Project: Aqaba-Amman Water Desalination and Conveyance (AAWDC)

2025 Environmental and Social Impact Assessment

Chapter 7: Socio-Economic Description

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7 Socio-Economic Description

7.1 Introduction: Approach and Methodology

The purpose of the social baseline is to provide an understanding of the social, economic and political environment of the Project context, as well as contextualise the feedback received from stakeholder engagement, to ultimately enable the assessment of potential Project impacts and development of appropriate mitigation measures.

Based on the gaps identified in the 2022 AAWDC ESIA, the Lenders identified a number of priority social topic areas as requiring further analysis within the 2025 AAWDC Project ESIA. These included:

- Cultural heritage, particularly within the Wadi Rum Protected Area (WRPA), a United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Site
- Resettlement and livelihoods impacts, including land use, agricultural livelihoods, tourism, maritime users and marine activities
- Potential impacts on Bedouin communities

The overall approach to the social baseline and associated impact assessment has therefore sought to address these gaps. Cultural heritage has been assessed through a dedicated Heritage Impact Assessment (HIA) for the Wadi Rum Protected Area (WRPA), and a Cultural Heritage section integrated into the 2025 AAWDC Project ESIA. Potential resettlement and livelihood related impacts have been addressed through a Resettlement Policy Framework (RPF); however, community-level feedback on livelihoods, businesses, land and resource use has been fully integrated into the broader social baseline description.

The Lenders requested that particular attention be placed on Bedouin communities, and this has been reflected in the design of the baseline and in the strong emphasis placed on early and comprehensive engagement with affected Bedouin stakeholders. Given that the majority of the Pipeline route, hereafter referred to as the 'Pipeline', lies within the Central and Southern Badia, most of the communities along the route between Aqaba and the outskirts of Amman are Bedouin. Therefore, potential impacts on Bedouin communities have been integrated into the overall social baseline and Social Impact Assessment (SIA), rather than addressed as a stand-alone assessment. In practice, when referring to local community stakeholders in the Badia, this largely entails Bedouin households, Bedouin community leaders, and different Bedouin social groupings and stakeholder segments.

For the socio-economic components of the ESIA, the Study Area largely comprises the towns, villages and settlements, and land users located along and adjacent to the Conveyance Pipeline route, the Desalination Plant site, the Renewable Energy (RE) Facility site and the Overhead Transmission Line (OHTL). However, it should be noted that the social Study Area is multi-layered and impact-specific, reflecting the different ways in which Project activities may affect people, land users, institutions and livelihood systems. The Study Area therefore varies according to the nature of each potential impact pathway.

- Community Health, Safety and Security: The Study Area comprises all communities, settlements, facilities and land users located within or adjacent to construction areas, including households, community facilities, businesses, farmers, herders, road users and tourism operators who may be affected by construction traffic, access restrictions, dust, noise or safety or security risks
- Land, Assets, and Livelihoods (Resettlement): The Study Area includes an overview of land uses, agricultural areas, grazing areas, roadside businesses and community assets that fall within or

directly border the Project component, including access routes and areas used for laydown, storage or temporary works. This reflects where temporary or permanent physical and economic displacement may occur

- Local Employment and Local Content: The Study Area is broader in scope. At the national level, Jordan constitutes the wider labour and supply market relevant to the Project hiring and procurement. At the local level, the Study Area includes the Governorates, Districts, Sub-Districts and Municipalities along the pipeline corridor, as well as Bedouin tribal territories and communities whose members may seek employment or provide goods and services to the Project. This reflects both the national labour context and the strong local expectations for Project-related economic benefits
- Stakeholder Engagement: For engagement purposes, the Study Area includes all communities, authorities, and livelihood groups who may be directly or indirectly affected by construction or operation, or who have an interest in Project benefits, risks or management measures

Because socio-economic impacts extend beyond the physical footprint of the Project , the ESIA Study Area is therefore defined for the purpose of this socio-economic baseline at a broader geographic level, encompassing the area within which AAWDC Project activities may generate social impacts, primarily along the Pipeline route between the Aqaba Special Economic Zone (ASEZ), up until the water storage reservoirs at Abu Alanda and Al Muntazah in Amman, as well as the areas associated with the Desalination Plant site, the proposed RE Facility site and the Overhead Transmission Line (OHTL) in Aqaba Governorate, as follows:

- The towns, villages and settlements within the ESIA Study Area, where construction-related impacts are most likely to occur (see Table 7-1). This includes residences, businesses and municipal services and infrastructure. Listed towns, villages and settlements generally lie within 10km of the Project components anticipated footprint
- Land users within the ESIA Study Area, who are most likely to experience land access and construction-related impacts (e.g. Bedouin herders, farmers)
- Bedouin representatives of tribes and clans who may consider that the ESIA Study Area overlaps with their customary tribal lands. These were ascertained in consultation with local governors, as well as Bedouin experts on the ESIA team
- Districts, sub-districts and municipal authorities and representatives from the towns, villages and settlements within and adjacent to the ESIA Study Area

7.1.1 Data Sources

The social baseline focuses on communities and land users located along and adjacent to the Conveyance Pipeline route, the Desalination Plant site, the Renewable Energy (RE) Facility site and the Overhead Transmission Line (OHTL). The baseline does not attempt to characterise the wider governorates in full; broader regional or demographic information has only been included where it is necessary for context. The purpose of the baseline is therefore to generate information directly relevant to understanding stakeholder perspectives, assessing likely social impacts, and identifying practical mitigation and benefit-sharing measures that are proportionate to the scale and nature of the Project's effects.

Primary qualitative data collection formed the foundation of this baseline. Extensive engagement with stakeholders was undertaken across all five governorates and localities along the Project route, including meetings with tribal and clan representatives, women-only focus groups, youth focus groups, and key

informant interviews with municipalities, service providers, businesses, herders, farmers and community-based organisations. This approach was taken to ensure that the baseline reflects lived realities and stakeholder perspectives, not only secondary information. Secondary sources were also reviewed selectively to complement and contextualise findings from fieldwork.

It is noted that while stakeholder engagement and social baseline data collection serve two distinct purposes, in practice, all meetings with the Project stakeholders involved an element of two-way dialogue where stakeholders raised questions, concerns and expectations related to the Project, as well as provided some baseline contextual information.

The social baseline is therefore based on qualitative research from the following data sources:

- Primary qualitative data collection undertaken between September and October 2025, involving:
  - 95 key informant interviews with former local government officials, local residents, business owners, farmers, farm labourers, herders, Bedouin community respected people
  - 35 focus group discussions, with local women residents, local male youth residents, women herders, male herders, community-based organisations (CBOs), and marine users' representatives
  - 30 group interviews with district, sub-district and municipal officials and
- Local baseline data derived from 7 larger stakeholder engagement community meetings
- Field observations from several visits between September and October 2025 to all the towns and villages located in or near to the Project footprint, including casual conversations with local residents and land users along the Pipeline route
- An infrastructure observational study carried out along the entire Conveyance Pipeline route in June 2025
- Review of secondary sources, including academic texts, news and media sources, official demographic data, legal documents, and reports from Government, non-governmental organisation (NGO)s and international organisations

7.1.2 Assumptions and Limitations

Neither a quantitative Household Survey nor detailed land use mapping are included within this baseline. Both household-level quantitative data and detailed Land use Surveys will be collected during the preparation of the Resettlement Action Plan (RAP), which will be developed after completion of the 2025 AAWDC Project ESIA.

The findings presented in this social baseline are based on the information available within the timeframe of this assignment. While reasonable efforts were made to gather accurate, up-to-date and relevant information through extensive qualitative primary engagement and secondary data review, the assessment does not claim to represent a complete or exhaustive characterisation of all social conditions within the ESIA Study Area. Some data may not have been accessible, disclosed, or may not have been captured in stakeholder discussions. The baseline therefore reflects a "best available information" approach and should be read together with the RAP, which will continue to refine, quantify and update social information as the Project progresses toward construction. The RAP will carry out detailed land use studies, including an assessment of any semi-nomadic and nomadic herders who might be present in the ESIA Study Area (their seasonal movements and their dependence on rangeland resources), and a census and Household Survey, which will generate further socio-economic baseline data

7.2 Political and Socio-economic Description of the Project Context

7.2.1 Overview of the Project Social Context and Stakeholders

The Project, including the 438km Conveyance Pipeline, covers an area that stretches across the five Governorates of Aqaba, Ma'an, Karak, Tafiela and Amman, crossing through eleven districts, seven sub-districts, and either through or near to more than 47 towns and villages.

The ESIA Study Area is largely situated in desert and arid areas of the Jordanian territory, referred to in the Jordan context as the Badia. The Badia is defined by the Hashemite Fund for the Development of the Jordanian Badia as those desert and semi-arid areas in Jordan that receive less than 150mm of rainfall a year, and that have historically been used by nomadic and semi-nomadic Bedouin tribes. The Badia comprises 82% of the total Jordanian territory, and is politically and administratively divided into the Northern, Central and Southern Badias.

The Project is located in both the Southern Badia and the Central Badia. The Southern Badia ESIA Study Area starts from just north of the ASEZ port area where the Desalination Plant will be located, and cover most of the areas where the Pipeline will be located – other than the central part of Ma'an Governorate – up until the southern boundary area of Amman Governorate. The Central Badia ESIA Study Area starts from the southern boundaries of Amman Governorate, where the town of Damkhi is situated, and covers most of the areas where the Pipeline will be located up until the southern boundaries of Al-Qweismeh and Sahab Districts.

Within these Badia areas, the large majority of the population are of Bedouin heritage, largely living in settled towns and villages. In the Aqaba areas south of the Badia and Amman urban areas north of the Badia, the local population can be characterised as a settled urban population made up of a diversity of livelihoods and heritages.

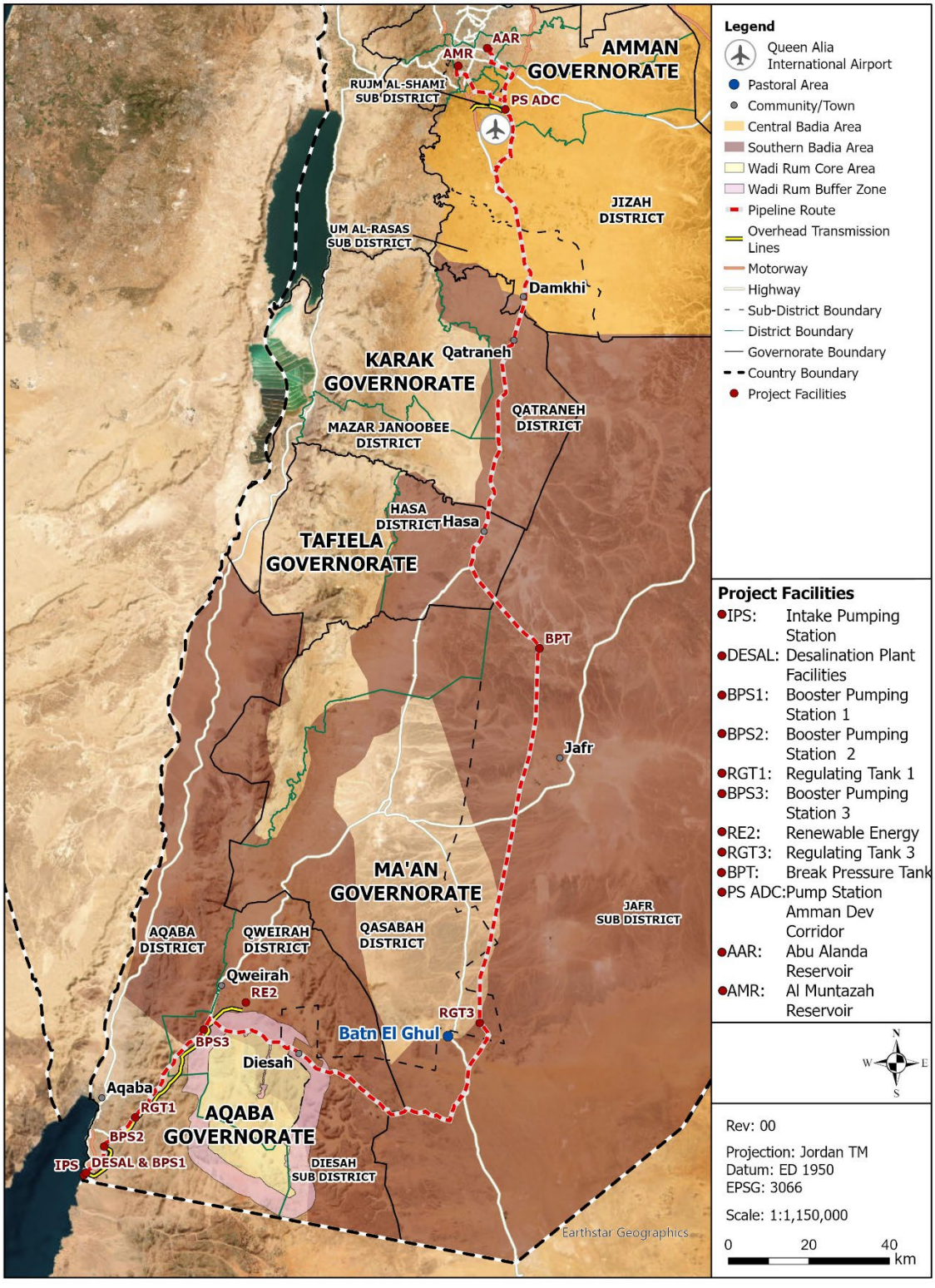
Table 7-1 outlines the relevant governorates, districts, sub-districts and towns/and villages in the ESIA Study Area. Figure 7-1 presents an overview of the social and administrative context of the Project.

Table 7-1: Administrative Divisions and Settlements within the ESIA Study Area

District	Sub-District	Municipality	Towns/Villages
AQABA GOVERNORATE			
AQABA		ASEZA	Aqaba, Mezfer, Al-Mamlah (resort)
QWEIRAH		Qweirah Al-Jadedah Municipality	Um El-Basatien, Sallheiah , Rashdyah, Shakriyyeh, Qweirah
	Diesah Sub-District	Hud Al-Diesah Municipality	Diesah, Taweel, Twaiseh, Mnaishier, Ghal
MA'AN GOVERNORATE			
QASABAH	Jafr Sub District	Jafr Municipality	Jafr, Shadeiah, Abu Amoud
TAFIELA GOVERNORATE			
HASA		Hasa Municipality	Hasa, Jorof
KARAK GOVERNORATE			

District	Sub-District	Municipality	Towns/Villages
MAZAR JANOOBEE			Fraifrah
QATRANEH		Qatraneh Municipality	Qatraneh
		Al-Sultani Municipality	Al-Sultani, Wadi Abyadh
AMMAN GOVERNORATE			
JIZAH		Um Rasas Municipality	Damkhi, Swaqa, Abu Al-Hasani
	Um Rasas Sub District	Al-Amiriyah Municipality	Zmaileh, Khaldieh, Ḍabʿah
		Jizah Municipality	Areinbeh Al-Sharqiyah, Al-Sayfiyah, Al-Qunaitirah , Al-Mushatta, Al-Tuneib, Qiba'a
MOWAQQAR		Mowaqqar Municipality	Dhaibeh Al-Sharqiyah
	Rujm Al-Shami Sub District	Rujm Al-Shami Municipality	Rujm Al-Shami , Ktaifeh, Dhaibeh Al-Gharbiyah
SAHAB		Sahab Municipality	Sahab
AL-QWEISMEH	Al-Qweismeh, Abu Alanda, Al-Juwaideh, and Alrajeeb	Greater Amman Municipality (GAM)	Ghamadan, Yadoodeh, Abu Alanda, Al Maghaba Al Sharqi, Alrajeeb
	Khraibet Al-Souq, Jawa, and Yadoodeh		Ḥayy Abu Sowaneh
NA'OOR	Um El- Basatien Sub District	Um El- Basatien Municipality	Hayy Um El-Kindam Hayy Al-Amal

Figure 7-1: Project Administrative Context



7.2.2 Demographic Overview

As reported by the Department of Statistics (DoS), Jordan's population in 2024 was estimated at 11,734,000. Of this total, 47.1% are women, and 52.9% are men, and 4,920,100 people (42%) reside in Amman Governorate.

The population and household numbers of the districts and sub-districts traversed by the Conveyance Pipeline, as reported by DoS, are presented in Table 7-2 below.

Table 7-2: Population Figures for ESIA Study Area Districts/Sub-Districts

Area	Male	Female	Household	Total
AQABA GOVERNORATE				
Aqaba District	107,775	89,850	40,595	197,625
Qweirah District	15,220	13,125	5,722	28,345
Diesah Sub-District	5,380	4,065	1,926	9,445
MA'AN GOVERNORATE				
Jafr Sub-District	5,415	4,180	1,660	9,595
TAFIELA GOVERNORATE				
Hasa District	2,263	5,995	6,580	12,575
KARAK GOVERNORATE				
Qatraneh District	7,610	5,765	2,374	13,375
AMMAN GOVERNORATE				
Jizah District	86,280	58,595	25,361	144,875
Mowaqqar District	55,890	47,690	19,331	103,580
Sahab District	122,220	85,795	39,559	208,015
Al-Qweismeh District	385,165	330,175	144,377	715,340
Na'oor District	83,270	75,905	33,425	159,175

These ESIA Study Area district population figures highlight the concentration of population in Amman districts, and in particular those within the metropolitan area boundaries, as well as a higher population concentration in Aqaba city. The districts lying between Aqaba and Amman, where the Conveyance Pipeline crosses, are much more sparsely populated, in particular Jafr and Diesah Sub-Districts.

In many districts, including Amman, population statistics show a higher proportion of men compared to women, reflecting national figures of 47.1% women and 52.9% men. This gender disparity is largely driven by labour dynamics and the presence of a significant foreign workforce, predominantly male, employed across construction, agriculture, services, and industrial sectors. According to official statistics, there are an estimated 600,000 to 1 million foreign workers in Jordan. Egyptians, the largest group of migrant labourers, are primarily employed in agriculture and construction, while Syrian workers are largely concentrated in the construction sector, but also to a certain degree in agriculture. In addition, domestic workers from Southeast Asia constitute a substantial share of the migrant workforce. These factors

together contribute to the male-skewed demographic profiles observed in both the Badia and urban centres.

As of the end of October 2025, the United Nations Refugee Agency (UNHCR) had registered 474,807 refugees living in Jordan. The large majority come from Syria, while there are also large groups from Iraq, Yemen, Sudan, and Somalia. Some 82% of them live outside of refugee camps, largely concentrated in Amman and areas to the north of the country. UNHCR report that close to 50% of these registered refugees are children. There are no refugee camps within the ESIA Study Area.

Jordan is ethnically and culturally diverse, including Jordanians of tribal/Bedouin origin, Jordanians of Palestinian origin, and smaller communities such as Circassians and Chechens. However, official national statistics do not disaggregate population figures by heritage or identity group. For the purposes of this 2025 ESIA baseline, heritage identity is only considered where it is directly relevant to understanding local community governance structures, such as in the Badia areas where most affected community stakeholders are of Bedouin heritage. As such, Bedouin population figures are both derived from population figures of people living in the Badia, as well as electoral lists of those who are registered to vote for Bedouin members of parliament, based on a connection to a certain area of the Badia. The Hashemite Fund for the Development of the Jordan Badia therefore gives an estimated figure of 824,457 Bedouin living in the Badia, which comes to around 7% of a total estimated national population of 11.7 million. However, it should be noted that many people of Bedouin heritage also live outside the Badia, so the overall estimated population figures for people of Bedouin heritage in Jordan is likely to be higher.

7.2.3 Social and Spatial Overview of the Different ESIA Study Area

From a socio-political and spatial perspective, the ESIA Study Area can be grouped into the following Study Areas.

7.2.3.1 Aqaba and Coastal Areas

Starting in the south, the Project footprint begins within the Aqaba Special Economic Zone (ASEZ), where the Desalination Plant and part of the Overhead Transmission Line (OHTL) will be located. ASEZ is managed and overseen by the Aqaba Special Economic Zone Authority (ASEZA) and includes the city of Aqaba, the coastal areas and the southern industrial and port zones. The southern coastal and industrial area of ASEZ contains major port, logistics and industrial activities, while the northern coastal strip supports a range of maritime users including fishers, diving operators and tourism activities. The planned Desalination Plant is located within the southern part of ASEZ, south of the main urban centre of Aqaba city.

