



# **Almaty International Airport**

Environmental and Social Impact Assessment  
Report - Chapters 16 and 17

September 2025

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# **Almaty International Airport**

## **Environmental and Social Impact Assessment Report - Chapters 16 and 17**

September 2025

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# Acronyms and abbreviations

Abbreviation / Acronym	Definition
BAKAD	Big Almaty Ring Road
CIA	Cumulative Impact Assessment
TMP	Traffic Management Plan
E&S	Environment and social
EPC	Engineering, Procurement, and Construction
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
C-ESMP	Construction Environmental and Social Management Plan
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
GRM	Grievance Redress Mechanism
ICAO	International Civil Aviation Organization
IFC	International Finance Corporation
IWG	Inter-Working Group
NIP	Noise Insulation Programme
NMP	Noise Management Plan
PSZ	Public Safety Zone
RCIA	Rapid Cumulative Impact Assessment
SEP	Stakeholder Engagement Plan
SMEs	Small and medium enterprises
SPZ	Sanitary Protection Zone
TMP	Traffic Management Plan
VEC	Valued Environmental and Social Components

# 16 Cumulative assessment

## 16.1 Overview

- 16.1.1 This chapter of the Environmental and Social Impact Assessment (ESIA) presents the cumulative impact assessment (CIA) for the Project. The analysis is framed within the methodological approach of the International Finance Corporation (IFC) Good Practice Handbook on Cumulative Impact Assessment and Management, recognising that not all elements of the IFC CIA methodology are fully applied.
- 16.1.2 This chapter focuses on intra-project cumulative impacts, acknowledging that the assessment of inter-project cumulative effects is constrained by limited publicly available information on reasonably foreseeable co-located developments.
- 16.1.3 Inter-project effects consider the combined influence of the Project and other reasonably foreseeable developments in the area, which include:
- The Almaty Metro Expansion (25km extension and new green line)<sup>1, 2, 3</sup>
  - The Big Almaty Ring Road (BAKAD) and national road upgrades<sup>4</sup>
  - The Almaty Railway Bypass Project<sup>5, 6</sup>
  - The 2024–2030 Housing Renovation Programme<sup>7, 8</sup>
  - Multiple industrial and manufacturing projects in the Almaty Industrial Zone (e.g. Astana Motors, ALTRA Tyres, Black Biotechnology)<sup>9</sup>
  - Industrial parks: 24 under construction<sup>10</sup>
- 16.1.4 These developments, while individually beneficial, may collectively intensify environmental and social pressures on local communities, particularly in Turksib, Guldala, Almerék, Panfilovo, and Nurshashkan.
- 16.1.5 It is worth noting that the airport has been operational since 1935 and has been operated by ALA/TAV since 2021, with an Environmental and Social Management System (ESMS) and Environmental and Social Management Plan (ESMP) in place.

## 16.2 Methodology

- 16.2.1 The assessment is based on the Rapid Cumulative Impact Assessment (RCIA) approach, outlined in the IFC Good Practice Handbook: Cumulative Impact Assessment and Management

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<sup>1</sup> [Almaty Metro — Map, Lines, Route, Hours, Tickets](#)

<sup>2</sup> [\(17\) Extending the reach of the Almaty metro | LinkedIn](#)

<sup>3</sup> [Expanding Horizons: Future Developments of Almaty Metro in Kazakhstan](#)

<sup>4</sup> [EDB Projects – Eurasian Development Bank | Евразийский банк развития](#)

<sup>5</sup> [Kazakhstan: Almaty Railway Bypass Project](#)

<sup>6</sup> [2.-Supplementary-ESIA\\_23042025-EN.pdf](#)

<sup>7</sup> [Renovation of dilapidated housing - SEC Almaty](#)

<sup>8</sup> [Think twice, demolish once: Almaty revises its renovation program for the third time — - 11.02.2025 - Kursiv Media Kazakhstan](#)

<sup>9</sup> [Kazakhstan's major industrial projects are set to launch in 2025 — - 07.01.2025 - Kursiv Media Kazakhstan](#)

<sup>10</sup> [11 new projects will be launched in the industrial zone of Almaty in 2025 - SEC Almaty](#)

(2013)<sup>11</sup>, which emphasises the identification of Valued Environmental and Social Components (VECs) to guide the spatial, temporal, and thematic scope of the analysis.

