Almaty International Airport

Environmental and Social Impact Assessment Report - Chapter 14

September 2025

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Acronyms and abbreviations

Abbreviation / Acronym	**Definition**
ALA	Almaty International Airport
EBRD	European Bank for Reconstruction and Development
EHS	Environmental, Health and Safety
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
IFC	International Finance Corporation

14 Water resources

14.1 Introduction

14.1.1 This chapter of the Environmental and Social Impact Assessment (ESIA) reports the findings of an assessment of the likely significant environmental effects on the water environment as a result of the Project. The following water environment receptors and resources are considered in the assessment:

- Surface water including the localised impacts to the water quality (routine runoff and spillage) and hydromorphology
- Existing water resources receptors (abstractions and discharges)
- Groundwater – including water quality (routine runoff and spillage) and groundwater levels and flows
- Flood risk – including to people, property and infrastructure that could be at risk of flooding

14.1.2 An assessment of likely significant effects has been undertaken for each of the sensitive receptors identified in the study area. Where necessary, commitments to mitigation measures have been made to manage any impacts on receptors.

14.2 Methodology

14.2.1 This section of the ESIA chapter presents the methodology applied to the assessment of impacts. The assessment of potential water environment effects has been carried out in accordance with the methodology outlined in **ESIA Chapter 4: ESIA scope and methodology**, which includes sensitivity of the receptor, the magnitude of the potential impact, and the significance of effects.

Applicable guidelines and standards

14.2.2 In addition to the applicable overarching policy and legislation for the Project that is presented in **ESIA Chapter 3: Policy, legal and institutional framework**, the following section presents further policy and legislation which specifically relates to water quality, hydrology and hydrogeology for the Project.

International requirements

14.2.3 International guidelines relating to water environment are applicable to Kazakhstan. These are:

- European Bank for Reconstruction and Development (EBRD) Sub Sector Environmental and Social Guideline – Air Transportation, 2014[1]
- EBRD Environmental and Social Policy and Performance Requirements, 2024[2]
- International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability, 2012[3]
- IFC Environmental, Health and Safety (EHS) Guidelines: General Guidelines, 2007[4]

[1] EBRD (2014). Sub Sector Environmental and Social Guideline – Air Transportation
[2] EBRD (2024). Environmental and Social Policy and Performance Requirements
[3] IFC (2012). Performance Standards on Environmental and Social Sustainability
[4] IFC (2007). Environmental, Health and Safety Guidelines

- IFC EHS Guidelines: Airports, 2007[5]
- IFC EHS Guidelines: Construction and Decommissioning, 2007[6]

Area of Influence for water resources

14.2.4 The Area of Influence for road drainage and the water environment covers a 1km radius around the Project. This relates to both surface water and groundwater. This study area has been determined based on professional judgement as pollutants are expected to disperse and have been diluted beyond a 1km radius. This study area may be extended where there are sensitive features (protected areas) that may be affected by contaminants transported downstream of the Project via surface waterbodies or ground waterbodies. However, based on the Project components, there are no sensitive receptors beyond the 1km study area that could be impacted. Therefore the study area was not extended.

Data collection

14.2.5 A desk-based review of available information from national and international sources was undertaken. This included:

- Country Profile – Kazakhstan (Food and Agriculture Organisation of the United Nations, 2012)[7]
- Municipal Water Services, Kazakhstan. Background Analysis for Financing Strategy (DEPA, 2001)[8]

14.2.6 Previous relevant reports which have been made available and reviewed for the purposes of this assessment include:

- Almaty International Airport ESIA Scoping Report (Mott MacDonald, 2022)[9]
- Environmental & Social Review and Audit 8th Site Visit Report (Almaty International Airport, 2025)[10]
- Spill response procedure and emergency response plan
- Preliminary report on analysis of groundwater[11]

Limitations and assumptions

14.2.7 This chapter has been prepared using publicly available surface and groundwater information for desk-based assessment. Third party surveys have been undertaken to support and validate (where applicable) this information. Where this has not been possible, it is assumed the information provided from public sources is correct and reflects baseline conditions.

14.2.8 In the absence of detailed mapping or formal designations of the underlying aquifers, the assessment is subject to a degree of uncertainty.

14.2.9 It has been assumed that the increase in wastewater generated will be within the capacity of the existing treatment works.