7.2.3.2 Qweirah District & Diesah Sub-District & Wadi Rum

From the Desalination Plant location, the Conveyance Pipeline and the Overhead Transmission Line (OHTL) route runs north roughly parallel to the Desert Highway (Highway 15), which is the major transport corridor linking Aqaba to Amman and serving the southern and central Badia (Figure 7-2). The Qweirah District boundary at the village of Mezfer lies approximately 30–35km north of the Aqaba port and industrial zone, and largely marks the beginning of the Southern Badia. Qweirah town is the administrative centre of Qweirah District. Large parts of this District, including areas outside municipal boundaries and the Wadi Rum UNESCO World Heritage Site, remain under the jurisdiction of ASEZA.

The Pipeline route runs through Qweirah District and turns east off the Desert Highway at Um El-Basatien village, entering the buffer zone of the Wadi Rum UNESCO World Heritage Site and passing near to several villages within the UNESCO buffer zone before reaching Diesah town, which is the administrative centre

of Diesah Sub-District. The Wadi Rum UNESCO World Heritage Site is a globally significant protected landscape and major domestic and international tourism destination.

Four villages within the ESIA Study Area fall under the Qweirah Municipality, while four villages located in the Wadi Rum area fall under the Diesah Municipality. The proposed RE Facility and the Overhead Transmission Line (OHTL) will be located to the east of Qweirah town.

Overall, this area supports a combination of agricultural production (including larger irrigated farms and household-scale cultivation), pastoral herding activities, and tourism enterprises associated with Wadi Rum. Tribal and clan affiliations play an important role in local representation and community organisations.

7.2.3.3 Jafr Sub-district in Ma'an Governorate

Moving eastwards from Diesah Sub-District, the Conveyance Pipeline route follows the main road towards Jafr Sub-District in Ma'an Governorate (Figure 7-3). The route then intersects the Diesah Pipeline infrastructure before turning north. From here, the alignment largely follows the same general route as the Diesah Pipeline, veering east off the road just south of the Batn el-Ghul area. Batn el-Ghul is a wide valley with historic significance linked to the Arab Revolt and the old Hejaz railway, and remains a seasonal grazing area, particularly during the autumn and winter months when nomadic and semi-nomadic Bedouin herders can move into the area.

North of Batn el-Ghul, the Conveyance Pipeline route continues off-road through the Southern Badia desert landscape before approaching the wider vicinity of Jafr town (located around seven kilometres to the east of the route). In the areas near Jafr, there are irrigated farms alongside the Conveyance Pipeline route, and semi-nomadic and nomadic Bedouin herders, are commonly encountered across the surrounding landscape during the winter grazing period. Tribal and clan affiliations continue to play an important role in local representation and community organisations in the towns (Jafr) and villages in the wider area.

7.2.3.4 Along the Desert Highway Through Hasa, Qatraneh and Jizah Districts

The Conveyance Pipeline route rejoins the Desert Highway corridor just east of the town of Jorof, and south of the town of Hasa (Figure 7-4). From then onwards it follows the Desert Highway corridor through and near to several towns, including the administrative district centres of Hasa and Qatraneh (Figure 7-5), and the town of Damkhi (Figure 7-6), and near to various villages and industrial facilities. As the route moves north, settlement density gradually increases, with more established towns, roadside commercial activities, services, and increasing numbers of agricultural enterprises. Some areas in this section of the route include settled herding households in addition to mobile pastoralism. The population of these districts is socially diverse, reflecting the area's role as an industrial and transport hub. The presence of the Jordan Phosphate Mines Company, one of the largest mining enterprises in the country, has attracted workers from various regions across Jordan, creating a socially mixed community that includes families from the local Bedouin tribes, as well as employees and settlers from other governorates. Tribal relations and family networks continue to play an important role in local governance and community cohesion in the towns (Jorof, Hasa, Qatraneh, Damkhi) and villages in the wider area.

7.2.3.5 Amman Urban Areas

Moving further north into the southern boundaries of Amman, and past the international airport, the route splits and the wider areas become increasingly urbanised and economically diversified, interspersed with agricultural enterprises, and a few settled herders. Both routes ultimately reaching the

metropolitan areas of the capital where population density is significantly higher and livelihoods are predominantly more urbanised (Figure 7-7).

Figure 7-2: Conveyance Pipeline Route through Aqaba Governorate

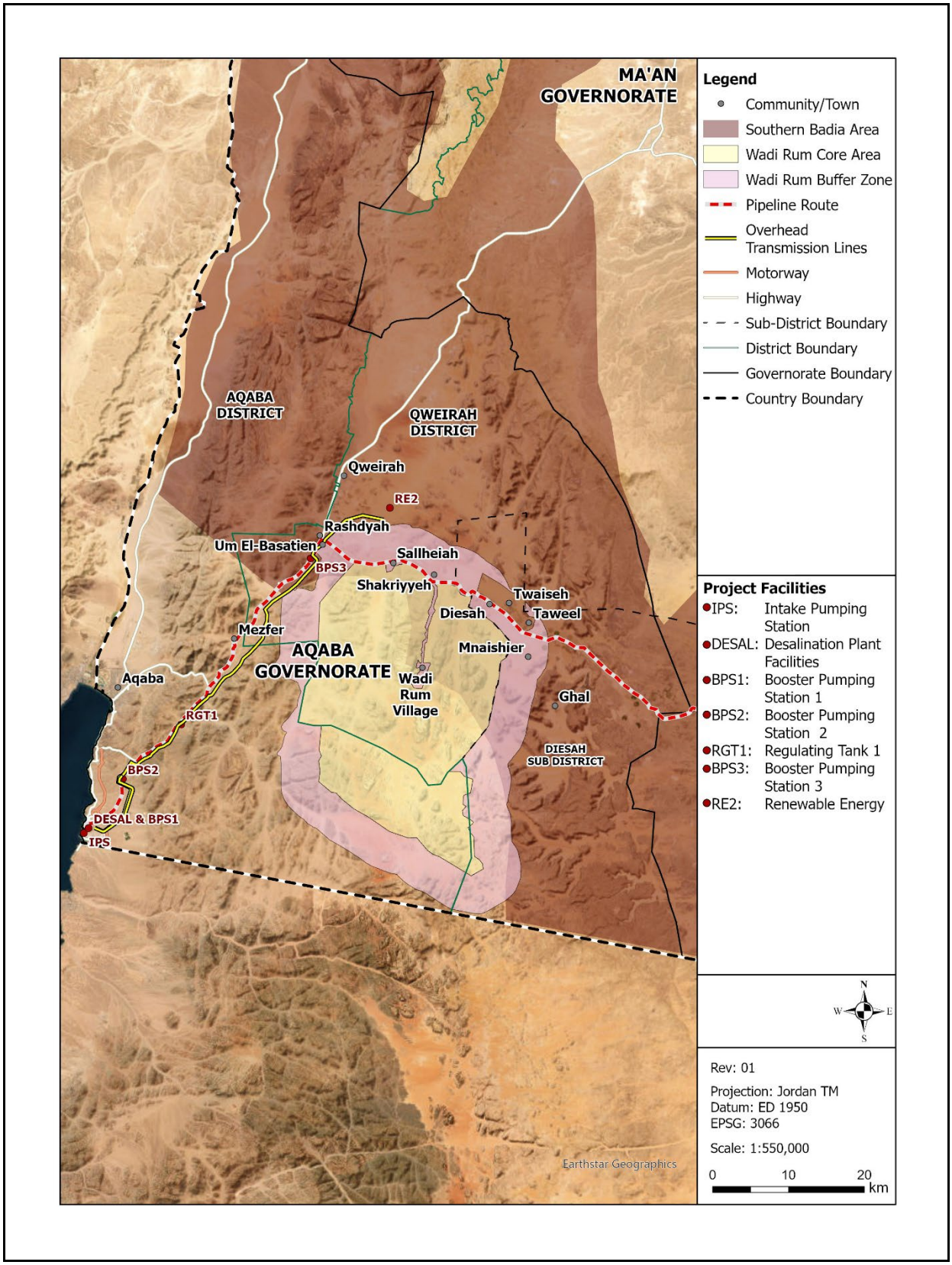


Figure 7-3: Conveyance Pipeline Route through Jafr Sub-District (Ma'an Governorate)

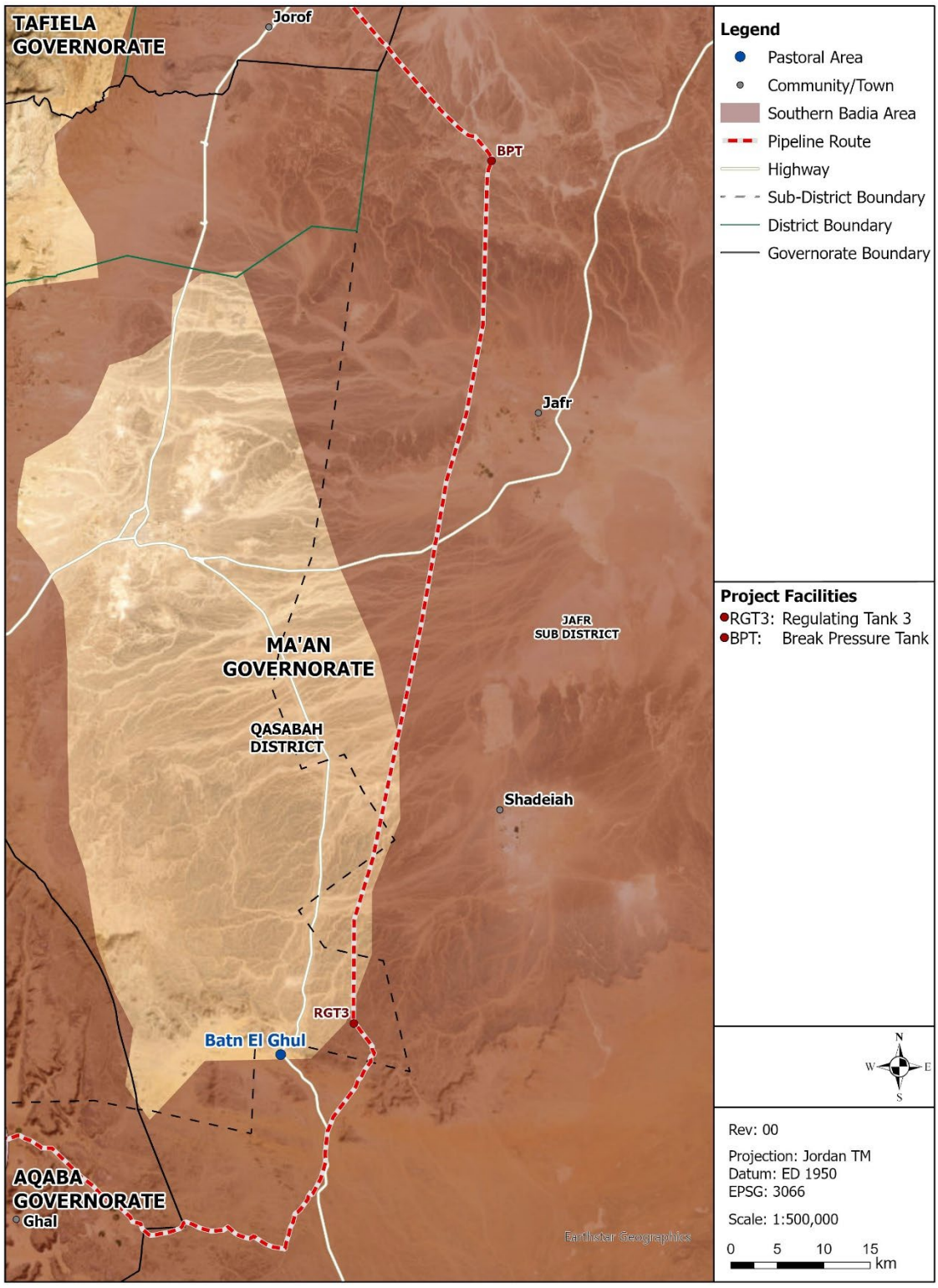


Figure 7-4: Conveyance Pipeline Route through Hasa District (Tafiela Governorate)

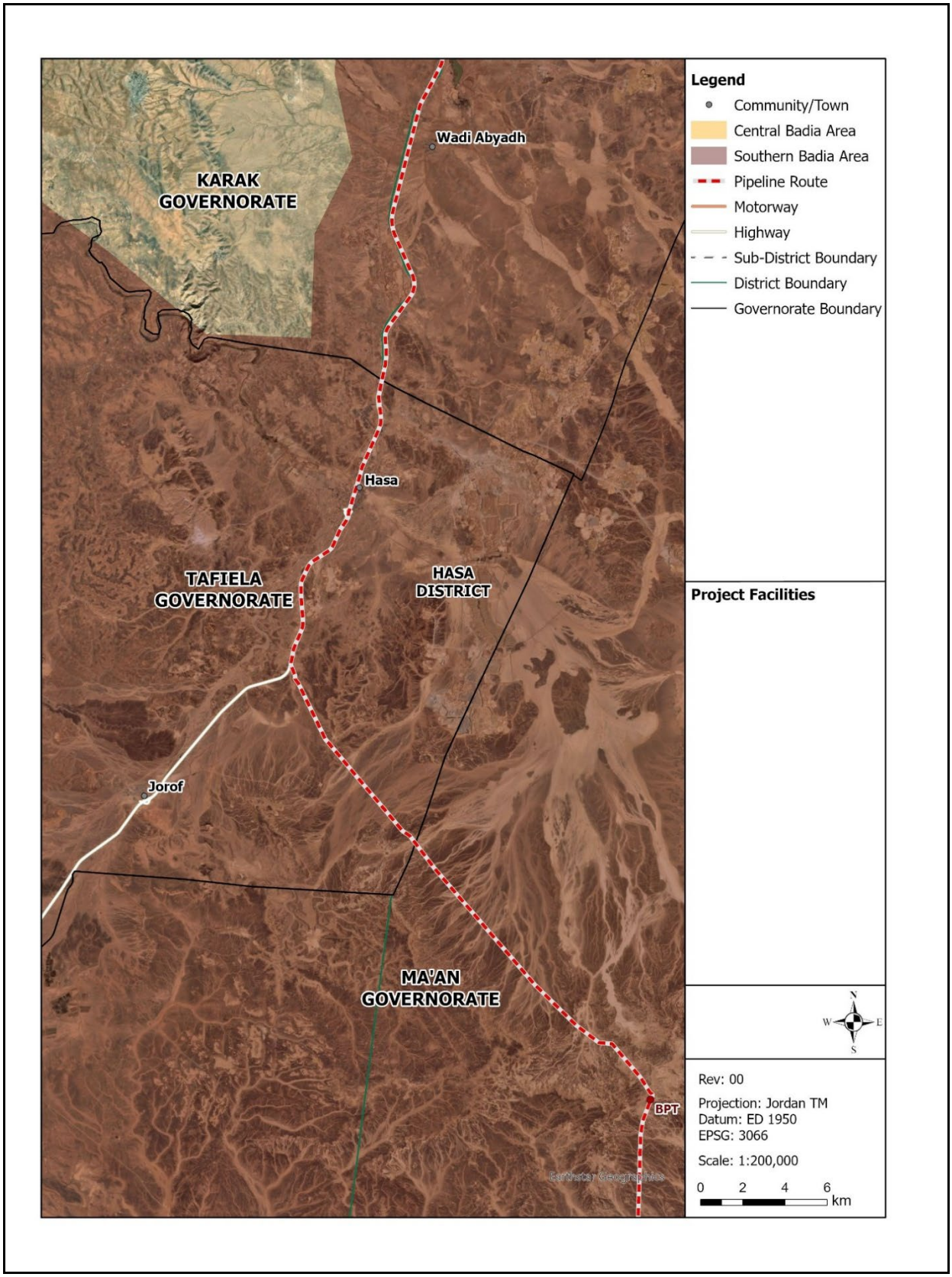


Figure 7-5: Conveyance Pipeline Route through Qatraneh District (Karak Governorate)

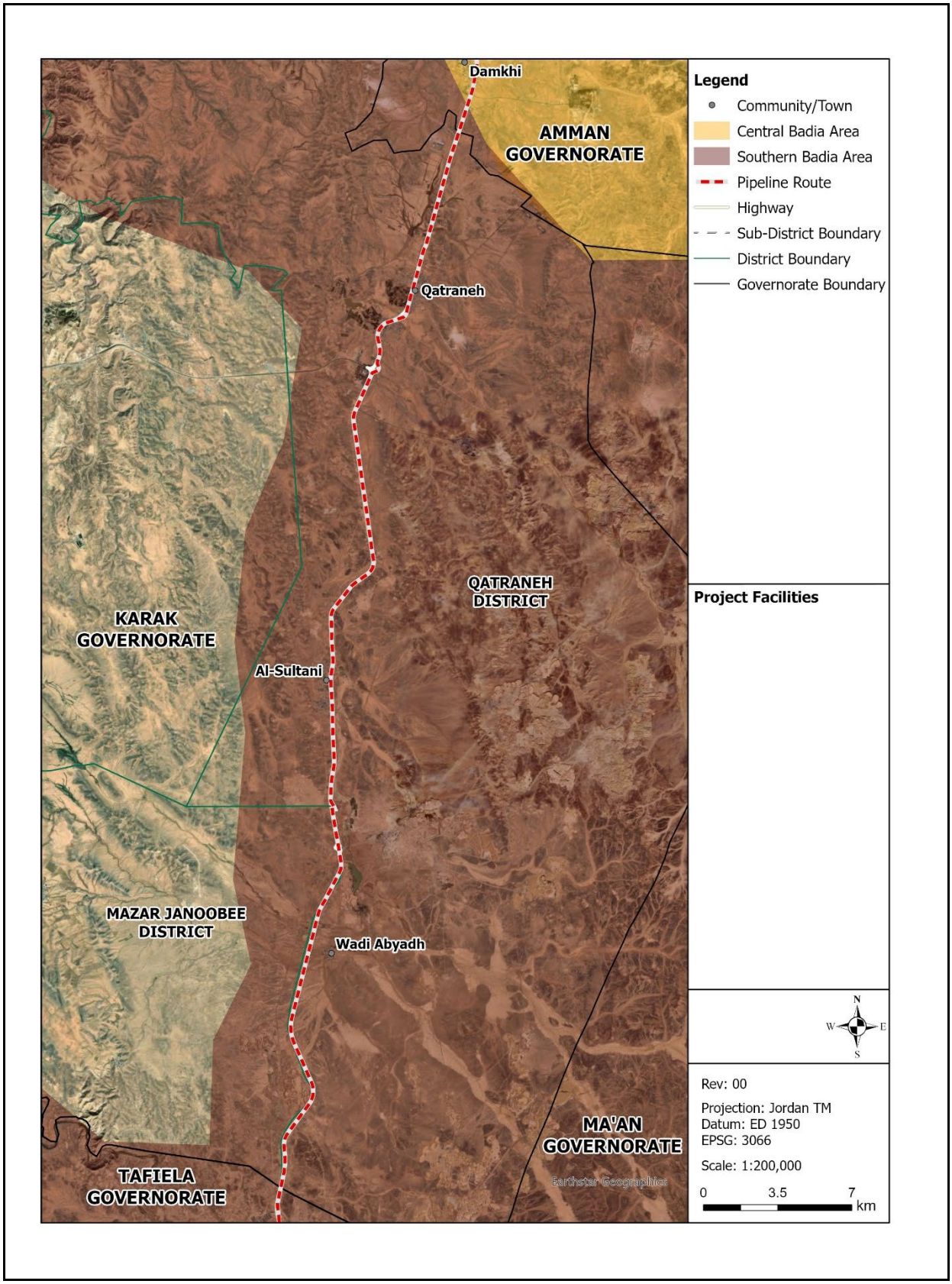


Figure 7-6: Conveyance Pipeline Route through Jizah District (South Amman Governorate)