16.2.2 The RCIA process involved the following steps:

1. Definition of the spatial and temporal boundaries relevant to the Project.
2. Identification of the VECs based on ESIA thematic chapters and stakeholder input.
3. Identification of co-located developments that may affect the same VECs.
4. Determination of each selected VEC sensitivity and justification.
5. Assessment of impacts' significance of key cumulative pathways.
6. Recommend mitigation, monitoring, and management measures.

### Spatial and temporal boundaries

16.2.3 The definition of appropriate temporal and spatial boundaries is a critical step in CIA as it frames the scope of analysis for each VEC. These boundaries are established to ensure that all relevant sources of impact - both from the Project itself and from other reasonably foreseeable developments - are considered in relation to their potential to interact over time and space.

16.2.4 Spatial boundaries have been defined based on the geographic extent of potential impacts on each VEC, taking into account the Project's area of influence, the location of sensitive receptors, and the footprint of co-located developments. Temporal boundaries reflect the anticipated duration of construction (2025–2028) and operation (from 2030 onward), while also considering legacy impacts from past activities and future trends in urban development and infrastructure expansion.

### Identification of VECs

16.2.5 VECs are defined as environmental or social components that are particularly sensitive to change or are highly valued by stakeholders. In this chapter, VECs were identified based on the findings of the ESIA's thematic chapters, with emphasis on receptors that are repeatedly exposed to multiple stressors. The selected VECs include Community, Noise, Air Quality, Road Traffic, and Business/Economy, each with an assigned sensitivity rating to guide the assessment.

16.2.6 This chapter adopts a pathway-based approach to CIA, focusing on how multiple Project-related and external factors interact to affect each VEC. Table 16.1 outlines the sensitivity levels assigned to each VEC based on their potential to be affected by Project activities during the construction and operational phases. Sensitivity ratings inform the prioritisation of mitigation and management measures.

**Table 16.1: Sensitivity ratings of Valued Environmental and Social Components (VECs) identified for the Project**

VEC	Sensitivity	Justification
Business/Economy	Low	Limited direct disruption expected; impacts are indirect and manageable through standard mitigation.
Community	High	High potential for disruption due to high exposure to multiple stressors during construction and operational phases; includes safety, security, and quality of life concerns.
Noise	High	Significant potential for nuisance and health impacts, particularly from construction and aircraft operations.

<sup>11</sup> [ifc-goodpracticehandbook-cumulativeimpactassessment.pdf](#)



VEC	Sensitivity	Justification
Air quality	Moderate	Emissions from construction equipment and aircraft may affect local air quality, though impacts are expected to be localised and manageable.
Road traffic	High	Increased congestion and safety risks from both airport and city-wide developments, during both construction and operational phases. Affecting both community and airport users.

- 16.2.7 Each pathway is analysed in terms of overlapping impacts from construction and operational activities, existing baseline conditions, and the vulnerability of affected populations. This approach allows for a more integrated understanding of how different impacts converge on the same receptors over time.

### Cumulative impact assessment

- 16.2.8 While the RCIA approach primarily focuses on intra-project cumulative effects - where multiple impacts from the Project interact with each other - it also accommodates a high-level assessment of inter-project cumulative effects. These include potential interactions between the Project and other reasonably foreseeable developments in the region. Due to data limitations, the inter-project assessment is qualitative in nature but follows the same pathway-based structure, allowing for integrated consideration of overlapping impacts across projects. Section 16.3 presents the results of both the intra- and inter-project assessments, organised by key cumulative pathways.

### Assumptions and limitations

- 16.2.9 The assessment of inter-project cumulative effects is high-level and qualitative, due to limited availability of detailed data on other developments in the area. However, intra-project cumulative effects, where multiple impacts from the same project affect a single VEC, are considered in more detail. This includes analysis of how noise, air quality, and traffic impacts collectively influence community wellbeing.