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[5] IFC (2007). EHS Guidelines: Airports

[6] IFC (2007). EHS Guidelines: Construction and Decommissioning

[7] United Nations (2012). Country Profile – Kazahkstan. Available at: fao.org/aquastat/en/countries-and-basins/country-profiles/country/KAZ/index.html. Accessed 07/07/2025

[8] DEPA (2001). Municipal Water Services, Kazakhstan. Background Analysis for Financing Strategy

[9] Mott MacDonald (2022). Almaty International Airport ESIA Scoping Report

[10] ALA (2025). Environmental & Social Review and Audit 8th Site Visit Report

[11] Preliminary report on analysis of groundwater (2025)

14.2.10 For the purpose of this assessment, it has been assumed that the increase in clean water demand will be within the current available water supply and no abstraction are required. If abstractions are required, then this ESIA chapter will need to be re-assessed.

14.2.11 To calculate the predicted water consumption, it is assumed the predicted percentage increase in passengers is equal to the percentage increase in water consumption. These uplifts have been applied to the 2024 water consumption data.

14.2.12 The following information was not available for this assessment:

- Information on the existing permitting for discharge from the airport.
- A completed flood risk assessment, including data on current and historical flood risk to the airport and surrounding area. The assessment here provided is based on professional judgement in the absence of this data.

14.2.13 This may affect the validity of the baseline data and consequently impacts may be under or over estimated.

14.3 Baseline

Current baseline

Water resources

14.3.1 According to information provided by Almaty International Airport (ALA), water supply to buildings within the site is sourced from the municipal supply. This includes both hot and cold-water supplies, with hot water distributed from central locations within the municipality. Consumption figures for 2024 are shown in Table 14.1.

Table 14.1: ALA water consumption (2024)

Supply type	Volume (m^3)
Cold water	367,149.71
Sewage	391,954.97
Total	**759,104.68**

