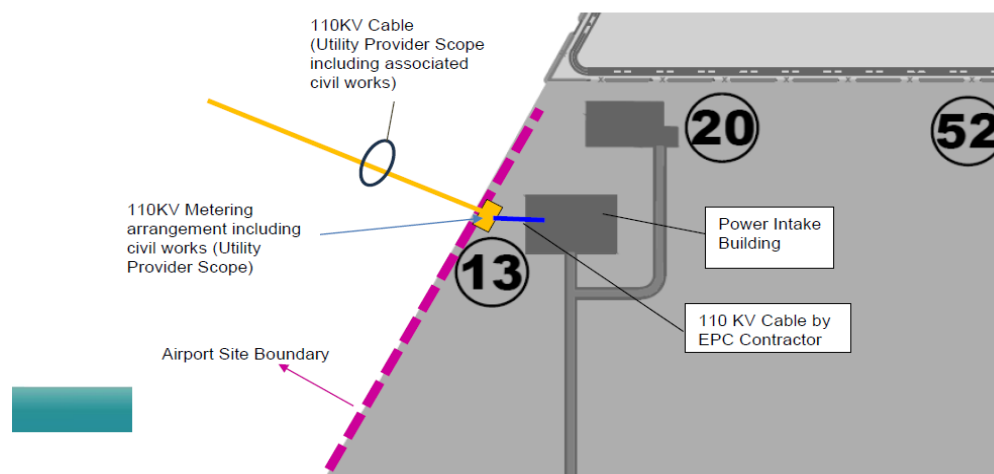


Figure 2-40 Schematic of External Power Supply and Intake System

2.17.3.1 Potential E&S Risks

Construction of an OHTL typically requires tower foundations, access tracks, and establishment of a right-of-way corridor. Environmental risks include vegetation clearance, potential habitat fragmentation, and soil disturbance. In open agricultural landscapes, transmission lines may present collision risks for birds, particularly if located along migratory routes or near water bodies. Visual impacts may also be significant given the height and linear extent of transmission infrastructure.

Social impacts may include permanent land acquisition for tower bases and long-term land use restrictions within the right-of-way. Although agricultural activities can often continue beneath transmission lines, restrictions on certain structures or tree planting may affect productivity. Community concerns may also arise regarding perceived health risks from electromagnetic fields (EMF), even where exposure remains within international guidelines.

International lender standards typically require routing alternatives to be assessed to minimise environmental and social impacts, biodiversity risks (including avifauna collision) to be evaluated and mitigated, and land acquisition to comply with replacement cost and livelihood restoration principles. In many jurisdictions, national permitting processes may not require detailed biodiversity assessments, avifauna mitigation measures (such as bird diverters), or comprehensive livelihood restoration. These may therefore represent potential gaps relative to lender expectations.

Given that routing has not yet been finalised, lenders may require further environmental and social due diligence once the alignment is defined, to confirm compliance with applicable standards and to identify any additional mitigation measures required.

2.17.4 Fuel Supply Line

As outlined earlier in this report, aviation fuel will be delivered from a rail receipt facility located approximately 140 m east of the airport boundary, outside the project site. From this facility, fuel will be conveyed to the airport fuel farm via a short underground pipeline. The proposed pipeline alignment will pass through agricultural land and may result in temporary or localised disruption to farming activities during construction. However, given the proximity of this land to the airport and its anticipated future land-use constraints, any loss of agricultural productivity is expected to be limited and likely to occur irrespective of the pipeline installation.

2.17.4.1 Potential E&S Risks

Provided reinstatement is properly undertaken, long-term agricultural productivity impacts are expected to be limited. However, operational risks are more significant from an environmental perspective. Fuel pipelines carry inherent risks of leakage, which could result in soil and groundwater contamination if not promptly detected and contained. There are also associated fire and explosion risks.

International lender standards require application of international good industry practice (GIIP) in pipeline design and operation, including corrosion protection, leak detection systems, emergency shutdown systems, spill prevention and response planning, and routine inspection and maintenance. While national standards may address many of these aspects, potential gaps may arise in areas such as continuous leak detection, emergency preparedness planning consistent with international standards, long-term environmental liability provisions, and public disclosure of emergency response arrangements.

The indicative alignment of the underground fuel supply pipeline connecting the airport to the Rail Receipt Pump Bay is presented in Figure 2-41.

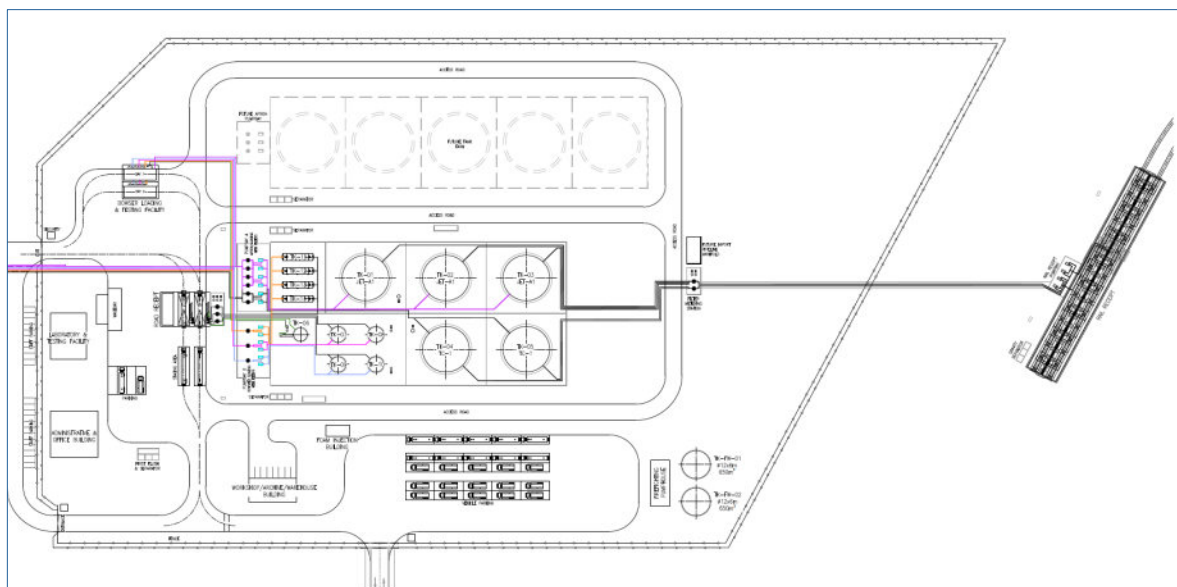


Figure 2-41 Fuel Supply from Rail Receipt Pump Bay to Airport

2.17.5 Diverted Irrigation Canals and Collectors

As part of the Project, limited diversions of existing irrigation canals and wastewater collectors serving surrounding agricultural areas will be required. The proposed realignments will pass through nearby farmland and may result in minor permanent land take as well as temporary disruption to agricultural activities during construction. However, no significant permanent loss of productive agricultural land is anticipated at a wider scale, as the diversions are intended to reinstate and maintain the integrity of the existing irrigation and drainage network. Preliminary plan for the diversion of canals and collectors and reconstruction of certain sections is illustrated in Figure 2-42 which are subject to further studies and assessment by relevant stakeholders prior to finalisation.

The diversion works will be engineered to maintain or improve existing hydraulic capacity and operational performance, ensuring continued irrigation supply and wastewater conveyance for both adjacent and downstream users. Construction will, where practicable, be scheduled outside peak irrigation periods and coordinated with local water management authorities and water user associations to minimise service interruption and agricultural disruption.

2.17.5.1 Potential E&S Risks

Notwithstanding the design intent described above, the diversion of irrigation canals and collectors presents a number of environmental and social risks that require assessment and management. Environmental risks include temporary interruption of water flows during tie-in works, sedimentation and turbidity arising from earthworks, and potential short-term deterioration of water quality. If not properly managed, construction activities could also result in localised erosion or unintended changes to hydraulic performance. Any reduction in canal capacity or reliability, even on a temporary basis, could have downstream implications for agricultural productivity.

Social risks are closely linked to the reliance of local communities on irrigation water for crop production. Disruption during critical growing periods could affect yields and household income. There is also potential for stakeholder concern if water distribution is perceived to be inequitable or if reinstated infrastructure does not perform to pre-project standards.

In line with international lender requirements, the reconfigured network must demonstrate no net reduction in hydraulic capacity or service levels compared to baseline conditions. Lender

standards also require meaningful consultation with affected water users, documentation of any temporary livelihood impacts, and, where necessary, proportionate mitigation or compensation measures. Post-construction monitoring may be required to verify hydraulic performance and confirm that downstream users are not adversely affected.

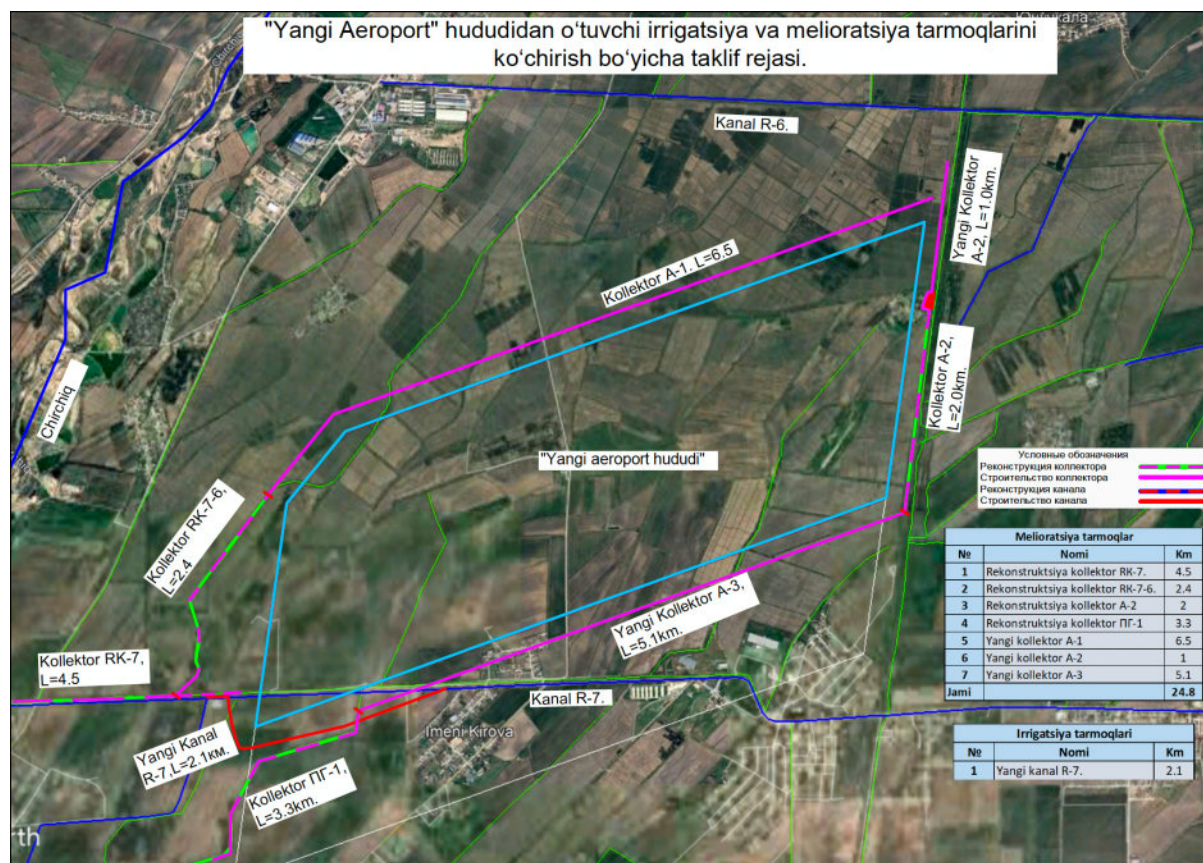


Figure 2-42 Canal and Collector Diversion Plan (to be confirmed)

2.18 Project Phasing, Timeline, and Key Milestone

Based on the details provided by the Project sponsors, the following tentative timeline of key milestones (see Table 2-3) is currently in place for the Project.

Table 2-3 Key Project Milestones and Timeline

Milestones	Date/Schedule/Duration
PPP Agreement Signing	29 July 2026
Notice to Proceed (NTP) and Financial Close (FC)	Q1 2027
Construction Duration	48 Months
Start of Commercial Operation	Q4 2030
Operational Term	31 Years

2.19 Project Study Area and Area of Influence

The primary study area for the purposes of environmental baseline data collection and impact assessment is defined as the geographical boundary of the Project site and its immediate vicinity, depending on the environmental and socio-economic parameters being assessed.

The Area of Influence (AoI) for the Project has been defined in accordance with the principles of IFC Performance Standard 1 (PS1) and EBRD Environmental and Social Requirement 1 (ESR1). The AoI represents the geographic area within which the Project may cause direct, indirect, induced, or cumulative environmental and social impacts. In line with international practice, the AoI is not defined by a single fixed boundary but is determined based on the nature of impact pathways, receptor sensitivity, and the spatial extent over which impacts may occur.

The AoI has therefore been determined through consideration of the principal impact pathways, including land acquisition, noise, air quality, greenhouse gas emissions, traffic and transport, biodiversity, water resources, socio-economic effects and visual impacts, supported by baseline surveys, technical modelling, engineering design information and stakeholder consultation. As different environmental and social aspects have different zones of influence, the ESIA adopts a tiered approach whereby the study area varies according to the topic being assessed.

In addition to spatial boundaries, the AoI also considers temporal boundaries, reflecting the period over which Project-related impacts may occur and interact with other activities. Based on currently available information, there are no confirmed or planned developments expected to coincide temporally with the Project in a manner that would materially influence the AoI, particularly in relation to cumulative impacts.

It is acknowledged that, over the longer term, additional development activities are likely to occur during the operational phase of the airport, including broader urban growth and supporting infrastructure. However, at this stage, such developments are not sufficiently defined in terms of scope, location, or timing to allow for a reasonable or robust assessment. As such, they have not been explicitly incorporated into the current AoI definition but will be considered, where relevant, through future planning processes undertaken by relevant stakeholders as further information becomes available.

Accordingly, the temporal scope of the AoI is defined by the Project's construction and operational phases and will be reviewed and updated as additional information on surrounding developments emerges.

Further information related to the AoI for specific environmental and social parameters is discussed in the relevant chapters of the ESIA report.

2.19.1 Direct Impacts

The primary AoI includes the Project footprint and areas immediately influenced by construction and operational activities. For the purposes of defining direct environmental impacts, this includes an indicative area of up to 10 km from the runway edges, based on modelling for noise and air quality, as well as:

- Construction work areas and temporary facilities;
- Effluent discharges, including site drainage into the nearby Chirchiq River.
- Access routes used by construction vehicles and delivery traffic;
- Locations of construction support infrastructure;
- Waste management infrastructure that will receive project wastes;
- Potential worker accommodation areas (to be confirmed at a later stage).

Within this zone, impacts are direct and include impacts such as land take, physical disturbance, construction emissions, or operational effects such as aircraft noise.

The Aol includes areas affected by land acquisition and resettlement, including both directly affected households and communities such as Kalkabod that may receive some of the PAPs. This ensures that both direct and indirect social impacts are fully captured.

2.19.2 Secondary Impacts

The secondary Aol extends beyond the Project footprint to include areas where indirect or induced impacts may occur. This includes nearby communities that may experience changes in environmental conditions (e.g. noise, air quality, traffic) as well as socio-economic effects.

In addition to local communities, this Aol includes administrative areas such as Urta-Chirchik and Kuyi-Chirchik districts, where the Project is expected to generate employment opportunities, economic activity, and increased demand for goods and services. These benefits are anticipated to extend more broadly to the Tashkent region, reflecting the scale of the Project and its role in regional development.

2.19.3 Extended Aol

Certain impacts extend beyond the secondary Aol and are therefore considered within a broader, topic-specific Aol. This includes:

- Regional socio-economic impacts, such as labour market effects and supply chain linkages;
- Greenhouse gas emissions, which are global in nature;
- Sourcing of construction materials, including aggregates, cement, and steel.

With respect to raw materials, potential quarry sources for land raising are considered as part of the Project's supply chain. These are described in a separate section of the ESIA. At this stage, the final selection of quarry locations has not been confirmed and therefore impacts associated with these facilities are assessed at a high level, consistent with available information.

2.19.4 Associated Facilities

In accordance with IFC PS1, the Aol includes consideration of Associated Facilities that are directly related to the Project and necessary for its operation. These are assessed proportionately based on their level of dependency on the Project and the availability of design information.

Infrastructure that is conceptual, part of broader regional development planning, or not required for Project viability is not considered an Associated Facility but may be addressed under cumulative impact assessment where relevant.

2.20 Cumulative Impacts Assessment

In accordance with IFC Performance Standard 1 and EBRD ESR 1, the ESIA has considered the potential for cumulative impacts arising from the interaction of the Project with existing and reasonably foreseeable future developments within the Area of Influence.

At the time of preparation of this ESIA, there are no confirmed third-party developments with defined construction programmes that are expected to coincide with the Project and result in significant cumulative construction impacts. However, the assessment recognises a number of reasonably foreseeable developments within the wider area, including future urban development to the north of the Project, transport infrastructure (such as planned toll roads and potential rail connections).

As planning for the wider new Tashkent area continues to evolve, the Project Company will maintain a watching brief on future developments through implementation of the Environmental and Social Management System (ESMS). Where new developments become sufficiently defined and have the potential to materially influence the Project's cumulative impact assessment, the need for further assessment and any associated mitigation measures will be reviewed.

2.21 Construction Activities

Construction of the proposed airport will comprise a range of airside and landside works undertaken in accordance with applicable ICAO standards and recommended practices.

As outlined earlier in this report, the Sponsors have appointed Larsen and Toubro (L&T) as the EPC contractor for the landside development. A separate EPC contractor, which is yet to be decided, will be responsible for the airside construction works. It is anticipated that approximately 5,000 personnel including labours and other technical staff will be involved in the construction of the Project, of which about 55% and 45% will be engaged for the landside and airside works respectively.

The construction activities expected for the project include the following:

- *Site Preparation and Earthworks:* This involves land clearing of vegetation, grading, excavation, filling to raise the land, and compaction to establish the base for all airport infrastructure. It also includes relocation of existing utilities and diversion of existing drainage and irrigation ditches.
- *Runway, Taxiway, and Apron Construction:* These critical airside components are constructed using high-strength pavement materials. Works include sub-base preparation, asphalt or concrete paving, airfield lighting systems, drainage infrastructure, and installation of runway safety areas and navigational aids.
- *Terminal Building Construction:* This includes the development of passenger terminals with structural frames, roofing, curtain walls, interior fit-outs, Heating, Ventilation and Air Conditioning (HVAC), electrical and Information and Communication Technology (ICT) systems, baggage handling systems, and security screening equipment.
- *Airside Support Facilities:* Construction of aircraft maintenance hangars, ground service equipment (GSE) yards, fuel storage and distribution systems, firefighting and rescue stations, and the ATC tower.
- *Landside Infrastructure:* This includes access roads, bridges (if necessary), parking structures, drop-off/pick-up zones, public transport interfaces, and utility networks (water, power, telecommunications, sewage).
- *Stormwater and Wastewater Management Systems:* Construction of drainage channels, retention ponds, oil-water separators, and connection to municipal treatment systems or onsite treatment plants.
- Landscaping and security fencing installation works.

Construction activities are expected to be undertaken predominantly during daytime working hours. Night-time construction activities are not anticipated as part of the routine construction programme. Should night-time working be required, the activities will be minimised to the extent reasonably practicable and managed through the Construction Noise Management Plan. Appropriate mitigation measures, stakeholder notification and any necessary approvals from the relevant authorities will be implemented prior to undertaking such works.

Some of the main construction activities are discussed in flowing sections:

2.21.1 Site Preparation and Earthworks

Vegetation Clearance

Vegetation clearance will be required within the project footprint to enable construction of airside and landside infrastructure. The site is predominantly characterized by naturally growing landscape vegetation, including trees of varying species and maturity. Tree removal or relocation will be undertaken based on tree type, condition, and feasibility of transplantation, and will be subject to the necessary approvals from the relevant authorities. Where relocation is feasible, trees will be transplanted in accordance with good international practice to minimise loss of vegetation. Any unavoidable tree removal will be managed in line with applicable regulations and offset or compensatory measures, where required, will be defined as part of the project's environmental management commitments.

Diversion and Irrigation Canals and Wastewater Collector

As outlined earlier in this report, the Project area is intersected by an existing network of irrigation canals and wastewater collectors that support surrounding agricultural activities and local users. To avoid disruption to downstream users, affected canals and collectors will be diverted in a phased manner prior to commencement of excavation and construction works in the relevant areas. Diversion works will be designed to maintain hydraulic capacity and continuity of flow, with temporary or permanent diversion channels constructed as necessary. Once diversion is completed, the original canal or collector alignments within the construction footprint will be backfilled and reinstated in accordance with approved designs.

Canal diversion and backfilling activities will be carefully planned and coordinated to avoid impacts on farmers, land users, and water availability. All works will be implemented in compliance with applicable regulatory requirements in close coordination with the Khokkimiyat and the irrigation department and will incorporate measures to control sedimentation, prevent contamination, and maintain water quality during construction.

Management of Existing Graveyards

As outlined earlier in this report, four existing graves have been identified within the Project area that may be affected by the airport development and are considered a form of cultural heritage under IFC Performance Standard 8 (Cultural Heritage). Any activities involving these graves will be undertaken with full respect for their cultural, religious, and social significance, and will only proceed following meaningful and inclusive stakeholder consultation with affected families, community representatives, religious authorities, and relevant government bodies.

In accordance with IFC PS8, the project will seek to avoid disturbance of cultural heritage where feasible. Where avoidance is not possible and relocation is required, this will be carried out only with the free, prior, and informed participation of affected stakeholders and in compliance with applicable national legislation and religious practices. Graves will be respectfully relocated to an appropriately identified and agreed location, with procedures documented and approved prior to implementation. All actions will be transparently communicated, and records of consultations and agreed outcomes will be maintained as part of the project's cultural heritage management commitments.

Land Raising

Given the presence of a shallow groundwater table at the project site, ground raising of approximately 4 m above existing levels may be required. It is estimated that approximately 10,500,000 m³ and 1,500,000 m³ of fill material could be required for airside and landside respectively. The fill material needed for this purpose is expected to be sourced from existing, operational quarries within the Tashkent region.

The characteristics and the volumes of required fill material provided here are based on preliminary calculations and have not yet been finalised, as these will be confirmed following completion of detailed topographic and hydrological surveys. The source locations shown in

Figure 2-43 and summarised in Table 2-4 are indicative only and represent potential supply sources that have been identified based on their location, available material type and estimated production capacity. The final borrow areas, quarries and material suppliers will be confirmed by the EPC Contractor during detailed design and procurement.

Prior to the appointment of material suppliers, the EPC Contractor will undertake an environmental and social due diligence process to confirm the suitability of the proposed sources. This assessment will include the following verification for each selected quarry:

- That it is appropriately licensed and operating in accordance with applicable national legislation
- It has sufficient permitted reserves and production capacity to meet the Project demand without requiring unauthorised expansion
- It has implemented appropriate environmental, health and safety management measures
- That the area is not located within protected areas, critical habitats or other environmentally sensitive locations where extraction would result in unacceptable impacts
- The area has appropriate traffic access and haulage routes that minimise impacts on local communities and public roads; and
- It demonstrates compliance with applicable labour and working condition requirements, including those consistent with the Project's commitments under IFC Performance Standard 2, and the Project Labour Management Procedures. Where required, supplier audits will be undertaken prior to engagement and periodically during construction.

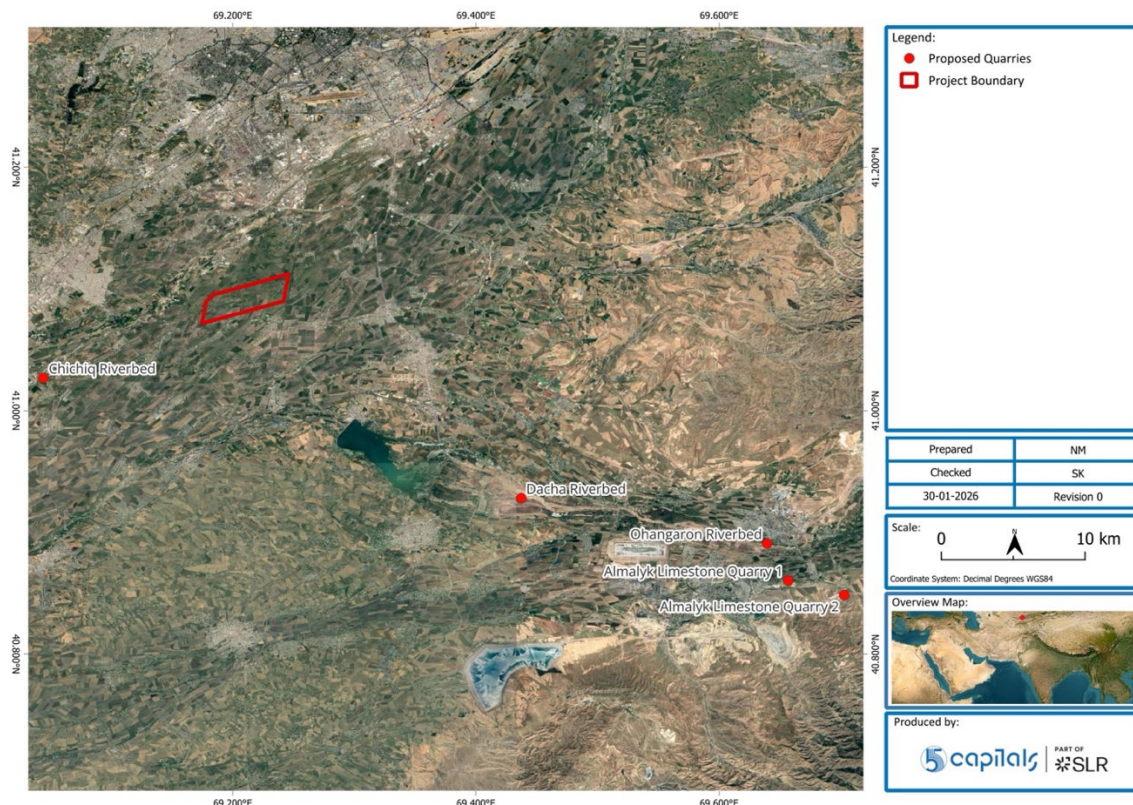


Figure 2-43 Indicative Locations of Quarries for Sourcing Fill Material

Table 2-4 Potential Sources for Fill Material

Source Location	District/Region	Type of Material	GPS Coordinates	Required Area (Ha)
Chirchiq Riverbed	Yanhiyul	Fill material and crushed aggregate	41°1'42"N 69° 2'15"E	200
Datcha Riverbed	Pskent	Fill material and crushed aggregate	40° 55'34"N 69° 26'16"E	300
Ohangaron Riverbed	Pskent	Crushed aggregate	40° 53'16"N 69° 38'4"E	200
Almalyk Limestone Quarry 1	Almalyk	Crushed aggregate	40° 51'29"N 69° 39'8"E	20
Almalyk Limestone Quarry 2	Almalyk	Crushed aggregate	40° 50'50"N 69° 41'45"E	

The extraction, transport, and placement of fill material may result in temporary environmental and social impacts, including increased traffic movements, dust and noise generation, greenhouse gas emissions from haulage, and potential localised disturbance at source quarries. Ground raising activities may also affect surface drainage patterns and shallow groundwater conditions if not properly managed. These impacts are expected to be temporary and manageable and will be addressed through the implementation of appropriate mitigation measures, including sourcing materials only from licensed quarries, application of dust suppression measures, traffic management planning, and design controls to ensure groundwater protection.

2.21.2 Excavation and Dewatering

Excavation works will be undertaken to prepare the site for landside and airside infrastructure, including runways, taxiways, terminal buildings, and associated facilities. The excavation methodology will be designed to ensure construction efficiency while minimising environmental and other health and safety risks. Excavation activities will be carried out in a phased manner, guided by detailed topographic and geotechnical investigations. The main excavation areas are illustrated in Figure 2-44, with typical excavation depths summarised in Table 2-5 and representative cross-sections of the excavation and foundation design provided in Figure 2-45. A total area of approximately 13,000 m² of basement excavation will be required.

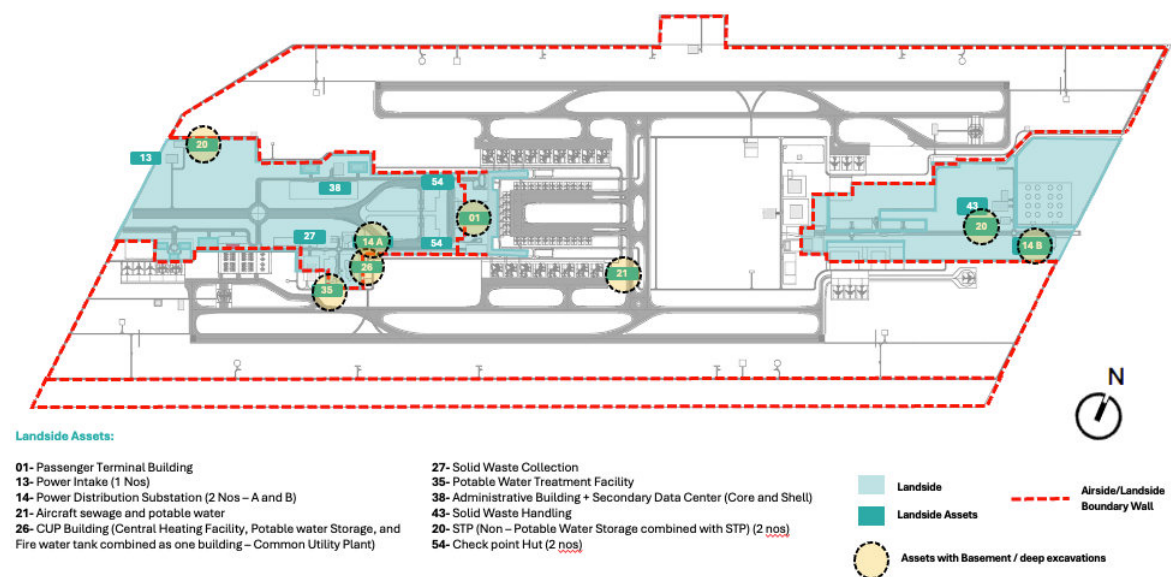


Figure 2-44 Indicative Locations of Deep Excavations

Table 2-5 Estimated Foundation Levels and Excavation Depths

Asset Name	Existing Ground Level (m)	Depth of Foundation (m)	Depth of Excavation (m)
Passenger Terminal Building	358.4	354.6	3.8
Sewage Treatment Plant	355	347.5	7.5
Aircraft Sewage and Potable Water	358	352.9	5.1
Common Utility Plant	356	348.8	7.2
Potable Water Treatment Facility	356	347.5	8.5
Power Distribution – Load Centre A	363.5	359	4.5
Power Distribution – Load Centre B	354.5	350	4.5

Excavation will generally be performed using conventional mechanical methods, including excavators, bulldozers, and loaders, with material temporarily stockpiled on site or transported to designated reuse or disposal areas in accordance with the project's earthworks management plan. Where required, temporary slope stabilisation, shoring, or benching will be implemented to maintain excavation stability and ensure worker safety. Excavation depths will vary depending on local ground conditions and foundation requirements, and groundwater management measures will be applied where necessary to prevent water ingress and sediment release. All excavation works will be conducted in compliance with applicable environmental, health, and safety standards, with mitigation measures implemented to control dust, noise, and runoff during construction.

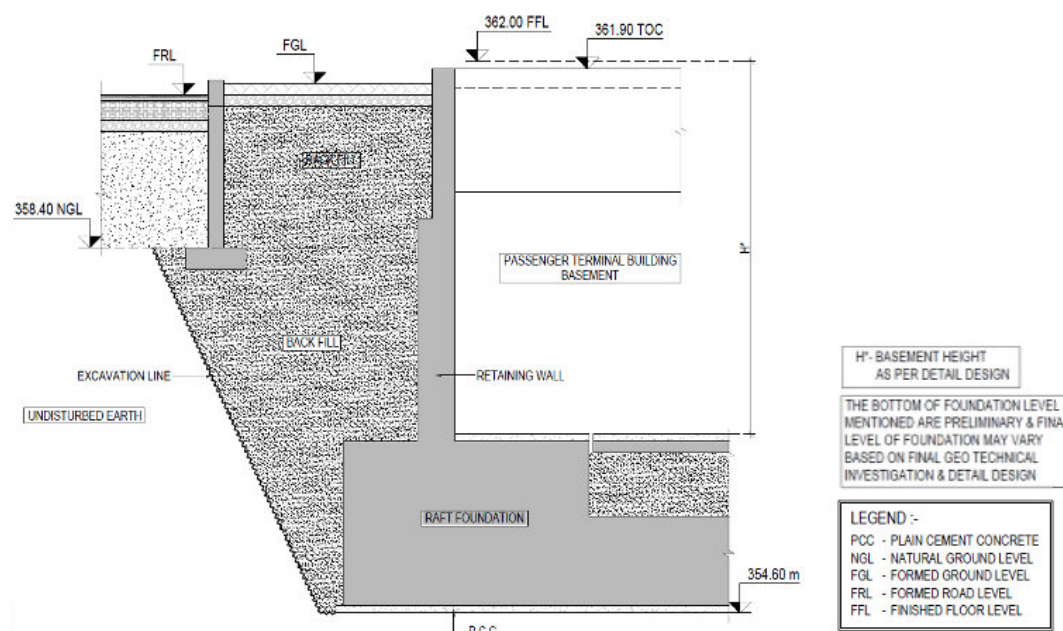


Figure 2-45 Passenger Terminal Building Excavation Depth Details

Due to the high permeability of the subsurface materials within the project area, excavation works will require groundwater dewatering, and dewatering volumes could be significant unless appropriate control measures are implemented to limit groundwater inflow. Such measures may include cut-off techniques or localised seepage control, subject to detailed design. While the exact dewatering methodology to be adopted by the EPC Contractor has not yet been confirmed, it is anticipated that well-point dewatering systems will be utilised, based on preliminary geotechnical conditions and to be finalised following detailed geotechnical investigations during the construction planning stage.

At this stage, specific details regarding the estimated duration, rates, and total volumes of dewatering are not available. Any groundwater abstracted during construction is expected to be discharged via the external site drainage system, with ultimate discharge to the Chirchik River, subject to compliance with applicable regulatory requirements and environmental management measures. Appropriate controls will be implemented to manage water quality, prevent erosion or sediment release, and minimise potential impacts on downstream receptors.

2.21.3 Civil and Airfield Works

In addition to site preparation works discussed above, civil works will include, ground improvement where required, and construction of airfield pavements for runways, taxiways, aprons, and aircraft parking stands. Pavement construction will involve subgrade preparation, placement of sub-base and base courses, and installation of asphalt or concrete wearing surfaces designed to meet aircraft load requirements. Additional civil works will include construction of terminal buildings, control towers, cargo and maintenance facilities, perimeter fencing, access roads, car parks, and associated landside infrastructure. Drainage systems, including surface water channels and culverts, will be installed to manage stormwater runoff and protect pavement integrity.

2.21.4 Structural and Architectural Works

Structural works will involve reinforced concrete and structural steel construction for terminal buildings and ancillary facilities. Architectural works will include building envelopes, roofing systems, internal partitions, and finishes. Construction materials will be sourced, stored, and

handled within designated laydown areas in accordance with environmental and safety requirements.

2.21.5 Mechanical Works

Mechanical works will include installation of heating, ventilation, and air conditioning (HVAC) systems for terminal and support buildings, plumbing and fire protection systems, fuel supply infrastructure where applicable, and mechanical equipment for baggage handling systems. These activities will be coordinated with civil and structural works to ensure integration with building services and operational requirements.

2.21.6 Electrical, Lighting, and Navigational Aids

Electrical works will include installation of power supply networks, substations, standby generators, and internal building electrical systems. Airfield ground lighting systems, including runway, taxiway, and apron lighting, will be installed in accordance with ICAO Annex 14 requirements. Navigational aids, communications systems, and air traffic management support infrastructure will be progressively installed and tested as construction advances.

2.21.7 Utilities, Systems, and Ancillary Works

Additional activities will include installation of water supply, wastewater and drainage networks, telecommunications, security systems, and airport operational systems. Temporary construction facilities such as site offices, workshops, material storage areas, and worker welfare facilities will be established within designated construction zones and removed following completion of works.

2.21.8 Temporary Construction Facilities

Workers Accommodation

As outlined earlier in this report, it is estimated that around 5,000 workers (2,700 for landside, 2,300 for airside) will be required during peak construction majority of which are anticipated be staying at the onsite accommodation facility. Worker's accommodation for the EPC Contractor's construction staff will be provided within the Project site boundary at the western portion as illustrated in Figure 2-46. This will include living quarters as well as other amenities and welfare facilities such as sanitary facilities, canteen halls and other common areas.

At the time of preparing this ESIA, the accommodation and workforce arrangements for the airside contractor have not yet been determined and may include a combination of locally based workers commuting from their homes, use of existing accommodation facilities, and/or temporary worker accommodation.

In addition to the onsite facilities, alternate offsite workers' accommodations may also be required, such as for some of the airside EPC contractor staff and subcontractors that will be involved in Project construction. All onsite and offsite construction worker accommodation provided or paid for by Project parties will be audited for compliance against the latest IFC/EBRD workers accommodation – processes and standards. In addition, the EPC contractor will need to undertake an assessment of housing options and availability to ensure sufficient capacity of appropriate housing in the locality prior to mobilisation.

Temporary construction facilities will also include site offices, construction yards, waste management and chemicals storage areas, workshops, batching plant etc. (see Figure 2-46).

Construction Utilities

The main utilities required during the construction phase will include construction water, potable water, electricity, and fuel supply.

Water for construction purposes is expected to be primarily sourced from groundwater via onsite wells, subject to the necessary permits and hydrogeological assessment. Based on the current construction planning assumptions, the peak construction workforce is estimated to comprise approximately 5,000 personnel. Assuming a domestic water consumption rate of 150 litres per person per day, the domestic water requirement is estimated at approximately 750 kL/day (750 m³/day). Water required for construction activities, including concrete production, dust suppression, equipment washing and other construction-related uses, is estimated at approximately 1,752 kL/day (1,752 m³/day).

Accordingly, the total tentative water requirement during the peak construction period is estimated to be approximately 2,500 kL/day (2,502 m³/day). This estimate will be refined during the detailed construction planning stage as construction methodologies, phasing, water sources and demand management measures are further developed.

Electricity demand for construction activities is anticipated to be met from the national grid, managed by the JSC National Electric Grid of Uzbekistan. It is estimated that approximately an average of 5,500MWh of electricity will be required per year during construction. Diesel generators will be used as backup power sources in the event of grid disruptions to ensure uninterrupted operations.

Fuel supply, primarily high-speed diesel, required for backup generators and other construction plant and equipment will be procured from JSC Uztransgaz or alternative approved suppliers arranged by the EPC contractor.

The estimated types of plant and their anticipated fuel consumption are shown in Table 2-6.

Table 2-6 Construction Plant and Estimated Fuel Requirement

Type of Machinery	No	Fuel Consumption Lts/day
Dozer	1	128
Excavator	3	80
Wheel Loader	2	80
Grader	3	128
Vibratory Roller	4	72
Water Tanker	3	32
Paver	1	112
PTR	1	72
Tandem	1	56
Skid Steer Loader	1	32
Mini Roller	1	32
Crane 25 Ton	1	64
Transit Mixer	3	67
Truck 25 Ton	8	89

Construction Waste Management

Dedicated areas will be earmarked within the Project site for collection, handling and temporary storage of waste materials. Sanitary drains will be installed to collect wastewater from all welfare facilities, including toilets, showers, sinks and other sanitary amenities provided for the construction workforce.

Based on a peak construction workforce of approximately 5,000 personnel and an estimated domestic water demand of 750 kL/day (750 m³/day), the Project is expected to generate approximately 600 kL/day (600 m³/day) of domestic wastewater, assuming that approximately

80% of potable water consumption is returned as sewage. To manage this wastewater, an onsite Sewage Treatment Plant (STP) will be installed as part of the temporary construction facilities. The STP will be designed to treat domestic wastewater to the applicable national standards and international good practice prior to discharge, reuse or disposal, as appropriate. The detailed design capacity, treatment process and management arrangements for the STP will be confirmed during the detailed engineering phase.

The EPC Contractor will enter contractual agreements with licensed waste service providers to transport and dispose or treat different construction waste streams listed in Table 2-7

Table 2-7 Construction Waste Types

Waste Type	Description
Hazardous waste	Waste materials contaminated with substances that pose a risk to health or the environment, including used/waste oils, oily rags, oil filters, used oils from diesel generators (DG), compressor oil, transformer oil, workshop waste, discarded containers or barrels contaminated with hazardous substances (e.g., used oil drums, paint drums), and bottom sludge from storage tanks or areas.
Construction and Demolition (C&D) waste	Waste generated from construction and demolition activities, including earth excavated material, concrete rubble, bricks, wood, metal scrap, and other inert or non-hazardous debris. These materials may be subject to reuse, recycling, or proper disposal.
Non-hazardous waste	General solid waste generated during construction excluding C&D waste, such as paper, cardboard, packaging waste, plastics, and other non-hazardous refuse from site operations.
Municipal Solid Wastes	Domestic waste generated within worker accommodations and site offices, including food waste, paper, plastics, and other typical household-type waste.
Packaging Waste	Packaging materials received with construction materials, including cardboard boxes, plastic wrapping, wooden crates, and labelling materials. These may be recyclable and should be segregated accordingly.
Wastewater	Water contaminated or used during construction activities, including runoff, dewatering discharge, process water from concrete batching, and domestic wastewater from worker facilities.

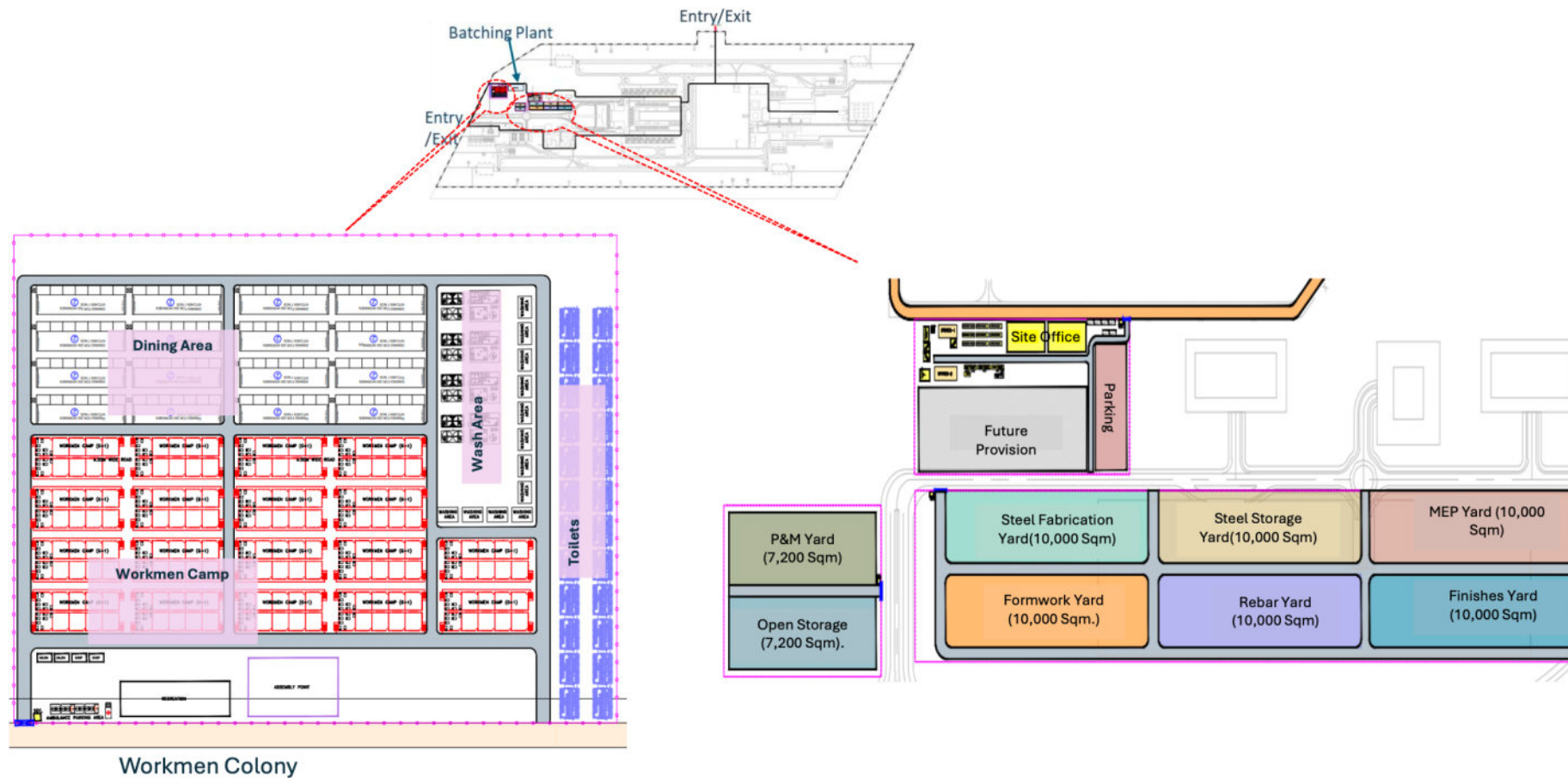


Figure 2-46 Construction Stage Temporary Facilities Layout

2.21.9 Environmental and Safety Management

All construction activities will be implemented in compliance with applicable environmental, health, and safety standards. Mitigation measures will be applied to control noise, dust, waste generation, traffic movements, and potential impacts on surface water and surrounding receptors. Detailed construction methodologies and mitigation measures will be set out in contractor-specific management plans to be developed prior to commencement of works.

2.22 Airport Operation and Maintenance

2.22.1 Management Structure and Roles

The new Tashkent International Airport will be developed, operated, and managed by TAA which is the SPV, with TAA responsible for the operation of landside and other airport assets, while the Public Partner will be responsible for the operation of airside and airfield assets. The SPV will oversee all core operations and management functions for activities under its responsibility, while strategically outsourcing specific non-core services and technical operations to specialised entities, namely, a Facility Management (FM) company and an Airport Operating Partner (AOP). The SPV will maintain governance and oversight of all operational, environmental, social, and safety aspects, ensuring that airport activities comply with national regulations and international aviation standards.

The SPV will maintain an adequately staffed organisation, including an Environmental and Social (E&S) Manager responsible for overseeing compliance with environmental and social standards, coordinating impact assessments, implementation of the Grievance Redress Mechanism (GRM), monitoring mitigation measures, and reporting to project leadership and regulatory authorities. The airport will also have a dedicated Health, Safety, and Environment (HSE) department led by a Chief Safety Director and supported by HSE and Quality Managers and officers. This team will be responsible for developing health and safety procedures, conducting risk assessments, ensuring compliance with safety protocols, and managing incident reporting.

2.22.2 Workforce

The in-house workforce for airport and FM services for the landside is expected to comprise approximately 3,000 personnel, with an additional estimated 2,000 staff engaged in overall airport operations for the airside, including ground handling and other ancillary services.

Training programs will be implemented to ensure compliance with safety, environmental, and operational standards. Staff induction and ongoing capacity building will form part of standard operational procedures to maintain high-quality services and regulatory compliance.

2.22.3 Operational Activities

Once operational, the airport will support continuous activities such as aircraft landings and take-offs, passenger processing, baggage handling, cargo operations, air traffic management, ground transportation, maintenance, fuelling, catering, cleaning, and waste management. Ancillary commercial services, including duty-free shops, restaurants, car rentals, and hotels, will also be integral to airport operations.

2.22.4 Maintenance Activities

Routine and periodic maintenance will be conducted for all airport infrastructure, including runways, taxiways, aprons, terminal buildings, and operational equipment. Maintenance activities will include pavement repairs, structural inspections, mechanical and electrical system servicing, and maintenance of vehicles and ground support equipment.

Preventive and corrective maintenance programs will ensure safety, reliability, and uninterrupted airport operations, while minimising downtime and operational disruptions.

2.22.5 Utilities and Resource Management

Operational utilities will include water, electricity, fuel, and telecommunications systems to support airport functions. Water for operational use will be sourced from approved municipal or groundwater supplies, while electricity will be drawn from the national grid with backup diesel generators. Fuel will be supplied through authorized vendors and managed under strict storage and handling protocols.

Resource management practices will aim to optimize efficiency, reduce waste, and minimise environmental impacts associated with airport operations.

2.22.6 Community and Stakeholder Engagement

The SPV will maintain ongoing engagement with local communities, government authorities, and other stakeholders to address any concerns or grievances and provide information on operational activities. The GRM will be in place to respond promptly to complaints or issues related to airport operations, including noise, traffic, and environmental impacts.

Periodic community consultations and information dissemination will ensure transparency and support the airport's social license to operate.

2.23 Decommissioning of Existing Airport

The decommissioning of the existing Islam Karimov Tashkent International Airport is not part of the current ESIA scope and remains subject to separate government planning, timing, and implementation decisions. As such, the detailed approach to decommissioning, including the sequencing of activities, land use transition, and associated environmental and social management measures, has not yet been defined. In line with this, a detailed quantitative assessment is not feasible at this stage.

However, a high-level qualitative assessment has been undertaken to identify potential environmental and social implications associated with the eventual relocation of airport operations.

In considering the wider regional context, it is noted that a 10 km radius from the existing airport encompasses a substantial portion of the urban core of Tashkent, including dense residential areas. Population density within this zone is estimated to be approximately 5,000 to 6,000 people per km², indicating that a significant urban population (more than 1 million people) is currently exposed to aircraft-related noise and associated environmental effects.

The relocation of airport operations will therefore result in notable environmental and social benefits, including:

- Reduction in aircraft noise exposure across large urban areas;
- Improvement in local air quality, due to the avoidance of aircraft emissions, ground support activities and traffic congestions in Tashkent city;
- Potential improvement in overall urban liveability in affected districts.

At the same time, decommissioning may give rise to a range of environmental and social considerations, which would need to be addressed once plans are defined. These could potentially include:

- Management of demolition waste and potential contamination from historical airport activities (e.g. fuels, oils, chemicals);
- Remediation of soils and groundwater, where required;

- Temporary impacts during decommissioning works (e.g. noise, dust, traffic);
- Changes in employment associated with airport operations and transition to alternative land uses;
- Planning and management of future land use, including potential redevelopment of the site;
- Management of any legacy infrastructure and utilities.

Given that the decommissioning programme and subsequent land use are not yet determined, these impacts are expected to be location and design specific and will require further detailed assessment.

Accordingly, it is anticipated that, once the scope and timing of decommissioning are confirmed, a separate environmental and social assessment and management plan will be prepared in accordance with applicable national regulations and international standards. This will ensure that any potential adverse impacts are appropriately mitigated and that opportunities for environmental and social enhancement are maximised.

2.24 Assessment of Alternatives

2.24.1 No Project Option

As outlined earlier in this report, the Republic of Uzbekistan is undertaking the development of the new airport to replace the existing Tashkent International Airport. This initiative forms part of the country's broader strategic infrastructure programme, supporting its rapid transformation and integration into the global economy. The new airport is envisioned as a key regional hub for connectivity and trade, reinforcing the Republic of Uzbekistan's position as a leading destination in Central Asia.

The decision to develop this new international airport is underpinned by a combination of economic, strategic, and logistical considerations, including the need to enhance air transport capacity, boost tourism and trade, and address environmental concerns such as the existing noise-related impacts on surrounding communities from the current airport. The new site has been selected to mitigate this legacy issue while accommodating future growth.

Given the strategic importance of the Project, the 'No Project' scenario is not considered a viable alternative, as it would fail to meet the core objectives of the Ministry of Transport and the broader development goals of the government of the Republic of Uzbekistan. This option would limit the country's ability to enhance regional connectivity, address existing infrastructure constraints, and support long-term economic growth and competitiveness.

Under the No-Project alternative, the proposed airport development would not proceed, and the existing Islam Karimov Tashkent International Airport would continue to operate within its current urban setting. In this scenario, current environmental and social conditions would largely persist, including ongoing exposure of nearby communities to aircraft noise, air emissions, and operational disturbance.

The existing airport is located within a densely populated urban environment, where a significant proportion of the population resides within proximity to flight paths and operational areas. As such, the continuation of operations at the existing airport would result in the ongoing exposure of large urban populations to elevated noise levels, as well as continued local air quality impacts associated with aircraft movements and ground operations. In contrast, the Project involves relocation of operations to a less densely populated area, thereby redistributing and, in some cases, reducing exposure at a city-wide scale.

From a social perspective, the No-Project scenario would also result in the absence of potential benefits associated with the Project. These include:

- Development of new infrastructure (e.g. access roads, utilities, and services) in the Project area;
- Improved regional connectivity and accessibility;
- Generation of employment opportunities during both construction and operation;
- Stimulation of local economic activity in surrounding districts, including Urta-Chirchik and Kuyi-Chirchik, as well as the wider Tashkent region.

Stakeholder consultations undertaken as part of the ESIA indicate that local communities perceive the Project as an opportunity to enhance infrastructure provision and access to employment, which would not be realised under the No-Project alternative.

At the same time, the No-Project scenario would avoid certain Project-related impacts, including:

- Land acquisition and associated resettlement;
- Construction-related disturbances (e.g. noise, dust, traffic);
- Localised environmental impacts at the new airport site.

However, these avoided impacts are site-specific and temporary (in the case of construction), whereas the continued operation of the existing airport would maintain long-term environmental pressures on a larger urban population.

Overall, the No-Project alternative would maintain the current baseline conditions and avoid new site-specific impacts but would also result in the continued exposure of urban communities to aviation-related impacts and the loss of potential environmental and socio-economic benefits associated with the Project.

2.24.2 Siting Alternatives

The requirement for the airport to be located near Tashkent is driven by the Project's purpose, which is to replace the existing Islam Karimov Tashkent International Airport and continue serving the city as the primary aviation hub. As such, the new airport must remain within a reasonable distance of Tashkent to maintain accessibility for passengers and cargo and preserve regional connectivity.

The selection of the site to the south of Tashkent city was driven by a combination of environmental, social, and technical considerations. Sites located to the north and east were discounted due to their proximity to planned urban expansion areas of Tashkent, which would have resulted in greater exposure of future residential populations to aircraft noise. Other factors included the need to avoid airspace and operational constraints such as obstacles and prevailing wind conditions. Overall, the southern location was preferred due to its comparatively lower density of nearby residential receptors and reduced potential for environmental and social impacts.

A comprehensive site selection study was conducted by NACO for the new Tashkent Airport based on a shortlist of potential locations initially identified by the Government to evaluate potential locations that are suitable for the construction and operation of the airport. This involves assessing various factors such as socio-geographical, operational and technical considerations to determine the most suitable site.

As part of the study, the data gathered from three sites specified by the Ministry of Transport were utilised. These sites were visited during two separate visits in December 2023 and January 2024. To ensure comprehensive coverage of the search area, a fourth option within the same vicinity has been included. The locations and layout of the four options that were considered are illustrated in Figure 2-47.

Multilevel evaluation criteria were used to assess and evaluate the most suitable option for the Project site which is included in Table 2-8. Among the several criteria that were used in the assessment, the impacts to the existing gas pipeline were given the highest priority as a standalone weighted criterion and therefore considered as a “No-Go”.

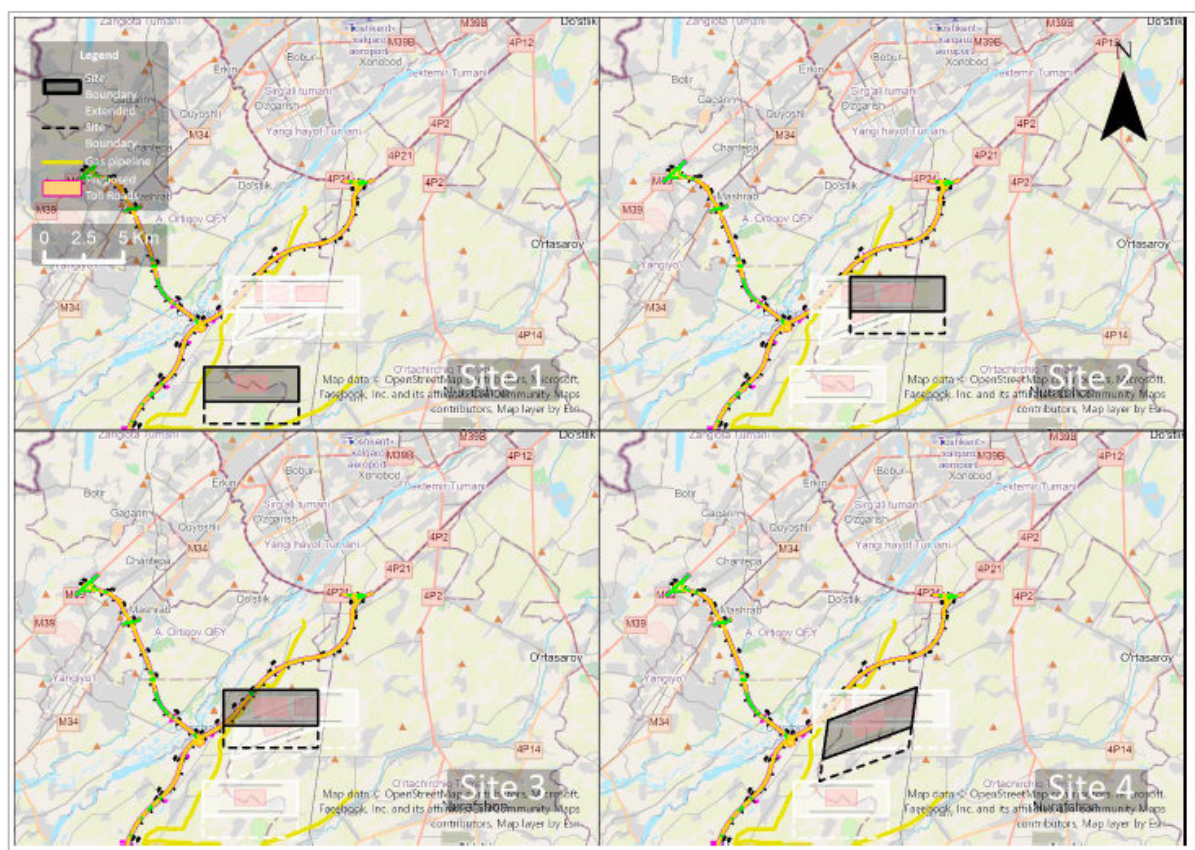


Figure 2-47 Geographical Locations of Optional Sites

Based on the evaluation made by NACO, and besides the Go/No-Go criterion for the gas pipeline, the presence of graveyards within the proposed site was considered the most important weighted criterion, followed by rail upgrade requirements and by the residential areas within the 65 and 55 dB(A) noise contours respectively. The key types of criteria used in the site selection assessment are listed below.

- Go/No-Go Criteria
 - o Gas pipeline impacting critical airport assets
- Social and Geographical Criteria
 - o Existing land use within the Project site boundaries
 - o Eastward expansion Tashkent City affected by noise
 - o Noise Impact
- Operational Criteria
 - o Connectivity of site road/rail
 - o Wind direction / runway usability
 - o Obstacles
 - o Airspace

- Technical Criteria
 - o Topography
 - o Geology and seismicity
 - o Geohydrology

Table 2-8 Evaluation Criteria Weighing and Ranking

Criteria	Weighing Factor	Ranking
Go / No-Go Criteria		
Gas pipeline impacting critical airport assets	Go / No-Go	1
Social – Geographical Criteria		
Existing land-use within the projected site boundaries		
Reduced land due to gas pipeline [ha] (non-critical airport assets)	4.8%	12
Residential areas	6.2%	9
Industrial areas	5.2%	11
Cemeteries / Heritage sites	9.5%	2
Roads	1.0%	20
Power lines	1.4%	19
Rivers	0.5%	21
Eastward expansion Tashkent City affected by noise	4.3%	13
Noise impact		
Residential areas within 55 dB(A) noise contour	8.1%	5
Residential areas within 65 dB(A) noise contour	8.6%	4
Operational Criteria		
Connectivity of site by road / rail		
Road distance from Tashkent	2.9%	16
Rail distance from Tashkent	1.9%	18
Rail infrastructure upgrade requirements	9.0%	3
Wind direction / Runway usability	2.4%	17
Obstacles	7.6%	6
Airspace		
Distance to nearest border with Kazakhstan	6.7%	8
Distance to nearest boundary of UTTT TMA	7.1%	7
Technical Criteria		
Topography	3.3%	15
Geology and Seismicity	3.8%	14
Geohydrology	5.7%	10

Methodology for Criteria Weighting

A structured weighting methodology was applied by NACO to determine the relative importance of several criteria including environmental and social criteria such as noise, cultural heritage, resettlement (see table above) used in the site selection assessment. The weighting of criteria was derived through a pairwise comparison approach, whereby each parameter was

assessed relative to others and assigned a binary score. The total score for each parameter was normalised against the overall score to derive percentage weightings, which were then used to rank the relative importance of each factor. For each comparison:

- A value of “1” was assigned where a criterion was considered more important than the comparator; and
- A value of “0” was assigned where it was considered less important.

Self-comparisons were excluded from the analysis. This process resulted in a comparison matrix (see Figure 2-48), where each criterion received a total score based on the number of times it was considered more important relative to others.

The total score for each criterion was then calculated by summing all positive (i.e. “1”) comparisons across the row. The overall score across all criteria was subsequently derived by summing the individual criterion scores.

To determine the relative weighting, each criterion score was normalised against the total score using the following formula:

$$\text{Weight (\%)} = (\text{Total Score} / \text{Criterion Score}) \times 100$$

This process results in a percentage weighting for each criterion, reflecting its relative importance within the overall assessment framework. The criteria were then ranked based on their respective weightings, with higher percentages indicating greater relative importance.

This method provides a transparent and consistent basis for weighting, ensuring that all criteria are evaluated systematically. While the approach is based on expert judgement, it enables a structured comparison and reduces subjectivity through a repeatable scoring process.

	Gas pipeline impact to critical airport assets	Gas pipeline impact to non-critical airport assets [ha]	Residential area [ha]	Industrial area [ha]	Cemeteries/heritage sites [ha]	Roads [m]	Power lines [m]	Rivers [m]	Noise [ha of residential area affected by 55 dB noise contours]	Noise [ha of residential area affected by 65 dB noise contours]	Obstacles	Distance to nearest border with Kazakhstan [km]	Distance to nearest boundary of UTTT TMA [km]	Wind direction/runway usability	Road - Distance from Tashkent [km]	Rail - Distance from Tashkent [km]	Rail - Required infrastructure upgrades [km]	Eastward expansion Tashkent City area affected by 55 dB(A) noise contours [ha]	Topography	Geology and Seismicity	Geohydrology	Overall Weight	Relative Weight	Ranking
Gas pipeline impact to critical airport assets	1																					10	4.8%	12
Gas pipeline impact to non-critical airport assets [ha]		1	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	1	1	1	0	13	6.2%	9
Residential area [ha]		1	1	1	0	1	1	1	0	0	0	0	0	1	1	1	0	1	1	1	1	11	5.2%	11
Industrial area [ha]		1	0	1	0	1	1	1	0	0	0	0	0	1	1	1	0	1	1	1	0	20	9.5%	2
Cemeteries/heritage sites [ha]		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0%	20
Roads [m]		0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1.4%	19
Power lines [m]		0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.5%	21
Rivers [m]		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	17	8.1%	5
Noise [ha of residential area affected by 55 dB noise contours]		1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	18	8.6%	4
Noise [ha of residential area affected by 65 dB noise contours]		1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	16	7.6%	6
Obstacles		1	1	1	0	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	14	6.7%	8
Distance to nearest border with Kazakhstan [km]		1	1	1	0	1	1	1	0	0	0	1	0	1	1	1	0	1	1	1	1	15	7.1%	7
Distance to nearest boundary of UTTT TMA [km]		1	1	1	0	1	1	1	0	0	0	1	1	1	1	1	0	1	1	1	1	5	2.4%	17
Wind direction/runway usability		0	0	0	0	1	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	6	2.9%	16
Road - Distance from Tashkent [km]		0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	4	1.9%	18
Rail - Distance from Tashkent [km]		0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	19	9.0%	3
Rail - Required infrastructure upgrades [km]		1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	4.3%	13
Eastward expansion Tashkent City area affected by 55 dB(A) noise contours [ha]		0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	1	1	1	0	7	3.3%	15
Topography		0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	1	0	0	8	3.8%	14
Geology and Seismicity		0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	1	1	0	12	5.7%	10
Geohydrology		1	0	1	0	1	1	1	0	0	0	0	0	1	1	1	0	1	1	1	1	210	100%	

Figure 2-48 Comparison Matrix to Calculated Criterion Weightage (NACO)

Assessment of Potential Noise Impacts

A preliminary noise assessment was also considered during the master planning stage, particularly looking at nearby receptors that will be impacted with noise levels of 65 and 55 dB(A).

The impact of noise depends on the expected fleet mix of the airport. At this stage this information is not available and therefore the detailed calculation of the noise cannot be performed. To get an estimate of the impact of noise, the noise contours of a comparable airport are selected, using current generation aircraft, in order to estimate the residential areas affected by these noise contours. This is only for the purpose of the initial site selection, and these indicative contours are not specifically calculated for the new Tashkent Airport. Traffic volumes and runway usage may be different, as well as the Standard Instrument Departures (SIDs) and Standard Instrument Arrivals (STARs).

A preliminary assessment of noise impacts was carried out by NACO as part of the site selection study using a 2 run-way system with 31 million Annual Passengers (MAP) and 535 daily aircraft movements. The indicative noise contours for each site are plotted in Figure 2-49.