## 16.3 Cumulative impact assessment

- 16.3.1 The cumulative effects assessment identified the following key pathways through which impacts may interact or accumulate over time:

- Noise and air quality: Combined effects from construction machinery, aircraft operations, and increased vehicular traffic may lead to persistent nuisance and health concerns for nearby communities.
- Traffic congestion: Cumulative traffic from construction vehicles, airport users, and workers may exacerbate existing road capacity issues, particularly during peak hours.
- Community wellbeing: Repeated and prolonged exposure to noise, air pollution, and traffic congestion may lead to cumulative stress and reduced quality of life for local residents.
- Safety and security risks: Overlapping risks from construction activities, increased traffic, and operational hazards (e.g., wildlife strikes, emergency events) may strain local emergency response and safety systems.

- 16.3.2 The following assessment addresses both intra-project cumulative effects and inter-project cumulative effects. Each pathway considers the combined influence of these factors on the identified VECs. While some VECs, such as business and economy, are not directly impacted by a single pathway, they are indirectly affected by the combined pressures of noise, air quality, traffic congestion, and community wellbeing. These cumulative stressors may disrupt access, reduce customer footfall, and create uncertainty for airport tenants and nearby enterprises, particularly during construction. The mitigation measures proposed aim to minimise disruption and support local economic resilience.

- 16.3.3 While not assessed as a standalone pathway, population influx may occur as a secondary effect of airport upgrades and traffic expansion, particularly if employment opportunities increase or regional connectivity improves. This could place additional pressure on housing, public services, and infrastructure in surrounding areas, especially where planning controls are limited. Although not currently considered a significant cumulative driver, population dynamics will be monitored through stakeholder engagement, and any emerging risks will be addressed through adaptive management measures.

### Noise and air quality

- 16.3.4 As detailed in **ESIA Chapter 11: Noise**, noise modelling studies indicate that communities near the airport already experience high noise levels. By 2030, over 70,000 buildings are projected to be exposed to >40 dB(A). The reconstructed second runway, increased aircraft movements, and traffic from co-located projects (e.g. industrial parks, road upgrades) will intensify this exposure. Vulnerable groups may face heightened risks of sleep disturbance, stress, and cognitive impacts (refer to **ESIA Chapter 8: Community**).
- 16.3.5 Air quality impacts will stem from construction dust, aircraft emissions, and increased road traffic. These will be compounded by emissions from industrial developments and freight transport linked to the railway bypass and BAKAD. The cumulative burden on respiratory health and wellbeing is significant, particularly in already urbanised and congested areas like Turksib and Guldala.
- 16.3.6 Air quality impacts, while more localised, are also cumulative in nature. Construction activities will generate dust and emissions, and operational phases will see increased aircraft and vehicular emissions. These pollutants, combined with existing urban air quality challenges in Almaty, may lead to respiratory issues and reduced quality of life, particularly for sensitive populations. The overlapping exposure to both noise and air pollution creates a compounded health burden.
- 16.3.7 While mitigation measures such as the Noise Insulation Programme (NIP), which forms part of the broader Noise Management Plan (NMP), along with buffer zones and air quality monitoring, are either in place or planned, the cumulative nature of these impacts necessitates ongoing, adaptive management. Transparent communication with affected communities will be essential, particularly as the NMP is expected to be updated as part of this Project.
- 16.3.8 The cumulative impact on community health and wellbeing from noise and air quality is considered to be of **moderate adverse significance**, particularly for vulnerable groups in Guldala and Turksib, where exposure is expected to intensify under future operational scenarios.