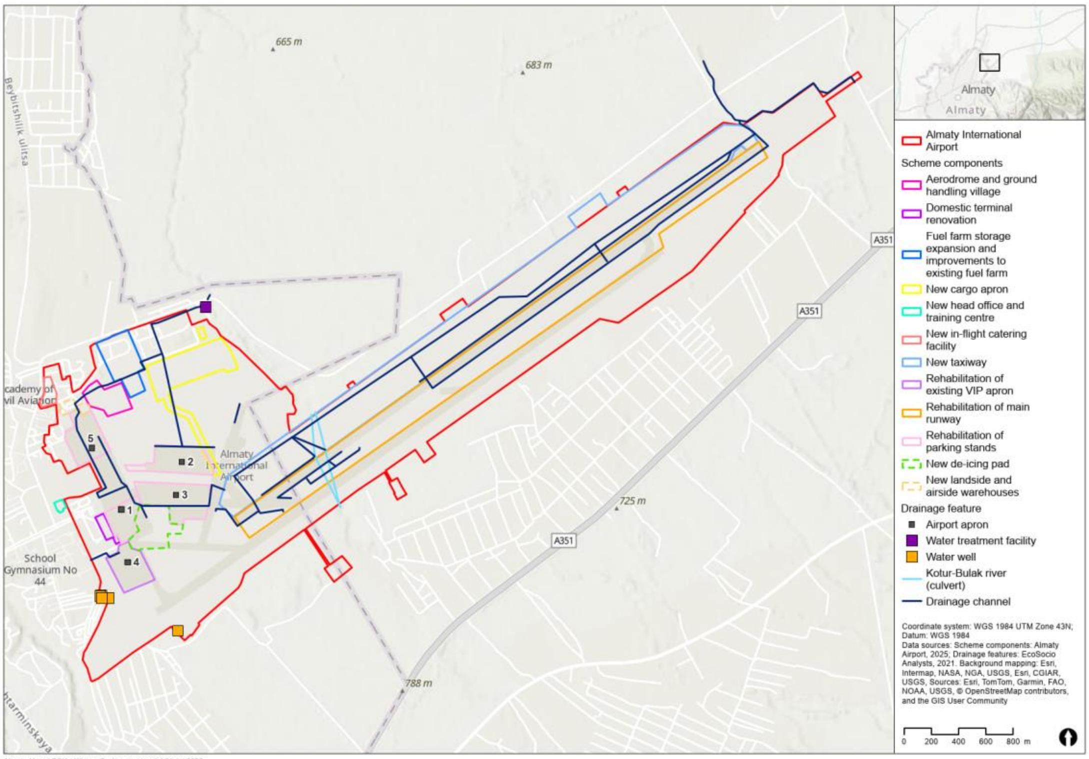
Wastewater and sludge

14.3.2 All wastewater produced at the airport, including foul water from airport buildings and blue water from aircraft, is discharged to sewer for treatment at the municipal wastewater treatment facility. Sludge produced from the cleaning of oil tanks at the fuel farm is retained in underground storage tanks which are emptied by a contractor who treats the waste offsite. There is no information on the structural condition of the tanks as they are not pressure tested. Secondary containment is not in place, and the tanks are located outside of the bunded area of the fuel farm.

Surface water – hydrology

14.3.3 The development falls within the Balkhash-Alakol River basin which covers an area of 413,000km^2 and is the second largest basin in Kazakhstan. The Malaya Almatinka River is situated to the west of the site, approximately 50m from the operational boundary of the airport at its closest point, and approximately 20m lower than the airport elevation. The Kotur-Bulak River flows northwards through a culvert beneath both runways approximately 1.8km east of the site of the new international terminal building, see Figure 14.1.

Figure 14.1: Surface water features within the airport



Almaty Airport ESIA | Water - Drainage network | 21 Jul 2025

14.3.4 A large proportion of the site is covered with hard surfacing associated with the two runways, apron areas, two terminal buildings, and a range of operational and maintenance buildings and infrastructure, and associated hardstanding. It is assumed that all hard surfaces within the site are formed from impermeable materials.

14.3.5 Surface runoff within the site is managed through a network of covered drainage channels, which are lined with concrete and asbestos (see **ESIA Chapter 9: Geology and soils**), the layout of the channels is shown in Figure 14.1. The majority of the site is drained by channels which flow into the airport water treatment facility and the water is reused for internal purposes such as dust suppression and operational needs. It is anticipated that the discharge will eventually enter into the Kotur-Bulak river, as shown in Figure 14.1. However, the runway drainage channels drain to a sump and discharge into a drainage ditch outside of the airport boundary which flows north towards Almerek without passing through the onsite water treatment facility. Additionally, Apron 4, shown in Figure 14.1 drains to the west into the municipal drainage system. The surface water drainage channels are noted to be in poor condition.

14.3.6 Additional drainage from the apron areas within the airport site occurs via surface water runoff, which flows off the edge of the apron onto adjacent grassed areas, where it subsequently infiltrates into the ground through soakaway.

Surface water – water quality

14.3.7 Contaminants may be present in surface water runoff from accidental spillages and activities at the airport, including ground handling vehicles, aircraft refuelling and combustion of aviation fuel. Contaminants sourced from these operations include hydrocarbon-based oil and lubricants, heavy metals, suspended solids and organic compounds. Further information on baseline surface water quality monitoring is provided in the ALA Environment Operating Reports for 2023 and 2024 (received July 2025).

Groundwater

14.3.8 The site is located in the foothill plain of Zailiysky Alatau, the Northern Tien Shan geomorphological region of Central Asia. The Project area is expected to be underlain by a cover of made ground as part of the existing airport apron and construction materials associated with the existing buildings. Some small areas of soft landscaping are also present, which include some limited amounts of topsoil.

14.3.9 The underlying geology is reported by Environmental and Social Due Diligence report[12] for the site. The report states the underlying geology to comprise Quaternary age alluvial deposits which variably comprise loams, sandy loams, quartz-feldspar sands of various sizes and pebble (gravelly) soils.

14.3.10 The underlying soils are likely to contain useable groundwater resources (aquifers).

14.3.11 There are groundwater wells on site which have been used for firefighting operations in the past. Currently no abstraction from these groundwater sources takes place, and it is understood that there is no permit in place for groundwater abstraction from the site.

14.3.12 The groundwater levels near the fuel farm range from 1.1m to 3.4m below ground level.

14.3.13 It is understood that abstraction of groundwater by private companies takes place within the region, however, with water sourced from a confined aquifer at a depth of approximately 220m. The location of this abstraction is unknown. This was reported in the 2022 ESIA.