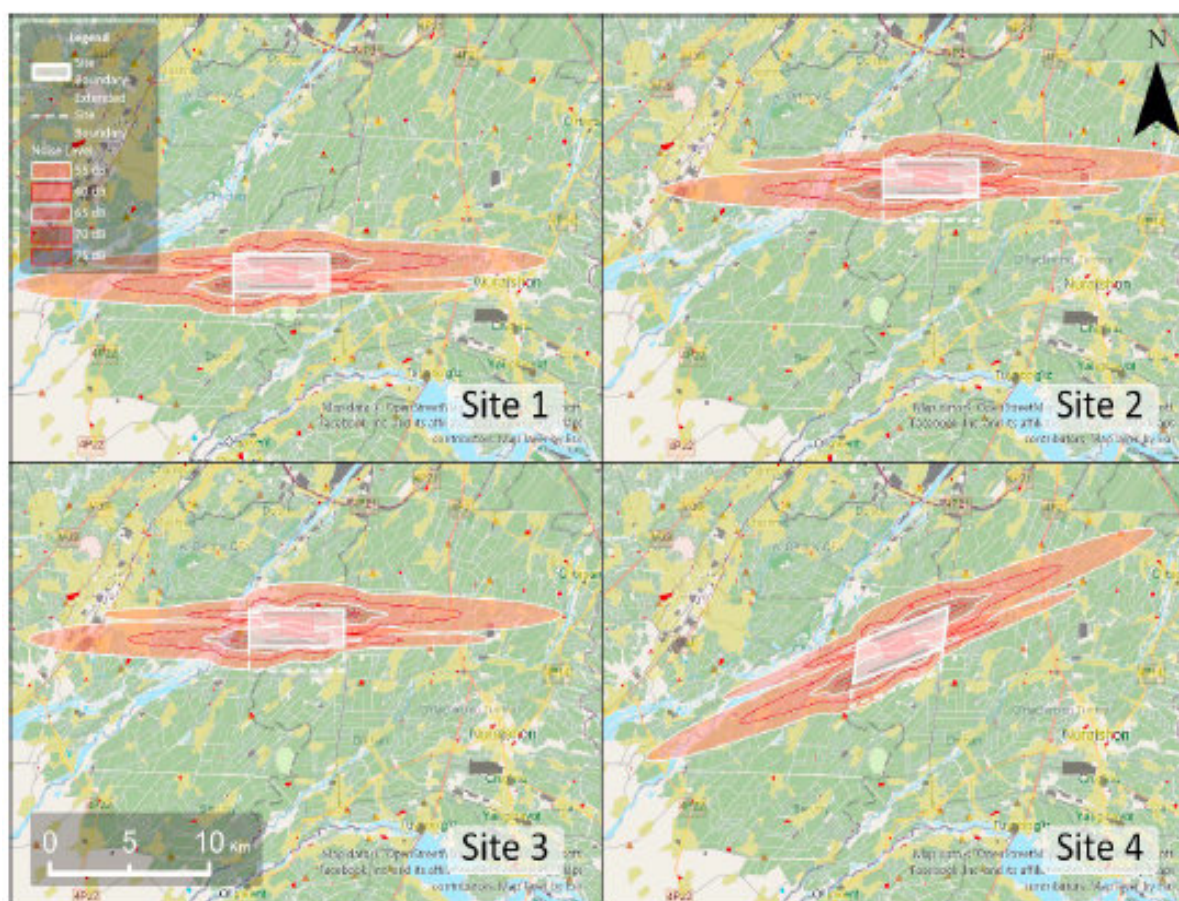


Figure 2-49 Indicative Noise Contours for Each Site

As outlined earlier, the site selection process, undertaken at the feasibility stage by NACO applied a structured multi-criteria assessment to evaluate alternative locations. This approach incorporated environmental and social considerations, including noise exposure, residential areas (as a proxy for potential displacement), and sensitive receptors, alongside technical and operational factors.

Consistent with the requirements of IFC PS1 and EBRD ESR 1, the assessment of alternatives sought to avoid or minimise adverse environmental and social impacts at source, in accordance with the mitigation hierarchy. Within this framework, noise exposure and the extent of residential areas affected were key differentiating factors between site options.

The comparative assessment indicated that Site 4 results in relatively lower exposure of residential receptors to aircraft noise, including reduced interaction with densely populated areas when compared to other shortlisted sites. In contrast, alternative sites would have resulted in greater overlap with residential areas, thereby increasing the potential for both direct impacts (including displacement) and indirect impacts (such as long-term noise exposure).

On this basis, Site 4 was identified as the preferred option, as it provides a more favourable outcome in terms of minimising environmental and social impacts, particularly by reducing the number of people exposed to aircraft noise and associated disturbances. This reflects the application of the mitigation hierarchy, whereby impact avoidance has been prioritised through site selection, consistent with the objectives of IFC PS1 and EBRD ESR 1.

Based on the assessment of the 4 site options and using the scoring criteria mentioned above, Site 4 was selected as the most favourable as outlined in Table 2-9.

Table 2-9 Alternatives Selection Outcome

Criteria	Site 1	Site 2	Site 3	Site 4
Total Score	0.57	0.77	N-Go	0.83
Overall Ranking	3	2	4 (No-go)	1 (Best)

3.0 Regulatory Framework

3.1 National Regulations

3.1.1 Constitution of Uzbekistan

The Constitution of Uzbekistan has been amended following a referendum that took place on 30th of April 2023. Key constitutional reforms include:

- Uzbekistan is a legal, social, and secular state.
- Human rights may be restricted in order to maintain social morality and public order (for instance, homosexuality, considering cultural and religious perceptions of majority of population).
- Land can be private property (it is expected that more cases of owning land will be allowed, compared to the previous years when ownership status was granted in very few case).
- Prohibition of death penalty.
- Moreover, the following articles of the Constitution may be applicable for provisions relating to environmental and social aspects:
 - o Article 30. No one shall be convicted, punished, deprived of property, or any other right on the basis of a law that is not publicly promulgated.
 - o Article 40. Everyone shall have the right, both individually and collectively, to submit applications, proposals, and to lodge complaints with competent state bodies and organizations, citizens' self-governing bodies, officials and public representatives. Such applications, proposals and complaints shall be considered in accordance with the procedure and within the time-limit specified by law.
 - o Article 41. Everyone shall have the right to own property. The privacy of bank operations, deposits, and accounts, as well as the right to inheritance shall be guaranteed by law.
 - o Article 42: Everyone shall have the right to decent work, to free choice of profession and occupation, favourable working conditions that meet the requirements of safety and hygiene, to fair remuneration for work without any discrimination and not below the established minimum wage, as well as the right to unemployment protection in the manner prescribed by law. The minimum wage shall be determined taking into account the need to ensure a decent standard of living for a person. It shall be prohibited to refuse to hire women, dismiss them from work and reduce their wages on the basis of pregnancy or having a child.
 - o Article 44: Any forced labour shall be prohibited, except as punishment under the court decision, or in some other Instances specified by law. Any form of child labour that poses a threat to the health, safety, morality, mental and physical development of the child, including those that prevent him or her from getting an education, shall be prohibited.
 - o Article 49: Everyone shall have the right to a favourable environment, reliable information about its condition. The State shall create conditions for the implementation of public control in the field of urban planning activities in order to ensure the environmental rights of citizens and prevention of harmful environmental impact. Draft urban planning documents shall be subject to public discussion in the manner prescribed by law. The State, under the principle of

sustainable development, shall implement measures to improve, restore and protect the environment, maintain ecological balance.

- o Article 58. Women and men shall have equal rights. The State shall ensure equal rights and opportunities for women and men in the administration of public and state affairs and in other spheres of social and state life.
- o Article 61. It is the duty of citizens to protect the historical, spiritual and cultural scientific and natural heritage of the people of Uzbekistan. The historical, spiritual, cultural, scientific, and natural heritage shall be protected by the state.
- o Article 62. Citizens shall be obliged to protect the environment.
- o Article 65. The basis of the economy of Uzbekistan, evolving to enhance the well-being of citizens, shall be a property in its various forms. The State shall create the conditions for the development of market relations and fair competition, and guarantee the freedom of economic activity, enterprise and labour, taking into account the priority of consumer rights. Equality and legal protection of all forms of property shall be ensured in Uzbekistan. Private property shall be inviolable. An owner may not be deprived of his or her property except in the cases and according to the procedure prescribed by law and on the basis of a court decision.
- o Article 66. An owner, at his/her discretion, shall possess, use and dispose of his/her property. The use of any property must not be harmful to the environment or violate the rights and legitimate interests of other persons, society and the state.
- o Article 68. The land, its minerals, waters, flora and fauna, other natural resources shall constitute the national wealth and shall be rationally used and protected by the state. Land may be privately owned on the terms and in the manner prescribed by law, which ensure its rational use and protection as national wealth.

3.1.2 Law on Nature Protection, 1992 (as Amended in 2025)

This Law is the key national environmental law for the protection of the environment and the sustainable use of resources and the right for the population to a clean healthy environment. This law states legal, economic, and organisational basis for the conservation of the environment and the rational use of natural resources.

Article 24 of this law states that the State Environmental Expertise (SEE) is a mandatory measure for environmental protection, preceded to decision making process. In addition, the law prohibits the implementation of any Project without approval from SEE.

It should be noted that Article 53 of this law confirms that if an international treaty concluded by the Republic of Uzbekistan establishes rules other than those provided for by the legislation of the Republic of Uzbekistan on nature protection, the rules of the international treaty shall be applied, except in cases where the legislation of the Republic of Uzbekistan establishes stricter requirements.

3.1.3 Law on Environmental Control, 2013 (as Amended in 2024)

The Law generally provides for the protection of the environment and natural (ecosystem) resources in Uzbekistan. The main objectives of this law include:

- Prevention, detection, and suppression of violation of legislative requirements relating to environmental protection and rational use of natural resources.
- Monitoring the state of the environment, identifying situations that can lead to environmental pollution, irrational use of natural resources, pose a threat to the life and health of citizens.

- Determination of compliance with environmental requirements of any ongoing economic development activities.
- Ensuring compliance with the rights and legitimate interests of legal entities and individuals performing their duties in relation to environmental protection and sustainable use of natural resources.

The Article 7 of this law states that, the objects of environmental control are:

- Land, its subsoil, waters, flora and fauna, and atmospheric air;
- Natural and man-made sources of impact on the environment; and
- Activities, action, or inaction that may lead to pollution of the environment and irrational use of natural resources, create a threat to the life and health of citizens.

3.1.4 Law on Ambient Air Protection” (1996, as amended in 2025)

This Law specifies regulations on air protection and its objectives. It also includes standards, quality and negative impact, norms, and requirements on fuels and lubricants, the production and operation of vehicles and other machinery and equipment, ozone layer protection requirements, the obligations of enterprises, institutions and organizations toward air protection, and compensations for damages from air pollution.

3.1.5 Law on Amendments and Additions to the Code of the RUz on Administrative Responsibility in Connection with the Establishment of Mandatory Requirements for the Elimination of Dust and Sand Particles Rising into the Air at Construction Sites” (2025)

This Law introduces amendments and additions to the Code of the Republic of Uzbekistan on Administrative Liability, establishing liability for failure to comply with air quality protection requirements at construction sites. It will improve the environmental situation, prevent air pollution, and increase the environmental responsibility of construction organization officials.

3.1.6 Law on Wastes (2002, amended in 2023)

This Law addresses waste management, exclusive of emissions and air and water pollution, and confers authority to the NCECC concerning inspections, coordination, and environmental expertise. It also establishes certain parameters regarding locations for waste disposal. The key objective of this law is to prevent negative effects of solid wastes on people’s lives and health, as well as on the environment, reduce waste generation, and encourage rational use of waste reduction methods in household activities.

3.1.7 Water Code of the Republic of Uzbekistan (2025)

This Code regulates relations in the field of use, protection, and management of water resources. It establishes the legal framework for state governance of water resources, defines the rights and obligations of water users, and ensures the rational, sustainable use and protection of waters from pollution, depletion, and harmful impacts.

3.1.8 Law on the Protection and Use of Flora” (2016, amended in 2024)

This Law regulates relations in the field of protection and use of the plant world growing in natural conditions, as well as wild plants contained in the conditions of culture for their reproduction and conservation of genetic resources.

3.1.9 Law on Amendments and Additions to Certain Legislative Acts of the RUz Aimed at Strengthening the Protection of Fauna and Flora” (2024)

This Law regulates the strengthening of protection of flora and fauna by introducing amendments and additions to the Criminal Code, the Code of Administrative Responsibility, and other legislative acts.

3.1.10 Law on Protection and Use of Wildlife” (2016, amended in 2024)

This Law regulates relations in the field of protection, use, restoration and reproduction of wildlife in order to ensure the conditions of its existence, conservation of species diversity, integrity of natural communities and habitat.

3.1.11 Law on Protected Natural Areas” (2004, amended in 2025)

The purpose of this Law is to regulate relations in the field of organization, protection and use of protected natural areas.

3.1.12 Law on Amendments and Additions to the Law of the RUz "On forests” (2018, amended in 2025)

This Law introduces updates to the national forestry legislation aimed at improving the legal framework for sustainable forest management, strengthening forest protection and restoration measures, and enhancing the rational use and conservation of forest resources.

3.1.13 Law on Environmental Audit (2021, amended in 2024)

The Environmental Audit Law was adopted to regulate environmental audits in the field of environmental protection and rational use of natural resources, including voluntary or mandatory environmental audits. The Law states that *‘an environmental audit can be carried out on a voluntary form by businesses with low or insignificant (local) risk of environmental impact and on a mandatory form on an annual basis for businesses with high and medium risk of environmental impact’*.

An environmental audit is not a substitute for environmental control; however, in case of a positive conclusion of the audit, a business entity is not subject to an inspection by the State Committee on Ecology and Environmental Protection for one year, except for accidents and emergencies, as well as in connection with the investigation of criminal cases or by order of the President of the Republic of Uzbekistan or the Cabinet of Ministers of the Republic of Uzbekistan. The environmental audit is carried out on the basis of a contract concluded between the environmental auditing organisation and the client of the environmental audit. The Law came into force in March 2022.”

3.1.14 Presidential Decree No. 5863 on Environmental Protection Strategy (2019, amended in 2024)

The Strategy contains measures to preserve the environment (atmospheric air, water, land, soil, subsoil, biodiversity, protected areas) from anthropogenic impact and other negative factors, expand protected areas, and improve the environmentally safe system of waste management.

The Strategy approved 24 target tasks until 2030, which aim to increase the area of forest plantations, restoration and reclamation of disturbed lands, rational use of water resources, reduction of emissions into the air, protection and reproduction of biological resources, and improvement of the waste management system.

Through the implementation of the Strategy, the following are expected to be achieved:

- Increasing the area of forest plantations on the Uzbek part of the dried Aral Sea bed from 28% (0.9 million ha) to 60% (2 million ha);
- Reduction of pollutant emissions by 10% (from 2.492 million to 2.243 million tonnes);
- Converting 80% (about 6,500) of public transport to natural gas and electric propulsion;
- Increasing the area covered by forest from 3.2 million to 4.5 million hectares;
- Increasing the area of protected areas from 3.5 percent (1.5 million hectares) to 12 percent (5.4 million)
- Increasing the coverage of solid domestic waste collection and transportation services from 48% (16 million people) to 100%;
- Increasing solid domestic waste processing from 18% (1.3 million tonnes) to 65% (4.6 million tonnes).

3.1.15 International Civil Aviation Organization (ICAO) Standards

The International Civil Aviation Organization (ICAO) is a United Nations agency which helps 193 countries to cooperate together and share their skies to their mutual benefit. One of the main functions of ICAO is the development and adoption of international Standards for uniform application in global civil aviation. Such Standards are currently set out in 19 Annexes to the Chicago Convention.

On July 3, 1992, the Parliament of Uzbekistan ratified the Convention on International Civil Aviation (Resolution of the Supreme Council No. 666-XII of July 3, 1992) and on November 12, 1992, the Republic of Uzbekistan became a full member of the ICAO, having assumed the relevant obligations. Aviation regulations of the Republic of Uzbekistan and other regulatory documents in the field of civil aviation of the republic are adopted on the basis of international ICAO standards. The requirements set by ICAO will also be used as a basis for environmental quality standards at airports.

3.2 Other Environmental Laws and State Regulatory Standards

The following laws focused on the protection of specific environmental/ natural resource elements are in effect and applicable to the Project.

- The Law “On the sanitary and epidemiological well-being of the population” (2015, as amended in 2023).
- The Resolution of the Cabinet of Ministries of the Republic of Uzbekistan №541 “On further improvement of the environmental impact assessment mechanism” (2020, as amended in 2024).
- The Resolution of Cabinet of Ministries of the Republic of Uzbekistan №820 “On measures to further improve the economic mechanisms for ensuring nature” (2018, as amended in 2025).
- The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No 14. “On approval of the regulation on the procedure for the development and agreement of projects with environmental standards” (2014, as amended in 2018).
- Resolution of Cabinet of Ministers of Republic of Uzbekistan No.95 “On approval of general technical regulations of environmental safety” (2020, as amended in 2022).
- SanR&N No 0350-17 - Sanitary rules and norms for the protection of atmospheric air in places of the Republic of Uzbekistan;
- SanR&N No 0339-16 - Sanitary rules and norms for planning and development of populated areas of Uzbekistan;

- SanR&N No 0083-24 – Sanitary rules, norms and hygienic standards for the protection of underground and surface water bodies;
- SanR&N No 0202-06 - The procedure for issuing permits for special water use, development and approval of projects of maximum permissible discharges (MPD) of substances entering with wastewater into water bodies and on the terrain;
- SanR&N No 0053-23 – “Hygienic standards. The list of maximum permissible concentrations of pollutants in the ambient air of settlements in the territory of the RUz”;
- SanR&N No 0212-06 - Hygienic assessment of the degree of soil pollution of different types of land use under specific conditions of Uzbekistan;
- SanR&N No 0183-05 - Hygienic requirements for the quality of the soil in settlements areas in specific natural and climatic conditions of Uzbekistan;
- O'zMSt 133:2024 - National Standard of Uzbekistan. Drinking water. Hygienic requirements and quality control;
- O'zDSt 1057:2004 - Vehicles. Safety requirements for technical conditions;
- CR&N No 2.01.08-96 - Noise protection;
- CR&N No 3.01.02-00 - Construction Safety Standards.

3.2.1 Laws relating to Land Rights, Acquisition, and Resettlement

The following laws govern the process of land tenure, expropriation, and reallocation in Uzbekistan.

- Civil Code of the Republic of Uzbekistan (1997, as amended in 2025);
- Land Code of the Republic of Uzbekistan (1998, as amended in 2025, and with ongoing amendments);
- Law of the Republic of Uzbekistan on State Land Cadastre No.666-I (1998, as amended in 2025);
- Presidential Decree № UP-5495. Decree “On measures on cardinal improvement of investment climate in the Republic of Uzbekistan” (2018, as amended in 2024);
- Appendix No. 2 to the Resolution of the Cabinet of Ministers No. 146 (2011, as amended in 2024), regulation “On the Procedure for Compensation for Losses of Land Owners, Users, Tenants and Owners, as well as Losses of Agricultural and Forestry Production”;
- Resolution No. 911 of the Cabinet of Ministers (2019, as amended in 2024) “On the Procedure for withdrawal of land plots and compensation to owners of immovable property located on the land plot;
- Presidential Decree No. DP-6243, “On measures to ensure equality and transparency in land relations, reliable protection of rights to land and their transformation into market assets” (2021, as amended in 2025);
- Law No 781 “On procedures for the withdrawal of land plots for public needs with compensation” (2022, as amended in 2024).

3.2.2 Laws Relating to Labour and Employment

The following laws pertain to the recruitment and management of labour in Uzbekistan, and the protection of labour rights within the workplace.

- Labour Code of the Republic of Uzbekistan (1996, as amended in 2025)

- Law “On the employment of the population” No. 642 (2020, as amended in 2025);
- Decree of the Cabinet of the Ministers No. 965 "On the measures of further improvement of the procedure of establishment and reservation of minimum number of job places for the job placement of persons who are in need of social protection and face difficulties in searching employment and incapable of competing in labour market with equal conditions" (2017, as amended in 2020);
- Decree of the Cabinet of the Ministers No. 964 "On the measures for further improvement of the activity of self-government bodies aimed at ensuring employment, firstly for the youth and women" (2017, as amended in 2025).

3.2.3 Law Relating to Archaeology and Cultural Heritage

The laws pertaining to the exploration, protection and preservation of archaeological resources and cultural heritage sites in Uzbekistan are listed below.

- Constitution of the Republic of Uzbekistan, the Criminal Code of the Republic of Uzbekistan (2023);
- Law “On protection and use of the objects of archaeological heritage” (2009, as amended in 2021);
- Law “On protection and use of cultural heritage (2001, as amended in 2022).

3.3 Management of Public Grievances

The Law LRU-445 “On Amendments and Additions to the Law of the Republic of Uzbekistan “On Appeals of Individuals and Legal Entities” (2017, as amended in 2024). The purpose of this Law is to regulate the procedures and relations concerning appeals submitted by individuals and legal entities to state bodies, state institutions, and their officials. It also applies to organizations with state participation and citizen self-governance bodies.

However, this Law does not apply to appeals governed by specific procedures established under other legislative frameworks, including those related to administrative liability, civil, criminal, and economic procedural laws, as well as criminal-executive legislation and other relevant legal acts.

In addition to the above, the Law regulates the appeals of individuals and legal entities to state bodies as well as to their officials. Appeals can be oral, written, or electronic and regardless of their form and type are of equal importance. A people’s ‘Reception Office’ is tasked with organising a direct dialogue with the population, ensuring the functioning of an effective system of appeals aimed at the full protection of their rights, freedoms and legitimate interests. Any applications are considered within 15 days from date of receipt, and any additional consideration is completed within 1 month.

3.4 International Conventions and Protocols

Uzbekistan is signatory to a number of effective international conventions pertaining to environmental management, social sustainability, climate change and human rights. The nationally binding E&S commitments enshrined in these accords will apply to the Project, as listed in Table 3-1.

Table 3-1 International Protocols and Conventions

Name of International Protocol/Convention	Signed/ Ratified	Relevance to the Project
UN Framework Convention on Climate Change	Accession: 20 June 1993	The Project will comply with all national standards for GHG emissions in order to contribute to Uzbekistan's targets.
Kyoto Protocol to UNFCCC	Ratified: 12 th October 1999	
Paris Agreement to UNFCCC	Signed: 19 th April 2017	
Montreal Protocol on Substances that Deplete the Ozone Layer (with London, Copenhagen, Montreal amendments)	Accession: 10 th June 1998	The Project will support Uzbekistan's contribution towards the protection of the ozone layer by refraining from use of ozone depleting substances.
Vienna Convention on the Protection of Ozone Layer	Accession: 18 May 1993	
UN (Rio) Convention on Biological Diversity	Accession: 19 th July 1995	The Project will implement mitigation and management measures to ensure the conservation and protection of terrestrial and canal ecology during the Project lifecycle.
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Accession: 10 th July 1997	The Project staff and workers will be strictly forbidden from trading in any wild flora and fauna found in the Project site or outside the Project boundaries.
Convention on Migratory Species of Wild Animals	1 May 1998	The project will implement mitigation and management measures to ensure conservation of terrestrial and avian migratory species where identified.
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	Accession: 7 th February 1996	The Project will be required to adhere to all national and international standards for hazardous waste generation and management.
United Nations Convention to Combat Desertification	Ratified: 31 August 1995	The Project will not result in accelerated desertification through sourcing of its materials and will contribute to sustainable development.
UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes	Accession: 4 th September 2007	The canal south of the project site is found between the border of Uzbekistan and Tajikistan. Therefore, the Project will ensure that any impacts to the canal i.e. discharge are mitigated and managed in accordance with the national and lenders requirements.
Paris Convention on Protection of the World Cultural and Natural Heritage	Succession: 13 th January 1993	The Project will implement mitigation and management measures where items/sites/monuments of cultural or natural heritage are identified within or near the Project

Name of International Protocol/Convention	Signed/Ratified	Relevance to the Project
		boundaries and notify the relevant authorities immediately.
Stockholm Convention on Persistent Organic Pollutants	Accession: 28 th June 2019	The Project will implement control measures to eliminate any use of chemicals under Annex A and B and reduce the unintentional release of those under Annex C.

3.5 Institutional Framework

Key organisations with responsibility for environmental management in Uzbekistan are:

- National Committee on Ecology and Climate Change of Republic of Uzbekistan (NCECC)³.
- The Centre for State Ecological Expertise, which is under the NCECC.
- The Cabinet of Ministers of the Republic of Uzbekistan governs the executive body in the Republic of Uzbekistan following the Constitution of the Republic of Uzbekistan (Article 98), and the Law of the Republic of Uzbekistan “On the Cabinet of Ministers of the Republic of Uzbekistan” (new edition of 2019). The COM exercises the following main functions.

The National Committee on Ecology and Climate Change of Republic of Uzbekistan (NCECC) is the main regulating body of state administration on environmental protection issues. The primary responsibilities of the NCECC include ensuring the implementation of a unified state policy on environmental safety, environmental protection, and the use and reproduction of natural resources; and enforcing state control over the compliance of ministries, state committees, departments, enterprises, institutions, and organisations, as well as individuals, with respect to the use and protection of land, mineral resources, water, forests, flora and fauna, and atmospheric resources. Structurally, the NCECC consists of the central unit (located in Tashkent), regional units (viloyat) and local (district) units.

The Centre for State Ecological Expertise: The Centre for State Ecological Expertise's activities are directly related to the evaluation of materials for EIA and the issuance of documents determining compliance with environmental requirements for planned or executed business and other activities, as well as determining the admissibility of the implementation of the object of environmental expertise.

Due to the cross-cutting nature of sustainable development and the environment, virtually all other state bodies have some responsibility towards them. Other Ministries, Departments and Agencies (MDAs) related to E&S impact management will also contribute to the Project.

Table 3-2 Main National Institutions and Roles

Name of Institution	Main Role
Ministry of Transportation of the Republic of Uzbekistan	The Ministry of Transportation of the Republic of Uzbekistan is the authorised state body for implementation of current Project from the side of GoU

³ In accordance with UP-217 "On measures to create a management system for promptly responding to public demands in the areas of ecology and tourism" dated November 18, 2025, the Ministry of Ecology and Environmental Protection and Climate Change (MEEPCC) was renamed to the National Committee on Ecology and Climate Change of Republic of Uzbekistan (NCECC).

Name of Institution	Main Role
National Committee on Ecology and Climate Change of Republic of Uzbekistan	National Committee is responsible for managing environmental monitoring for industrial facilities. It reviews and issues technical conditions for construction and operation of facilities, both planned and existing.
Sanitary and Epidemiological Welfare and Public Health Service of The Republic of Uzbekistan	Responsible for determining the Health Protection Zone (HPZ) under the Ministry of Health. The HPZ applicable for the Project is determined this government organisation.

3.6 Requirements for National EIA

The national environmental assessment procedure is regulated by the law "On Environmental Review, Environmental Impact Assessment, and Strategic Environmental Assessment" (2025) and the regulation "On Further Improvement of the Environmental Impact Assessment Mechanism", approved by Resolution of the Cabinet of Ministers No. 541 (2020, last amended 2024). The resolution specifies the legal requirements for environmental assessment documents in Uzbekistan. According to the Law, environmental assessment is a procedure aimed at establishing the compliance of the planned and (or) planned or implemented economic and other activities with environmental requirements and determining the admissibility or inadmissibility of the implementation of the object of environmental assessment.

The environmental assessment stages and their required results are summarized as follows:

Stage I: A Preliminary Environmental Impact Statement shall be prepared during preparation of a proposed project prior to any fund allocation for development.

Stage II: An Environmental Impact Statement shall be carried out on a basis of a conclusion of the environmental expertise issued at the first stage of the assessment. The second stage of the assessment is also submitted to the CSEE, and the conclusion must be received before the start of construction.

Stage III: State Environmental Consequences is the final stage of the SEE process and shall be carried out prior to the project start. The report will include (i) a detailed description of changes to be made to the project design as a result of the CSEE review during the first two stages of the environmental assessment process, (ii) comments received during public consultations, (iii) environmental standards applicable to the project, (iv) environmental monitoring requirements related to the project, and (v) the key opinion.

Before start of any construction works it is necessary to obtain permission – positive conclusion from NCECC for Stage I, and if required from Stage II.

Commissioning and operation of Projects is possible only after receipt of permission – positive conclusion for Stage III.

Public Participation in National EIA

Based on changes in the national legislation regarding the national EIA process, public consultation is now a mandatory part of the first EIA stage.

According to the Resolution of the Cabinet of Ministries of the Republic of Uzbekistan on "Further Improvement of the Environmental Impact Assessment Process" No. 541 dated 7th September 2020, the procedure of conducting public consultations is as follows:

- Annex 3 of the Resolution No 541 – Rules and regulations for conducting public consultations states that public consultations should include discussions and decision

making regarding planned activities (for construction of any facility) that may have negative impacts on the environment.

- A non-technical summary regarding any planned project activity that is categorized as I & II group (in accordance with national requirements for categorization) shall be prepared. The NTS should include information about the following:
 - o Brief description of the project.
 - o Technology solutions and alternative options for the project.
 - o Current state of the environment at the selected project site.
 - o A brief assessment of socio-economic conditions.
 - o Brief description of the causes and type of negative impacts on the environment as a result of the project.
 - o Forecast and assessment of possible changes in the state of the environment, socio-economic conditions.
 - o Forecast and assessment of project and non-project risks.
 - o Measures to prevent, minimise and/or compensate for adverse impacts; and
 - o Assessment of possible significant adverse cross-border impacts.
- A public consultation shall be based on the review of non-technical summary by providing equal rights to all participants to express their concerns, opinions, and suggestions.
- The following entities shall be considered as part of public consultations:
 - o Representatives of local departments of State Committee on Ecology and Environmental Protection who will be considered as observers of public consultations.
 - o Local municipalities (considered as the responsible organisation for organising and inviting participants to the meetings).
 - o NGOs'.
 - o All organisations interested in the project.
 - o Local communities.
 - o Mass media.
- Expenses, if any, related to the public consultations are to be financed by the Project Developer.

In addition to the above national requirements on conducting public consultations, the Law of the Republic of Uzbekistan "Regarding Appeals of Individuals and Legal Entities" No 378 dated 3.12.2014 (with amendments on 17th August 2017) and the new edition of this law, the Law of the Republic of Uzbekistan "On Amendments and Additions to the Law of the Republic of Uzbekistan "On Appeals of Individuals and Legal Entities" No 445 dated 12.09.2017 (with amendments on 21 September 2024), regulates the appeals of individuals and legal entities to state bodies as well as to their officials. Appeals can be oral, written, or electronic and regardless of their form and type are of equal importance. A people's "Reception Office" is tasked with organising a direct dialogue with the population, ensuring the functioning of an effective system of appeals aimed at the full protection of their rights, freedoms and legitimate interests. Any applications are considered within 15 days from date of receipt, and any additional consideration is completed within 1 month.

3.7 Lenders' Requirements

Project finance from lenders will necessitate compliance with certain internal policies/safeguards to protect lenders investments from environmental and social risks. Where such policies/safeguards are not developed internally by the banks, it is expected that the lenders may be signatories of voluntary agreements such as the Equator Principles.

Based on the target lenders, the requirements of the lenders are initially interpreted herein as meaning the standards and guidelines set out by:

- International Finance Corporation (IFC) – Performance Standards;
- European Bank for Reconstruction and Development (EBRD) – Environment & Social Policy and Environmental and Social Requirements (ESRs);

All of the above require a certain level of environmental assessment, including various considerations and on-going environmental management throughout the Project lifetime.

3.7.1 IFC Performance Standards

Note: As also applied by EPIV, OECD Common Approaches and other lenders.

The IFC Performance Standards and World Bank Group EHS Guidelines are applicable on IFC financed projects but are also necessary for compliance under Equator Principles Financial Institution financed projects (ref. EP 3), and projects financed by Export Credit Agencies (under the OECD Common Approaches). IFC Performance Standards (PS) (2012) are set out below:

- PS1 - Assessment and Management of Environmental and Social Risks and Impacts
- PS2 - Labour and Working Conditions
- PS3 - Resource Efficiency and Pollution Prevention
- PS4 - Community, Health, Safety & Security
- PS5 - Land Acquisition and Involuntary Resettlement
- PS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources
- PS7 - Indigenous people
- PS8 - Cultural Heritage.

3.7.2 WBG/IFC EHS Guidelines and Sector Specific Guidelines

- WBG/IFC EHS Guidelines with particular relevance to:
 - o WBG/IFC General EHS Guidelines (2007);
 - o WBG/IFC Industry Sector EHS Guidelines, Airports (2007).

3.7.3 EBRD E&S Policy and E&S Requirements:

The latest E&S Policy of EBRD (Oct 2024) and their Environmental and Social Requirements (ESR) are outlined below:

- ESR1 - Assessment and Management of Environmental and Social Risks and Impacts
- ESR 2 - Labour and Working Conditions
- ESR 3 - Resource Efficiency and Pollution Prevention and Control
- ESR 4 - Health, Safety and Security

- ESR 5 - Land Acquisition, Restriction on Land Use and Involuntary Resettlement
- ESR 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESR 7 - Indigenous People
- ESR 8 - Cultural Heritage
- ESR 9 - Financial Intermediaries, and
- ESR 10 - Stakeholder Engagement.

3.7.3.1 European Union Substantive Environmental Criteria

The EBRD E&S Policy requires EBRD-financed projects to be structured in line with relevant European Union (EU) environmental principles, practices and substantive standards, where these can be applied at project level, irrespective of the geographical location of the Project.

Accordingly, the relevant technical chapters of this ESIA have considered applicable national legislation, international good practice and, where relevant, EU substantive environmental requirements to inform the assessment methodology and the identification of mitigation measures. The applicability of specific EU substantive requirements has been considered in the context of the nature, scale and characteristics of the Project and the corresponding technical discipline.

A screening of the relevant EU substantive environmental requirements considered in the preparation of this ESIA is provided later within this chapter.

3.7.4 DFC Environmental and Social Policy

The U.S. International Development Finance Corporation (DFC) Environmental and Social Policy and Procedures (ESPP, 2024) establishes the framework for ensuring that DFC-supported projects are environmentally and socially sustainable. The policy is aligned with international best practice and adopts the IFC Performance Standards and WBG EHS Guidelines as its core requirements.

DFC applies a risk-based approach to project assessment, including screening, categorisation (Category A, B, or C), and proportional environmental and social review based on the scale and significance of potential impacts. Projects are required to identify and manage risks across the full project lifecycle, including construction, operation, and decommissioning.

Climate considerations are integrated into project evaluation, including greenhouse gas accounting, energy efficiency, and climate resilience, alongside alignment with low-carbon development pathways.

Overall, the DFC ESPP ensures that projects are developed in a manner that is environmentally sound, socially responsible, and consistent with international standards, while promoting sustainable development outcomes.

3.7.5 KEXIM E&S Policy

KEXIM's E&S policy is a comprehensive approach to managing the environmental and social impacts of its financed projects. The bank's E&S due diligence process involves assessing historical E&S related risk incidents and relevant reputations of project parties, which is crucial for the internal credit approval process. KEXIM has established a department dedicated to E&S related tasks and has developed an ESG roadmap covering its overall day-to-day operations. The bank also participates in multilateral discussions and shares knowledge with other government agencies and international organizations to address E&S issues.

3.7.6 JBIC E&S Policy

JBIC has established the Guidelines for Confirmation of Environmental and Social Considerations, which provide the framework for ensuring that JBIC-supported projects are developed in an environmentally and socially responsible manner. The current version of the Guidelines came into effect in July 2022 and is aligned with international good practice, including reference to the IFC Performance Standards and the WBG EHS Guidelines.

The Guidelines apply a risk-based approach to project screening and categorisation (Category A, B, C, and FI), considering the scale, location, sensitivity, and potential environmental and social impacts of projects. JBIC's review process considers direct, indirect, cumulative, and associated facility-related impacts, as well as impacts throughout the project lifecycle, including construction, operation, and decommissioning.

3.7.7 NEXI E&S Policy

The environmental and social framework of NEXI is set out in its Guidelines on Environmental and Social Considerations in Trade Insurance, which establish the requirements for assessing and managing environmental and social risks associated with projects supported by NEXI. The Guidelines are aligned with international good practice and reference international standards, including the IFC Performance Standards, OECD Common Approaches, and relevant international environmental and social frameworks.

3.7.8 OECD Common Approaches

The Recommendation sets out 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 Adherents' decision making and risk management systems. This includes the following steps by Adherents:

- **Screening**, with the aim of identifying which applications for officially supported export credits should be classified and, where appropriate, subsequently reviewed;
- **Classification** to identify the potential positive and negative environmental and social impacts, using three categories for the classification of applications (Category A, B and C projects. An illustrative list of Category A projects is set out in Annex I of the Recommendation);
- **Environmental and Social Review**, undertaken in accordance with the international standards applied to the project as set out in the Recommendation;
- **Evaluation, Decision and Monitoring**, resulting from the screening and review of projects;
- **Exchange and Disclosure of Information** to share experiences and exchange information with other Adherents, financial institutions and the wider public; and
- **Reporting and Monitoring of the Recommendation** to build a body of experience on the application of the Recommendation through regular reporting and exchanges of information with the aim of improving common practices, developing guidance, and promoting a level playing field.

3.7.9 Other Applicable Environmental and Social Standards

Besides those outlined above, the RFP also highlights that the following standards should be considered as part of the scope of work:

- "Chicago Convention" - Convention on International Civil Aviation (CICA), in particular Annex XVI Volume IV on Environmental Protection;

- United Nations, International Civil Aviation Organization (ICAO) Documents and Resolutions:
 - o Doc. 9829, the Balanced Approach to Aircraft Noise and including Resolution A39-1 on ICAO Circular Community Engagement on Aviation Environmental Management complementing the current policy of aircraft noise management at and around airports
 - o ICAO factsheets Water Management at Airports, Aviation and Changes to Biodiversity, Aviation and Precipitation;
- United States Federal Acts, Codes, Agencies and Regulations:
 - o United States Federal Aviation Administration (FAA), Code of Federal Regulations (CFR), Federal Aviation Regulation (FAR) 14, parts 150 and 161 on noise and planning for noise at airports and other relevant parts;
 - o United States FAA Consultant Circulars;
 - o United States Environmental Protection Agency (EPA) National Ambient Air Quality Standards (NAAQS);
 - o United States Occupational Health and Safety Administration (OSHA)
- Airport Council International (ACI) World ESG Management Best Practices
- International Organization for Standardization (ISO)

3.7.10 Screening Against EU Substantive Environmental Requirements

Table 3-3 summarises the principal EU environmental legislation considered, its relevance to the Project, and where the corresponding requirements have been addressed within this ESIA. The screening is intended to demonstrate consideration of the relevant EU substantive environmental requirements and does not constitute a formal legal compliance assessment against the full body of EU environmental legislation.

Detailed consideration of the relevant requirements is presented within the relevant technical chapters.

Table 3-3 EU Substantive Requirements Screening

Topic	Relevant EU Substantive Requirements	Assessment Outcome
Air Quality	Ambient Air Quality Directives	Relevant ambient air quality standards as per EU Directive 2008/50/EC used in the air quality assessment in addition to national standards and WHO guidelines.
Noise	Environmental Noise Directive (principles)	Noise assessment undertaken using international practice. A Noise Management Framework will be prepared for the airport operation which follows the substantive requirements of ESR 3 and relevant EU-aligned good practice.
Water	Water Framework Directive (principles)	Surface water protection measures incorporated.
Waste	Waste Framework Directive	Waste hierarchy adopted; waste management plan to be developed.
Biodiversity	Habitats/Birds Directives (principles)	Critical habitat assessment undertaken using IFC PS6.

Topic	Relevant EU Substantive Requirements	Assessment Outcome
Climate	EU climate objectives	GHG assessment and climate resilience completed.

4.0 Approach to the ESIA

4.1 Scope of Assessment

Assessment of the Airport Facilities and Operational Activities

The primary study area comprises the Project footprint, which includes, the land, proposed physical structures, equipment and construction/operational activities inside this area. This also includes the access road.

The ESIA assesses the operational phase impacts that will result from the typical operations of the airport, whilst establishing provisions to manage environmental and social effects of reasonably foreseeable potential emergency situations.

While the sponsors scope for the project is limited to the Landside development comprising of the Terminal, the ESIA has been undertaken for the entire scope of the Project including the Public Partner's scope which includes the Airside development.

As outlined earlier in this report, the airport is planned to initially accommodate up to 20 MAP as part of the currently defined development phase. A potential future expansion to increase capacity to approximately 46 MAP has been conceptually identified for the long-term. However, this expansion is beyond the current planning horizon and remains subject to multiple uncertainties, including future passenger demand, regulatory approvals, financing arrangements, and detailed design development. As such, it is not considered reasonably certain at this stage.

Accordingly, the scope of this ESIA is limited to the initial development phase (up to 20 MAP), based on defined design parameters and operational assumptions. All assessments presented in this ESIA (including air traffic movements, noise, air quality, and associated impacts) are aligned with this development scenario to ensure consistency.

Should the future expansion be confirmed, a separate environmental and social assessment will be undertaken in accordance with applicable national and international requirements to assess the potential impacts associated with increased capacity.

4.2 Impact Assessment and Significance Criteria

In order to obtain a credible assessment of environmental and social impacts, the assignment of "effect 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 an International Best Practice based on the assumption that the significance of an impact on resources or receptors is considered to result from an interaction between three factors:

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

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

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

Identification And Evaluation of Sensitive Receptors

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);
- **Human** receptors, such as stakeholders (i.e. users of dwellings, places of recreation, places of employment, community facilities or household relocation) and human systems (e.g. employment market, population disease susceptibility and disease communicability, exposure to toxicity of chemicals).

Table 4-1 Environmental Value of Receptor or Resources

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., indigenous peoples, hospitals, schools). • Other examples are very high proportion of vulnerable groups (women, elderly, disabled, etc.) in the Project area, very frequent occurrences of gender-based violence, 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 of gender-based violence, 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 of gender-based violence, tangible or intangible cultural assets that contribute to regional research objectives, etc).
Low	• Low or medium importance and rarity on a local scale.

Sensitivity	Description of Value
	- 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, 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, 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, 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).

Identification and Evaluation of Potential Impacts

During the evaluation undertaken, the following types of impacts will be considered:

- **Direct Impacts** - Potential impacts that may result from the construction, commissioning, and operations 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 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, oil spill, etc.

Defining Impact Magnitude

The magnitude of the impact will be defined wherever possible in quantitative terms. The magnitude of an impact has a number of different 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, its frequency; and
- Its likelihood of occurrence where the impact is not certain to occur.

Where necessary, the determination of impact magnitude has been assisted through the use of computer modelling. The criteria used for identifying the magnitude of impacts is provided in Table 4-2.

Table 4-2 Criteria for Magnitude of Impacts

Magnitude	Description of Magnitude
Major	Adverse: Loss of resource and/or quality and integrity; severe damage to key characteristics, features or elements. A major impact is usually large scale, permanent and irreversible. Beneficial: Large scale or major improvement of resource quality; extensive restoration or enhancement; 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, features or elements. Moderate impacts usually extend above 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 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.

4.2.1 Determining Significance of Effects

The significance of effects is a combination of the environmental value (or sensitivity) of a receptor or resource and the magnitude of the project impact value (change). In other words, it is this product of the impact acting on the receptor that produces an environmental effect. The following matrix provides criterion used for determining the significance of environmental effects through consideration of the potential magnitude of impact and sensitivity of the associated receptor. Definitions of each significance categories are provided.

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 or Major' Significance). In these cases, professional judgement will be used to determine which significance the impact represents.

Table 4-3 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

Table 4-4 Definition of Significance of Effects

Significance Category	Criteria
Major (Adverse/ Beneficial)	- The effect is large scale and would cause a large improvement or deterioration in the environment which will likely (but not exclusively) feature nationally or international important sites and features. - Adverse effects may be considered unacceptable due to exceeded of statutory limits and may require additional studies to ascertain if alternatives (in terms design and location) with the potential for lower impacts should be considered. These effects represent key factors in the decision-making process. - These effects are generally, but not exclusively, associated with sites or features of international, national, or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category.
Moderate (Adverse/ Beneficial)	- The effect gives rise to noticeable improvement or deterioration to the existing environment at a regional or local scale. - If adverse, are potential concerns to the project and may become key factors in the decision-making process. - Whilst the effects will be experienced, mitigation measures and detailed design work may reduce (or enhance) the effect. Some residual effects will still arise.
Minor (Adverse/ Beneficial)	- The effect 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 may not always be required 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.

Significance Category	Criteria
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 to an effect 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. If no standards are available then it is necessary to develop Project specific limits, based on guidance or best practice as necessary.

4.2.2 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 which have been included in the ESIA report and should be 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 are 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. The following mitigation hierarchy: avoid > minimise > restore > offset is utilised.

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.

4.2.3 Residual Impact

The residual impacts section of the ESIA will consider the overall significance of impacts following the implementation of the mitigation and management measures not already included in the design. The significance of such impacts will be re-evaluated based upon the same criteria used to determine the impact significance stated above.

4.2.4 Cumulative Impact Assessment

IFC Handbook on Cumulative Impact Assessment defines cumulative impacts as “those 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*” (IFC, 2013).

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;
- Assessment of effects on Valued Environmental Components (VEC) 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.

5.0 Stakeholder Engagement

5.1 Applicable Requirements and Standards

5.1.1 National Standards

5.1.1.1 Public Participation in National EIA

Based on changes in the national legislation regarding the process of National Environmental Impact Assessment conducting public consultation is now a mandatory part of Stage I of the National EIA process.

According to the Resolution of the Cabinet of Ministries of the Republic of Uzbekistan “On further improvement of mechanism for Environmental Impact Assessment” No. 541 dated 07.09.2020 the procedure of conducting public consultations is as follows:

- Annex 3 of the Resolution No 541 – Rules and regulations for conducting public consultations states that public consultations should include discussions and decision making regarding planned activities (for construction of any facility) that may have negative impacts on the environment.
- A non-technical summary regarding any planned project activity that is categorized as I & II group (in accordance with national requirements for categorization) shall be prepared. The Non-technical Summary (NTS) should include information about the following:
 - Brief description of the project;
 - Technology solutions and alternative options for the project;
 - Current state of the environment at the selected project site;
 - A brief assessment of socio-economic conditions;
 - Brief description of the causes and type of negative impacts on the environment as a result of the project;
 - Forecast and assessment of possible changes in the state of the environment and socio-economic conditions;
 - Forecast and assessment of project and non-project risks;
 - Measures to prevent, minimise and/or compensate for adverse impacts; and
 - Assessment of possible significant adverse cross-border impacts.
- A public consultation shall be based on the review of NTS by providing equal rights to all participants to express their concerns, opinion and suggestions.
- The following entities shall be considered as part of public consultations:
 - Representatives of local departments of State Committee on Ecology and Environmental Protection who will be considered as observers of public consultations.
 - Local municipalities (considered as the responsible organisation for organising and inviting participants to the meetings);
 - Non-governmental Organisations (NGOs);
 - All organisations interested in the project;
 - Local communities; and

- Mass media.
- Any costs associated with public consultations will be borne by the Project Developer. In accordance with Law No. 781 “On Procedures for the Withdrawal of Land Plots for Public Needs with Compensation,” meaningful consultations must be undertaken with Project Affected Persons (PAPs) who may experience physical or economic displacement as a result of Project implementation.

5.1.1.2 Management of Public Grievances

The Resolution No. 728 provides for a centralized Grievance Redress Mechanism (GRM) for the resolution of broad-ranging grievances from the public. This system draws on a publicly accessible online platform for the collection of grievances from residents across the country. The Portal allows any member of the public to submit a grievance, for the attention of various authorities within the various domains of local and central Government. The application for grievance resolution can target any authority within the hierarchy of executive Government. Upon initial review of the grievance statement by the target authority, the grievance is allocated to the most relevant LGA for further review and remedial action. In the event that resolution cannot be delivered by the most relevant LGA level, the grievance is cascaded higher along the administrative hierarchy, until an appropriate executive decision is provided by a competent authority.

Furthermore, the Law of the Republic of Uzbekistan № 378 “On Appeals of Individuals and Legal Entities” dated 3.12.2014 (as amended on 17.08.2017), provides a legal basis for communication between individuals and legal entities with state organizations as well as their officials. According to this Law, individuals and legal entities can send their grievances and appeals in any form (verbal, written, or electronic). Submitted appeals should be reviewed within 15 days from the date of receipt. If additional investigation is required, a response should be sent within one month.

5.1.2 Lender Requirements

The Project is seeking financing from a group of international development finance institutions (collectively referred to as the Lenders), including the International Finance Corporation (IFC), European Bank for Reconstruction and Development (EBRD), U.S. International Development Finance Corporation (US DFC), Japan Bank for International Cooperation (JBIC), Nippon Export and Investment Insurance (NEXI) and Export-Import Bank of Korea (KEXIM). The stakeholder engagement requirements according to the lenders' criteria are provided in the following sections.

5.1.3 International Finance Corporation - Performance Standards

Stakeholder engagement is a fundamental requirement of the IFC Performance Standards (PS), principally under PS1 and supplemented by specific consultation obligations under PS2–PS8. The Project will therefore undertake stakeholder engagement in line with these requirements. 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:

- Stakeholder 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 PS 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 on 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.

5.1.4 European Bank for Reconstruction and Development

All Projects financed by EBRD shall be undertaken to meet the requirements of the EBRD Environmental and Social Policy (2024) which includes ten (10) Environmental and Social Requirements (ESRs) for key areas of environmental and social sustainability that projects are required to meet, including ESR 10 on Stakeholder Engagement

The EBRD is committed to stakeholder engagement processes which are inclusive and on-going to manage Projects' E&S risks and impacts. The following elements are involved in stakeholder engagement: (i) stakeholder identification and analysis; (ii) stakeholder engagement planning; (iii) disclosure of information; (iv) meaningful consultation; (v) implementation of an effective grievance mechanism, and (vi) ongoing reporting to relevant stakeholders. The process of stakeholder engagement should begin at the earliest stage of project planning and continue throughout the project life.

An essential element in the stakeholder engagement process to ensure meaningful and effective consultation process, is the careful identification and consideration of the characteristics of relevant stakeholders, and the examination of their concerns, expectations, and preferences. ESR10 states "the client will identify those project-affected parties (individuals or groups) who, because of their particular circumstances, may be disadvantages or vulnerable". Engagement with vulnerable groups should be appropriate, planned, and managed with special attention.

Furthermore, the EBRD requires that the project developer establishes and maintain an effective grievance mechanism proportionate to the Project risks and impacts, ensuring that any stakeholder concerns and grievances are received and handled in a timely manner. Project developers are also expected to monitor the effectiveness of engagement processes and the grievance mechanism. A SEP should also include provisions of stakeholder engagement for any changes during the Project lifecycle to ensure the disclosure of mitigations to stakeholders.

In addition, the EBRD has established an Independent Project Accountability Mechanism (IPAM). This mechanism is intended to:

- Help resolve social, environmental, and public disclosure concerns raised by Project-affected people and civil society organisations;
- Facilitate dialogue among Project stakeholders; and
- Assess whether the Bank has complied with its Environmental and Social Policy (ESP) a IPAM exists to address non-compliance with these policies and helps prevent future non-compliance by the Bank.

5.2 Stakeholder Identification and Analysis

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

- **Affected Stakeholders (A)** – individuals or groups who may be affected by one or more of the potential impacts⁴ of the project, directly⁵ or indirectly⁶.
- **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 National Committee on Ecology and Climate Change (NCECC).
- **Vulnerable Groups:** Vulnerable groups will be identified through the socio-economic baseline and stakeholder mapping process and may include individuals disproportionately affected due to age, gender, disability, ethnicity, religion, social status, displacement, or economic vulnerability. Unlike general affected stakeholders, they will be engaged through tailored approaches such as household-level consultations, separate focus group discussions (e.g., with women), one-on-one meetings, accessible information formats, and engagement at convenient times and locations to ensure their concerns and inputs are meaningfully heard and considered.

A comprehensive Stakeholder Engagement Matrix has been developed to systematically guide the Project's interactions with all identified stakeholder categories, ensuring that communication is structured, consistent, and responsive to stakeholder needs.

⁴ 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.

⁵ 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.

⁶ 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

Administrative Order	Stakeholder	Relevance Category and Agenda	Consultation Method
State organisations /Government Entities			
Government Entities (Ministries/Agencies)	National Committee on Ecology and Climate Change (NCECC)	D: Entity responsible for issuing the Environmental Permit after reviewing the National EIA. Provision of information on biodiversity, Protected Natural Areas within project site and project-affected areas. In addition, NCECC will review the national EIA stakeholder consultation protocols to ensure compliance.	Official correspondence and Bilateral meetings.
	Ministry of Transportation	D: Public Partner, responsible for Project implementation and decision making from GoU side. In addition, they will also be involved in the land acquisition processes for the Project.	Official correspondence, Bilateral meetings, Phone/video call consultations.
	Ministry of Water Resources	D: Provides information on types of water bodies (river, canals, ponds) and establishes buffer zone as well as requirements to be followed during construction works.	Official correspondence, Bilateral meetings, Phone/video call consultations.
	Ministry of Health	I: May have an interest in how the graveyards at the Project site are relocated and the health protocols to be followed.	Official correspondence, Bilateral meetings, Phone/video call consultations.
	Ministry of Labor and Social Security of the Republic of Uzbekistan	I: May be interested on how the Project will address issues related to employment, labour & working conditions etc.	Official correspondence, Bilateral meetings, Phone/video call consultations.
	Academy of Sciences – Institute of Archaeology	D: Provision of information on tangible and intangible cultural heritage within the project-affected areas. Conducting archaeological surveys for the national inventory of cultural heritage sites and issuing conclusion/technical conditions for construction works, if required for Project .	Official correspondence, Bilateral meetings, Phone/video call consultations.
	Institute of Botany of the Academy of Sciences of the	I: Provision of information on biodiversity and technical support in baseline surveys, if required, for specific floral species and habitats.	Official correspondence, Bilateral meetings,

Administrative Order	Stakeholder	Relevance Category and Agenda	Consultation Method
	Republic of Uzbekistan		Phone/video call consultations.
	Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan	I: Provision of information on biodiversity and technical support in baseline surveys, if required for specific faunal species and habitats.	Official correspondence, Bilateral meetings, Phone/video call consultations.
	State Committee for Roads	I: Provision of information on the existing roads within the project-affected areas.	Official correspondence, Bilateral meetings, Phone/video call consultations.
	Sanitary and Epidemiological Welfare and Public Health Service of The Republic of Uzbekistan	D: Establishes size of Health Protection Zone for Project and its facilities based on applicable regulations. Issues conclusion for relocation of graveyards, i.e., from _health and safety prospective.	Official correspondence, Bilateral meetings, Phone/video call consultations.
	Cultural Heritage Agency	I: Provision of information on tangible and intangible cultural heritage within the project-affected areas.	Official correspondence, Bilateral meetings, Phone/video call consultations.
	Civil Aviation Agency under the Ministry of Transport of the Republic of Uzbekistan	D: Provides the main requirements to be followed (safety measures, buffer zones, etc) for establishing of new airport and legislation base to be followed.	Official correspondence, Bilateral meetings, Phone/video call consultations.
Local Government Agencies	Tashkent Region Khokhimiyat	D: Authority responsible for regional planning and administration of development projects. Overarching regional authority to consult with prior to engaging with several other regional and local government entities. The Khokhimiyat will issue order on project construction and confirm the land allocation.	Official correspondence and Bilateral meetings, Phone/video call consultations.
	Yagiyoul district Khokhimiyat	D: District level planning and administration of development projects. Can assist in conducting consultations with main departments of the khokhimiyat and arrange meetings with local communities. The Khokhimiyat will terminate leases of the impacted	Official correspondence Bilateral meetings, Phone/video call consultations.

Administrative Order	Stakeholder	Relevance Category and Agenda	Consultation Method
		leaseholders and take it back to the State Reserve for allocation to the Project. The Municipality will also issue an order on affected graveyards in accordance with decision provided by Sanitary Agency.	
	Tashkent Regional Department of the Cadastre Agency	D: Authority responsible for maintaining details of land owners of agricultural lands within the project site and nearby areas. The Agency will register the land plots allocated to the Project by the order of the municipality to the Project and change existing cadastral maps accordingly.	Official correspondence Bilateral meetings, Phone/video call consultations.
	Tashkent Regional Department of the State Cadastre Chamber of the Cadastre Agency	D: For confirmation of land boundaries, property rights and relevant legal documents. Conducting legal examination of land plots and determining who owns them and whether they have property rights; Providing the necessary topographic information, relief and territorial studies for the project, support in the identification of existing structures; In addition, they will register the land taken back to the State Reserve and ensures its further allocation to the Project.	Official correspondence Bilateral meetings, Phone/video call consultations.
	Tashkent Regional Main Department of Architecture and Construction	I: Providing information on existing buildings, structures, underground and above-ground communication networks, including electricity, gas, water and other infrastructure.	Official correspondence Bilateral meetings, Phone/video call consultations.
	Tashkent Regional Department of Agriculture	I: Information about agricultural lands; Assessment of the legal status of agricultural land plots, its productivity and economic significance of lands in the project area that are in agricultural use.	Official correspondence Bilateral meetings, Phone/video call consultations.
	Chirchiq-Ohangaron Irrigation Systems Basin Administration	D: Responsible for the execution of laws and regulations pertaining to operation and maintenance of irrigation water infrastructure. Provision of information on existing irrigational water supply facilities within the Project site and	Official correspondence Bilateral meetings, Phone/video call consultations.

Administrative Order	Stakeholder	Relevance Category and Agenda	Consultation Method
		establishing buffer zones to be followed.	
	Tashkent Regional Main Department of Tourism and Cultural Heritage	D: Provision of information on presence/absence of objects of cultural heritage on the project site. Permission on relocation will be needed if impacted graveyards are registered as cultural object of national importance.	Official correspondence Bilateral meetings, Phone/video call consultations.
	Tashkent Territorial Electric Networks JSC	I: The entity responsible for the execution of laws and regulations pertaining to operation and maintenance of electric infrastructure. Provision of information on existing electricity supply facilities within and close to the project site.	Official correspondence and bilateral meetings, if necessary.
	Hududgaz Tashkent Gas Supply Branch	I: The entity responsible for the execution of laws and regulations pertaining to operation and maintenance of gas supply infrastructure. Provision of information on existing gas supply facilities within and close to the project site. If pipes exist near Project site, then buffer zones and technical conditions for construction are provided.	Official correspondence and bilateral meetings if necessary.
	Tashkent Regional Road Construction Department	I: Entity responsible for the execution of laws and regulations pertaining to operation and maintenance of roads and related infrastructure For the provision of information on existing road infrastructure within and close to the project site.	Official correspondence and bilateral meetings if necessary.
	Head of Tashkent Regional Health Department	I: Entity responsible for the execution of laws and regulations pertaining to public health and safety.	Official correspondence bilateral meetings if necessary.
	Center for State Sanitary and Epidemiological Surveillance of Tashkent Region (SES)	D: Entity responsible for the execution of laws and regulations pertaining to public health and safety. Entity responsible for the establishment of sanitary and health and safety buffer zones. Department of Tashkent region will be supporting the Republican department in collecting relevant materials and providing recommendation for issuing	Official correspondence and bilateral meetings if necessary.

Administrative Order	Stakeholder	Relevance Category and Agenda	Consultation Method
		conclusion on whether the impacted graveyards can be relocated including the required health and safety protocols.	
	Tashkent Regional Department of the Mahalla Association of Uzbekistan	I: Establishes open communication with the population.	Official correspondence and bilateral meetings and phone/video calls.
	Regional Council for the Coordination Self-government Bodies' Activities	Informing residents of settlements affected by the project activities about construction work, assisting in studying their proposals and any concerns.	Official correspondence and bilateral meetings if necessary.
	Nuroni" Foundation's Tashkent Regional Branch	Communication with the population and provision of information.	Official correspondence and bilateral meetings if necessary.
	Tashkent Regional Department of the Committee for Religious Affairs	D: Provides decision on impacted graveyards located within Project site, i.e., if they can be relocated or not.	Official correspondence and bilateral meetings if necessary.
	Tashkent Regional Representation of the Spiritual Administration of Muslims of Uzbekistan	I: Subordinate organisation to Committee for Religious affairs and supports relocation of graveyards if required,	Official correspondence and bilateral meetings if necessary.
	Tashkent Regional Council of Farmers, Dehkan Farms, and Household Landowners (tomorkas)	I: To facilitate communication with Farmers, Dehkans and Household Landowners.	Official correspondence and bilateral meetings if necessary.
Non-Governmental Organizations			
NGOs	Ecology movement (O'zbekiston ekologik harakati)	I: Increasing the civic activity of the population in solving environmental issues.	Official correspondence and bilateral meetings if necessary.
	Ecosan (Ekosan)	I: Implementation of programs and projects aimed at improving the	

Administrative Order	Stakeholder	Relevance Category and Agenda	Consultation Method
		environmental condition of Uzbekistan.	
	Istiqbolli avlod	I: Activities aimed at eradicating all forms of violence, conflicts in the society, prevention of HIV, AIDS protection of child rights and preventing human trafficking in society.	
	Yuksak salohiyat	I: Promoting the development and support of citizens' initiatives in the use of rights and freedoms in the forming/shaping the strong civil society.	
	Center for social and legal support for women and their families "Qalb mehri"	I: Promotes equal rights between men and women, provides support to victims of gender based violence.	
	Human Rights and Cultural Heritage and Community based NGOs	I: Organizations that focus on cultural preservation or community rights may need to be consulted, especially if there are concerns over human rights or cultural impacts. Similarly local community groups can facilitate dialogue and ensure the views of affected populations are adequately represented.	Bilateral meetings Phone/video calls
Project Affected Stakeholders			
Project Affected Land Owners and Land Users	Leaseholders and land users, workers etc within the Project Area of Influence	A: Households and vulnerable PAPs who may experience economic and physical displacement as a result of the Project.	Public disclosure meetings and face to face consultations with individual farm owners and socioeconomic surveys.
	Owners of residential buildings & assets	A: Household that will experience physical displacement as a result of the Project.	Consultations, Socio-economic and inventory surveys, Public disclosure meetings.
	Commercial entities & their workers	A: Commercial entities operators & workers who may experience physical and economic displacement due to the Project.	Face to face interviews, consultations, inventory surveys Public disclosure meetings.

Administrative Order	Stakeholder	Relevance Category and Agenda	Consultation Method
Local service operators	Operators of existing infrastructure & utilities (cables, gas & water pipes, OTLs)	A: Relocation of structures might be required due to the construction of Project.	Consultations, business correspondence, site observation and inventory surveys, if required.
Directly affected communities	People living in nearby communities such as Yangitosh	A: Receptors at nearby communities that may potentially be impacted from the construction and operation related impacts such as noise, air emissions, traffic, community health & safety etc.	FGD/socio-economic surveys of households, KII with community leaders. Public disclosure meetings.
Stakeholders Managing the Affected Graveyards			
Project affected communities	Next to Kin of the deceased	A : Families of the deceased must be consulted and involved in decision-making regarding the relocation process, including the new burial site.	Face to face discussion to understand concern and preferred option if to relocate or leave the grave as it is.
Workers	Cemetery workers	A: Cemetery workers may be subject livelihood impacts if the cemetery is relocated to a new location.	Face to face consultation and phone conversation as required.
Religious Leaders	Priests, Imams etc.	D: Religious leaders will be leading the process of communication with deceased s' family members. They will be executing relevant ceremonies and rituals if grave is relocated from one place to another in consultations with relevant government authorities & next of kin.	Face to face consultation or phone conversation to discuss any religious or cultural requirements are to be followed.
Project Financing			
Financial Lenders	IFC, EBRD, US DFC, JBIC, NEXI and KEXIM.	D: Will approve the Project ESIA documents including this SEP and provide financing for the Project.	Ongoing dialogue as part of their E&S due diligence for the project

5.2.1 ESIA Phase Stakeholder Engagement

The Project involves significant land acquisition for the Project footprint and has potential socio-economic implications for communities within a 5 km Area of Influence (Aoi). In alignment with international standards, the ESIA team has conducted extensive stakeholder engagement activities to ensure meaningful participation and transparency. Community consultations and FGDs were held with stakeholders from the following makhallas: Aranshi, Beruniy, Dustlik, Kim Pen Xva, Koshek, Sarum, Sergeli, Taraqqiyot, Xalqobod, Yangiyol and Yungichokli. Engagement activities targeted a wide range of stakeholders, including physically and economically displaced households, vulnerable groups, municipal and district authorities, government agencies, farmer associations, local service providers, and civil society organizations. These activities aimed to gather insights on community concerns, identify potential impacts on livelihoods, and inform the design of mitigation and management measures for both the construction and operation phases.

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

- Communicate key project information and the planned ESIA activities.
- Collect feedback on potential environmental, social, and economic impacts, particularly relating to land acquisition, livelihoods, infrastructure access, and community services.
- Identify stakeholder priorities and concerns, including equitable access to project benefits, protection of vulnerable groups, and continuity of agricultural production.
- Explain the Project grievance redress mechanism, ensuring stakeholders had accessible channels to raise concerns or seek support.
- Enhance trust, transparency, and collaborative problem-solving between the Project and affected communities.

5.2.2 Stakeholder Engagement During the National EIA Process

Stakeholder engagement was also undertaken as part of the national Environmental Impact Assessment (EIA) process in February 2026, prior to and separately from the stakeholder engagement undertaken for the Project's international lender Environmental and Social Impact Assessment (ESIA) and Stakeholder Engagement Plan (SEP).

The national EIA process included engagement with relevant local stakeholders and government representatives in accordance with applicable national requirements. The purpose of this engagement was to provide information on the proposed project, present the anticipated environmental and social implications of the Project, and provide an opportunity for stakeholders and potentially affected communities to raise questions, concerns, and recommendations regarding the proposed development.

The engagement undertaken during the national EIA process provided an early opportunity for stakeholders to be informed about the Project and complemented the subsequent engagement undertaken as part of the international lender ESIA process. Issues and concerns raised during the national EIA engagement were considered, where relevant and available, in the subsequent assessment of environmental and social impacts and in the development of mitigation and management measures.

The national EIA consultation process is distinguished from the subsequent lender-aligned stakeholder engagement undertaken for the Project. The latter was designed to meet the requirements of the applicable international standards and lender requirements, including the principles of meaningful, inclusive, accessible, and ongoing stakeholder engagement. Accordingly, the February 2026 national EIA engagement does not replace the stakeholder

identification, disclosure, consultation, and ongoing engagement activities required under the Project SEP.

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

Items		Name of the Stakeholders
Stakeholder Engaged	Groups	• Project Affected Households • Community Members within the Project Area of Influence (5 km) • Uzsuvt'a'minot (Tashkent Regional Water Supply) • Tashkent Regional Department of Preschool and School Education • Hududgaz Tashkent • Tashkent Regional Health Department • Water Supply Department, Urtachirchik District • Melioration (Land Reclamation/Drainage) Department, Urtachirchik District • Urtachirchik District Khokim's Office – Agriculture • Urtachirchik District Khokim's Office – Construction • Sanitary and Epidemiological Service (SES), Urtachirchik District • Deputy Chief Doctor, Urtachirchik District • Melioration Expedition Department, Urtachirchik District • UzAirports Project Office • Halqobod Mahalla Committee • Makhalla Citizens' Assemblies: • Aranshi • Beruniy • Dustlik • Kim Pen Xva • Koshek • Sarum • Sergeli • Taraqqiyot • Xalqobod • Yangiyol • Yungichokli • Department of Tourism, Urtachirchik District • Department of Ecology, Environmental Protection and Climate Change, Urtachirchik District • Tashkent Regional Highways Department • Tashkent Regional Department of Cultural Heritage • Department of Ecology, Environmental Protection and Climate Change, Kuyi Chirchik District • Kuyi Chirchik District Road Department • Khokim's Office, Kuyi Chirchik District • Central Chirchik District SES Department • Makhalla Chairmen and Other Community Representatives (including school directors, teachers, women leaders, and local Khokimiyat representatives)

Items	Name of the Stakeholders
	Women-headed and single-parent households, low-income and economically vulnerable households, elderly persons, persons with disabilities, households with members requiring regular medical care, children and youth; households dependent on agriculture, livestock and other land-based livelihoods, persons with limited literacy, access to information, or digital connectivity; socially or economically marginalised households and other vulnerable persons identified through the socio-economic baseline and Project implementation

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

5.2.3 Consultation Methods & Frequency

Between December 2025 and January 2026, the Project conducted FGDs, public meetings, door-to-door visits, online consultations, and a socio-economic survey to support the RAP and ESIA studies. Communities within the 5 km Area of Influence (Aol) were engaged across eleven makhallas—Aranshi, Yongichkoli, Kim Pen Khva, Dustlik, Tarakkiyot, Khalkobod, Yangiyul, Surum, Kushek, Sergeli, and Beruniy—selected for their proximity to the Project and socio-economic relevance.