### Traffic congestion

- 16.3.9 Traffic congestion is a critical cumulative pathway, with both construction and operational phases contributing to increased pressure on local road networks. During construction, heavy vehicle movements, worker transport, and material deliveries will intensify congestion, particularly along Mailin Road and through residential streets in Almerék and Guldala. GPS navigation applications often re-route drivers through these neighbourhoods, exacerbating peak-hour congestion and increasing the risk of accidents. The opening of the BAKAD has helped alleviate some pressure, but without dedicated access routes to the airport, residential areas remain vulnerable to through-traffic.
- 16.3.10 In the operational phase, increased passenger and cargo volumes will drive further growth in private vehicle use, taxis, and service vehicles. The absence of a functioning metro connection to the airport for at least another decade means that road-based transport will remain dominant. This will likely lead to chronic congestion, increased emissions, and reduced accessibility for

local residents. The cumulative impact is particularly relevant in Nurshashkan and Guldala, where traffic-related grievances have already been recorded. While the Transport Master Plan to 2030 includes multimodal corridors and public transport upgrades, the cumulative burden of traffic on community wellbeing and infrastructure resilience remains a significant concern.

- 16.3.11 The cumulative impact of traffic congestion is considered to be of **moderate adverse significance**. Without improved public transport and access planning, future conditions may lead to chronic congestion and reduced mobility for residents in Nurshashkan and Guldala.

### Community wellbeing

- 16.3.12 The cumulative stressors affecting community wellbeing stem from a combination of environmental nuisances, legal uncertainty (e.g. the establishment of Sanitary Protection Zones (SPZs)), and socio-economic pressures. Residents in Almerek, Guldala, and Turksib are already exposed to high levels of noise, air pollution, and traffic congestion. These stressors, when experienced simultaneously and over extended periods, contribute to chronic stress, sleep disruption, and reduced mental health. Survey data from 2025 indicates that 30% of households report health impacts linked to airport noise, with women and children disproportionately affected (see **ESIA Chapter 8: Community**). Vulnerable groups such as pregnant women, the elderly, and large families are particularly at risk, and the presence of illegal housing adds another layer of insecurity and exclusion from public services.
- 16.3.13 The uncertainty surrounding the establishment of SPZs further compounds community anxiety. Many residents fear displacement or the inability to legalise their homes, which limits access to healthcare, education, and social assistance. While the airport has engaged in stakeholder consultations and implemented mitigation measures like the NIP, the cumulative effect of environmental, legal, and social stressors undermines trust and resilience. Addressing community wellbeing requires a holistic approach that integrates environmental management, legal clarity, and inclusive development planning.
- 16.3.14 The cumulative impact on community wellbeing is considered to be of **moderate adverse significance**, especially for vulnerable populations facing overlapping environmental, legal, and socio-economic stressors. Without coordinated planning and inclusive engagement, future conditions may further erode resilience and trust.

### Safety and Security Risks

- 16.3.15 Safety and security risks during both construction and operational phases are cumulative in nature, particularly when considering the proximity of residential areas to the airport and the scale of ongoing development. During construction, risks include accidental exposure to hazardous materials, traffic incidents, and potential breaches of restricted zones. While these risks are mitigated through Construction ESMPs and emergency response plans, the cumulative exposure to construction-related hazards, especially in areas like Guldala and Panfilovo, can erode community perceptions of safety and increase stress levels.
- 16.3.16 In the operational phase, risks shift toward aircraft-related incidents, fuel storage hazards, and broader security concerns such as smuggling or illicit activity. The expansion of the fuel farm and increased air traffic elevate the potential consequences of rare but high-impact events. The presence of unregulated housing within high-risk zones further complicate emergency preparedness and response.
- 16.3.17 This concern is underscored by the Bek Air Flight 2100 crash on 27 December 2019, when a Fokker 100 aircraft lost lift during take-off from Almaty International Airport and collided with a residential building located just 9-10 metres beyond the airport perimeter fence, resulting in 12

fatalities and 47 injuries<sup>12</sup>. Although the airport has robust safety systems aligned with International Civil Aviation Organization (ICAO) standards and conducts regular drills, the cumulative nature of these risks, combined with community vulnerability and limited legal protections, necessitates enhanced coordination between airport authorities, local governments, and residents to ensure long-term safety and resilience. In light of these risks, the NMP will be subject to periodic review, with updates aligned to changes in land use planning, safety incidents, and stakeholder feedback as stated in **ESIA Chapter 11: Noise**.

- 16.3.18 Cumulative safety and security risks may emerge in areas near the airport perimeter, particularly where unregulated housing and limited planning controls persist. While current risks are manageable, future conditions could increase vulnerability if not addressed through proactive coordination and integrated planning measures.