Future baseline

14.3.14 For precipitation, projections indicate that summers will become drier in future, and winters wetter, as time progresses. In addition, the frequency of extreme weather events including intense precipitation events, and also drought events, will increase. It is possible that increases in intensity of rainfall during storm events may lead to an increase in flood risk by overwhelming the capacity of the existing surface drainage network and onsite water treatment plant, should no expansion be carried out. At present, there is no mechanism for controlled overflow should the capacity of the facility be reached. The tanks within the plant would be overtopped with uncontrolled flow of untreated water flowing north east towards and across the road.

14.3.15 Additionally, it is likely that the warming climate will impact the glacially fed Malaya Almatinka River. Following a period of increased glacial melt rates and higher flows due to temperature increases, flow rates are likely to decline due to a reduction in the availability of glacial ice at the source. Therefore, the discharge of treated or untreated surface water and wastewater is likely to be diluted to a lesser degree than at present, thus increasing concentration of contaminants within the watercourse which could negatively impact downstream ecosystems and users.

14.3.16 Further information can be found in **ESIA Chapter 7: Climate resilience**.

14.3.17 Using the total passenger numbers (2025) and water consumption values provided (2024) to estimate water use per passenger, the estimated water use demand is expected to increase by 122% by 2050 based on forecasted passenger numbers.

14.4 Potential impacts

14.4.1 The main potential construction impacts relating to the water environment are:

- Increased pollution from construction traffic and activities, hydrocarbons and other chemicals from accidental spillages for both surface water and groundwater receptors.

[12] Waterman (2020). Almaty Airport Environmental and Social Due Diligence

- Dust emissions and deposition from land clearing, road works, extraction of material from quarries/borrow pits, material storage, loading/unloading/transportation of materials, wind blowing of stockpiles, etc., which impact deposits into the watercourses.
- Piling activities during construction may create vertical pathways through soil layers, increasing the risk of contaminated surface water or runoff infiltrating into underlying groundwater resources.
- Water demand for construction phase: workers, dust control by water spraying, other construction compounds.
- Increase in surface water runoff due to altered drainage through excavation.

14.4.2 The main potential operational impacts relating to the water environment are:

- De-icing fluid entering the watercourse and contaminating the surrounding environment
- Increase in surface water runoff due to additional paved surfaces.
- Potential for pollution pathways, allowing infiltration of contaminated water or runoff.
- Increase in pollution from airplanes and support vehicles (hydrocarbons and other chemicals) from accidental spillages.
- Rising passenger numbers over the Project's lifetime will increase consumption of drinking water, which could cause demand to exceed available water supply.

14.5 Assessment of effects

Construction phase effects

Site surface drainage and flooding

14.5.1 There is likely to be an increase in temporary hardstanding and structures on site throughout the construction phase which may impact the current drainage pattern. Additionally, excavations required for the construction of the Project, installation of associated infrastructure, and laying of sub-surface services may adversely affect site drainage.

14.5.2 There is the potential for an increase in flood risk within the Project extent and the surrounding areas due to the potential for construction activities, which may temporarily alter the flow paths of the surface water or increase the amount of surface water runoff in localised areas. The sensitivity of the drainage ditch and Kotur-Bulak river are **medium**, and the magnitude of impact is **low**, which would result in a **minor adverse (non-significant) effect**.

Surface water quality

14.5.3 During the construction phase of the Project, it is likely that there will be an increase in traffic at the site due to the transport of materials and movement of construction plant. This will increase the risk of contamination of surface water by accidental spills, hydrocarbon-based oils and lubricants, heavy metals, suspended solids, and organic compounds. The sensitivity of the drainage ditch and Kotur-Bulak river are **medium**, and the magnitude of impact is **low**, which would result in a **minor adverse (non-significant) effect**.

14.5.4 As part of the construction phase, it is expected that significant amounts of dust will be created and re-settled. This process creates a substantial amount of material that will be mobilised through surface runoff and deposited in the drainage channels and surface water courses at points of particularly low flow, such as at culverts and reaches of thick vegetation. The siltation of the channels can cause flooding problems and reduce the volume of the drainage channels for transporting the resulting flow. The use of water as a dust suppression mechanism may further increase the sediment load entering the drainage channels and increase pressure on local resources. The sensitivity of the drainage ditch and Kotur-Bulak river are **medium**, and the magnitude of impact is **low**, which would result in a **minor adverse (non-significant) effect**.