Engagement included FGDs and a household survey to capture community perspectives on livelihoods, household composition, social structures, and local priorities, with emphasis on gender and vulnerable groups. Multiple FGDs were held in eight makhallas (Surum, Yangiyul, Khalkobod, Tarakkiyot, Kushek, Beruniy, Sergeli, and Dustlik), featuring mixed-gender groups with ≥30% women, women-only groups, and sessions with vulnerable participants such as the elderly and low-income households. A total of 272 households were randomly selected from 8,105 households, with discussion guides and survey questionnaires covering livelihoods, income sources, access to services, and other socio-economic indicators.

Table 5-3 Key feedback and Concerns

Key Feedback & Concerns	Project Responses & Commitments
- Existing collector-drainage network and design solutions for its relocation. - Financing and responsibility for relocating infrastructure outside the project territory. - Ornithological conditions on the project site and possible mitigation or improvement measures. - Impacts of collector-drainage network relocation on nearby residents. - Status and relocation of graveyards/burial sites, including national and religious affiliations. - Compliance with legislative and sanitary-epidemiological norms for cemetery relocation. - Conducting explanatory discussions with local communities regarding cemetery relocation. - Job creation, local employment prioritization, and potential training opportunities. - Opportunities for local businesses to provide catering and support services. - Infrastructure improvements, including roads, utilities, and transport connectivity.	- Conduct ESIA to assess environmental, social, and cultural impacts. - Relocate collector-drainage networks and infrastructure with minimal disruption. - Ensure cemetery relocation follows legislation and involves community consultation. - Monitor and mitigate ecological impacts, including ornithology and groundwater. - Prioritize local employment and provide training where feasible. - Support local businesses through transparent procurement for services and catering. - Plan roads and transport connections in coordination with authorities. - Mitigate noise, vibration, and air quality impacts from airport operations. - Protect cultural heritage sites within the project area and 5 km radius.

Key Feedback & Concerns	Project Responses & Commitments
• Impacts of new and existing roads on traffic, noise, and public access. • Noise, vibration, and air quality impacts from airport operations. • Groundwater (seepage water) impacts and mitigation. • Presence and protection of cultural heritage sites within the project area and 5 km radius. • Project transparency, grievance mechanisms, and information sharing with communities. • Positive economic effects, including tourism, trade, investment, and skills development.	• Maintain stakeholder engagement and grievance mechanisms throughout the project.

ESIA public disclosure meetings will be held between late September and early October 2026, providing an opportunity for stakeholders to review the ESIA findings and proposed mitigation and management measures and provide further feedback. The ESIA will be publicly disclosed for 60 days to allow for stakeholder review and comment. The results of the meetings and any written feedback received during the disclosure period will be documented, reviewed and incorporated, as appropriate, into the final ESIA package, which will remain publicly available for the Project lifetime.

5.2.4 Stakeholder Engagement During Construction and Commissioning

The planned construction and commissioning-related engagement processes are outlined below.

Table 5-4 Construction Phase SEP Timetable

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
Notification of construction and commissioning activities (including timelines)	Directly Affected Stakeholders: Leaseholders and land users within the Project Area of Influence; owners of residential buildings and assets; commercial entities and their workers; people living in nearby communities (e.g. Yangi-tosh); operators of existing infrastructure and utilities.	Official notices at site boundaries and access roads; community notice boards; distribution of leaflets; disclosure through mahalla committees; bilateral meetings with affected parties; phone calls where required.	Prior to commencement of construction and commissioning, stakeholder engagement activities will be initiated and implemented, with updates incorporated as required throughout the construction phase to reflect any changes in project activities. In addition, further meetings will be convened in the event of significant changes to the project scope, schedule, or potential impacts, ensuring that stakeholders remain informed and have the opportunity to provide input on any developments.	Project Company
	Indirectly Affected Stakeholders: Wider communities in Tashkent Region, NGOs and interested parties	Disclosure through local authorities, Mahalla Association, public notices, and information materials.	Meetings will be undertaken throughout the construction phase of the project and will also be convened in the event of any significant changes to construction activities or processes. These engagements will serve as a continuous platform for communication with relevant stakeholders, ensuring that they are kept informed of project progress, upcoming activities, and any potential impacts. In addition, the meetings will provide an opportunity to address stakeholder concerns, incorporate feedback where appropriate, and maintain transparency and trust throughout the construction period.	

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
Engagement on land acquisition, livelihood restoration and resettlement	Leaseholders, land users, affected households, farmers (including Council of Farmers, Dehkan Farms and Household Landowners)	Household-level consultations will be conducted to engage directly with affected families, ensuring that their concerns, preferences, and socio-economic conditions are clearly understood and documented. In addition, focus group discussions will be organized with specific stakeholder groups to facilitate more inclusive and participatory dialogue, enabling the collection of diverse perspectives, particularly from vulnerable or marginalized populations. The Project will also ensure the transparent disclosure of compensation and livelihood restoration plans, providing stakeholders with clear, accessible, and timely information regarding entitlements, processes, and implementation timelines. Furthermore, one-to-one meetings will be carried out with key affected individuals and stakeholders who may require tailored engagement or have specific concerns that cannot be adequately addressed through broader consultation formats.	Engagement activities will be undertaken continuously throughout both the pre-construction and construction phases of the project, ensuring consistent communication and stakeholder involvement. These efforts will be further intensified in advance of any displacement or land access requirements, with a focus on providing timely information, addressing concerns, and facilitating meaningful consultation with affected stakeholders	Project Company
Communication of project employment opportunities	The stakeholder group includes local communities, affected persons, local authorities, and vocational institutions. Local communities represent the broader population residing within and around the project's	Engagement with stakeholders during the construction phase will be carried out through multiple, structured channels to ensure broad accessibility and transparency. Information will be shared through public notices placed in accessible locations, ena-	During pre-construction and throughout recruitment phases	Project Company and EPC Contractor

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
	area of influence, whose daily lives, access to services, and socio-economic conditions may be directly or indirectly impacted. Affected persons specifically refer to individuals or households that may experience tangible impacts from the project, such as land use changes, livelihood disruptions, or environmental and social effects	bling timely awareness of project activities and opportunities. Coordination with local employment offices will support the dissemination of job-related information and facilitate access to employment opportunities for the local workforce. Regular meetings will be organized with relevant stakeholders to provide updates, gather feedback, and address concerns in a participatory manner. In addition, information will be disseminated through mahalla committees, which serve as key community-level institutions, ensuring that communication reaches households effectively and reflects local dynamics		
Implementation of Grievance Redress Mechanism (GRM)	All stakeholders including Project Affected Households, affected communities, workers, NGOs, local authorities, and vulnerable groups	The Project will establish and operate a multi-channel Grievance Redress Mechanism (GRM) in line with IFC requirements to ensure accessibility, transparency, and responsiveness for all stakeholders. Grievances may be submitted through several channels, including a dedicated hotline, email, grievance boxes placed at accessible locations, community meetings, and direct in-person submissions to project representatives. This approach is designed to accommodate diverse stakeholder preferences and literacy levels, ensuring that all affected and interested parties have a clear and convenient means to raise concerns, provide feedback, or seek	Established prior to construction and maintained continuously throughout construction and commissioning	Project Company and EPC Contractor

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
		information. All grievances received through these channels will be systematically recorded, assessed, and addressed within defined timeframes, with feedback provided to the complainant in a timely and culturally appropriate manner.		
Environmental and social impact management communication (e.g. noise, dust, traffic, health and safety)	Nearby communities, commercial entities, vulnerable groups, and Mahalla representatives have been identified as key stakeholders. These groups are considered directly or indirectly affected by the Project and/or capable of influencing its outcomes.	Stakeholder engagement will be undertaken through a combination of community meetings and focus group discussions to ensure inclusive and meaningful participation of affected and interested parties. These activities will be supported by the disclosure of mitigation measures in a clear and accessible manner, along with the distribution of appropriate information materials to facilitate understanding of project impacts, risks, and proposed management strategies.	Prior to high-impact activities and periodically throughout construction	EPC Contractor/Project Company
Traffic and access management communication	The key stakeholders include road users, nearby communities, commercial entities, the State Committee for Roads, and the Tashkent Regional Road Construction Department.	The project will implement a structured approach to traffic and community safety management through the provision of traffic signage, dissemination of public notices, regular coordination meetings with relevant authorities and stakeholders, and timely disclosure of traffic management plans to affected communities. These measures are intended to ensure transparency, facilitate stakeholder awareness, and minimize risks and disruptions associated with	Prior to and throughout construction, particularly during peak activity periods.	EPC Contractor/Project Company

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
		project-related traffic during construction phases.		
Coordination with utilities and infrastructure providers	Tashkent Territorial Electric Networks JSC, Hududgaz Tashkent Gas Supply Branch, and the operators of water, gas, electricity, and telecommunications infrastructure are key utility stakeholders for the Project, responsible for the provision, management, and coordination of essential services within the project area.	Engagement during construction and commissioning will be undertaken through structured technical coordination meetings, formal written correspondence, and joint site inspections. These mechanisms will facilitate timely information sharing, ensure alignment on project progress and compliance requirements, and enable the identification and resolution of issues in a transparent and coordinated manner among relevant stakeholders.	As required throughout construction phase	Project Company
Environmental and social performance reporting and regulatory engagement	National Committee on Ecology and Climate Change, Civil Aviation Agency, Ministry of Transport, relevant regional authorities and lenders.	The engagement process will include formal reporting mechanisms supported by the regular submission of monitoring reports that document progress, performance, and compliance with agreed requirements. This will be complemented by periodic meetings held with relevant stakeholders to review implementation status, discuss emerging issues, and agree on necessary corrective actions.	As per regulatory and lender requirements (periodic)	Project Company
Engagement on cultural heritage and chance finds	Cultural Heritage Agency, Academy of Sciences-Institute of Archaeology, affected communities, religious leaders (if applicable)	Immediate notification should be carried out as soon as any relevant issue is identified, ensuring timely communication with the appropriate authorities and stakeholders. This should be followed by formal correspondence to document the matter and maintain a	Immediately upon identification of any potential cultural heritage findings	Project Company

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
		clear record of actions taken. Site-specific consultations should be undertaken to engage with local stakeholders and address any concerns in a structured manner. In parallel, chance find procedures should be implemented, including stopping work where necessary, documenting the find, and coordinating with relevant authorities for appropriate management.		
Engagement with NGOs and vulnerable groups	Environmental NGOs, social and community-based NGOs and vulnerable groups (including women and elderly via relevant organizations)	The engagement approach includes targeted meetings with key stakeholders to capture specific concerns and perspectives, supported by clear and timely information disclosure. Consultations will be carried out to enable meaningful two-way dialogue, while ensuring the inclusion of diverse stakeholder groups, particularly vulnerable and underrepresented communities, in stakeholder discussions throughout the project lifecycle.	Periodically throughout construction phase	Project Company
Worker engagement and occupational health and safety communication	Project workers, including contractors and subcontractors, are directly involved in project implementation, particularly during construction and are responsible for executing on-site activities in line with project requirements.	Induction training, toolbox talks, worker meetings, and occupational health and safety (OHS) briefings will be conducted regularly to ensure workers are informed of site requirements, potential hazards, and safety procedures, while also promoting communication, compliance, and a safe working environment.	At the start of employment and continuously throughout construction	EPC Contractor

5.2.5 Stakeholder Engagement During Operation

The planned operational phase stakeholder engagement activities are outlined in the table below.

Table 5-5 Operational Phase SEP Timetable

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
Ongoing disclosure of environmental and social performance	The National Committee on Ecology and Climate Change, the Civil Aviation Agency, the Ministry of Transport, lenders, and relevant regional authorities.	Periodic environmental and social monitoring reports will be prepared and formally submitted to relevant authorities and lenders to demonstrate compliance. These will be complemented by audits, as well as regular meetings and site inspections, to review performance and address any issues promptly.	As per regulatory and lender requirements (typically quarterly/annual)	Project Company/Airport Operator
Operational phase Grievance Redress Mechanism (GRM)	All stakeholders including nearby communities (including Project Affected Households and any resettled households, where relevant), passengers, workers, NGOs, and local authorities.	The Grievance Redress Mechanism (GRM) will operate through multiple accessible channels, including a hotline, email, website, grievance boxes, and in-person submissions. All grievances will be recorded, tracked, and regularly reported to ensure timely and transparent resolution.	Continuous throughout operations	Airport Operator
Community engagement on operational impacts (e.g. noise, air emissions, traffic, safety)	People living in nearby communities (e.g. Yangitosh), including Project Affected Households and resettled households where residual impacts persist; commercial entities; Mahalla representatives	Community engagement during the project will include a range of structured and ongoing activities designed to ensure transparent communication and meaningful participation. These will comprise community meetings to share updates, gather feedback, and address concerns from the wider public, as well as focus group discussions with specific stakeholder groups to better understand their perspectives and priorities.	Periodically (e.g. bi-annually) and in response to significant changes or complaints	Airport Operator

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
Noise and environmental monitoring disclosure	Nearby communities along with the National Committee on Ecology and Climate Change and relevant non-governmental organizations (NGOs), will be engaged as part of the stakeholder group.	Public disclosure of monitoring data, reports, and community briefings will be carried out to ensure transparency, keep stakeholders informed, and communicate key project updates and performance.	Periodically in line with monitoring programs and regulatory requirements	Airport Operator
Post-resettlement and livelihood restoration monitoring (if applicable)	Project affected households, business enterprises, Dehkan Farms, and household landowners.	Household-level follow-ups will be conducted to maintain direct engagement and address any concerns. Surveys will be carried out to gather stakeholder feedback and assess project impacts, while targeted consultations will ensure focused engagement with specific and vulnerable groups. The outcomes of these activities will be documented in monitoring reports to track progress and inform ongoing project management.	Periodically until livelihood restoration objectives are demonstrably achieved	Project Company
Stakeholder engagement with aviation and operational authorities	Uzbekistan Airports JSC, Civil Aviation Agency, and the Ministry of Transport.	Technical meetings, operational coordination meetings, and formal reporting and approvals will guide project implementation by ensuring alignment on technical aspects, supporting day-to-day coordination among stakeholders, and maintaining compliance through structured documentation and decision-making processes.	Continuous and as required for operational coordination	Airport Operator
Coordination with local government and administrative bodies	Tashkent Region Khokimiyat, Yangi-Yul District Khokimiyat, Mahalla Association, and regional coordination bodies.	Coordination meetings, official correspondence, and joint planning sessions will be undertaken to ensure effective communication, alignment of objectives, and smooth implementation of activities among all stakeholders involved.	Periodically (e.g. quarterly) and as required	Airport Operator

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
Engagement on public health and safety	Sanitary and Epidemiological Welfare and Public Health Service, Center for State Sanitary and Epidemiological Surveillance (SES), Ministry of Health, and Regional Health Department.	Reporting, inspections, meetings, and compliance audits will be carried out to ensure effective monitoring, coordination, and adherence to regulatory and project requirements.	As per regulatory requirements and periodic inspections	Airport Operator
Employment and workforce engagement	Airport workers, contractors, and the Ministry of Labor and Social Security are key stakeholders involved in the project, each playing an important role in ensuring compliance with labor standards, workforce management, and regulatory oversight.	Worker meetings, trainings, internal communication platforms, and compliance reporting are key tools for workforce engagement and management. It will support regular communication, capacity building, timely information sharing, and monitoring of compliance with project and regulatory requirements.	Continuous throughout operations	Airport Operator
Engagement with utilities and infrastructure providers	Tashkent Territorial Electric Networks JSC, Hududgaz Tashkent Gas Supply Branch, and other infrastructure operators.	The process will involve coordination meetings, technical discussions, and formal communication channels to ensure effective information exchange, alignment on technical matters, and proper documentation throughout the engagement.	As required during operations and maintenance	Airport Operator
Engagement with NGOs and vulnerable groups	Environmental NGOs, social NGOs, and vulnerable groups including women, elderly, and low-income households.	The engagement approach will include targeted consultations with relevant stakeholders, proactive disclosure of information to ensure transparency, and the inclusion of stakeholders in all engagement activities to support meaningful participation and feedback throughout the process.	Periodically and as required	Airport Operator
Cultural heritage management	Cultural Heritage Agency, Institute of Archaeology, religious leaders, and affected communities.	The process will include reporting on relevant activities and outcomes, conducting consultations with key stakeholders to gather feedback and ensure transparency, and implementing appropriate management	As required	Airport Operator

Activity	Stakeholders	Engagement Method	Timing and Frequency	Responsible Parties for Implementation
		measures to address identified issues and ensure effective project execution.		
Passenger and user engagement	Airport users (passengers, visitors, airlines, service providers)	Customer feedback systems, surveys, helpdesks, and digital platforms will be used to collect and manage stakeholder feedback, enabling timely response and continuous service improvement.	Continuous throughout operations	Airport Operator
Emergency preparedness and communication	Nearby communities, local authorities, airport users, and workers.	Awareness materials, coordination meetings, and drills will be implemented to support stakeholder engagement and preparedness. Awareness materials will provide key information, coordination meetings will ensure alignment among stakeholders, and drills will help test and strengthen response readiness.	Periodically and as required under operational procedures	Airport Operator
Periodic review and update of SEP	All stakeholder groups	The process includes an internal review of the relevant documents, followed by the incorporation and consideration of stakeholder feedback. Where necessary, updates are then disclosed to ensure transparency and to reflect any revisions arising from the review and consultation process.	Periodically (ex- In every 2–3 years or upon significant changes)	Airport Operator

While a detailed Construction Phase Stakeholder Engagement Plan (SEP) will be developed and disclosed prior to the commencement of construction activities, this ESIA provides the overarching framework for stakeholder engagement throughout the Project lifecycle. The framework establishes the principles, objectives, and procedures for meaningful and inclusive engagement, including stakeholder identification and analysis, information disclosure, consultation and participation mechanisms, grievance management, monitoring, and reporting. Stakeholder engagement activities will be tailored to the specific risks, impacts, and stakeholder interests associated with each phase of the Project, including design, construction, operation, and eventual decommissioning. The SEP will be periodically updated to reflect changes in Project activities, stakeholder expectations, and emerging issues, ensuring continued alignment with applicable national requirements and lender standards, including those of the Development Finance Corporation (DFC) and other applicable international good practice requirements.

5.2.6 Grievance Redress Mechanism (GRM)

The Grievance Redress Mechanism (GRM) is a key component of stakeholder engagement and will remain operational throughout the Project's implementation. It will follow a clear, transparent, and culturally appropriate process that is easily accessible and free of charge, ensuring that all stakeholders and affected parties have the opportunity to raise concerns. Stakeholders can be assured that their complaints will be carefully heard, documented, and promptly addressed.

The Project will implement a Grievance Redress Mechanism (GRM) to receive, record, assess, and address concerns, complaints, and grievances raised by affected stakeholders throughout the Project lifecycle aligned with the Project's environmental and social management system and will comply with the requirements of applicable national legislation and international lender standards, including IFC Performance Standard 1 and other relevant good international industry practice.

5.2.7 Key Principles of Grievance Mechanism

The grievance mechanism for the Project will comply with the following principles:

- The purpose of the grievance mechanism procedure will be clarified at the outset.
- The process will be scaled to the risks and impacts of the Project.
- The process will be transparent and accountable to all stakeholders by putting it into writing, publicising it and explaining it to relevant stakeholders.
- The grievance mechanism will be made clear, understandable and easily accessible by providing information in the local language and orally where communities cannot read.
- Complaints or concerns will be rapidly resolved.
- The mechanism will not involve any costs nor retribution associated with lodging a grievance; and
- Precautionary measures such as clear non-retaliation policy, confidentiality measures and safeguarding of personal data collected in relation to a complaint, as well as an option to submit grievances anonymously will be in place.

5.2.8 Scope of Grievance Mechanism

The scope of the grievance mechanism is to evaluate and address stakeholders' complaints and concerns regarding project activities and environmental and social performance during the Project's lifecycle.

All relevant grievances from affected stakeholders will be accepted and no judgment made prior to investigation, even if complaints are minor. However, according to good practice, the following grievances will be directed outside of Project-level mechanisms:

- Complaints clearly not related to the project based on assessment of its legitimacy.
- Issues related to governmental policy and government institutions.
- Complaints constituting criminal activity and violence, which will be referred to the justice system; and
- Commercial disputes: Commercial matters will be stipulated in contractual agreements and issues will be resolved through a variety of commercial resolution mechanisms or civil courts.

If grievance is rejected during screening stage, the grievant will be informed of the decision and provided with clear justification for the rejection.

5.2.9 Steps in Grievance Mechanism Management

5.2.9.1 Publicising Grievance Management Procedures

The grievance mechanism will be publicised to stakeholders, including the following information:

- What Project-level mechanisms exist and what they can deliver, and what remedies grievant can receive from using the company's grievance mechanism, as opposed to other resolution mechanisms;
- Who can raise complaints (i.e., all stakeholders);
- Where, when, and how community members can raise complaints;
- Who is responsible for receiving and responding to complaints;
- What sort of response grievant can expect from the company, including timing of response; and
- What other rights and protection are guaranteed.

5.2.9.2 Means of GRM Disclosure

The Project's Grievance Redress Mechanism (GRM) and associated grievance procedures will be widely disclosed to ensure that all stakeholders are aware of their right to raise concerns and the available channels for doing so. Information on the GRM will be provided through multiple disclosure methods to maximise accessibility and transparency.

A Project Grievance Information Leaflet, describing the purpose of the GRM, the grievance submission process, available communication channels, expected response timelines, and appeal procedures, will be prepared in Uzbek, Russian, and English. The leaflet will be distributed during stakeholder engagement activities and will be made available at the Project site office, the construction camp (for workers), relevant mahalla committee offices, and other publicly accessible locations within the Project Area of Influence.

In addition, GRM information and stakeholder engagement materials, including the Stakeholder Engagement Plan (SEP), non-technical project information, and key Project updates, will be disclosed electronically through the Project website (or the Project Company's corporate website once established). Hard copies of key disclosure documents will be maintained at the Project site office and other designated public locations for review by interested stakeholders.

Project notice boards and information kiosks (where established) at the Project site entrance and other appropriate community locations will be used to display notices regarding Project activities, consultation events, grievance contact details, and other relevant announcements. During construction, contractors will ensure that GRM contact information, including telephone numbers, email addresses, postal addresses, and designated community liaison contact details, is prominently displayed at site entrances and worker accommodation facilities.

The Project Company will periodically review the effectiveness of these disclosure mechanisms through stakeholder feedback and will update the disclosure approach, as necessary, to ensure that Project information remains accessible, timely, culturally appropriate, and consistent with the requirements of IFC Performance Standard 1

5.3 Grievance Mechanism during Construction and Commissioning

The Project Company will ensure that the GRM is accessible, transparent, and culturally appropriate for all stakeholders during the construction and commissioning phases of the Airport Project.

Grievance submission channels will be established in Uzbek and Russian languages and will include multiple access points such as project information offices, site entrances, local community interfaces (including Mahalla committees), telephone hotlines, email, and dedicated grievance forms. Secure and clearly marked grievance boxes will also be installed at accessible locations within and around the Project site to facilitate written submissions. Locked grievance boxes will be installed at:

- Project Information Centre
- Project Site Office
- Main construction gate
- Worker accommodation
- Mahalla Committee Offices
- Khokimiyat Offices (where agreed)
- Airport Administration Office (during operations)

Boxes will be clearly labelled in Uzbek and Russian.

All grievances received through any channel will be formally logged, acknowledged, and tracked in a centralized grievance register maintained by the Project Company and/or EPC Contractor. Each complaint will be assigned a unique reference number to ensure traceability and timely resolution. Responses will be communicated to the complainant using their preferred communication method, where practicable.

The Project Company will ensure that grievances are addressed in a timely, fair, and culturally sensitive manner. Where a grievance is rejected or cannot be fully resolved in the complainant's favor, clear justification will be provided, and efforts will be made to engage the complainant through meetings or consultations to explain findings, clarify technical issues, and explore feasible alternative solutions.

All grievance cases will be supported by documented records, including description of the issue, investigation findings, root cause analysis, corrective and preventive actions, and follow-up verification where applicable. These records will be securely stored in a dedicated grievance management system and will be made available for review by lenders, independent auditors, and relevant regulatory bodies upon request.

Confidentiality and personal data protection will be strictly maintained. Personal information will be used solely for grievance management purposes and will not be disclosed publicly or used for unrelated purposes.

The effectiveness of the GRM will be monitored regularly through weekly construction EHS meetings, monthly management reviews, and periodic internal and external audits. The system will be continuously improved based on feedback trends, audit findings, and stakeholder input to ensure alignment with IFC Performance Standard 1 and good international industry practice (GIIP).

5.4 Grievance Mechanism during Operation

During the operational phase of the Airport, the Grievance Redress Mechanism (GRM) will continue to function as a core component of stakeholder engagement and will remain accessible to all stakeholders, including nearby communities, Project Affected Households (where residual impacts persist), airport users, workers, contractors, and other interested parties.

The GRM will be managed by a designated responsible officer within the Airport Operator (or Project Company, as applicable), who will oversee the receipt, registration, assessment, investigation, and resolution of grievances in a timely and transparent manner. Where required, grievances will be escalated to relevant technical departments or management levels to ensure appropriate resolution.

Multiple grievance submission channels will remain available throughout the operational phase, including dedicated hotline/telephone, email, online submission platform (where applicable), written submissions, and in-person complaints through designated contact points at or near the airport. Information on how to submit grievances will be publicly disclosed in Uzbek and Russian languages at accessible locations such as airport information boards, community notice points, and through local administrative structures (including Mahalla committees).

All grievances will be systematically recorded in a grievance register, including details of the complaint, actions taken, responses provided, and closure status. Records and supporting documentation will be retained for a minimum of five years in accordance with good international industry practice and lender requirements.

The contact details of the designated GRM focal point will be clearly displayed at publicly accessible locations and updated as required. Worker grievances will be managed through a separate but aligned internal mechanism in accordance with national labor legislation and IFC Performance Standard 2 (PS2), ensuring confidentiality and non-retaliation principles. Worker representatives will support communication between employees and management to facilitate effective resolution of workplace-related concerns.

The GRM will be periodically reviewed and improved based on grievance trends, stakeholder feedback, and operational experience to ensure continued effectiveness and alignment with IFC PS1 requirements.

5.5 Grievance Procedures for Women, Vulnerable and Disadvantaged Groups

A project-specific Gender Action and Management Plan (GAMP) will be developed for the Airport Project to address risks related to Gender-Based Violence and Harassment (GBVH) and to ensure inclusive engagement and protection of women, vulnerable, and disadvantaged groups. The plan will be developed in alignment with Uzbek national legislation, and applicable lender requirements, and will be implemented by the Project Developer (Vision Invest and Sojitz Corporation) through the Project Company and EPC Contractors.

As no formalized, standalone Health, Safety, Security and Environment (HSSE) Management System has been publicly confirmed for the Project Developers at this stage, the Project will instead develop and implement a project-specific Environmental, Social, Health and Safety

(ESHS) management framework. This framework will incorporate provisions for the prevention of gender-based violence and harassment (GBVH), as well as clear reporting channels and response procedures, in line with internationally recognized good practice standards.

The Gender Action and Management Plan will define:

- Expected standards of behaviour for all workers and contractors.
- Clear reporting and response procedures for GBVH-related incidents.
- Disciplinary measures, including sanctions up to termination of employment.
- Referral pathways to appropriate support services for survivors.
- Confidentiality and non-retaliation principles; and
- Monitoring and reporting arrangements.

In accordance with the Project Labour Working Management Procedures (LWMP), all workers will be informed of the Code of Conduct in languages they understand during induction and onboarding. The Code of Conduct will include explicit provisions on GBVH prevention, reporting mechanisms, disciplinary consequences, and grievance handling procedures.

The Project Company will ensure regular training and awareness programmes for all workers and contractors on GBVH risks, acceptable behaviour, reporting channels, and consequences of misconduct. Particular attention will be given to strengthening awareness among supervisory staff and subcontractors. Efforts will also be made to promote gender representation in relevant roles, including the appointment of designated focal points to provide accessible and trusted support for female workers.

Anonymous and confidential reporting tools will be established for both workers and community members to enable safe reporting of GBVH cases without fear of retaliation. Vulnerable workers, including women, will be provided with targeted awareness and capacity-building initiatives, which may include life skills training, leadership development, and empowerment programmes aimed at strengthening their protection and participation in the Project workforce and community interface.

A monitoring and evaluation system will be implemented to track GBVH related risks, reported cases, response effectiveness, and the overall performance of preventive measures. Findings will be used to strengthen mitigation actions and continuously improve the system.

5.5.1 Reporting of Gender Based Violence and Harassment (GBVH)

The Project will establish multiple confidential and accessible reporting channels to enable safe reporting of GBVH incidents by both workers and community members. These channels will ensure confidentiality, accessibility, and protection from retaliation.

For community members, reporting channels may include:

- Community grievance/feedback boxes.
- Toll-free telephone hotline.
- Reporting through Mahalla committees or local community representatives.
- Engagement with women's support organisations or civil society groups where available.
- Designated focal persons at community engagement points.

For workers, reporting channels may include:

- On-site grievance/feedback boxes.
- Dedicated hotline and email system managed by the Project Company;

- Reporting through supervisors or designated GBVH focal points (with escalation safeguards);
- Online grievance submission through Project communication platforms (where applicable).

Child-friendly and anonymous reporting options will be made available where relevant to ensure that young or vulnerable individuals can safely raise concerns.

All GBVH-related grievances will be recorded in a separate confidential grievance register, distinct from the general grievance log. Access to this register will be strictly limited to designated trained personnel, ensuring confidentiality, sensitivity, and protection of complainants' identities.

In cases involving criminal acts, serious harm, or safety risks, grievances will be escalated to the relevant competent authorities in accordance with Uzbek legal requirements, while ensuring that survivor safety and confidentiality are maintained.

All GBVH-related grievances will be handled in accordance with:

- Applicable national laws of Uzbekistan.
- IFC Performance Standards and Good International Industry Practice (GIIP).
- Project-specific non-retaliation principles; and
- Strict confidentiality protocols.

5.6 GRM Process Flow and Timeline

The process flow and timeline below will be followed as part of the GRM. Where complex grievances⁷, or other factors are extending the investigation time, the Grievant will be informed of this delay and advised of an updated expected timeline for response.

Table 5-6 Grievance Process and Timeline

Stage	Timeline
Grievance Received/Submitted	-
Grievance logged and acknowledged	Within seven working days of grievance being submitted
Grievance investigated	Within 14 working days of grievance being submitted
Proposed resolution conveyed to grievant (simple grievances)	Within 14 working days of grievance being submitted
Proposed resolution conveyed to grievant (complex grievances)	Within 21 working days of the grievance being submitted
If applicable following dissatisfaction of resolution by Grievant	
Actions to re-assess grievance/propose new solution/inform Grievant of final decision	Within 14 working days of notification of dissatisfaction by Grievant
In the event that a grievance cannot be resolved between the two parties a mediator will be involved i.e. the GRM Committee	Within 14 working days of notification of dissatisfaction by the Grievant.

⁷ In cases of sensitive grievances, such as those involving multiple interests in the affected communities, land or asset disputes or where a more complex investigation is required, Vision Invest, Sojitz Corporation, and the ESIA consultant will seek advice from the Grievance Redress Committee (GRC) and then propose a resolution in consultation with the affected parties. Such cases will be addressed and communicated to the complainants within 21 working days of the grievance(s) being submitted.

The Project-level GRM will maintain a comprehensive and auditable record of all grievances received, actions taken, and closure status. This system will support timely resolution of issues and provide input to management reviews and external reporting to authorities and lenders where required.

GRM performance will be monitored through key performance indicators (KPIs) to assess effectiveness and responsiveness.

Table 5-7 Monitoring Indicators for Grievance Management and Compliance

No.	KPI	Measurement Action	Frequency	Goal
1	Number of valid grievances submitted	Project Grievance Register	Weekly	Managed and tracked
2	Number of resolved grievances	Project Grievance Register	Weekly	100% resolution
3	Outstanding/open grievances	Project Grievance Register	Weekly	Minimized / Zero backlog
4	Grievances not addressed within defined timeframe	Project Grievance Register	Weekly	Zero
5	Number of grievances related to GBV/SEA/SH	Project Grievance Register	Weekly	Zero tolerance (all cases addressed per protocol)
6	Average grievance resolution time (by severity level)	Project Grievance Register	Weekly	Within 14 days from receipt
7	Category of grievances (e.g. noise, dust, traffic, safety, employment)	Project Grievance Register	Monthly	N/A
8	Number of incidents/non-compliances linked to SEP or GRM failures	Submission of Incident Report and/or Non-Compliance Report (NCR)	Weekly	Zero

In addition to the above, all grievances will be documented within the grievance register.

6.0 Air Emission and Ambient Air Quality

This chapter assesses the potential impacts that may occur as a result of the Project's construction and operational activities on ambient air quality. It further looks to identify measures that can be undertaken and/or implemented to mitigate, manage and monitor such impacts, as necessary.

6.1 Applicable Requirements and Standards

6.1.1 National Standards

The Law of the Republic of Uzbekistan "On Atmospheric Air Protection" (1996, amended on 2025)

This regulation specifies standards, quality and harmful effects norms, requirements on fuels, lubricants, production and operation of vehicles and other transport means and equipment, ozone layer protection requirements, obligations of enterprises, institutions and organisations toward atmospheric protection, and compensations of damages from atmospheric pollutions.

SanR&N 0053-23 – "Hygienic standards. The list of maximum permissible concentrations of pollutants in the ambient air of settlements in the territory of the RUz" with the addition in the Decision of the Committee for Sanitary and Epidemiological Welfare and Public Health under the Ministry of Health of the RUz "On the Addition of Permissible Hygienic Standards for the Content of Harmful and Toxic Substances, Productive Microorganisms, Bacterial Preparations and Aeroions in the Air of Residential Premises" (account number 253, dated 27.05.2024).

Table 6-1 Ambient Air Quality MPC (mg/m³)

Pollutant	(MPC mg/m ³)			
	One-time	24-hour	Monthly	Annual
NO ₂	0.085	0.06	0.05	0.04
NO	0.6	0.25	0.12	0.06
CO	5	4	3.5	3
SO ₂	0.5	0.2	0.1	0.05
PM ₁₀	0.5	0.3	-	0.05
PM _{2.5}	0.5	0.3	-	0.05

Note:

- Maximum one-time concentration - the highest concentration detected at 20-30-minute sampling.
 - o Average daily concentration is the average of the one-time concentrations detected during the day or obtained with continuous 24-hour sampling.
 - o Monthly average concentration is the average of the average daily concentration detected during the month.
 - o Average annual concentration - the average of the number of average monthly concentrations revealed during a year in the course of one-time sampling.

"Guidelines for Airport Planning (Land Use and Environmental Management)" is the document approved by the Civil Aviation Agency of the Republic of Uzbekistan on 28.04.2023 which provides information on air quality, pollutants and pollution sources in the airport area.

6.1.2 Lenders' Requirements

As per the IFC, EBRD, (and as outlined in the OECD Common Approaches) the WBG EHS Guidelines for Airports are applicable for the Project and provide advice on preventing, minimising and controlling emissions to air from ground services within an airport.

6.1.2.1 WHO Ambient Air Quality Standards

The WHO ambient air quality standards often required by lenders, are presented in table below.

Table 6-2 WHO Ambient Air Quality Standards ($\mu\text{g}/\text{m}^3$)

	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 $10\mu\text{m}$ in diameter (PM_{10})					
24 Hours*	45	150	100	75	50
Annual	15	70	50	30	20
Particulate Matter not exceeding $2.5\mu\text{m}$ ($\text{PM}_{2.5}$)					
24 Hours*	15	75	50	37.5	25
Annual	5	35	25	15	10
Ozone					
8 Hour Daily Maximum	60	70	100	-	-
*Allowance of 3-4 days exceedance per year (99th percentile)					

WHO Interim Target 1 values have been adopted as the project-specific standards as they represent internationally recognised health-based interim targets intended for application in regions where achievement of the WHO Air Quality Guideline values is not yet feasible, while providing a progressive pathway towards improved air quality. The more stringent WHO Interim Targets (2,3 & 4) and the WHO Air Quality Guideline values are presented for contextual benchmarking only to demonstrate the Project's performance against increasingly protective health-based criteria and do not form part of the formal impact significance assessment.

In addition to the WHO Air Quality Standards and national regulations, the Project will also consider the IFC General Environmental, Health, and Safety Guidelines (2007), which outline good international industry practice (GIIP) for air emissions management.

6.1.2.2 European Union Standards

The EU ambient air quality standards are also required ERBD. The relevant EU air quality standards as set out within EU Directive 2008/50/EC have also been used within this assessment and are provided in Table 6-3.

Table 6-3 EU Ambient Air Quality Standards

Pollutant	Averaging Period	Standard (µg/m ³)
Nitrogen dioxide	1-Hour	200
	Annual	40
Carbon monoxide	8-Hour	10000
Particulate matter (PM ₁₀)	24-Hour	50
	Annual	40
Particulate matter (PM _{2.5})	Annual	20
Benzene	Annual	5

6.1.3 Project-Specific Standards

For the purpose of the ESIA, project-specific ambient air quality standards have been defined based on the most stringent of applicable national standards, WHO Air Quality Guidelines (Interim Target 1) and EU limit values. These standards as shown in Table 6-4 (with the most stringent limits highlighted) forms the basis for all baseline evaluation, modelling assessment, and impact significance determination.

Table 6-4 Summary of Project Specific Standards

Pollutant	Averaging Period	National	WHO	EU Limit
NO ₂	1-hour	85	-	200
	24-hour	60	120	-
	Annual	40	40	40
CO	8-hour	-	-	10000
	24-hour	4000	7000	-
	Annual	3000	-	-
SO ₂	24-hour	200	125	-
	Annual	50	-	-
NH ₃	24-hour	120	-	-
	Annual	40	-	-
PM ₁₀	24-hour	300	150	50
	Annual	50	70	40

Pollutant	Averaging Period	National	WHO	EU Limit
PM _{2.5}	24-hour	300	75	-
	Annual	50	35	20
Ozone	8-hour	-	70	-
Benzene	Annual	-	-	5

Diffusion tube monitoring provides an integrated concentration over a period of 3 weeks, which does not directly correspond to the averaging periods defined under WHO or EU air quality standards. In this context, Uzbekistan national Maximum Permissible Concentrations (MPCs), which include longer averaging periods such as monthly values, provide a more appropriate reference for comparison with time-integrated passive sampling results. Accordingly, national standards have been used for the interpretation of diffusion tube data.

6.2 Scoping

For this ESIA, the scope of air quality assessment included in the following:

- Review of meteorological data in order to understand the climatic conditions in the vicinity of the Project.
- Desktop study followed by ground-truthing to confirm the locations of nearby areas that may be sensitive to changes in ambient air quality.
- Review of available construction and operational information and data including expected type of construction equipment and current and future emission sources.

Baseline of ambient air quality at the Project area and the surroundings were established by undertaking sampling using diffusion tubes and continuous air quality monitoring, for the parameters PM₁₀, PM_{2.5}, NO₂, SO₂, CO, and VOCs.

A qualitative assessment is made in relation to the potential impacts of construction dust, gaseous emissions and odour.

Potential impacts during operation are assessed using the ADMS Airport dispersion model, to predict the emissions generated from the airport itself, for the parameters that likely to arise which are NO_x, particulate matter, CO and hydrocarbons.

Besides the emissions from the airport operation, vehicular emissions from the access road to the airport using preliminary traffic data available are also included in the assessment.

As outlined above, a quantitative air quality assessment has been undertaken for the opening year (2030) airport configuration of 20 MAP, which represents the Project currently proposed for development and for which sufficient design and operational information is available to support robust dispersion modelling. The ultimate masterplan capacity of approximately 46 MAP has not been quantitatively modelled because this expansion represents a long-term conceptual development rather than a defined project phase.

At the current stage of planning, the key parameters required to undertake a technically robust air quality assessment remain undefined. These include, but are not limited to:

- Timing and phasing of future expansion works;
- Future aircraft fleet composition, engine technologies and operational characteristics;
- Aircraft movement profiles, including runway utilisation, taxiing arrangements and auxiliary power unit (APU) usage;
- Future landside transport demand and access arrangements, including passenger, employee and freight traffic volumes, the final configuration of the wider area road

network, the planned new toll road and associated junctions, traffic distribution across the surrounding road network, and vehicle fleet composition.

- Future airport energy supply strategy, including the extent of electrification of ground support equipment, on-site renewable energy generation and other low-emission technologies; and
- Future operational and mitigation measures that may be implemented to minimise emissions in line with evolving regulatory requirements and industry best practice.

Given these uncertainties, any quantitative modelling of the ultimate 46 MAP scenario would necessarily rely on numerous assumptions that cannot currently be substantiated. Such assumptions would introduce a level of uncertainty that would reduce the technical robustness and reliability of the assessment and could result in predictions that are not representative of the future operational airport.

Furthermore, the ultimate expansion is expected to occur over a long-term planning horizon, during which significant advances in aviation, transport and energy technologies are anticipated. These are expected to include continued improvements in aircraft engine emission performance, increased penetration of sustainable aviation fuels (SAF), progressive electrification of airport ground operations and landside vehicle fleets, greater use of fixed electrical ground power in place of aircraft auxiliary power units, decarbonisation of the national electricity grid, and implementation of increasingly stringent international and national emission standards. These technological and regulatory developments are expected to influence future air quality emissions and concentrations, although the magnitude and timing of these changes cannot currently be predicted with sufficient confidence for quantitative modelling.

Accordingly, undertaking dispersion modelling for the ultimate 46 MAP scenario at this stage would not provide a meaningful or proportionate assessment and could present a misleading representation of future environmental conditions. Instead, the ESIA adopts a phased assessment approach whereby quantitative modelling is undertaken for the defined opening year development, while recognising that any future expansion beyond the currently assessed phase will be subject to separate design development, environmental assessment and regulatory approval processes. As part of those future assessments, a project-specific air quality assessment will be undertaken using the detailed design information, operational forecasts and prevailing emission factors available at that time, ensuring that the assessment reflects the actual characteristics of the proposed expansion and contemporary regulatory and technological conditions.

Although the ultimate airport development would result in increased passenger throughput and aircraft movements, this would not necessarily result in a proportionate deterioration in local air quality. Over the long-term planning horizon for the ultimate 46 MAP scenario, significant advancements in aircraft engine technology, increasing adoption of sustainable aviation fuels, progressive electrification of airport ground support equipment and landside vehicle fleets, greater use of fixed electrical ground power in place of aircraft auxiliary power units, and continued decarbonisation of the electricity grid are expected to reduce emissions of key local air pollutants. In addition, future expansion phases would incorporate contemporary design standards and operational mitigation measures that reflect applicable regulatory requirements and industry best practice at the time of implementation.

6.3 Sensitive Receptors

Receptors that could be potentially affected due to changes in ambient air quality are shown in following table.

Table 6-5 Potential Air Quality Receptors

Receptor	Sensitivity	Justification
Nearby Residential Communities	High	Residential areas include permanent and potentially vulnerable populations (children, elderly, and individuals with pre-existing health conditions). These receptors are highly sensitive to changes in ambient air quality from construction and operational emissions.
Commercial, Industrial and Agricultural Land Uses	Medium	These receptors involve occupational exposure and productive land uses. Workers are present during defined hours and agricultural activities may be affected by dust deposition and pollutant exposure. While sensitive to air quality changes, they are generally less vulnerable than permanent residential and community receptors
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.

6.4 Observations and Baseline Conditions

6.4.1 Meteorological Conditions

Based on 'Climate Risk Country Profile: Uzbekistan' (2021, ADB & WBG)⁸, Uzbekistan has an arid and continental climate identified by substantial variations in temperature within days and between seasons. Sizeable parts of the country (79% by area) have flat topography either in the form of semi-desert steppes or desert zone. The remaining south-eastern areas have a continental climate, including the area covering the largest cities of Tashkent and Samarkand, and contain high mountains forming part of the Tien-Shan and Gissar-Alai Ranges. Summers in the country has an average monthly temperature of 27.2 °C, with the hottest in July. The average daily maximum temperature in many of the major cities is 35 °C. While the winters has average monthly temperatures of -1 °C to -3 °C, between December and February.

For the precipitation levels, many western areas of the country receive less than 100 millimetres (mm) of precipitation per year, while the area on east and south-east could receive up to 800 – 900 mm per year. Data from World Meteorological Organization⁹, between January to December, the lowest mean daily minimum temperature is in December with – 0.3 °C. The hottest month is in July, with the highest mean daily temperature of 35.7 °C. The mean number of precipitation days varies between months, from the lowest is in August with 1.9 days and the highest is 13.8 days in March.

Figure 6-1 depicts the wind rose using the data recorded at the existing Tashkent International Airport for the year 2023 and 2024 which wind blowing predominantly from an easterly direction.

⁸ <https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15838-Uzbekistan%20Country%20Profile-WEB.pdf>

⁹ <https://worldweather.wmo.int/en/city.html?cityId=115>

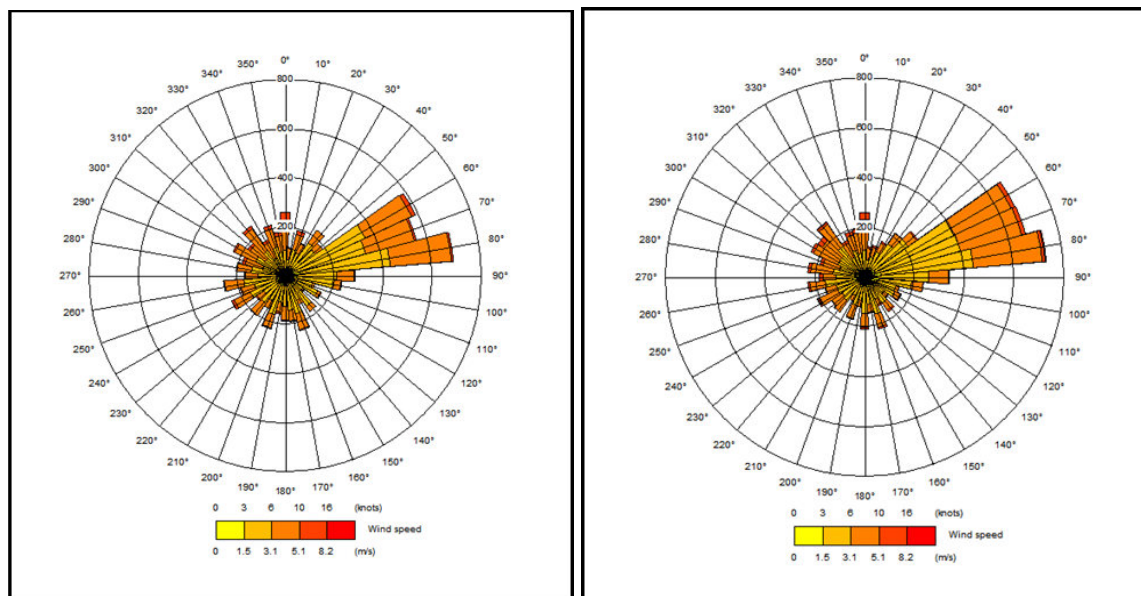


Figure 6-1 Windrose at Tashkent International Airport, 2023 and 2024

6.4.2 Local Influence on Air Quality

The proposed Project site is located approximately 23 kilometres south of Tashkent city and about 20km from the existing Tashkent International Airport, in a predominantly flat rural area within the territory of the Tashkent Province, Urta-Chirchik and Kuyi-Chirchik districts.

The Project site current condition features mainly a rural area predominantly used for farming including growing fruit trees. There are no major anthropogenic sources of air emissions within the Project site or nearby areas. Local farming may also result in local air quality impacts, including for Ammonia (NH_3) and fine particulates (such as $\text{PM}_{2.5}$), particularly where there is fertiliser application, burning of agricultural residues and poor manure management. Such impacts may be seasonal, however, based on the observed farming techniques (of limited sophistication) these are unlikely to result in significant long-term impacts to the airshed.



Figure 6-2 The conditions surrounding the Project site

6.4.3 Air Quality Monitoring Overview

Air quality measurements were conducted as part of the ESIA baseline survey for the following parameters: PM₁₀, PM_{2.5}, NO₂, SO₂, CO and VOCs. Continuous ambient air quality monitoring was undertaken at two (2) locations (AQM-1 and AQM-2) over a 10-day period. These monitoring locations were selected to represent air quality at the Project site and at sensitive receptors situated close to the Project site.

In addition, medium-term passive diffusion tube monitoring was undertaken for NO₂, SO₂, O₃ and VOCs at eleven (11) locations. The diffusion tubes were deployed for two (2) monitoring rounds, with each round consisting of a three-week exposure period. The monitoring network included both baseline locations representative of existing ambient conditions and roadside locations along existing roads to enable verification and calibration of the traffic air quality model.

The monitoring data are presented in this ESIA in units of µg/m³ and have been assessed against applicable national ambient air quality standards, as well as the WHO Air Quality Guidelines, as referenced in the WBG/IFC EHS Guidelines.

The ambient air quality monitoring locations are indicated Figure 6-3 and comprised the following:

- AQ1 to AQ3: Roadside monitoring locations used to verify the traffic model. These were positioned approximately 1–2 metres from the edge of the existing roads.
- AQ4, AQ5 and AQ6: Monitoring locations at settlements situated close to the Project site.

- AQ7: A monitoring location situated close to the route of the proposed new highway.
- AQ8, AQ9 and AQ10: Additional monitoring locations at settlements close to the Project site.
- AQ11: A monitoring location situated within the Project site boundary.

As outlined above, the monitoring locations are focused on receptors closest to the Project site and along potential future roads, where impacts are likely to be more localised.

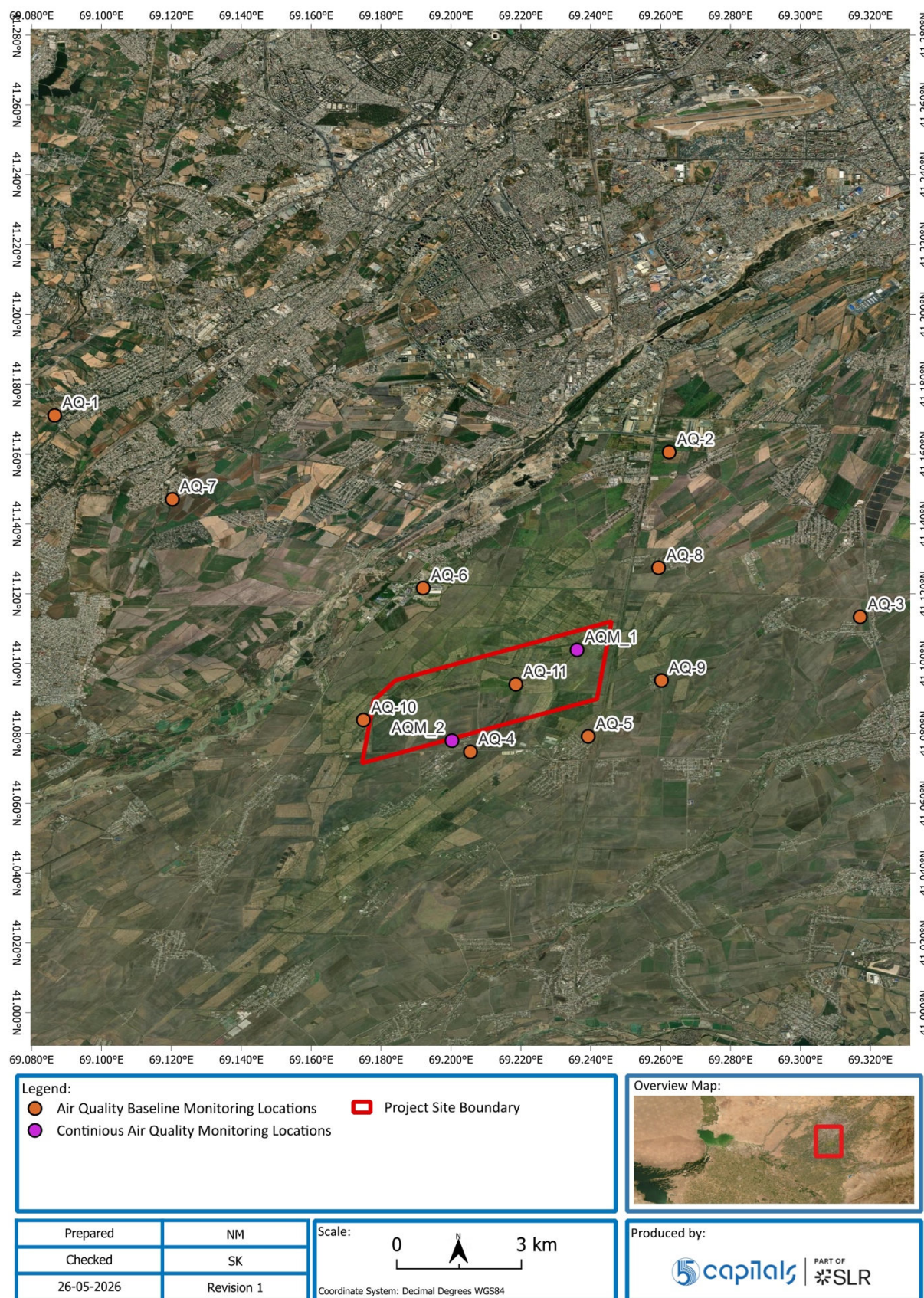


Figure 6-3 Air Quality Baseline Monitoring Locations

6.4.4 Air Quality Monitoring Results

6.4.4.1 Continuous Air Quality Monitoring

To characterise existing ambient air quality conditions at the Project location, continuous air quality monitoring was undertaken at two monitoring stations (AQM-1 and AQM-2). Monitoring was conducted from 27 November to 09 December 2025 at AQM-2, and from 13 to 26 December 2025 at AQM-1.

The parameters measured during the monitoring campaign included CO, NO₂, O₃, SO₂, PM₁₀ and PM_{2.5}. The temporal trends in pollutant concentrations at both locations are presented in Figure 6-4 to Figure 6-14.

Based on the monitoring results:

Concentrations of CO, NO₂ and SO₂ at both AQM-1 and AQM-2 were generally compliant with the applicable national ambient air quality standards and relevant guideline values throughout the monitoring period.

O₃ concentrations were within applicable standards during the monitoring campaign. The observed diurnal pattern occurs because ground-level ozone is a secondary pollutant formed through photochemical reactions between Nitrogen oxides (NO_x) and Volatile Organic Compounds (VOCs) in the presence of sunlight. During daylight hours, particularly under strong solar radiation, ozone formation is enhanced. At night, in the absence of sunlight, ozone production ceases and concentrations decline due to atmospheric dispersion and chemical reactions.

Elevated concentrations of particulate matter (PM₁₀ and PM_{2.5}) were recorded, both at AQM-1 and AQM-2. At this location, periodic exceedances of the applicable standards were observed, associated with ongoing local activities and short-term increases in emissions. The results indicate that these exceedances were temporary in nature and corresponded with specific activity periods rather than sustained elevated background concentrations.

The elevated particulate matter concentrations are considered to be influenced by local emission sources. Typical sources of PM include fuel combustion (e.g., motor vehicles and stationary sources), and agricultural operations. Considering the land uses and activities surrounding the monitoring locations, the primary contributors to the recorded exceedances at AQM-2 are understood to be agricultural activities (including soil disturbance and open land exposure) and vehicle emissions along nearby roads.

These results indicate that while gaseous pollutants are generally within acceptable limits, background particulate matter concentrations, particularly at AQM-2 are periodically elevated.