## Business and Economic Impacts

- 16.3.19 Cumulative impacts on local businesses and the regional economy may arise during both the construction and operational phases. During construction, access disruptions, noise, and dust may affect airport tenants and small enterprises in surrounding areas, particularly those reliant on foot traffic or logistics. Informal businesses operating near the airport may also face challenges due to regulatory changes and land use planning (e.g. SPZ/Public Safety Zone (PSZ) designations).
- 16.3.20 In the operational phase, increased passenger and cargo volumes are expected to stimulate economic activity and create opportunities for growth. However, this may also strain infrastructure and services, especially if connectivity and access are not improved. Without clear communication and support, small and medium enterprises (SMEs) may struggle to adapt to changing conditions. Supporting local procurement, maintaining access, and ensuring inclusive stakeholder engagement will be key to minimising disruption and enhancing long-term economic benefits.
- 16.3.21 The cumulative impact on business and the local economy is considered to be of both **moderate adverse and moderate beneficial significance**, with the potential for positive outcomes if access and engagement are well managed. However, without proactive coordination and support, particularly for informal and small enterprises, future conditions may result in disruption and missed opportunities for inclusive economic growth.

## 16.4 Mitigation

- 16.4.1 This section outlines recommended measures to address the cumulative impacts identified across the VECs and key pathways. The measures are structured to support effective mitigation of adverse effects, enable ongoing monitoring of environmental and social conditions, and ensure adaptive management throughout the construction and operational phases of the project. Each set of recommendations is tailored to the sensitivity of the VEC and the nature of the cumulative pathway, considering both intra-project and inter-project interactions.
- 16.4.2 The mitigation measures presented in this section have been iteratively reviewed and aligned with those identified in the topic-specific impact assessments conducted as part of the broader ESIA process. No new topic-specific measures have been introduced through the cumulative impact assessment. Instead, the cumulative analysis has served to reinforce and ensure consistency across the ESIA chapters.

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<sup>12</sup> Accident Fokker 100 UP-F1007, Friday 27 December 2019

- 16.4.3 Table 16.2 presents targeted strategies to address cumulative impacts on each VEC, organised by key pathways. Measures are designed to support impact avoidance, reduction, and adaptive response over time.
- 16.4.4 The mitigation, monitoring, and management measures listed in Table 16.2 reflect a combination of actions that are either directly within the authority of ALA or recommended for coordination with external stakeholders, such as local government, aviation authorities, and infrastructure developers. Measures under ALA's operational control, such as updates to emergency response plans, stakeholder engagement, and internal safety protocols, are considered binding and will be implemented as part of the Project's ESMS.
- 16.4.5 Additional measures identified through the CIA relate exclusively to broader, cross-cutting issues that require coordination with third parties. These recommended actions are presented **in bold** in Table 16.2 to distinguish them from binding measures already embedded in the topic chapters. ALA will seek to support these actions through engagement and collaboration with relevant stakeholders. The "Responsibility" column in Table 16.2 indicates whether ALA is directly responsible for implementation or whether coordination with external parties is required.