Groundwater

14.5.5 During the construction phase of the Project, it is likely that piling (either temporary and/or permanent) will be required. Disturbance of the ground from piling could lead to disruption of natural groundwater flow paths by enabling water to move more easily between strata or by obstructing existing pathways. Shallow groundwaters are anticipated to be present underlying the Project. Ground and earthworks including compaction from heavy machinery, increased impermeable areas piling and excavations may also cause disruption to the shallow groundwater flow regime and recharge efficiency. The sensitivity of the groundwater is **medium**, and the magnitude of impact is **low**, which would result in a **minor adverse (non-significant) effect**.

Water resources

14.5.6 Water usage during the construction phase will include supply for on-site personnel, dust suppression through water spraying, and operational needs within construction compounds and associated facilities. This will increase strain on the existing water supply infrastructure, which may not have capacity to meet future water demands. Information provided indicates the increased demand will be within the current available water supply, in addition, treated water will be reused on site for internal purposes such as dust suppression and construction needs, therefore there will be a negligible impact. The sensitivity of the drainage ditch and Kotur-Bulak river are **medium**, and the magnitude of impact is **negligible**, which would result in a **negligible (not significant) effect.**

Operational phase effects

Water quality

14.5.7 An increase in the number of aircraft and support vehicles is expected to result in higher levels of pollution, particularly through routine surface runoff. This runoff, which may contain contaminants such as hydrocarbons and heavy metals, and will enter the nearby watercourses. In addition, there is a risk of the de-icing fluid entering the watercourse and contaminating the surrounding environment. Whilst the stormwater drainage pipe will collect stormwater runoff from taxiway TXY-B, there is still a risk of spillage of airplane fuel and de-icer fluids. These discharges could lead to the long-term degradation of surface water quality. The sensitivity of the drainage ditch and Kotur-Bulak river are **medium**, and the magnitude of impact is **moderate**, which would result in a **moderate adverse (significant) effect**.

14.5.8 In addition, the shallow groundwater levels indicate a high degree of vulnerability, as the limited depth between the surface and the water table offers minimal natural protection against surface-derived contaminants. This increases the potential for pollutants to infiltrate and impact groundwater quality. Further detail on the composition of de-icing fluids, fuel and oils can be found in the Preliminary Report on the results of analysis of soil and groundwater samples. The sensitivity of the groundwater is **medium**, and the magnitude of impact is **moderate**, which would result in a **moderate adverse (significant) effect.**

Drainage

14.5.9 The existing main drainage network does not provide sufficient capacity to accommodate for the increase in stormwater discharge capacity. In addition, new infrastructure such as the de-icing pad, cargo apron and warehouses will increase stormwater runoff.

14.5.10 The increase in impermeable area may alter flow dynamics and potentially affect both the rate and direction of runoff into the drainage channel and rivers. As the drainage channels are culverted, the main flood risk will be surface water runoff. As the baseline flood risk is currently unknown and no hydraulic modelling has been undertaken to understand the impacts post Project, the impacts cannot be quantified. However, the percentage increase is expected to be <10% from the baseline, it is assumed that these changes will be minor. The receiving discharge quantities in the existing apron drainage network will decrease due to the construction of this new main apron drainage line.

14.5.11 The sensitivity of the airport is **medium**, and the magnitude of impact is **low**, which would result in a **minor adverse (non-significant) effect**.

Water resources

14.5.12 Rising passenger numbers over the Project's lifetime are expected to increase the demand for drinking water. As the volume of passengers grows, so too will the need for potable water to support daily operations, sanitation, and passenger comfort. This growing demand will increase strain on the existing water supply infrastructure, which may not have capacity to meet future water demands. The estimated water use demand is expected to increase by 122% by 2050 based on forecasted passenger numbers. Information provided shows the increased demand will be within the current available water supply, therefore will be a negligible impact. The sensitivity of the drainage ditch and Kotur-Bulak river are **medium**, and the magnitude of impact is **negligible**, which would result in a **negligible (not significant) effect**.