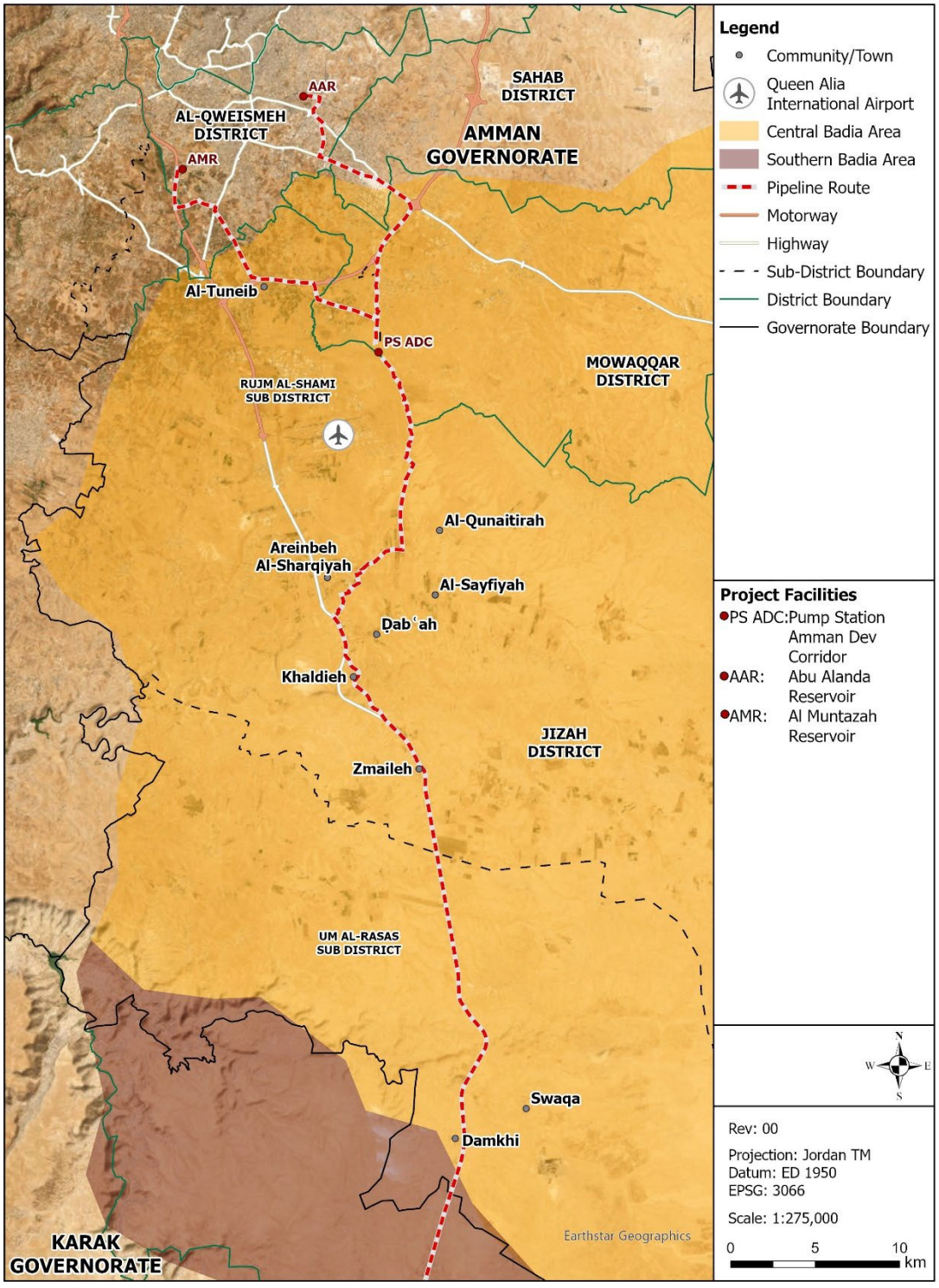
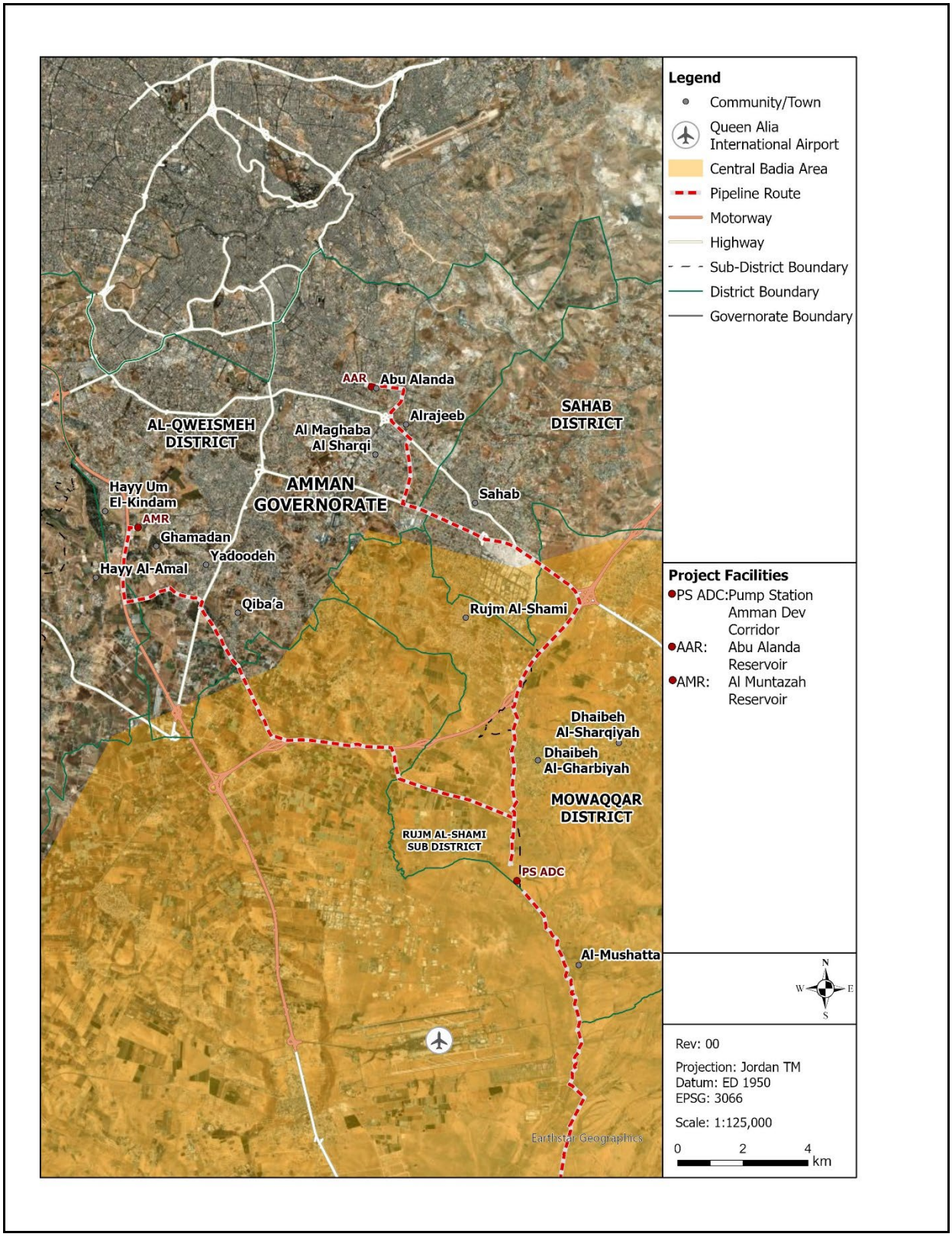


Figure 7-7: Conveyance Pipeline Route in Amman Urban Areas



7.2.4 Project Stakeholder Groups

Across this landscape, stakeholders of the Project include all individuals, groups, and organisations who have the potential to be affected, or have an interest in the Project's planning, construction, and operation. Stakeholders are grouped below according to their roles and characteristics, and relationships to the Project.

- **Government Authorities and Administrative Entities:** The administrative and political entities from central government to the governorate, district and municipal levels, who may be involved or interested in any potential impacts from the Project due to their mandates and responsibilities
- **Bedouin tribal and clan representatives:** Tribal traditional leaders (sheikhs) and key respected people, representing tribal and clan groups areas with customary tribal land use claims to Study Areas
- **Residents of municipalities, towns, villages and smaller settlements located within or near the Project footprint:** These include people who may be affected by land acquisition, livelihood disruption, construction related impacts, as well as those who have expectations or may benefit from local employment and local procurement opportunities. Local residents within the Badia areas of the Project – between Aqaba and the southern outskirts of Amman – are predominantly Jordanians of Bedouin heritage. Those local residents outside those Study Areas in Amman urban areas and along the Aqaba coast will reflect the diversity of the general Jordanian population. Finally, local residents can be grouped into demographic segments who may have distinct perspectives or vulnerabilities, such as women and youth, and there is a common tendency in Jordan for local residents to organise themselves into different interest or livelihood related community-based organisations (e.g. women's associations, youth associations, farmers associations, etc)
- **Business stakeholders:** Private sector entities, including owners and workers, that may experience direct or indirect impacts, such as land acquisition, access issues and construction related disruptions
- **Agricultural stakeholders**: There are different types of agricultural enterprises in the ESIA Study Area, including non-intensive and intensive crop and livestock farming, who may experience direct and indirect impacts such as land acquisition, loss of crops or assets, access issues, and construction related disruptions. Agricultural enterprises include farm landowners, farmers and agricultural labourers
- **Herders:** This includes different types of Bedouin herders – settled, semi-nomadic and nomadic – along the Pipeline route, who may experience construction related impacts such as impeded access to grazing areas or water points, and health and safety issues related to themselves or their animals around construction sites

7.3 Bedouin Context

This section provides an overview of the national context related to Bedouin people. Issues specifically related to community governance, tribal lands and pastoralism are addressed in the Sections 7.6, 7.7 and 7.9 below.

7.3.1 History

The term Bedouin has historically been used to refer to nomadic and semi-nomadic Arab pastoralist tribes in the Middle East, living primarily in desert and steppe areas. It derives from the Arabic word *Badawiyin* meaning people of the Badia (desert or wilderness).

The area now known as Jordan has a history that stretches back to antiquity. It has been part of numerous empires, including the Roman, Abbasid, and most recently the Ottoman (1516-1918). Strategically located at the crossroads of three continents, the area has long been important for trade, migration, and pilgrimage, offering waystations for pilgrims traveling to Mecca. It also has had long-standing traditions of nomadic pastoralism, with Bedouin tribes practicing seasonal migration across the desert and steppe landscapes. Jordan's modern era began in the early 20th century, shaped by the Great Arab Revolt (1916-1918), the collapse of the Ottoman Empire (1922), and the establishment of the British Protectorate of Transjordan (1921), which eventually led to the creation of the independent State of the Hashemite Kingdom of Jordan in 1946.

The Bedouin tribes have been among the key actors who have over centuries shaped the social, political, cultural, and environmental development of the Middle East. The history of the Bedouin tribes in the area that is now called Jordan dates back centuries, as they accessed the region in successive waves and moved across the desert and steppes in search of water and pastures. Knowledge of the history of these tribes has primarily relied on oral narratives passed down by elders and tribal leaders, through poetry and popular folktales. Over the centuries, Bedouin tribes controlled large herds and lands across the region and demanded tributes from settled communities, pilgrims and caravans passing through the desert landscape. Historically, the tribes' relationships with settled communities, as well as between themselves, were both characterised by competition and conflicts, as well as trade, negotiations and agreements, and during the Ottoman Empire the tribes were treated as one of the units of power and governance in the region.

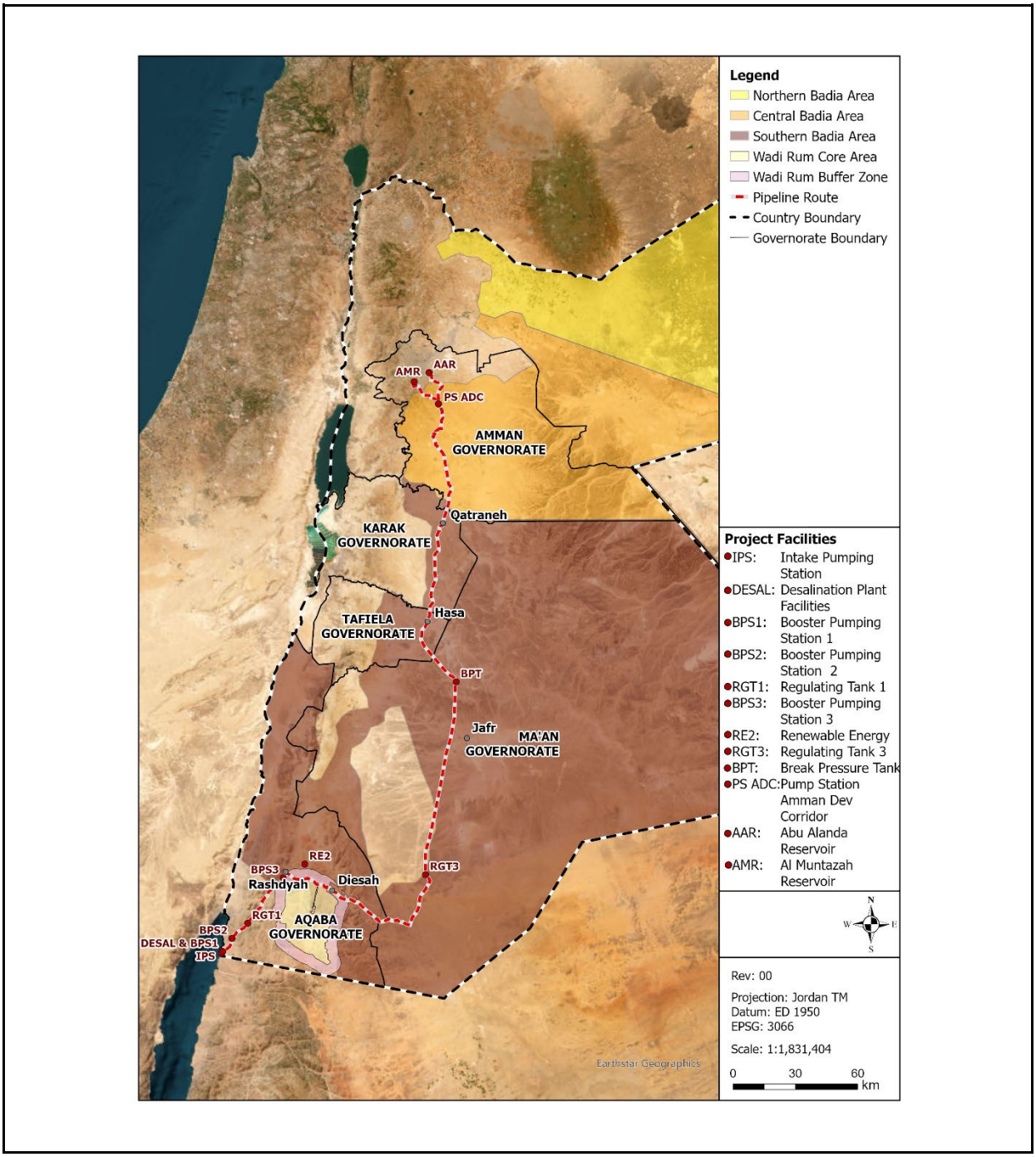
In Jordan, Bedouin tribes played a central role in the Great Arab Revolt against the Ottoman Empire, in support of Prince Abdullah bin Hussein I, which led to the establishment of the Emirate of Transjordan, under the British Protectorate. Since then the Bedouin tribes have become an important feature of Jordanian society and identity, and the centrality of the Bedouin heritage to Jordanian national identity has also been articulated by the Jordanian monarchy and Royal Family, the Hashemites. After the formation of the Emirate and then the modern State, the Royal Family also placed an emphasis on forming and maintaining strong relationships with Bedouin tribes and honouring Bedouin culture and traditions, including customary tribal law, as well as consistently favouring Bedouin people for military and government employment. As a result, Bedouin tribes were early supporters of the Royal Family, forming the basis of the Jordanian armed forces, and have remained, to an extent, part of the backbone of support for the monarchy, as well as holding key positions in the army and in government.

The establishment of the British Protectorate, and later the Jordanian State, also had a dramatic impact on Bedouin tribes, society and lifestyles, making nomadic pastoralism increasingly less practical and economically sustainable. Except for a minority, most Bedouin in Jordan today have abandoned nomadic pastoral lifestyles and have settled down in established towns and villages, a process that has been paralleled across the Middle East. The Jordanian State largely supported the process of Bedouin settlement (sedenterisation) through financial and political incentives and state-led encouragement measures.

7.3.2 The Bedouin in Jordan Today: The Badia and Tribes

While the term 'Bedouin' has historically and contextually varied in meaning, today in Jordan it broadly refers to Arabs who are seen as possessing or claim to possess recent descent from nomadic pastoralists, who may or may not still practice some form of pastoralism, possess an affiliation to certain tribes and clans, and still value certain traditions. More formally, being Bedouin in Jordan today is largely associated with living in or having a recent family connection to the Badia, which is seen as traditional Bedouin lands. Though it should be noted that there are some Bedouin settlements and communities that are located outside the Badia areas. Furthermore, the importance of Bedouin identity for individuals has persisted even as what is seen as Bedouin traditional nomadic lifestyles have become less common.

Figure 7-8: Map of the Northern, Central and Southern Badias in Jordan with the Pipeline Route (in Blue)



Being Bedouin in Jordan today also relates to being part of a recognised Bedouin tribe (*Alqabila*) and clan (*Ashira*), and people of Bedouin heritage have largely maintained their tribal names and tend to place significant importance on their tribal and clan affiliation. Tribes come in different sizes, are subdivided into clans and lineages, are patrilineal, and are associated with particular land areas, the boundaries of which are fluid and based on negotiations between and amongst tribes.

There are several overlapping ways of understanding tribes and the tribal system. First and foremost, tribes are social organisations and kinship networks of individuals and families with shared lineage and history that provide a source of belonging, reputation, and prestige. Second, they are reservoirs of cultural traditions, knowledge, and heritage. Third, the tribal system is as socio-economic structures that governs and regulates production and resources, including land. Lastly, Bedouin tribes can also be seen as political actors that claim to represent and advance the collective rights of their members, as well as providing patronage.

Even to this day, despite the transformations in the social and cultural structure of Jordanian society, the tribe and clan remain a fundamental part of the identity of its members and continue to play a central role as a source of social capital in Jordanian society. Tribal/clan loyalty can grant access to resources such as leadership positions, job opportunities, power, and influence. Additionally, tribal/clan loyalty contributes to the creation of strong social networks that foster a sense of membership and belonging, strengthening commitment to participating in tribal events and visiting relatives, which further consolidates social cohesion and solidarity. The continued presence of tribal identities is evident in the functioning of modern state institutions within tribal frameworks. The State has maintained its relationship with Bedouin tribes by granting them certain privileges, which has, in turn, strengthened these groups and directly tied their interests to the State.

7.3.3 Political Representation at the National Level

Since independence, the Jordanian political system has supported and promoted Bedouin political representation. This has been done through the creation of specific forums (such as the Tribes Consultancy), direct relationships between the Monarchy and tribal leaders, the nomination of Bedouin leaders to the Senate (the Upper House), and the reservation of seats for the House of Representatives (the Lower House) for Bedouin elected representatives. According to the Election Law for the House of Representatives of 2022, Article 4/C of the law indicates that the Civil Status and Passports Department is responsible for preparing the voter lists for Bedouin voters based on the names of the tribes listed in the Electoral Districts System issued under the provisions of the Election Law.

The reservation of seats for the House of Representatives for particular groups is common practice in Jordan and includes, seats reserved for women more generally (18), Christians (9), and Circassians and Chechens (3). It should be noted that the exact number of reserved seats is reviewed every election and has changed over time.

Currently, nine seats are reserved for Bedouin representatives, three each in the Northern, Central, and Southern Badia areas, and include one seat reserved for Bedouin women candidates in each of the three areas. A consequence of reserving seats is that those people of Bedouin heritage living in the Badia have a higher degree of political representation per capita compared to other areas and or groups, and that reserved seats have in certain instances created tension among and between Bedouin tribes as to whom should represent them and has tended to increase the political power of larger tribes.

Despite the existence of laws and regulations that support the participation of youth and women in political life, their presence in positions of power in the Bedouin regions remains limited. For example, the Political Parties Law stipulates that youth between the ages of 18 and 35 must comprise at least 20% of the founding members, while women have benefited from the quota system to reach the House of Representatives. However, youth participation remains low at the level of local administrations (municipalities), a situation attributed to a prevailing social culture that does not grant sufficient trust to youth, and that places an emphasis on experience and social status. Furthermore, the election process can rely more on tribal considerations than on competency or developmental vision.