**Table 16.2: Recommended mitigation, monitoring, and management measures by VEC and cumulative pathway**

VEC	Key pathway	Responsibility	Mitigation, monitoring and management measures
Community	Community wellbeing, safety and security risks	ALA implementation	<ul style="list-style-type: none"> <li>Mitigation measures: <ul style="list-style-type: none"> <li>Implement and regularly update the Stakeholder Engagement Plan (SEP), ensuring inclusive communication with vulnerable groups.</li> <li>Strengthen the Grievance Redress Mechanism (GRM) to handle cumulative concerns (e.g. noise, traffic, safety) with clear escalation protocols.</li> <li>Ensure community safety protocols are integrated into both construction and operational Emergency Response Plans.</li> <li><b>Continue engagement with local authorities through the IWG to monitor developments related to housing legalisation in areas affected by SPZ/PSZ discussions. While ALA is not responsible for legalisation decisions, ongoing coordination will support informed planning and stakeholder engagement.</b></li> <li><b>Collaborate with aviation authorities to assess and communicate risks related to flight safety and proximity of residential buildings to the airport perimeter.</b></li> </ul> </li> <li>Monitoring measures: <ul style="list-style-type: none"> <li>Track community grievances by type, location, and resolution time.</li> <li>Conduct annual community wellbeing surveys to assess perceived quality of life and stressors.</li> <li>Monitor demographic shifts and housing trends in high-impact zones.</li> <li>Monitor implementation of flight safety recommendations.</li> </ul> </li> <li>Management measures: <ul style="list-style-type: none"> <li>Establish a Community Liaison Committee to coordinate between airport, contractors, and local authorities.</li> <li>Integrate community risk considerations into airport-wide safety drills and emergency simulations.</li> <li><b>Ensure coordination between airport authorities, emergency services, and municipal planners to address cumulative safety risks.</b></li> </ul> </li> </ul>
		ALA implementation	
		ALA coordination	
		ALA implementation	
		ALA Coordination	
		ALA implementation	
		ALA implementation	
		ALA implementation	
		ALA implementation	
		ALA coordination	
		ALA implementation	
		ALA coordination	
Noise	Noise and air quality	ALA implementation	<ul style="list-style-type: none"> <li>Mitigation measures: <ul style="list-style-type: none"> <li>Expand the NIP to include additional households and public facilities (e.g. kindergartens) within high-exposure zones.</li> </ul> </li> </ul>

VEC	Key pathway	Responsibility	Mitigation, monitoring and management measures
Air quality	Noise and air quality	ALA implementation	<ul style="list-style-type: none"> <li>– Continue implementing the use of interchangeable approach and departure directions (runways 05 and 23) during night-time hours to reduce sleep disturbance.</li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>– Require contractors to use low-noise equipment and limit high-noise activities to daytime hours.</li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>• Monitoring measures: <ul style="list-style-type: none"> <li>– Continuous noise monitoring at fixed stations in Almerék, Guldala, and Turksib.</li> </ul> </li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>– Annual review of noise contour maps to reflect changes in operations and aircraft types.</li> </ul>
		ALA coordination	<ul style="list-style-type: none"> <li>• Management measures: <ul style="list-style-type: none"> <li>– <b>Coordinate with city planners to avoid siting new sensitive receptors in high-noise zones.</b></li> </ul> </li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>• Mitigation measures: <ul style="list-style-type: none"> <li>– Promote clean fuel or electric vehicles for airport ground operations and logistics partners.</li> <li>– Require all contractors to implement dust suppression measures and use low-emission machinery.</li> </ul> </li> </ul>
		ALA coordination	<ul style="list-style-type: none"> <li>– <b>Coordinate with city authorities to manage emissions from industrial zones and freight corridors.</b></li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>• Monitoring measures: <ul style="list-style-type: none"> <li>– Continue conducting air quality monitoring.</li> </ul> </li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>– Track PM2.5, NOx, and VOC levels during both construction and operation.</li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>• Management measures: <ul style="list-style-type: none"> <li>– Integrate air quality data into the Environmental and Social Management System (ESMS) for adaptive response.</li> </ul> </li> </ul>
Road traffic	Traffic congestion	ALA implementation	<ul style="list-style-type: none"> <li>• Mitigation measures: <ul style="list-style-type: none"> <li>– Develop a construction Traffic Management Plan (TMP) to avoid peak hours and residential routes.</li> </ul> </li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>– Promote carpooling, shuttle services, and public transport for workers and airport staff.</li> </ul>
		ALA coordination	<ul style="list-style-type: none"> <li>– <b>Coordinate with city authorities to fast-track the metro extension and improve last-mile connectivity.</b></li> </ul>
			<ul style="list-style-type: none"> <li>• Monitoring measures</li> </ul>