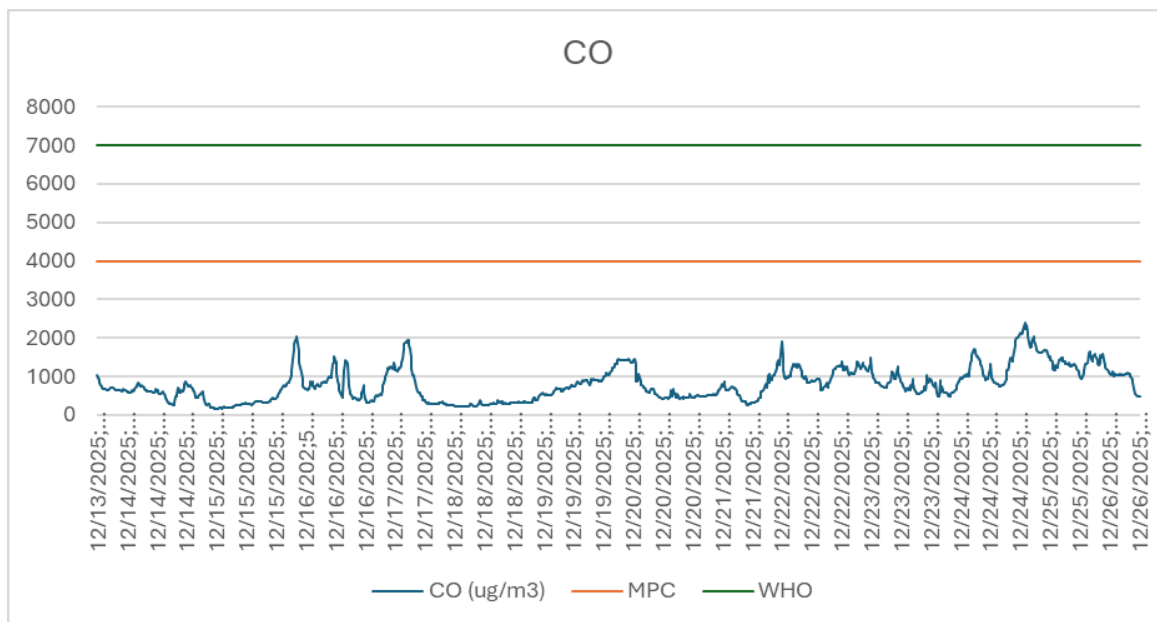


Figure 6-4 Trend of CO concentration at AQM-1

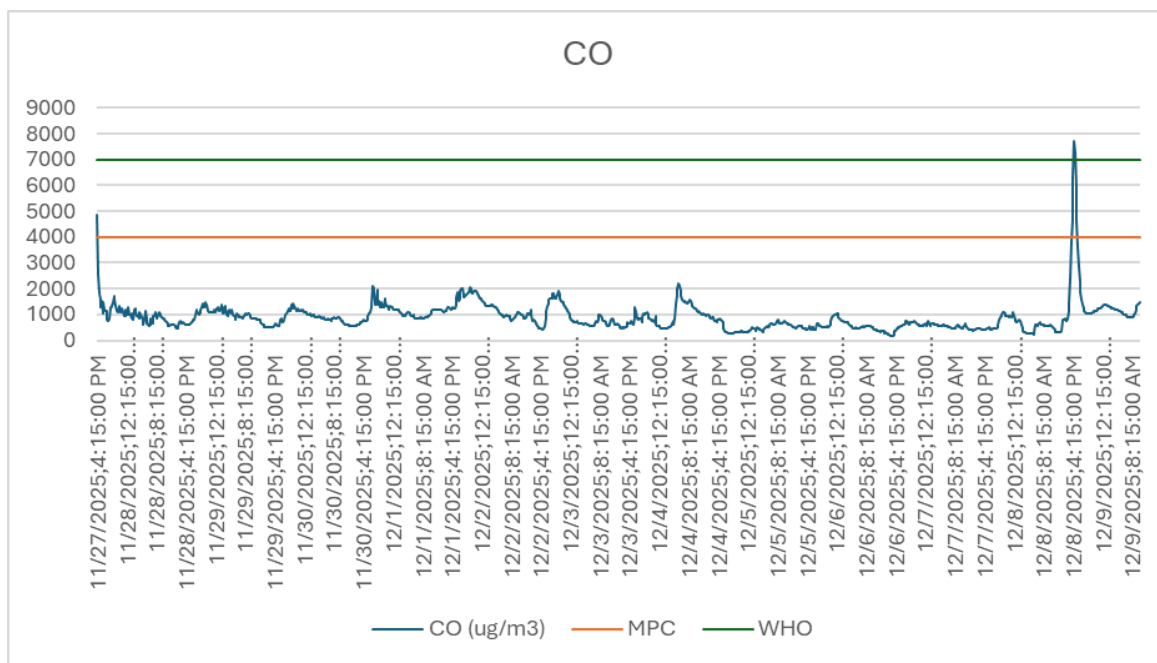


Figure 6-5 Trend of CO concentration at AQM-2

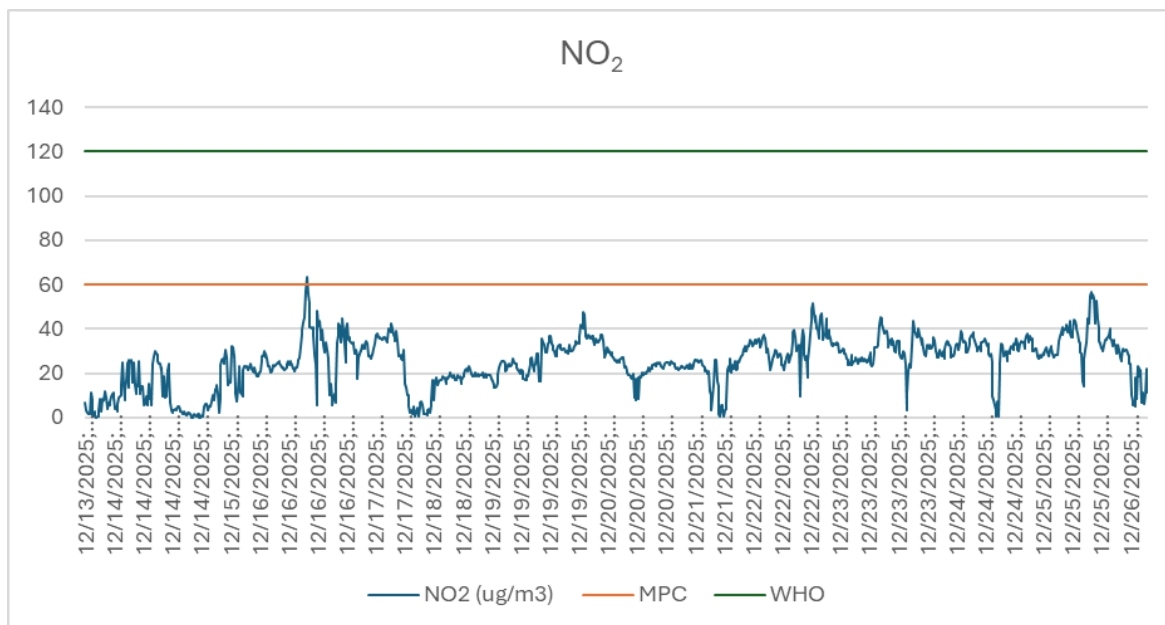


Figure 6-6 Trend of NO2 concentration at AQM-1

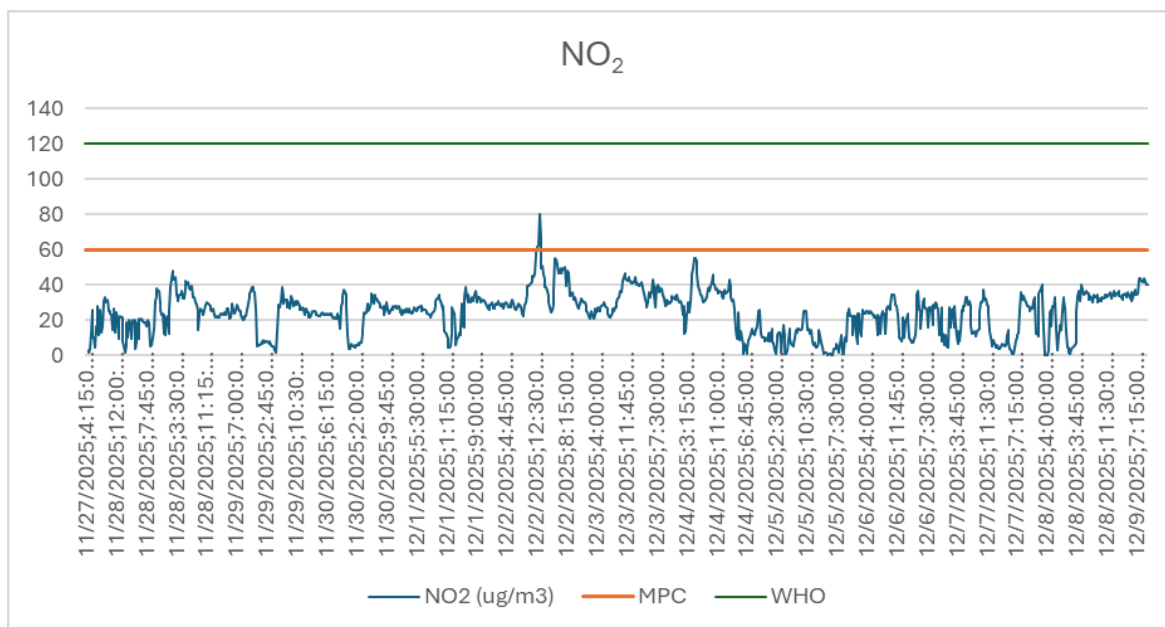


Figure 6-7 Trend of NO2 concentration at AQM-2

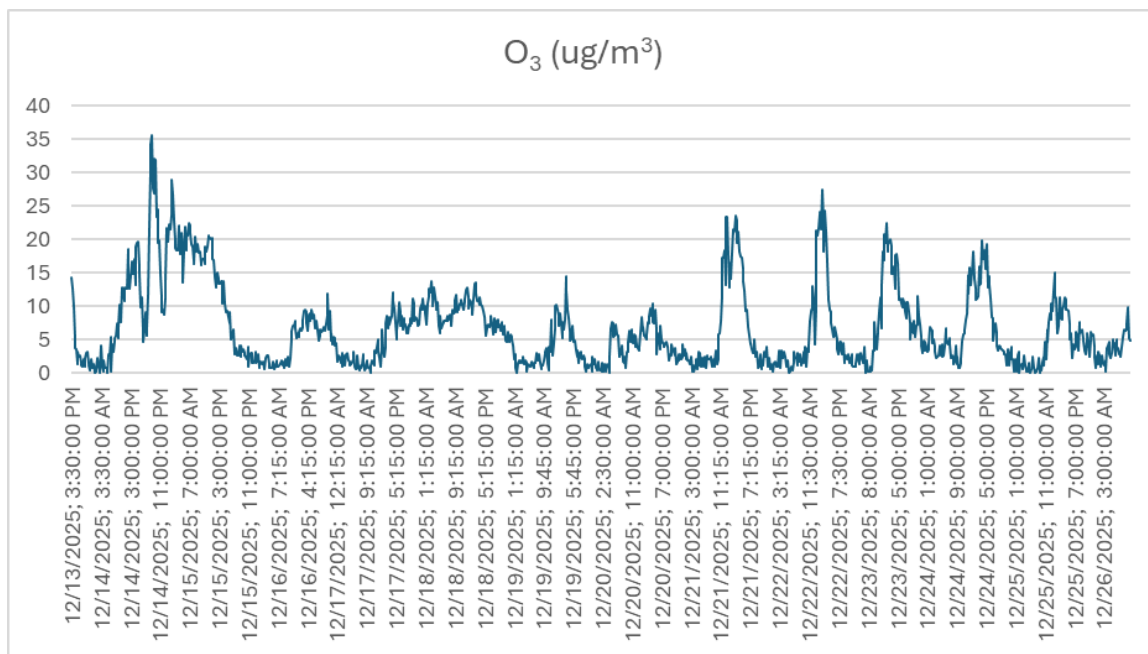


Figure Trend of O₃ concentration at AQM-1

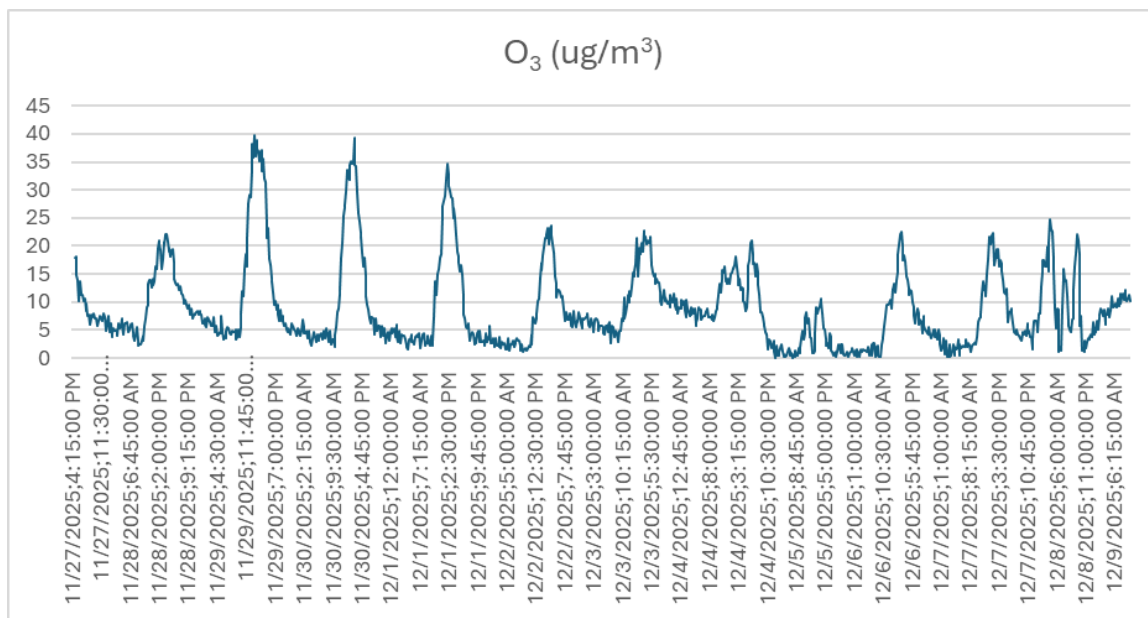


Figure 6-8 Trend of O₃ concentration at AQM-2

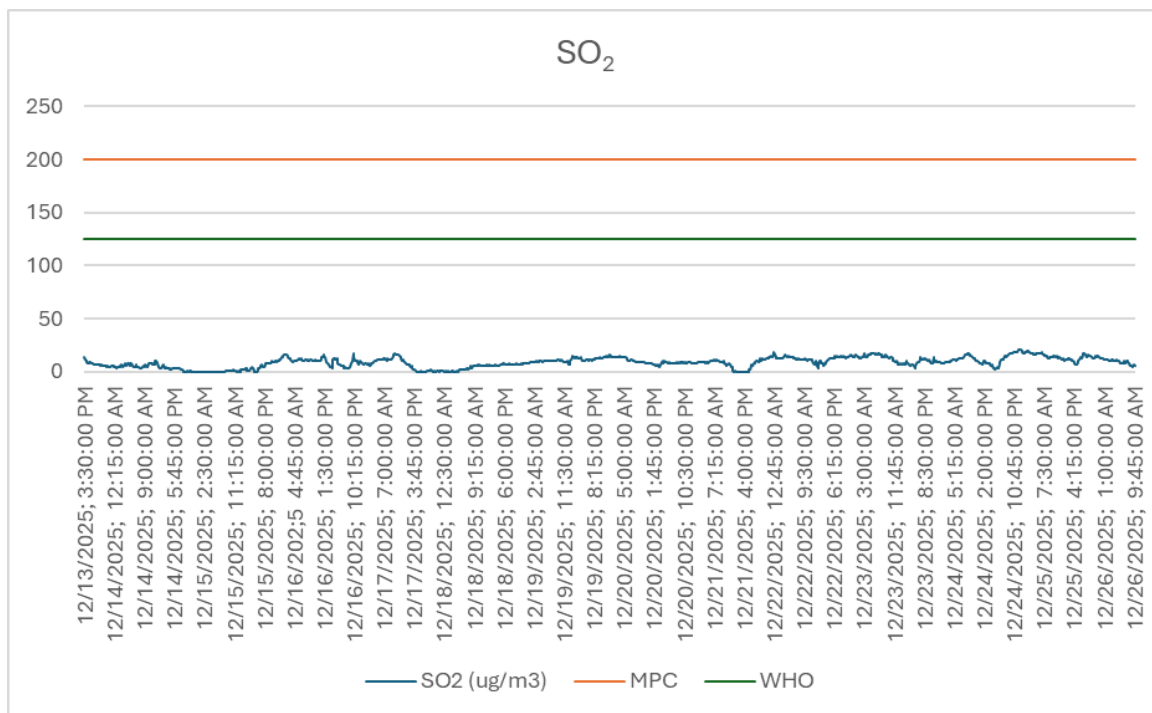


Figure 6-9 Trend of SO₂ concentration at AQM-1

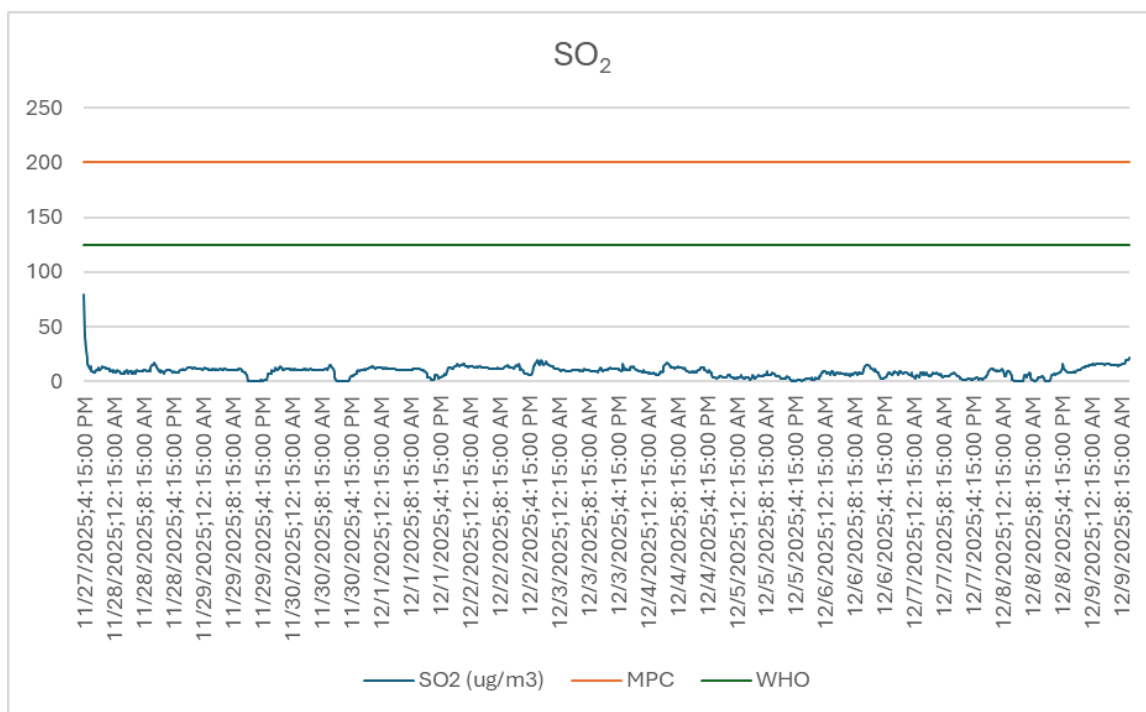


Figure 6-10 Trend of SO₂ concentration at AQM-2

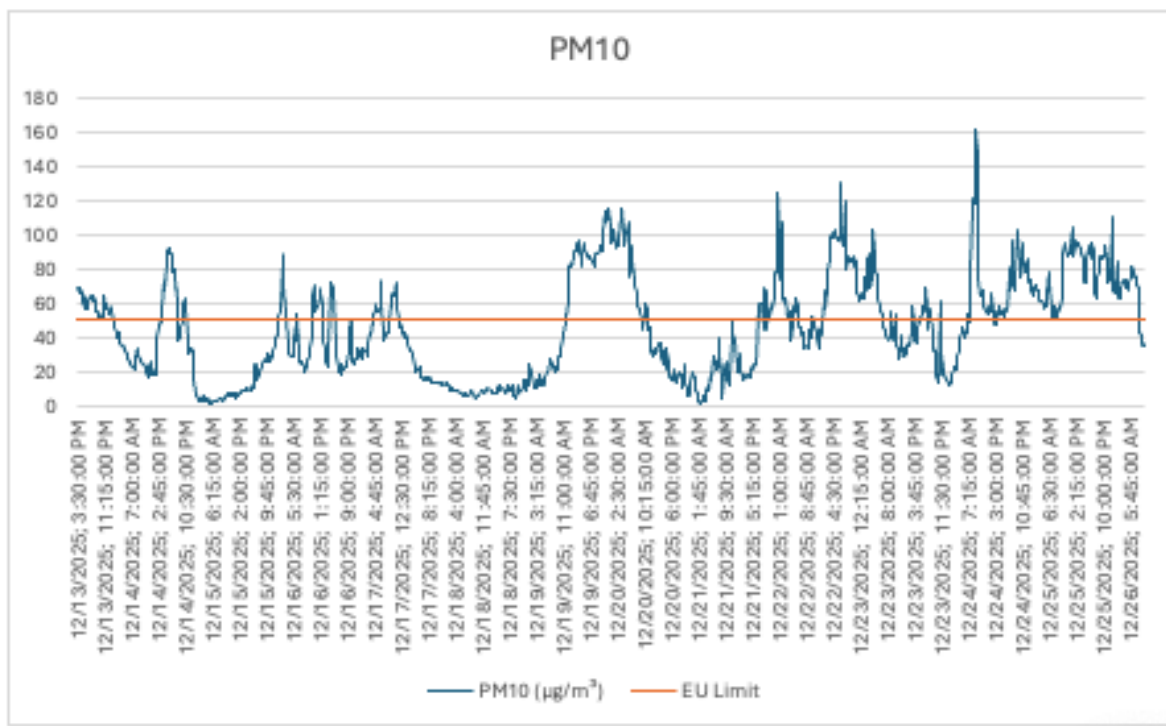


Figure 6-11 Trend of PM₁₀ concentration at AQM-1

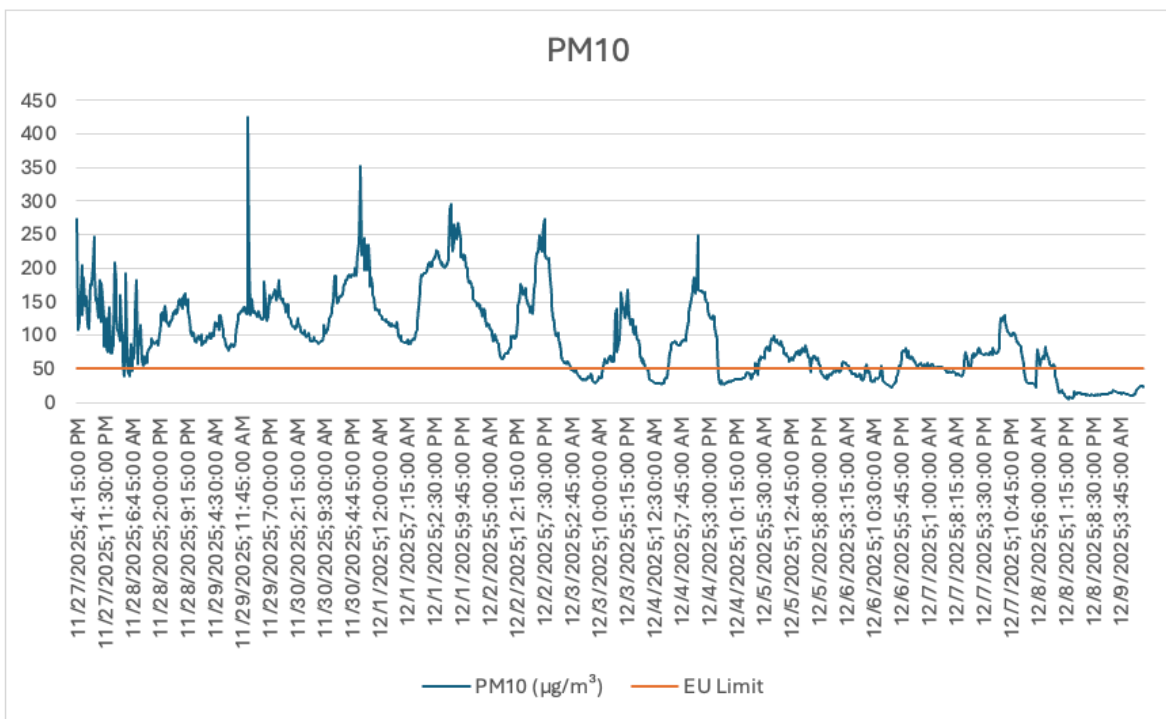


Figure 6-12 Trend of PM₁₀ concentration at AQM-2

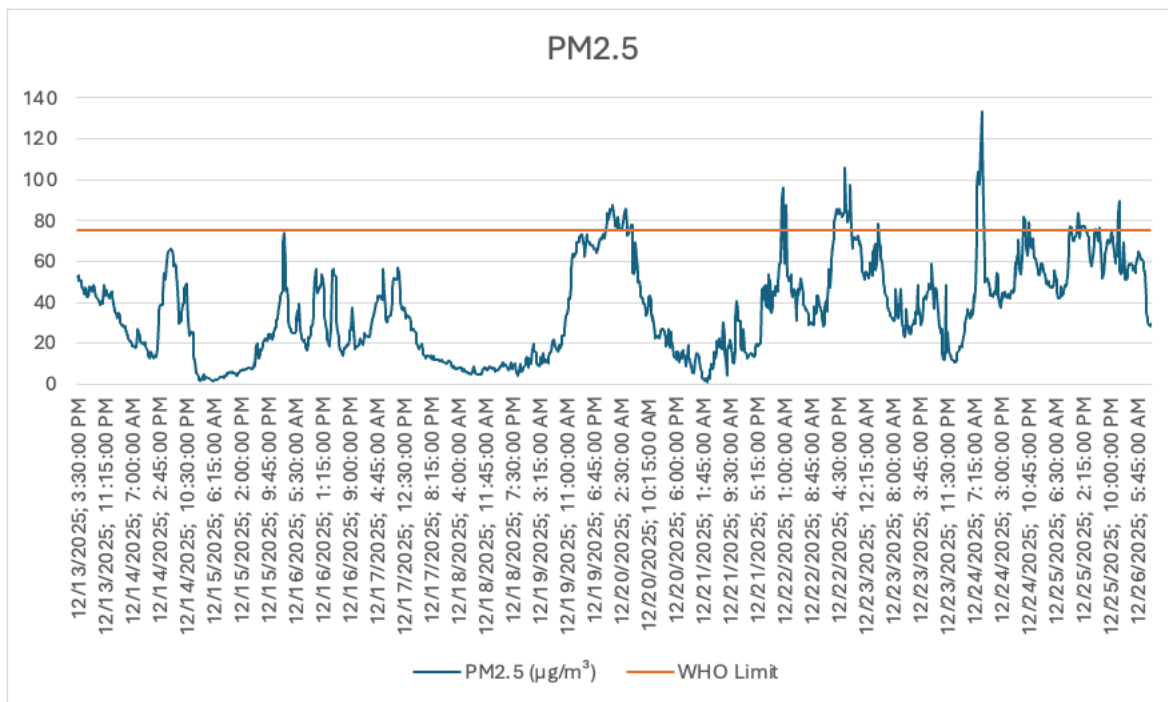


Figure 6-13 Trend of PM_{2.5} at AQM-1

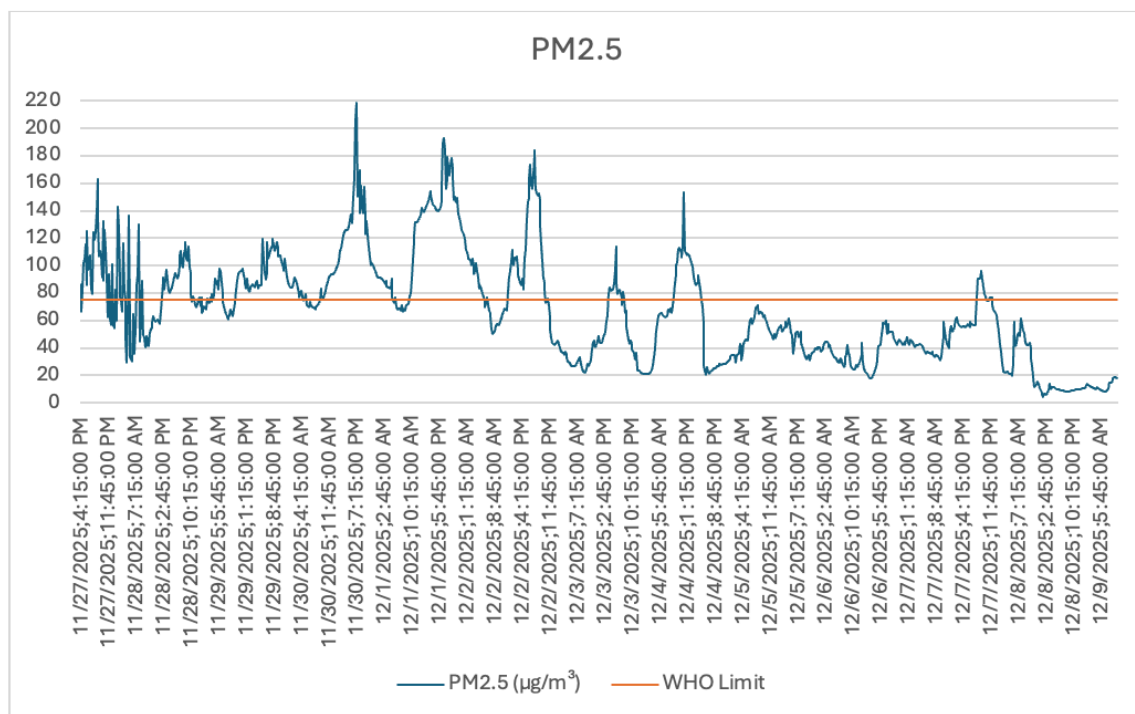


Figure 6-14 Trend of PM_{2.5} at AQM-2

6.4.4.2 Passive Air Sampling – Diffusion Tubes

In addition to the continuous air quality monitoring described above, passive air sampling using diffusion tubes was undertaken to characterise medium-term ambient concentrations of selected gaseous pollutants and volatile organic compounds (VOCs).

Passive diffusion tubes are a widely accepted method for monitoring time-averaged concentrations of gaseous pollutants. The method operates on the principle of molecular diffusion, whereby pollutants diffuse along a concentration gradient into a tube containing an absorbent material. The pollutant is subsequently analysed in an accredited laboratory to determine the average ambient concentration over the exposure period.

As outlined earlier, two monitoring rounds were undertaken. Each round consisted of approximately three weeks of exposure at up to eleven (11) monitoring locations representative of roadside environments, settlements, and on-site conditions. Duplicate samples were collected for each parameter.

Round 1 Monitoring Results

SO₂, O₃ and NO₂

The results of Round 1 monitoring for SO₂, O₃ and NO₂ are presented in Table 6-6, with the exceedances highlighted. The results were compared against the applicable maximum permissible monthly limits as per national standards.

Table 6-6 SO₂, O₃, and NO₂ Concentrations on Round 1 Diffusion Tube Sampling

No	Location	Parameter					
		MPC*	SO ₂ (µg/m ³)	MPC*	O ₃ (µg/m ³)	MPC*	NO ₂ (µg/m ³)
1	AQ4 (A)	100	20.03	-	61.0	50	34.88
2	AQ4 (B)		3.33		28.7		26.30
3	AQ5 (A)		23.76		36.6		32.26
4	AQ5 (B)		23.49		35.2		32.55
5	AQ1 (A)		16.46		32.6		50.51
6	AQ1 (B)		16.20		23.6		51.68
7	AQ7 (A)		15.98		23.3		45.21
8	AQ7 (B)		16.53		27.2		44.28
9	AQ3 (A)		31.39		21.4		42.30
10	AQ3 (B)		29.55		27.5		41.38
11	AQ10 (A)		14.42		19.7		32.55
12	AQ10 (B)		17.52		23.0		31.59
13	AQ11 (A)		20.19		23.2		33.40
14	AQ11 (B)		20.66		23.1		34.16
15	AQ6 (A)		19.91		16.7		43.14
16	AQ6 (B)		20.08		19.11		43.54
17	AQ8 (A)		16.45		18.36		31.74
18	AQ8 (B)		16.48		15.3		33.01
19	AQ2 (A)		16.66		13.1		45.72
20	AQ2 (B)		10.82		20.5		47.78

* = national standards, monthly, in µg/m³

Note: tubes were unrecovered for AQ9

Based on the results:

SO₂ concentrations are well below the applicable national monthly Maximum Permissible Concentration (MPC) of 100 µg/m³. O₃ concentrations ranged from 13.1 to 61.0 µg/m³. No monthly MPC value is available for Ozone, however, was observed to be below its WHO 8-hr average limits.

NO₂ concentrations ranged from 26.30 to 51.68 µg/m³, compared with the national monthly MPC of 50 µg/m³.

All locations complied with the national standards for SO₂. For NO₂, all monitoring locations were compliant except AQ1 (both A and B tubes), where marginal exceedances of the monthly MPC were recorded (50.51 µg/m³ and 51.68 µg/m³). These slightly elevated concentrations are likely attributable to local traffic emissions and nearby anthropogenic activities.

Overall, ambient concentrations of SO₂ and NO₂ during Round 1 indicate generally good baseline air quality conditions in the Project area, with isolated localised NO₂ elevations.

BTEX (Benzene, Toluene, Ethylbenzene and Xylene)

BTEX compounds were also monitored at the same locations during Round 1. Results are shown in Table 6-7.

Table 6-7 BTEX Concentration on Round 1 Diffusion Tube Sampling

No	Location	Parameters			
		Benzene (µg/m ³)	Toluene (µg/m ³)	Ethylbenzene (µg/m ³)	m/p-Xylene (µg/m ³)
1	AQ4 (A)	6.00	68.00	29.00	29.00
2	AQ5 (A)	5.70	50.00	36.00	36.00
3	AQ5 (B)	5.80	60.00	36.00	37.00
4	AQ1 (A)	11.00	78.00	51.00	55.00
5	AQ1 (B)	10.00	82.00	38.00	41.00
6	AQ7 (A)	11.00	67.00	45.00	48.00
7	AQ7 (B)	12.00	93.00	29.00	33.00
8	AQ3 (A)	6.30	58.00	46.00	47.00
9	AQ3 (B)	6.50	86.00	43.00	44.00
10	AQ9 (B)	6.20	76.00	41.00	41.00
11	AQ10 (A)	6.00	47.00	29.00	29.00
12	AQ10 (B)	6.20	71.00	31.00	32.00
13	AQ11 (A)	6.60	79.00	33.00	33.00
14	AQ11 (B)	6.50	96.00	55.00	56.00
15	AQ6 (A)	7.80	69.00	18.00	21.00
16	AQ6 (B)	7.40	76.00	47.00	49.00
17	AQ8 (A)	7.00	57.00	49.00	49.00
18	AQ8 (B)	6.90	70.00	49.00	50.00
19	AQ2 (A)	7.70	66.00	15.00	18.00
20	AQ2 (B)	8.20	84.00	32.00	34.00

Note: tubes were unrecovered one each for AQ4 and AQ9

There are no specific national ambient air quality standards in Uzbekistan for BTEX compounds. Therefore, results have been assessed with reference to international health-based guidance, including:

WHO Global Air Quality Guidelines (2021) – which identify benzene as a carcinogenic pollutant for which no safe threshold can be established. WHO does not provide a guideline value for benzene but recommends minimising exposure as far as reasonably achievable.

IFC/WBG General Environmental, Health and Safety (EHS) Guidelines – which reference internationally recognised health-based values (e.g., WHO and other recognised authorities) for assessment of ambient air quality.

For screening purpose, health-based reference concentrations from internationally recognised US EPA IRIS has been used to compare the measured concentrations. These are not regulatory standards but represent conservative values for long-term exposure.

Typical chronic inhalation reference concentrations (RfCs) used for screening include:

- Benzene (non-carcinogenic effects): 30 µg/m³
- Toluene: 5,000 µg/m³
- Ethylbenzene: 1,000 µg/m³
- Xylene (mixed isomers): 100 µg/m³

The EU annual limit value of 5 µg/m³ represents a long-term exposure standard based on a full year of monitoring data and is therefore not directly comparable to short-duration passive sampling results.

Measured benzene concentrations ranged from 5.7 to 12.0 µg/m³ across monitoring locations. These concentrations are below the commonly applied chronic reference concentration of 30 µg/m³ for non-carcinogenic effects and are consistent with typical urban or roadside background environments influenced by traffic emissions. The remaining compounds were also well within the referenced standards.

Round 2 Monitoring Results

SO₂, O₃ and NO₂

The results of Round 2 monitoring are presented in Table 6-6. SO₂ concentrations ranged from 4.38 to 18.67 µg/m³, well below the national monthly MPC of 100 µg/m³. NO₂ concentrations ranged from 31.28 to 46.25 µg/m³, below the national monthly MPC of 50 µg/m³. O₃ concentrations remained within expected background levels. All monitored locations complied with the applicable national standards during Round 2. Compared to Round 1, NO₂ concentrations were lower and no exceedances were recorded.

Table 6-8 SO₂, O₃, and NO₂ Concentrations on Round 1 Diffusion Tube Sampling

No	Location	Parameter					
		MPC*	SO ₂ (µg/m ³)	MPC*	O ₃ (µg/m ³)	MPC*	NO ₂ (µg/m ³)
1	AQ1 (A)	100	10.68	-	17.98	50	42.39
2	AQ1 (B)		6.22		18.90		45.76
3	AQ7 (A)		11.85		19.24		39.56
4	AQ7 (B)		6.73		15.69		40.75
5	AQ6 (A)		10.35		18.38		37.55
6	AQ6 (B)		6.08		14.71		38.08
7	AQ11 (A)		9.26		16.47		32.80
8	AQ11 (B)		7.04		20.92		33.19

No	Location	Parameter					
		MPC*	SO ₂ (µg/m ³)	MPC*	O ₃ (µg/m ³)	MPC*	NO ₂ (µg/m ³)
9	AQ4 (A)		7.25		22.67		32.54
10	AQ4 (B)		11.49		22.29		34.81
11	AQ10 (A)		8.48		18.73		32.71
12	AQ10 (B)		4.38		19.94		31.28
13	AQ5 (A)		12.35		19.97		35.61
14	AQ5 (B)		7.59		19.77		32.19
15	AQ8 (A)		11.58		13.77		37.73
16	AQ8 (B)		10.41		15.63		38.07
17	AQ9 (A)		13.42		16.08		36.26
18	AQ9 (B)		12.66		20.34		36.10
19	AQ3 (A)		18.39		12.53		42.68
20	AQ3 (B)		16.96		13.08		44.60
21	AQ2 (A)		18.67		22.04		45.45
22	AQ2 (B)		16.01		20.11		46.25

* = national standards, monthly, in µg/m³

BTEX (Benzene, Toluene, Ethylbenzene and Xylene)

During round 2, Benzene concentrations ranged from 4.7 to 15.0 µg/m³. Toluene concentrations remained below 15 µg/m³ and both Ethylbenzene and xylene concentrations were typically below 5 µg/m³. See Table 6-9.

Table 6-9 BTEX Concentration on Round 2 Diffusion Tube Sampling

No	Location	Parameters			
		Benzene (µg/m ³)	Toluene (µg/m ³)	Ethylbenzene (µg/m ³)	m/p-Xylene (µg/m ³)
1	AQ1 (A)	8.3	12.0	1.2	4.1
2	AQ1 (B)	8.7	14.0	1.5	4.7
3	AQ7 (A)	8.5	11.0	1.1	4.0
4	AQ7 (B)	15.0	11.0	1.1	3.8
5	AQ6 (A)	5.4	8.8	1.2	3.0
6	AQ6 (B)	5.3	8.3	0.8	2.6
7	AQ11 (A)	5.2	6.1	0.6	2.0
8	AQ11 (B)	5.0	5.3	0.5	1.7
9	AQ4 (A)	5.9	6.4	0.6	2.1
10	AQ4 (B)	4.9	5.4	0.5	1.8
11	AQ10 (A)	5.0	6.4	0.7	2.3
12	AQ10 (B)	4.8	6.4	0.7	2.3
13	AQ5 (A)	4.7	6.0	0.6	2.0
14	AQ5 (B)	4.9	8.1	0.9	2.5
15	AQ9 (A)	5.8	6.7	0.7	2.2
16	AQ9 (B)	5.5	6.4	0.6	2.1
17	AQ3 (A)	4.8	8.1	0.7	2.7
18	AQ3 (B)	8.8	8.5	0.8	3.0
19	AQ2 (A)	5.6	11.0	0.9	3.2
20	AQ2 (B)	5.4	9.9	0.7	2.6

Note: tubes were unrecovered for AQ8

All measured concentrations remained significantly below internationally recognised health-based reference concentrations. Compared to Round 1, BTEX concentrations during Round 2 were generally lower, indicating variability likely associated with traffic intensity, meteorological conditions, and localised activity patterns.

The results indicate that, at the time of monitoring, ambient air quality in the Project area was generally compliant with applicable standards, with localised influences from traffic and surrounding anthropogenic activities.

6.5 Potential Impacts, Mitigation and Management

6.5.1 Construction Phase

During construction, local ambient air quality potentially affected by increased of pollution such as fugitive dust, especially on early phase of construction works, including site preparation, construction activities, and vehicle movement. Ambient air in the vicinity of the Project site may also be impacted from exhaust emissions from construction vehicles, equipment and temporary power generators. The typical air emissions resulting from these activities will typically include nitrogen oxides, sulphur dioxides, carbon monoxide, carbon dioxide, VOCs, particulates and BTEX. There is also potential source of VOCs from storage of fuels and chemicals, if it's poorly managed. Emissions of malodorous gases are also likely if sanitary wastes and decomposable organic solid wastes are not managed properly.

The main project construction activities that could result in potential changes in air quality are summarised in following table and discussed further later in this section.

Table 6-10 Aspects and Impacts - Air Quality during Construction

Activity	Environmental Aspect	Impacts and Zone of Influence	Potential Receptors
Site preparation, earth-works and construction dust	Dust/Particulate generation	Increased suspended particles in air and dust deposition (250m from source – UK IAQM)	Human and ecological receptors in study area.
Vehicle movements on unpaved tracks			
Use of vehicles, mobile equipment and fuel driven plant	Emission of gases (e.g. NOx and particulates)	Increased concentration of gaseous pollutants (distinguishable from background within a distance of 200m from source – UK DMRB)	
Use of temporary sanitation facilities and wastewater containment structures	Odour from sanitary wastewater (only if poorly managed)	Expected at a maximum of 100m from source of site based temporary toilets/septic tanks.	
Storage of fuels, chemicals and other volatile substances	VOC emissions and odour (only if poorly managed)	Expected a maximum of 100m from source for small quantity and distributed storage during construction.	

6.5.1.1 Dust Generation

The main sources of dust and particulate emissions during construction will be:

- Excavations and earthworks, such as groundbreaking, cutting, filling and levelling;
- Vehicle movements on unpaved, or compacted surfaces; and
- Particulate dispersion from uncovered truckloads (e.g. while bringing in materials from off-site quarries).

Dust Emissions from Site Preparation and Earth Works

Baseline monitoring identified periodic exceedances of PM₁₀ and PM_{2.5}, primarily associated with ongoing local activities and temporary increases in emissions (e.g., agricultural operations and vehicle movements). These results indicate that background particulate matter concentrations in the Project area can already be elevated during certain conditions. As such, the receiving environment demonstrates an existing sensitivity to additional dust loading, particularly during dry and windy periods.

During the construction phase, site preparation activities including vegetation clearance, topsoil stripping, grading, excavation, backfilling and movement of construction vehicles have the potential to generate dust emissions. Nuisance dust (inert dust) is typically defined as particulate matter greater than 10 microns (PM₁₀—sized and larger fractions). These particles generally settle rapidly and close to the source; however, under certain meteorological conditions they may be transported further afield.

In addition to larger dust particles, construction activities can also generate finer particulate matter (including PM₁₀ and PM_{2.5} fractions), particularly from:

- Mechanical disturbance of dry soils;
- Vehicle movements on unpaved surfaces; and
- Handling and stockpiling of fine materials.

The potential for off-site dust impacts increases significantly during dry and windy conditions, when soil moisture content is low and wind speeds are sufficient to entrain and transport fine particles. Given the arid/seasonally dry characteristics of the area, dust generation potential is likely to be higher during prolonged dry periods. Strong winds aligned toward nearby receptors may increase the likelihood of short-term dust episodes.

According to the screening guidance of the UK Institute of Air Quality Management (IAQM), a detailed dust assessment is warranted where there is a human receptor within 350 m of the site boundary. There is only one residential receptor (H1) which falls within these criteria, located approximately 70 m south of the site boundary.

Given the proximity of H1 (within 100 m), there is potential for short-term dust-related impacts during site preparation and earthworks, particularly during periods of elevated wind speed and low soil moisture. Considering the baseline evidence of periodic particulate matter elevations in the wider area, the construction phase could result in temporary increases in ambient PM concentrations if not appropriately managed.

The magnitude of dust-related impacts will depend on:

- Soil type and moisture content;
- Frequency and scale of earthworks;
- Wind speed and direction;
- Duration of exposed soil surfaces;
- Effectiveness of dust suppression and site management measures.

Without mitigation, there is potential for temporary nuisance effects (e.g., dust deposition and irritation) at the nearest residential receptor and short-term increases in ambient PM₁₀ concentrations during peak activity periods. However, these impacts would be localised and reversible in nature.

Appropriate dust management measures (e.g., water suppression during dry/windy conditions, speed control on unpaved roads, prompt stabilisation of exposed surfaces, and covering of stockpiles) will be required to minimise the risk of exacerbating existing baseline particulate levels. Overall, the magnitude of potential dust related impacts is assessed to be of moderate magnitude, in particular to the nearby receptor H1.

Dust Emissions & Particulate Emissions from Movement of Vehicles

In addition to on-site vehicle activity, the construction phase will involve considerable truck movements associated with the import of soil fill materials from external quarries and other construction related traffic such as transport of materials and wastes, commuting of construction staff etc. These vehicles will utilise existing paved local roads to access the Project site.

Although paved roads typically generate less dust than unpaved surfaces, increased heavy goods vehicle (HGV) movements can result in particulate emissions through:

- Re-suspension of settled road dust (including track out) due to tyre movement and vehicle turbulence;
- Exhaust emissions (including PM_{2.5} and PM₁₀ fractions);
- Loss of fine materials from inadequately covered truckloads;
- Spillage of soil or aggregate onto road surfaces, which may subsequently dry and become entrained by passing traffic.

If trucks are not properly sheeted or if loads are not adequately contained, wind action and vehicle-induced turbulence may result in dispersion of fine materials along transport routes. Such emissions have the potential to temporarily degrade local air quality in the immediate vicinity of haul routes and near the site entrance.

Baseline monitoring identified periodic elevations of particulate matter in the wider Project area under certain conditions. Consequently, additional particulate emissions from increased truck movements, particularly during dry and windy periods could result into short-term increases in ambient PM concentrations at sensitive receptors located close to haul routes.

In accordance with the UK Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction, detailed assessment of vehicle movement impacts is generally required where human receptors are located within 50 m of construction traffic routes (up to 500 m from the site entrance).

At present, residential receptors H18 and H19 are known to be located within 50 m of one of the potential access routes. However, as the final haul routes have not yet been confirmed, the precise receptors that may be affected will be verified once the Traffic Management Plan is finalised.

The EPC Contractor will be required to prepare and implement a Traffic Management Plan (TMP) prior to commencement of construction. The TMP will:

- Identify final haul routes to and from external quarries;
- Confirm anticipated daily HGV movements and scheduling;
- Include measures to avoid or minimise routing through sensitive residential areas where practicable;
- Specify mandatory load covering (sheeting) requirements;

- Include wheel washing and vehicle cleaning procedures;
- Establish speed limits and driver code of conduct requirements;
- Provide procedures for inspection and prompt clean-up of any road spillages;
- Include monitoring and corrective action mechanisms where necessary.

In line with the IFC/WBG General Environmental, Health and Safety (EHS) Guidelines (Air Emissions and Ambient Air Quality), fugitive dust emissions from construction traffic will be managed through implementation of good industry practice and the measures set out in the TMP.

Given the temporary nature of construction activities, the use of paved roads, and the requirement for a robust TMP, potential impacts associated with construction traffic are expected to be localised and short-term.

In line with the IFC/WBG General Environmental, Health and Safety (EHS) Guidelines (Air Emissions and Ambient Air Quality), control of fugitive dust emissions from construction-related traffic should be achieved through the implementation of good site management practices. These include mandatory sheeting of trucks, prompt clean-up of any road spillage, wheel washing before exiting the site, speed restrictions, and, where necessary, dampening of heavily trafficked areas during dry conditions.

Considering that impacts would be localised to areas immediately adjacent to haul routes, temporary and associated with the construction period only, and reversible following completion of works, the pre-mitigation impact magnitude is assessed as minor to moderate (depending on traffic intensity and weather conditions), reducing to minor with implementation of appropriate mitigation measures.

6.5.1.2 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.

The likely types and number of the main construction plant and equipment are listed in Table 2-6. The quantity of gaseous emissions from this equipment in addition to their numbers, will also depend on the number hours of operation and efficiency.

Note: Details of the overall greenhouse gas (GHG) emissions during construction are provided in chapter 7 of this ESIA.

The IAQM guidance (2014) states that:

“Experience of assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed.”

The magnitude of gaseous emission impacts is assessed as:

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

6.5.1.3 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. 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.

6.5.1.4 Odour Emissions

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.

During construction, temporary accommodation and sanitary facilities will be provided on-site. The potential issues related to odour could occur because of release of gases such as H₂S when improper waste management happen (such as accumulation of biodegradable wastes). Sewage generated from temporary site sanitary facilities such as toilets and holding tanks can cause odour nuisance if not properly managed. Whilst exposure to odours can give rise to nuisance, particularly where human receptors may expect a high degree of amenity, this seldom represents a concern for physical health effects.

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

6.5.2 Impacts Assessment Summary – Air Quality during Construction

A summary of potential impacts from emissions of air pollutants during construction and their effects on identified receptors are presented in following table including recommended mitigation measures and residual impacts after the implementation of such measures.

Table 6-11 Impact Assessment Summary – Air Quality during Construction

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
Dust emissions as a result of site preparation and excavation works and movement of vehicles on unpaved surfaces	Moderate	Residential areas	High	Major	Minor
		Commercial/industrial and agricultural areas	Medium	Moderate	Negligible
		Project workers	Medium	Moderate	Negligible
Gaseous emissions from vehicle and plant exhaust	Minor	Project workers	Medium	Minor	Negligible
	Negligible	Residential areas	High	Minor	Negligible
		Commercial areas	Medium	Minor	Negligible
Odour from waste and on-site sanitary facilities	Minor	Project workers	Medium	Minor	Negligible
Emissions of VOCs and other hazardous volatiles	Negligible	Residential areas	High	Minor	Negligible
Proposed Mitigation Measures <u>Mitigation measures for dust control</u> - Any land grading, excavations and moving of uncovered waste/materials will be avoided during strong windy weather conditions and the area of exposed ground surfaces will be minimised at any given time. - Daily review of weather updates, to give warning of likely strong winds to assist with the management of windblown dust. - Enhanced dust control measures such as placing high barriers, in addition to vehicular speed control will be implemented during construction of the access road and water pipeline corridor considering the receptors located adjacent to and within 50m of the construction area. The EPC contractor to consider paving of access road in advance at locations close to these receptors (e.g., H1) to reduce fugitive dust from vehicle movements. - Where sand and other dusty materials are transported to or from the site, trucks will not be overloaded and will be appropriately covered/sheeted to avoid losses en-route. - Solid screens or barriers will be erected around dusty activities or the site boundary that are at least as high as any stockpiles on site. - Dust suppression attachments will be used on equipment where possible. - Drop heights of will be reduced while handling materials including unloading. - It will be ensured that bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.					

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
- Cement and other fine powders will be sealed after use or put in bunded containers. - Vehicle speed on all site roads and along the access road into the site, near the residential area will be restricted to 20 km/h. - Where paved routes are not available vehicles routes will be clearly demarcated and appropriate signage displayed around the site. - Internal roads inside the project site will be compacted as it reduces vehicular power consumption and fugitive dust emissions. - Wetting down of any unpaved site roads in order to reduce dust generation. - Provide project workers with full PPE kit including dust masks. - No burning of wastes will be allowed onsite. - Notice will be provided to the sensitive receptors near the site as early as possible (minimum one-week notice) if there will be activities that might generate a lot of dust. - Any complaints received from nearby land users will be recorded and promptly addressed to avoid by taking corrective and preventive measures. - A wheel cleaning facility such as rumble strips shall be used for construction vehicles leaving the site prior to accessing the paved public road network - Dusty material stockpiles (i.e. any fine powders and sand) dust generating activities are to be located away from the site boundaries and be contained to avoid dust dispersion during storage or use. - The EPC Contractor if installing a batching plant, will obtain all the necessary permits related to the construction and operation of the batching plant. - Any exceptional incidents that cause dust and/or air emissions, either on- or off-site, will be recorded and the action taken to resolve the situation. <u>Mitigations for gaseous emissions</u> - Construction roads in the site will be designated and made clear to the drivers with signage for directions and speed limits placed all along the roads. - Unnecessary usage of vehicles, plant and equipment will be minimized and unnecessary idling of vehicles and plant will be avoided. - Deliveries of equipment/plant 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 will 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. - Lorries and truck engines will be turned off while waiting on site to minimize gaseous emissions. Air-conditioned/heated shelters will be provided for drivers in designated waiting, loading and unloading areas to prevent drivers waiting in vehicles. <u>Mitigations for odour emissions</u> - Adequate and sufficient sanitary facilities for site workers must be provided.					

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
- Effective cleaning and maintenance of toilets to be undertaken to avoid odour dispersion and cleaning records/inspection sheets displayed in the toilets. - All septic tanks must be sealed and fully functioning. - Septic tanks must be operated and maintained according to manufacturer recommendations. - Sanitary waste will be removed from site by licensed contractors and disposed in waste treatment facilities approved by the local government <u>Mitigations for VOC emissions</u> - 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. - 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. - Fires and material burning will not be allowed on the Project site. - Chemical storage areas will be purpose built and well maintained. A data log of all chemicals with Material Safety Data Sheet (MSDS)s will be provided at the storage facility within easy access.					

6.5.3 Operational Phase

The identification of aspects associated with the operation of the Plant and the receptors that may be affected has been used to identify potential impacts associated with air emissions. These are presented in Table 6-12 and discussed further in this section.

Table 6-12 Aspects and Impacts – Air Quality during Operation

Activity	Environmental Aspect	Impacts and Zone of Influence	Potential Receptors
Aircraft operations (including take-off, landing, taxiing, engine testing, auxiliary power units (APUs) and ground power units (GPUs))	Emissions of NO _x , CO, SO ₂ , particulates and VOCs	Within 1km of source.	Human and ecological receptors in study area.
Ground Support Vehicles	Emissions of NO _x , and Particulates	Within 200m of airport,	
Energy Generating Plant	Emission of NO _x , and Particulates	Within 1km of source,	
Aircraft Fuel	Fugitive releases of HCs and VOCs from refueling operations and storage tanks	Within 200m of source,	
Road vehicles using local roads	Emissions of NO _x , and Particulates	Within 200m of affected roads,	Human and ecological receptors within 200m of affected roads.

6.5.3.1 Emission from Airport Operation

Overview of Air Dispersion Modelling

Airport operations give rise to a range of air emission sources associated with aircraft activity, landside traffic, stationary combustion plant, and fuel handling operations as summarised in Table 6-12.

To quantify these potential impacts of operational emissions on local ambient air quality, detailed air dispersion modelling has been undertaken as part of this ESIA. The modelling incorporates:

- Anticipated aircraft movement data and operational profiles;
- Ground support equipment and vehicle activity;
- Available preliminary traffic data on access road;
- Energy plant emission characteristics;
- Meteorological data representative of the Project area; and
- Existing baseline air quality conditions established through field monitoring.

The modelling assessment predicts ground-level pollutant concentrations at identified human receptors locations within the study area. The results also allow identification of the spatial extent (zone of influence) of operational emissions and the receptors potentially affected.

A car parking area is planned within the central part of the Project site, in proximity to the Passenger Terminal Building. However, given its location within the site and separation from sensitive receptors, the potential impact on local air quality is expected to be negligible. On

this basis, emissions from the car park have been excluded from the detailed air quality assessment. Further assumptions and scope of the air dispersion modelling is discussed in the modelling report provided in appendix 3.

The following sections present the modelling results and provide an assessment of predicted impacts at identified sensitive receptors during airport operation.

The detailed modelling report is included in Appendix 3 which forms a supporting technical study to the ESIA, providing quantitative predictions of pollutant concentrations and comparing them against Uzbek national standards, WHO guidelines, and EU standards, as well as IFC/EBRD lender requirements, including the rule that project contributions should not exceed 25% of applicable air quality standards.

Modelling Assumptions

The assessment has been undertaken using a conservative set of modelling assumptions to ensure that predicted pollutant concentrations are unlikely to underestimate potential impacts. Rather than representing average airport operations, the modelling reflects a realistic worst-case operational scenario for the proposed airport.

The principal conservative assumptions adopted in the assessment includes the following:

- Inclusion of emissions from all aircraft landing, take-off, climb-out, approach and taxiing activities using ICAO aircraft emission factors;
- Use of five consecutive years (2020–2024) of hourly meteorological data to capture a wide range of atmospheric dispersion conditions, including periods of poor dispersion;
- Conservative assumptions regarding aircraft movement distribution and runway utilisation;
- Modelling of standby diesel generators as operating continuously over the relevant short-term averaging period for comparison with ambient air quality standards, notwithstanding that under normal operation these generators are intended only for routine monthly testing (approximately one hour per month) and emergency operation during interruptions to the national electricity supply.
- Conservative assumptions regarding aircraft movement distances during landing and take-off, which intentionally maximise emissions over sections of the runway closest to sensitive receptors.

Conversely, the assessment also reflects a number of design assumptions that are expected to reduce operational emissions compared with a conventional airport. These include the proposed use of predominantly electric ground support equipment and the provision of fixed electrical ground power for aircraft at stands, thereby minimising the need for auxiliary power unit operation.

Accordingly, the modelling does not represent a typical operational scenario but rather a conservative assessment intended to demonstrate compliance under credible worst-case operating conditions. In practice, actual operational emissions are expected to be lower than those predicted due to infrequent operation of standby generators, continued improvements in aircraft engine technology and the proposed use of low-emission airport ground support systems. The assessment therefore provides a robust basis for concluding that operational air quality impacts are expected to remain within the applicable national and international assessment criteria, with the exception of the limited area identified adjacent to the southern boundary of the airport where targeted mitigation and ongoing monitoring are proposed.

Scope of Assessment

The operational air quality assessment considered pollutant emissions across a 10 × 10 km modelling domain centred on the airport site. Impacts were evaluated at 30 identified sensitive receptors, comprising primarily residential dwellings located within surrounding settlements.

The pollutants assessed in the modelling were:

- Nitrogen dioxide (NO₂),
- Carbon monoxide (CO),
- Particulate Matter (PM₁₀ and PM_{2.5}), and
- Hydrocarbons, including benzene.

These pollutants were selected based on the nature of airport emission sources and their relevance to national and international ambient air quality standards. Sulphur is present in aircraft fuel; however it is at a relatively low level, typically 600 to 800ppm. Sulphur dioxide emissions have therefore been scoped out of this assessment.

Emission sources included aircraft operations (covering the full Landing and Take-Off (LTO) cycle and taxiing activities), standby diesel generators (tested monthly), and road traffic associated with the airport access road. Aircraft movements were assumed to be divided equally between Runway 1 and Runway 2. Runway direction (06 or 24) will be determined by prevailing wind conditions, with aircraft taking off and landing into the wind in accordance with standard aviation practice.

Air dispersion modelling was undertaken using ADMS-Airport v5.1, a recognised state-of-the-art dispersion model specifically developed for airport assessments. The modelling incorporated five years (2020–2024) of representative meteorological data, building downwash effects, detailed atmospheric chemistry for NO_x to NO₂ conversion, and conservative assumptions regarding diesel generator operation (including continuous operation during short-term averaging periods to represent a worst-case scenario).

The modelling predicted ground-level pollutant concentrations at each receptor, which were then combined with baseline concentrations to derive Predicted Environmental Concentrations (PECs) for comparison with applicable national standards, WHO Air Quality Guidelines (including Interim Targets), EU limit values, and IFC/WBG guidance.

As outlined above, the operational air quality assessment focuses on those emission sources expected to make a material contribution to ambient pollutant concentrations at identified sensitive receptors. Certain airport related emission sources were therefore scoped out of the detailed assessment based on their anticipated negligible contribution.

Ground power will be provided at all contact stands, with aircraft using remote stands relying on auxiliary power units (APUs) or mobile ground power units (GPUs) only where required during turnaround. Emissions from APUs/GPUs at remote stands were excluded from the detailed assessment as their operation is intermittent and of relatively short duration, and these sources are located within the central airside area of the airport at substantial distances from the nearest sensitive receptors. In comparison, emissions from aircraft engines during landing, taxiing and take-off represent the dominant airport-related source of operational air emissions and were therefore the focus of the assessment.

Similarly, emissions associated with passenger vehicle movements within airport car parks were excluded from the detailed assessment. The principal car parking facilities are located within the central landside area of the airport, approximately 1 km from the nearest residential receptors. Given the low vehicle speeds, relatively low emission rates, dispersed nature of emissions and substantial separation distance to sensitive receptors, emissions from these activities are expected to be negligible in comparison with aircraft operations and traffic on the surrounding road network. Accordingly, these sources are not expected to materially influence

ambient pollutant concentrations at nearby sensitive receptors or the conclusions of the operational air quality assessment.

Significance Criteria

There are no local planning policies that provide criteria for acceptable impacts from development projects in Uzbekistan. The IFC guidance states that 'emissions from a single project should not contribute more than 25% of the applicable ambient air quality standards to allow additional, future sustainable development in the same airshed'.

In the absence of specific significance criteria, this has been used to determine the significance of the emissions from the proposed airport in the local area.

Predicted Impacts

Nitrogen Dioxide (NO₂)

Modelling results indicate that annual mean NO₂ concentrations comply with applicable standards at all receptors except one location (H1), situated within the small settlement to the south of the runway. At this receptor, the Predicted Environmental Concentration (PEC) is 43.0 µg/m³, slightly exceeding the 40 µg/m³ annual mean standard (National, WHO Interim Target 1 and EU).

The Contour Plot illustrated in Figure 6-15 shows the area of exceedance within the blue line shown on the plan.

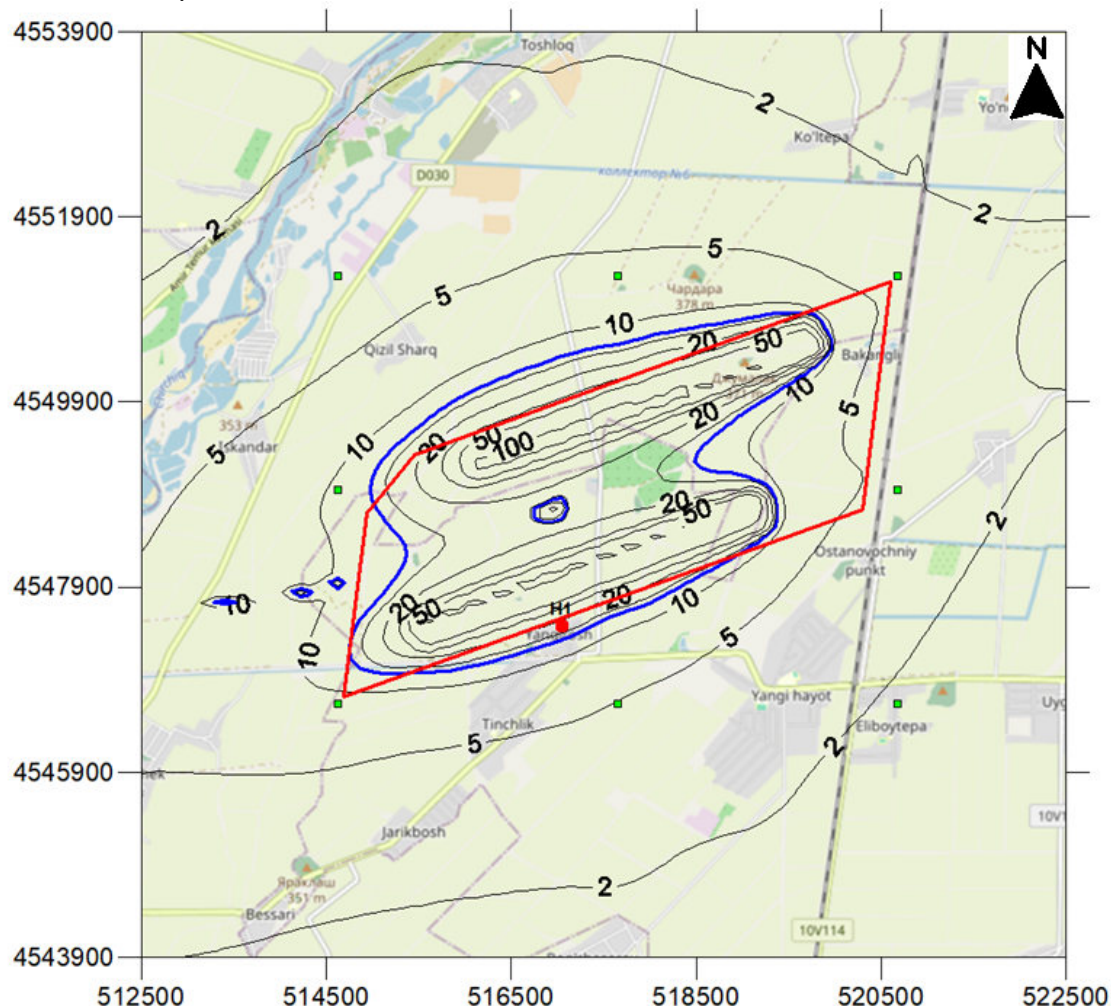


Figure 6-15 Contour Plot illustrating the Maximum Annual Mean NO₂ (µg/m³)

This exceedance is highly localised and influenced by conservative modelling assumptions, including equal runway usage and aircraft activity occurring near the receptor under worst-case meteorological conditions. At all other receptors, the airport contribution to annual NO_2 concentrations is well below 25% of the applicable standards and is therefore considered insignificant under IFC criteria.

Short-term NO_2 concentrations (1-hour, 24-hour and 15-minute averaging periods), including those associated with standby diesel generator operation under worst-case assumptions, are predicted to remain below 25% of applicable standards at all receptors and are therefore not significant. It is also noted that background NO_2 concentrations are expected to improve over time due to increasing electrification of regional vehicle fleets and progressive tightening of vehicle emission standards, suggesting that future operational impacts may be lower than those predicted.

Particulate Matter (PM_{10} and $\text{PM}_{2.5}$)

For PM_{10} , no exceedances of the National Standard or WHO Interim Targets 1 and 2 are predicted as a result of airport operations. Where exceedances of stricter WHO guideline levels (Targets 3 and 4) occur, these are attributable to existing baseline conditions rather than airport contributions. At all receptors, the airport contribution to PM_{10} concentrations is below 25% of the applicable standards and is therefore considered insignificant.

Similarly, no exceedances of the National Standard for $\text{PM}_{2.5}$ are attributable to the airport. Although background $\text{PM}_{2.5}$ concentrations exceed certain WHO guideline values and EU standards in parts of the study area, the airport's contribution is extremely small (typically less than 1% of the relevant standard). As such, operational impacts on fine particulate concentrations are assessed as negligible.

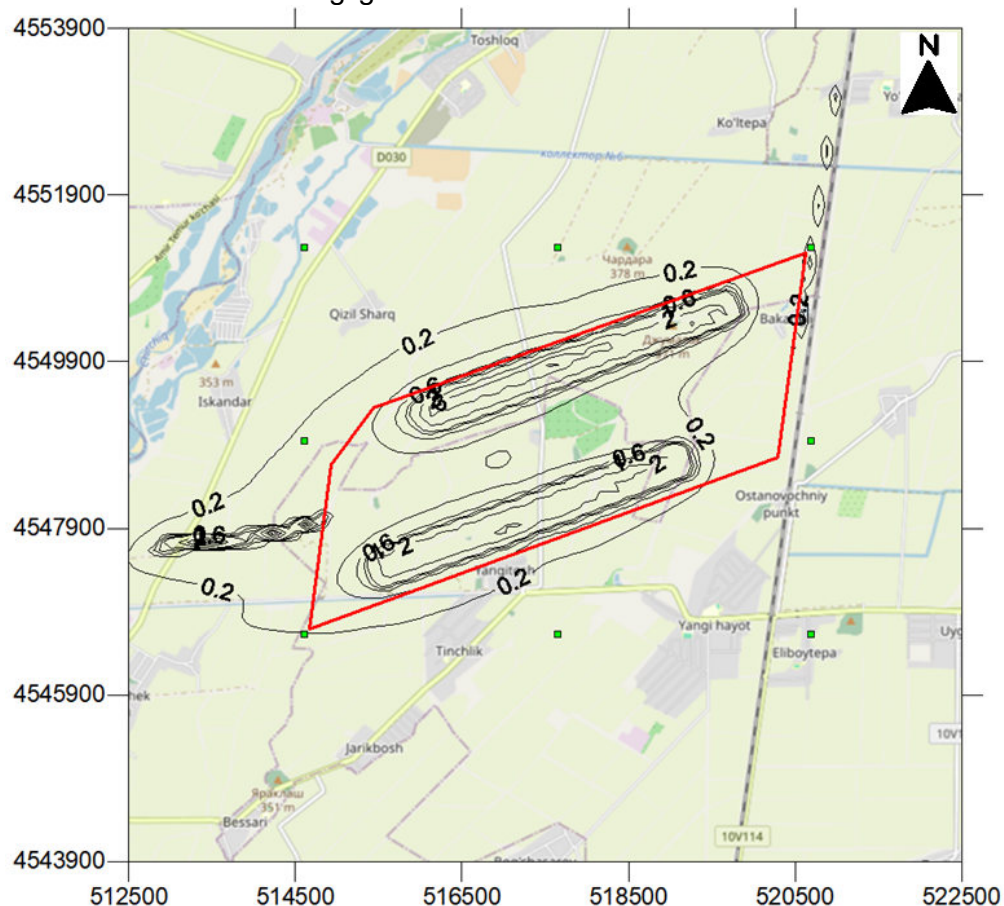


Figure 6-16 Contour Plot illustrating the Maximum Annual Mean PM_{10} ($\mu\text{g}/\text{m}^3$)

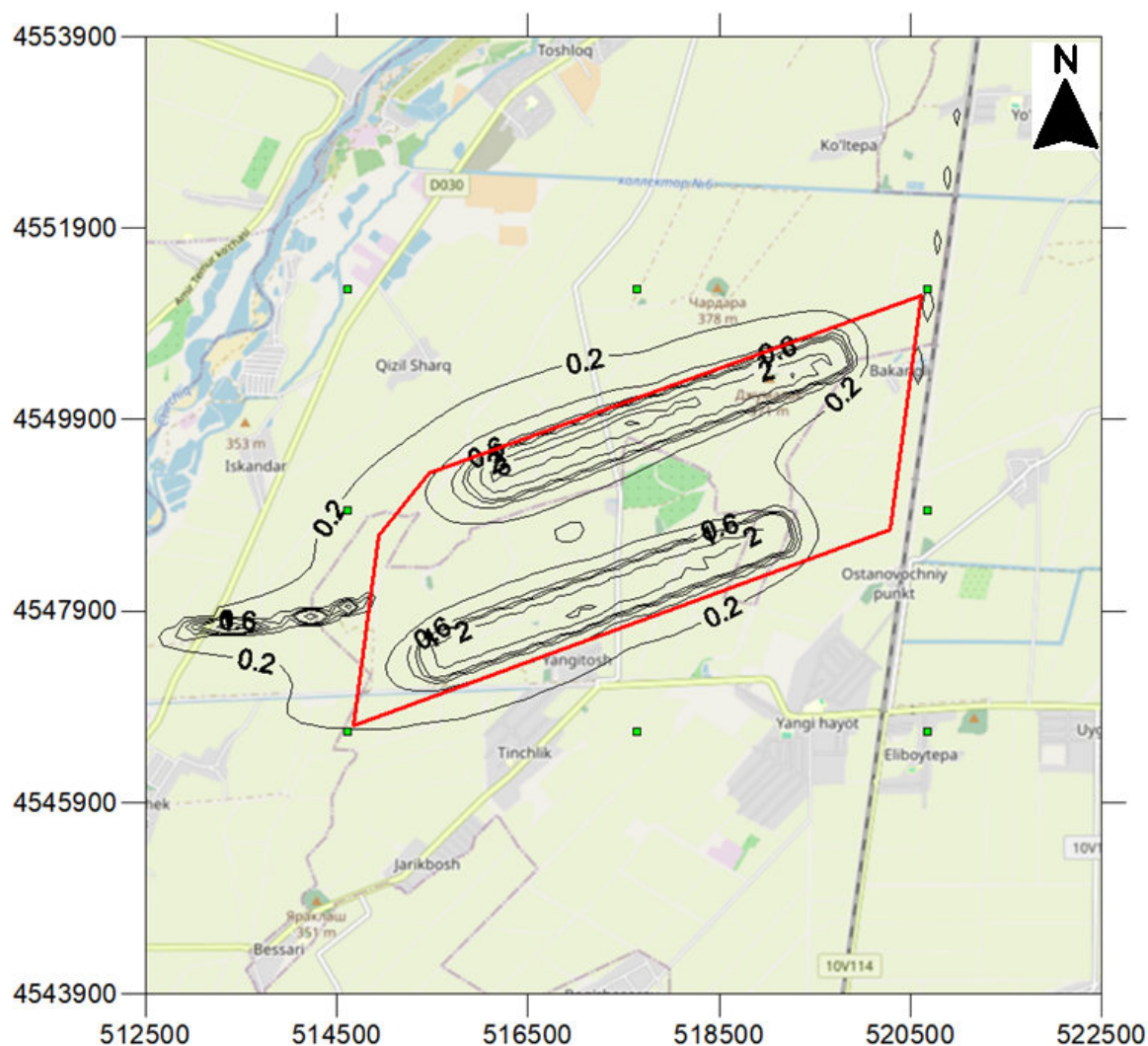


Figure 6-17 Contour Plot illustrating the Maximum Annual Mean PM_{2.5} (µg/m³)

Carbon Monoxide (CO)

Predicted CO concentrations comply with National, WHO and EU standards at all receptors. Even under conservative assumptions for generator operation, airport contributions remain well below 25% of applicable standards. Operational impacts for CO are therefore assessed as insignificant.

Hydrocarbons (Including Benzene)

The airport's contribution to benzene concentrations is predicted to be less than 25% of the applicable EU limit value at all receptors. While total concentrations at some locations exceed the EU benzene limit value, this is driven by existing baseline conditions rather than airport emissions. The airport's incremental contribution is minor and does not materially alter existing air quality conditions.

Overall Significance of Impacts

Across the modelling domain, the proposed airport is predicted to have an insignificant air quality impact at almost all receptors when assessed against IFC/WBG criteria.

A single localised exceedance of the applicable annual mean NO₂ assessment criterion is predicted at receptor H1, a small community located approximately 70 m south of the Project site boundary. The predicted annual mean concentration is 43 µg/m³ compared with the applicable assessment criterion of 40 µg/m³. This exceedance is marginal, confined to a single

receptor immediately adjacent to the runway, and no exceedances are predicted at any other identified receptor. All predicted short-term concentrations of NO₂, CO, PM₁₀ and PM_{2.5} remain below the applicable assessment criteria.

The predicted exceedance at H1 reflects the receptor's proximity to the primary aircraft landing and take-off emission sources rather than a widespread deterioration in ambient air quality. The assessment methodology adopts conservative assumptions regarding aircraft operational activities, including aircraft movement patterns, landing and take-off emissions, and atmospheric dispersion, which are intended to ensure that potential impacts are not underestimated. Consequently, the predicted concentrations are considered to represent a conservative assessment of the potential operational air quality impacts.

The exceedance is limited in magnitude (approximately 3 µg/m³ above the applicable annual mean criterion) and is highly localised, with pollutant concentrations reducing rapidly with increasing distance from the runway environment. The modelling therefore indicates that the potential effect is confined to the receptor located closest to the airport, rather than representing a broader impact on surrounding communities.