14.5.13 Rising passenger numbers are expected to result in increased on-site wastewater production. This includes both domestic wastewater from terminal facilities and operational wastewater from cleaning, catering, and other support services. The volume of treated effluent discharged into the receiving watercourse will therefore increase with increased passenger numbers. It is anticipated the effluent will undergo treatment prior to discharge. The sensitivity of the drainage ditch and Kotur-Bulak river are **medium**, and the magnitude of impact is **negligible**, which would result in a **negligible (not significant) effect**.

14.6 Mitigation

14.6.1 This section presents mitigation measures to manage potential water feature impacts during construction and operation. The mitigation measures have been identified based on the potential impacts identified above.

Construction phase

14.6.2 The assessment has shown that significant effects on water pollution could occur to surface waters and groundwater from a range of sources linked to the construction phase of the Project. This section describes specific mitigation measures that will be implemented to prevent and minimise these construction impacts. Preventative measures such as best practice site management and effective site planning/layout will be implemented to minimise the risk of any pollution incidents finding their way to the receptors. A range of remedial or suppressive methods will then also be applied to control these potential adverse activities. The following measures will be taken to reduce the risk of surface and groundwater contamination:

- Accidental spill prevention through implementing to Spill Response Plan
- Compliance with rules of material storage and use, waste storage and its timely removal.
- Use of the existing roads for material delivery
- Work performed strictly within the construction site
- Strict prohibition of vehicle washing outside of the specially equipped places.

14.6.3 The following dust suppression methods will be undertaken to reduce the amount of dust created:

- Minimising dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment
- Minimising dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers
- Implementing dust suppression techniques on unpaved roads, such as applying water or non-toxic chemicals to minimise dust from vehicle movements
- No burning of waste materials shall be allowed
- Planning land clearing, removal of topsoil and excess materials, location of haul roads, tips and stockpiles with due consideration to meteorological factors (e.g. precipitation, temperature, wind direction, and speed) and location of sensitive receptors
- Designing, installing, and applying a simple, linear layout for materials-handling operations to reduce the need for multiple transfer points
- Compacting and periodically grading and maintaining roads
- Vegetating exposed surfaces of stockpiled materials.

14.6.4 Additionally, a water quality monitoring regime of both surface water and groundwater will be implemented during the construction phase and continued during the operational lifespan of the Project. Water samples will be obtained from the following locations:

- Wastewater treatment facility storage tanks, prior to reuse
- Runway drainage sediment trap
- Drainage ditch which the runway drainage discharges into (upstream and downstream of the point of discharge)
- Kotur-Bulak River (upstream and downstream of the culvert).

14.6.5 The above-named water sampling areas should be used by the airport for their ongoing monitoring (as described further in the Environmental Social Management Plan). Furthermore, as defined by the previous Environmental and Social Action Plan (ESAP) for the Project, the following management plans will be developed that are of relevance to this chapter:

- Stormwater Management Plan
- Spill Response Plan

14.6.6 The receiving discharge quantities in the existing apron drainage network will decrease due to the construction of this new main apron drainage line; in addition to the VIP and de-icing apron drainage networks, the existing cargo apron will be connected to this new drainage line as well. This will prevent the new drainage network intersecting the existing drainage line that connects the cargo apron to the (pre-treatment) storage facility.

Operational phase

14.6.7 Preventative measures such as best practice site management and effective site planning/layout will be implemented to minimise the risk of any pollution incidents finding their way to the receptors (including those defined by the previous project ESAP). The following measures will be taken to reduce surface and groundwater contamination:

- Ensuring continued used of specific zones for loading and unloading (if concerning potentially polluting substances), including refuelling and maintenance of support vehicles. These areas should be impermeable where the collection and disposal of any spills or leaks can be done so easily.