VEC	Key pathway	Responsibility	Mitigation, monitoring and management measures
		ALA implementation	<ul style="list-style-type: none"> <li>– Monitor traffic volumes and travel times on key access roads (e.g. Mailin Road, BAKAD connectors).</li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>– Track accident rates and near-miss incidents in high-traffic zones.</li> </ul>
		ALA coordination	<ul style="list-style-type: none"> <li>• Management measures: <ul style="list-style-type: none"> <li>– <b>Establish a joint traffic coordination task force with city transport planners and developers of co-located projects.</b></li> </ul> </li> </ul>
		ALA implementation	<ul style="list-style-type: none"> <li>– Develop and indicative an indicative Surface Access Strategy to reflect cumulative traffic forecasts and modal shifts.</li> </ul>
Business/Economy	Indirectly affected by all above		<ul style="list-style-type: none"> <li>• Mitigation measures: <ul style="list-style-type: none"> <li>– Minimise disruption to airport-based and nearby businesses by maintaining access and clear communication during construction.</li> <li>– Encourage local procurement and employment where feasible to support the regional economy.</li> </ul> </li> <li>• Monitoring measures: <ul style="list-style-type: none"> <li>– Track local procurement volumes and employment figures linked to the project.</li> </ul> </li> <li>• Management measures: <ul style="list-style-type: none"> <li>– Include business-related considerations in stakeholder engagement activities, particularly for airport tenants and SMEs in the immediate vicinity.</li> </ul> </li> </ul>



# 17 Environmental and social management framework

## 17.1 Overview

- 17.1.1 This chapter outlines the overarching framework through which the Project will manage environmental and social (E&S) risks and impacts throughout its lifecycle. It serves as a bridge between the impact assessment and the implementation of mitigation and monitoring measures and builds on the existing Environmental and Social Management System (ESMS) and organisational capacity to manage E&S performance.

## 17.2 Integration with existing ESMS

- 17.2.1 Almaty International Airport (ALA) has an established ESMS that provides the foundation for E&S risk management. This system includes policies, procedures, and tools aligned with international good practice. The airport is also certified under ISO 14001, demonstrating its commitment to systematic environmental management and continual improvement. The ESMS will be updated to incorporate project-specific risks and mitigation measures identified through the ESIA, ensuring alignment with the evolving scope and scale of the Project.
- 17.2.2 ALA will continue to maintain a dedicated E&S team responsible for:
- Overseeing implementation of the ESMP and associated management plans
  - Coordinating with contractors, consultants, and third parties
  - Supervising the implementation of Engineering, Procurement, and Construction (EPC) contractors' Construction Environmental and Social Management Plans (C-ESMPs)
  - Ensuring compliance with E&S commitments and regulatory requirements
  - Building capacity through training, supervision and continuous improvement initiatives

## 17.3 Environmental and social management plans

- 17.3.1 A high-level framework ESMP will be developed for this Project Horizon. The ESMP will outline the suite of management plans required during the construction and operation phases. These management plans will be developed by ALA and the EPC Contractors and will detail specific mitigation, enhancement and monitoring measures, responsibilities, and implementation timelines.
- 17.3.2 The ESMP will include, among others, the following topic plans: Noise Management Plan, Traffic Management Plan, Air Quality Management Plan, Waste Management Plan, Community Health and Safety Plan, Stakeholder Engagement Plan, and Emergency Preparedness and Response Plan. This list is not exhaustive. The ESMP will be embedded within the overarching Environmental and Social Management Framework (ESMF), which provides the structure for environmental and social risk management across the lifecycle of Project Horizon.

## 17.4 Monitoring, evaluation, and reporting

- 17.4.1 Monitoring and reporting are essential for tracking the effectiveness of mitigation measures and ensuring compliance with E&S requirements.
- 17.4.2 Performance monitoring, reporting and auditing will be carried out to ensure compliance with the requirements of the ESIA and ESMP. This will be defined in the ESMP and will include:

- Monitoring during the construction phase of key environmental and social parameters
- Monitoring during the operational phase to ensure long-term compliance and performance
- Independent auditing commissioned on behalf of the prospective Lenders to verify implementation and effectiveness
- Monitoring results will be shared with stakeholders through periodic disclosure mechanisms to promote transparency and accountability

17.4.3 This framework ensures that the Project is implemented in a manner that is consistent with the airport's ongoing E&S commitments and supports continuous improvement in environmental and social performance.