As outlined earlier, the assessment adopted conservative modelling assumptions regarding aircraft operational activities, including the spatial extent of landing and take-off emissions, which are likely to overestimate ground-level concentrations at receptor H1. Nevertheless, the current assessment predicts a marginal exceedance of the annual mean criterion under these conservative assumptions.

From the commencement of airport operations, the Airport Operator will implement an Air Quality Management Programme incorporating source-level emission reduction measures, including progressive electrification of airside vehicles and ground support equipment, provision of fixed electrical ground power to minimise aircraft auxiliary power unit use, optimisation of aircraft ground movements and taxiing, minimisation of engine idling, and continued fleet modernisation through engagement with airlines. These measures are expected to progressively reduce operational emissions over time.

The Air Quality Management Programme also includes operational ambient air quality monitoring to verify actual air quality performance and confirm the effectiveness of the implemented mitigation measures. Monitoring results will be periodically reviewed against the applicable assessment criteria. Where monitoring identifies concentrations approaching or exceeding the applicable annual mean criterion, the Airport Operator will implement additional operational mitigation measures through an adaptive management process to reduce emissions and achieve compliance with the applicable air quality standard.

Given the conservative nature of the modelling, the limited magnitude and spatial extent of the predicted exceedance, and the commitment to implement operational mitigation measures supported by performance-based monitoring and adaptive management, the residual operational air quality impact is considered to be minor (not significant) and manageable.

All short-term pollutant concentrations (NO₂, CO, PM₁₀ and PM_{2.5}) remain well below applicable standards.

Most exceedances of WHO and EU guideline values identified within the study area are associated with existing regional background concentrations rather than airport contributions.

The modelling approach adopted for this assessment is intentionally conservative. It incorporates worst-case assumptions for runway usage, generator operation, and atmospheric chemistry. As a result, actual operational impacts are expected to be equal to or lower than those predicted.

The airport's operational contributions to NO₂, PM₁₀, PM_{2.5}, CO and hydrocarbons are predominantly minor and compliant with relevant national and international standards.

Overall, the proposed airport's operational impact on ambient air quality is assessed as low and acceptable in accordance with international ESIA significance criteria, including the IFC/WBG 25% contribution threshold.

6.5.4 Impacts Assessment Summary – Air Quality during Operation

A summary of potential impacts from emissions of air pollutants during operation and their effects on identified receptors are presented in following table including recommended mitigation measures and residual impacts after implementation of mitigations measures.

Table 6-13 Impact Assessment Summary – Air Quality during Operation

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Residual Impacts
Emissions of gaseous air pollutants (aircraft operations, ground support vehicles, fuel storage, energy plants): NO ₂ , PM ₁₀ , PM _{2.5} , CO, SO ₂ and VOCs	Moderate (localised annual NO ₂ exceedance under conservative assumptions)	Residential receptor H1	High	Moderate	Minor
	Negligible	Other nearby residential receptors within Aol	High	Minor	Negligible
	Negligible	Commercial / Industrial and agricultural land users	Medium	Minor	Negligible
	Negligible	Project Workers	Medium	Minor	Negligible
Emissions from airport related road traffic on local roads	Negligible	Residential receptors along local roads	High	Minor	Negligible
	Negligible	Commercial / Industrial and agricultural land users	Medium	Minor	Negligible

Proposed Mitigation Measures

The airport operator (i.e., TAA) will implement a comprehensive Air Quality Management Programme as part of the Operational Environmental and Social Management System (ESMS). The programme will incorporate the following measures.

Mitigations for gaseous emissions

To minimise emissions associated with aircraft movements, ground handling and stationary sources, the airport operator will:

- Optimise runway allocation and flight procedures, in coordination with air traffic control authorities, to minimise taxiing distances and engine running times where operationally feasible and consistent with aviation safety requirements.
- Implement stand management procedures to minimise aircraft Auxiliary Power Unit (APU) operating times.
- Establish and enforce anti-idling requirements for ground support vehicles (GSVs) and service equipment.
- Undertake progressive transition of all ground support equipment to lower-emission technologies, including electric or hybrid units, where technically and economically feasible.
- Make provisions for using Sustainable/Synthetic Aviation Fuel (SAF) in the future.
- Require that all contractors operating airside comply with airport environmental requirements, including emissions performance standards for equipment and vehicles.
- Implement a preventive maintenance programme for all airport-owned vehicles, plant and equipment to ensure optimal combustion efficiency and minimise exhaust emissions.

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Impact Significance	Residual Impacts
- Conduct periodic inspections to ensure that vehicles and equipment exhibiting visible black smoke or excessive exhaust emissions are removed from service until repaired and compliant. - Fuel storage and handling facilities will be designed and operated in accordance with international standards to minimise fugitive hydrocarbon emissions. <u>Mitigations for emissions from back up diesel generator</u> Emergency diesel generators will be operated strictly for emergency use and scheduled testing, in accordance with manufacturer and regulatory requirements. To minimise emissions: - Generators will use ultra-low sulphur diesel fuel. - Stack heights will be designed to ensure adequate dispersion, with stacks extending at least 3 metres above the generator housing and in accordance with dispersion modelling assumptions. - Preventive maintenance will be undertaken in accordance with manufacturer specifications to ensure efficient combustion. - Generator testing will be scheduled, during daytime hours and outside periods of adverse meteorological conditions to reduce potential short-term exposure at nearby receptors. <u>Mitigations for emissions of operational road traffic</u> To manage emissions from airport-related traffic on access roads and within the airport: - A Traffic Management Plan will be implemented to optimise vehicle routing and reduce congestion. - Anti-idling requirements will be enforced for taxis, buses and service vehicles within airport premises. - Airport fleet vehicles will progressively transition toward low-emission or electric vehicles. - All airport-operated vehicles will be subject to routine inspection and maintenance programmes, with documented records maintained. - Vehicles emitting excessive smoke or failing emissions checks will be removed from service until rectified. - Compliance with national vehicle emission standards will be mandatory for all contracted service providers operating within the airport boundary.					

6.6 Monitoring

The EPC Contractor and the Project Company will undertake air quality monitoring during the construction, commissioning and operational phases of the Project respectively and these are outlined in Table 6-14. 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 6-14 Monitoring for Air Quality

Monitoring	Parameters	Frequency & Duration	Location
Construction			
Dust Generation & Dispersion	Visual dust emissions	Daily visual inspections during active earthworks and vehicle movements. Quantitative monitoring (e.g., portable PM ₁₀ monitor) to be undertaken monthly and on occasions if excessive dust is observed, during prolonged dry/windy conditions, or in response to complaints.	At 4 locations just outside Project boundary and at receptor H1
Construction traffic emissions	Visible exhaust emissions (black smoke), vehicle condition	Daily visual inspection of active vehicles and plant. Verification of valid annual inspection certificates prior to site entry.	All onsite contractor vehicles and access to Project site.
Construction plant and equipment	Exhaust emissions performance	Pre-mobilisation inspection and routine spot checks during construction.	All non-road machinery operating within Project site.
Fuel Storage, Hazardous Materials & Sanitary Facilities	Odour, visible leak	Daily inspection of fuel storage, refuelling areas and hazardous material stores.	Fuel storage areas, refuelling zones, laydown areas, contractor camps and sanitary facilities.
Operation			
Aircraft and ground operations emissions	Compliance with APU limits, anti-idling compliance, ground power usage	Continuous operational control through airport procedures. Periodic compliance audits (at least annually).	Airside apron areas, stands, and taxiways.
Road and ground support vehicle emissions	Road and ground support vehicle emissions	Routine preventive maintenance in accordance with manufacturer schedules. Annual inspection and certification of airport-operated fleet. Spot checks for visible smoke.	All airport-operated and contractor vehicles within airport boundary; access roads
Ambient air quality verification monitoring	NO ₂ , PM ₁₀ , PM _{2.5} , BTEX	One-week continuous monitoring undertaken initially on a quarterly basis during the first year of operation. Frequency to be reviewed based on results.	Close to receptor H1

7.0 Climate Change Impacts and Adaptation

A detailed Climate Change Impact Assessment (CCIA) has been prepared for the new Tashkent International Airport and is provided in Appendix 4. The appendix contains the complete methodological framework, climate data analysis, greenhouse gas (GHG) accounting, climate-risk assessment, and supporting technical tables and figures. The following section includes a concise summary of that assessment.

7.1 Applicable Requirements

7.1.1 National Requirements

The ratification of the Paris Climate Agreement committed Uzbekistan to transitioning to a green economy, and adoption of the following normative documents:

- Decree of the President of the Republic of Uzbekistan. № PD-4477 "On approval of the Strategy on transition of the Republic of Uzbekistan to the "green" economy for the period 2019-2030" (2019, as amended in 2024)
- Decree of the President of the Republic of Uzbekistan, № PD-5863 "On approval of the Concept of environmental protection of the Republic of Uzbekistan until 2030 (2019, as amended in 2024)
- In 2021, the Republic of Uzbekistan updated its nationally determined contribution (NDC) and aims to reduce specific greenhouse gas emissions per unit of GDP by 35% by 2030 as compared to the level of 2010. Uzbekistan's NDC also includes adaptation commitments such as enhancing the resilience of strategic infrastructure and developing early warning systems for hydro-meteorological hazards.

7.1.2 Lender Requirements

IFC Performance Standards

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.'*

EBRD - Paris Agreement Alignment

The Project will be assessed for alignment with the climate-related requirements of EBRD guided by EBRD's commitment to align its investments with the objectives of the Paris Agreement, the Project will be evaluated against the Methodology to Determine the Paris Agreement Alignment of EBRD Investments (March 2024), as applicable.

Equator Principles IV (Good Practice)

Equator Principles IV establishes that impacts to climate should be avoided where possible, and in support of the 2016 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 required in an ESIA.

For projects that have Scope 1 & 2 GHG emissions of over 100,000 tonnes of CO₂ equivalent per annum, there are also other requirements linked to alternative analysis and client annual reporting on GHG emissions.

European Commission Climate Proofing of Infrastructure

The EC Technical Guidance on Climate Proofing of Infrastructure covers the programming period 2021-2027. In line with the Paris Agreement and EU climate objectives, It follows the principle 'energy efficiency first' defined in Article 2(18) of Regulation (EU) 2018/1999, and the principle 'do no significant harm' in Regulation (EU) 2020/852 (Taxonomy Regulation). It integrates climate proofing with Environmental Impact Assessment (EIA).

7.2 Climate Change – National and Regional Context

Uzbekistan joined the United Nations Framework Convention on Climate Change (UNFCCC) on June 20, 1993. Uzbekistan prepared and submitted three National Communications, the First Biennial Update Report (2021) and the Inventory Reports for 1990-2017 in accordance with the UNFCCC requirements and guidelines.

The Fourth National Communication is currently being prepared. Uzbekistan signed the Paris Agreement by providing the Intended Nationally Determined Contribution¹ to the UNFCCC Secretariat on April 19, 2017. The country ratified the Paris Agreement on October 2, 2018 (Law of the Republic of Uzbekistan No. 491), and thus the INDC became the country's First NDC (NDC1). In accordance with the NDC1, in the long-term perspective until 2030, the Republic of Uzbekistan seeks to strengthen measures and actions to combat climate change in order to reduce by 2030 specific greenhouse gas emissions per unit of GDP by 10% from the level of 2010.

Decision 1/CP.21 requests to update national contributions by 2020 and every five years thereafter, in accordance with Article 4, paragraph 9, of the Paris Agreement. Uzbekistan shares the view of the world community on the need to make every effort to prevent global climate change. Based on the capacity and responsibility and taking into account the country's transition to a resource-efficient "green" development model, which is based on decarbonization of the economy and the ongoing socio-economic reforms in the country, Uzbekistan has updated and strengthened its commitments (NDC) under the Paris Agreement for the period until 2030.

7.3 Climate Baseline and Projections

7.3.1 Historical Trends in Temperature

Uzbekistan has an arid and continental climate with large temporal and spatial variations in temperature and precipitation. Flat topography dominates 79% of the country's area in the form of semi-desert, steppes or desert zones, and the remaining south-eastern areas have a continental climate, which include big cities like Tashkent and Samarkand. For the period of 1991 – 2020, Uzbekistan has summers that are long, hot, and dry with an average monthly temperature of 27.2°C in July, when daily maximum can reach 35°C in cities. Average monthly temperatures in winter range from -1°C to -3°C (Climate Risk Country Profile, World Bank and Asian Development Bank). From 1950 to 2020, average temperatures of Uzbekistan have increased by 2.9°C, while precipitation trend is not statistically significant (Country Climate and Development Report, World Bank).

Observed Seasonal Cycle Average Minimum Surface Air Temperature, Average Mean Surface Air Temperature, Average Maximum Surface Air Temperature, Precipitation Uzbekistan 1991-2020

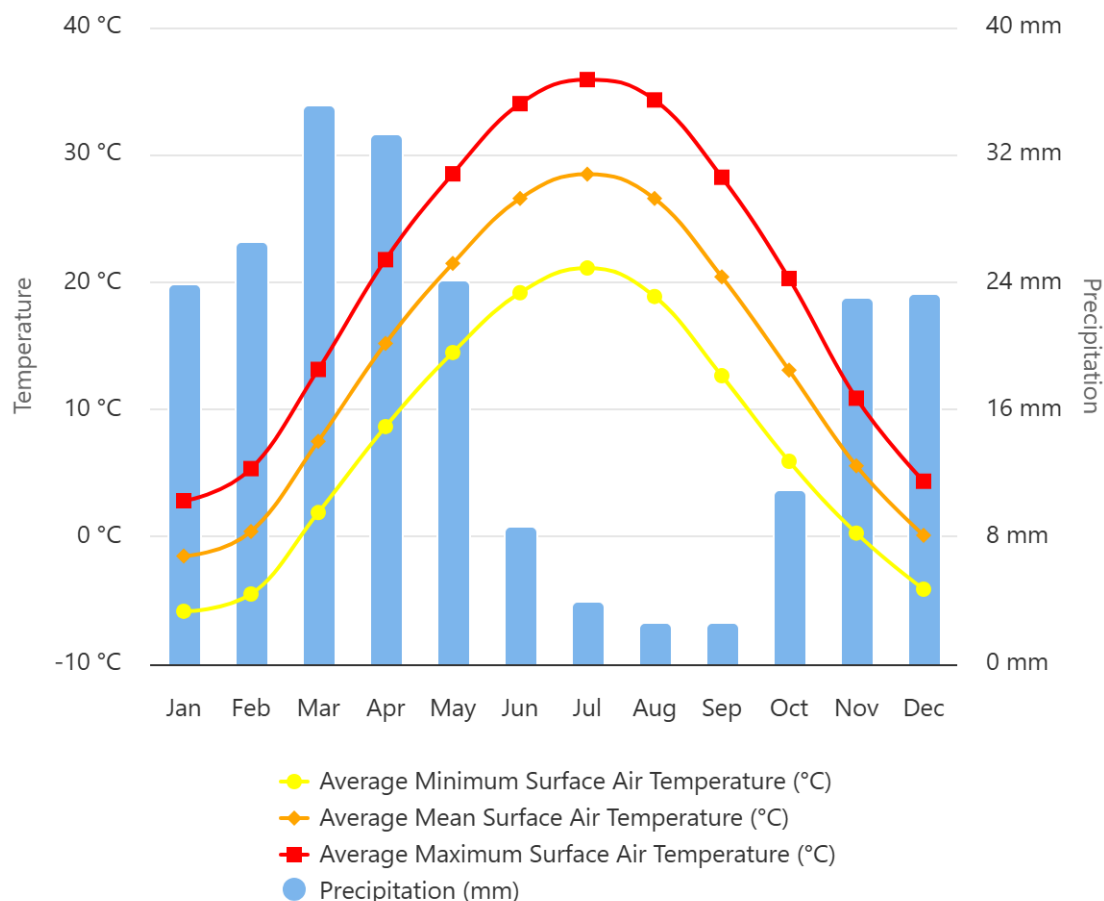


Figure 7-1 Average Temperatures in Uzbekistan

7.3.2 Projections for Temperature

Future Trends

According to the World Bank Country Climate and Development Report in 2023, temperatures in Uzbekistan are expected to rise by another 1.21°C–1.94°C by the end of the century. Increased temperatures can lead to other disasters like mudslides, glacier melt, at the same time worsening water scarcity. Heavy rainfall frequencies are also projected to increase, which in turn would increase flood risks.

The following map shows climate risk scores across Uzbekistan projected for 2030. The score is the average of four indicators: anomalies in the standardized precipitation evapotranspiration index, maximum rainfall depth in one day, average annual rainfall depth, and anomalies in the growing season length. The project site falls within an area with a low climate risk score.

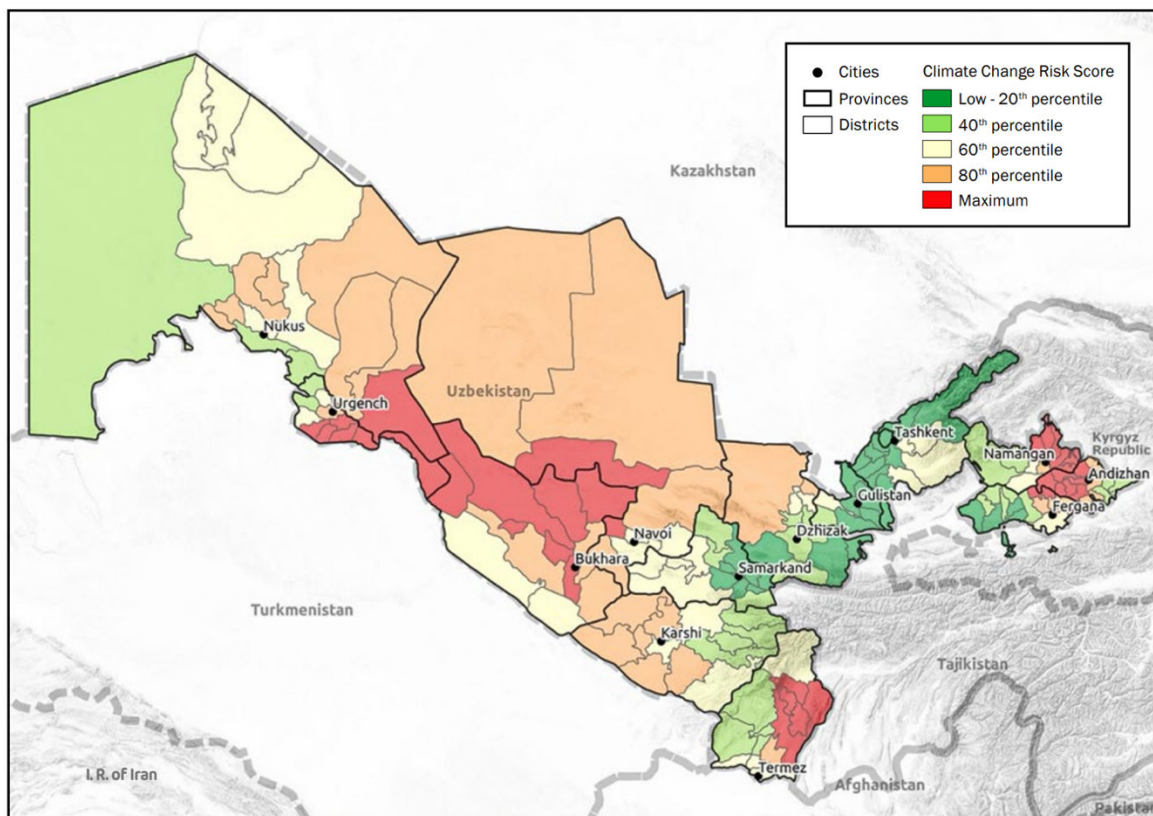


Figure 7-2 Projected Climate Risk Scores for Uzbekistan

7.3.3 Historical Trends in Precipitation

In contrast to the clear trend in average temperatures, average annual precipitation has not shown statistically significant changes in Uzbekistan in recent decades. A slight decrease in average annual precipitation was observed between 1950 and 2013. Observations from the Tien Shan and Gissar-Alai mountain ranges exhibit some variation between seasons, with a slight increase in winter months (December to February) being offset by slight decreases in other months of the year. El Niño Southern Oscillation (ENSO) has a strong influence over multi-year dry and wet climate variability.

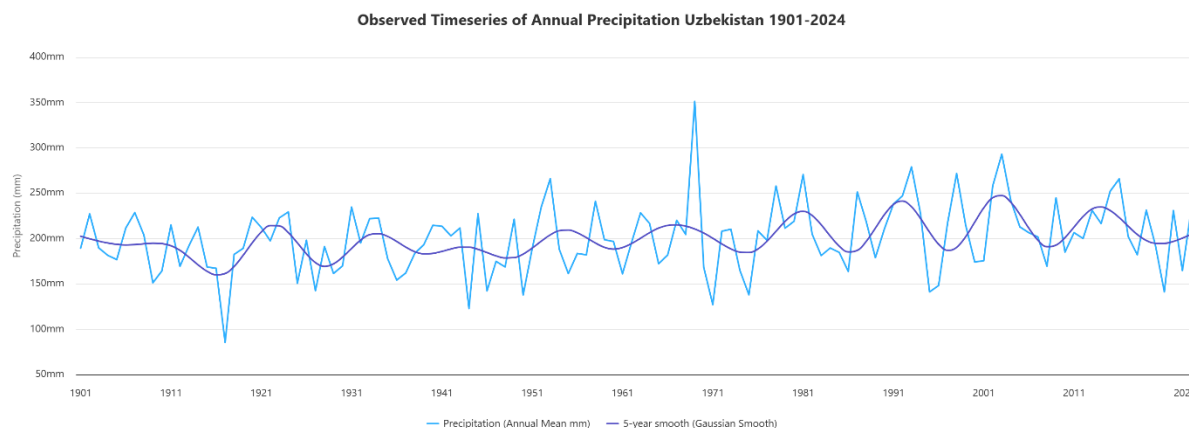


Figure 7-3 Annual Trend of Precipitation of Uzbekistan (1901 – 2024)

7.3.4 Projections for Precipitation

According to averaged outputs averaged from 8 Global Climate Models with use of model MAGIC/SCENG5.3 (Climate Scenario Generator for Vulnerability and Adaptation Assessments), climate change scenarios for the whole of Uzbekistan and for upper watersheds of Syrdarya and Amudarya river basins indicate the probability of heat waves in the future will increase along with retention of cold waves due to climate warming. Precipitation changes are more uncertain than temperature changes. The medium-impact scenario indicates an increase in precipitation of about 48mm/yr in the desert and steppe zones, an increase of 42mm/yr in the piedmont zone, and a decrease of about 10mm/yr in the highlands zone.

Despite an overall increase in precipitation, aridity is also expected to increase across the entire country, most notably in the western parts of Uzbekistan. In addition, the situation with water scarcity in Uzbekistan might significantly worsen due to the expected reduction of existing water resources (projections suggest that the water flow will potentially decrease by 2–5% in the Syr Darya River Basin and by 10–15% in the Amu Darya River Basin by 2050). In addition to reduction in water resources, climate change will increase current competition over water resources because the demand for irrigation water will increase due to increasing temperatures. Evaluation of water use by use of WEAP (Water Evaluation and Planning System) model also show deficiency in water resources will be increased considerably as a result of climate change. By the 2040s even with increase in runoff of the Amudarya and Syrdarya rivers, the total deficiency of water for irrigation in Uzbekistan may be 8.0% with materialisation of the low impact scenario, 15.4% under medium impact and 33.5% under the high impact scenario (Third National Communication for the Republic of Uzbekistan, 2016).

7.4 Climate Change Impacts Assessment

7.4.1 Overview

As outlined earlier in this report, a comprehensive Climate Change Impact Assessment (CCIA) has been undertaken for the Project. The full technical assessment, including datasets, climate modelling outputs, GHG calculations, and detailed adaptation analysis, is provided in Appendix 4. The summary below presents the key findings relevant for the ESIA.

The CCIA evaluates both (i) the impact of the Project on climate change, through its operational and aviation-related GHG emissions, and (ii) the impact of climate change on the Project, considering historical and projected climate variables and associated physical hazards. The assessment aligns with:

- European Commission Climate-Proofing Guidance (2021–2027)
- European Investment Bank (EIB) Project Carbon Footprint Methodology
- IFC Performance Standards, Equator Principles (EP4), and TCFD recommendations

7.4.2 Impact of the Project on Climate Change

7.4.2.1 Greenhouse Gas Emissions

Construction and Operational Emissions

The Project's GHG emissions were quantified for both the construction and operational phases. Construction-phase emissions are estimated at 14,514 tCO₂e from mobile diesel combustion and 8,990 tCO₂e from purchased electricity over the approximately 3.5-year construction period. Also see Table 7-1 and Table 7-2.

Operational emissions were assessed for an annual passenger capacity of 20 million, resulting in 58,800 tCO₂e/year for Scope 1 and 2 sources, including fuel combustion from ground support equipment and purchased electricity (see Table 7-3). Additional Scope 3 emissions from aircraft landing and take-off (LTO) cycles are significantly higher, with an estimated 972,122 tCO₂e/year, reflecting the dominance of aviation emissions in airport carbon footprints (see Table 7-4).

Table 7-1 Calculated Emissions from Fossil Fuel Consumption during Construction

Description	Units	Value
Total fossil fuel consumption ^a	L	5,375,552
Default emission factor ^b	kgCO ₂ e/kWh	2.7
Conversion	tCO ₂ e/kgCO ₂ e	0.001
Total GHG emissions	tCO₂e	14,514
Sources:		
^a Vision Invest.		
^b EIB (2023). <i>EIB Project Carbon Footprint Methodologies</i> (Link) [accessed on 04 February 2026].		

Table 7-2 Calculated Emissions from Purchased Electricity during Construction

Description	Units	Value
Total electricity consumption ^a	kWh	19,250,000
Country-specific grid emission factor ^b	gCO ₂ e/kWh	467
Conversion	tCO ₂ e/gCO ₂ e	0.000001
Total GHG emissions	tCO₂e	8,990
Sources:		
^a Vision Invest.		
^b EIB (2023). <i>EIB Project Carbon Footprint Methodologies</i> (Link) [accessed on 04 February 2026].		

Table 7-3 Calculated Scope 1 and Scope 2 GHG Emissions during Operation

Description	Units	Value
Total number of passengers ^a	Pax/year	20,000,000
Average emissions per passenger ^b	kgCO ₂ e/pax	2.94
Conversion	tCO ₂ e/kgCO ₂ e	0.001
Annual GHG emissions	tCO₂e/year	58,800
Sources:		
^a 5 Capitals (2025) <i>Tashkent New Gateway Hub International Airport Uzbekistan: Environmental & Social Impact Assessment: Scoping Report</i> .		

Description	Units	Value
^b Airport Carbon Accreditation (2024) <i>Annual Report 2023-2024</i> (Link) [accessed on 04 February 2026].		

Table 7-4 Calculated Scope 3 GHG Emissions for the LTO Cycle

Description	Units	Value
Average number of annual passengers ^a	Pax/year	20,000,000
Avg. number of annual flights (for 20 million pax) ^b	flights/year	125,984
Proportion of domestic flights ^c	%	1%
Avg. number of annual of domestic flights	flights/year	1,260
Avg. fuel consumption of domestic flights ^d	kg/flight	800
Conversion	t/kg	0.001
Annual fuel consumption of domestic flights	t/year	1,008
CO ₂ emission factor ^e	kgCO ₂ /LTO	3,104
N ₂ O emission factor ^e	kgN ₂ O/LTO	0
CH ₄ emission factor ^e	kgCH ₄ /LTO	0
CO ₂ GWP ^e		1
N ₂ O GWP ^e		28
CH ₄ GWP ^e		265
Conversion	tCO ₂ e/kgCO ₂ e	0.001
Annual GHG emissions from domestic flights	tCO₂e	3,914
Proportion of international flights	%	99%
Avg. number of annual of international flights	flights/year	124,724
Avg. fuel consumption of international flight	kg/flight	2,500
Conversion	t/kg	0.001
Annual fuel consumption of international flights ^d	t/year	311,810
CO ₂ emission factor ^e	kgCO ₂ /LTO	3,104
N ₂ O emission factor ^e	kgN ₂ O/LTO	0
CH ₄ emission factor ^e	kgCH ₄ /LTO	0
CO ₂ GWP ^e		1
N ₂ O GWP ^e		28
CH ₄ GWP ^e		265
Conversion	tCO ₂ e/kgCO ₂ e	0.001
Annual GHG emissions from international flights	tCO₂e	968,208
Annual GHG emissions	tCO₂e/year	972,122
Sources: ^a 5 Capitals (2025) <i>Tashkent New Gateway Hub International Airport Uzbekistan: Environmental & Social Impact Assessment: Scoping Report</i> . ^b Recalculated for 20 million passengers. ^c Based on flight data from the existing Tashkent International Airport for the period 1 January to 21 December 2025. ^d IPCC (2006). <i>Aircraft Emissions</i> (Link) [accessed on 04 February 2026]. ^e EIB (2023). <i>EIB Project Carbon Footprint Methodologies</i> (Link) [accessed on 04 February 2026].		

Assessment of impacts associated with a potential expansion to 46 MAP has not been undertaken, as such an expansion forms part of a future development scenario that is currently uncertain and falls outside the scope of the present ESIA. This approach is consistent with that adopted by majority of the other specialist studies, which assess only those project components and activities included within the defined scope of the current application.

Any future expansion and the associated impacts arising from increased passenger volumes would be subject to a separate environmental assessment process, at which stage the relevant impacts including GHG emissions would be assessed in detail.

Relative Emissions

According to the EU Technical Guidance, the baseline emissions (Be) are “the emissions that would be generated under the expected alternative scenario that reasonably represents the emissions that would be generated if the project is not carried out.” For the purposes of this assessment, it is assumed that, under the baseline (alternative-project) scenario, the Islam Karimov Tashkent International Airport (TAS) would continue operating at its current capacity (handling approximately 10 million passengers per annum, consistent with 2025 levels).

The relative GHG emissions represent the difference between the absolute emissions and the baseline emissions for a typical year of operation. The absolute GHG emissions are the annual emissions estimated for an average year of operation for the Project.

Scope 1 and 2 Emissions

The analysis indicates that the Project, with an annual throughput of 20 million passengers, would lead to an increase in GHG emissions of approximately 29,400tCO₂e per year relative to the baseline scenario (10 million passengers per annum) for scope 1 and 2 emissions as shown in Table 7-5.

Table 7-5 Calculated Relative Scope 1 and 2 GHG Emissions

Description	Units	Absolute Emissions (A _e)	Baseline Emissions (B _e)
Total number of passengers ^a	Pax/year	20,000,000	10,000,000
Average emissions per passengers ^b	kgCO ₂ e/pax	2.94	2.94
Conversion	tCO ₂ e/kgCO ₂ e	0.001	0.001
Annual GHG emissions	tCO ₂ e/year	58,800	29,400
Relative emissions (R_e)	tCO₂e/year		29,400
Sources: ^a 5 Capitals (2025) <i>Tashkent New Gateway Hub International Airport Uzbekistan: Environmental & Social Impact Assessment: Scoping Report</i> . ^b Airport Carbon Accreditation (2024) <i>Annual Report 2023-2024</i> (Link) [accessed on 04 February 2026].			

Scope 3 Emissions – LTO Cycle

The analysis indicates that the Project, with an annual throughput of 20 million passengers, would lead to an increase in GHG emissions of approximately 486,061 tCO₂e per year relative to the baseline scenario (10 million passengers per annum) for scope 3 emissions – LTO cycle as shown in Table 7-6. Flights beyond LTO have not been included in the assessment since quantification of beyond-LTO Scope 3 aircraft emissions is highly dependent on airline/route/fleet/flight-profile information that is not available or sufficiently defined at this stage of the Project.

Table 7-6: Calculated Relative Scope 3 GHG Emissions for the LTO Cycle

Description	Units	Absolute Emissions (A _b)	Baseline Emissions (B _e)
Avg. number of annual passengers ^a	Pax/year	20,000,000	10,000,000
Avg. number of annual flights (for 20 million pax) ^b	flights/year	125,984	62,992
Proportion of domestic flights ^c	%	1%	1%
Avg. number of annual of domestic flights	flights/year	1,260	630
Avg. fuel consumption of domestic flights ^d	kg/flight	800	800
Conversion	t/kg	0.001	0.001
Annual fuel consumption of domestic flights	t/year	1,008	504
CO ₂ emission factor ^e	kgCO ₂ /LTO	3,104	3,104
N ₂ O emission factor ^e	kgN ₂ O/LTO	0	0
CH ₄ emission factor ^e	kgCH ₄ /LTO	0	0
CO ₂ GWP ^e		1	1
N ₂ O GWP ^e		28	28
CH ₄ GWP ^e		265	265
Conversion	tCO ₂ e/kgCO ₂ e	0.001	0.001
Annual GHG emissions from domestic flights	tCO₂e	3,914	1,957
Proportion of international flights	%	99%	99%
Avg. number of annual of international flights	flights/year	124,724	62,362
Avg. fuel consumption of international flight	kg/flight	2,500	2,500
Conversion	t/kg	0.001	0.001
Annual fuel consumption of international flights ^d	t/year	311,810	155,905
CO ₂ emission factor ^e	kgCO ₂ /LTO	3,104	3,104
N ₂ O emission factor ^e	kgN ₂ O/LTO	0	0
CH ₄ emission factor ^e	kgCH ₄ /LTO	0	0
CO ₂ GWP ^e		1	1
N ₂ O GWP ^e		28	28
CH ₄ GWP ^e		265	265
Conversion	tCO ₂ e/kgCO ₂ e	0.001	0.001
Annual GHG emissions from international flights	tCO₂e	968,208	484,104
Relative emissions (R_e)	tCO₂e/year		486,061

Description	Units	Absolute Emissions (A ₀)	Baseline Emissions (B ₀)
Sources: ^a 5 Capitals (2025) <i>Tashkent New Gateway Hub International Airport Uzbekistan: Environmental & Social Impact Assessment: Scoping Report</i> . ^b Recalculated for 20 million passengers. ^c Based on flight data from the existing Tashkent International Airport for the period 1 January to 21 December 2025. ^d IPCC (2006). <i>Aircraft Emissions</i> (Link) [accessed on 04 February 2026]. ^e EIB (2023). <i>EIB Project Carbon Footprint Methodologies</i> (Link) [accessed on 04 February 2026].			

Mitigation Measures

As operational Scope 1 and 2 emissions exceed the EIB threshold of 20,000 tCO₂e/year, they are considered significant and require a full assessment. The Project incorporates mitigation measures including an on-site solar PV installation and LEED-aligned energy-efficient design. Additional measures recommended in the CCIA include high-efficiency HVAC systems, adaptive LED and airfield lighting, electrification of ground support equipment, and an advanced building management system.

7.4.2.2 Shadow Carbon Cost and Alignment with National GHG Pathway

When applying the EU shadow carbon price, the Project's operational emissions represent a starting carbon cost of approximately €8 million in 2029, increasing over time in line with carbon-price escalation trajectories. Assessment against Uzbekistan's national pathway shows that Project emissions account for only 0.010–0.011% of total projected national emissions through 2035, indicating compatibility with the country's NDC target of reducing emissions intensity by 50% against the 2010 baseline.

7.4.3 Impact of Climate Change on the Project

7.4.3.1 Climate Risks

The CCIA evaluates historical trends and climate projections under SSP2-4.5 and SSP5-8.5 scenarios for 2025, 2050, and 2075. Temperature increases of up to 25.8% in mean monthly temperatures and a substantial rise in "Extreme Danger" heat-stress days (167%–771.9% by 2075, depending on scenario) are projected. Cooling-degree days are expected to rise significantly, increasing energy demand, while heating-degree days decline toward mid-century. Extreme precipitation is projected to increase by 14.4–23.7% for 24-hour 1-in-100-year storm events, raising the risk of localised flooding, impaired runway performance and operational disruption.

A structured vulnerability assessment identified flooding, extreme heat, extreme precipitation, and extreme cold as the most relevant climate hazards requiring detailed evaluation. Flooding poses risks to infrastructure and flight operations, particularly due to increased extreme rainfall and the flat terrain of the airport site. Extreme heat threatens worker safety and operational efficiency, especially for airside personnel. Rising temperatures may also reduce aircraft lift, increase fuel consumption, and affect runway integrity. Extreme precipitation events may compromise braking performance and necessitate low-visibility procedures, while extreme cold increases aircraft and runway icing risks, requiring enhanced de-icing capacity.

In addition, extreme wind has been identified as a material climate hazard for the Project. Projected increases in extreme wind events have the potential to disrupt airport operations by affecting aircraft take-off and landing performance, increasing the likelihood of delays, diversions and temporary operational restrictions. Strong winds may also generate

sandstorms, reducing visibility, affecting airside safety and contributing to the long-term abrasion of aircraft and airport infrastructure. To enhance climate resilience, the Project will incorporate appropriate engineering and operational measures, including consideration of prevailing wind conditions in detailed design where practicable, weather monitoring and forecasting, and operational procedures to support safe airport operations during periods of extreme wind.

7.4.3.2 Adaptation Measures

Adaptation measures recommended in the CCIA include upgrading stormwater infrastructure to account for projected rainfall increases, grooving of runways, proactive weather monitoring, enhanced heat-stress protocols, rescheduling of labour-intensive tasks during cooler periods, procurement of airside PPE, and increasing de-icing equipment and operational capacity.

7.4.4 Impacts on Communities and Ecosystem Services

The Project's climate-related impacts on surrounding communities are assessed as negligible, provided effective stormwater management prevents downstream flooding and groundwater abstraction remains within sustainable limits to avoid affecting agricultural users. The Project site has been almost entirely transformed from its natural state and does not include forested areas, coastal ecosystems, or critical habitats; therefore, climate-related impacts on ecosystem services or areas important for climate adaptation and mitigation are considered insignificant.

7.4.5 Conclusion of CCIA

The CCIA concludes that although the Project will generate significant emissions, primarily from aviation activities, operational emissions can be effectively mitigated through the proposed design and technology improvements.

Climate change presents several material risks to the Project; however, with the recommended adaptation measures in place, residual risks can be reduced to acceptable levels. Overall, the Project remains aligned with Uzbekistan's national climate commitments and international climate-risk management good practice.

7.4.6 Carbon and Energy Management Plan

Prior to commencement of airport operations, the Project Company will prepare and implement a Carbon and Energy Management Plan (CEMP) to support the ongoing management of greenhouse gas emissions and climate-related transition risks throughout the operational life of the Project.

The Plan will provide a framework for the following actions:

- Preparation of an annual greenhouse gas inventory covering Scope 1, Scope 2 and relevant Scope 3 emissions, using internationally recognised GHG accounting methodologies consistent with those adopted in the CCIA.
- Annual monitoring, verification and reporting of GHG emissions and energy consumption.
- Identification, implementation and periodic review of energy efficiency and GHG reduction measures, including opportunities for increased renewable energy use and adoption of low-carbon technologies.
- Periodic review of climate-related transition risks, including changes in climate policy, regulatory requirements, carbon pricing mechanisms and technological developments.

- Annual reporting of GHG performance and implementation of the Plan to the Project Company and lenders, as required under the financing agreements.

The CEMP will be reviewed periodically throughout the operational phase to reflect changes in airport operations, regulatory requirements and international good practice.

8.0 Noise and Vibration

This chapter assesses the potential impacts that may occur as a result of the Project's construction and operational activities on the noise environment. It further looks to identify measures that can be undertaken and/or implemented to mitigate, manage and monitor such impacts.

8.1 Applicable Requirements & Standards

8.1.1 National Regulations

SanR&N No. 0331-16 'Admissible noise level into the living area, both inside and outside the buildings'

This law sets out the acceptable noise levels for habitable areas both inside and outside of buildings in Uzbekistan as shown in Table 8-1.

Table 8-1 Noise Limits under SanPin No.0331-16

Location	Time	SanPiN No. 0331-16
Noise levels in premises of residential, public buildings and on the territory of residential areas	7am to 11pm	55dB L _{Aeq,T}
	11pm to 7am	45dB L _{Aeq,T}
Offices, commercial	7am to 11pm	45dB L _{Aeq,T}

SanR&N No. 0325-16 Sanitary standards for permissible noise levels in the workplace

This law aims to protect the health of the staff and workers in the workplace. The law represents noise levels for a variety of internal and external application as shown in Table 8-2 and Table 8-3.

Table 8-2 Work Environment Noise Limits

Type of work, Workplace	Requirement
Performing all types of work on the permanent workplaces in industrial premises and in the enterprises	80db(A)

The national standards for vibration levels in residential houses are provided in SanN&R No 0331-16 "Residential house design in climatic conditions of Uzbekistan". For residential houses, the standard is 67 dB for nighttime and 72 dB for daytime, with a frequency of 37 and 61 Hz. For non-continuous vibration, the standards should be decreased by 10 dB. However, the standard does not provide any coefficient/allowance for non-frequent events such as passing trains. For the construction phase, the vibration limit will be 72 dB.

Table 8-3 National Vibration Standards

Period	Permanent Vibration, dB	Frequency (Hz)	Application Note
Daytime	72	61	Apply to continuous sources; reduce by 10 dB for non-continuous events.
Nighttime	67	37	Apply more conservative scheduling to avoid nighttime operations near receptors.

The manual cites criteria developed by the United States Federal Transit Administration, which indicates vibration impact levels on residences and buildings where people normally sleep (see Table 8-4).

Table 8-4 Federal Transit Administration Vibration Impact Criteria

Land Use Category	Vibration Level for Frequent Events (VdB)	Vibration Level for Infrequent Events (VdB)
Category I: Buildings where low ambient vibration is essential for interior operations	65	65
Category II: Residences and buildings where people normally sleep	72	80
Category III: Institutional land uses with primarily daytime use	75	83

Note: "Frequent events" is defined as more than 70 events per day. "Infrequent events" is defined as fewer than 70 events per day.

For non-residential areas, standards for building integrity were accepted in accordance with the following tables (Table 8-5 and Table 8-6) presents maximum continuous vibration levels for preventing damages to different type of buildings, as set by the American Association of State Highway and Transportation Officials (AASHTO) and Swiss Association of Standardization (SAS). This data could be used as thresholds for both phases – construction and operation for structural integrity of buildings/houses.

Table 8-5 Maximum Continuous Vibration Levels for Preventing Damage

Description of Building Type	AASHTO (1990)		SAS (1992)	
	mm/s	dB*	mm/s	dB*
Historic sites or other critical locations	2.5	94	2.5	94
Residential buildings with plastered walls / Building with foundation walls and floors in concrete, wooden ceilings, and walls in masonry	5.1-7.6	100-104	5.1	100
Residential buildings in good repair/ Building with foundation walls and floors in concrete, walls in concrete or masonry	10.2-12.7	106-108	7.6	100
Engineered structures without plaster / Buildings in steel or reinforced concrete	25.4-38.1	114-118	12.7	108

Notes

AASHTO = American Association of State Highway and Transportation Officials, SAS = Swiss Association of Standardization.

Source: California Department of Transportation (2013), US Transportation Research Board (2012).

As international standards for vibration were used, the standards provided in general guidance on human response to building vibrations is given in:

- AS 2670.2–1990 Evaluation of human exposure to whole-body vibration: continuous and shock-induced vibration in buildings” (1 to 80 Hz);
- ISO 2631–2:2003 Mechanical vibration and shock: evaluation of human exposure to whole body vibration, Part 2: Vibration in buildings (1 Hz to 80 Hz); and
- BS 6472 –1:2008 Guide to evaluate human exposure to vibration in buildings. Vibration sources other than blasting. Based on these guidelines, the ground vibration limits are presented in Table 8-6.

Table 8-6 Ground Vibration Limits for Human Comfort

Category	Period	Peak Component Particle Velocity (mm/s)	Vibration, dB
Residential	Nighttime	0.2 mm/s	72
	Daytime	0.3 mm/s	76
Offices	When occupied	0.6 mm/s	82
Occupied non-sensitive sites, such as factories and commercial premises	When occupied	2.5 mm/s	94

A sensitive site includes houses and individual residential buildings, theatres, schools, and other similar buildings occupied by people.

Therefore, as a result of comparison of both national and international standards for vibration, it was accepted that national standards for vibration in residential areas are more stringent, and therefore will be applied for the project, i.e. 72 dB during daytime and 65 dB during nighttime.

8.1.1.1 Aircraft Noise Standards

Currently, the following regulatory documents are in force in Uzbekistan, establishing requirements for aircraft noise levels:

GOST 22283-14 "Aircraft noise. Permissible noise levels in residential areas and methods for measuring it" for assessing and regulating aviation noise (Interstate Standard, 2009). The standard establishes maximum permissible levels of aircraft noise in newly designed residential areas near existing airfields and airports, as well as in residential areas of cities and urban-type settlements around newly designed airfields and airports during take-off, flight and landing of aircraft and helicopters, when testing engines at airfields during flights, and also establishes methods for measuring aircraft noise.

GOST 23337-2014 "Noise. Methods for measuring noise in residential areas and in residential and public buildings" (Interstate Standard). The standard establishes methods for measuring, in real conditions, noise levels from external sources in residential areas in cities, towns and other populated areas and noise levels from external and internal sources in residential and public buildings.

GOST 17228-2014 "Passenger and transport aircraft. Permissible noise levels generated on the ground" (Interstate standard). The standard establishes the maximum permissible noise levels generated by subsonic passenger and transport aircraft with turbojet or turbofan engines of all mass categories with a runway (RWY) length of more than 610 m, as well as aircraft with piston, turboprop and turboprop fan engines with a take-off weight of more than 8618 kg, on the ground at control points under the initial conditions established by GOST 17229. This standard does not establish permissible noise levels as noise standards for restricting residential development in the vicinity of airports and airfields (these standards are regulated by GOST 22283).

GOST 17229-2014 "Passenger and transport aircraft. Method for determining noise levels generated on the ground" (Interstate Standard). This standard establishes a method for determining noise levels generated by the above-mentioned aircraft on the ground during take-off, climb, and landing.

8.1.2 Lender Requirements

8.1.2.1 IFC/WBG Guidelines

The IFC/World Bank Group, 'Environmental Health and Safety Guidelines' (General EHS Guidelines) and industry-specific examples of Good International Industry Practice (GIIP) state the following (see Table 8-7).

Table 8-7 WHO Noise Guidelines

Receiver	General EHS Guidelines	
	Daytime (7.00 am – 10.00 pm)	Nighttime (10.00 pm – 7.00 am)
	LAeq, 1hr dB	
Residential	55*	45*
Offices, commercial, industrial	70	70

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

If the above guidelines apply to new airports, the noise model will be considered in terms of L_{day} ($L_{Aeq,15hr}$) and L_{night} ($L_{Aeq,9hr}$) rather than the 1-hour guidelines. Further due to the nature of aircraft events, it is unlikely that there will be compliance, in some neighbourhoods, for the 3 dB(A) over background noise level increase limitation.

8.1.2.2 IFC Good International Industry Practice (GIIP or GIP)

An example of GIIP is the main overarching ICAO policy on aircraft noise is the Balanced Approach to Aircraft Noise Management, adopted by the ICAO Assembly in its 33rd Session (2001) and reaffirmed in all the subsequent Assembly Sessions. This document outlines the four principal elements:

- Reduction of noise at source
- Land-use planning and management
- Noise abatement operational procedures
- Operating restrictions on aircraft

8.1.2.3 EBRD Guidelines

EBRD sets its Environmental and Social Requirements (ESR) in ten documents of which the following are key elements for the noise assessment:

- ESR1 Assessment and management of environmental and social risks and impacts
- ESR3 Resource efficiency and pollution prevention and control
- ESR4 Health, safety and security
- ESR8 Cultural Heritage
- ESR10 Stakeholder Engagement

ESR3 states the following:

- *Clients will assess the noise and vibration impacts of the project, based on the results of the environmental and social risk assessment. This may require baseline data, the identification of key receptors and the assessment of impacts of the development,*

taking into account both negative and positive impacts and compliance with national legislation and GIP.

8.2 Scoping

The scope of the noise and vibration assessment undertaken for this ESIA includes baseline characterisation, predictive modelling of operational noise, assessment of potential construction noise and vibration effects, and identification of mitigation and monitoring requirements.

The key components of the assessment are as follows:

Baseline noise surveys (multiple rounds) were undertaken at representative locations within and around the Project area to establish existing daytime and night-time ambient noise conditions. Monitoring locations were selected to represent nearby residential receptors and other noise-sensitive areas potentially affected by the Project.

A detailed operational noise assessment has been conducted using recognised airport noise prediction modelling tools. The modelling incorporates forecast aircraft movements, fleet mix, runway utilisation patterns, flight paths, ground running operations, and associated surface transport activity. The purpose of the modelling is to predict future noise levels at identified sensitive receptors and to define the spatial extent of operational noise contours.

The assessment considers noise from:

- Aircraft take-off and landing (airborne noise);
- Taxiing and ground running operations;
- Road traffic; and
- Ground support equipment.

Construction-phase noise and vibration impacts have also been assessed qualitatively and, where necessary, quantitatively, taking into account equipment types, duration of works, and proximity to receptors.

The predicted noise levels have been evaluated against applicable national regulations and relevant international guidance, including IFC/WBG Environmental, Health and Safety Guidelines, where appropriate. The assessment also considers potential exceedances of guideline values and the identification of significant adverse effects.

The study identifies feasible mitigation measures and establishes a monitoring framework to manage construction and operational noise, ensure regulatory compliance, and minimise potential disturbance to nearby communities.

The overall objective of the noise and vibration assessment is to determine the likely magnitude and significance of impacts associated with the airport development and to define appropriate mitigation and management measures to reduce noise-related effects on surrounding receptors.

8.3 Sensitive Receptors

The noise sensitive receptors considered within this ESIA include residential dwellings and communities, roadside receptors along access routes, commercial premises, industrial facilities, and on-site project workers. Residential receptors, including the nearest dwelling located approximately 70 m from the Project boundary (H1), are considered the most sensitive to noise. Industrial and commercial receptors are considered to have lower sensitivity due to their compatibility with higher ambient noise environments.

Sensitive habitats and ecological receptors are also recognised as potentially sensitive to noise; however, impacts on ecological receptors are assessed separately within the Terrestrial Ecology chapter of this ESIA.

Noise sensitive receptors were identified through a review of recent satellite imagery, supported by multiple site visits undertaken during the ESIA process. Receptors located within a 10 km study area were identified. While all identified human receptors were included individually within the detailed operational noise modelling report which is included as an appendix 5, the ESIA presents them in grouped categories (e.g., residential communities, roadside receptors, industrial areas) for clarity of assessment.

The receptors predicted to experience the highest potential effects are those located within approximately 4 km of the Project site, particularly those in closest proximity to the runway alignment and flight paths. Baseline noise surveys were undertaken at representative monitoring locations selected to reflect the range of identified receptor types. Monitoring locations included positions representative of the nearest residential receptors, including the closest dwelling (H1), as well as receptors located at greater distances to characterise the wider ambient noise environment.

Table 8-8 Noise Sensitive Receptors

Receptor	Sensitivity	Justification
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. This includes places of education, worship etc. which are located as part of the communities.
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 (including residential properties along access roads)	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.
Commercial / 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 Observations and Baseline Conditions

There are no major sources of noise in the Project area. The existing sound environment within and around the Project site is predominantly influenced by rural activities. Baseline monitoring results indicate that ambient noise levels are typically governed by natural sources (e.g., wind, fauna) and intermittent human activities rather than continuous industrial or transport noise.

The primary identifiable existing anthropogenic noise sources include:

- A railway line located to the east of the Project site, generating intermittent pass-by noise events depending on train frequency, speed and type;
- A local road traversing the central part of the site, contributing occasional vehicle-related noise;
- Agricultural activities, including the use of tractors and farm machinery; and
- Sporadic movements of vehicles along local unpaved tracks.

These sources result in periodic and short-duration increases in noise levels; however, no major continuous industrial or high-traffic transport noise sources were identified within the immediate vicinity of the Project site.

8.4.1 Baseline Surveys

Ambient noise monitoring was undertaken at the eleven (11) receptor locations identified during the scoping stage. In order to obtain representative baseline conditions across all locations, monitoring was conducted over three separate rounds, with measurements undertaken for two (2) consecutive days at each location per round. Noise impacts from airport operations will extend over a wider area, influenced by flight paths, aircraft altitude, and operational procedures. As such, noise monitoring and assessments consider a broader spatial extent, including receptors.

The use of multiple monitoring rounds allowed full coverage of all identified sites while taking into account favourable meteorological conditions and access constraints associated with winter weather. This phased approach ensured that data collection was completed at all locations under suitable conditions and that the baseline acoustic environment was adequately characterised.

Given that operational airport noise has the potential to result in significant impacts at nearby receptors, a comprehensive survey programme was implemented. Monitoring was undertaken using calibrated Class 1 integrating Sound Level Meters (SLM), consistent with international good practice for environmental noise measurement.

The monitored parameters included:

- LAeq,T (equivalent continuous sound level)
- LA90,T (background noise level)
- LA50,T and LA10,T (statistical noise levels)
- LAmax (maximum A-weighted sound level)
- Lpeak (both weighted and unweighted peak sound pressure levels)

Monitoring locations were selected to represent the range of identified noise-sensitive receptors and were positioned in secure areas on open land, where practicable, to minimise the influence of reflections or extraneous localised noise sources.

The indicative noise and vibration survey locations are presented in Figure 8-1. Locations were selected with reference to the anticipated runway orientation and potential aircraft flight paths, which are dependent on prevailing wind direction and corresponding approach and departure procedures. Representative images showing noise monitoring are shown in Figure 8-2.

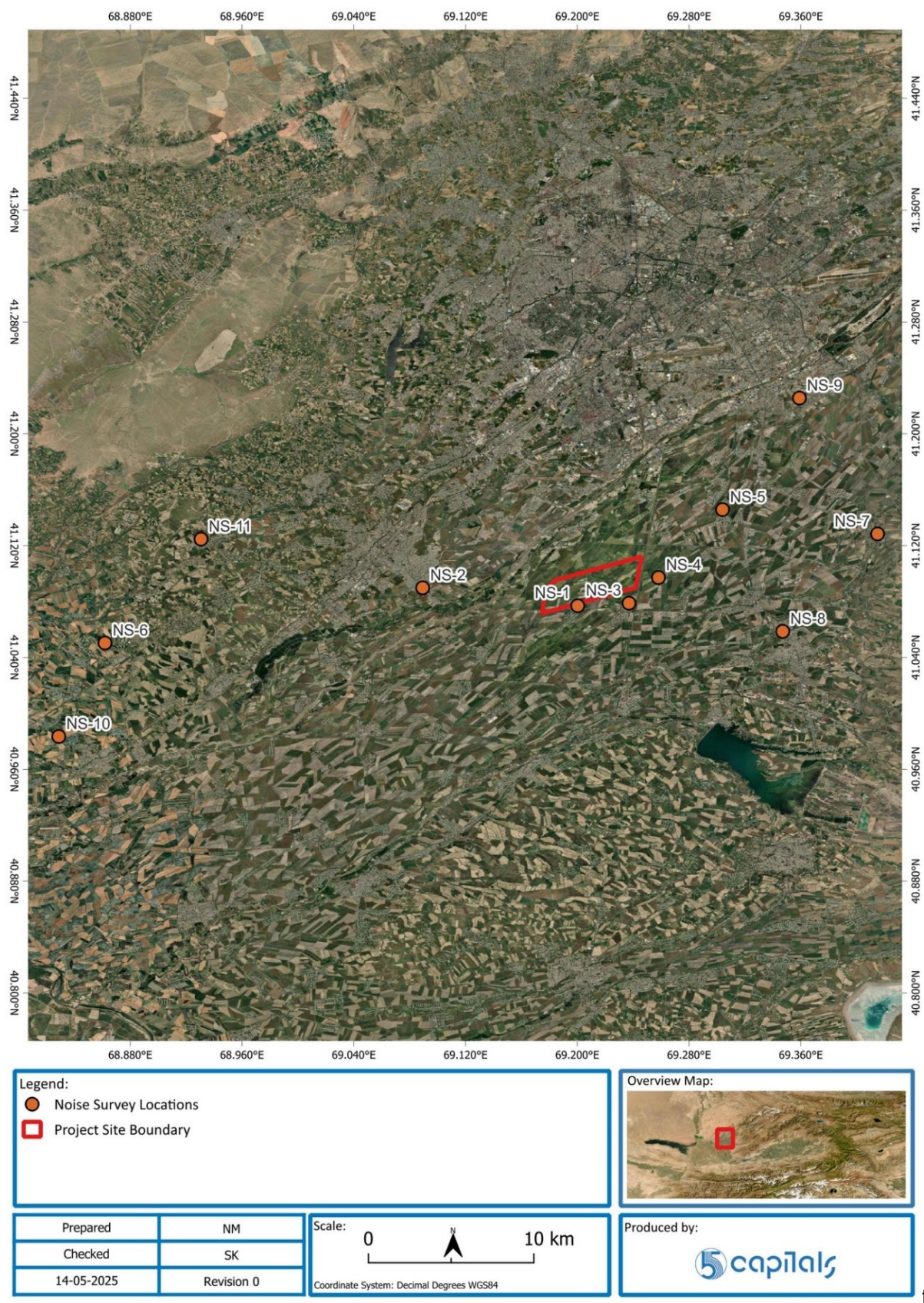


Figure 8-1 Noise and Vibration Survey Locations



Figure 8-2 Noise Monitoring Activity at Project Surrounding Area

8.4.1.1 Noise Monitoring Results

Based on field observations recorded during the monitoring surveys, the existing acoustic environment is characteristic of a rural setting and is primarily influenced by intermittent local activities. Background noise levels (LA90,T) were generally governed by natural and low-level anthropogenic sources.

As outlined earlier in this report, the main noise influences observed during the monitoring period included:

- Occasional agricultural activities (e.g., tractor operation);
- Intermittent vehicle pass-by events on nearby roads;
- Human activity within settlements;
- Animal-related noise (e.g., dogs, donkeys, frogs and insects).

At certain monitoring locations, intermittent railway pass-by events contributed short-duration elevated noise levels (L_{Amax}), depending on train frequency and timing.

During evening and night-time periods, background noise was frequently influenced by natural sources such as frogs and crickets. These sources contributed to relatively stable nocturnal background sound levels and are considered characteristic of the rural baseline environment rather than anthropogenic disturbance.

Figure 8-3 to Figure 8-13) present the recorded baseline noise levels across the full monitoring period at each location. The results indicate that, in general, ambient noise levels in the vicinity of the Project site are low and typical of rural agricultural areas. Measured daytime and night-time LAeq,T values were generally compliant with applicable national and international guideline values. Short-duration increases in noise levels were observed at specific times,

primarily associated with identifiable transient events such as vehicle pass-bys, railway movements, or farm activity.

Overall, the baseline results confirm that the Project area currently experiences a relatively quiet acoustic environment, particularly during night-time periods, which is an important consideration in assessing the magnitude of potential operational airport noise impacts.

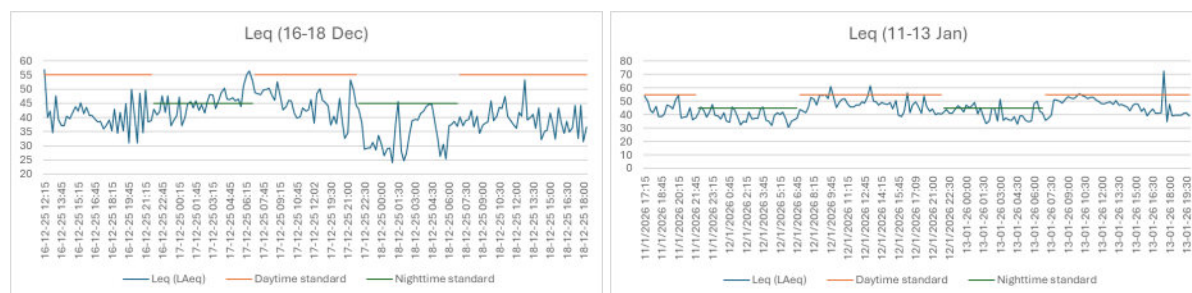


Figure 8-3 Trends in Recorded Noise Data at monitoring location NS-1

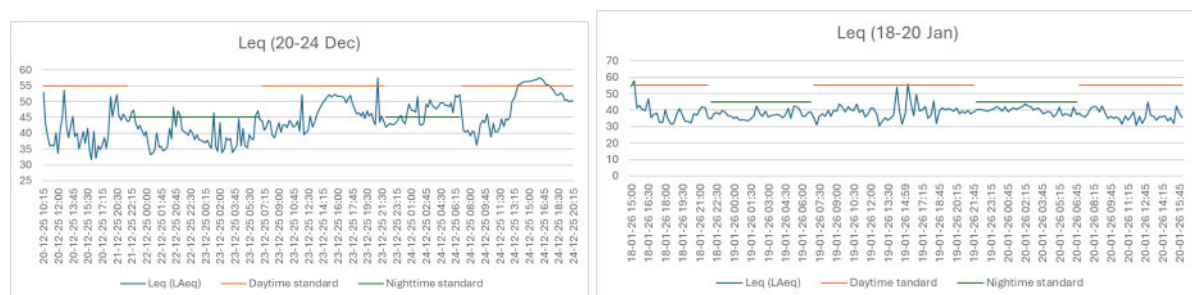


Figure 8-4 Trends in Recorded Noise Data at monitoring location NS-2

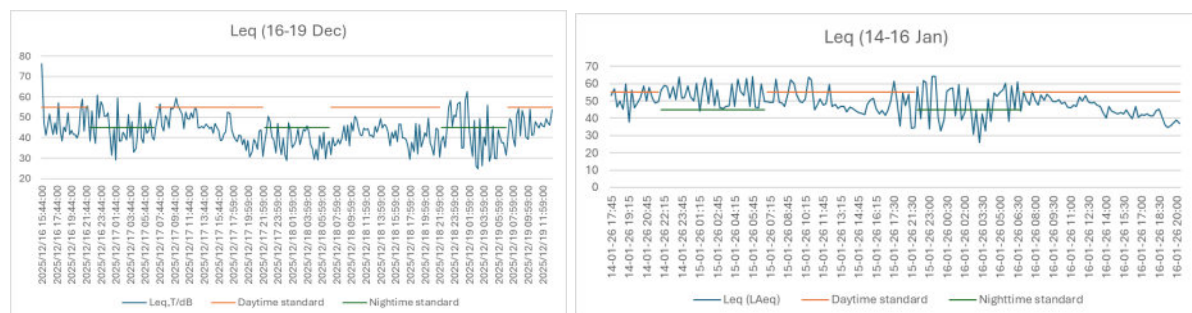


Figure 8-5 Trends in Recorded Noise Data at monitoring location NS-3

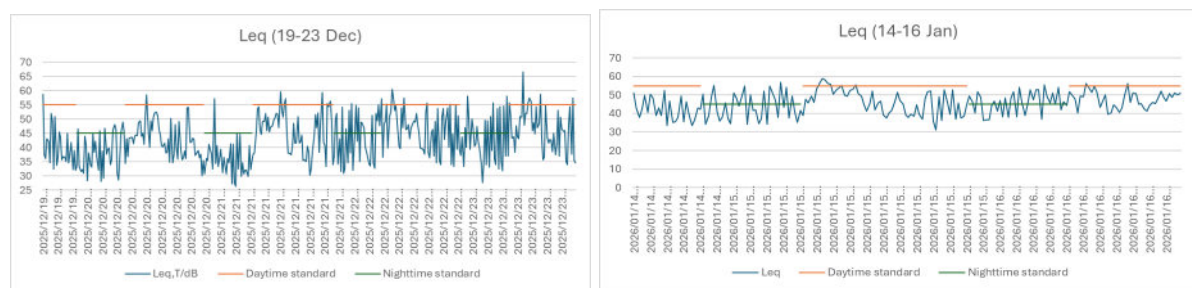


Figure 8-6 Trends in Recorded Noise Data at monitoring location NS-4

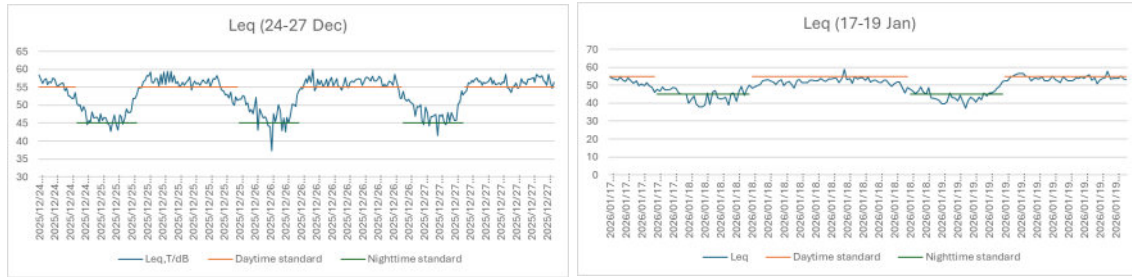


Figure 8-7 Trends in Recorded Noise Data at monitoring location NS-5

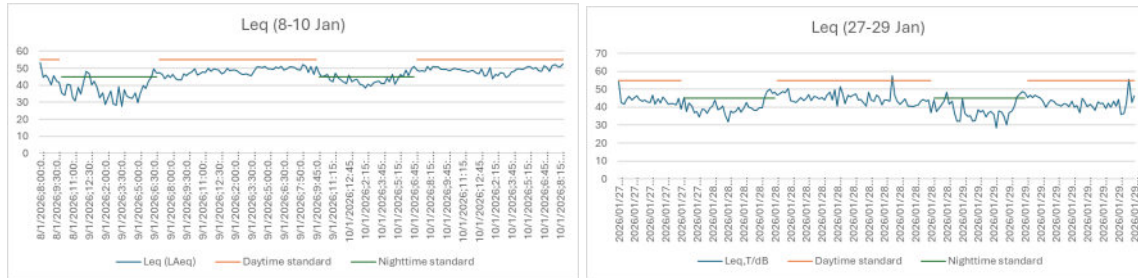


Figure 8-8 Trends in Recorded Noise Data at monitoring location NS-6

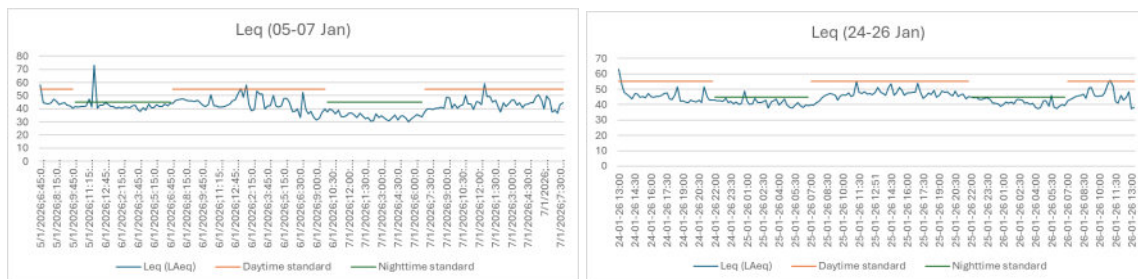


Figure 8-9 Trends in Recorded Noise Data at monitoring location NS-7

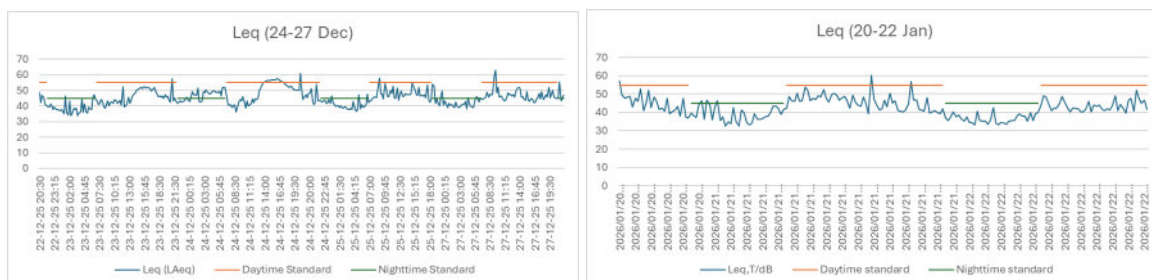


Figure 8-10 Trends in Recorded Noise Data at monitoring location NS-8

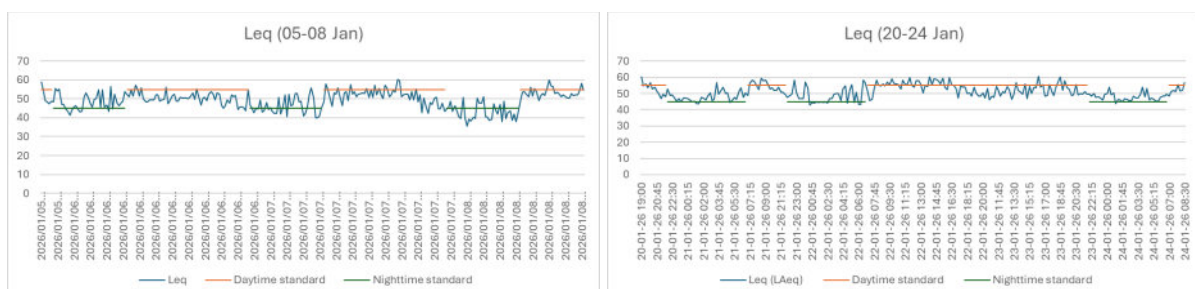


Figure 8-11 Trends in Recorded Noise Data at monitoring location NS-9

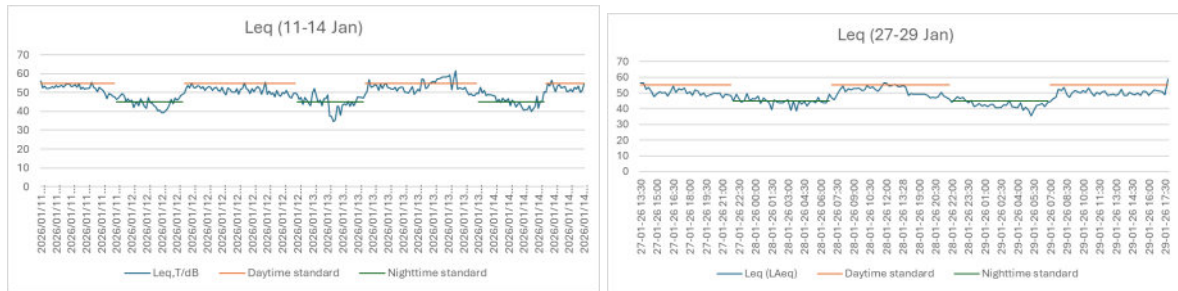


Figure 8-12 Trends in Recorded Noise Data at monitoring location NS-10



Figure 8-13 Trends in Recorded Noise Data at monitoring location NS-11

8.5 Potential Impacts, Mitigation, and Management

8.5.1 Construction Phase

The identification of aspects associated with the construction of the project and the receptors that may be potentially affected has been used to identify potential noise and vibration effects during the construction phase. These are presented in following table and discussed. Indirect impact from noise, e.g. potential disturbance to wildlife, presented in Section 9.0 Terrestrial Ecology and Birds.