- The water quality monitoring regime for both surface water and groundwater should be continued throughout the operational life of the Project. Should water quality monitoring return results outside of acceptable limits, appropriate remedial action should be carried out which may include removal of water via a wastewater tanker to a treatment facility, or appropriate disposal of affected sediment.
- To manage pluvial flood risk, site drainage and the existing culvert should be kept well maintained to prevent blockages that would reduce its effectiveness. This should also include a plan for managing discharge from the water treatment facility, should storage capacity be exceeded during intense storm events. A detailed flood risk assessment will be undertaken to improve the understanding of fluvial flood risk and associated operational risks to the airport more precisely (specifically from the Malaya Almatinka and Kotur-Bulak Rivers).
- In case of an emergency spillage accident, emergency pollution prevention plans will be maintained to the appropriate international standards, with training given to staff on how to use the kits as well as general environmental awareness training to all staff to encourage incident reporting if a potential problem arises.
- The management of de-icing fluids will be formalised through the design and construction of a dedicated de-icing pad. Further detail on the composition of the de-icing fluids can be found in the Preliminary Report on the results of analysis of soil and groundwater samples[11]. As part of the design, an oil-water separator is included in the de-icing apron drainage network directly downstream of the de-icing liquid collection tank. In addition to the oil interceptors, further treatment will be provided by a separate de-icing pad which will be constructed and operated using a separate reservoir to collect de-icing liquid waste, which will be treated by specialised 3rd party plant. Whilst the stormwater drainage pipe will collect stormwater runoff from taxiway TXY-B, there is still a risk of spillage of airplane fuel.
- It is recommended to treat this from the stormwater runoff from taxiway TXY-B before discharging to the outfall location. The oil-water separator will be installed upstream of the connection point of the grated drain to the main drainage network. Both the VIP apron drainage system and the de-icing apron drainage system will need to be connected to a main drainage network to transport the (treated) stormwater runoff to the stormwater storage facility.
- With regards to increasing consumption of water resources, it is recommended that the capacity of the municipal supply to ensure availability of water is established and that water saving measures should be incorporated throughout the Project, including but not limited to low flow taps and dual flush toilets.
- Any discharges to municipal wastewater treatment systems must be compliant with national legislation.

14.6.8 Full details of the proposed drainage plans must be made available at the detailed design stage.

14.7 Summary of residual effects

14.7.1 Residual effects are those that remain after mitigation and/or enhancement measures detailed in Section 14.6 have been implemented. Table 14.2 summarises the potential effects and any residual effects as a result of the Project.

Table 14.2: Summary of residual effects for water resources

Description of effect	Permanent or temporary	Sensitivity of receptor	Magnitude of impact	Significance of effect before additional mitigation	Additional mitigation	Residual effect	Proposed monitoring
Construction phase							
Increase in flood risk due to the construction activities which alter flow pathways. A Stormwater Management Plan will be developed which is assumed to include flood risk.	Temporary	Medium	Low	Minor adverse (not significant)	N/A	Minor adverse (Not significant)	N/A
Increase the risk of contamination of surface water by accidental spills, hydrocarbon-based oils and lubricants, heavy metals, suspended solids, and organic compounds as well as dust. A Spill Response Plan will be developed.	Temporary	Medium	Low	Minor adverse (not significant)	N/A	Minor adverse (Not significant)	Continued ground water quality monitoring within the fuel farm area. Implementation of surface water monitoring with agreed thresholds for each parameter.
Operational phase							
An increase in the number of aircraft and support vehicles is expected to result in higher levels of pollution, particularly through routine surface runoff. This runoff, which may contain contaminants such as hydrocarbons and heavy metals, and will enter the nearby watercourses and groundwater.	Permanent	Medium	Moderate	Moderate adverse (significant)	Treatment is required on the one taxiway that currently does not have any mitigation. In addition to the oil interceptors, further treatment is required to mitigate against de-icing fluids. This consists of a separate de-icing pad which will be constructed and operated using a separate reservoir to collect de-icing liquid waste. This will be treated by specialised 3rd party plant. An inspection on the current drainage network is recommended to ensure no seepages into the ground.	Minor adverse (Not significant)	Continued ground water quality monitoring within the fuel farm area. Implementation of surface water monitoring with agreed thresholds for each parameter.
Increase in impermeable area, may alter flow dynamics and potential affect both the rate and direction of runoff.	Permanent	Medium	Low	Minor adverse (not significant)	N/A	Minor adverse (Not significant)	N/A

Description of effect	Permanent or temporary	Sensitivity of receptor	Magnitude of impact	Significance of effect before additional mitigation	Additional mitigation	Residual effect	Proposed monitoring
Increase in passenger numbers will increase drinking water supply	Permanent	Medium	Negligible	Negligible	N/A	Negligible	N/A
Increase in passenger numbers will increase domestic wastewater which will be treated before being discharged into the watercourse	Permanent	Medium	Negligible	Negligible	N/A	Negligible	N/A

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