7.3.4 Culture and Customary Law

Historically, being Bedouin meant having a nomadic or semi-nomadic pastoral lifestyle, and Bedouin nomads practiced a distinct culture, way of life, and relationship with the land that was different to that of settled populations in Jordan and across the Middle East. Aspects of Bedouin historical culture and heritage in Petra and in Wadi Rum have been recognised as part of UNESCO's Intangible Cultural Heritage of Humanity, with the objective to 'safeguard the oral traditions performed through songs and poetry, the weaving, climbing and camel-herding skills, and the medical and religious practices' (Bille, 2012: 110). People of Bedouin heritage, particularly those living in the Badia areas, also speak Arabic dialects, which vary in pronunciation to Jordanian Arabic.

Like Jordanian society as a whole, Bedouin communities have undergone significant social, economic and political transformations over the decades since the creation of the Jordanian State. Bedouin tribes in Jordan have for the large part become settled, in villages and towns, and while different forms of pastoralism are still practiced and valued, Bedouin individuals are largely integrated into the education, economy and political system in Jordan. However, certain cultural practices are still valued and present amongst the Bedouin tribes, often linked to a sense of identity related to the tribe or clan and to being Bedouin in Jordan today. For example, though certain aspects of Bedouin material culture, such as the use of *bayt al-shaʿr* (traditional black tents) as primary residences, have declined among Bedouins who have settled in villages, their symbolic significance has endured, and you can sometimes find examples of these tents pitched alongside concrete houses in Bedouin urban areas.

Tribal law or justice remains one of the most prominent cultural features of Bedouin heritage. It functions as an "oral constitution" that governs daily life and settles disputes based on inherited customs and traditions. Tribes have preserved this system since the Ottoman era, during which they managed their judicial and social affairs with a degree of autonomy through tribal judges who were chosen from families known for their wisdom. Although tribal law was legally abolished in Jordan in 1976, its influence remains present in both judicial and social practices, and tribal judges (*Qudat ʻashāʾir*) continue to play an important role within Bedouin communities in Jordan. They are respected figures within the tribal system and more widely and are relied upon to mediate disputes, resolve conflicts and uphold customary law (*ʿurf*), particularly in matters such as land access, grazing rights, compensation, and family or inter-tribal relations. While formal state courts exist and are used, tribal dispute resolution remains highly influential in the Badia, even called upon by the administrative authorities (such as governors and district governors).

In recent times there has been more fluidity between what are seen as Bedouin and Jordanian practices and customs. The Jordanian authorities, particularly those promoting tourism and Jordanian identity and heritage, have long sought to promote the image and idea of the stereotypical Bedouin as the 'Authentic' Arab and Jordanian, and Bedouin heritage as 'Authentic' Arab and Jordanian heritage, including in areas such as oral poetry, dress, and traditions of hospitality. This blurring or fluidity between what are considered Bedouin and Arab or Jordanian traditions and practices can also be seen elsewhere, for example in the duality of Jordan's national dish 'Mansaf', which has been argued to have Bedouin origins.

7.3.5 Women in Bedouin Society

The role and position of women in Bedouin society have changed over the past few decades. Bedouin women enjoy greater access to education and employment and are likelier than in the past to travel and work outside of their village, town, and tribal area. They play a bigger role in Bedouin and Jordanian society and are better represented in a range of social, economic, and political organisations, including as members of the Jordanian parliament. However, women's place and role can vary significantly,

between clans, between rural and urban areas, and are greatly affected by their age and levels of education and literacy.

In most contexts, social relations within Bedouin communities continue to be organised around male authority and decision-making roles. Key virtues associated with Bedouin culture, such as honour, courage, and hospitality, are strongly associated with men. Bedouin tribal leadership has been traditionally dominated by older men and Bedouin family lineage is patrilineal. Land and property are largely held by men and, particularly in more rural areas, there is a degree of female seclusion and exclusion. Women's voices are underrepresented in tribal society and women do not enjoy equal standing in tribal customary law. These affect women's mobility, interaction with men, employment and education opportunities, and marriage opportunities and choices. Bedouin women also face challenges and barriers, particularly in rural areas, in accessing education and health care.

Unemployment rates among Bedouin women are higher than national averages, and jobs in the education sector remain among the most accessible opportunities for them in the Badia. As a result, many Bedouin women are turning to work in the civil society sector, particularly within charitable associations. Feedback from interviewed Bedouin women in the Study Areas indicate that established women-led associations focus on traditional crafts such as handicrafts, weaving, embroidery, and productive kitchens. Women from various educational backgrounds engage in these activities, which provide an important source of income. However, these women-led associations face significant challenges in accessing support or funding from major development projects and financial institutions.

7.3.6 Social, Economic and Political Overview

The social, political and economic experiences of Bedouin communities in Jordan are diverse and cannot be generalised as uniform. Bedouin identity today spans a broad range of circumstances — from communities with strong links to state institutions and stable access to land and employment, to communities facing higher levels of poverty, unemployment and geographic marginalisation. Historically, Bedouin tribes have played a significant role in the formation of the Jordanian State and continue to be strongly represented within the armed forces and security sectors, which have been important pathways of mobility and influence. In many areas, Bedouin communities have benefited from state support, land access arrangements, political representation and long-standing relationships with government institutions. Social and human development indicators have also improved over recent decades.

At the same time, disparities persist. There is also substantial variation between Bedouin tribes/clans themselves. Larger tribes/clans, and those located closer to Amman and major urban centres, have generally had greater access to public services, economic opportunities and political influence. Smaller and more geographically isolated Bedouin communities living deeper in the Badia tend to experience more limited access to healthcare, education, employment, public infrastructure and basic services. Development outcomes in the Badia lag behind urban centres, unemployment is high, and access to services and economic diversification remains limited in many areas. Access to water is a particular issue for many Bedouin communities in the Badia: while water access challenges are national in scale, service delivery gaps are more pronounced in the Badia compared with urban areas.

Local concerns are often rooted in a perception that investment and development have been concentrated in major cities at the expense of the Badia. Young people and women in particular face constraints linked to both economic structure and social norms, leading to limited employment opportunities and reduced participation in public life. These dynamics shape contemporary Bedouin experiences in the Badia and are relevant to understanding expectations, sensitivities and stakeholder engagement needs within the ESIA Study Area.

7.4 National and Community Governance in Jordan

7.4.1 National Context

Jordan is a unitary constitutional monarchy with a centralised governance structure. Executive power is held by the King, who appoints the Prime Minister and the Council of Ministers (Cabinet), responsible for day-to-day governance. Legislative authority is vested in the bicameral National Assembly, consisting of the Senate (appointed by the King) and the House of Representatives (elected by the people). Core decision-making and service delivery remain under central government ministries, particularly the Ministry of Interior, which oversees regional administration through appointed Governors.

Jordan is divided into 12 governorates, each overseen by a Governor appointed by the King, upon recommendation from the Minister of Interior. Governorates are further structured into districts (*liwāʾ / qada*) and sub-districts (*nāḥiya*). Governors serve as the central government's executive representative in their area and oversee public security, coordination of government services, and local development projects. They also approve municipal budgets and expenditures (excluding Greater Amman Municipality and the Aqaba Special Economic Zone Authority which are overseen by the central government).

Districts and sub-districts, headed by appointed local governors and administrative directors, are local extensions of the governorate, under the Ministry of Interior. Their main responsibilities include local law enforcement coordination, coordination of central services at the district level, liaising with community leaders and local notables, and monitoring compliance with national laws and local governance. Districts and sub-districts do not have elected councils or formal planning roles, but often interface with tribal traditional leaders, other key local people who might represent a community social organisation, and municipal officials to coordinate service delivery and maintain order.

While Jordan's governance system remains highly centralised, with strong central government oversight, in recent years decentralisation reforms have introduced elected layers through municipalities and governorate councils. Jordan's Decentralisation Law No. 49 of 2015 introduced an additional layer of local governance through the establishment of elected governorate councils, aimed at enhancing local participation in development planning and public affairs.

Furthermore, elected municipalities, overseen by the Ministry of Local Administration (MoLA), also play a role in local governance, service delivery, and local development planning. Their functions are governed by the Municipalities Law, which was most recently amended through Law No. 41 of 2015 and later updated under the Local Administration Law No. 22 of 2021. While all municipalities share a set of core responsibilities, the scope and quality of services they provide vary depending on their classification, revenue base, and administrative capacity. Their core responsibilities include service delivery, urban planning, local development, licensing and regulation.

Elected municipalities and elected governorate councils were dissolved by the Jordanian government in July 2025. According to official statements, the decision was 'intended to ensure transparency, integrity, and neutrality in the lead-up to upcoming elections. For context, elected municipalities were also dissolved by the government in the run up to the previous local elections in 2021. New elections are expected in 2026, but no firm date has been provided, and it is unclear whether this will encompass governorate councils. The Minister of Local Administration has stated that new legislation concerning the local governance system is pending.

There are two distinct models of local governance in Jordan that differ markedly from municipal and governorate structures elsewhere in the country. These are the Greater Amman Municipality (GAM) and the Aqaba Special Economic Zone Authority (ASEZA).

Home to around 40% of the national population, the capital Amman and its immediate surrounding areas are administered by the GAM, which has a special legal and administrative status in Jordan. Under the GAM's authority sit 22 local district municipalities. These are not independent municipalities but administrative divisions of the GAM, which are headed by an appointed director from the GAM. The GAM council currently comprises 42 members, including an elected mayor and 14 appointed members, alongside 22 elected members (one for each of the local districts) and 6 seats reserved for women. While the GAM scope and mandate are formally local, given the size of the population it serves, and its economic weight, its actions are of national importance and significance. It also enjoys greater authority and revenue-raising powers than other municipalities.

Established by law in 2000, the Aqaba Special Economic Zone Authority (ASEZA) replaced elected municipal and local councils within the defined boundaries of the Aqaba Special Economic Zone (ASEZ) with a single appointed Board of Commissioners that exercises municipal, regulatory and development powers in the Zone. The ASEZ includes Aqaba city, the coastal tourism areas north of the city, the southern industrial and port zones, and inland areas extending north towards Qweirah District, including Wadi Rum. ASEZA's remit includes urban planning, land use and infrastructure development, investment and tourism promotion, regulation and licensing. Unlike other local authorities in Jordan, ASEZA does not rely on central government transfers; it raises its own revenues through investments, taxation, customs and service fees. Municipalities continue to operate in areas of Aqaba Governorate that fall outside ASEZ boundaries, including settlements in parts of Qweirah District and Diesah Sub-District.

7.4.2 Community Governance

Community governance in Jordan operates through several complementary channels, from elected municipalities to community-based organisations and trusted and traditional leaders.

Elected municipalities (under MoLA) are the principal public interface for service delivery and local development planning, with participatory needs-assessment mechanisms introduced under decentralisation reforms. In certain areas, local Community Councils have been established by municipalities to promote citizen participation in local planning and service delivery. These councils typically include representatives of women, youth, CBOs, and community leaders, and serve as advisory forums to support the municipality in identifying community priorities and facilitating communication with residents. Their role is consultative rather than decision-making, but they represent an important platform for engagement and information sharing.

The role, representativeness, and revenue base of municipalities varies considerably across the ESIA Study Area. In more sparsely populated Badia regions, municipalities often have limited fiscal resources and play a more administrative and service facilitation role, with day-to-day community representation often mediated through tribal/clan networks. By contrast, in more densely populated areas closer to Amman, municipalities tend to have greater scope, stronger revenue streams, and a more prominent representative role in local governance and service delivery.

Community-based organisations (CBOs) such as women's associations, youth associations, and agricultural or business cooperatives also play an important representative role at the local level in both the Badia and in urban areas. These organisations are recognised and regulated under national cooperative legislation and often act as trusted intermediaries, especially for groups whose voices may be less visible within more formal representative structures. CBOs mobilise their members for consultation, articulate community priorities, support implementation of local initiatives, and can provide safety-net or welfare support (including cash, food, education or health support) to households not covered by formal state programmes. In May 2025, amendments to Jordan's cooperative legislation

strengthened the sector through alignment with international cooperative standards, the establishment of a dedicated Cooperative Development Fund and Institute, and the introduction of gender-balanced governance requirements. While associations, are charities, bringing together specific interest groups, cooperatives are groups of individuals representing a specific livelihood related area, who are organising themselves by establishing productive projects that generate profit. In most local areas within the ESIA Study Area, women's associations and youth associations, as well as agriculture, tourism, camel racing and machinery operators' cooperatives are active and will be important interlocutors for the AAWDC Project.

From a Bedouin tribal specific governance perspective, Bedouin tribes and clans are generally headed by traditional leaders (Sheikhs) whose authority is also recognised by the State, and who can negotiate on behalf of their members with other tribes and political bodies. Bedouin tribes and clans also place great importance on trusted or respected people within the community (sometime referred to as *Wajah*). These are not always necessarily sheikhs, and can also be individuals who have done a lot for the community through charity work for example. Additionally, in many rural and Badia communities along the Project route, local representation can be exercised through mukhtars — community figures formally recognised by the Ministry of Interior who serve as intermediaries between residents and the local administration. In more urban areas, this role is generally fulfilled by municipal councils and elected representatives, and formal mukhtars are often absent.

Finally, it is worth noting that consistent feedback from focus group discussions and interviews with women, male youths, and other local residents, highlighted that in the Southern and Central Badia, district and sub-district local governors often play a significant and trusted role in convening all different segments of the local community, as well as taking a role in mediating local disputes between different groups, tribes or clans.

7.5 Land Tenure and Use

7.5.1 National Context

Jordan has a mixed legal system drawing on civil law, Islamic (Shari'a) law and customary tribal law, reflected in a pluralistic land tenure regime. Land rights are recognised and exercised through statutory, customary, religious, and informal systems. Over the past century, Jordan's legal and institutional framework has gradually moved toward land privatisation, including provisions allowing foreign nationals and investors to purchase land.

Approximately 80% of Jordan's total land area is classified as state land, the majority of which is located across the Badia regions of Jordan (Northern, Central and Southern Badia). These areas in the Badia also have long-standing customary tribal use arrangements. In contrast, private, formally registered landholdings with the Department of Lands and Survey (DLS), are more dominant in the urban and peri-urban areas of Jordan, particularly in Amman Governorate, but also within the municipal boundaries of towns and villages.

Land transactions must be registered with DLS; this is generally straightforward in urban areas, whereas rural land records can be incomplete or outdated. While land mapping and registration is extensive nationally, gaps still exist in some areas, and not all private properties are officially registered with the DLS, especially in rural tribal lands.

Jordan also faces increasing pressure on limited agricultural land. According to a 2018 USAID report, around 12% of the national land area is agricultural, and less than 3% is arable. Urban expansion, population growth, environmental pressures and refugee inflows have accelerated conversion of

agricultural land into housing and infrastructure, raising land prices and intensifying competition for remaining productive land.

Several groups within this overall context can experience greater tenure vulnerability, including women (although civil and Shari'a law formally recognise women's inheritance and property rights, social norms can limit women's ability to exercise them in practice), and households in informal or unplanned settlements.

7.5.2 Tribal Lands and Customary Use in the Badia

The classification of the Badia as State land was a process that started in the Ottoman period, further reinforced during the British Mandate and early Hashemite state formation, and finally established with the Agriculture Law No. 20 of 1973, which declared Jordan's rangelands as State land and transferred their management to the Ministry of Agriculture. Given that the vast majority of rangelands are located in the Badia, this effectively consolidated State ownership over most of the Badia, though tribal customary use and claims remain socially influential in most areas.

Most Bedouin households have undergone a gradual process of sedentarisation over the past century, accelerating from the 1960s onwards. Today, Bedouin communities are largely settled in towns and villages across the Badia, particularly along the main transport corridors (e.g. the Desert Highway and the King's Highway). From the Mandate period and early Hashemite state formation, throughout the 1960s through to the early 2000s, successive governments actively encouraged permanent settlement by formalising land allocation for cultivation, granting individual land parcels to tribal/clan households, and extending services such as education, healthcare, and infrastructure to settled communities. This contributed to a progressive process of land privatisation in certain areas of the Badia.

A minority of Bedouin households, however, continue to reside in settlements that are unauthorised or unregistered—either because settlement took place more recently without formal allocation, or because expansions occurred outside approved municipal planning boundaries. In many such cases, regularisation processes can be eventually negotiated over time, and arrangements may be reached with the State allowing formal registration; however this is not guaranteed and tenure insecurity, and lack of services and infrastructure remain a key vulnerability for these households.

Historically, Bedouin tribes governed land and grazing through communal systems that regulated access to pasture and conserved resources. Although these customary rights were annulled legally in 1973, they continue to shape lived practice: tribal use, norms and dispute resolution mechanisms (including mediation by tribal judges) remain socially influential, and overlapping customary and State claims persist in the Badia areas outside of towns and villages. Bedouin tribes continue to use land for grazing, water access, and subsistence, and intertribal/clan agreements (*urf*) remain important in managing access to these resources. In recent years, many Bedouin clans in the Badia have expressed growing interest in expanding agricultural activity on lands they consider part of their tribal areas. These initiatives depend on State permission, including allocation of land and permission to drill deep wells

Modern-day tribal land in Jordan therefore reflects a complex and sometimes ambiguous patchwork of State land, private land, and areas where customary access and use continue to be asserted through social legitimacy rather than legal title. Although tribal lands are not formally recognised in law today, there remains what can be described as a "de facto informal formalism" in which customary land usage and claims are socially acknowledged and negotiated. There are also different forms of informal State acknowledgement of tribal land use in the Badia, which contributes to ambiguity and differing interpretations of the extent and legitimacy of tribal claims over State land. These informal

understandings are not codified in law, but may be reflected in long-standing local practice, tacit permissions, or historical agreements at governorate or district level.

Based on conversations with various Bedouin stakeholders in the ESIA Study Area, including Bedouin Sheikhs, it can be argued that the state acknowledgement of tribal lands can be classified into 3 different categories:

- General informal acknowledgement of tribal use and claims over land areas across the Badia
- Informal acknowledgement of specific tribal/clan use and claims over specific land areas
- More formal acknowledgment of specific tribal/clan use and claims over specific land areas, through a Cabinet or Royal decree, or through formal nominal lease arrangements

In practice, district and sub-district local governors, as well as municipalities, are often the most reliable institutional entry points for understanding which areas are subject to recognised tribal usage or expectations, as these authorities usually maintain a working knowledge of where customary claims and seasonal use patterns are locally understood to apply.

7.5.3 Land Use and Access in the ESIA Study Area

These differences in land tenure patterns have direct relevance for the Project. Along much of the Conveyance Pipeline route in the Badia, the alignment will pass within or adjacent to existing linear infrastructure corridors (e.g., the Desert Highway right-of-way and the Diesah Pipeline route). The surrounding land in these areas is predominantly State land, where customary tribal use and claims related to grazing, access to water, seasonal mobility and agriculture remain socially recognised even if not formally registered. By contrast, as the alignment approaches the southern outskirts of Amman, land bordering the Conveyance Pipeline route becomes increasingly characterised by individually owned private freehold parcels, as well as municipal lands under the jurisdiction of local authorities.

Informal settlement and land use also exist in parts of the ESIA Study Area. In some Badia locations, Bedouin households reside informally on State land, either in tent structures (bait sha'ar) or mixed informal tent–housing settlements that have evolved over time without formal registrations. In other cases, settlements have expanded beyond municipal boundaries—such as in parts of the Diesah Sub-District—without formal planning approval or regularisation. These contexts create situations where the social reality of land use and expectations differs from formal legal title.

7.6 Economy, Labour and Livelihoods

7.6.1 Overview of Labour Context in Jordan

7.6.1.1 Employment & Unemployment

Jordan's unemployment rate remains very high at around 21% (Q2 2025), with a stark gender gap – female unemployment is about 33% versus 18% for males. There are also regional disparities: for example, Ma'an governorate faces the highest unemployment (34%), while Aqaba has the lowest (16%). Overall employment-to-population is low (with 32% of adults aged 23+ working for wages). Youth unemployment (age 15-24) is acute, peaking at roughly 46% in 2022. Jordan has one of the lowest female labour force participation rates in the world, at just 13–18% in recent years.