Table 8-9 Aspects and Impacts – Noise and Vibration during Construction

Activity	Environmental Aspect	Impacts and Zone of Influence	Potential Receptors
Construction activities on-site (including temporary plant and use of mobile equipment)	Noise propagation	Increased noise influence at receptors expected up to 500m or to a maximum of 2km in very calm and quiet ambient conditions.	Human and ecological receptors in zone of influence, including residences
	Vibration	Impacts within the site footprint and immediately adjacent to the site.	
Movement of vehicles to and from the Project site	Noise propagation	Impacts along road corridors used by construction vehicles to the site. Particularly due to increased HGV movements.	

Construction noise will have a localised spatial extent, largely contained within the project footprint. The duration of the impact will be short considering individual noise emission events relative to the lifespan of the project. The frequency of occurrence is high as noise emissions will likely occur daily, but noise emissions are reversible once the activity ceases.

8.5.1.1 Noise from On-site Construction Activities

Noise Assessment Methodology

The types and number of the main plant and equipment that are likely to be used during construction has been provided by the EPC contractor and listed earlier in this report which is used in this assessment. Noise generation data for the anticipated plant and equipment has been obtained from 'British Standards: Code of practice for noise and vibration on construction and open sites'. The anticipated construction plant and equipment listed in Table 2-6, provided by the EPC contractor has been used in the assessment.

The construction plant inventory adopted for the assessment represents the principal items of plant anticipated to operate concurrently during the noisiest construction activities, based on the current level of project design and construction planning. It is not intended to represent the total construction fleet that will be present on site over the duration of the works. Construction activities will be undertaken in phases and across different work areas, such that not all items of equipment will operate simultaneously at a single location. The assessment therefore adopts a representative concurrent plant inventory for each construction activity, providing a proportionate basis for predicting worst-case construction noise levels at the ESIA stage.

Predicted noise levels for construction plant impacts at receptors have been calculated using the noise ratings for equipment (as above), in combination with distance attenuation to receptors. The predictions assume that each piece of equipment will only be operational for

50% of the working day. The predictions also work on the basis that one number of each of equipment is located at the same location at the boundary of the site as a conservative approach.

In order to derive representative noise level for the purpose of calculating the construction noise, baseline daytime and night time noise levels have been calculated from the logarithmic average of all measurements obtained over a given period of time in order to obtain a single ambient noise level (presented in 8.4.1.1 above) for each location and monitoring period.

A basic modelling assessment using equations set out in Annex F of 'BS5228-1:2009 Part 1 Noise' has been used to predict the effects of distance propagation and ground absorbance related to mechanical and installation works shown in the table below. The adjustment due to ground absorbance has been made based on all nearby receptors being >25m from source and using the equation ' $25 \cdot \log_{10}(\text{Distance to receptor}) + 2$ '. (Note: *The relevant noise monitoring location has been selected by determining the nearest baseline monitoring location to each receptor*). The cumulative impact is based on the overall noise and considers the baseline noise and the construction noise levels.

In respect of potentially more sensitive residential receptors, BS5228-1:2009+A1:2014 outlines criteria in Annex E.3, which considers impact significance based upon the change in ambient noise associated with construction activities. BS5228 states that this can be considered as, '*an alternative and/or additional method to determine the significance of construction noise levels*'.

Paragraph E.3.2 describes Example Method 1 (The ABC Method), which considers the existing ambient noise environment (the LAeq noise level environment) at the neighbouring sensitive receptors and identifies levels that if exceeded would be considered to result in a significant adverse effect and is noted to apply to residential receptors only.

Table E.1 of BS5228 sets out significance effect threshold values at receptors. The process for determining this requires the determination of the ambient noise level at the relevant receptor (rounded to the nearest 5dB), which is then compared to the total noise level, including the predicted construction noise level. If the combined noise level exceeds the appropriate category value, then the impact is deemed to be significant. The relevant statistics from Table E.1 are set out below.

Table 8-10 Construction Phase Noise – ABC Assessment

Assessment category and threshold value period (LAeq)	Threshold value, in decibels - dB(A)		
	Category A	Category B	Category C
Daytime (0700 to 1900 hrs) and Saturdays (0700 to 1300 hrs)	65	70	75
Evenings and weekends ^{D)}	55	60	65
Night-time (2300 to 0700 hrs)	45	50	55
NOTE 1 A potential significant effect is indicated if the $L_{Aeq,T}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level			
NOTE 2 If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level higher than the above values), then a potential significant effect is indicated if the total $L_{Aeq,T}$ noise level for the period increases more than 3 dB due to site noise			

NOTE 3 Applied to residential receptors only.

A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

D) 19.00-23.00 weekdays, 13.00-23.00 Saturday and 07.00-23.00 Sundays

Note: The ABC Method does not provide levels of significance, as such professional judgement has been applied to determine this within following significance tables.

Impacts on Residential Receptors from Onsite Construction Activities

The construction phase of the project will generate additional noise to the surrounding area which comes from mobile and stationary plant used for the site preparation and development. Each phase of construction will entail the use of various machinery and plant which will be deployed at various locations.

Predicted combined sound level as a result of the working of all plant and equipment that are expected to be used for the construction as well as the baseline noise levels have been used to predict the combined noise levels at identified receptor locations and the calculated change in noise when compared to the baseline.

Table 8-11 Summary of Predicted Noise Impacts from Construction Activities

Re- cep- tor	Relevant noise monitor- ing location	Baseline noise level		Anticipated Con- struction Noise at Receptor (dBA)	Calculated Noise Level at Receptor Lo- cation (dBA)		Change from Baseline	
		Day	Night		Day	Night	Day	Night
H1	NS-1	51.4	44.2	58.3	59.1	58.4	7.7	14.2
H2	NS-2	47.9	43.9	21.2	47.9	43.9	0.0	0.0
H3	NS-2	47.9	43.9	27.5	47.9	44.0	0.0	0.1
H4	NS-4	49.7	48.0	38.6	50.0	48.4	0.3	0.4
H5	NS-3	54.2	54.4	33.2	54.2	54.4	0.0	0.0

Predicted noise levels have been assessed at the five closest residential receptors (H1–H5) in accordance with BS5228-1:2009+A1:2014, applying the ABC assessment method.

Under the ABC method, significance is determined by comparing the total predicted construction noise level (LAeq, including ambient noise) against threshold values defined according to the existing ambient noise climate. For residential receptors:

- Category A applies where baseline ambient levels (rounded to the nearest 5 dB) are below the Category A threshold.
- Category B applies where baseline levels are approximately equal to Category A thresholds.
- Category C applies where baseline levels exceed Category A thresholds.

A significant effect is deemed to occur where:

- The total predicted construction noise level exceeds the relevant ABC threshold for the period; or

- Where baseline noise already exceeds the threshold, and construction activity results in an increase greater than 3dB.

The assessment adopts a conservative worst-case scenario, assuming all plant operates simultaneously at the closest point to the site boundary and that works could occur during both daytime and night-time periods.

Daytime Assessment (07:00–19:00)

Baseline daytime levels at the assessed receptors range between approximately 48–54 dBA. When rounded to the nearest 5 dB (i.e. 55 dBA), these fall below the Category A daytime threshold of 65 dBA. Accordingly, Category A criteria apply.

At H1, the predicted total daytime construction noise level is approximately 59 dBA. This is below the Category A daytime threshold of 65 dBA and therefore does not constitute a significant effect under BS5228-1:2009+A1:2014, despite representing an increase of approximately more than 7 dB over baseline.

At H2, H3, H4, and H5 predicted daytime noise levels remain at or only marginally above baseline (increases of less than 1 dB), and total levels are well below the 65 dBA threshold. Construction noise impacts at these receptors are therefore not significant during the daytime period.

Night-time Assessment (23:00–07:00)

Baseline night-time levels range between approximately 44–54 dBA. When rounded to the nearest 5 dB, these are approximately 55 dBA. This aligns with the Category C night-time threshold of 55 dBA.

At H1, the predicted total night-time construction noise level is approximately 58.4 dBA. This exceeds the Category C night-time threshold (55 dBA) by 3.4 dBA. The increase relative to baseline is approximately 14.2dB. Under the ABC method, this constitutes a significant adverse effect if night-time works were to occur.

At H2 and H3, predicted night-time levels remain effectively unchanged from baseline and below applicable thresholds, resulting in no significant effect. Similarly, at H5, with baseline noise level at 54.4 dBA, near the Category C threshold, but there is no significant increase predicted during the construction, resulting in no significant effect.

At H4, predicted increases are less than 1 dB and total levels remain close to baseline. The negligible increase means no significant effect would occur under the ABC criteria.

Summary of Construction Noise Significance

The assessment demonstrates that:

- Daytime construction noise is predicted to remain below BS5228-1:2009+A1:2014 Category A threshold levels at all assessed residential receptors and is therefore not significant.
- Night-time construction noise would result in a significant adverse effect at H1 under worst-case assumptions.
- Other receptors (H2–H5) are not predicted to experience significant construction noise effects.

It should be emphasised that the assessment assumes simultaneous operation of all plant at the site boundary and includes a hypothetical night-time working scenario. In practice, construction activities are expected to be phased and primarily restricted to daytime hours. With appropriate management measures, including control of working hours and implementation of best practice measures, construction noise impacts are expected to be temporary, localised and manageable.

As outlined earlier in the report, construction activities are not anticipated in full scale as part of the routine construction programme. Should night-time working be required, the activities will be minimised to the extent reasonably practicable and managed through mitigation measures, stakeholder notification and any necessary approvals from the relevant authorities.

Compliance with the construction noise mitigation requirements and application of GIIP will form part of the EPC Contractor's contractual environmental and social obligations and will be subject to monitoring and oversight by the SPV.

8.5.1.2 Impacts from Ground Vibration

The threshold of perception of vibration by human beings are typically in the range between 0.14mm/s to 0.3mm/s (BS 5228). Impacts from exposure to vibration is expected to be considerable beyond these values with potential to cause disturbance, startle, cause annoyance or interfere with work activities.

Data included in BS 5228 has been reviewed to understand the distance decay in vibration levels generated from auger driven piling. This activity was chosen as it represents the most likely to generate vibration during construction works. Reviewed data indicates that vibration levels would be well below 0.14 mm/s at a distance of 20 m or more from the source. This indicates that vibration from construction activities and construction traffic movements would be negligible impact off-site.

8.5.1.3 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.

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 at the main highways. Therefore, impacts along the main roads and highway are anticipated to be minor and temporary.

In contrast, receptors located along the interior rural roads may experience more noticeable temporary increases in noise, particularly during the land preparation phase when truck movements are expected to be highest.

Given the existing low background noise environment in the Project area, construction traffic will result in impacts of moderate magnitude. 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.

8.5.2 Impacts Assessment Summary – Noise during Construction

A summary of potential impacts from noise emissions during construction and their effects on identified receptors are presented in the following table including suggested mitigation measures and residual impacts after implementation of the mitigations measures. The residual impacts will be re-assessed once the construction stage ESMP has been developed.

The EPC Contractors will apply the principle of GIIP and Best Practicable Means throughout the construction period to minimise noise emissions, taking into account the nature of the works, available technology and site-specific constraints and the presence of sensitive residential receptors close by, mainly H1 which is about 70 m away from the Project boundary to the south. BPM will have regard to local conditions and circumstances, the current state of technical knowledge and the financial implications of the measures. This will include, where reasonably practicable, selection of lower-noise equipment, regular maintenance of plant, avoidance of unnecessary engine idling, use of temporary acoustic screening where appropriate, careful programming of particularly noisy activities, optimisation of plant locations and implementation of workforce awareness measures. The design, selection, installation, maintenance and manner and periods of operation of plant and machinery, as well as the design, construction and maintenance of buildings and acoustic structures, will also be considered. Measures will be implemented in a manner compatible with safety and safe working conditions. These requirements will be incorporated into the CESMP and associated Construction Noise Management Plan.

Construction Noise Management Plans will be prepared as part of the CESMP to demonstrate the application of Best Practicable Means and GIIP. The plans will define the applicable mitigation, monitoring and management measures for construction activities, including procedures for planning higher-noise activities, monitoring construction noise and vibration where appropriate, recording and responding to community complaints, reviewing mitigation effectiveness and implementing corrective actions where required. The plans will be reviewed and updated as construction activities and conditions change.

Where practicable, noise insulation measures planned for operational aircraft noise will be implemented at an early stage of the Project to provide protection to affected residents from construction noise as well as subsequent operational aircraft noise.

The SPV will oversee implementation of the construction noise management plan through its environmental and social management system and contractor management procedures.

Given the temporary and progressive nature of construction activities, the primary approach to noise management is the application of source and pathway mitigation measures in accordance with Best Practicable Means and GIIP. Should construction monitoring or stakeholder feedback identify unforeseen noise impacts at particular sensitive receptors, additional site-specific mitigation measures will be considered as appropriate, taking account of the predicted noise levels, duration of exposure and the nature of the affected receptor.

Table 8-12 Impacts Assessment Summary – Noise and Vibration during Construction

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
Noise impacts due to onsite construction activities	Major	Nearest Residential Receptor (H1 – approx. 70 m from Project boundary)	High	Major	Moderate
	Moderate	Other nearby Residential Communities	High	Moderate	Minor
		Project workers	Medium	Moderate	Minor
		Commercial / Industrial facilities	Low	Minor	Negligible
Vehicular Noise	Minor	Other nearby Residential Communities	High	Moderate	Minor
		Roadside receptors (including residential properties along access roads)	Medium	Minor	Negligible

Proposed Mitigation Measures

Mitigation measures for noise from construction activities on residential areas

- Consideration of noise fences, or other methods to attenuate construction noise, will be required close to non-mobile equipment such as generators or at boundaries for key receptors that may have higher assessed impacts.
- The EPC 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).
- Acoustic covers on machine engines remain closed at all times as applicable.
- Where practical, electrically powered plants will be preferred to mechanically powered alternatives.
- All mechanically powered plants, diesel engine vehicles and compression equipment will be fitted with noise control equipment (exhaust silencers, mufflers) as available from the manufacturer.
- The highest noise emitting activities will be undertaken in a central site area, or within an enclosed structure. For example, fabrication of materials will be carried out away from the site boundaries and/or within structures.

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
- Careful planning of the sequence of work in order to minimise the effects of noise to neighbours. - Careful handling of materials and waste such as lowering rather than dropping items. - Where practical, additional noise barriers /attenuation will be employed to ensure that the maximum noise level at 1m distance outside of the plant fence when all equipment is running do not exceed 70dB(A) and maximum noise level at 1m from open air installations do not exceed 85dB(A). - Items of plants on site operating intermittently will be shut down in the intervening periods between use. - Nighttime construction works will be minimised to prevent noise impact at nearest noise sensitive receptors. Where unavoidable, night work permits (if applicable) will be obtained from the relevant authorities. - Notice will be provided to the sensitive receptors (e.g. H1) as early as possible (minimum one-week notice) of periods of noisier works in regard to certain construction and commissioning activities and for how long such activities will be likely to last in accordance to the SEP. - The impacted receptors will have access to a grievance mechanism in accordance with Project SEP in order to make any complaints regarding noise during the construction phase. - A Noise Management Plan will be prepared for implementation by the EPC Contractor as part of the CESMP. <u>Mitigation measures for noise from construction activities on construction workers</u> - Identify workers who may be exposed to elevated noise levels (equal to or exceeding 80dB(A)) and brief them of occupational risks from noise exposure. Provide noise reduction PPE to workers. Respond to noise related complaints from workers or other nearby receptors and take corrective and preventive actions as necessary. - Use hierarchy of control to reduce impacts on workers (in the order of physical removal of noise source, replace with quieter options, isolate workers from high noise sources, changes to work methodology, use of PPE. - Operators of vibrating hand-held machinery (if any) will be provided with appropriate PPE (e.g. protective gloves and earmuffs/plugs) and be given suitable breaks from using such equipment to reduce the impacts of vibration. - Workers potentially exposed to high noise and vibration shall be provided with appropriate PPE with respect to the occupational H&S risk assessment conducted for that activity. - Workers potentially exposed to high noise and vibration shall be trained to identify situation when PPE is required to be worn and how to effectively utilize the PPE. - These mitigation measures shall be incorporated into the applicable occupational H&S plan being developed by the EPC Contractor and implemented on-site					

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
<u>Mitigation for impacts due to vehicular movement</u> - 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. - 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.					

8.5.3 Operation Phase

The identification of aspects associated with the operation of the project and the receptors that may be potentially affected has been used to identify potential noise effects during the operational phase. These are presented in following table and discussed further later in this section.

Table 8-13 Aspects and Impacts – Noise and Vibration during Operation

Activity	Environmental Aspect	Impacts and Zone of Influence	Potential Receptors
<u>Air-side noise</u> Noise from arriving and departing aircraft on the flight paths as well as lateral noise effects on the surrounds.	Noise propagation	Both aspects are likely to influence the day and night-time noise climate at the immediate surrounds as well as at the settlements under and near to the flight paths.	Human and ecological receptors in zone of influence, including residences
<u>Ground Noise</u> The ground running noise impacts due to taxiing on aprons, ground/auxiliary power units, engine testing, terminal associated operations	Noise propagation		
Airborne traffic and ground running operational activities	Airborne and ground vibration	Existing structures closest to aircraft in flight and taxiways. Based upon data gathered in the UK ('Research on the Potential Noise Impacts on the Historic Environment by Proposals for Airport Expansion in England (2014)')	Nearby buildings including residential properties and other structures. Any heritage sites in the surrounding area.

8.5.4 Impacts from Increase in Noise Levels during Airport Operation

8.5.4.1 Overview of Noise Prediction Modelling

This section presents the noise and vibration assessment for the proposed new Tashkent International Airport. The assessment has been undertaken to predict and evaluate the likely noise effects arising from aircraft operations, ground activities, and road traffic associated with the new airport. It also identifies appropriate mitigation measures in accordance with Good International Industry Practice (GIIP) and the requirements of the Government of Uzbekistan and international lenders.

Aircraft noise modelling has been undertaken iteratively to reflect the progressive development of the Project. Following completion of the initial ESIA assessment, additional technical work was undertaken in response to comments from the international lenders, discussions with Uzbekistan Airports and consultation with the Committee for Sanitary and Epidemiological Welfare and Public Health regarding establishment of the SPZ. This resulted in an updated Noise Assessment Addendum (Entran Ltd., June 2026), which refined the operational

assumptions and assessed additional operational mitigation scenarios to reduce community noise exposure and modelled predicted noise for revised opening year of 2030 and future assessment year of 2045. The findings of the Addendum supersede the corresponding aircraft noise assessment presented in the original Noise Assessment Report where applicable.

The final SPZ conclusion issued by the Committee for Sanitary and Epidemiological Welfare and Public Health confirms that the airport SPZ should be established based on the 60 dBA aircraft noise contour, rather than a fixed separation distance. This ESIA has therefore been updated to reflect the approved SPZ approach, together with the refined aircraft noise modelling presented in the Addendum.

A standalone Noise Assessment Report and Addendum (Entran Ltd, 2026) is provided as Appendix 4 to this ESIA and contains the full technical modelling database, assumptions, and contour outputs. This ESIA chapter summarises the key findings and places them within a wider environmental and social impact framework.

8.5.4.2 Regulatory and Policy Framework

There are no Uzbekistan-specific noise standards for aircraft in flight. Therefore, the assessment references:

- Uzbekistan SanPiN No. 0339-16, and subsequent guidance issued by the Committee for Sanitary and Epidemiological Welfare and Public Health regarding establishment of airport SPZ;
- The approved SPZ conclusion establishing the airport SPZ based on the 60 dBA aircraft noise contour;
- IFC/World Bank Group General and Airport EHS Guidelines, which emphasis minimisation of aircraft noise through airport planning, operational procedures, flight-routing and land-use planning rather than numerical compliance limits for aircraft noise;
- EBRD Good International Practice relating to aircraft noise assessment and management; and
- WHO Night Noise Guidelines (2009), which have been used as a health-based reference when considering potential sleep disturbance.

The aircraft noise assessment has therefore been undertaken using internationally recognised modelling methodologies together with the applicable national SPZ requirements and international good practice to support the assessment of potential impacts, development of mitigation measures and long-term airport noise management.

The Project acknowledges the applicability of the IFC/WBG EHS Guidelines and the associated guideline values of 55 dBA daytime and 45 dBA nighttime at residential receptors. However, it is also recognised that airport developments represent a special category of infrastructure for which noise impacts are typically assessed using aviation-specific methodologies, land-use planning frameworks, and management approaches.

In international practice, including at airports financed and operated in accordance with international standards, aircraft noise management is generally based on a combination of operational controls, land-use planning measures, noise monitoring, sound insulation programmes, and application of the ICAO Balanced Approach, rather than strict compliance with generic environmental noise guideline values at all off-site receptors. This reflects the practical reality that aircraft operations can result in noise levels exceeding generic environmental noise guidelines in communities located near airport infrastructure, even where good international industry practice is being applied.

Accordingly, the ESIA considers the IFC/WBG EHS guideline values as important reference points for understanding potential impacts and informing mitigation requirements. The

assessment also incorporates aviation-specific modelling, SPZ requirements, international airport noise management practices, and the identification of feasible mitigation measures to reduce impacts as far as reasonably practicable. A Noise Management Framework will be prepared which will further define the mitigation hierarchy, monitoring requirements, and receptor-specific mitigation measures, including consideration of sound insulation and operational controls.

8.5.4.3 Baseline Acoustic Environment

As outlined earlier, the baseline surveys confirm a rural acoustic environment, largely free of major transport or industrial noise sources. Day-time LAeq values generally range from 45–55 dB, with night-time LAeq values between 38–52 dB.

In some cases, night-time baseline noise slightly exceeds the SanPiN/IFC 45 dB guideline, driven by localised village activity rather than major infrastructure.

8.5.4.4 Modelling Methodology

Forecast Air Traffic and Modelling Approach

Total annual aircraft movements are forecast to increase from approximately 78,600 Air Traffic Movement (ATM)s at the existing airport to approximately 110,400 ATMs in the opening year (2030) and approximately 274,000 ATMs by the future assessment year (2045). This represents a significant long-term growth trajectory consistent with the strategic role of the airport as a major regional hub. Out of the estimated ATMs, approximately 36% of forecast aircraft movements are expected during the night-time period; consequently, aircraft noise during the night represents the most sensitive assessment scenario.

Aircraft noise has been modelled using the Aviation Environmental Design Tool (AEDT v3g), with contour processing undertaken using IMMI software. AEDT is an internationally recognised aviation noise modelling platform developed by the U.S. Federal Aviation Administration and is widely used for airport environmental assessments. Ground operations noise, including taxiing aircraft, was modelled using IMMI (2025 version), applying ISO 9613-2 sound propagation algorithms. Road traffic noise associated with airport access was assessed using the Calculation of Road Traffic Noise (CRTN) methodology.

At the ESIA stage, certain operational parameters, including detailed flight procedures (SIDs and STARs), airspace design and airline-specific operating practices, had not yet been finalised. Accordingly, the assessment adopted a series of reasonable and, where appropriate, conservative assumptions to ensure that aircraft noise impacts were not underestimated. Following review by the international lenders, these assumptions were further refined through the Noise Assessment Addendum to better represent the intended airport operation while maintaining a precautionary approach.

The principal modelling assumptions include:

- Indicative arrival and departure routes developed from the current airport masterplan and existing operational practices, pending final airspace design;
- Standard instrument approach procedures and preliminary runway geometry;
- Updated aircraft fleet forecasts, including a conservative transition towards quieter next-generation aircraft by the 2045 assessment year;
- Differentiated runway utilisation, whereby larger (ICAO Code D and above) aircraft are preferentially allocated to the northern runway to reduce noise exposure at Yangitosh and other communities south of the airport;

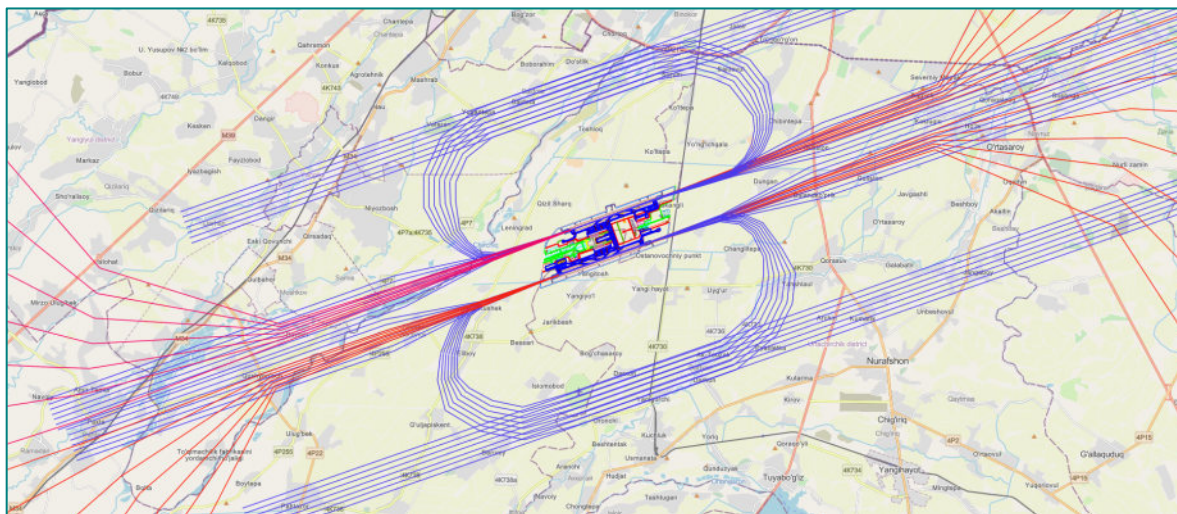
- Assessment of additional mitigation scenarios, including a partial night-time operational restriction on the southern runway and a southern noise bund for ground noise sources; and
- Conservative operational and dispersion assumptions where detailed operational information remains unavailable.

The refined assumptions were developed in consultation with Uzbekistan Airports and reflect the intended operational strategy for the airport. Nevertheless, they remain precautionary and provide a robust basis for environmental assessment.

As the airport design progresses, the aircraft noise model will be updated to incorporate the final airspace design, Standard Instrument Departures (SIDs), Standard Arrival Routes (STARs), aircraft fleet forecasts and operational procedures. The final modelling will confirm the operational aircraft noise contours, support implementation of the approved SPZ, and inform the Airport Noise Management Plan and long-term aircraft noise monitoring programme.

The assumptions listed above are considered precautionary and likely to overestimate long-term noise exposure relative to a scenario incorporating technological improvements and refined airspace optimisation. The modelling therefore provides a robust basis for impact assessment and mitigation planning within the ESIA.

Figure 8-14 illustrates the assumed aircraft track centre line tracks and sub-tracks to and from the two runways covering the area over which the noise contours lie. Arrivals routes are shown red and departure routes are shown blue.



Note: Red are arrival routes. Blue are departure routes

Figure 8-14 Indicative Flight Tracks (Arrivals and Departures)

As outlined in the modelling assumptions, a number of operational noise mitigation measures were identified through discussions with the Public Partner/Uzbekistan Airports, the UzNavigation Department and other relevant stakeholders. These measures were incorporated into the updated aircraft noise modelling to evaluate their effectiveness in reducing noise exposure at nearby communities. Two operational mitigation scenarios were therefore assessed:

- **Mitigation Scenario 1** – incorporates potential preferential runway use through runway differentiation, whereby larger (ICAO Code D and above) aircraft are allocated to the northern runway, together with a conservative future fleet transition to quieter next-generation aircraft and the inclusion of a 10 m southern noise bund to reduce ground noise.

- **Mitigation Scenario 2** – builds upon Mitigation Scenario 1 by additionally assuming a partial night-time operational restriction on the southern runway between 23:30 and 05:00 hours, with night-time operations preferentially directed to the northern runway (except in emergency or exceptional operational circumstances).

Further details about these scenarios are discussed in the Noise Assessment Addendum included in the Appendix 4.

8.5.4.5 Predicted Noise Impacts

The following sections present the predicted noise impacts based on the original aircraft noise modelling and compare these with the refined modelling presented in the Noise Assessment Addendum. This comparison illustrates the influence of the revised operational assumptions and mitigation scenarios on the predicted aircraft noise contours and community noise exposure.

The daytime assessment for updated noise model is based on Mitigation Scenario 1. For the night-time period modelled as part of the Addendum, results are presented for both Mitigation Scenario 1 and Mitigation Scenario 2, with the latter incorporating an additional partial night-time operational restriction on the southern runway to further reduce community noise exposure.

Aircraft Noise – Opening Year 2030

Day-time (07:00–22:00) – Original Noise Assessment

The 55 dB LAeq contour extends into nearby settlements including Yangitosh (H1), Kushek (H3), Qorasuv and small parts of Yangiyo'l (H5), with predicted levels up to 60 dB in places.

Night-time (22:00–07:00) – Original Noise Assessment

Night-time LAeq reaches up to 62 dB in Yangitosh (H1) and exceeds 55 dB in Kushek (H3) and Qorasuv, above WHO thresholds for sleep disturbance. These represent high-significance impacts.

Day-time (07:00–22:00) – Updated Noise Assessment (Addendum)

Noise levels at Yangitosh (H1) immediately to the south are predicted to be up to 57dB, which is 3dB lower than reported in the original assessment.

Kushek (H3) and Qorasuv would be overflown by aircraft using the southern runway 07R/25L, with noise levels in the range of 55 to 58dB.

Night-time (22:00–07:00) – Updated Noise Assessment (Addendum)

Mitigation Scenario 1

Noise levels at the nearest part of Yangitosh immediately to the south are predicted to be up to 57dB nighttime, which is about 5dB lower than in the original assessment, but still above the WHO Night Noise Guidance level of 55dB.

Kushek and Qorasuv would be overflown by aircraft using the southern runway (07R/25L), with noise levels above in the WHO Night Noise Guidance level of 55dB and therefore mitigation is likely to be required. Several other villages would be overflown by aircraft using the southern runway, with lower noise levels also requiring consideration of mitigation. A key mitigation measure will be in review and potential modification of the detailed flight tracks to be developed prior to the airport operating.

Mitigation Scenario 2

Noise levels at the nearest part of Yangitosh immediately to the south are predicted to be up to 55dB, which is about 7dB lower than in the original assessment, and within the WHO Night Noise Guidance level of 55dB.

Kushek and Qorasuv would be overflowed by aircraft using the southern runway (07R/25L), with noise levels below the WHO Night Noise Guidance level of 55dB. Several other villages would be overflowed by aircraft using the southern runway, with lower noise levels. A key mitigation measure will be design of the flight tracks so as to further reduce noise impacts to be developed during detailed design of the flight paths prior to the airport operating.

Updated noise contours for day and nighttime for the year 2030 are illustrated in Figure 8-15 to Figure 8-17

Aircraft Noise – Future Year 2045

Original Noise Assessment

Under the Future Year 2044 operational scenario as per the original assessment, forecast growth in ATMs is predicted to increase overall aircraft noise levels by approximately 4 dB compared to the 2029 scenario. During daytime periods, noise modelling indicated that Yangitosh may experience levels of up to 65 dB, while Kushek, Qorasuv and Balandko'prik are predicted to fall within the range of approximately 55–63 dB. These levels exceed commonly referenced preferred external living environment guidelines.

Night-time impacts, representing the most sensitive assessment period, are predicted to reach approximately 66 dB in Yangitosh and 62 dB in Kushek and Qorasuv. In addition, night-time noise levels above 45 dB are predicted across more than 40 additional surrounding villages and settlements, indicating a substantial spatial extent of operational aircraft noise influence during the critical night-time period.

These levels imply substantial risk of widespread sleep disturbance and associated health/economic impacts.

Updated Assessment as part of the Addendum

Noise contours for the year 2045 for day and nighttime hours are illustrated in Figure 8-18 to Figure 8-20.

Day-time (07:00–22:00) – Updated Noise Assessment (Addendum)

Noise levels at Yangitosh (H1) immediately to the south are predicted to be up to 61dB, which is 4 dB lower than in the original assessment.

Kushek and Qorasuv would be overflowed by aircraft using the southern runway 07R/25L, with noise levels in the range 55- 60dB.

Nighttime (22:00 to 07:00) – Updated Noise Assessment (Addendum)

Mitigation Scenario 1

Noise levels at the nearest part of Yangitosh (H1) immediately to the south are predicted to be up to 59 dB, which is 7dB lower than in the original assessment, which is 4dB above the WHO Night Noise Guidance level of 55dB.

Kushek and Qorasuv would be overflowed by aircraft using the southern runway (07R/25L), with noise levels up to 60dB, 3dB lower than in the original assessment, however 5dB above the WHO Night Noise Guidance level of 55dB.

Mitigation Scenario 2

Mitigation Scenario 2 incorporates a partial night-time operational restriction on the southern runways, redistributing 5.5 hours of night-time aircraft movements to the northern runways. While this reduces aircraft noise exposure for communities south of the airport, it also increases noise exposure to the north. The assessment therefore considers whether this operational change introduces any new or materially greater noise impacts on communities north of the airport.

Noise levels at the nearest part of Yangitosh (H1), immediately south of the airport, are predicted to be up to 56 dB LAeq,9hr, approximately 10 dB lower than those predicted in the original assessment. Although this is marginally (approximately 1 dB) above the WHO Night Noise Guideline reference level of 55 dB, the WHO guideline is considered a health-based reference rather than a regulatory compliance standard for aircraft noise. The refined modelling demonstrates a substantial reduction in night-time noise exposure, with the approved SPZ continuing to be based on the 60 dBA aircraft noise contour. Further operational mitigation and ongoing noise management are discussed below.

Similarly, Kushek and Qorasuv would be overflowed by aircraft using the southern runway (07R/25L), with noise levels up to 56dB, 7dB lower than in the original assessment. This marginally (i.e. 1dB) above the WHO Night Noise Guidance level.

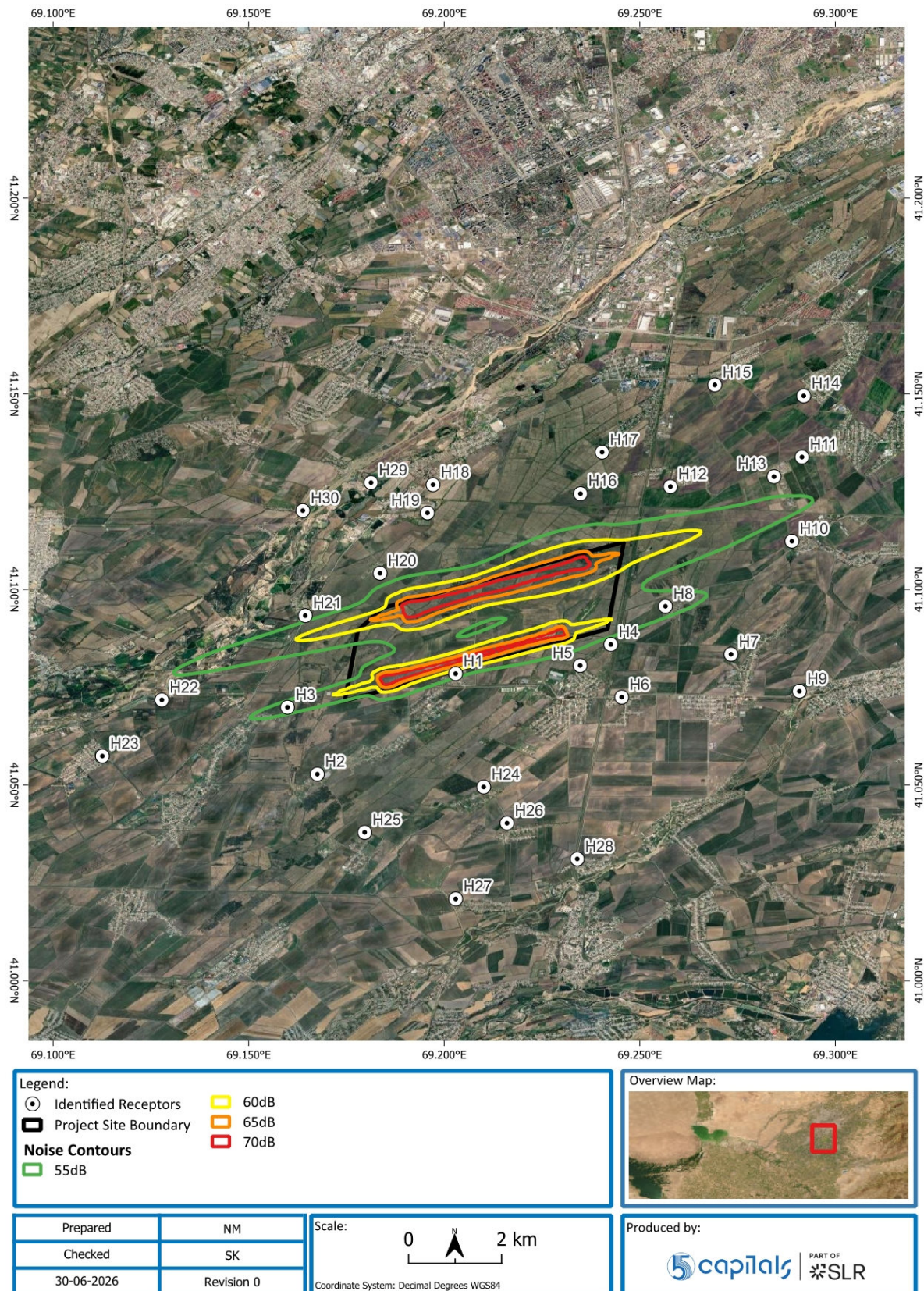


Figure 8-15 Daytime LAeq15hr Noise Contours – Year 2030

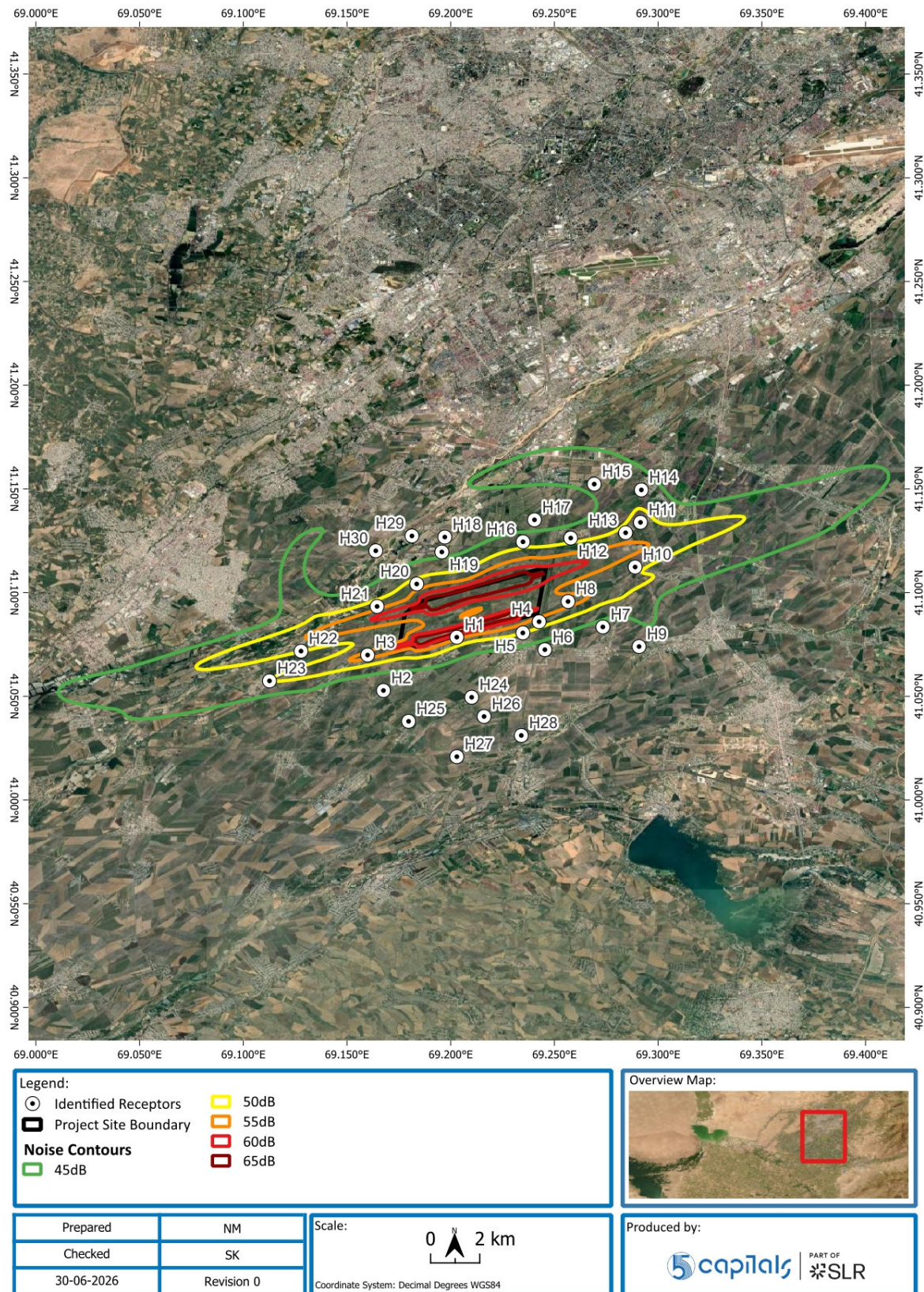


Figure 8-16 Nighttime LAeq_{9hr} Noise Contours (Mitigation 1) – Year 2030

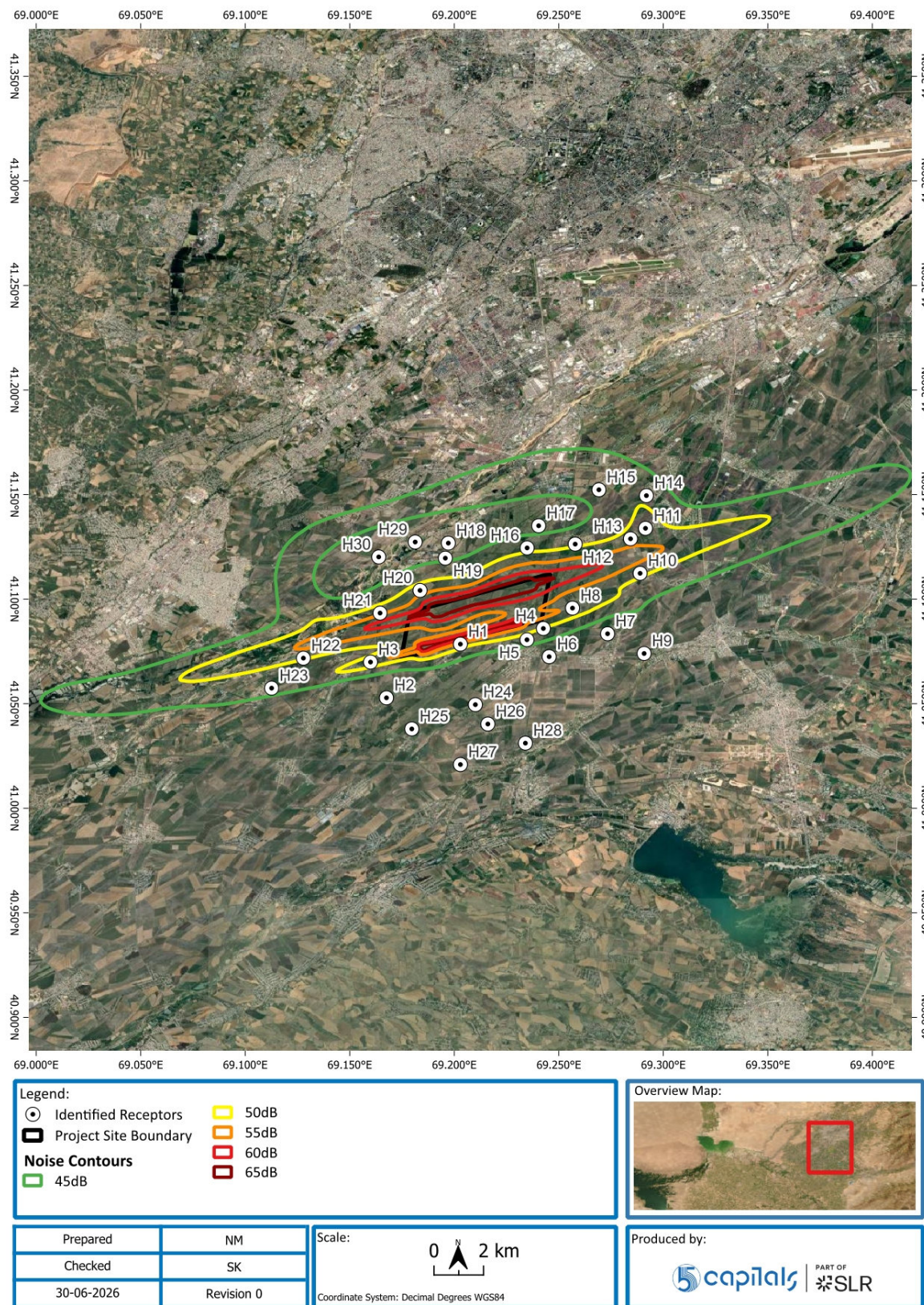


Figure 8-17 Nighttime LAeq_{9hr} Noise Contours (Mitigation 2) – Year 2030

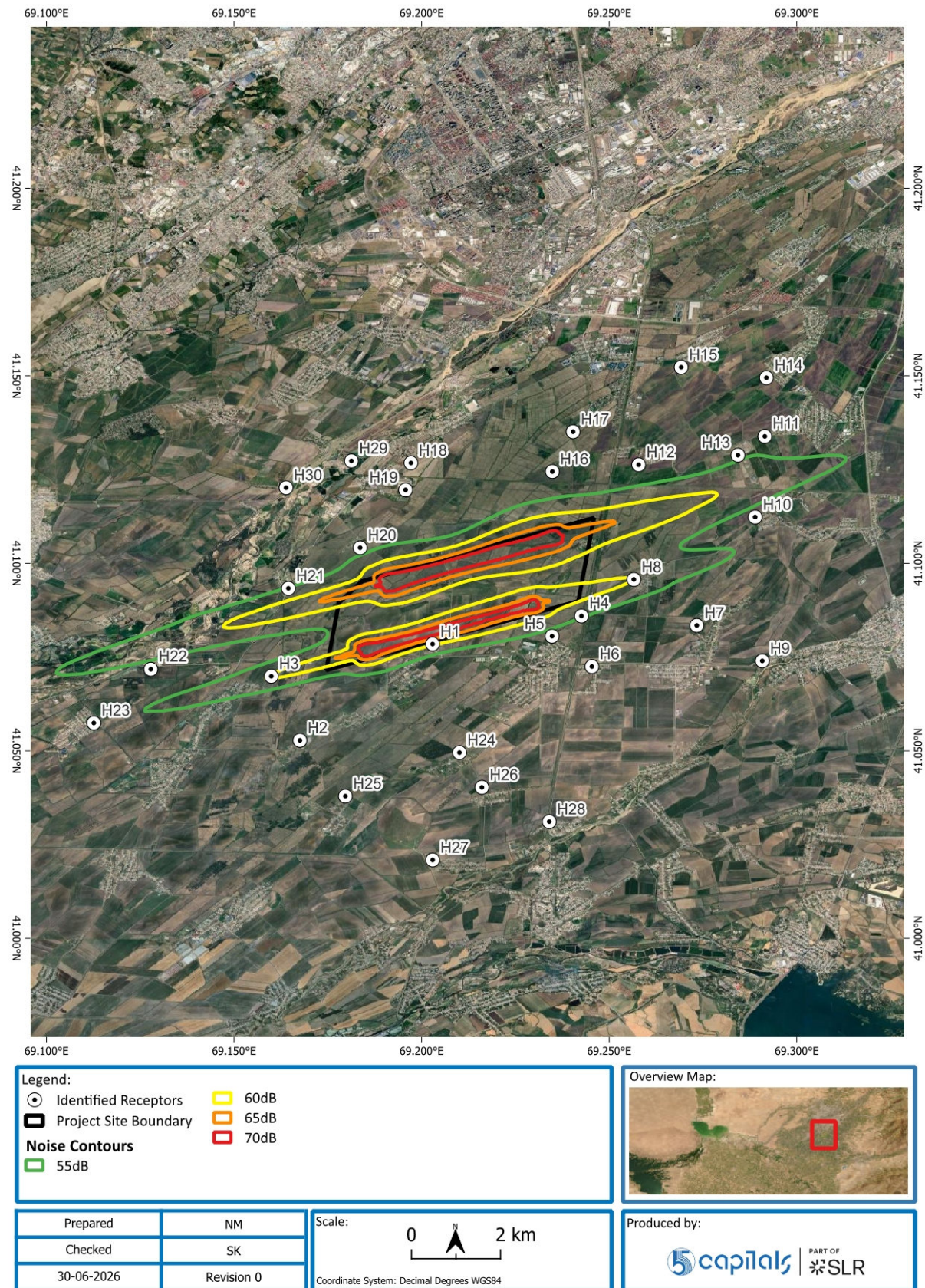


Figure 8-18 Daytime LAEq_{15hr} Noise Contours – Year 2045

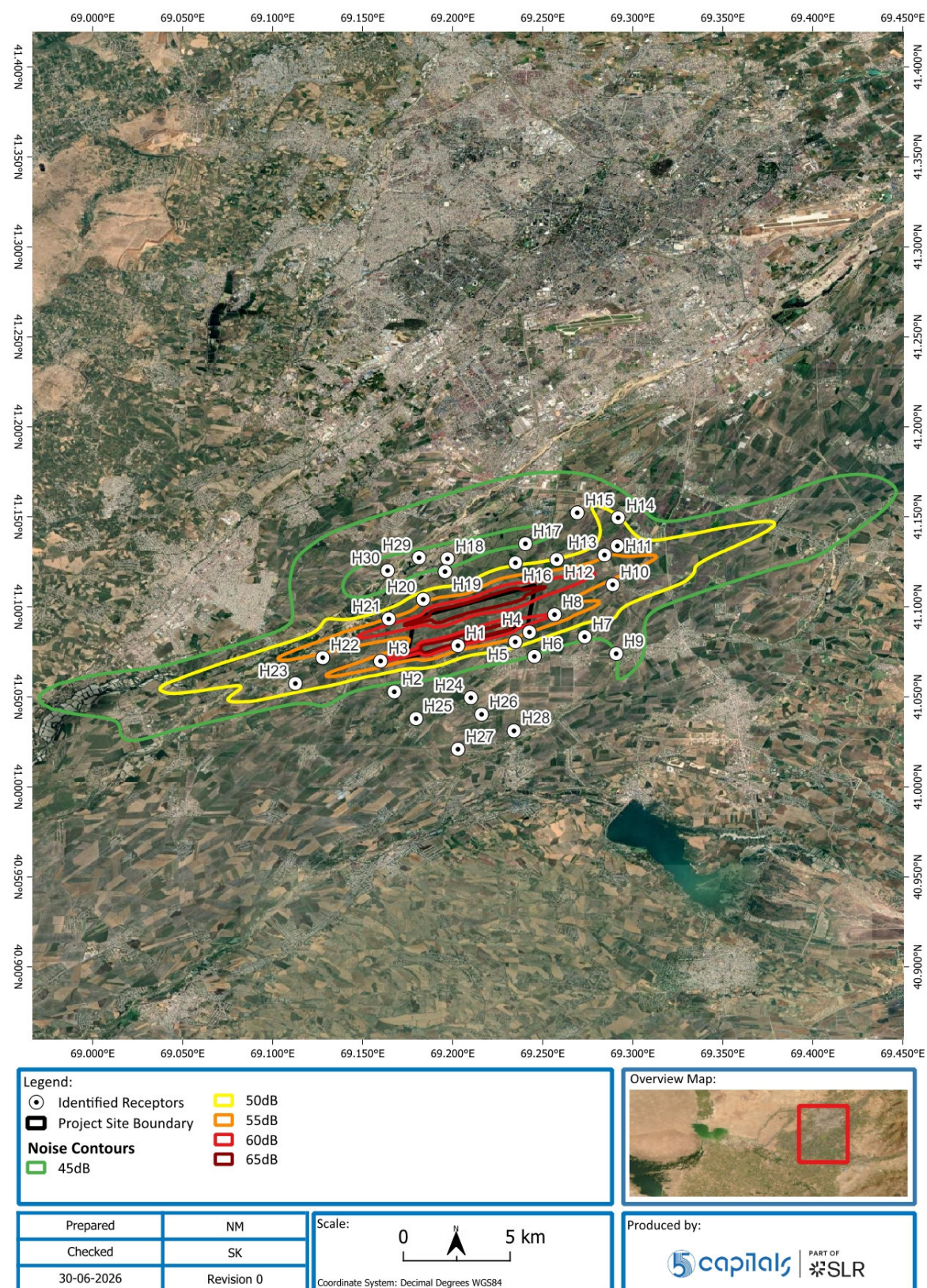


Figure 8-19 Nighttime LAeq_{9hr} Noise Contours (Mitigation 1) – Year 2045

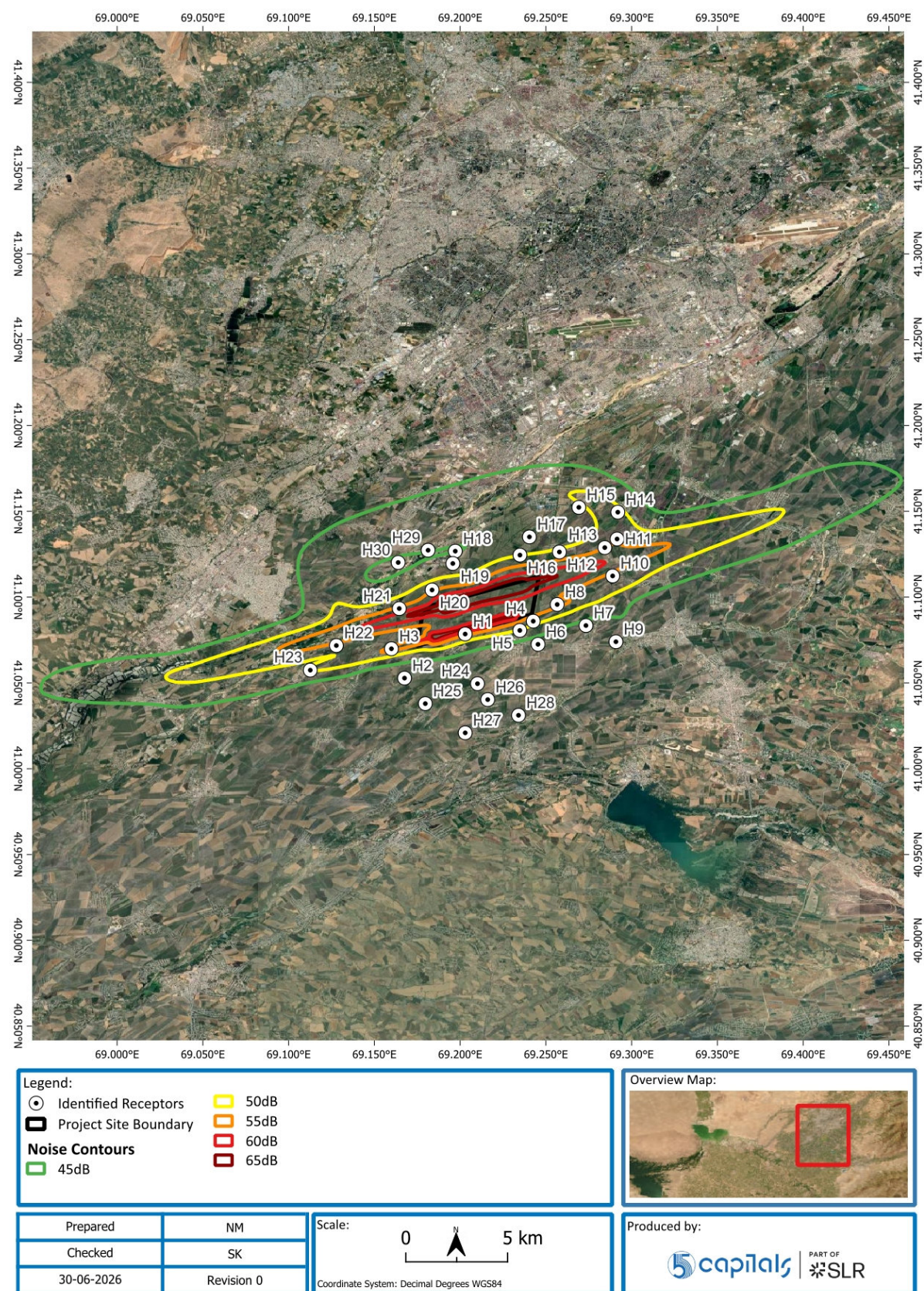


Figure 8-20 Nighttime LAeq_{9hr} Noise Contours (Mitigation 2) – Year 2045

Estimated Residential Exposure to Aircraft Noise

To provide an indication of community exposure under the refined aircraft noise assessment, Table 8-14 and Table 8-15 presents the estimated number of residential properties located within the principal aircraft noise contours for each of the assessed mitigation scenarios. The estimates are based on the refined noise modelling and are intended to illustrate the relative effectiveness of the different operational mitigation measures in reducing community noise exposure.

The estimates presented provide an indication of the relative extent of residential exposure under the different aircraft noise levels and mitigation scenarios. They have been derived from desktop GIS mapping and are not results of a detailed field verification or household survey. Accordingly, the estimated number of residential properties should not be regarded as final for the purposes of land acquisition, compensation, resettlement or noise mitigation planning. The final number and location of affected residential properties will be confirmed through detailed ground verification surveys, cadastral mapping and, where required, socio-economic surveys once the aircraft operational procedures, final flight paths, and detailed airport design have been finalised.

Table 8-14 Estimated Residential Properties within Day-time Noise Contours

Day time Noise Contour	2030 Mitigation Scenario 1	2045 Mitigation Scenario 1
65 dB	0	0
60 dB	0	0
55 dB	150	370

Table 8-15 Estimated Residential Properties within Night-time Noise Contours

Nighttime Noise Contour	2030 Mitigation Scenario 1	2030 Mitigation Scenario 2	2045 Mitigation Scenario 1	2045 Mitigation Scenario 2
55 dB	70	0	320	60
50 dB	>1,400	1,080	>>3,000	>3,000
45 dB	>8,500	7,780	>>8,500	>8,500

Ground Operations Noise

In addition to airborne aircraft noise, the assessment considered noise generated from ground operations, including aircraft taxiing, apron activity and engine ground running. Taxiing aircraft are predicted to generate localised increases in noise levels along sections of the airfield perimeter, particularly in areas closest to the runway and taxiway alignments.

A 3-metre-high solid noise barrier has been incorporated into the design as embedded mitigation to reduce direct line-of-sight noise propagation toward nearby receptors. With this mitigation in place, predicted increases in noise levels at the most affected receptors (including H1, H4, H5 and H20) remain limited, generally below 3 dB relative to baseline conditions. Such increases are typically considered to represent minor perceptible changes.

Overall, ground operations noise is predicted to be localised and secondary in magnitude when compared with airborne aircraft noise.

Secondary Vibration (Ground-Borne Response to Aircraft Noise)

This section assesses the potential for perceptible secondary vibration effects within residential properties located in proximity to the proposed airport. Secondary vibration refers to vibration-like effects within buildings (such as window, door or lightweight structural element rattling) caused by high airborne noise levels rather than direct ground-borne vibration. The assessment focuses specifically on aircraft operations associated with each runway.

To evaluate the likelihood of such effects, an indicative 90 dB Sound Exposure Level (SEL) contour was modelled for a representative Boeing 767-300 aircraft under take-off and landing conditions for each runway. The 90 dB SEL criterion is commonly used as a screening threshold for the potential onset of perceptible secondary vibration effects in lightweight residential structures. The resulting contours identify areas where aircraft noise events may reach or exceed this level.

The modelling indicates that five residential receptor areas (H1, H3, H4, H5 and H8) fall within the 90 dB SEL contour. Properties within these areas may therefore experience occasional perceptible secondary effects, such as window or fitting rattling, during high-noise aircraft events. These effects would be intermittent in nature and associated with specific aircraft movements rather than continuous exposure.

The likelihood and frequency of such occurrences will depend on final runway utilisation patterns, aircraft fleet mix and operational procedures. As fleet modernisation typically results in quieter aircraft over time, the assessment represents a precautionary scenario.

Opportunities for mitigation are limited in this scenario. The most feasible interventions may consist of remedial structural works to reduce the transmission of vibration within affected properties.

Overall, secondary vibration effects are predicted to be localised to a limited number of receptors situated closest to the runway alignment and are not expected to extend widely across the surrounding area.

Road Traffic Noise

Noise associated with airport-related road traffic on the main access road and internal service roads has also been assessed. Forecast traffic flows indicate that noise levels at surrounding residential and roadside receptors will remain below applicable guideline values. This is primarily due to moderate traffic volumes, the separation distances between road corridors and settlements, and the absence of high-density residential development immediately adjacent to access routes.

Accordingly, operational road traffic noise is not predicted to result in significant adverse effects.

Mitigation Strategy

Mitigation measures have been developed in accordance with the ICAO Balanced Approach to Aircraft Noise Management, IFC guidance and international good practice. The strategy integrates operational controls, airspace design, infrastructure measures and land-use planning controls.

Operational and airspace measures include optimisation of flight paths to reduce overflight of densely populated settlements where practicable, establishment of Noise Preferential Routes (NPRs) with defined monitoring corridors, implementation of Continuous Descent Approach (CDA) procedures, and evaluation of runway use preferences to minimise exposure at the most affected communities.

Operational controls may include redistribution of some night-time movements to daytime periods where feasible, application of restrictions or differential charging for noisier aircraft

types during sensitive periods, and the introduction of a night-time noise charging framework to incentivise quieter fleet operations.

Land-use and physical mitigation measures include potential relocation of properties within areas subject to highest predicted exposure, provision of building noise insulation for dwellings exceeding night-time guideline levels following operational mitigation, and the construction of additional noise barriers or earth bunds where technically feasible. Final operational noise contours will also inform planning controls to restrict incompatible future development within defined exposure zones.

Residual Impacts

Despite the implementation of embedded and additional mitigation measures, night-time aircraft noise remains the principal environmental constraint associated with airport operation, particularly under the 2044 forecast scenario. The extent of residual impact will depend on finalised airspace design, aircraft fleet composition, uptake of quieter aircraft technologies and implementation of operational controls.

Ground operations noise, road traffic noise and construction noise are predicted to remain manageable and not significant with the proposed mitigation measures in place.

Overall Conclusion of Findings from Modelling

The refined aircraft noise assessment confirms that airborne aircraft noise will represent the dominant source of operational noise impact for surrounding communities, particularly during the night-time period in the future assessment year. While ground, road traffic and construction noise impacts are limited and controllable through standard mitigation, aircraft noise requires a coordinated and long-term management approach combining airspace optimisation, operational restrictions, infrastructure mitigation and land-use planning measures.