7.6.1.2 Formal vs. Informal Economy

A large portion of Jordan's workforce is in the informal economy, meaning they work without formal contracts or full legal protections. Roughly 46%–52% of all workers are considered informally employed (estimates vary, but nearly half of labour force is not registered for social security). These include many self-employed individuals, day labourers, and migrant workers who do not have stable contracts. People in informal jobs typically lack benefits like health insurance, pension, paid leave, and often earn less secure incomes. This divide particularly affects young workers and refugees, who often resort to informal work. The government has recognised this issue and is working on policies to formalise more jobs (for instance, simplifying business registration and enforcement of social security mandates). Nonetheless, informality remains high, meaning a significant share of Jordanian workers have no safety net or legal protection in practice.

7.6.1.3 Minimum Wage & Working Poverty

Jordan sets a national minimum wage of JOD 290 per month (about $408), effective 01, January 2025. This minimum wage level is slightly above the individual poverty line, and extreme working poverty is very low (only 0.3% of workers live under $1.90/day in 2021). However, in practice some low-skilled and informal workers earn less than the legal minimum. Reports indicate issues with non-payment of overtime, non-compliance with safety standards, and some workers (especially in informal jobs) not receiving the minimum wage due to lack of enforcement.

7.6.1.4 Migrant Workers

Jordan's economy relies heavily on migrant labour, which makes up nearly half of the workforce. As of 2025, the proportion of foreign labour in total employment was 45%. The largest groups are Egyptians and Syrians, along with workers from South and Southeast Asia (e.g. Bangladesh, India, Sri Lanka, the Philippines, Myanmar). These migrants are predominantly employed in labour-intensive sectors – agriculture, construction, manufacturing (garment factories), and domestic work (household servants). Many of these jobs are low-wage and some fall outside full legal protection (Syrian refugees, for instance, often work informally). Jordan's *kafala* (sponsorship) system ties migrant workers' residency to their employer, which can make them vulnerable despite recent reforms. The reliance on foreign labour has slightly decreased in recent years as the government encourages hiring Jordanians, but migrants still fill critical roles in the economy.

Alongside the widespread reliance on migrant labour in Jordan, concerns regarding access to jobs for local people remain a highly salient issue. This was one of the most consistently raised issues during stakeholder engagement for the AAWDC Project across all five Governorates, particularly among women and youth, who stressed the need for fair and transparent access to employment opportunities. These local concerns reflect a broader national sensitivity over foreign labour taking roles that Jordanians believe they are able and willing to fill. For example, media sources reported a protest in 2018 at the Ministry of Labour where unemployed Jordanians objected to foreign workers being hired into skilled jobs by large contractors. Such instances demonstrate that public projects perceived to bypass local labour can generate resentment and social tension.

Partly in response to these pressures, national policy now seeks to prioritise Jordanian employment in public investment. A 2016 By-Law requires contractors working on government projects to hire Jordanian staff—particularly new graduates—and to subcontract to firms based in the project's Governorate, with priority given to residents of the district. Bids may be rejected if these requirements are not met. This

framework is intended to ensure that public projects contribute to local development, reduce unemployment and prevent resentment arising from the use of external labour.

7.6.1.5 Women's Labour Force Participation

Female labour force participation in Jordan and in the AAWDC Study Areas remains very low. In 2024, only 14.9% of Jordanian women were economically active, and just 10% were employed. Participation is highest among women with higher education — yet overall unemployment figures amongst Jordanian women are 32.9%. Marriage and motherhood further reduce women's likelihood of entering or remaining in the labour market, and women with young children are the least likely to participate.

Women who do work are concentrated in a small number of sectors, primarily education, health, public administration, and household-based micro-enterprises. This was confirmed by women in the AAWDC Study Areas interviewed as part of the ESIA engagement.

Recent policy reforms, including Law No. 10 of 2023, have contributed to improvements in the legal framework for women's economic rights. The 2023 amendments explicitly prohibited gender-based discrimination in employment and removed prior restrictions that barred women from working in certain industries, which were previously determined at the ministerial level. Additionally, the law established new protections against bullying and sexual harassment, defining sexual harassment broadly to include any physical or verbal behaviour of a sexual nature or related threats that undermine a worker's dignity or cause harm. Perpetrators are now subject to financial penalties.

Building on this momentum, the Jordanian Cabinet approved further reforms in August 2024 aimed at improving job security and maternity protections. Proposed amendments to Labour Law No. 8 of 1996 include extending maternity leave from 10 to 12 weeks and prohibiting both public and private employers from terminating pregnant employees' contracts. These changes represent a continued effort to make the labour market more inclusive and supportive of women's participation.

However, barriers to women's employment in Jordan are shaped by a combination of restrictive social norms, market-related constraints, and gaps in legal enforcement. Social expectations around gender roles remain one of the strongest determinants of women's labour force participation. While many women would like to work, permission from male family members often determines whether they can do so, and support for women's work declines sharply when jobs are outside the home, in mixed-gender settings, or require returning after evening hours.

Market-related constraints also significantly reduce women's ability to work. Women carry the vast majority of unpaid care responsibilities, particularly childcare and housework, which creates high time burdens, especially for mothers with young children. Limited availability, affordability and geographic access to formal childcare options — particularly outside major cities — further restrict women's ability to take up work. In addition, lack of, inadequate, unsafe and costly transportation presents a major barrier; many women report harassment on public transport, which discourages commuting even when transport is available.

Despite a series of legal reforms aimed at enhancing women's rights in Jordan, significant structural and legal barriers continue to limit women's full participation in the workforce. As a result, even highly educated women in Jordan face substantial structural obstacles that limit their participation in the labour market. Persistent gaps in equal pay enforcement, safe working conditions, inheritance and property rights, and legal protections continue to restrict women's economic empowerment.

These national patterns are directly relevant to the AAWDC Project. During stakeholder engagement, women in all Study Areas repeatedly stressed the importance of fair access to employment and

contracting opportunities within the Project — particularly given the limited availability of suitable jobs for women locally, and the high unemployment rates among educated women.

7.6.1.6 Gender Based Violence and Harassment (GBVH)

Despite increasing attention to gender equality, thorough research on gender-based violence and harassment (GBVH) and sexual exploitation and abuse and harassment (SEAH) in Jordan remains limited, particularly outside the garment sector. However, existing studies indicate that sexual harassment constitutes a significant barrier to women's retention and advancement in the labour market.

- In 2017, the Jordanian National Commission for Women (JNCW) conducted a landmark study on sexual harassment across different settings, finding alarmingly high prevalence rates: 89.1% of respondents reported experiencing non-verbal harassment (such as gestures), 88.4% verbal harassment, 80.8% online harassment, 68.7% physical harassment, and 52.3% psychological harassment
- In 2018, the Arab Renaissance for Democracy and Development (ARDD) examined harassment specifically in the workplace, revealing that 52% of Jordanian women and 73% of Syrian refugee women had informally reported experiencing sexual harassment at work. The study further underscored that harassment was among the main challenges facing women employees and highlighted widespread gaps in awareness about what constitutes sexual harassment as well as the lack of accessible reporting mechanisms to seek redress

In 2023, Jordan amended its Labour Law (Law No. 10 of 2023) to strengthen protections against sexual harassment in employment, explicitly expanding Article 29 to include "sexual harassment" among the actionable offenses, and authorising the Minister of Labour to refer employers to court and impose financial penalties when harassment is proven. Under the new regime, perpetrators may face fines from JD 2,000 to JD 5,000, and employers found liable, such as managers or their representatives, can be held responsible, including for cases of dismissal without notice in cases of assault, insult, or harassment. The amendment further grants an employee the right to leave work and claim compensation if subjected to harassment, and introduces the possibility of establishment closure when an employer is found to have used violence or sexual assault in the workplace. Although the law now addresses harassment more directly, implementation challenges remain: employers are not uniformly mandated to maintain internal reporting systems or prevention policies, and the revised Article 29 has been criticised for gaps in scope (e.g. limited to employer/representative misconduct) and for not aligning fully with international standards such as ILO Convention 190.

7.6.2 Local Economy and Livelihoods in the ESIA Study Area

7.6.2.1 Aqaba & Coastal Areas

The Project begins within the Aqaba Special Economic Zone Authority (ASEZA), where the Desalination Plant and a section of the OHTL will be located in the southern industrial and port area. Aqaba District's economy is shaped by tourism, maritime services, logistics, port activities and trade, underpinned by ASEZA's mandate to position Aqaba as an investment-and-development hub. Coastal tourism, diving and beach resorts along the northern shoreline are significant sources of employment, alongside small-scale fisheries and maritime operators who rely on healthy marine ecosystems for their income.

Labour market statistics indicate that Aqaba Governorate recorded the lowest unemployment rate nationally in 2024 at 17.3%, though unemployment rates among women and youth are higher. The Governorate also hosts a high prevalence of foreign workers, especially in industrial, port and logistics operations, which contributes to a dynamic but complex labour environment with strong demand for skills and a diverse workforce.

Aqaba's mixed economy provides a wide variety of employment types — from hospitality and tourism work to maritime services, transport logistics, free zone investment, commerce, small trade, and informal coastal tourism-related businesses. Economic development ambitions under ASEZA also seek to attract further investment, industrial diversification, and tourism growth along the coast.

Local livelihoods and economic activities in this area are therefore strongly dependent on preserving marine ecosystems, maintaining tourism attractiveness and ensuring that future industrial projects contribute to rather than undermine coastal economic opportunities.

7.6.2.2 Qweirah District and Wadi Rum Basin

As the Pipeline and OHTL route moves north into Qweirah District and the Wadi Rum Basin, the economy becomes more rural, diversified, and rooted in a combination of tourism, agriculture, and pastoral livelihoods. The Wadi Rum UNESCO World Heritage Site is a major domestic and international tourism destination, supporting a range of commercial camps, guiding services, jeep tourism, and hospitality businesses. Agricultural activities are also significant and vary in scale — ranging from large privately owned farms (such as the Wadi Rum Corporation holdings) to medium-sized holdings and household-level cultivation. Many households in the Qweirah area also have gardens or olive plots, although water scarcity has increasingly constrained production. Livestock herding remains a central livelihood, especially for Bedouin households, with pastoral activities forming part of flexible, seasonal income strategies.

Stakeholder feedback from interviews and focus groups in the area has highlighted how tourism is increasingly recognised locally as the most economically transformative opportunity and a major source of local revenue. Stakeholder feedback further highlighted particular concern that construction activities could disrupt tourism operations or affect the environmental and visual quality of the landscape — which directly affects income generation potential. Feedback from the ASEZA Wadi Rum Area Director in October 2025, highlighted that local tourism operators and businesses in Wadi Rum have experienced prolonged economic strain in recent years, following the dual shocks of the COVID-19 pandemic and regional instability. These events led to a sharp decline in visitor numbers and tourism revenues, and the sector is only now beginning to show signs of gradual recovery.

However, despite these diversified livelihood sources, poverty and unemployment remain structurally high. Diesah is formally identified as a poverty pocket (a sub-district where the percentage of individuals below the absolute poverty line exceeds 25% of the total population of the sub-district), with approximately 171 households receiving support from the National Aid Fund. The National Aid Fund is a government-administered social protection agency in Jordan. It provides means-tested cash transfers and in-kind support to low-income households, female-headed households, disabled persons, and other vulnerable groups. Qweirah District as a whole is also classified as a poverty pocket, reflecting longstanding challenges such as limited basic services, weak infrastructure, lack of job opportunities— around 387 households in Qweirah District benefit from the National Aid Fund. Unemployment is particularly acute among women and youth in the district, and stakeholder consultations indicate a strong perception that many available jobs are filled by external labour, not local residents.

These economic vulnerabilities shape stakeholder expectations in this area and feedback from engaged local stakeholders in the area reveal high expectations that national projects such as AAWDC should create concrete local economic opportunities—either through employment, vocational training and contracting opportunities—or through funding for sustainable livelihood projects.

7.6.2.3 Jafr Sub-district in Ma'an Governorate

As the Pipeline route moves north into Jafr Sub-District, the landscape becomes more sparsely settled, with scattered nomadic or semi-nomadic herders during the autumn and winter months, seasonal grazing activities, and agricultural pivot farms irrigated through deep well extraction in certain areas. These agricultural enterprises mainly cultivate fodder crops such as barley and alfalfa and are farmed through lease agreements where farmers pay nominal annual fees to the State. Compared to household-scale farming in parts of the Wadi Rum basin, pivot farming in Jafr tends to be more capitalised and commercially oriented, with access to machinery, hired labour (often foreign), and established supply chains.

Despite this, the wider Jafr Sub-District is characterised by longstanding socio-economic vulnerability. Official poverty pocket assessments by the Ministry of International Planning have described Jafr as facing fragile economic and development conditions, with most households reliant on low-paid public sector employment, national aid programmes, and subsistence pastoral livelihoods. Private sector investment is limited due to weak purchasing power, remoteness from markets, and inadequate transport infrastructure. Basic services also face constraints—with high school dropout rates, limited school facilities.

A 2021 press article indicated that Jafr Sub-District faces clear economic and infrastructure marginalisation highlighted by deficiencies in basic services, and that despite the geographic proximity of major industrial operators in the wider region (e.g. phosphate and energy companies) these have not translated into significant local economic opportunities for the area. Overall, livelihoods in Jafr remain highly dependent on pastoralism, supplemented by limited agriculture and public sector employment, with a large share of households below the poverty line and reliant on national assistance.

The youth in the area face particularly high and long-term unemployment, limited vocational pathways, weak institutional support, and low participation in civil society. A 2024 study on social exclusion among Bedouin youth in the Ma'an Badia highlighted these issues, citing financial instability, indebtedness, weak institutional trust (particularly towards municipalities and Parliament), and increased social isolation.

7.6.2.4 Along the Desert Highway Through Hasa and Qatraneh Districts

The economies of Qatraneh and Hasa Districts are shaped by their strategic location along the Desert Highway, linking Aqaba with Amman. The accessibility of land and direct connectivity to the national transport corridor has attracted industrial investment, positioning Al-Qatraneh in particular as a developing industrial and agricultural hub in southern Jordan. The local economy is characterised by major industrial enterprises in the broader area such as poultry, cement, gypsum and phosphate industries, roadside commerce and transport services linked to the Desert Highway corridor, providing basic goods, repair services, and retail trade for travellers and local residents, employment in education, municipal services, and army institutions, as well as small and medium-scale agricultural units established since the 1970s, and pastoral livestock production that continues to extend into the eastern desert through settled, semi-nomadic and nomadic herding practices. Local Municipal Strategic Plans note that this geographic advantage continues to draw new investors, positioning Qatraneh as a growing industrial and agricultural hub with potential for expanded employment and economic diversification in the coming years.

Despite these assets, structural challenges remain in integrating the local workforce into these industrial activities, with most skilled and managerial jobs in industry filled by labour brought in from outside the Districts. Public sector and services employment therefore remain an important income source for many households, alongside agriculture, livestock, roadside commerce and transport services linked to the Desert Highway corridor.

Unemployment — particularly among youth and women — was consistently reported by engaged stakeholders to be significantly higher locally than official governorate aggregates suggest, due to limited local vocational training, skills mismatches, and weak integration of local labour into the industrial base. Water scarcity, declining rangeland productivity, and the rising costs of fodder are also placing pressure on traditional herding-based livelihoods. Many households rely on informal income sources or social assistance programmes, underscoring both the vulnerability of local livelihoods and the strong expectation among local communities that major national projects — such as the AAWDC — should support local employment and economic opportunities.

7.6.2.5 Amman Governorate

As the Pipeline route enters the southern parts of Amman Governorate, the context transitions into a peri-urban landscape where agriculture remains highly present and economically significant. Along this route, there is a mix of medium-scale commercial farms, orchards, fodder production areas, as well as smaller household farms, alongside roadside commerce, light industrial activity, workshops, logistics yards, and expanding residential development. Many settled Bedouin families continue to farm in these areas, and agriculture remains an important income source for some households, although land conversion pressures linked to urban expansion are increasing. Livelihoods in this zone therefore remain mixed — combining agricultural production, public sector employment, small trade, construction work, transport services, and informal work.

Further north into metropolitan Amman, the economy becomes far more diverse, service-oriented, and integrated into national labour markets. Amman is the largest employment centre in Jordan, with strong public sector, private sector, retail, logistics, construction, hospitality, IT, and service industry employment. Households in the city and outer peri-urban belts are far more likely to have permanent wage-based employment rather than pastoral or agriculture-based livelihoods.

7.7 Agriculture and Pastoralism

7.7.1 Overview of the Agricultural Sector in Jordan

Agriculture, including pastoralism, in Jordan plays a relatively modest role in the national economy, but remains socially and strategically significant, particularly in the Badia areas where it continues to be a key livelihood source. The sector contributes approximately 5% of GDP, but its wider contribution to food security, employment, rural incomes, and value chains (processing, transport, inputs, feed supply) is substantially higher than its direct GDP share indicates. Agricultural production in Jordan is constrained by extreme water scarcity, limited arable land, high climatic variability, and increasing pressures linked to urban expansion — meaning production is heavily dependent on groundwater extraction and irrigation efficiency, particularly for high-value horticulture and fodder crops.

Agricultural production is characterised by regional specialisation: irrigated fruit and vegetable production dominates in the Jordan Valley; mixed horticulture and fodder production is widespread in peri-urban governorates; and pastoral livestock herding (sheep, goats, camels) remains a critical livelihood system across the Badia. The sector is also shaped by a significant migrant labour presence,

particularly Egyptian workers, who form a major share of the agricultural labour force. For many rural households, agriculture and seasonal herding is combined with other income sources, such as public sector work, seasonal or project work, and informal trade.

Jordan's agricultural policy priorities in recent years have increasingly focused on water efficiency, sustainable rangeland management, modernising value chains, and strengthening agricultural cooperatives as a mechanism for improving market access, reducing input vulnerability, and enhancing producer bargaining power.

Discussions with the Jordan Cooperative Corporation (JCC) revealed that cooperatives are a significant institutional mechanism supporting agriculture and livestock initiatives in Jordan. Agricultural cooperatives and producer associations play an important role in supporting small and medium-scale farmers, particularly in the Badia and in peri-urban governorates. The Jordan Cooperative Corporation (JCC) regulates, supports, and oversees cooperative entities nationwide, including agricultural, livestock and mixed production cooperatives. As of 2025, more than a third of all registered cooperatives in Jordan operate in agriculture or agro-pastoral activities, providing collective input purchasing, marketing support, access to shared machinery, and in some cases facilitating access to subsidised financing or donor-supported development programmes. Within many of the AAWDC Project Badia localities, agricultural cooperatives therefore function as important vehicles for farmer representation, mobilisation, and improved access to markets and resources.

7.7.2 Overview of Agriculture in the ESIA Study Area

Agriculture is a key livelihood and land-use activity in many of the locations along and near the Project route, particularly in the Badia. Although the Central and Southern Badia are characterised by arid conditions and low rainfall, irrigated and mixed farming systems have developed in a number of productive zones extending from Aqaba northwards through Qweirah, Wadi Rum, Jafr, Hasa, Qatraneh, and into Amman Governorate.

Across Qweirah District, including Diesah Sub-District, most households maintain small garden plots or orchards, often cultivating olives, vegetables, and fruit trees for household consumption. These smallholdings are watered by access to the local water network, but declining groundwater levels and water-use restrictions in recent years have made this increasingly difficult. In this area, agriculture has expanded through the use of deep wells that draw on fossil groundwater, as well as through access to the local water network through above ground water pipes. The overall area contains a mix of large-scale privately owned farms, such as the Wadi Rum Corporation holdings; medium-sized commercial farms operated by local investors; and small family-run farms that supply nearby markets. Crops include dates, vegetables, and fodder, and the area supports both permanent and seasonal farm labour.

Further east, in Jafr, there are extensive irrigated farms established on state land that also forms part of traditional tribal territories. These lands are farmed under lease agreements between individual farmers and the Government, whereby farmers—from local clans—pay a nominal annual fee. The farms are typically centre-pivot (crop-circle) systems producing barley and alfalfa as animal fodder, and seasonal vegetables.

Along the Desert Highway corridor, particularly in Hasa and Qatraneh Districts, there are medium and large-scale irrigated farms producing grapes, vegetables, and fruit trees. Many of these enterprises are commercial in nature and employ seasonal or migrant workers during planting and harvest periods.

In the Amman Governorate, agriculture becomes more diversified and intensive, reflecting access to infrastructure, urban markets, and a larger agricultural workforce. Farms in this area are mostly

commercial, cultivate olives, citrus, vegetables, greenhouse crops, fodder crops and operate small dairy and poultry enterprises.

Across all these locations, the agricultural workforce is composed mainly of migrant labourers, including Egyptian workers employed across most governorates, Syrian workers (particularly in Amman and central Jordan), and a long-established community of Pakistani farmers concentrated in Amman Governorate. Workers (with their families in the case of Syrian workers) often live on the farms, in makeshift tents.

7.7.3 Herders and Pastoralism

7.7.3.1 Herders National Overview

Pastoralism remains an important livelihood system in Jordan, amongst Bedouin households, particularly in the Southern and Central Badia, where small ruminant herding continues to be culturally significant and economically relevant. Most livestock are sheep, followed by goats, with camels now representing a smaller proportion of total herds due to their higher cost and because they are not covered under existing feed subsidy allocations.

While the majority of Bedouin households are now settled, pastoralism has adapted rather than disappeared. Herding in the Badia is best understood as a livelihood system, although for many Bedouin households it also remains closely linked to cultural identity and heritage. Bedouin herders may be settled, semi-nomadic, or nomadic, and these categories are fluid rather than rigid. Many households that are considered settled may continue to practice seasonal livestock mobility, while others shift between patterns of movement depending on rainfall, grazing conditions, and access to water. Settlement therefore does not imply the disappearance of mobility but rather reflects adaptive strategies that combine permanent residence with continued use of seasonal grazing areas and water points.

The Hashemite Fund for the Development of the Jordanian Badia estimates that only a small minority of Bedouin families still practice full nomadism (2%), while approximately 15% are semi-nomadic. However, settled herders are most common, ranging from commercial livestock owners, who employ hired shepherds (often Egyptian agricultural labourers, or in recent years refugees from Syria), to settled Bedouin households owning livestock animals for livelihood and subsistence purposes. Across these groups, livestock rearing continues to play a key role in household economies, cultural identity, and local land use practices in the Badia.

It should be noted that nomadic or semi-nomadic pastoralism is not associated with a particular tribe or clan, but rather with certain families choosing to maintain this type of pastoralism livelihood. Semi-nomadic herders maintain a fixed home base but still move their livestock in relation to pasture and water availability. This type of semi-nomadism typically involves men moving seasonally with their herds, while their families remain settled in permanent homes. In this arrangement, women and children stay in town or village residences—often near schools, services, and extended relatives—while the male herders alternate between the household and the grazing areas. The herders live temporarily with the livestock in what is locally called an *Ezbah*, a smaller version of the traditional Bedouin tent, usually set up near grazing sites or water sources. Nomadic herders are Bedouin herder households who live in Bedouin tents and move seasonally with their herds, primarily sheep and to a lesser extent camels, across Jordan in search of grazing and water.

Both nomadic and semi-nomadic herders move their herds seasonally to access grazing—especially during winter and spring. These seasonal movements generally involve moving eastward into deeper Badia areas in winter where temperatures are warmer and wadi basins hold vegetation, and returning westwards, particularly to the highlands part of Jordan or towards agricultural zones in spring and early

summer where access to crop residues or post-harvest grazing is available. So for example, winter and autumn grazing areas such as Al-Qataif, Al-Shmeisanat, Al-Hurr, Wadi Araba, Wadi Rum, Al-Jafr, Bayer, and others are warmer during these months, and are characterised by the growth of shrubby vegetation such as Atriplex, Salsola, Artemesia and Anabasis, which provide valuable forage for animals. From both a social and environmental perspective, these rangelands are among the most significant grazing zones in the Jordanian Badia, as they serve as the main winter grazing grounds for Bedouin herders. In times of severe drought, however, some Bedouin herders extend their grazing routes beyond Jordan's borders, moving eastward into Iraq or southward and northward into Saudi Arabia and Syria, in search of pasture and water resources for their livestock.

The spring grazing areas, known locally as "Al-Mirb'a," including Al-Harra, Al-Hamad, Al-Marabbat, Al-Samh, and others, were referred to by one interviewed herder as the places "wherever the rain falls, that's where we go," emphasising their close connection to rainfall patterns. The spring season is considered the most productive period for livestock, as the abundance of fresh vegetation enhances animal health and growth. Consequently, it is also viewed as the main season for generating income from livestock, marking a period of economic vitality and abundance for Bedouin pastoral households.

The summer grazing areas, known as "Al-Qeidh," are usually found in the western parts of the Northern and Southern Badia, such as Subha, Subhiyah, Al-Husseiniyah, and Jebal Al-Sharah. These include the highland rangelands of Al-Rahah, Al-Rajif, and Al-Qurain in the south.

According to a 2025 interview with a local community Shiekh, "those who own large herds usually remain in the spring rangelands, and sometimes return eastward to areas such as Al-Had, Bayer, Al-Ghamr, Al-Hazeem, Al-Shamiyah, Al-Wisad, Al-Hurr, Al-Awja, and Al-Ghudaiwiyat," since grazing for long periods in the western rangelands is difficult due to limited grazing space and the large size of their flocks. Thus, summer grazing typically involves shorter movements or partial migration, depending on herd size and resource availability, forming part of the seasonal transhumant system that continues to shape Bedouin pastoral life in Jordan's Badia.

Whether herders are settled, or semi-nomadic or nomadic, feedback from herders and local key informants gathered during the ESIA Study stakeholder engagement suggests that livestock owners in the Badia can generally be divided into three main categories based on the size of their flocks. The first group includes large-scale owners, who manage more than 1,000 head of sheep and goats. These herders often have greater mobility, financial resources, and access to feed and water sources. The second group represents medium-scale owners, with herds ranging between 400 and 1,000 animals, who combine traditional grazing with purchased feed and often rely on family labour. The third group consists of small-scale owners, who typically own fewer than 400 head of livestock and face the greatest challenges in sustaining their herds due to limited grazing access, feed costs, and water scarcity. Livestock owners also noted that most of the fully nomadic herders fall within the large and medium-scale categories, as maintaining mobility requires sufficient herd size to justify the costs and labour involved. This classification helps to explain differences in livelihood strategies, mobility patterns, and vulnerability among herders in the Southern and Central Badia (Herders' interviews, 2025).

According to a 2025 study carried out by the Hashemite Fund for the Development of the Jordanian Badia, the majority of nomadic or semi-nomadic herders (74%) come from the Southern Badia, where pastoralism remains a key part of livelihoods and cultural identity, around 22% come from the Northern Badia, while only 4% are from the Central Badia. This distribution reflects the geographical and ecological patterns of rangeland use, as the southern regions continue to offer wider grazing areas and stronger traditions of nomadic and semi-nomadic herding compared to the more settled and urbanised middle and northern parts of the country. The Central Badia, being geographically closer to Amman, the capital, experienced earlier access to education, public services, and employment opportunities, which

encouraged many families to diversify their sources of income and gradually move away from traditional nomadic herding. As a result, full nomadism has become rare in this region. A similar, though less pronounced, trend can be observed in the Northern Badia, which is also relatively close to Amman and other urban centres. In contrast, the Southern Badia, characterised by its vast rangelands and greater distance from major cities, has remained more dependent on livestock and grazing, explaining why the majority of Jordan's nomadic and semi-nomadic herders are concentrated there.

Natural rangeland productivity has declined significantly over the past decades due to overgrazing, vegetation loss, land conversion and climate pressures, and as a result herders rely increasingly on purchased fodder to supplement grazing. Interviewed herders indicated that due to the depletion of natural rangeland resources in the Badia, many herders increasingly depend on vegetation that grows in wadi basins, which has become a critical factor shaping their current grazing movements, as well as bought livestock feed. Government-subsidised feed (primarily barley and wheat bran), distributed through feed centres managed by the Ministry of Agriculture, is critical to herd viability. Distribution is managed through authorised feed centres in the governorates, where herders collect their assigned quotas monthly or seasonally upon presenting their livestock registration cards. However, interviewed herders noted that the livestock census used to allocate feed quotas is outdated, resulting in subsidy allocations that do not reflect current herd numbers or needs. Veterinary vaccines and basic animal health services are also subsidised through the Ministry of Agriculture, and usually available in towns, near to feed centres. Veterinary service coverage is limited in remote grazing areas, and interviewed herders highlighted the need for mobile veterinary units.

Access to water remains one of the most significant constraints on pastoralism. Herders rely on traditional wells, wadi basins, ponds (*haffirs*), and in more remote areas trucked water, particularly in drought years. Concentration of livestock around scarce water points has contributed to localised degradation. The distance between water points can reach tens of kilometres, significantly affecting herd mobility and increasing costs.

Over recent years, climatic and environmental challenges, coupled with increase in feed costs, and the reduction in feed subsidy programmes has made herd maintenance increasingly less economically viable. As a result, many households have downsized their herds or abandoned herding altogether.

7.7.3.2 Herders in the ESIA Study Area

Bedouin herders in the ESIA Study Area predominately include settled herders/pastoralism, and to a lesser extent semi-nomadic herders and nomadic herders as follows:

- **Settled herders/pastoralism**: Settled herders or pastoralism associated with settled Bedouin households, is very common across the ESIA Study Area in the Southern and Central Badia, particularly in the urban and peri-urban areas, and include households that reside permanently in the villages or towns listed in Table 7.1, across Aqaba, Ma'an, Tafiela, Karak and Amman Governorates. You can also find small numbers of settled herders residing in tents and living informally on state or private land, across all five Governorates of the ESIA Study Area. Small herds of sheep, goats, and camels (in the Wadi rum general area), associated with settled households, can be found grazing across the ESIA Study Area, including along the Desert Highway. Feedback from interviewed Bedouin community members and livestock owners indicated that their main concerns with regards to the Project were related to the potential for noise or dust to disturb their animals, for livestock to fall into open trenches, and for construction to impede the movement of livestock or access to water points, grazing areas or livestock feed centres

- **Semi-nomadic and nomadic herders**: Depending on the climatic conditions in any particular year, some semi-nomadic, and to a lesser extent nomadic, herders can be found in autumn, winter and early spring in grazing areas stretching from the wadis east of Qatraneh and Hasa, down south to areas around Jafr, Batn-Al-Ghul and Wadi Rum. While these areas are likely to lie several kilometres away from the pipeline corridor, these herders and livestock may move across or near the corridor at certain times of the year in response to rainfall, grazing availability, and access to water points or grazing corridors. These movements are typically seasonal and adaptive in nature, however further studies will need to confirm whether the pipeline construction has the potential to temporarily restrict access to grazing areas or water points, or to intersect the movement of livestock. These studies will be carried out as part of the resettlement action plan (RAP)

7.8 Community Health, Safety & Security

Community health, safety and security conditions in the ESIA Study Area are closely linked to the quality and availability of local infrastructure and service provision across the Badia and urban Amman and Aqaba areas. Issues raised through stakeholder engagement included: road safety and increasing traffic risks along the Desert Highway and local internal roads; the capacity of emergency and health services to respond to incidents in remote or sparsely populated locations; and adequacy and quality of household and livestock water supply. Across the ESIA Study, these conditions are uneven: areas that are more remote and further from major urban centres generally experience weaker and more constrained public services and infrastructure, more limited health facilities, and more constrained municipal resources. This is also connected to the differing revenue generation capacities of municipalities, with better resourced urban municipalities generally able to provide higher service coverage than those in more remote Badia areas.

These themes are directly relevant to the Project, as construction will involve large-scale movement of materials and workers, increased heavy-vehicle traffic, and works in remote stretches where emergency response, water access, and security coordination can be challenging. The baseline presented in this section therefore focuses on community health, safety, and security conditions most relevant to potential Project impacts during construction and early operations.

7.8.1 Transport and Road Safety

The transport network along the Conveyance Pipeline route is dominated by the Desert Highway (Highway 15), which is the main national transport artery connecting Aqaba with Amman and is the primary road corridor through the Central and Southern Badia. National highways and “connecting roads” fall under the mandate of the Ministry of Public Works and Housing, while municipalities are responsible for local internal road networks within municipal boundaries. Within the Aqaba Special Economic Zone (ASEZ), road planning, regulation, and maintenance fall under the authority of ASEZA.

Public transport access varies significantly across the ESIA Study Area, with relatively high availability and choice in urban Amman, compared with very limited provision in Badia localities. In Jafr Sub-District, for example, there is no formal public transport system, except for a single bus donated by the Phosphate Company and operated by the Municipality to serve students travelling to Ma’an city. In Diesah Sub-District, formal public transport is also minimal, forcing residents—particularly women, students, and those without private vehicles—to rely on informal, unlicensed local buses, creating safety concerns and limiting mobility options. This lack of safe and reliable transport was consistently raised by women’s associations as a constraint to participation in economic opportunities and community activities.

While formal location-specific traffic safety data was not available for this assessment, interviews with municipalities, local residents, herders, and tourism operators pointed to several potential types of road safety hotspots: any road in urban areas and particularly those close to schools, entry points into Wadi Rum tourism areas, informal public transport stops (especially in Jafr and Diesah), and seasonal grazing corridors or areas where livestock frequently cross roads (a common issue of vehicles striking camels at night in the Wadi Rum area, was raised by various stakeholders in the area).

7.8.2 Public and Private Security & Emergency Response

Public security in Jordan is centrally organised under the Ministry of Interior and delivered through several specialised branches that operate across the ESIA Study Area. The Public Security Directorate (PSD) has primary responsibility for policing, law enforcement, and criminal investigation nationally. In the Badia regions, PSD functions are supported by the Badia Police, which maintain presence and patrols across desert localities and remote communities. The Gendarmerie Forces play a separate role with remit over riot control, public order management, and national-level security support.

Emergency response, including fire, traffic incidents, and medical emergencies, is carried out by the Civil Defence Directorate, which operates through governorate and district-based units. At the national coordination level, the National Centre for Security and Crisis Management (NCSCM) coordinates cross-sectoral response in national-scale emergencies.

In addition to public security actors, private security companies are widely used in Jordan and in the Badia and are commonly staffed by former military or former police officers, many of whom are of Bedouin heritage. Feedback from interviews with local stakeholders across the ESIA Study Area highlighted that it is common and locally expected that construction projects will be supported by local private security providers. In many of the Project localities, ex-army and ex-policy personnel organise themselves into associations, in order to take advantage of such potential opportunities.

Stakeholder engagement did not indicate any major existing security tensions in the ESIA Study Area, but concerns were raised in several locations regarding the potential for violent incidents relating to local inter-tribal tensions over benefit allocation, and the importance of managing these issues carefully.

7.8.3 Health Services

Healthcare access in Jordan follows a tiered structure. Hospitals (secondary and tertiary care) are generally located in major cities and governorate centres, while towns and villages are primarily served by primary health centres that provide routine and general medical services. Most governorates have both Ministry of Health hospitals and Royal Medical Services (RMS) military hospitals serving as main referral centres. In the rural Badia areas, households typically rely on these tiered facilities, with referrals made upwards to hospitals in the nearest urban centres for specialised or emergency care.

Access to healthcare services varies significantly along the AAWDC Pipeline route, reflecting the wider urban–rural disparities present in Jordan.

Amman Governorate offers the most comprehensive and specialised healthcare services in the country, including both Ministry of Health and Royal Medical Services facilities. Amman is recognised as a regional centre for medical and therapeutic tourism, with numerous public and private hospitals, specialist clinics, and well-developed pharmaceutical and diagnostic services.

In comparison, health infrastructure in the southern Badia governorates is more limited. For example, across Qweirah District and the Wadi Rum area, health services are provided primarily through primary care health centres, with no hospital within the districts themselves. Residents requiring specialist

treatment generally travel to Aqaba city. In Jafr Sub-District, available health infrastructure is also limited to a single primary health centre that lacks specialist services, and local residents have to travel to Ma'an for more advanced healthcare access.

7.8.4 Water Access

Water scarcity is one of the most critical development challenges in Jordan, and this was reflected strongly in stakeholder feedback across the ESIA Study Area. Concerns were repeatedly raised in the Central and Southern Badia areas, that the Project will transport water across these lands, but these local communities themselves will not benefit from improved access. This issue was among the most emotionally sensitive and politically charged topics raised during engagement.

The Ministry of Water and Irrigation (MWI) is responsible for water sector regulation and policy. The Water Authority of Jordan (WAJ) is responsible for the operational and service delivery functions of the water sector. Service provision is delivered through regional water companies (e.g. Aqaba Water Company in Aqaba Governorate).

Jordan's water supply comes primarily from groundwater aquifers (renewable and non-renewable), supplemented by surface water reservoirs and treated wastewater. Deep groundwater wells are the dominant source across much of the Badia. In many towns and villages along the Pipeline route, household piped supply originates from such wells, pumped into main trunk lines and then distributed into local networks. Over-abstraction of aquifers, combined with declining recharge, has contributed to reduced availability, water quality decline in some locations, and greater reliance on tanker deliveries during summer months or in high-demand periods.

Water supply and household access patterns vary across the ESIA Study Area but are generally characterised by intermittent, rationed supply. Most households do not receive continuous piped water. Instead, water distribution is organised by rotating schedules which differ by location. For example, in Amman, many households reported receiving piped water once per week for approximately 24 hours. In Wadi Rum Basin, communities reported receiving piped water approximately three times per week for limited durations (around two hours each cycle). These patterns require households to rely heavily on rooftop tanks, water storage, and tanker purchases—particularly during summer months.

Nationally, water distribution is divided according to three sectors: municipal use, including domestic household consumption, industrial use, and agricultural use. The agricultural sector consumes the majority share of Jordan's available water resources, largely due to irrigation needs in an arid climate. The national allocation balance is widely understood by government stakeholders, however it is not widely perceived as equitable at the local level in the Badia, where communities consistently raised concerns about lack of access, declining reliability, and worsening service provision.

Across the Pipeline route, dissatisfaction with water access and reliability was widespread. While scarcity affects all regions, stakeholder engagement indicated that more remote Badia communities—particularly in parts of Jafr and the Wadi Rum basin—face some of the most severe service gaps.

7.9 Social Infrastructure Sensitivity Mapping

7.9.1 Sensitivity Mapping Categorisation

The Infrastructure Sensitivity Mapping Field Survey was conducted between 2 and 12 June 2025 along the Pipeline right-of-way. Of the reroutes, only the Diesah bypass was surveyed; the Hasa and Qatraneh reroutes were assessed using satellite imagery and will require follow-up field surveys.

Based on the survey team's experience with linear projects, sensitivity categories were defined and included in the scope prior to the infrastructure field survey. During the survey, photographs, video footage, field descriptions, and trigger details were collected. The rating categories considered existing infrastructure within the survey footprint.

Sensitivity categories and their triggers are provided in Table 7-3 below.

Table 7-3: Category Triggers

Category	Triggering Receptors
Category 3: High Sensitivity	• Hospital • Graveyard • Military or government building • Place of worship • More than 30 residential detached buildings • Apartment building or buildings with more than 20 individual residential units or 3 floors • More than 10 commercial properties • More than 2 hotels • More than 3 industrial properties • 1 or more large high industrial risk facilities (to include hydrocarbon, chemical processing facilities)
Category 2: Medium Sensitivity	• More than 10 residential detached buildings, but less than 30 • Apartment building or buildings with less than 20 individual residential units or 2 floors • More than 5 commercial properties, but less than 10 • Less than 2 hotels • More than 1 industrial property, but less than 3 • Intensive agricultural including livestock (includes greenhouse, irrigation and housed livestock) • Major road or above-ground utility crossing
Category 1: Low Sensitivity	• Less than 10 residential detached buildings • 1 to 5 commercial properties • Non-intensive agriculture including livestock • Minor road or above-ground utility crossing
Category 0: No Sensitivity	No Receptors

7.9.1.1 Aqaba Governorate Overview of AAWDC Project Facilities

The AAWDC Project Facilities and Pipeline route located in Aqaba Governorate include the following:

- 113km of Pipeline
- Project Facilities: Desalination Plant Facilities, Intake Pumping Station, Booster Pumping Station 1, Booster Pumping Station 2, Booster Pumping Station 3 and Renewable Energy Facility (Figure 7-9 and Figure 7-10)

Approximately 26% of the total Pipeline route is situated within the Aqaba Governorate. In this Governorate, there are seven Project Facilities, which are outlined in Table 7-4.

Table 7-4: Project Facilities within Aqaba Governorate

AAWDC Project Facilities	District	Subdistrict
Desalination Plant Facilities	Aqaba	-
Intake Pumping Station	Aqaba	-
Booster Pumping Station 1	Aqaba	-
Booster Pumping Station 2	Aqaba	-
Regulating Tank 1	Aqaba	-
Booster Pumping Station 3	Qweirah	-
Renewable Energy Facility	Qweirah	-

Within the Aqaba Governorate, there are 12 communities within 10km of the Pipeline route. This is summarised in Table 7-5.