Following consultation with Uzbekistan Airports, the UzNavigation Department, the Committee for Sanitary and Epidemiological Welfare and Public Health, the aircraft noise assessment was refined to evaluate additional operational mitigation measures, including the consideration for preferential runway use, a conservative transition to quieter next-generation aircraft, a southern noise bund for ground noise, and a partial night-time operational restriction on the southern runway. The refined modelling demonstrates a substantial reduction in predicted community noise exposure compared with the original assessment, particularly for the nearest communities such as Yangitosh to the south of the Project.

The Committee for Sanitary and Epidemiological Welfare and Public Health has confirmed that the airport SPZ will be established based on the 60 dBA aircraft noise contour, providing the framework for future land-use planning and management of noise-sensitive development surrounding the airport. The refined aircraft noise modelling demonstrates a substantial reduction in community noise exposure compared with the original assessment and indicates that no additional physical displacement is currently anticipated beyond that already required for the Project footprint. Nevertheless, a limited number of existing residential properties are predicted to remain above the WHO Night Noise Guideline reference level of 55 dB LAeq,9hr under the future operational scenarios. While the WHO guideline is a health-based reference rather than a regulatory compliance standard for aircraft noise, these residual impacts will be addressed through the implementation of the Project's Noise Management Plan, including operational noise management measures and, where appropriate, physical mitigation such as residential acoustic insulation. The detailed mitigation strategy is presented later in this chapter and will be refined as the aircraft operational procedures, flight paths and airport design are finalised.

With appropriate implementation of these measures, the Project can align with international lender standards and recognised best practice for airport noise management.

In considering the wider regional context, it is noted that a 10 km radius from the existing Islam Karimov Tashkent International Airport encompasses a substantial proportion of the dense urban core of Tashkent to the north and east, as well as expanding residential areas to the south and west. The estimated population density within this 10 km radius is approximately 5,000 to 6,000 people per km², indicating that a large urban population is currently exposed to aircraft noise associated with the existing airport's operations.

The relocation of primary aviation activities to the proposed airport site, which is situated in a comparatively less densely populated area, is therefore expected to redistribute aircraft noise exposure away from the highest-density urban zones. While certain rural and peri-urban communities in proximity to the proposed airport will experience increased aircraft noise, the number of people benefiting from reduced overflight and lower aircraft noise exposure in central Tashkent is anticipated to substantially exceed the number experiencing new or increased exposure.

Overall, although significant localised impacts are predicted at specific receptors, particularly during night-time operations in the future assessment year, the strategic relocation of airport operations is expected to result in a net regional noise benefit when considered at the metropolitan scale. Continued refinement of airspace design, fleet composition and mitigation implementation will be critical to ensuring that noise impacts are managed in accordance with international lender standards and best practice.

8.5.5 Impacts Assessment Summary – Noise and Vibration during Operation

A summary of potential impacts from noise generation during operation and their effects on identified receptors are presented in following table including suggested mitigation measures and residual impacts after implementation of mitigations measures.

Table 8-16 Impact Assessment Summary – Noise and Vibration during Operation

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
Noise from daytime aircraft operation – opening year 2029	Minor	Residential communities	High	Moderate	Minor
		Project workers	Medium	Minor	Negligible
		Commercial / Industrial facilities	Low	Minor	Negligible
Noise from nighttime aircraft operation – opening year 2029	Moderate	Residential communities	High	Moderate	Minor
		Project workers	Medium	Moderate	Minor
		Commercial / Industrial facilities	Low	Minor	Negligible
Noise from daytime aircraft operation – year 2044 (worst case)	Moderate	Residential communities	High	Major	Moderate
		Project workers	Medium	Moderate	Moderate
		Commercial / Industrial facilities	Low	Minor	Minor
Noise from nighttime aircraft operation – year 2044 (worst case)	Major	Residential communities	High	Major	Moderate
		Project workers	Medium	Moderate	Minor
		Commercial / Industrial facilities	Low	Moderate	Minor
Noise from ground operations	Moderate	Residential communities	High	Moderate	Minor
		Project workers	Medium	Moderate	Minor
		Commercial / Industrial facilities	Low	Minor	Minor
Secondary vibration from aircraft noise	Moderate	Nearby residential communities (buildings)	High	Moderate	Moderate

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
Road traffic noise	Minor	Residential communities	High	Moderate	Minor
		Roadside receptors	Medium	Minor	Negligible
		Commercial / Industrial facilities	Low	Negligible	Negligible

Proposed Mitigation Measures (see detailed modelling report in Appendix for detailed mitigation measures)

Mitigation measures for aircraft noise (airborne noise)

- A dedicated airport operational Noise Management Plan will be developed and implemented. Prior to that a Noise Management Framework (NMF) is being prepared separate to the ESIA to guide the detailed management plan.
- Transition to aircraft compliance with latest ICAO noise certification standards
- Encourage airlines to operate quieter aircraft types
- Periodically update fleet forecast and refine noise modeling to reflect actual fleet mix.
- Consider restrictions or phased bans on the noisiest aircraft types
- Optimisation of turning points and track dispersion will be considered to reduce exposure over settlements
- Noise Preferential Routes for departure will be defined. These are typically used to set corridors 1.5km either side of the preferred route centre-line within which departing aircraft should fly up to a given height.
- Concentrating arrivals over densely populated areas will be avoided where operationally feasible.
- Where operationally safe and approved by the relevant air navigation service provider, aircraft will be encouraged to intercept the Instrument Landing System (ILS) as close to the airport as practicable, thereby maintaining higher altitudes for longer and reducing noise exposure over surrounding communities
- Undertaking a dedicated airspace design study will be considered, focused on minimising population exposure.
- Evaluate opportunities to redistribute a proportion of night-time aircraft movements to daytime periods, where operationally feasible and taking into account operational, commercial and regulatory considerations.
- Consider introducing operational restrictions or preferential operating arrangements for noisier aircraft during the night period, where consistent with applicable regulatory requirements and airport operational needs.
- Evaluate the implementation of noise-related charging or other economic incentives to encourage the use of quieter aircraft and support fleet modernisation, subject to the applicable regulatory framework.
- Where operational noise assessments or monitoring identify persistent significant impacts, consider property-specific mitigation measures, including acoustic insulation or, where justified and in accordance with applicable national legislation and Project policies, property acquisition or relocation for affected residential properties.

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
<u>Mitigation measures for ground operation noise</u> • Incorporate a 3 m high solid noise barrier along selected airfield boundaries as part of the embedded Project design. • Consider additional noise bunds or barriers along the southern boundary, where appropriate, to reduce aircraft ground noise affecting nearby communities such as Yangitosh and Yangiyo'l. • Optimise, where practicable, aircraft taxi routes and minimise engine ground running in areas closest to sensitive receptors. • Restrict, where practicable, engine ground running and engine testing to daytime hours (e.g. 08:00–13:00) and only when operationally necessary. • Implement an operational ground noise monitoring programme to verify noise performance and support ongoing noise management and adaptive mitigation, where required. <u>Mitigation Measures for Secondary Vibration</u> • Identify properties within 90 dB SEL contour. • Consider property-specific mitigation where required (e.g. improved glazing, window reinforcement). • Include affected properties in any insulation or relocation programme where applicable					

8.6 Operational Noise Mitigation Strategy

The Project will aim to implement a structured and hierarchical approach to operational noise mitigation in accordance with international good practice, including the ICAO Balanced Approach to Aircraft Noise Management. The mitigation strategy has been refined based on updated noise modelling and focuses on addressing the most significant impacts, particularly night-time noise in the 2045 scenario, where the largest extent of exceedances is predicted.

The aircraft fleet in 2045 has been revised to allow to the future transition to newer aircraft. The allocation of aircraft to the two runways has been refined to mitigate noise impacts to the south. A noise barrier has been added on the south boundary to reduce noise propagation to the south. Further details will be included in the Operational Noise Management Framework (NMF) document that will be prepared separate to the ESIA.

8.6.1 Operational Controls (Source-Level Mitigation)

Operational mitigation measures represent the primary means of managing aircraft noise and are the preferred approach for reducing community exposure at source. These measures focus on minimising noise generation, where feasible, through airport operational procedures, flight management practices and ongoing monitoring, thereby reducing the need for receiver-based mitigation measures such as building insulation.

The implementation, monitoring and enforcement of operational noise controls will be the responsibility of the Project Company, acting through the Airport Operator, who will be responsible for ensuring that airport operations are managed in accordance with applicable national aviation regulations, international aviation requirements and the environmental commitments set out in the ESIA and the Project ESMS. The Airport Operator will establish an Airport Noise Management Programme that will define operational procedures, monitoring requirements, reporting arrangements and mechanisms for continual improvement of aircraft noise performance throughout the operational life of the airport.

Although individual aircraft operations remain under the control of aircraft operators and air traffic management authorities, the Airport Operator will work collaboratively with the relevant aviation authorities, airlines and air navigation service providers to promote compliance with airport noise management procedures and encourage the adoption of best international practices for aircraft noise reduction. This will include regular review of aircraft noise monitoring data, investigation of noise complaints, engagement with stakeholders, and periodic assessment of opportunities to further reduce operational noise where practicable.

8.6.1.1 Runway Use Optimisation (Runway Preference)

Larger and typically noisier aircraft (ICAO Code D and above) will be considered, if feasible, to be preferentially allocated to the northern runway. This measure has been modelled and is predicted to reduce noise levels in the most affected southern communities (notably Yangitosh) by approximately 6 dB.

8.6.1.2 Airspace and Flight Procedure Design

Detailed flight paths and operational procedures will be developed prior to airport opening (planned by 2028) to minimise overflight of sensitive receptors, particularly during night-time operations. These measures will be designed into the Project prior to operations to maximise effectiveness.

8.6.1.3 Fleet Transition to Quieter Aircraft

The Project assumes a progressive transition toward newer generation aircraft, which are inherently quieter. By 2045, approximately 79% of the fleet is expected to consist of next-

generation aircraft, contributing to reduced overall noise exposure compared to a static fleet scenario.

8.6.2 Physical Mitigation Measures

8.6.2.1 Ground Noise Attenuation (Noise Bund)

A noise bund along the southern boundary of the airport will be considered, to reduce ground-based noise sources such as taxiing and engine operations. While this measure has limited influence on aircraft airborne noise, it contributes to reducing localised ground noise impacts.

8.6.3 Land Use Planning and Development Control

The Project will work with relevant authorities to implement land use planning controls to prevent the introduction of new noise-sensitive receptors within areas exposed to elevated aircraft noise levels.

- Refined noise contours will be used to guide planning decisions.
- New residential or sensitive developments will not be permitted within areas exceeding 55 dB LAeq,day and 45 dB LAeq,night unless appropriate mitigation is incorporated.
- National planning instruments (e.g. SanPiN No. 0339-16) will be applied to enforce compatible land use zoning.

8.6.4 Building-Level Noise Mitigation (Acoustic Insulation Programme)

To assess the practicality of implementing building-level noise mitigation, technical condition surveys were undertaken by a qualified civil surveying company based in Tashkent for five representative residential properties (Houses 11, 19, 28, 30 and 34) located within the area predicted to experience the highest operational aircraft noise exposure. The objective of the programme is to reduce internal noise levels to acceptable standards for residential use, including during night-time periods. Acoustic insulation is recognised as a secondary (last-resort) mitigation measure, applied where operational and planning controls are insufficient. It is effective in reducing indoor noise exposure but does not mitigate outdoor noise levels.

The surveys comprised visual and structural inspections, assessment of wall construction, condition of roofs, windows and doors, and preparation of conceptual refurbishment drawings where required. The investigations were undertaken specifically to determine whether the buildings could accommodate acoustic improvement. Detailed survey reports are presented in Appendix 5.

The surveys indicate that the assessed dwellings are generally of conventional single-storey masonry construction, comprising adobe or clay brick external walls with timber roof structures supporting corrugated roofing materials. Although the buildings vary in age and condition, the inspections concluded that the principal load-bearing elements of the surveyed buildings remain structurally serviceable and suitable for continued occupation. Most of the observed defects are superficial and relate to localised deterioration of plaster finishes, weathering and moisture damage rather than structural instability.

The structural assessments classify the residential buildings as being in generally good or serviceable condition, with estimated physical deterioration typically between approximately 15–20% for the main residential structures. House 11 exhibited slightly greater localised deterioration (approximately 31–40%) associated with plaster and surface weathering; however, the report concludes that the building retains its load-bearing capacity and remains structurally sound following routine repairs. Temporary or ancillary structures at some properties exhibit higher levels of wear (approximately 30–40%) but these do not affect the suitability of the principal residential buildings for acoustic improvements.

Based on the findings of the structural surveys, there are no engineering constraints that would prevent the installation of typical residential acoustic mitigation measures. The buildings are considered suitable for upgrades such as replacement of existing windows with acoustically-rated glazing, installation of improved external doors and seals, enhancement of roof and ceiling insulation, sealing of air leakage paths, and associated ventilation measures were required to maintain indoor comfort with windows closed. Any minor maintenance works identified during the inspections (e.g. repair of plaster, localised masonry repairs or moisture remediation) should be completed before installation to maximise the long-term performance of the acoustic treatments.

Overall, the building surveys demonstrate that the representative dwellings are technically suitable to accommodate building-level acoustic insulation measures. Consequently, should the final operational noise assessment identify residential properties exceeding the adopted night-time criterion, implementation of an acoustic insulation programme is considered feasible and represents a practical mitigation measure for reducing internal aircraft noise exposure. The detailed scope of property-specific improvements would be confirmed through individual pre-installation surveys undertaken as part of the future mitigation programme.

Photographs illustrating the general conditions of the surveyed buildings are provided in Figure 8-21.

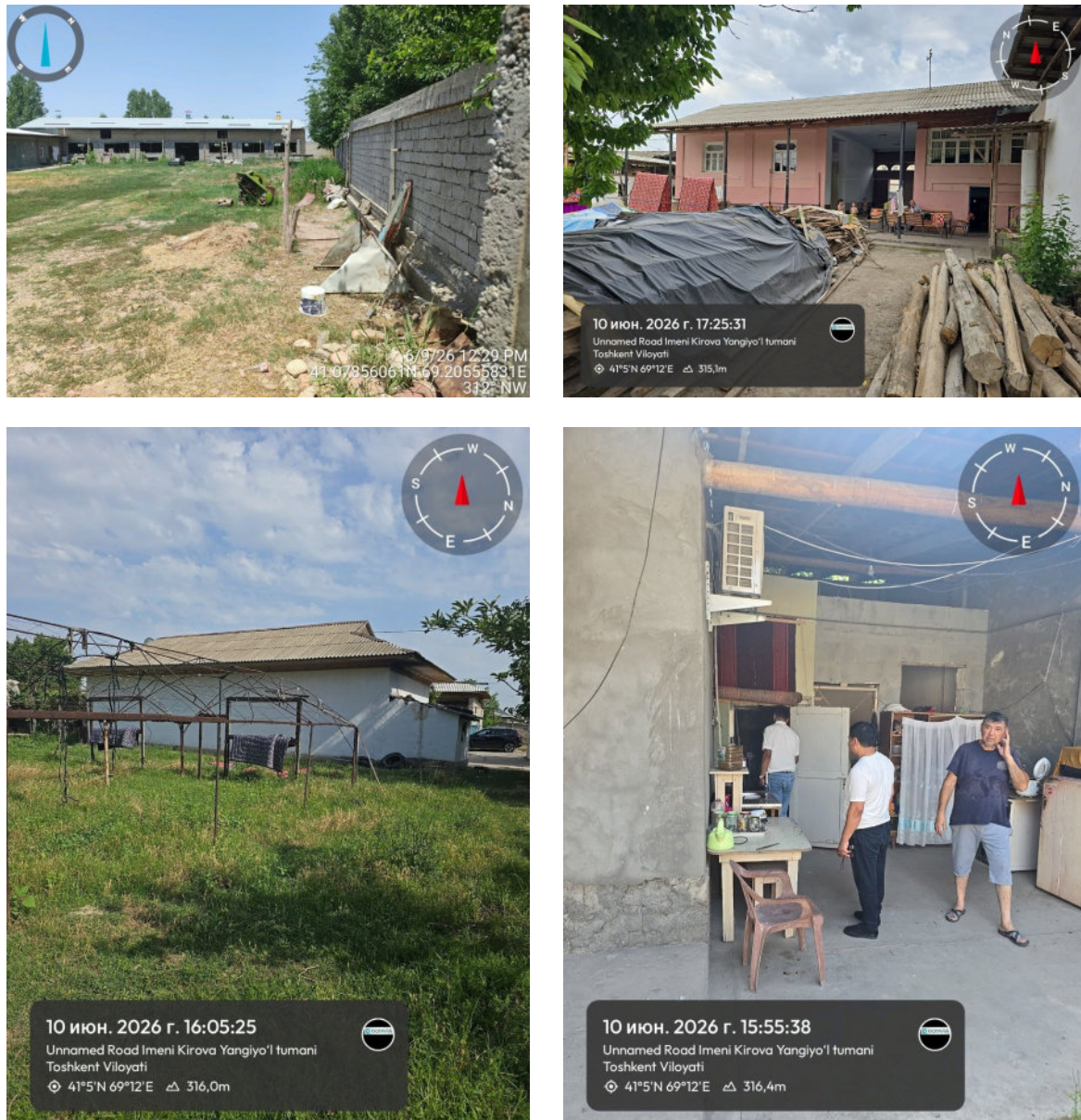


Figure 8-21 Conditions of Dwellings Selected for the Building Acoustics Feasibility Survey

8.6.5 Monitoring and Adaptive Management

A comprehensive noise monitoring programme will be implemented during operations to verify predicted impacts and effectiveness of mitigation. This will include:

- Installation of permanent monitoring stations at representative sensitive receptors
- Periodic comparison of measured and predicted noise levels
- Implementation of additional mitigation measures where exceedances are identified

This will be supported by an adaptive management framework to ensure ongoing compliance and continuous improvement. The Committee for Sanitary and Epidemiological Welfare and Public Health will be responsible for ensuring and monitoring the noise levels outside the airport premises are in compliance with the SPZ requirements.

8.6.6 Stakeholder Engagement

The Project will maintain ongoing engagement with affected communities, including:

- Disclosure of monitoring results
- Operation of a grievance mechanism for noise-related concerns
- Periodic review of mitigation effectiveness

8.7 Monitoring

The EPC Contractor and the airport operating company TGV will need to undertake noise monitoring on a periodic basis during both the construction, commissioning and operational phases of the project respectively. 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' as part of the respective construction or operational phases ESMS.

Table 8-17 Noise Monitoring Requirements

Monitoring	Parameter	Frequency & Durations	Monitoring Location
Construction & Commissioning			
Day time noise	LAeq LAmax	Weekly for 15 minutes periods at each location	Baseline receptor locations NS1, NS3, NS4
Nighttime noise (if works are ongoing)			
Operation			
Day time aircraft noise exposure	LAeq,15hr	Continuous monitoring of LAeq, 15h (07:00–22:00)	At communities near flightpaths
Nighttime aircraft noise exposure	LAeq,9hr	Continuous monitoring of LAeq, 9h (22:00–07:00) at all noise-sensitive receptors	
Tracking of aircraft operations	Monitoring compliance of aircraft with Noise Preferential Routes (NPRs) once established	Ongoing	Flight path
Secondary vibration	Monitor SEL events ≥90 dB SEL to confirm vibration impacts	Ongoing	Near runways
Monitoring of compliance with any operating restrictions	Night-time operating bans or differential charges for noisier aircraft	Ongoing	-

Note: All monitoring shall be conducted in accordance with the following: 'sound measurement equipment conforming to the class 1 or class 2 specifications set out in IEC 61672-1:2013, with associated certified laboratory calibration valid within 24 months, and with field calibration checked immediately before and after measurements using an acoustic calibrator conforming to the class 1 (for class 1 measurement equipment) or class 2 (for class 2 measurement equipment) specifications set out in IEC 60942:2017, with associated certified laboratory calibration valid within 12 months. During measurements, the sound measurement microphone shall be fitted with a windshield conforming to the manufacturer's recommendations for outdoor survey measurements in wind conditions not exceeding 5 ms⁻¹, and any associated adjustments required to the response of the measurement equipment shall be made in accordance with the manufacturer's instructions.

In the event of a recorded exceedance during noise monitoring or upon receipt of complaints/grievances related to noise, a process to investigate and take appropriate corrective actions will be outlined in the overarching 'Environmental Monitoring Plan.

During consultation meeting with Uzbek Airports authority on 30 April 2026 (also attended by the lenders) it was informed that a comprehensive air quality and noise monitoring system be implemented for the new airport to ensure compliance with all relevant local and lender's standards and limits.

Occupational H&S Noise Monitoring

Workplace risk assessment will be carried out in advance of project operations to identify workers at risk of heightened exposure to noise levels exceeding regulatory thresholds. The noise risk assessment will be reviewed in the event of a significant change in the work to which the workplace noise assessment relates or if there is reason to suspect that the risk assessment is no longer valid.

Where noise or hearing related grievances are received from the workforce, these shall be further investigated and as applicable hearing tests to applicable workers will be necessary.

9.0 Terrestrial Ecology and Birds

This chapter considers and assesses the potential impacts that may occur as a result of the Project's construction and operational activities including associated facilities on terrestrial ecology. It further looks to identify measures that can be undertaken and/or implemented to mitigate, manage and monitor such impacts.

9.1 Applicable Requirements & Standards

9.1.1 National Regulations

The Law of the Republic of Uzbekistan "On Nature Protection" (1992 as amended in 2024)

This law serves as the fundamental legal framework for environmental protection in Uzbekistan, with implementation responsibilities assigned to the Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC). It defines the principles, responsibilities, and mechanisms for environmental preservation, biodiversity conservation, and the sustainable use of natural resources.

Key regulatory requirements under the law include:

- The adoption of core principles such as the preservation of ecological balance, biodiversity conservation, and the sustainable use of natural resources;
- The establishment of measures for the protection, reproduction, and rational use of animal and plant species, including the conservation of habitats;
- Provisions to ensure that land management practices prevent ecosystem degradation and maintain critical habitats for terrestrial and avian species;
- A requirement for state ecological monitoring, including the status of flora and fauna, and the integration of monitoring data into decision-making processes.

The law also mandates that all economic and development activities undergo State Environmental Expertise (SEE), to ensure that projects do not pose significant risks to biodiversity, including birds and terrestrial ecosystems.

Furthermore, the law provides for the establishment of protection zones around environmentally sensitive areas, such as forests, wetlands, and breeding grounds for rare or migratory birds. It forms the legal foundation for Environmental and Social Impact Assessments (ESIAs), requiring that potential impacts on terrestrial and bird habitats are thoroughly assessed and mitigated. In addition, it supports the protection of threatened species, particularly those listed in the national Red Book or covered by international conventions.

The Law of the Republic of Uzbekistan "On Protection and Use of the Wildlife" (2016, as amended in 2024)

This law regulates the use, protection, reproduction and restoration of wildlife in order to promote conservation and ensure diversity of species in their natural habitat.

Other laws and regulations include:

- The Law of the Republic of Uzbekistan "On Protection and Use of Vegetation" (2016, as amended in 2024)
- Decree of the Cabinet of Ministers "Regulation on the procedure for using plant world objects and passing licensing procedures in the field of using plant world objects" No. 290 (2014, as amended in 2024) sets out the requirements to obtain permission to cut wood and shrub plantations that are in the zone of the construction site.

- The code on administrative responsibility of the Republic of Uzbekistan (2017, as amended in 2025)- Article 94 sets the regulation related to “destruction, extraction of rare or endangered animals or the commission of other actions that may lead to the death, reduction in numbers or disturbance of the habitat of such animals.”

9.1.2 Lender Requirements

IFC

IFC’s Performance Standard 6 (PS6), titled Biodiversity Conservation and Sustainable Management of Living Natural Resources, sets out comprehensive requirements for managing biodiversity risks and conserving ecosystems. Projects are required to identify and assess potential impacts on biodiversity as part of the Environmental and Social Impact Assessment (ESIA), applying the mitigation hierarchy of avoidance, minimisation, restoration, and, where necessary, biodiversity offsets. PS6 distinguishes between modified, natural, and critical habitats, with particularly stringent provisions for projects that may affect critical habitats. These include the requirement to demonstrate that no measurable adverse impacts will occur on key biodiversity features or on ecological processes. In such areas, clients are expected to achieve no net loss-or, in some cases, a net gain-of biodiversity. PS6 also emphasises the importance of ecosystem services and requires an assessment of how project activities might affect them, particularly where communities rely on these services for their livelihoods.

EBRD

Environmental and Social Requirement 6 (ESR6) of EBRD’s E&S Policy (2024) focuses on biodiversity conservation and the sustainable management of living natural resources, requiring a commitment to biodiversity protection.

Similar to IFC PS6 requirements, ESR6 emphasizes a precautionary approach to biodiversity conservation. Projects are required to apply the mitigation hierarchy—avoidance, minimization, restoration, and, where necessary, biodiversity offsets—to achieve no net loss and, where appropriate, a net gain in biodiversity.

9.2 Scoping

The scope of the biodiversity assessment for this ESIA is summarised as follows:

- **Field Surveys:** Systematic baseline surveys were conducted across the Project area and surrounding landscape to document species presence, abundance, and seasonal activity. This included birds, mammals, amphibians, reptiles, and floral species, with particular attention to species of conservation concern.
- **Habitat Mapping and Evaluation:** The Project footprint areas were characterised to identify habitat types including modified and natural habitats, linear features (e.g., irrigation channels, etc.), and overall land use.
- **Regulatory and Conservation Context:** National and international legislation, Red List data were reviewed to assess legal and ecological importance of habitats and species within the Project area.
- **Critical Habitat Assessment:** The Project was assessed for Critical Habitat under IFC PS6/EBRD Criteria.
- **Impact Identification:** Potential impacts of construction and operation, including habitat loss, fragmentation, disturbance, pollution, wildlife interactions with airport operations, etc. were evaluated to determine areas and receptors at risk.

- **Mitigation Considerations:** Potential measures for impact avoidance and minimisation were identified to guide detailed mitigation planning and ensure alignment with good practice and international guidance.
- **Risk Prioritisation:** Sensitive species and habitats/sites were flagged based on vulnerability and exposure to Project activities, providing a basis for targeted monitoring or management actions during subsequent Project phases.

This scoping exercise establishes the ecological baseline, highlights key biodiversity features, and identify potential impacts and mitigation measures to ensure that potential impacts on flora and fauna are adequately understood and addressed.

9.3 Baseline Conditions

9.3.1 KBA and LPA Proximity

The Project area is assessed for its overlap with, or proximity to, internationally recognized Key Biodiversity Areas (KBAs) and Legally Protected Areas (LPAs). While such overlap does not automatically result in a Critical Habitat (CH) designation, there is often a strong correlation. This is because the IUCN's KBA standard, widely recognized internationally, is incorporated into the CH criteria used by IFC PS6 and EBRD ESR6.

Beyond potential CH considerations, proximity to KBAs and LPAs is a key factor in ecological risk assessment. Areas near or overlapping these designations are typically highly ecologically sensitive and often contain species, habitats, or other biodiversity features of priority importance to regional and international conservation stakeholders.

To support this analysis, the Project's spatial relationship with KBAs and LPAs was assessed using the Integrated Biodiversity Assessment Tool (IBAT). The review confirms that Project does not overlap any KBA/PA and there are no PAs or KBAs located within a 10 km radius of the Project site. However, four PAs and four KBAs are situated within a 50 km radius. Details of these sites are provided in Table 9-1, Figure 9-1 and Figure 9-2.

Tuyabuguz Reservoir is the nearest Important Bird Area (IBA) located at approximately 11 km southeast of the Project site. This IBA is triggered for one species, Common Pochard (VU) under criterion A1¹⁰.

Table 9-1 Areas of Ecological Importance in the Region

SN	PA/ KBA	Site	Designation	IUCN Category	Approximate Distance from Project Site
1	PA	Ugam-Chatkal State National Nature Park	National Natural Park	II	39 km
2	PA	Chatkal Mountains Biosphere Reserve	UNESCO-MAB Biosphere Reserve	Not Applicable	~40 km
3	PA	Western Tien-shan	World Heritage Site (natural or mixed)	Not Applicable	~40 km
4	PA	Ugam-Chatkal State Biosphere Reserve	State Biosphere Reserve	Not Assigned	~40 km

¹⁰ <https://datazone.birdlife.org/site/factsheet/20681-tuyabuguz-reservoir>

SN	PA/ KBA	Site	Designation	IUCN Category	Approximate Distance from Project Site
5	KBA	Chardara Reservoir	IBA	Not Applicable	47 km
6	KBA	Bashkizylsay Unit of the Chatkal Mountains Biosphere Reserve	IBA	Not Applicable	~40 km
7	KBA	Balykchi Fish Farm	IBA	Not Applicable	35 km
8	KBA	Tuyabuguz Reservoir	IBA	Not Applicable	11 km

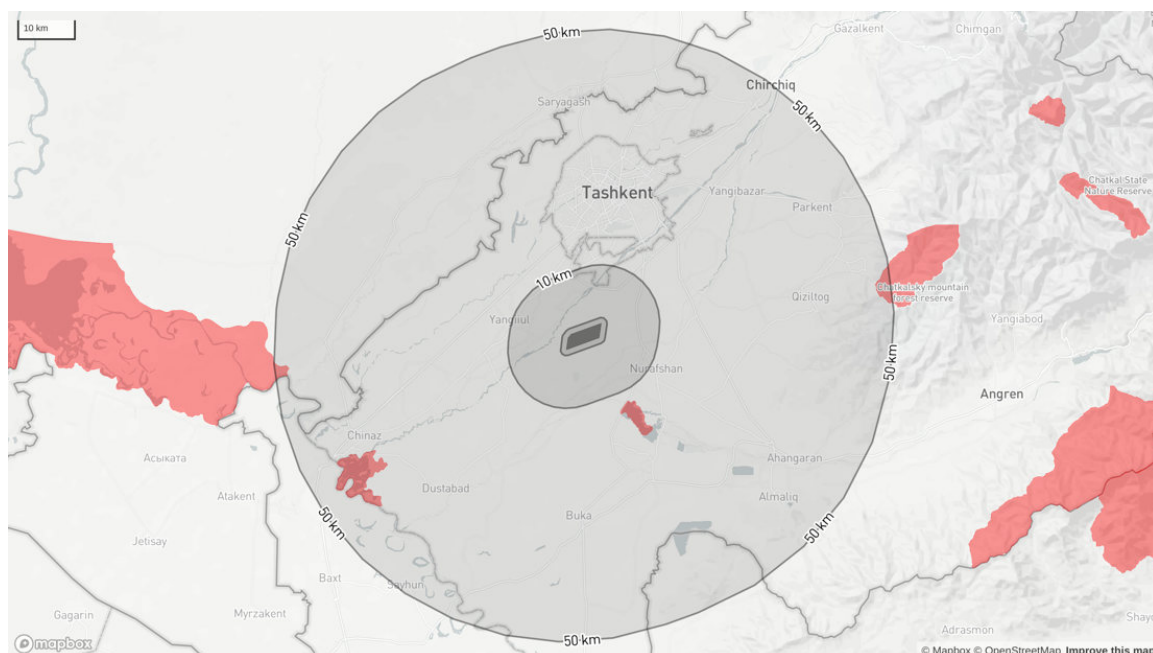


Figure 9-1 Locations of the Key Biodiversity Areas (KBAs) in relation to Project Site

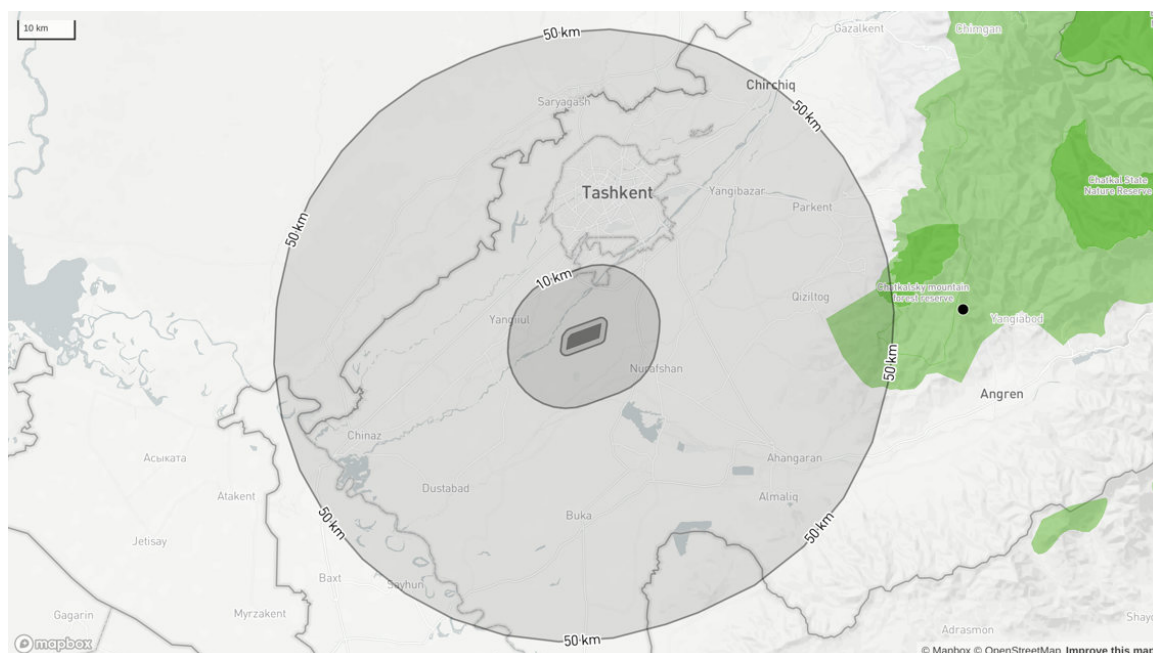


Figure 9-2 Locations of the Protected Areas (PAs) in relation to Project Site

9.3.2 Ecological Overview

The Project area covers approximately 1,300 ha and is located on the flat alluvial-proluvial plains between the Chirchik and Ahangaran rivers, within the lower Chirchik River basin in the Quyi Chirchik and Urta Chirchik districts of Tashkent Region. Ecologically, the site and its surroundings represent a highly transformed agro-ecosystem, dominated by irrigated arable lands, gardens, drainage and irrigation canals, and settlements. Natural vegetation is largely confined to remnants of woody and shrubby riparian communities, reed beds in marshy depressions, and small groves associated with graveyards and elevated areas. The terrain is flat (300–360 m a.s.l.) and heavily dissected by irrigation infrastructure. Climatically, the area falls within the hot-summer Mediterranean zone, characterized by hot, dry summers and mild

winters, with a mean annual temperature of about 14.1°C and annual precipitation of approximately 427 mm, mainly in winter and spring.

Phytogeographically, the site lies within the Chinaz region of the Middle Syrdarya district of the Turan province, reflecting a landscape where natural ecological features persist only in fragmented and modified forms within a predominantly anthropogenic setting.

9.3.3 Baseline Surveys

9.3.3.1 Methods and Effort Summary

5 Capitals/SLR partnered with locally based consultant, 'Nasser Business Technology (NBT)' to undertake the baseline surveys. The faunal and floral surveys were conducted to establish a biodiversity baseline for the Project area, focusing on floral species and vertebrates through systematic field observations. Methods included Vantage Point (VP) observations for birds, walking transects for multi-taxa data (mammals, birds, reptiles, amphibians), targeted bat surveys and transects for floral species. Transects were conducted within the Project area as well as in the areas along the Chirchik River on west of Project site.

Two VPs (VP1 at 41.085915 N, 69.183674 E; VP2 at 41.097756 N, 69.231150 E) were used for avian monitoring located at each end of proposed runway covering a 2 km radius with 36 hours of effort per VP in each season covering spring, autumn and winter. Ten transects (lengths 710–3900 m) covered diverse habitats like agricultural fields, irrigation canals, fishponds, and White Stork colonies. The details of the surveys are provided in **Table 9-2**.

Table 9-2 Details of the Baseline Surveys

Survey Type	Effort Summary	Timeframe
Faunal Surveys (Mammals, herpetofauna, resident and breeding birds)	10 transects (total ~12.41 km)	April-May 2025
Spring VP Surveys	36 hours per VP (2 VPs); 6-hour each session	April-May 2025
Autumn VP Surveys	36 hours per VP (2 VPs); 6-hour each session	September-October 2025
Winter VP Survey	36 hours per VP (2 VPs); 6-hour each session	December 2025 - January 2026
Bat Surveys	5 Transects (morning/evening); acoustic survey	May 2025
Botanical and Habitat Survey	14 sample plots/locations within the Project area	April 2025

The sampling locations are indicated in the Figure 9-3.

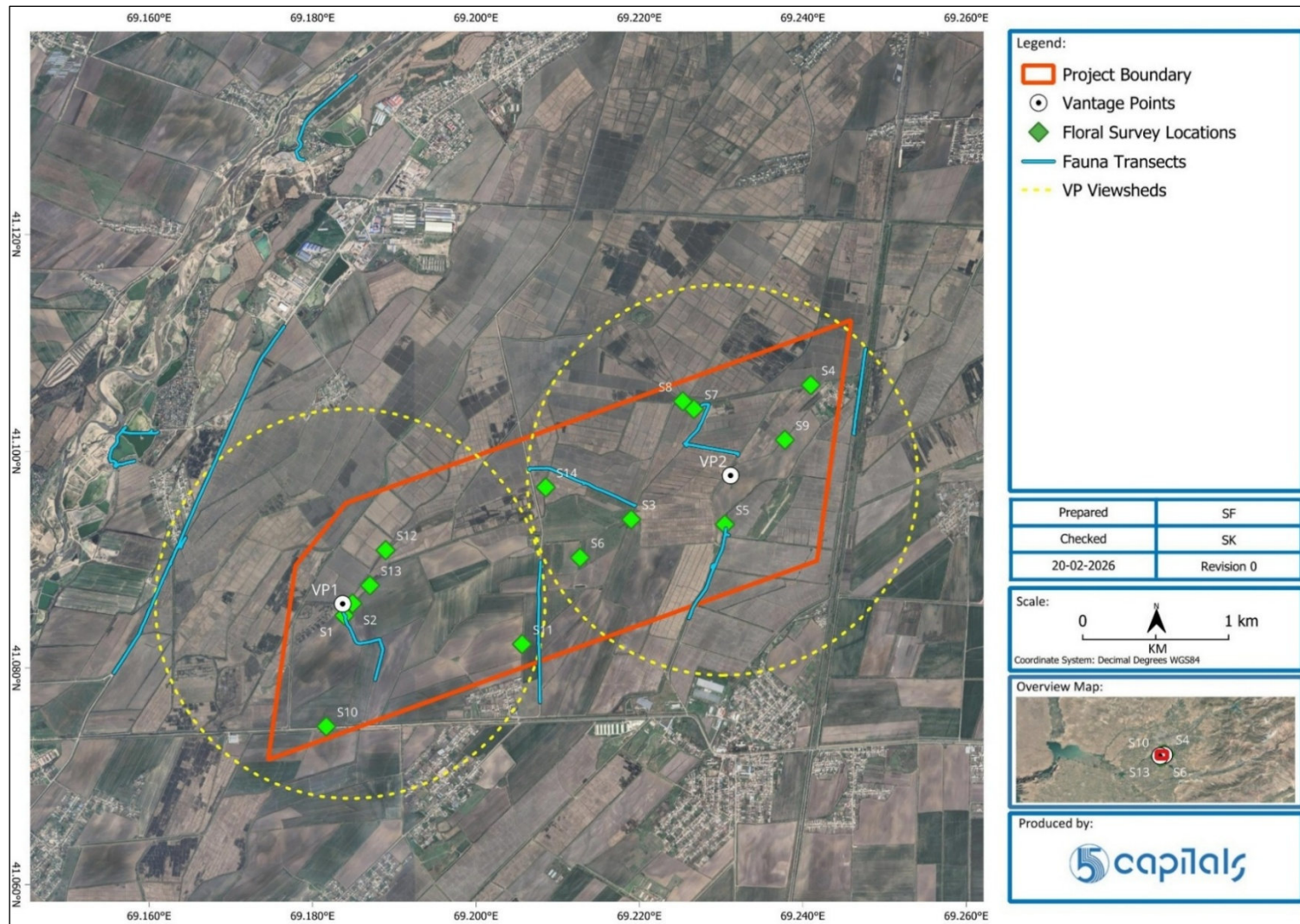


Figure 9-3 Sampling Location Map

9.3.3.2 Habitats

The Project area predominantly consists of modified habitats characterized by anthropogenic landscapes. The majority of the area is covered by irrigated arable land, which is used for agricultural purposes, including crops such as cotton, wheat, and rice. Additionally, fruit gardens are scattered throughout the area, where fruit trees such as apple, apricot, and cherry are cultivated. Irrigation channels, ditches, and boundary strips form important features of the landscape, providing water management and habitat for certain plant species. Woodland belts are narrow strips of planted trees, typically along roads and irrigation channels, offering limited biodiversity compared to natural habitats. Several areas of old graveyards are also present within the Project area where semi-natural vegetation, including native and weedy species, can be found. Abandoned pastures and settlements are also present within the Project area, contributing to the modified nature of the landscape. Overall, the habitat types within the Project area are primarily anthropogenic and modified, with little to no natural habitats.

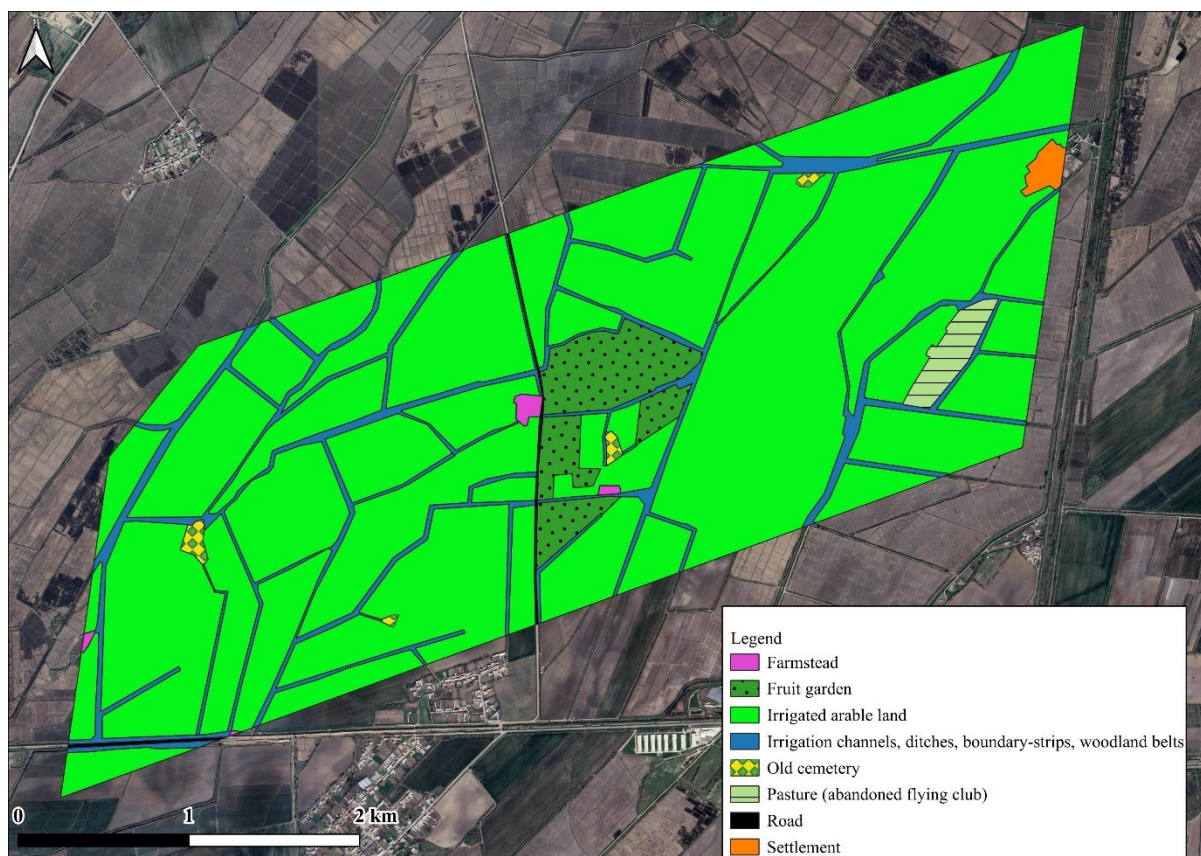


Figure 9-4 Habitat Characterization



Figure 9-5 Photo-documentation of the Habitats

9.3.3.3 Flora

A botanical survey of the Project Area was undertaken in April 2025. The objectives were to document plant species composition and habitat types, review available botanical literature, identify threatened species.

Field surveys were conducted using standard botanical methods. Fourteen sample plots (50 × 50 m quadrats) were surveyed across representative habitats within the Project Area, including irrigated agricultural land, gardens, shelterbelts, wasteland, canals, and other anthropogenically modified landscapes. At each plot, habitat type and condition, land use, disturbance factors, and vegetation structure were assessed. All plant species present were recorded, and their abundance and cover were estimated using the DAFOR (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare) and Braun–Blanquet scales. Species identification was based on regional floras and taxonomic references, and conservation status was assessed using the Uzbekistan Red Data Book and the IUCN Red List.

Habitats were classified and mapped on field data and interpretation of satellite imagery. In the absence of a national habitat classification system, the IUCN Habitats Classification Scheme, IUCN Global Ecosystem Typology, and (where applicable) the EUNIS system were applied. Habitats were evaluated in line with IFC Performance Standard 6 and classified as modified, natural, or critical, using IFC and IUCN guidance.

A comprehensive literature review was undertaken to provide regional context for the field survey results. Although the mountainous areas of Tashkent Region are well studied botanically, the lowland plain of the Chirchik River basin remains comparatively underexplored. Key sources included classical and modern floristic works, national floras,

regional checklists, the Red Data Book of Uzbekistan, IUCN assessments, and recent inventories of the flora of Tashkent Region. Online biodiversity databases and digital herbaria (e.g. GBIF, Plantarium) were also reviewed.

A total of 132 plant species were recorded in the Project area, including 116 native species and 16 alien species. Four out of the alien species viz. *Ambrosia artemisiifolia*, *Bidens frondosa*, *Xanthium orientale*, and *Xanthium spinosum* are listed as Invasive in Uzbekistan in EPPO Global Database¹¹. The flora is dominated by native plants alongside common alien weeds typical for anthropogenic landscapes in Uzbekistan. No threatened species (CR, EN, VU) or endemic species were found in the area.

The Project area is located within the ancient Tashkent oasis on an alluvial plain between the Chirchiq and Akhangaran Rivers, heavily used for agriculture. Field surveys and satellite imagery revealed that almost all habitats within the Project area are of a modified, anthropogenic type.

The eight main types of modified habitats within the Project area are:

- Irrigated arable land (cotton, wheat, rice, corn),
- Fruit gardens (apple, apricot, cherry, peach),
- Woodland belts (mulberry, poplar, willow),
- Boundary-strips (weedy herbaceous vegetation),
- Irrigation channels and ditches (reeds, sedges),
- Old graveyards (semi-natural vegetation),
- Settlements (planted fruit and ornamental trees),
- Roads (urban infrastructure).

The flora is mostly agricultural crops, planted trees, and secondary weedy vegetation, with some semi-natural vegetation along old graveyards and irrigation channels.

Although the construction of the airport will lead to vegetation loss, its impact on biodiversity is not expected to be significant, given the modified nature of the habitats. Compensation for vegetation damage during construction shall be in line with Uzbekistan's national regulations (Decree No. 290, 2014).

¹¹ Makhkamov T, Kortz A, Hejda M, Brundu G, Pyšek P (2024) Naturalized alien flora of Uzbekistan: species richness, origin and habitats. *Biological Invasions* 26, 2819–2830. <https://doi.org/10.1007/s10530-024-03371-w>

	
<i>Allium suworowii</i>	<i>Asperugo procumbens</i> (native weedy plant)
	
<i>Salix babylonica</i> (introduced non-native tree)	<i>Bromus tectorum</i> (native annual weedy grass)

Figure 9-6 Photo-documentation of the Floral Species Observed

9.3.3.4 Avifauna

Avifaunal surveys were undertaken using two fixed Vantage Points (VPs) to enable systematic observations under optimal visibility conditions. During the spring season, surveys comprised a total of 36 observation hours per VP, conducted across April and May 2025. Observations were undertaken during morning and evening periods to avoid peak heat conditions. Recorded parameters included species identification, number of individuals, flight altitude and direction, distance from the observation point, site usage, and prevailing weather conditions.

Autumn and winter surveys followed the same methodology, with 36 hours of observation per VP conducted during September-October 2025 and December 2025-January 2026. In addition, supplementary data were collected through ten walking transects during the spring period, covering a range of habitats such as agricultural fields, irrigation canals, fishponds, and known White Stork (*Ciconia ciconia*) breeding colonies.

Across all survey seasons (autumn and spring), a total of 56 bird species were recorded. Of these, 50 species were observed during the spring surveys (35 common to both VPs), while 41 species were recorded in autumn. The findings of the winter VP survey are being analyzed and will be incorporated in the next version of the ESIA. Species distribution was generally uniform across the study area; however, VP-specific differences were noted, largely attributable to local feeding conditions, with five species recorded exclusively at VP1 and ten species exclusive to VP2. In spring, species composition included 22 breeding migrants (BM), 14 residents (R), seven breeding and winterers (BMW), four migrants (M), and three migrant

winterers (MW). During the autumn period, 15 spring migrant species were no longer present, while six additional resident or wintering species were recorded.

Three species listed in the Uzbekistan Red Data Book (UzRDB) were consistently recorded across survey seasons: Little Egret (*Egretta garzetta*; UzRDB category 2 - Vulnerable/Declining; IUCN Least Concern), White Stork (*Ciconia ciconia*; UzRDB category 3 - Near Threatened; IUCN Least Concern), and Glossy Ibis (*Plegadis falcinellus*; UzRDB category 2 - Vulnerable/Declining; IUCN Least Concern). Northern Lapwing (*Vanellus vanellus*) was also recorded and is classified as Near Threatened on the IUCN Red List. Walking transects added six additional species to the inventory, including two UzRDB-listed species: Pygmy Cormorant (*Microcarbo pygmaeus*; UzRDB category 3 - Near Threatened; IUCN Least Concern) and Cinereous Vulture (*Aegypius monachus*; UzRDB category 3 - Near Threatened; IUCN Near Threatened). However, none of the IUCN Threatened species was recorded. Waterfowl observations were primarily associated with the Chirchik River and nearby fishponds and were not recorded within the core Project Area.

Other notable species recorded include Common Pheasant (*Phasianus colchicus*), Eastern Carrion Crow (*Corvus corone orientalis*), and Common Myna (*Acridotheres tristis*), typically recorded in flocks.

In addition to VP surveys, transect surveys were conducted to record bird activity across the wider landscape, both within and outside the Project area. The transects included coverage of areas along the Chirchik River. Survey results indicate a relatively higher concentration of bird abundance and activity along the river corridor, which supported the highest overall counts and was dominated by species associated with aquatic habitats. Species recorded in these areas included Pygmy Cormorant, Great Cormorant, Mallard, Caspian Gull, Black-headed Gull, Common Coot, and Common Moorhen. However, the highest overall abundance recorded during the surveys was for the Rock Pigeon in those areas.

White Stork Nesting Colonies

White Stork breeding colonies constitute a key ecological feature of the landscape and represent the most abundant resident colonial nesting bird species in the vicinity of the Project Area. Drive through survey was conducted to identify the major colonies of the species in the landscape. Three main nesting colonies and isolated nests were recorded during these surveys, primarily associated with electricity transmission infrastructure.

The largest breeding colony, comprising approximately 50 nests, is located on transmission line towers along the highway, approximately 1.1 km northwest of the Project site boundary, near village Yelibay. Surveys confirmed the presence of at least 41 active breeding pairs within this colony. A second colony, consisting of approximately 30 nests, is situated on transmission line towers along the railway corridor. This colony extends for approximately 3 km in a north-south direction, with the nearest nest located around 2 km southeast of the Project site boundary. A third, smaller colony of approximately 12 nests was recorded approximately 4 km north of the Project site, in the vicinity of the Chirchik River.

In addition to these colonies, isolated nests were recorded closer to the Project Area. One nest with a pair of adult birds and chicks was observed on an electricity pole at the southwestern corner of the Project site. Two further single nests containing chicks were recorded approximately 1-1.5 km south of VP2, outside the Project site boundary (Refer Figure 9-8.).

According to the results of the IIXX International White Stork Census conducted during June-August 2024, the average productivity for the Tashkent Region was 2.63 chicks per breeding pair. Based on this value and the approximately 86 nests recorded in the vicinity of the Project site, the local White Stork population of the Project landscape is estimated to comprise approximately 400 individuals.

The list of mammals recorded during the survey has been provided Table 9-3.

	
White Stork Nesting Colony 1 at ~1.1 km from the Project site	Nest with the chicks
	
Nests in the Colony 2 at ~3 km south of Project site	Marsh Harrier
	
Black-crowned Night Heron	Glossy Ibis

Figure 9-7 Photo-documentation of the Avifauna and Nesting Colonies Observed

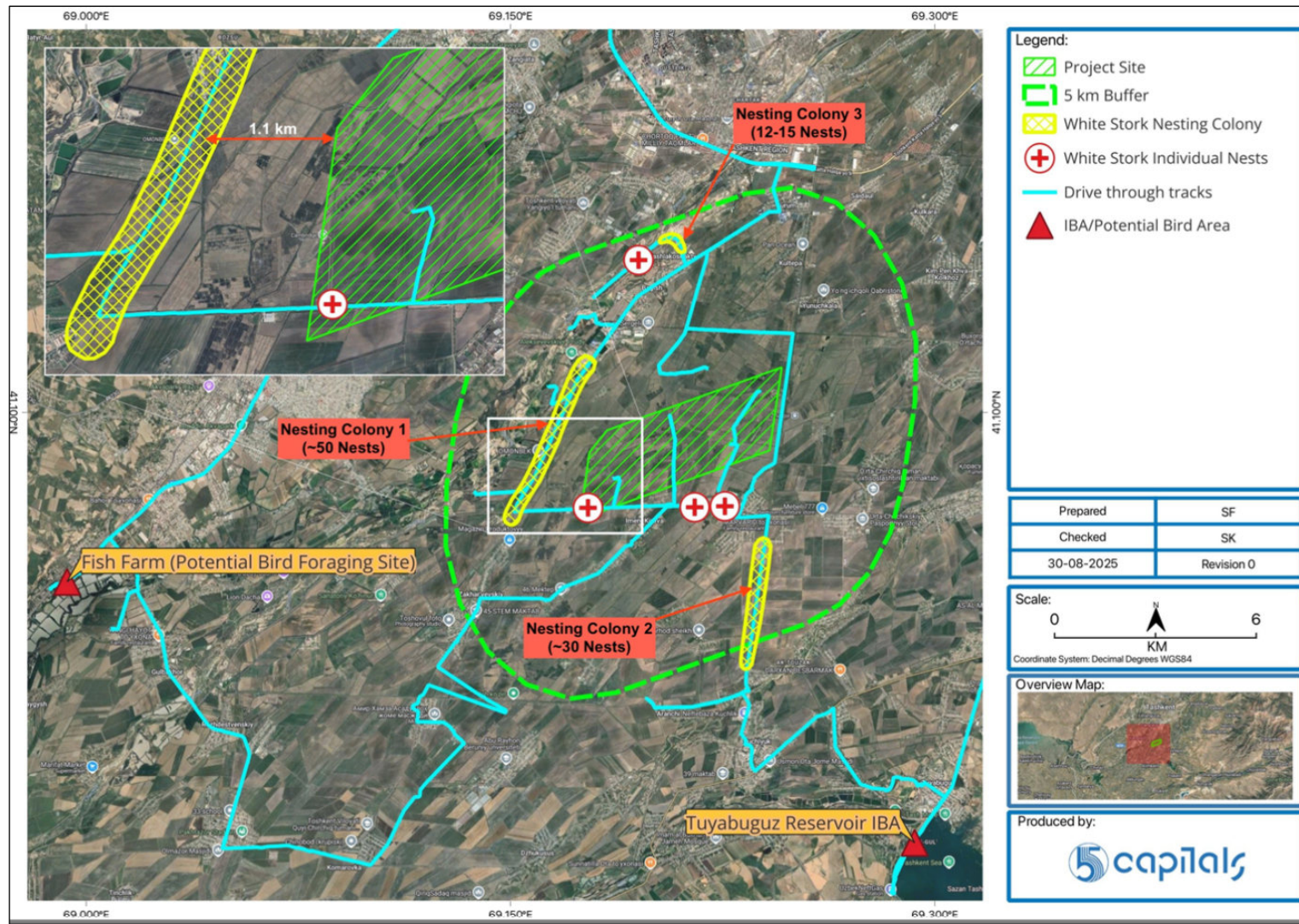


Figure 9-8 White Stork Nesting Sites in relation to Project Site

Table 9-3 List of Avifaunal Species Recorded

SN	Common Name	Scientific Name	UzRDB	IUCN	VP1 ¹²	VP2 ¹²	Resident/ Migratory Status ¹³	Indicative threshold of 0.1% Global Population ¹⁴
1	Barn Swallow	<i>Hirundo rustica</i>	-	LC	721	1067	BM	290,000
2	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	-	LC	183	190	BM	440
3	Black-winged Stilt	<i>Himantopus himantopus</i>	-	LC	513	522	BM	486
4	Blue-cheeked Bee-eater	<i>Merops persicus</i>	-	LC	71	13	BM	150
5	Collared Sand Martin	<i>Riparia riparia</i>	-	LC	-	18	BM	29,000
6	Common Cuckoo	<i>Cuculus canorus</i>	-	LC	2	2	BM	34,600
7	Common Hoopoe	<i>Upupa epops</i>	-	LC	83	2	BM	50,00
8	Common Kestrel	<i>Falco tinnunculus</i>	-	LC	3	4	BMW	4,330
9	Common Kingfisher	<i>Alcedo atthis</i>	-	LC	14	3	R	716
10	Common Magpie	<i>Pica pica</i>	-	LC	709	472	R	64,300
11	Common Moorhen	<i>Gallinula chloropus</i>	-	LC	51	34	R	9,069
12	Common Myna	<i>Acridotheres tristis</i>	-	LC	1149	792	R	200,000
13	Common Pheasant	<i>Phasianus colchicus</i>	-	LC	95	105	R	50,000
14	Common Redstart	<i>Phoenicurus phoenicurus</i>	-	LC	-	1	BM	17,500
15	Common Rosefinch	<i>Carpodacus erythrinus</i>	-	LC	5	-	BM	27,300
16	Common Sandpiper	<i>Actitis hypoleucos</i>	-	LC	97	28	BM	3,230

¹² The numbers correspond to the total number of observations across all seasons. However, they may include repeated detections of the same set of individuals, and therefore may not accurately represent the actual population sizes of the respective species within the landscape or Project area.

¹³ R: Resident species; BM: Breeding species; BMW: Breeding and wintering species; MW: Wintering species; M: Migratory species

¹⁴ The values presented are provided solely as indicative reference/screening benchmarks and should not be interpreted as biologically acceptable or permissible fatality thresholds. For consistency and precaution, the calculations use 0.1% of the lower-bound estimate of the respective global population reported by IUCN/BirdLife, where available. These values are intended only to provide broad population-level context.

SN	Common Name	Scientific Name	UzRDB	IUCN	VP1 ¹²	VP2 ¹²	Resident/ Migratory Status ¹³	Indicative threshold of Global Population ¹⁴ 0.1%
17	Common Swift	<i>Apus apus</i>	-	LC	-	29	BM	80,000
18	Common Teal	<i>Anas crecca</i>	-	LC	37	23	M	2,800
19	Common Wood-pigeon	<i>Columba palumbus</i>	-	LC	-	4	BMW	51,000
20	Crested Lark	<i>Galerida cristata</i>	-	LC	14	10	R	172,000
21	Eurasian Blackbird	<i>Turdus merula</i>	-	LC	39	34	R	145,000
22	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	-	LC	96	39	R	40,000
23	Eurasian Hobby	<i>Falco subbuteo</i>	-	LC	-	1	BM	900
24	Eurasian Jackdaw	<i>Corvus monedula</i>	-	LC	3000	530	R	39,000
25	Eurasian Tree Sparrow	<i>Passer montanus</i>	-	LC	1910	1161	R	53,700
26	European Bee-eater	<i>Merops apiaster</i>	-	LC	50	6	BM	18,400
27	European Roller	<i>Coracias garrulus</i>	-	LC	20	8	BM	100
28	Glossy Ibis	<i>Plegadis falcinellus</i>	2(VU:D)	LC	159	221	BM	119
29	Great Cormorant	<i>Phalacrocorax carbo</i>	-	-	-	9	BMW	1400
30	Grey Heron	<i>Ardea cinerea</i>	-	LC	2	3	BMW	500
31	Hooded Crow	<i>Corvus cornix</i>	-	LC	142	60	MW	Data Not available (likely several thousands)
32	House Sparrow	<i>Passer domesticus</i>	-	LC	347	505	R	896,000
33	Indian Sparrow	<i>Passer indicus</i>	-	LC	1165	1317	BM	Data Not available (likely several thousands)
34	Isabelline Shrike	<i>Lanius isabellinus</i>	-	LC	73	9	BM	Data Not available
35	Laughing Dove	<i>Streptopelia senegalensis</i>	-	LC	55	104	R	2,400

SN	Common Name	Scientific Name	UzRDB	IUCN	VP1 ¹²	VP2 ¹²	Resident/ Migratory Status ¹³	Indicative threshold of Global Population ¹⁴ 0.1%
36	Little Egret	<i>Egretta garzetta</i>	2(VU:D)	LC	18	21	BMW	430
37	Long-legged Buzzard	<i>Buteo rufinus</i>	-	LC	68	8	BMW	100
38	Mallard	<i>Anas platyrhynchos</i>	-	LC	63	44	BMW	26,152
39	Northern Lapwing	<i>Vanellus vanellus</i>	-	NT	13	12	MW	4,300
40	Northern Long-eared Owl	<i>Asio otus</i>	-	LC	24	4	MW	2,230
41	Oriental Carrion Crow	<i>Corvus orientalis</i>	-	LC	433	453	R	Data Not available
42	Oriental Turtle-dove	<i>Streptopelia orientalis</i>	-	LC	9	4	BM	Data Not available
43	Purple Heron	<i>Ardea purpurea</i>	-	LC	5	2	BM	180
44	Red-crested Pochard	<i>Netta rufina</i>	-	LC	19	24	BMW	420
45	Red-headed Bunting	<i>Granativora bruniceps</i>	-	LC	-	2	BM	Data Not available
46	Red-tailed Shrike	<i>Lanius collurio</i>	-	LC	1	-	M	21,900
47	Rock Pigeon	<i>Columba livia</i>	-	LC	9527	7927	R	Data Not available (likely several thousands)
48	Rosy Starling	<i>Pastor roseus</i>	-	LC	1000	470	BM	400
49	Ruddy Shelduck	<i>Tadorna ferruginea</i>	-	LC	36	4	M	134
50	Shikra	<i>Accipiter badius</i>	-	LC	-	2	BM	500
51	Siberian Stonechat	<i>Saxicola maurus</i>	-	LC	88	27	BM	Data Not available
52	Spotted Flycatcher	<i>Muscicapa striata</i>	-	LC	2	-	BM	54,000
53	Western Marsh Harrier	<i>Circus aeruginosus</i>	-	LC	31	29	R	600
54	White Stork	<i>Ciconia ciconia</i>	3(NT)	LC	876	800	R	526
55	White Wagtail	<i>Motacilla alba</i>	-	LC	159	34	MW	Data Not available
56	Yellow Wagtail	<i>Motacilla flava</i>	-	LC	-	140	M	Data Not available

9.3.3.5 Mammals

Mammal surveys were conducted during the spring period (April-June 2025) using ten walking transects. Data collection focused on direct observations as well as indirect evidence of presence, including tracks, burrows, feeding signs, etc. Transects were designed to sample a representative range of habitats within the Study area, including agricultural fields, wastelands, irrigation canals, and livestock grazing areas.

Additional information was obtained through review of available literature. Conservation status assessments were based on the Uzbekistan Red Data Book (UzRDB) and the IUCN Red List.

A total of ten mammal species were recorded during the surveys. All recorded species are classified as Least Concern on the IUCN Red List, and none are listed in the Uzbekistan Red Data Book. The mammal assemblage is typical of agricultural and wetland-influenced landscapes and is dominated by species tolerant of human-modified environments.

Synanthropic rodents, such as the House Mouse (*Mus musculus*), were abundant within cultivated areas and near human settlements. Zaisan Mole Vole (*Ellobius tancrei*) was widespread across the Study area, with characteristic signs recorded along all transects. Medium-sized carnivores, including Red Fox (*Vulpes vulpes*) and Golden Jackal (*Canis aureus*), were also confirmed, with fox burrow identified near VP1 and jackal tracks recorded along Transect 1, indicating the presence the species.

Semi-aquatic species, notably Muskrat (*Ondatra zibethicus*) and Coypu (*Myocastor coypus*), were restricted to irrigation canals and associated wetland features and were not recorded within intensively cultivated areas. The list of mammals recorded during the survey has been provided in Table 9-4.

Table 9-4 Mammals Recorded during Surveys

SN	Common Name	Scientific Name	UzRDB	IUCN	Numbers
1	Coypu	<i>Myocastor coypus</i>	-	LC	1
2	Fox	<i>Vulpes vulpes</i>	-	LC	1
3	Golden Jackal	<i>Canis aureus</i>	-	LC	2
4	House Mouse	<i>Mus musculus</i>	-	LC	Common
5	Large Souslik	<i>Spermophilus fulvus</i>	-	LC	5
6	Long-eared Hedgehog	<i>Hemiechinus auritus</i>	-	LC	1
7	Muskrat	<i>Ondatra zibethicus</i>	-	LC	3
8	Tolai Hare	<i>Lepus tolai</i>	-	LC	1
9	Weasel	<i>Mustela nivalis</i>	-	LC	1
10	Zaisan Mole Vole	<i>Ellobius tancrei</i>	-	LC	Common

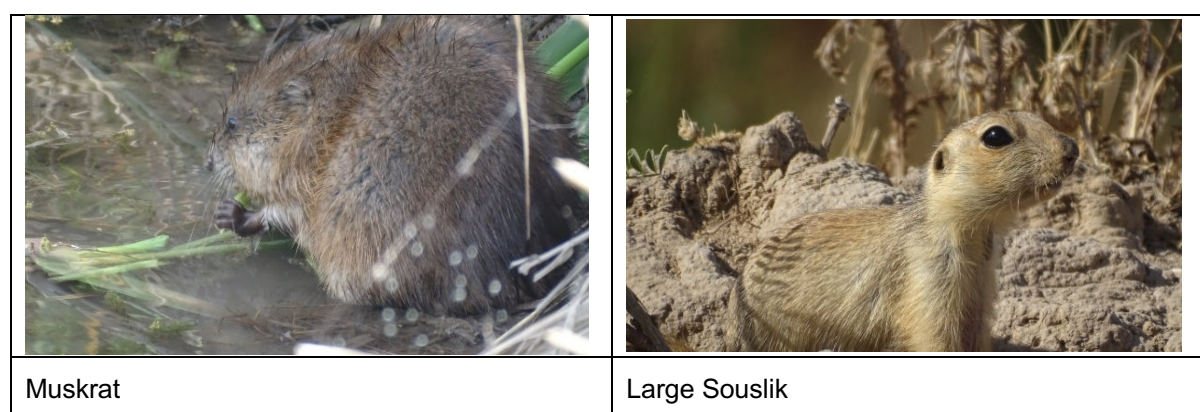


Figure 9-9 Photo-documentation of the Mammals Observed

9.3.3.6 Bats

An acoustic survey and potential bat roost search were conducted to identify bat species within the Project area. 14 key locations which can potentially be provide suitable conditions for roosting with a high probability or be highly attractive as the water sources or foraging areas, were identified during reconnaissance, four within the Project area and 10 within a 4 km radius of the Project boundary. These areas were visited during the survey to record the bat calls near these features. Surveys were performed using an ultrasonic detector (Bat Logger M2). Transects covered areas of potential roosting sites and foraging grounds, including water bodies, agricultural fields, and settlements. Five transects were surveyed over four nights, with data collected from 114 survey points (Refer Figure 9-10).

Note: Bat roost surveys were not conducted in residential buildings and human-made structures within or near the Project area due to concerns that surveying these structures could lead to the disclosure of sensitive project information and trigger premature public discussion or questions. As a result, visual inspections of buildings for roosting sites were replaced with vehicle-based transect surveys using ultrasonic bat call recording equipment to establish baseline for bat species.

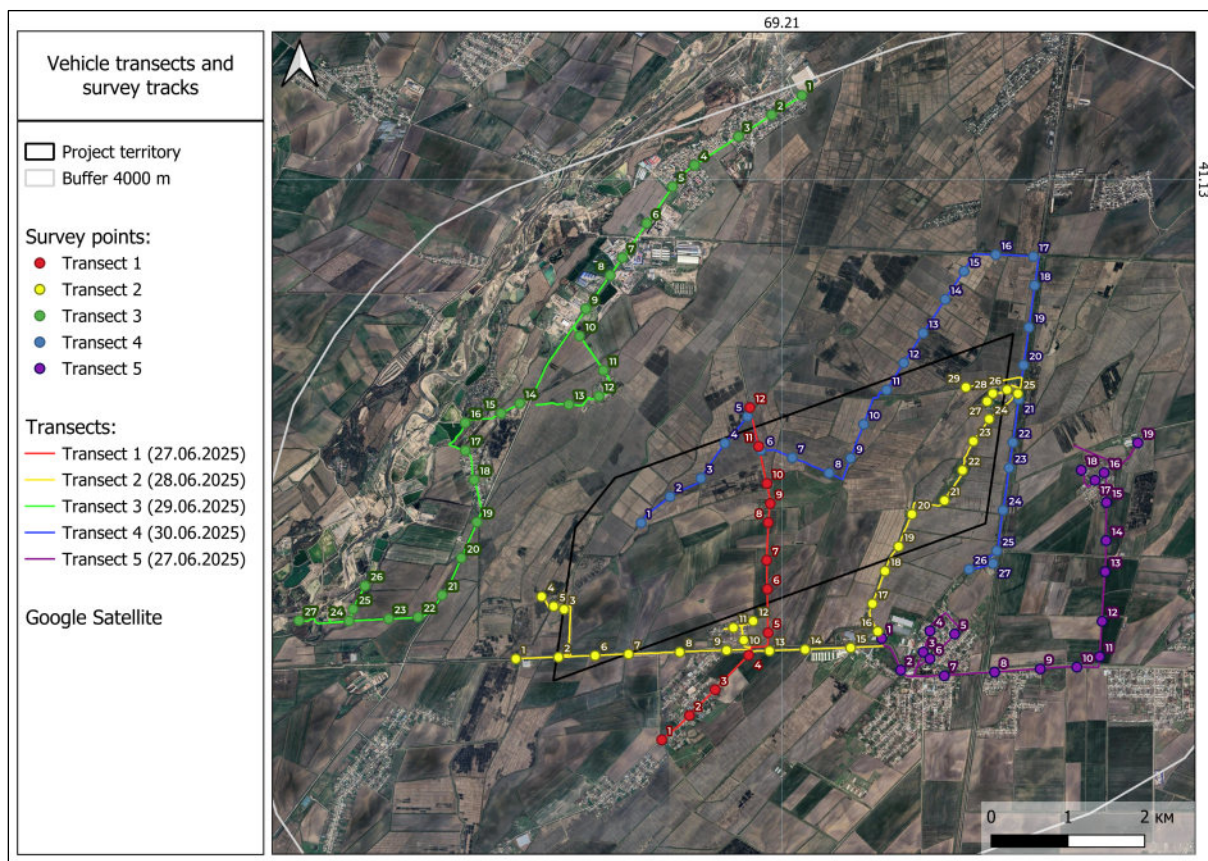


Figure 9-10 Bat Transects

The survey recorded six bat species across five genera, with the Common Pipistrelle (*Pipistrellus pipistrellus*) being the most abundant, accounting for approximately 96% of all detections. Other species recorded include the Serotine bat (*Eptesicus serotinus*), David's myotis (*Myotis davidii*), Geoffroy's bat (*Myotis emarginatus*), Parti-coloured bat (*Vespertilio murinus*), and the rare Eastern barbastelle (*Barbastella caspica*).

Bats were recorded at 111 out of 114 survey points, indicating widespread activity across the Project area and surrounding landscape. High bat activity was observed near water bodies and settlements, with increased activity also noted in the eastern part of the site. The majority of bat calls were recorded in anthropogenic structures, suggesting that bats are utilizing both human-made and natural roosting sites. However, no species listed as threatened in the IUCN Red List or Uzbekistan Red Data Book were detected.

The survey revealed that the Project area provides foraging habitats for bats, with activity higher near settlements and water sources. The results of the survey along with the activity analysed based on call recorded have been provided in Figure 9-11 and Figure 9-12.

Table 9-5 Bat Species Recorded during the Survey

SN	Common name	Scientific name	IUCN Status	UzRDB Status	Transects recorded
1	Common pipistrelle	<i>Pipistrellus pipistrellus</i>	LC	Not listed	Transects 1-5
2	David's myotis	<i>Myotis davidii</i>	LC	Not listed	Transects: 2-5
3	Eastern Barbastelle	<i>Barbastella caspica</i>	LC	Not listed	Transect 3
4	Geoffroy's bat	<i>Myotis emarginatus</i>	LC	Not listed	Transects: 1, 2, 4, 5
5	Parti-coloured bat	<i>Vespertilio murinus</i>	LC	Not listed	Transects 1-3, 5
6	Serotine bat	<i>Eptesicus serotinus</i>	LC	Not listed	Transects 1-5

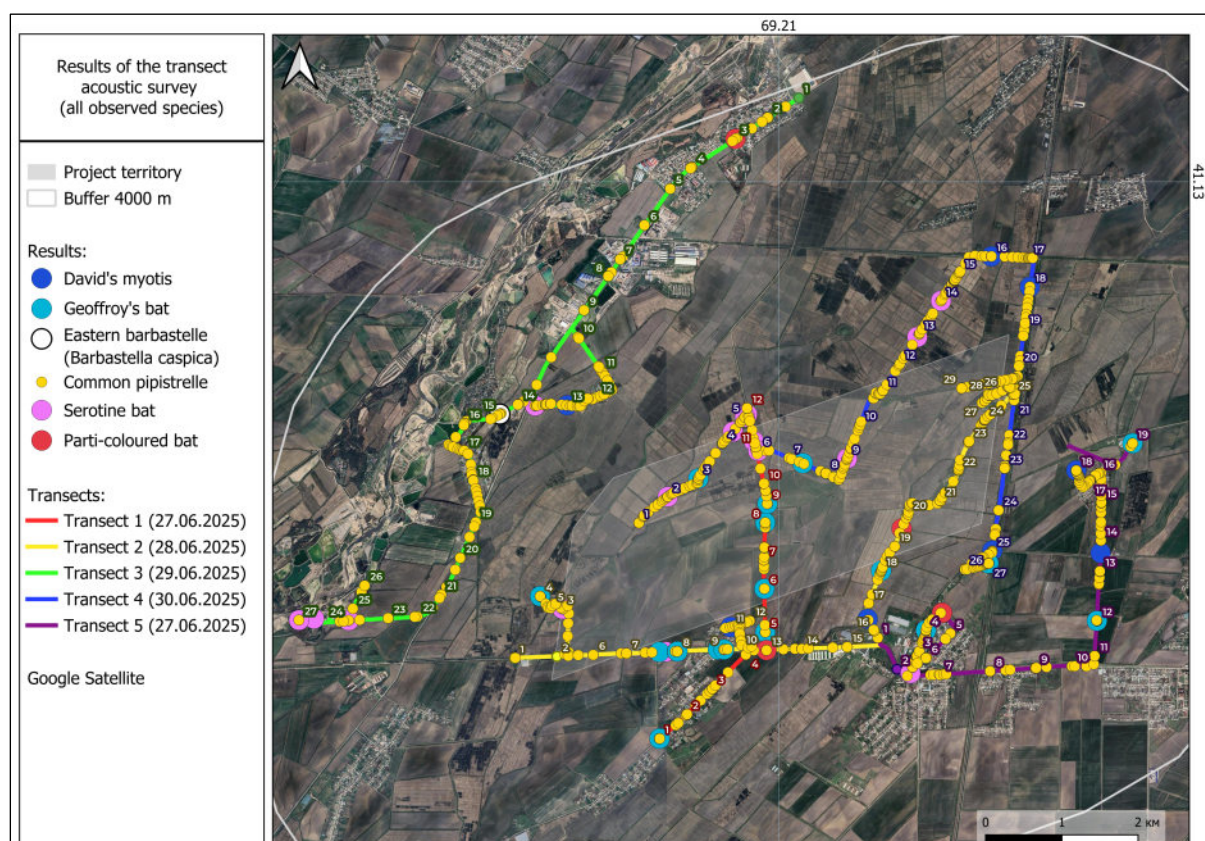


Figure 9-11 Results of Bat Survey

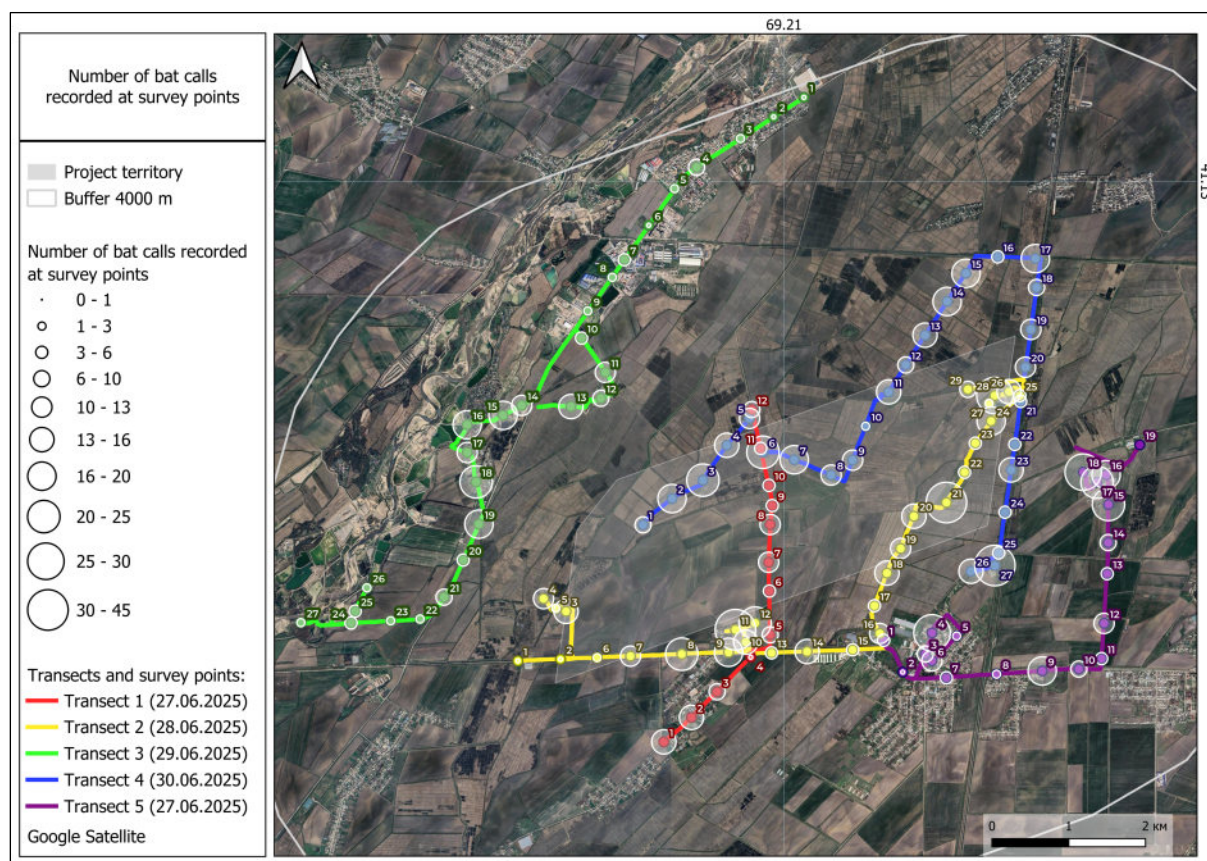


Figure 9-12 Bat Activity based on the Calls Recorded

9.3.3.7 Reptiles and Amphibians

Herpetofaunal surveys were conducted during the spring season (April-June 2025) using same ten walking transects. Survey covered habitat types most likely to support amphibians and reptiles, including irrigation canals and ponds for amphibian species, and grassy, fallow, and semi-natural areas for reptiles. Records were based on direct observations and indirect evidence of presence, such as burrows and other characteristic signs. Surveys were undertaken during periods of peak activity, primarily in the morning and evening.

A total of six herpetofaunal species were recorded during the surveys, comprising two amphibian species and four reptile species. Amphibians were commonly observed in wet habitats, particularly irrigation canals and associated water bodies, while reptile species were widely distributed across grassy and fallow areas within the study area.

The Central Asian Tortoise (*Testudo horsfieldii*), listed in the Uzbekistan Red Data Book as category 2 (Vulnerable) and classified as Vulnerable on the IUCN Red List, was recorded as two individuals within graveyard areas. These observations are considered atypical of the species' natural habitat and are likely attributable to released captive individuals rather than a naturally occurring population within the Project Area.

All other recorded reptile and amphibian species are classified as Least Concern on the IUCN Red List and were observed to be locally abundant where suitable habitat conditions were present. Notably, Desert Lidless Skink (*Ablepharus deserti*) was widespread across the study area.

The list of herpetofauna recorded during the survey has been provided in Table 9-6.

Table 9-6 List of Herpetofaunal Species Recorded

SN	Common Name	Scientific Name	UzRDB	IUCN	Numbers
1	Green Toad	<i>Bufo viridis</i>	-	LC	2
2	Eurasian Marsh Frog	<i>Pelophylax ridibundus</i>	-	LC	5
3	Central Asian Tortoise	<i>Testudo horsfieldii</i>	2(VU)	VU	2
4	Sheltopusik	<i>Pseudopus apodus</i>	-	LC	3
5	Desert Lidless Skink	<i>Ablepharus deserti</i>	-	LC	12
6	Dice Snake	<i>Natrix tessellata</i>	-	LC	2



Figure 9-13 Photo-documentation of the Herpetofaunal Species Observed

9.3.3.8 Invertebrates

The invertebrate baseline was supplemented through a desktop review of available GBIF, iNaturalist and published literature for the Tashkent Region and Chirchiq River basin. The available information indicates that the wider landscape supports a typical assemblage of invertebrates associated with irrigated agricultural land, field margins, ruderal vegetation, irrigation channels, fishponds and freshwater habitats. Recorded groups include Odonata, Lepidoptera, Hymenoptera and Coleoptera. Most species for which an IUCN assessment is available are classified as Least Concern, and no species of elevated conservation concern were confirmed within the Project site. Two nationally Vulnerable insect species, Solomon's Buprestid (*Ancylocheira salomonii*) and Tugay Underwing Moth (*Catocala remissa*), are reported from the wider Tashkent region and may potentially occur where suitable mature poplar stands are present¹⁵. The species presented in **Table 9-7** represent records from the wider regional landscape and may not be interpreted as species confirmed within the Project site.

¹⁵ Red Book of the Republic of Uzbekistan. Vol. II: Animals. Under the general editorship of J. A. Azimov. Tashkent: Tasvir Publishing House, 2019. 392 p.

Table 9-7 Invertebrates known from Wider Region

No	Common Name	Scientific Name	IUCN Red List Status
1	Common Bluetail	<i>Ischnura elegans</i>	LC
2	Small Bluetail	<i>Ischnura pumilio</i>	LC
3	Blue Emperor Dragonfly	<i>Anax imperator</i>	LC
4	Lesser Emperor	<i>Anax parthenope</i>	LC
5	Black Pennant	<i>Selysiothemis nigra</i>	LC
6	Scarlet Skimmer	<i>Crocothemis servilia</i>	LC
7	Black-tailed Skimmer	<i>Orthetrum cancellatum</i>	LC
8	White-tailed Skimmer	<i>Orthetrum albistylum</i>	LC
9	Slender Skimmer	<i>Orthetrum sabina</i>	LC
10	European Paper Wasp	<i>Polistes dominula</i>	NE
11	Watt's Paper Wasp	<i>Polistes wattii</i>	NE
12	Oriental Hornet	<i>Vespa orientalis</i>	NE
13	Mediterranean Potter Wasp	<i>Eumenes mediterraneus</i>	NE
14	Mason Wasp	<i>Euodynerus strigatus</i>	NE
15	Mason Wasp	<i>Odynerus melanocephalus</i>	NE
16	Common Blue	<i>Polyommatus icarus</i>	NE
17	Old World Swallowtail	<i>Papilio machaon</i>	NE
18	Painted Lady	<i>Vanessa cardui</i>	LC
19	Seven-spotted Ladybird	<i>Coccinella septempunctata</i>	NE
20	Variegated Ladybird	<i>Hippodamia variegata</i>	NE
21	Harlequin Ladybird	<i>Harmonia axyridis</i>	NE
22	Solomon's Buprestid	<i>Ancylocheira salomonii</i>	NE
23	Tugay Underwing Moth	<i>Catocala remissa</i>	NE

9.3.3.9 Critical Habitat

Preliminary screening for any triggers of a CH/PBF determination was conducted following the most recent guidance for such issued by IFC and EBRD. 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 or EBRD Criterion 1, hence the CH screening was then accordingly limited to species, and multi-species groupings of biological taxa. A master list of potential CH/PBF trigger species was first compiled by reviewing the IBAT report¹⁶, the IUCN red list of threatened species¹⁷, the eBird database¹⁸, and the national redlist. 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:

¹⁶ IBAT PS6 & ESS6 Report. Generated under licence 39087-85860 from the Integrated Biodiversity Assessment Tool on 14 May 2025 (GMT). www.ibat-alliance.org

¹⁷ <https://www.iucnredlist.org/>

¹⁸ <https://ebird.org/home>

- species that are extinct from the country/region;
- species that occur in Uzbekistan only as extreme rarities (i.e. vagrants or accidentals);
- species with no geographic and/or ecological overlap with the Project area.

The list of secondary resources review during CHA are provided in Table 9-8.

Table 9-8 List of Secondary Resources Reviewed

SN	Data Source	Purpose
1	IUCN Red List for Threatened Species Online Version 2025-2	It is the world's most comprehensive inventory of global conservation status of species. It provides a list of threatened species by classifying them under different categories from Least Concern (LC) to Extinct (EX) through an understanding of global distribution, population status and trends of the species. Classification of species, distribution, habitat preference and threats of species are also given.
2	ebird.org	ebird.org provides a geo-referenced list of identified bird species in a given area.
3	Alliance for Zero Extinction	The Alliance for Zero Extinction (AZE) is a global initiative aimed at preventing extinctions by identifying and safeguarding sites that are crucial for the survival of endangered species. These sites, known as Alliance for Zero Extinction sites, are locations where species considered to be at the brink of extinction have their last remaining habitat.
4	Integrated Biodiversity Assessment Tool (IBAT)	It screens the Project landscape for the presence of IUCN threatened, migratory, endemic species and provide a list of potential species for the assessment.
5	Bird Life International Data Zone	Birdlife International maintains a database of Important Bird Areas (IBAs) with a species list found in these IBAs, measure of sensitivity of these habitats and identifies migratory, congregatory and threatened species in the area.
6	iNaturalist	An online social network of naturalists, citizen scientists, and biologists built on the concept of mapping and sharing observations of biodiversity across the globe. Areas falling within scoping area were run through this database.
7	Global Biodiversity Information Facility (GBIF)	GBIF is an international organization that focuses on making scientific data on biodiversity available online. The data are provided by many institutions from around the world; GBIF's information architecture makes these data accessible and searchable through a single portal.
8	Research Publications	Available research articles, papers related to the target species were referred for understanding the presence/absence in the Project landscape, status, habitat, ecology, population, etc.

For the final CHA, the list of potential CH/PBF 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/PBF 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 definitions and criteria in IFC PS6 (Refer Table 9-9).

The description and justification of the different EAAAs used in the assessment and the results of the assessment are presented in Table 9-10 and Table 9-11. And the map of the EAAAs is provided in Figure 9-14.

Table 9-9 IFC PS6 CH Criteria with quantitative thresholds

Criteria	Thresholds
Criterion 1: Critically Endangered and Endangered Species	a) Areas that support globally important concentrations of an IUCN Red-listed EN or CR species (0.5% of the global population AND 5 reproductive units of a CR or EN species); b) Areas that support globally important concentrations of an IUCN Red-listed VU species, the loss of which would result in the change of the IUCN Red List status to EN or CR and meet the thresholds at (a). As appropriate, areas containing important concentrations of nationally/regionally listed EN or CR species.
Criterion 2: Endemic and Restricted-range Species	areas that regularly hold $\geq 10\%$ of the global population size AND ≥ 10 reproductive units of a species.
Criterion 3: Migratory and Congregatory Species	a) areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle. b) areas that predictably support ≥ 10 percent of the global population of a species during periods of environmental stress.
Criterion 4: Highly threatened and/or unique ecosystems	a) Areas representing $\geq 5\%$ of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN. Other areas, not yet assessed by IUCN, but determined to be of high priority for conservation by regional or national systematic conservation planning.
Criterion 5: Areas associated with key evolutionary processes	There are no thresholds for Criterion 5.

Table 9-10 Ecologically Appropriate Area of Analysis Determination

EAAA	Applicable species	Description	Rationale
1	Plant species: <i>Salvia korolkowii</i>	Entire Project area + 1 km buffer	This EAAA reflects the sessile nature of plant species. The assessment area focuses on the habitat unit within which the species is likely to occur and maintain ecological connectivity through seed dispersal and recruitment processes. In the context of the surrounding agricultural landscape, a 1 km buffer encompasses adjacent areas that may support the same population, providing an ecologically meaningful assessment unit. Moreover, the EAAA 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.
2	Mammal and Reptile species: Marbled Polecat and Central Asian Tortoise	Entire Project area + 5 km buffer	The EAAA for the Marbled Polecat and Central Asian Tortoise was defined based on the movement ecology, home-range characteristics, and dispersal capabilities of these terrestrial species within a fragmented agricultural landscape. The selected extent represents the spatial scale over which individuals are likely to access habitat resources, undertake routine movements. The selection of entire Project footprint and a 5 km radius as EAAA is typical for mammals and reptiles to ensure that all potential direct and indirect impact pathways are adequately captured. This spatial extent considers the mobility of the species and the potential for Project-related effects to extend beyond the immediate project footprint. This 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.
3	Bird species: White-headed Duck, Pallas's Fish-eagle, Egyptian Vulture, Lesser White-fronted Goose, Yellow-eyed Pigeon, Greater Spotted Eagle, Eastern Imperial Eagle, Sociable Lapwing, Great Bustard, Steppe Eagle, European Turtle-dove, Asian Houbara, White Stork, Little Egret, Glossy Ibis, Common Pochard, Other Migratory/Congregatory species.	Entire Project area + 10 km buffer	The EAAA for bird species was defined to reflect the ecological scale at which migratory, congregatory, and wide-ranging species utilize the landscape for foraging, resting, roosting, and movement between habitat features. Although many of these species occupy much larger geographic ranges, Critical Habitat assessments are typically informed by discrete habitat areas that support ecologically important functions, such as congregation, feeding, or stopover use. Within the predominantly agricultural landscape surrounding the Project, this EAAA may encompass the potential network of habitats most likely to function collectively for these purposes, if any, and is therefore considered an appropriate unit for assessing the relative importance of the area to local, seasonal, or migratory populations. The delineation is consistent with IFC GN6 guidance that, for wide-

EAAA	Applicable species	Description	Rationale
			ranging species, Critical Habitat may be informed by aggregation areas and other habitat features of particular importance to the species

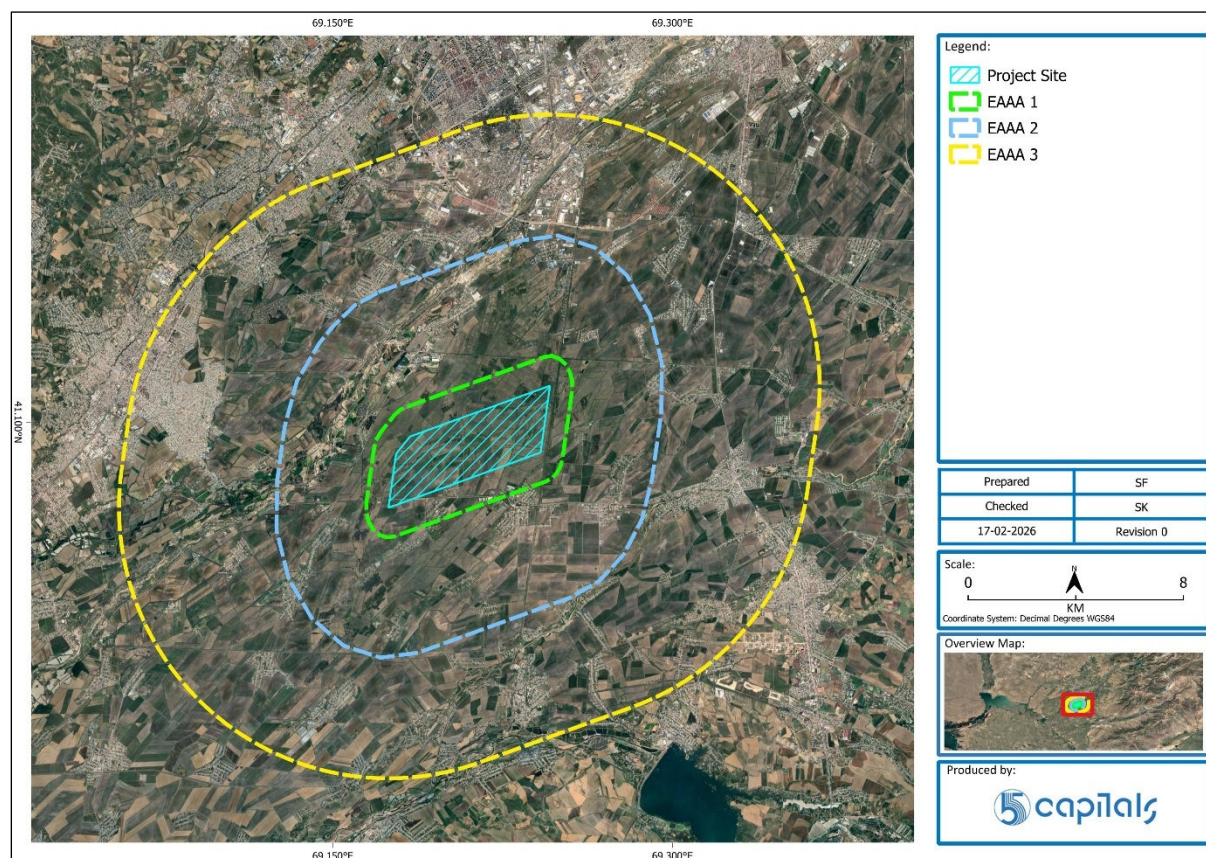


Figure 9-14 Ecologically Appropriate Areas of Analysis

Table 9-11 Critical Habitat Assessment

SN	Common Name	Scientific Name	Higher Taxon	IUCN global status	Uzbekistan RDB status	Criterion 1	Criterion 2	Criterion 3	EAAA #	IUCN global population estimate	Determination ¹⁹	Rationale
1	Sociable Lapwing	<i>Vanellus gregarius</i>	Bird	CR		x		x	3	16,000-17,000 individuals	NA	The species breeds primarily in the steppes of Kazakhstan, with migration routes passing through important stopover sites such as Talimarzhan on the Uzbekistan-Turkmenistan border²⁰. Uzbekistan serves as an autumn staging area, supporting substantial migratory flocks, although the species does not breed there. The largest known congregations have been recorded at Talimarzhan Lake. No staging sites, observation records, or aggregation areas have been identified within highly modified habitats of the EAAA. Furthermore, the species was not detected during baseline surveys, nor is it reported in available observation records from the project region in the eBird or iNaturalist databases. Based on this, the EAAA is unlikely to support globally significant concentrations of the species and therefore is not expected to meet the 0.5% population threshold.
2	White-headed Duck	<i>Oxyura leucocephala</i>	Bird	EN	EN	x		x	3	7,900-13,100 individuals	NA	The species is a passage migrant in Project area. It prefers large, deeper alkaline or saline lakes and lagoons, often with more open water and less emergent vegetation than in summer. They use inland saline lakes, coastal lakes and lagoons, and even sheltered coastal waters of inland seas, provided these support submerged plants and algae and are not heavily exposed to disturbance²¹. Such habitats are not present within the EAAA. The species was not recorded during the baseline surveys and the nearest eBird record of the species is from Aydar Lake located at around 140 km southwest of the Project site²². Given that the EAAA is primarily composed of modified and anthropogenic habitats, lacks major wetlands within the Project vicinity, and there are no known records of the species in the surrounding landscape, it is unlikely that the EAAA supports 0.5% of the global population (approximately 40 individuals). Therefore, Criterion 1 is not met, and CH is not triggered.
3	Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>	Bird	EN	EN	x			3	1,000-2,499 mature individuals	NA	The species is associated with wetlands, large lakes and rivers²³. Its passage range overlaps the Project site, and it does not breed in the region. Baseline surveys did not record the species within the Project landscape. Furthermore, a review of the eBird and iNaturalist databases indicates no documented sightings in the wider

¹⁹ **Note:** The identification of Priority Biodiversity Features (PBFs) was based not only on global conservation status but also on evidence of occurrence and ecological relevance to the Project landscape. Accordingly, threatened species with no confirmed records, suitable habitat, or reasonable likelihood of occurrence within the Project area and surroundings were not carried forward as PBFs.

²⁰ Donald, P. F., et al. (2023). Further surveys at a globally important staging site for migrating Sociable Lapwings (*Vanellus gregarius*) in Turkmenistan and Uzbekistan. Sandgrouse, 38, Ornithological Society of the Middle East (OSME).

²¹ <https://www.iucnredlist.org/species/22679814/119403602#habitat-ecology>

²² <https://ebird.org/checklist/S47824122>

²³ <https://www.iucnredlist.org/species/22695130/199521572#habitat-ecology>

SN	Common Name	Scientific Name	Higher Taxon	IUCN global status	Uzbekistan RDB status	Criterion 1	Criterion 2	Criterion 3	EAAA #	IUCN global population estimate	Determination ¹⁹	Rationale
												Project region, with iNaturalist reporting only a few sporadic records from central Uzbekistan ²⁴ . Considering this, it is unlikely that the EAAA supports globally significant numbers of the species to trigger CH.
4	Egyptian Vulture	<i>Neophron percnopterus</i>	Bird	EN	VU	×			3	18,600-54,000 individuals	NA	The species is known to forage in lowland and montane regions over open, often arid, country, and also scavenges at human settlements ²⁵ . A review of the eBird database identified a few sporadic records from the outskirts of Tashkent ²⁶ . However, the species was not recorded within the Project landscape during baseline surveys. The Central Asian Vultures Annual Report 2023-24 ²⁷ confirms the reported key aggregation/foraging sites for the species are located in southeast Uzbekistan, approximately 300 southwest of the Project site. Given the absence of records within the EAAA and the lack of known dumpsites or vulture feeding sites in the area, it is unlikely that the EAAA supports 0.5% of the global population of the species.
5	Great Bustard	<i>Otis tarda</i>	Bird	EN	CR	×		×	3	29,600-33,000 mature individuals	NA	A review of the literature indicates that the steppe habitats of the Tashkent, Syrdarya, and Zaravshan valleys historically supported thousands of Great Bustards. However, extensive ploughing during the Soviet agricultural expansion largely eliminated breeding habitats and significantly reduced the extent of suitable land ²⁸ . According to a recent paper Kashkarov et al. (2023) ²⁹ , the most significant regular wintering sites for the Great Bustard in Uzbekistan were identified in Forish and Gallaaral Districts, located more than 150km southwest of the Project site. Therefore, in the absence of any wintering or congregation sites within the EAAA and given that no individuals were recorded during baseline surveys, it is unlikely that the EAAA supports globally significant concentrations of the species.
6	Steppe Eagle	<i>Aquila nipalensis</i>	Bird	EN	VU	×			3	78,042-110,193 individuals	PBF	All three species of eagles (Steppe, Greater Spotted and Eastern Imperial) are passage migrants in the Project landscape. No congregation sites are known for the species within the Project region. Baseline surveys did not record any individuals in the Project area or the surrounding landscape. However, a review of the eBird database confirms that there are occasional
7	Greater Spotted Eagle	<i>Clanga clanga</i>	Bird	VU	VU	×			3	3,900-10,000 mature individuals	PBF	
8	Eastern Imperial Eagle	<i>Aquila heliaca</i>	Bird	VU	VU	×			3	16,000-20,000 mature individuals	PBF	

²⁴ https://www.inaturalist.org/observations?subview=map&taxon_id=5312

²⁵ <https://www.iucnredlist.org/species/22695180/205187871#habitat-ecology>

²⁶ <https://ebird.org/map/egyvvul1?neg=true&env.minX=&env.minY=&env.maxX=&env.maxY=&zh=false&gp=false&ev=Z&excludeExX=false&excludeExAll=false&mr=1-12&bmo=1&emo=12&yr=all&byr=1900&eyr=2026>

²⁷ Central Asian Vultures Annual Report 2023/24. Central Asian Vultures, 2025. Web. http://centralasianvultures.org/wp-content/uploads/2025/05/Central-Asian-Vultures-Annual-Report-2023_24_opt-1.pdf

²⁸ Kashkarov, R.D., Mitropolskaya, Y.O. & Ten, A.G. (2022). The historical and current status of the Great Bustard *Otis tarda* in Uzbekistan, a key winter refuge. Sandgrouse 44: 29–39.

²⁹ Kashkarov, R. D., Ten, A., Mitropolskaya, Y. O., & Soldatov, V. (2023). Changes in the modern range of the Great Bustard *Otis tarda* in Uzbekistan under the influence of agricultural transformation of landscapes and climate. Geography, Environment, Sustainability, 16(1), 140–149. <https://doi.org/10.24057/2071-9388-2022-091>

SN	Common Name	Scientific Name	Higher Taxon	IUCN global status	Uzbekistan RDB status	Criterion 1	Criterion 2	Criterion 3	EAAA #	IUCN global population estimate	Determination ¹⁹	Rationale
												sighting records from the wider region, including the outskirts of Tashkent. However, 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 passage zone and does not support significant congregations or staging, it is unlikely to hold globally significant concentrations of this species and does not meet the CH threshold.
9	White Stork	<i>Ciconia ciconia</i>	Bird	LC	NT			×	3	526,000-588,000 mature individuals	PBF	The species breeds within the Project landscape, where three nesting colonies were documented during the baseline surveys. The population of White Stork in the Project landscape is estimated at roughly 400 individuals. According to the IUCN Red List (2026), the species shows an increasing global population trend, with an estimated total population exceeding 500,000 mature individuals. Based on this estimate, the 1% threshold under Criterion 3 would require the regular presence of more than 5,000 individuals within the EAAA. Moreover, according to the 2014-2015 White Stork census conducted by the Uzbekistan Society for the Protection of Birds, the total population of the species in Uzbekistan was estimated at approximately 2,500-2,700 individuals ³⁰ . Given that the recorded local population is substantially below this threshold, it is highly unlikely that Criterion 3 would be triggered for the designation of Critical Habitat.
10	Lesser White-fronted Goose	<i>Anser erythropus</i>	Bird	VU	VU	×		×	3	24,000-40,000 individuals	NA	During winter and migration periods, the species primarily inhabits open short-grass habitats within steppe and semi-arid zones, as well as arable farmland, pastures, and meadow ³¹ . It is considered a passage migrant and is regarded as a rare or accidental visitor in Uzbekistan ³² . A review of online databases, including eBird and GBIF, indicates only a few sporadic records from the Bukhara region of Uzbekistan. There are no documented records of the species within the EAAA or the surrounding area, and baseline field surveys have not confirmed its presence. Given its rarity in Uzbekistan and with no known presence within the EAAA, it is highly unlikely that the site supports the species in numbers approaching the Criterion 3 threshold of 1% of the global population.
11	Yellow-eyed Pigeon	<i>Columba eversmanni</i>	Bird	VU	VU	×		×	3	15,000-30,000 individuals	NA	It is a resident species in the region and is regarded as one of the rarest pigeons with a predominantly Central Asian

³⁰ Kashkarov, R., Atakhodjaev, A., & Mitropolskaya, Y. (2017). Turkestan white stork *Ciconia ciconia asiatica* (Aves: Ciconiiformes) in Uzbekistan: Current size and condition of population. International Journal of Zoology Studies, 2(1), 96–101.
<https://www.zoologyjournals.com/assets/archives/2017/vol2issue1/2-1-21-748.pdf>

³¹ <https://www.iucnredlist.org/species/22679886/132300164#habitat-ecology>

³² <https://avibase.bsc-eoc.org/checklist.jsp?region=UZ>

SN	Common Name	Scientific Name	Higher Taxon	IUCN global status	Uzbekistan RDB status	Criterion 1	Criterion 2	Criterion 3	EAAA #	IUCN global population estimate	Determination ¹⁹	Rationale
												distribution. It nests mainly in the valleys of the Syr Darya and Ili Rivers in Kazakhstan³³. Although the species was not recorded during the baseline surveys, the eBird database indicates a few observations from the western region of Uzbekistan. Given the absence of known aggregation or breeding sites within the EAAA, it is unlikely that the species occurs in globally significant concentrations within the landscape.
12	European Turtle-dove	<i>Streptopelia turtur</i>	Bird	VU	VU	×			3	19,300,000-71,400,000 individuals	PBF	The species prefers a wide variety of woodland types, as well as steppe and semi-desert, frequently relying on agricultural land for feeding³⁴. While it was not recorded during baseline surveys, eBird database confirms its presence in the outskirts of Tashkent. However, the species has an extremely wide distribution and a large global population, estimated at between 19 and 71 million individuals. Given that the EAAA represents only a very small fraction of its global range, it is unlikely to support a concentration of individuals large enough that its loss would have any measurable effect on the species' global population status and result in an uplisting of its global IUCN status.
13	Asian Houbara	<i>Chlamydotis macqueenii</i>	Bird	VU	VU	×			3	33,000-67,000 mature individuals	NA	The species is a native resident and native breeder in much of Uzbekistan. It inhabits open, arid and sparsely vegetated steppe and semi-desert (Launay et al. 1997, Osborne et al. 1997, Mian 2003, Yang et al. 2003) and favours scattered shrubby vegetation, typically comprising xerophytic or halophytic plants. Birds wintering in Iran are also known to visit neighbouring farmland where alfalfa and salad rocket is grown (Aghanajafizadeh et al. 2010). eBird database confirms that majority of the records of the species are primarily from central and western Uzbekistan, mainly Kyzylkum desert areas. It shows no records from the project region and the baseline surveys also did not confirm species presence in the landscape. Considering that the EAAA is dominated by modified and anthropogenic habitats and lacks the primary habitats of the species, and additionally, no known records from the area, it is unlikely to support a concentration of individuals large enough that its loss would result in an uplisting of its global IUCN status.
14	Common Pochard	<i>Aythya ferina</i>	Bird	VU		×		×	3	1,140,000-1,180,000 individuals	PBF	The species prefers well-vegetated eutrophic to neutral swamps, marshes, lakes and slow-flowing rivers with areas of open water and abundant emergent fringing vegetation³⁵.

³³ B.T. Berdikulov, A.E. Gavrilov, V.O. Ilina, G. Song, F.M. Lei "Autumn Migration of the Rare Yellow-Eyed Pigeon *Columba eversmanni* from Western Tian Shan (Tanyrtau), Kazakhstan," *Ardea*, 112(1), 21-30, (24 January 2024)

³⁴ <https://www.iucnredlist.org/species/22690419/154373407#habitat-ecology>

³⁵ <https://www.iucnredlist.org/species/22680358/205288455#habitat-ecology>

SN	Common Name	Scientific Name	Higher Taxon	IUCN global status	Uzbekistan RDB status	Criterion 1	Criterion 2	Criterion 3	EAAA #	IUCN global population estimate	Determination ¹⁹	Rationale
												The Tuyabuguz Reservoir IBA, approximately 11 km southeast of the Project site, outside the EAAA, supports this species, which is designated as a trigger species for the IBA. Although no individuals were observed during the baseline surveys within the EAAA, records from the eBird database confirm the species' presence along the Chirchiq River within the EAAA. Notably, large congregations of up to 4,100 individuals have been reported from the Tuyabuguz IBA³⁶. The official estimate by BirdLife International reports that the species' population within the IBA ranges between 250 and 6,000 individuals³⁷. To meet the CH threshold under Criterion 3 (1% population threshold), the EAAA would need to support at least 11,400 individuals. Given that current records are substantially below this threshold, it is unlikely that the species would trigger CH designation.
15	Other Migratory/ Congregatory species	NA	Bird	NA				×	3	NA	NA	The baseline surveys documented relatively large flocks of several widespread and abundant species. Total seasonal observations exceeding 1,000 individuals were recorded for species such as Common Myna, Eurasian Jackdaw, Eurasian Tree Sparrow, Indian Sparrow, Rock Pigeon, and Rosy Starling. It should be noted that these totals may include repeat counts of the same set of individuals using the site at different times within the season. All of these species are classified as Least Concern on the IUCN Red List and have extensive global populations ranging from several hundred thousand to many millions of individuals. In this context, for the site to meet the 1% population threshold criterion, it would need to regularly support exceptionally large numbers relative to global or flyway populations, far exceeding the counts recorded during the surveys. Based on this, none of these species are likely to meet the quantitative threshold for triggering Critical Habitat designation.

³⁶ <https://ebird.org/checklist/S122332343>
³⁷ <https://datazone.birdlife.org/site/factsheet/20681-tuyabuguz-reservoir>

SN	Common Name	Scientific Name	Higher Taxon	IUCN global status	Uzbekistan RDB status	Criterion 1	Criterion 2	Criterion 3	EAAA #	IUCN global population estimate	Determination ¹⁹	Rationale
16	Marbled Polecat	<i>Vormela peregusna</i>	Mammal	VU	VU	×			2	Not Available	NA	The species has an extremely wide distribution across Asia and Europe; however, it is considered rare throughout much of its range³⁸. Its preferred habitats include desert, semi-desert, and steppe ecosystems. The baseline survey did not confirm its presence within the Project area or the surrounding landscape. Majority of the EAAA is dominated by modified habitat. Given that the species is classified as Vulnerable and that reliable population data are unavailable, the EAAA can be compared with its overall geographic range as a proxy. The EAAA represents only a very tiny fraction of the species' total distribution range. Considering this and the absence of records during the baseline surveys, it is unlikely that the EAAA supports a globally significant population of the species, such that the loss of which would be expected to contribute to an uplisting of its global IUCN status.
17	Central Asian Tortoise	<i>Testudo horsfieldii</i>	Reptile	VU	VU	×			2	Not Available	PBF	The species prefers dry steppes, sandy or loamy deserts, rocky hillsides, and semi-deserts. The EAAA is dominated by agriculture and anthropogenic land use and does not represent species' primary habitat. However, two individuals of the species were recorded during baseline survey in old graveyard areas. These individuals are attributable to released captive individuals rather than a naturally occurring population within the Project Area. Thus, EAAA is unlikely to hold globally significant population of the species, such that the loss of which would be expected to contribute to an uplisting of its global IUCN status.
18	Корольков мармараги	<i>Salvia korolkowii</i>	Plant	VU		×			1	9,000 mature individuals	NA	The species localities are concentrated along tributaries of the Chirchik River within the mountain ranges northeast to Tashkent along the Uzbekistan-Kyrgyzstan border³⁹. No known localities fall within the EAAA. The baseline surveys did not record this species within the EAAA. Additionally, the species known to occur between elevation range 850m and 1700m³⁹. The Project site and EAAA lie between 350-350m asl elevation. Considering this, the EAAA is unlikely to hold globally significant concentrations of this species. Thus, it does meet the Criterion 1 threshold to trigger the CH.

³⁸ <https://www.iucnredlist.org/species/29680/45203971#geographic-range>

³⁹ <https://www.iucnredlist.org/species/217557065/217845322#geographic-range>

9.3.3.10 CH Conclusion

In conclusion, the CHA identified a total of seven Priority Biodiversity Features (PBF). None of the assessed species triggered a Critical Habitat determination.

In addition to the species identified as PBFs, other biodiversity receptors such as the Little Egret, Glossy Ibis, 10 mammal species, and 6 herpetofaunal species, habitat features etc. were also screened for their likelihood of qualifying as PBF (i.e. threatened habitats, vulnerable species, significant biodiversity features identified by a broad set of stakeholders or governments, or ecological structure and function needed to maintain the viability of the above). However, no additional species or habitat features were identified as PBFs.

It is to be noted that not all PBF species were confirmed during the baseline surveys. However, based on secondary data and their potential to occur within the EAAA, these species have been classified as PBFs on a precautionary basis.

9.3.3.11 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 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 Project area is primarily characterized by modified habitats dominated by agricultural land, managed fields with limited presence of natural or semi-natural ecosystems. As such, ecosystem services are primarily provisioning and regulating services associated with agroecosystems. Key provisioning services include crop production, fodder, and limited groundwater abstraction for irrigation and domestic use. Regulating services include soil formation and nutrient cycling, localized flood attenuation through infiltration on permeable agricultural soils, and microclimate regulation. Cultural ecosystem services are mainly linked to the rural landscape value and traditional land-use practices. Given the predominance of already altered and intensively managed land, the Project is not expected to result in significant loss of high-value natural ecosystem services; however, conversion of agricultural land to airport infrastructure will lead to a reduction in provisioning services (crop production) and partial reduction in regulating services (soil permeability, carbon storage). However, these impacts are expected to be minimal.

The blockage or removal of canals and water channels within the Project site may have some impacts on the adjacent farmland. Therefore, a Water Management Plan shall be prepared to address any potential impacts and maintain associated ecosystem services.

9.4 Sensitive Receptors

Sensitive receptors that could be potentially affected by project are identified based on conservation status, ecological importance, and proximity to the project footprint and airspace.

Table 9-12 Terrestrial Ecology Sensitive Receptors

Receptor	Sensitivity	Justification
White Stork nesting colonies (~400 individuals within 5 km radius) and six other PBF species	High	Resident, colonial nesting species listed in as NT in Red Data Book of Uzbekistan; significant local population; vulnerable to strike, disturbance, and habitat modification; PBFs are IUCN VU species.
Other UzRDB-listed bird species (Little Egret, Glossy Ibis)	High	Nationally threatened migratory/resident species using the Project airspace and adjacent habitats; vulnerable to collision and disturbance during migration/breeding.
Migratory and resident avifauna (56 species recorded; including flocking species such as Rosy Starling, Barn Swallow, Rock Pigeon)	Medium	Regular use of airspace during spring and autumn; potential for bird-aircraft strike risk; no globally significant concentrations identified; non-threatened species.
Mammals (10 recorded species)	Low	All IUCN Least Concern; ecologically flexible and adapted to modified agricultural habitats.
Reptiles and amphibians (6 species recorded; Central Asian Tortoise – IUCN VU, UzRDB 2(VU); others common)	Medium	Nationally and globally threatened species (tortoise) present in low numbers (likely escaped captives); other species common in canals and fallows; vulnerable to habitat loss and direct mortality.
Vegetation and habitats (predominantly irrigated arable land, fruit gardens, irrigation channels/ditches/woodland belts, old graveyards, abandoned pasture)	Low	Modified anthropogenic habitats with no threatened or endemic plant species confirmed.

9.5 Potential Impacts, Mitigation, and Management

9.5.1 Construction Phase

9.5.1.1 Habitat and Vegetation Loss

Construction activities such as site clearance, earthworks, runway/taxiway construction, building erection, access road development, drainage modifications, etc. will result in direct but localized habitat loss, fragmentation, disturbance, and indirect impacts such as due to noise, dust, light, pollution, etc. on local biodiversity.

The permanent conversion of approximately 13,000 Ha of predominantly irrigated arable land, which is the dominant habitat type in the Project area, and associated linear features (irrigation channels, ditches, boundary strips, and woodland belts) will result in the direct loss of foraging, roosting habitat for common agricultural-adapted species. This includes resident birds as well

as small mammals. Importantly, the irrigated fields and associated channels function as key foraging habitats for White Stork, which was frequently observed feeding across the Project site. The conversion of these habitats to hardstanding and intensively managed airport grassland will reduce local foraging resources and will displace storks to more distant or adjacent fields and wetlands. This may potentially increase flight distances and energetic costs and reinforcing their reliance on remaining habitats outside the Project footprint.

Moreover, 116 native plant species of the total 132 species recorded in the Project area, the clearance will primarily affect ruderal and crop-associated vegetation. No significant natural habitats will be affected, as the entire Project area is predominantly classified as modified anthropogenic habitat with no confirmed threatened or endemic plant species.

For trees and shrubs located within the Project area and not included in the State Forest Fund, a detailed inventory will be undertaken prior to commencement of site clearance to determine their species composition, quantity, and assessed value in accordance with national regulatory requirements. Where technically feasible, identified trees and shrubs will be transplanted following the procedures established by applicable legislation. All tree cutting and transplantation activities will be implemented in coordination with and under the supervision of the relevant territorial divisions of the National Committee on Ecology and Climate Change, and subject to obtaining the necessary permits and approvals as required by law.

Based on the information currently available, significant cumulative impacts are considered unlikely. No other existing or planned developments with the potential to contribute materially to cumulative effects have been identified within the Project's area of influence, apart from the associated facilities assessed as part of this ESIA. While additional development may occur in the surrounding area in the future, details of such projects are not currently available.

9.5.1.2 Direct Mortality

Earthworks, excavation, soil compaction activities along with vehicle movements such as of construction trucks, heavy equipment, etc. on unpaved site roads and access routes present a direct risk of crushing or injury to ground-dwelling reptiles and small mammals. However, no IUCN threatened or nationally protected species of mammals or reptiles was recorded during baseline surveys except the Central Asian Tortoise (IUCN VU, UzRDB 2(VU)). Total two individuals of this species were recorded in old graveyards and are likely escaped or released captives with no preferred natural habitat present within Project area. These individuals are particularly vulnerable to construction impacts if present in remnant patches.

9.5.1.3 Disturbance to Fauna

Noise from heavy machinery (excavators, concrete mixers, etc.), ground vibration, and continuous human presence are likely to cause temporary disturbance, particularly for sensitive colonial and resident species. Other UzRDB-listed species (Little Egret, Glossy Ibis) and breeding residents that utilize the airspace and adjacent fishponds/irrigation channels may also experience elevated stress.

9.5.1.4 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. The access routes and surrounding habitats may provide suitable conditions for invasive species establishment or spread if not properly managed. This impact can be mitigated through appropriate biosecurity and site management measures.

9.5.1.5 Pollution and Runoff Effects on Chirchik River

During the construction, activities such as excavation, material stockpiling, and the operation of heavy equipment may generate sediment and pollutants that could enter nearby irrigation

channels, with the possibility of downstream movement toward the Chirchik River. Accidental spillage of fuels, oils, concrete wash water, or other hazardous materials also present a risk of surface water contamination if appropriate safeguards are not in place. Elevated turbidity and sediment deposition could temporarily disturb aquatic habitats, potentially affecting fish and other faunal species associated with these habitats. However, considering that the Project has minimal direct interaction with the river, any impacts on aquatic ecosystems are anticipated to be localized, short in duration, and minor in magnitude.

Table 9-13 Impacts Assessment Summary – Biodiversity during Construction

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
Habitat and vegetation loss	Moderate	Floral species, faunal species associated with those habitats	Medium	Moderate	Minor
Direct mortality	Minor	Reptiles and small mammals	High	Minor	Negligible
Disturbance to fauna	Moderate	Breeding birds (White Storks) and mammals and reptiles	High	Moderate	Minor
Invasive species spread	Minor	Flora	Low	Minor	Negligible
Pollution and Runoff Effects on Chirchik River	Minor	Faunal and floral species associated with aquatic habitats	High	Minor	Negligible
Proposed Mitigation Measures <u>Mitigation measures for habitat and vegetation loss</u> - A detailed tree enumeration and inspection will be undertaken as a regulatory requirement and as directed by the local authorities, the transplanting or compensatory plantation exercise will be carried out. - Mature poplar trees within the Project footprint will be identified, if any, during the detailed tree enumeration. Where such trees are proposed for removal, they will be inspected for evidence of established and ecologically meaningful use by nationally Vulnerable insect species including Solomon's Buprestid and Tugay Underwing Moth, such as breeding activity or other evidence indicating that the trees function as habitat for the species. Where confirmed habitat use is identified, avoidance or retention will be considered where practicable, or other appropriate measures (such as transplanting or compensatory plantation) will be agreed with the local authority. - 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.					

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
- Ensure that construction material such as fill material, quarried rock, etc. is not sourced from high biodiversity value areas or protected areas, and that the appropriate licences are in place for their extraction, if applicable. <u>Mitigations for direct mortality</u> - Pre-clearance surveys will be conducted by qualified ecologists prior to any ground disturbance in areas of suitable habitat (old graveyards, fallow patches, canal banks) to identify Central Asian Tortoise individuals or burrows; any encountered individuals shall be safely captured, transported, and released to suitable habitat outside the Project footprint. - A Chance Find Procedure shall be implemented for all fauna encounters during excavation or grading; work shall stop immediately in the vicinity, and the site E&S Manager shall be notified for assessment and relocation/rescue. - All construction vehicles shall maintain a maximum speed limit of 20 km/h on site roads and access routes. - Daily fauna mortality sweeps shall be conducted along active work zones; any incidents shall be recorded, photographed, and reported within 24 hours. - No open trenches or excavations, if any, shall be left uncovered overnight; temporary fencing or covers shall be used to prevent entrapment of small mammals and reptiles <i>Note:</i> As any significant potential impacts have not been identified on the identified PBFs, the NNL is considered achievable through embedded and operational mitigation measure. <u>Mitigations for disturbance to fauna</u> - If feasible, construction activities with high noise/vibration levels, if required, shall be scheduled outside the core White Stork breeding season (April–July). - Pre-clearance checks must be carried out to identify any active nests of White Storks within the Project footprint. In case any active nests are found (including isolated nests on poles/ transmission line towers, etc.), a 100-200m no-disturbance buffer zone shall be established around each nest until fledging is complete (typically late July–August); Ongoing periodic monitoring of White Stork colonies/nests in the immediate vicinity of the Project site shall be undertaken to track any major impacts on nesting activities or success and any displacement. - Outside the breeding season and subject to regulatory approval, the existing white stork nest within the airport footprint will be carefully removed under specialist supervision, with at least one alternative nesting platform constructed at an appropriate, safe location to maintain local nesting opportunities, aimed at achieving NNL. - 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. - Artificial lighting shall be designed and directed to minimise light spill beyond camp areas and Project boundaries. - Hunting, trapping, or intentional harm to wildlife by Project personnel shall be strictly prohibited.					

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
- Any fauna mortality or injury observed on site, including incidents involving construction vehicles, shall be recorded and formally reported by the site 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. <u>Mitigations for invasive species spread</u> - 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. <u>Mitigations for pollution and runoff effects on Chirchik River</u> - Install silt fences, sediment traps, etc. around all excavation areas, stockpiles, and drainage outfalls to prevent sediment-laden runoff entering irrigation channels. - Prohibit stockpiling of excavated material or hazardous substances (fuels, oils, chemicals) within 50 m of active irrigation channels or drainage ditches. - No direct discharge of construction wastewater (e.g., concrete washout, vehicle/machine washing) to channels; provide designated wash-down areas.					

9.5.2 Operation Phase

9.5.2.1 Bird-Aircraft Strike Risk (Wildlife hazards)

The faunal baseline confirms that the Project airspace is used by several large and/or flocking birds such as White Stork, pigeons, starlings, etc. foraging, moving between nearby nesting colonies, irrigated fields, irrigation channels, etc. which coincides with the critical low-altitude envelope for aircraft during take-off, climb, approach and landing. Analysis of the U.S. National Wildlife Strike Database (1990-2004; Dolbeer 2006)⁴⁰ indicates that approximately 74% of all reported bird strikes and 66% of strikes causing substantial damage occur at or below 500 ft above ground level (AGL), i.e. within the airport environment out to about 10,000 ft horizontally from the runway thresholds where aircraft are typically below 500 ft AGL. For the Project, this implies that the majority of bird-aircraft collisions may potentially occur in the low-altitude corridor where aircraft movements intersect with the local flight heights of foraging birds and White Storks, and that strike-prevention measures must focus on reducing bird use of habitats within the airport perimeter and approach/ departure zone, particularly below 500 ft AGL.

Baseline surveys confirmed that the airspace is intensively utilised by around 56 recorded bird species. Vantage point surveys documented peak spring movements of White Stork with total over 800 observations at each vantage point. Additionally, flocking species include Common Myna (1,149 observations at VP1), Rosy Starling (1,000 at VP1 during breeding), Barn Swallow (1,067 at VP2), Rock Pigeon (9,527 at VP1), Eurasian Jackdaw (3,000 at VP1), and waterfowl such as Black-winged Stilt (513-522) and Mallard (63-44) foraging in fish ponds and irrigation channels in the landscape. Although the total number of observations does not reflect the actual abundance of those species in the landscape, it clearly indicates a high level of airspace use.

Bird-aircraft strike risk arises from spatial and temporal overlap between aircraft operations within the low-altitude operational corridor (take-off, climb-out, approach, landing) and regular bird movements, including:

- Daily commuting flights between nesting colonies and feeding areas;
- Soaring and thermal use by large-bodied species;
- Flocking movements of pigeons, starlings, and corvids;
- Attraction to irrigated fields, standing water in the surrounding landscape.

Large-bodied species (e.g., White Stork) pose higher severity risk due to their mass and potential for engine ingestion or windscreen impact, while flocking species (e.g., pigeons, starlings, jackdaws) increase the probability of multiple-bird strike events. Considering the documented intensity of bird activity within the Project airspace, the presence of medium- to large-bodied and flocking species, and the anticipated predominantly local to regional impacts on avian species, the magnitude of impact is assessed as Moderate, while the overall impact significance pre-mitigation is considered Major.

9.5.2.2 Chronic Disturbance due to Noise and Light

During the operational phase, aircraft movements, ground handling activities, service vehicles, and auxiliary equipment will generate both continuous background noise and intermittent peak noise events. Elevated noise levels may disturb wildlife in areas surrounding the airport, potentially resulting in localized displacement, altered foraging behaviour, reduced habitat utilization, or disturbance to nesting activities, particularly during sensitive breeding periods.

⁴⁰ Dolbeer, Richard A., "Height Distribution of Birds Recorded by Collisions with Civil Aircraft" (2006). USDA National Wildlife Research Center - Staff Publications. 500.

Night-time lighting from runways, taxiways, aprons, and terminal facilities may further influence nocturnal species by modifying movement patterns and behavioural responses. While the surrounding landscape is predominantly modified and supports disturbance-tolerant species, localized effects cannot be ruled out, particularly in relation to nearby breeding bird colonies. Overall, operational noise and lighting impacts on biodiversity are expected to be limited and spatially confined.

Table 9-14 Impacts Assessment Summary – Biodiversity during Operation

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
Bird-aircraft strike	Moderate	Large-bodied birds including breeding White Storks, medium sized flocking birds	High	Major	Minor
Chronic disturbance due to noise and light	Moderate	Breeding birds and mammals	High	Moderate	Minor
Proposed Mitigation Measures <u>Mitigation measures bird-aircraft strike risk</u> - Develop and implement a site-specific Wildlife Hazard Management Plan (WHMP) in accordance with International Civil Aviation Organization (ICAO) Annex 14 and guidance in ICAO Doc 9137 Part 3 and ICAO Doc 9981. The WHMP shall include a formal wildlife risk assessment (species identification, strike history, seasonal patterns, likelihood–severity ranking), defined roles and responsibilities, training requirements, standard operating procedures for wildlife control, reporting protocols, performance indicators, and annual review within the airport Safety Management System (SMS). - Biodiversity monitoring requirements and commitments shall be incorporated into the BMEP and WHMP, including monitoring duration and seasonal survey requirements for the identified PBF species, targeted mitigation measures, and the operational wildlife hazard management measures. - Established biologically based fatality thresholds that are protective of populations of bird species potentially affected by the airport aviation activities; more precise thresholds will be defined as collision data becomes available during operation activities. - Implement habitat management measures to reduce wildlife attractants within the airport and immediate surroundings, including maintaining runway and taxiway grass height at approximately 15-20 cm, eliminating standing water through effective drainage and maintenance, preventing the establishment of fruit-bearing trees, dense shrubs, or ornamental water features, using covered, wildlife-proof waste bins, and ensuring prompt waste collection and disposal. - Deploy active wildlife dispersal measures by trained personnel during daylight hours and peak bird activity periods (e.g., dawn/dusk, migration seasons), using appropriate and rotating techniques such as pyrotechnics, distress calls, lasers, falconry, or other approved deterrent systems to prevent habituation. - Maintain a comprehensive bird strike and wildlife incident log recording date, time, species (confirmed where possible), location, aircraft type, phase of flight, damage level, and weather conditions, analyse data quarterly to identify trends and high-risk periods, and submit required reports to national authorities. - In addition to recording and analysing bird strike incidents, implement a monitoring programme for the identified White Stork nesting colonies in the vicinity of the project area. Monitoring shall be focused on the breeding season and carried out through periodic visits and observations by experts for three years after construction to assess any impacts of the airport operations.					

Potential Impacts	Magnitude of Impact	Receptor	Sensitivity	Potential Impact Significance	Residual Impacts
- Define clear adaptive management trigger thresholds such as repeated strike events involving a specific species, breeding failure, nest abandonment, marked decline in colony size, etc. If significant impacts are identified, develop and implement corrective measures in consultation with qualified ornithologists and relevant authorities. Measures may include targeted habitat modification, provision of alternative nesting platforms in safe locations away from flight paths, or other evidence-based interventions that balance aviation safety with species conservation. - Review the effectiveness of all mitigation measures annually, or following significant wildlife incidents, and update the WHMP accordingly to ensure continuous improvement and alignment with evolving ICAO guidance and best international practice. <u>Mitigations for chronic disturbance due to noise and light</u> - Implement ICAO-recommended noise abatement operational procedures. - Design and operate airport lighting limiting light spill, through the use of shielded, downward-directed fixtures and lighting intensity set to the minimum necessary for aviation safety. - Implement monitoring and adaptive management, including periodic review of aircraft noise contours and wildlife observations, to verify that ICAO-aligned procedures are effectively minimizing disturbance to nearby habitats and breeding bird colonies.					

9.6 Monitoring

The EPC Contractor and the Project Company will implement biodiversity monitoring during the construction, commissioning, and operational phases of the Project in accordance with Biodiversity Management and Monitoring Plan and the Wildlife Hazard Management Plan (WHMP).

Monitoring will be implemented as part of an adaptive management framework, whereby results are regularly reviewed and mitigation measures adjusted where necessary. Monitoring outcomes will be documented through periodic reporting and used to inform corrective actions. The detailed monitoring methodology shall be defined in the Project's BMEP and, where relevant, integrated into the WHMP.

9.7 Wildlife Hazard Management Plan

The Project Company shall develop, implement and maintain a Wildlife Hazard Management Plan (WHMP) prior to commencement of airport operations. The WHMP will provide the operational framework for identifying, assessing and managing wildlife-related risks to both aviation safety and biodiversity, and will be developed in accordance with applicable national requirements and relevant ICAO guidance.

The WHMP will include: (i) identification and mapping of wildlife attractants and higher-risk areas within and around the airport; (ii) species-specific risk assessment based on baseline surveys, seasonal movements and subsequent monitoring; (iii) procedures for habitat and attractant management, including management of grassland, drainage features, waste and standing water; (iv) wildlife deterrence and, where necessary, controlled intervention procedures; (v) systematic recording and investigation of wildlife strikes and mortality; and (vi) defined roles, responsibilities, reporting arrangements and emergency response procedures.

The WHMP will be finalized before commissioning/commencement of flight operations, with responsibility for implementation assigned to the Project Company/airport operator and suitably qualified wildlife-management personnel. The plan will be informed by the ESIA biodiversity baseline and updated using operational monitoring and strike data. Its effectiveness will be reviewed periodically, and mitigation measures will be adapted based on ongoing monitoring, repeated strike events, mortality of species of conservation concern, or other emerging risks.

Table 9-15 Monitoring Plan for Terrestrial Ecology

Monitoring	Parameters	Frequency & Duration	Location	Relevant Management Plan
Construction Phase				
Vegetation Clearance	Area to be cleared, presence of protected species, invasive species occurrence	Prior to clearance and periodic inspections during active earthworks	Project footprint, laydown areas, access roads	Biodiversity Management and Monitoring Plan
Fauna Disturbance	Presence of breeding activity, nesting birds, evidence of displacement	Weekly inspections during peak construction overlapping with breeding season	Construction site and adjacent areas	Biodiversity Management and Monitoring Plan
Wildlife Mortality	Incidental mortality (vehicle strikes, trench entrapment)	Ongoing recording throughout construction	Access roads, excavation areas, etc.	Biodiversity Management and Monitoring Plan
Operation Phase (WHMP + Adaptive Management)				
Wildlife-Aircraft Interaction (in line ICAO guidelines)	Species observed, flock size, strike records	Continuous recording of strike data; quarterly ecological review	Airfield, approach/departure corridors	Wildlife Hazard Management Plan (WHMP)
Breeding Bird Monitoring	Presence and status of nesting colonies in surrounding landscape	Seasonal surveys (breeding period)	Identified nesting sites within zone of influence (for three years after construction)	Wildlife Hazard Management Plan (WHMP)