Table 7-5: Communities Within 10km of the Pipeline Route and Project Facilities (Aqaba Governorate)

Community	AAWDC Project Facility or Pipeline	Distance from Project Facility or Pipeline (km)
Diesah	Pipeline	0.2
Sallheiah	Pipeline	0.2
	Renewable Energy Facility	7.3
Mezfer	Pipeline	0.3
Rashdyah	Pipeline	0.5
	Renewable Energy Facility	9.9
Shakriyyeh	Pipeline	0.8
	Renewable Energy Facility	10.6
Taweel	Pipeline	1.4
Twaiseh	Pipeline	1.4
Al-Mamlah	Pipeline	2.0
	Intake Pumping Station	4.6
	Desalination Plant Facilities & Booster Pumping Station 1	3.7
	Booster Pumping Station 2	4.2
Mnaishier	Pipeline	2.8
Quairah	Pipeline	8.7
	Renewable Energy Facility	7.3
Aqaba	Pipeline	9.2
	Regulating Tank 1	9.6

Community	AAWDC Project Facility or Pipeline	Distance from Project Facility or Pipeline (km)
Ghal	Pipeline	8.1

7.9.1.2 Aqaba Governorate Social Infrastructure Mapping Results

Within the Governorate of Aqaba, during the Social Infrastructure Survey, data was collected from the east side of the road for 63km, from the west side for 9km and from both sides for 41km due to time limitations, access considerations, and the orientation of the specified route. However, both sides exhibit comparable levels of development within all surveyed locations. As a result, the datasets obtained are considered representative of the overall conditions along the route through Aqaba.

Within the Aqaba Governorate, 13.4km (11.8%) of the Pipeline route was classified as high sensitivity, 21.6km (19.1%) classified as medium sensitivity, 13.7km (12.1%) classified as low sensitivity and 64.6km (57%) classified as having no receptors. Table 7-6 provides a summary of the identified sensitivities.

Table 7-6: Sensitivity Summary Aqaba Governorate

Category	Pipeline Route, km	ID Segments	Triggering Receptors (Number of in Brackets)	Other Infrastructure Receptors
Category 3 High Sensitivity	13.4	• 9,11,12,27,29	• Government building (4) • Places of worship (2) • Industrial properties (3)	• Minor road or above-ground utility crossing • Apartment <20 Unit or <=2 Floor • Major Road or Above-ground Utility Crossing • Commercial properties (5)
Category 2 Medium Sensitivity	21.6	• 1,5,10,15,16,24, • 25,26,28	• Commercial properties (8) • Apartment <20 Unit or <=2 Floor (8) • Intense agriculture (1) • Major road or above-ground utility crossing (7) • Potential Bedouin settled camps (1)	• Minor road or above-ground utility crossing • Moderately intense agriculture • Commercial properties
Category 1 Low Sensitivity	13.7	• 2,3,4,7,44	• Minor road or above-ground utility crossing (12)	• No applicable receptors
Category 0 (No Receptor)	64.6	• 6,8,13,14,17,19, • 20,21,22,23,217, • 218,43,45,46,47, • 48,49	No applicable receptors	No applicable receptors

Figure 7-9: Social Infrastructure Sensitivity Mapping, Aqaba Governorate

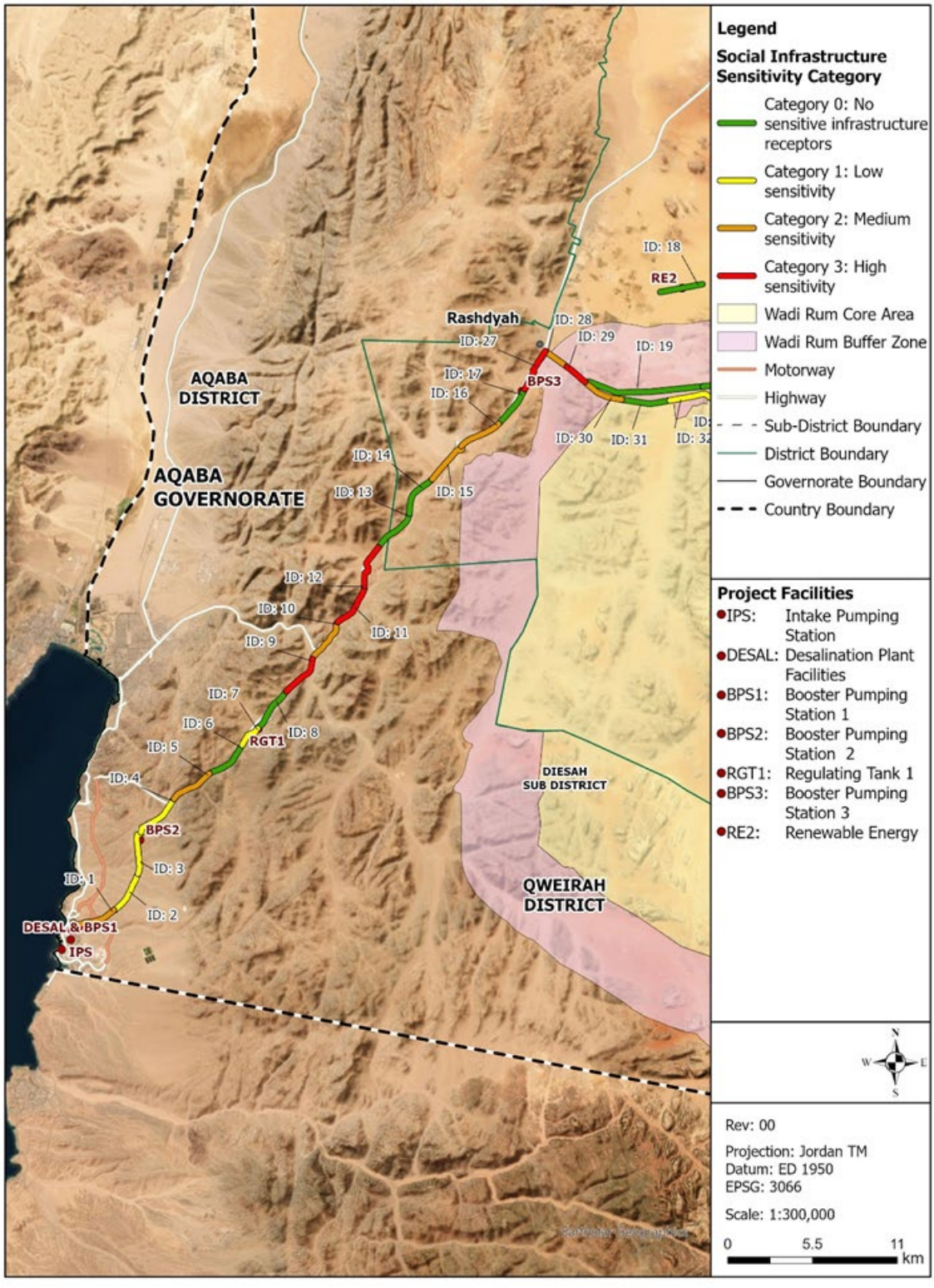
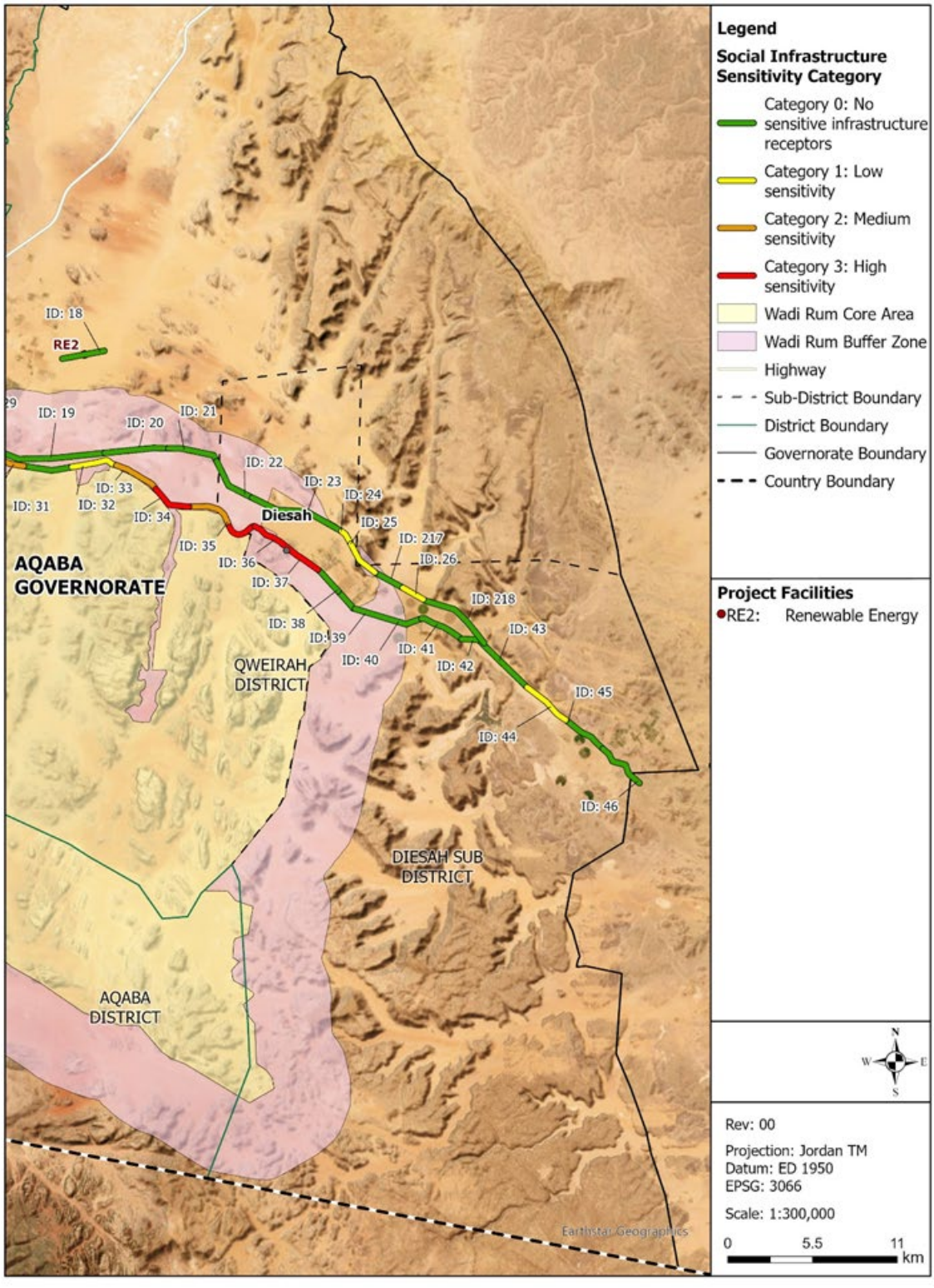


Figure 7-10: Social Infrastructure Sensitivity Mapping, Aqaba Governorate



7.9.1.3 Ma'an Governorate Overview of AAWDC Project Facilities

The AAWDC Project Facilities and Pipeline route located in Ma'an Governorate include the following:

- 145km of Pipeline
- Project Facilities: Regulating Tank 3 and Break Pressure Tank (Figure 7-11 and Figure 7-12)

Approximately 33% of the total Pipeline route is situated within the Ma'an Governorate. In this Governorate, there are two Project Facilities, which are outlined in Table 7-7.

Table 7-7: Project Facilities within Ma'an Governorate

AAWDC Project Facilities	District	Subdistrict
Regulating Tank 3	Qasabah	Jafr
Break Pressure Tank	Qasabah	Jafr

Within the Ma'an Governorate, there is one community, Jafr, within 10km of the Pipeline route. This is summarised in Table 7-8.

Table 7-8: Communities Within 10km of the Pipeline Route and Project Facilities (Ma'an Governorate)

Community	AAWDC Project Facility or Pipeline	Distance from Project Facility or Pipeline (km)
Jafr	Pipeline	7.6

7.9.1.4 Ma'an Social Infrastructure Mapping Results

Within the Governorate of Ma'an, during the Social Infrastructure Survey, data was collected on both sides of the road along the entire Pipeline route traversing through this Governorate.

The Pipeline route is located within 10km of the Jafr community; no high or low sensitivity triggers were noted in the vicinity of the community. However, approximately 80% of medium sensitivity triggers along the route were observed in the area surrounding this community.

Within the Ma'an Governorate, 2.4km (1.6%) of the Pipeline route was classified as high sensitivity, 18.6km (12%) as medium sensitivity, 6km (4%) as low sensitivity, and 118.1km (81%) as having no receptors. Table 7-9 provides a summary of the identified sensitivities.

Table 7-9: Sensitivity Summary Ma'an Governorate

Category	Pipeline Route, km	ID Segments	Triggering Receptors	Other Infrastructure Receptors
Category 3 High Sensitivity	2.4	• 61	• Government building (1)	• No applicable receptors
Category 2 Medium Sensitivity	18.6	• 54,60,81,82, • 86,87,88	• Industrial properties less than 3 (6) • Intense agriculture (20)	• Minor Road or Above-ground Utility Crossing

Category	Pipeline Route, km	ID Segments	Triggering Receptors	Other Infrastructure Receptors
			• Potential Bedouin settled camps (6)	
Category 1 Low Sensitivity	6.0	• 52,57	• Minor road or above-ground utility crossing (2)	• No applicable receptors
Category 0 (No Receptor)	118.1	• 50,51,53,55,56, • 58,59,62,63,64, • 65,66,67,68,69, • 70,71,72,73,74, • 75,76,77,78,79, • 80,83,84,85,89, • 90,91,92,93,94, • 95,96,97,98,99	No applicable receptors	No applicable receptors

Figure 7-11: Social Infrastructure Sensitivity Mapping, Ma'an Governorate

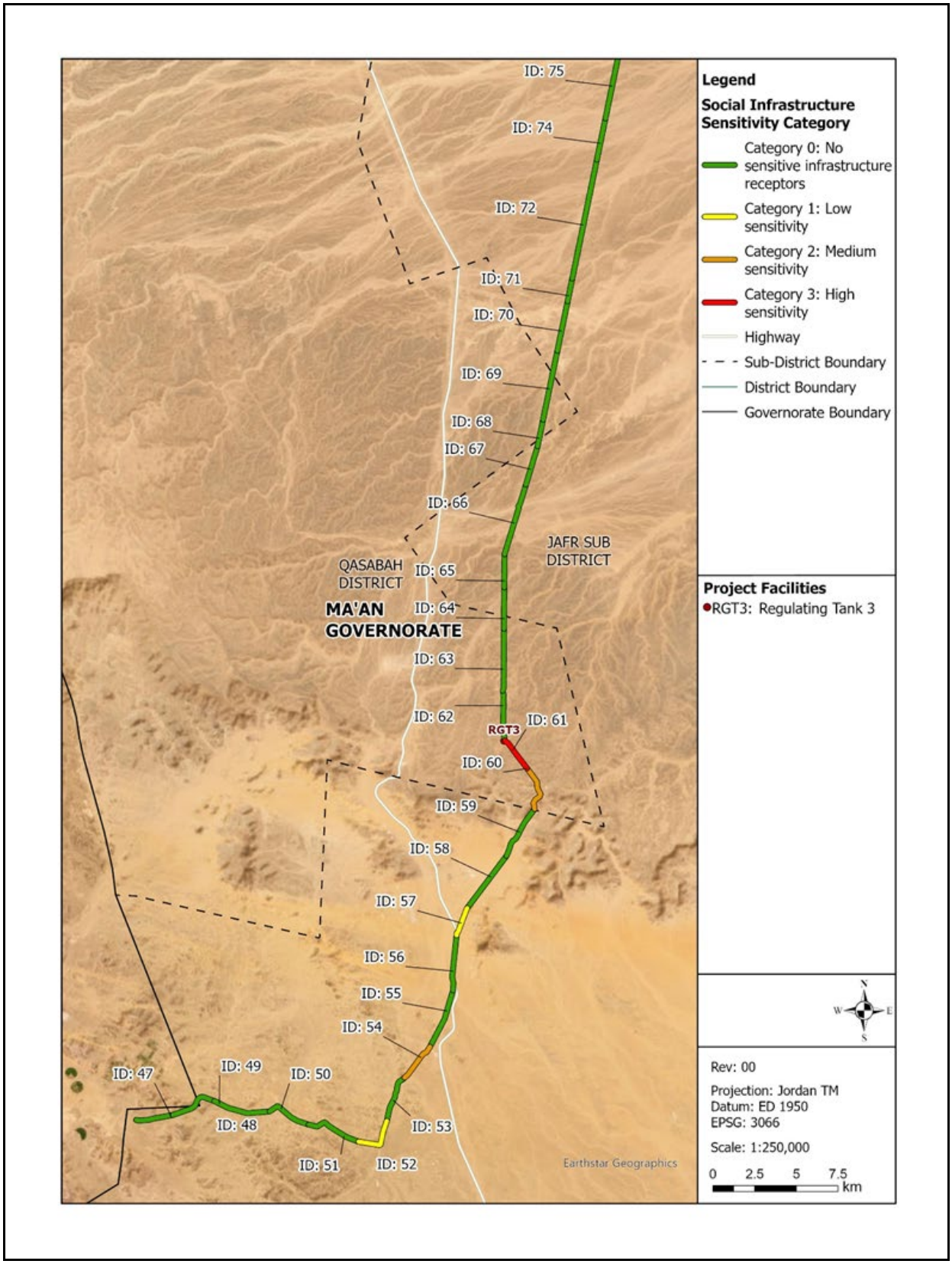
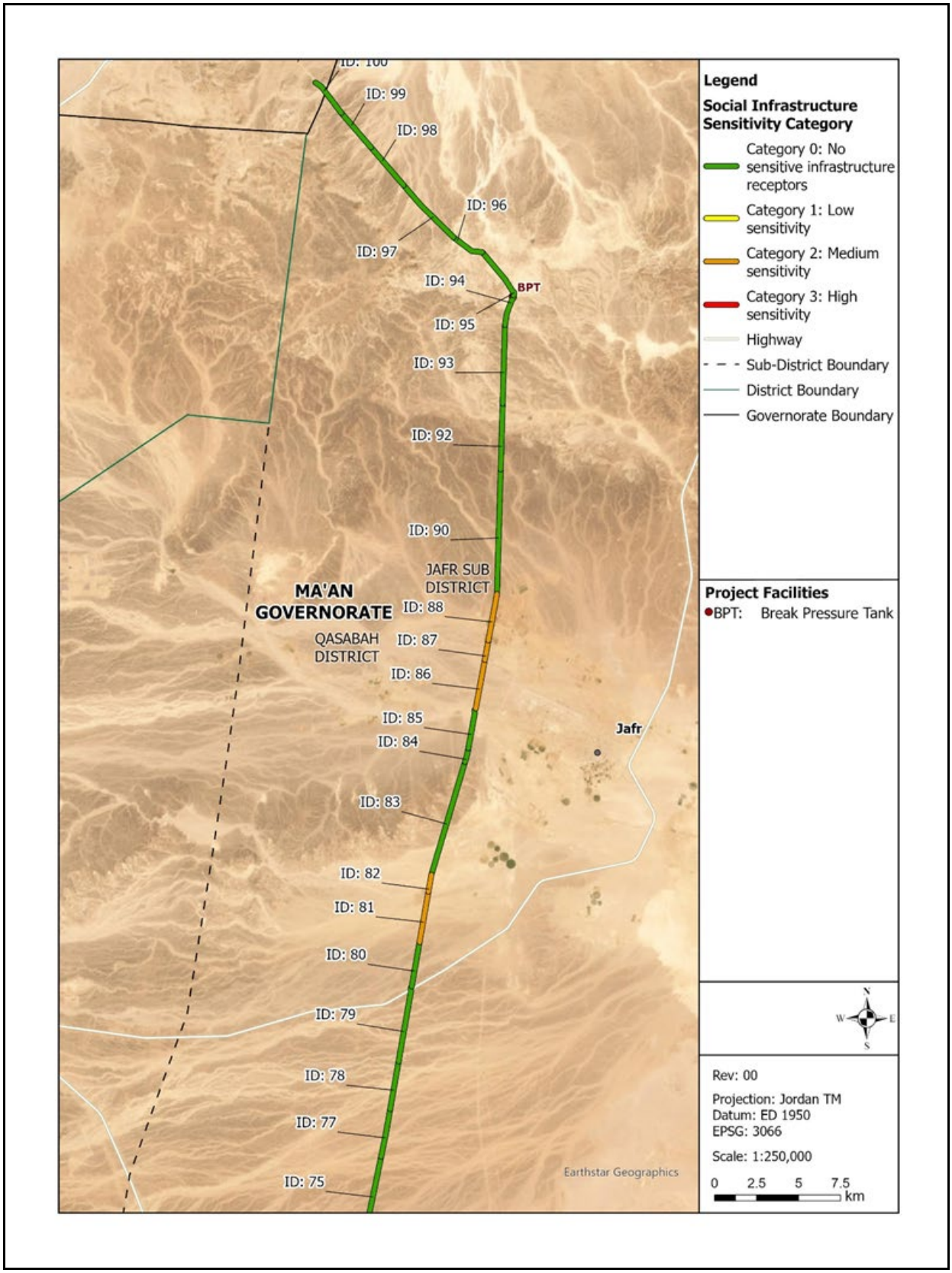


Figure 7-12: Social Infrastructure Sensitivity Mapping, Ma'an Governorate



7.9.1.5 Tafiela Governorate Overview of AAWDC Project Facilities

The AAWDC Project Facilities and Pipeline route located in Tafiela Governorate include the following:

- 26km of Pipeline
- No Project Facilities (Figure 7-13)

Approximately 6% of the total Pipeline route is located within the Tafiela Governorate and Hasa district. In this Governorate, there are no Project Facilities.

Inside this Governorate, there are two communities within 10km of the Pipeline route. This is summarised in Table 7-10.

Table 7-10: Communities Within 10km of the Pipeline Route and Project Facilities (Tafiela Governorate)

Community	AAWDC Project Facility or Pipeline	Distance from Project Facility or Pipeline (km)
Hasa	Pipeline	0.1
Jorof	Pipeline	8.9

7.9.1.6 Tafiela Social Infrastructure Mapping Results

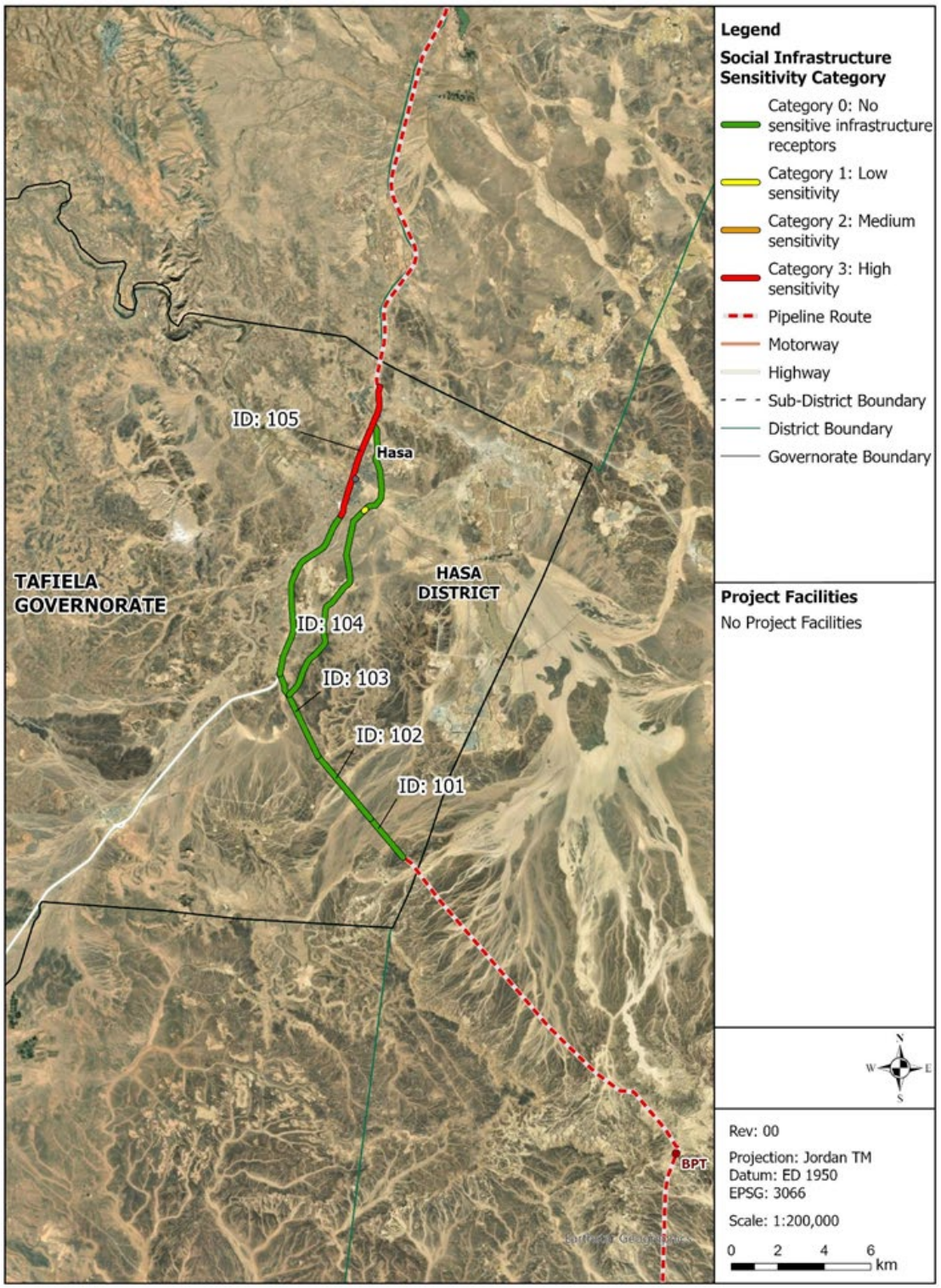
Within the Governorate of Tafiela, during the Social Infrastructure Survey, data was collected on both sides of the road along the entire Pipeline route traversing through this Governorate.

Within the Tafiela Governorate, considering the Hasa reroute, 0.1km (0.3%) of the Pipeline route was classified as low sensitivity and the rest of the route, 26.2km (99.7%), was classified as having no receptors. Table 7-11 provides a summary of the identified sensitivities.

Table 7-11: Sensitivity Summary Tafiela Governorate

Category	Pipeline Route, km	ID Segments	Triggering Receptors	Other Infrastructure Receptors
Category 3 High Sensitivity	0.0	• No ID Segments	• No applicable receptors	• No applicable receptors
Category 2 Medium Sensitivity	0.0	• No ID Segments	• No applicable receptors	• No applicable receptors
Category 1 Low Sensitivity	0.1	• Hasa re-route	• Minor road or above-ground utility crossing (1)	• No applicable receptors
Category 0 (No Receptor)	26.2	• 100,101,102,103, Hasa re-route	• No applicable receptors	• No applicable receptors

Figure 7-13: Social Infrastructure Sensitivity Mapping, Tafiela Governorate



7.9.1.7 Karak Governorate Overview of AAWDC Project Facilities

The AAWDC Project Facilities and Pipeline route located in Karak governorate include the following:

- 58km of Pipeline
- No Project Facilities (Figure 7-14)

Approximately 13% of the total Pipeline route is situated within the Karak governorate and travels through the Mazar Janoobee and Qatraneh districts. In this governorate, there are no Project Facilities.

Inside the Karak governorate, there are four communities within 10km of the Pipeline route. This is summarised in Table 7-12.

Table 7-12: Communities Within 10km of the Pipeline Route and Project Facilities (Karak Governorate)

Community	AAWDC Project Facility or Pipeline	Distance from Project Facility or Pipeline (km)
Qatraneh	Pipeline	0.1
Sad El-Soltani	Pipeline	0.2
Wadi Abyadh	Pipeline	1.1
Hamediyyeh	Pipeline	8.5

7.9.1.8 Karak Social Infrastructure Mapping Results

Within the governorate of Karak, during the Social Infrastructure Survey, data was collected from the East side of the entire Pipeline route due to time limitations, access considerations, and the orientation of the specified route. However, both sides exhibit comparable levels of development within all surveyed locations. As a result, the datasets obtained are considered representative of the overall conditions along the route through Karak.

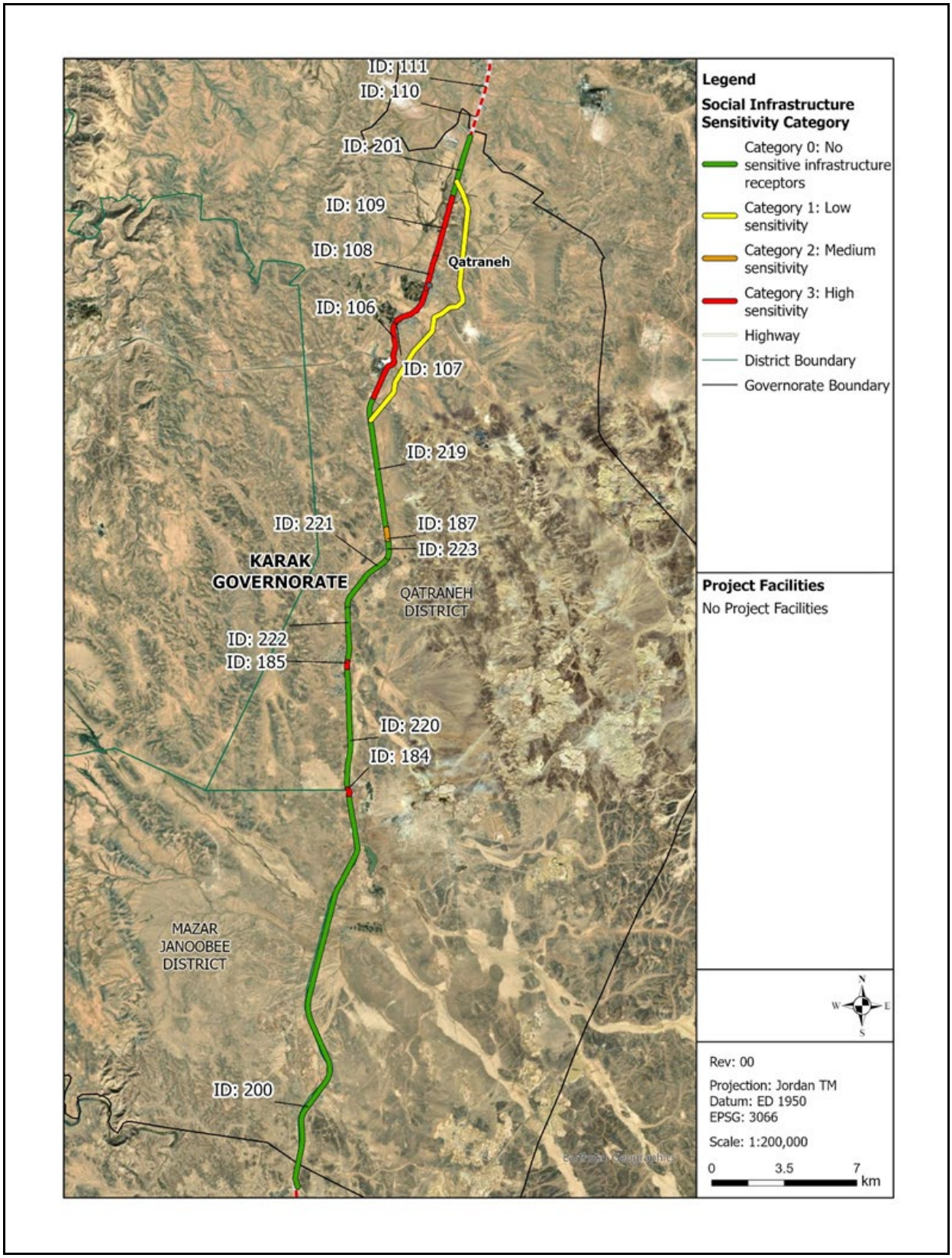
Within the Karak governorate, considering the Qatraneh reroute, 0.6km (1%) of the Pipeline route was classified as high sensitivity, 0.3km (0.5%) classified as medium sensitivity, 16.0km (27.3%) classified as low sensitivity and 41.8km (71.2%) classified as having no receptors. Table 7-13 provides a summary of the identified sensitivities.

Table 7-13: Sensitivity Summary Karak Governorate

Category	Pipeline Route, km	ID Segments	Triggering Receptors	Other Infrastructure Receptors
Category 3 High Sensitivity	0.6	• 184, 185	• Government buildings (2)	• No applicable receptors
Category 2 Medium Sensitivity	0.3	• 187	• Intense agriculture (4)	• No applicable receptors
Category 1 Low Sensitivity	16.0	• 186,110, Qatraneh re-route	• Minor road or above-ground utility crossing (2)	• No applicable receptors

Category	Pipeline Route, km	ID Segments	Triggering Receptors	Other Infrastructure Receptors
Category 0 (No Receptor)	41.8	• 200,220,222, 221,223,219, 201	No applicable receptors	No applicable receptors

Figure 7-14: Social Infrastructure Sensitivity Mapping, Karak Governorate



7.9.1.9 Amman Governorate Overview of AAWDC Project Facilities

The AAWDC Project Facilities and Pipeline route located in Amman governorate include the following:

- 95km of Pipeline
- Project Facilities: Pump Station Amman Dev Corridor, Abu Alanda Reservoir and Al Muntazah Reservoir (Figure 7-15 and Figure 7-16)

Approximately 22% of the total Pipeline route is situated within the Amman governorate. In this governorate, there are three Project Facilities, which are outlined in Table 7-14.

Table 7-14: Project Facilities within Amman Governorate

AAWDC Project Facilities	District	Subdistrict
Pump Station Amman Dev Corridor	Mowaqqar	Rujm Al-Shami
Abu Alanda Reservoir	Al-Qweismeh	-
Al Muntazah Reservoir	Al-Qweismeh	-

Within the Amman governorate, there are 94 communities within 10km of the Pipeline route.

7.9.1.10 Amman Social Infrastructure Mapping Results

Within the governorate of Amman, during the Social Infrastructure Survey, data was collected from the east side of the road for 59.7km, from the west side for 27.3km and from both sides for 8.4km due to time limitations, access considerations, and the orientation of the specified route. However, both sides exhibit comparable levels of development within all surveyed locations. As a result, the datasets obtained are considered representative of the overall conditions along the route through Amman.

Table 7-15 provides a summary of the identified sensitivities. Within the Amman governorate, 32.2km (33.8%) of the Pipeline route was classified as high sensitivity, 19.8km (20.8%) classified as medium sensitivity, 12.1km (12.6%) classified as low sensitivity and 31.3km (32.8%) classified as having no receptors.

Table 7-15: Sensitivity Summary Amman Governorate

Category	Pipeline Route, km	ID Segments	Triggering Receptors	Other Infrastructure Receptors
Category 3 High Sensitivity	32.2	• 111,113,115,117,130, 131,133,136,137,139, 140,141,143,147,148, 149,150,152,153,154, 155,156,158,159,160, 161,162,165,180,181, 182,183	• Grave Yard (6) • Government building (4) • Places of worship (11) • Apartment >20 Unit or >2 Floor (20) • Industrial Properties (H>3) (25) • Commercial properties >10 (413)	• Apartment <20 Unit or <=2 Floor • Intense agriculture • Major Road or Above-ground utility crossing • Potential Bedouin Settled Camps • Moderately intense agriculture

Category	Pipeline Route, km	ID Segments	Triggering Receptors	Other Infrastructure Receptors
				• Minor Road or Above-ground Utility Crossing • Industrial Properties (M>1) • Commercial Properties
Category 2 Medium Sensitivity	19.8	• 118,119,120,121,138, • 144,145,146,151,163, 164,166,168,170,176, 177,178,179	• Commercial properties (15) • Apartment <20 Unit or <=2 Floor (32) • Intense agriculture (20) • Major road or above-ground utility crossing (10) • Potential Bedouin settled camps (6)	• Moderately Intense Agriculture • Industrial Properties
Category 1 Low Sensitivity	12.1	• 112,114,116,122,123, 124,125,126,127,128, 129,132,134,135,142, 157,167,169,171,172, 173,174,175	• Minor road or above-ground utility crossing (27) • Commercial properties (16)	• No applicable receptors
Category 0 (No Receptor)	31.3	• 202,203,204,205,206, 207,208,209,210,211, 224,212,213,214,215, 216	No applicable receptors	No applicable receptors

Figure 7-15: Social Infrastructure Sensitivity Mapping, Amman Governorate

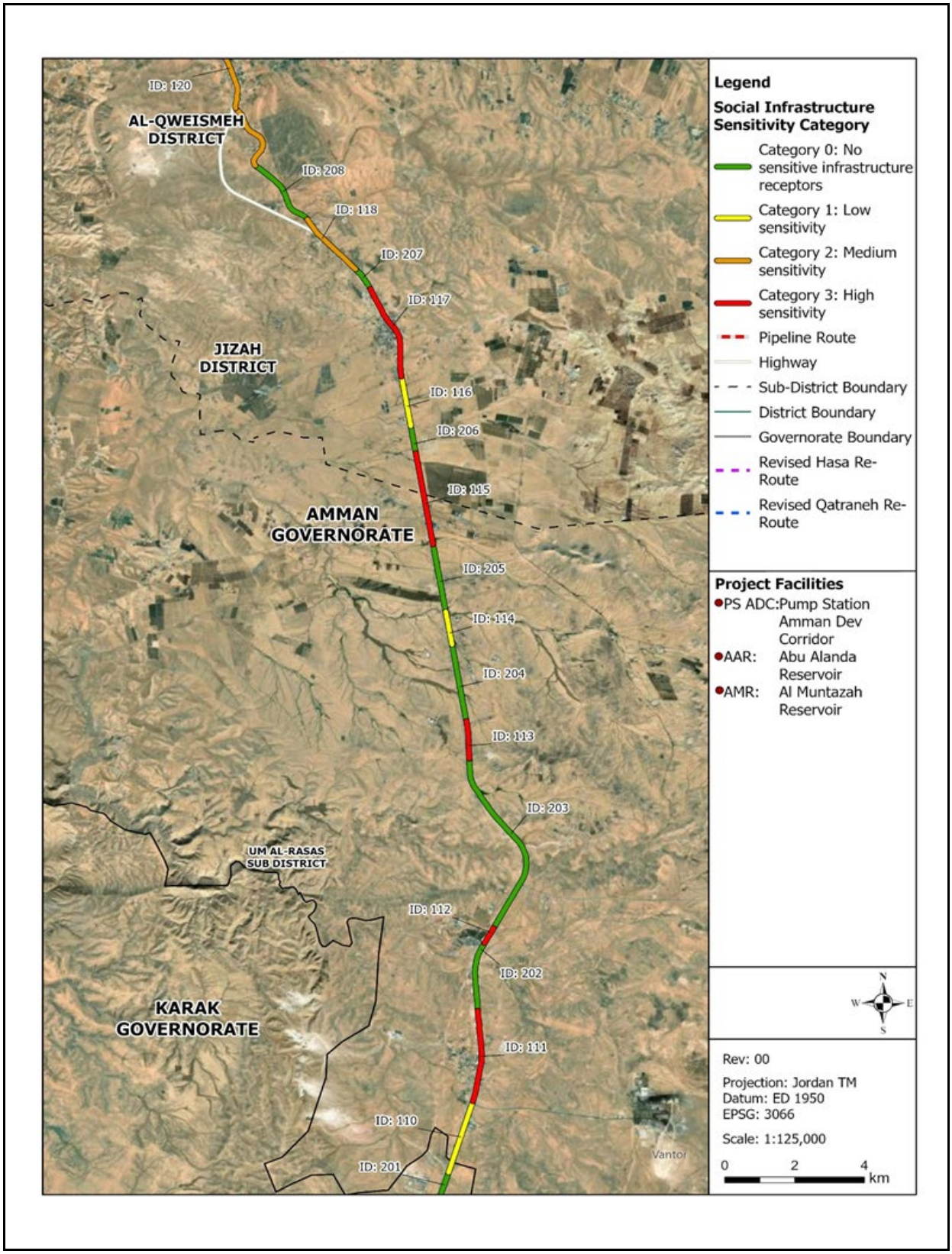
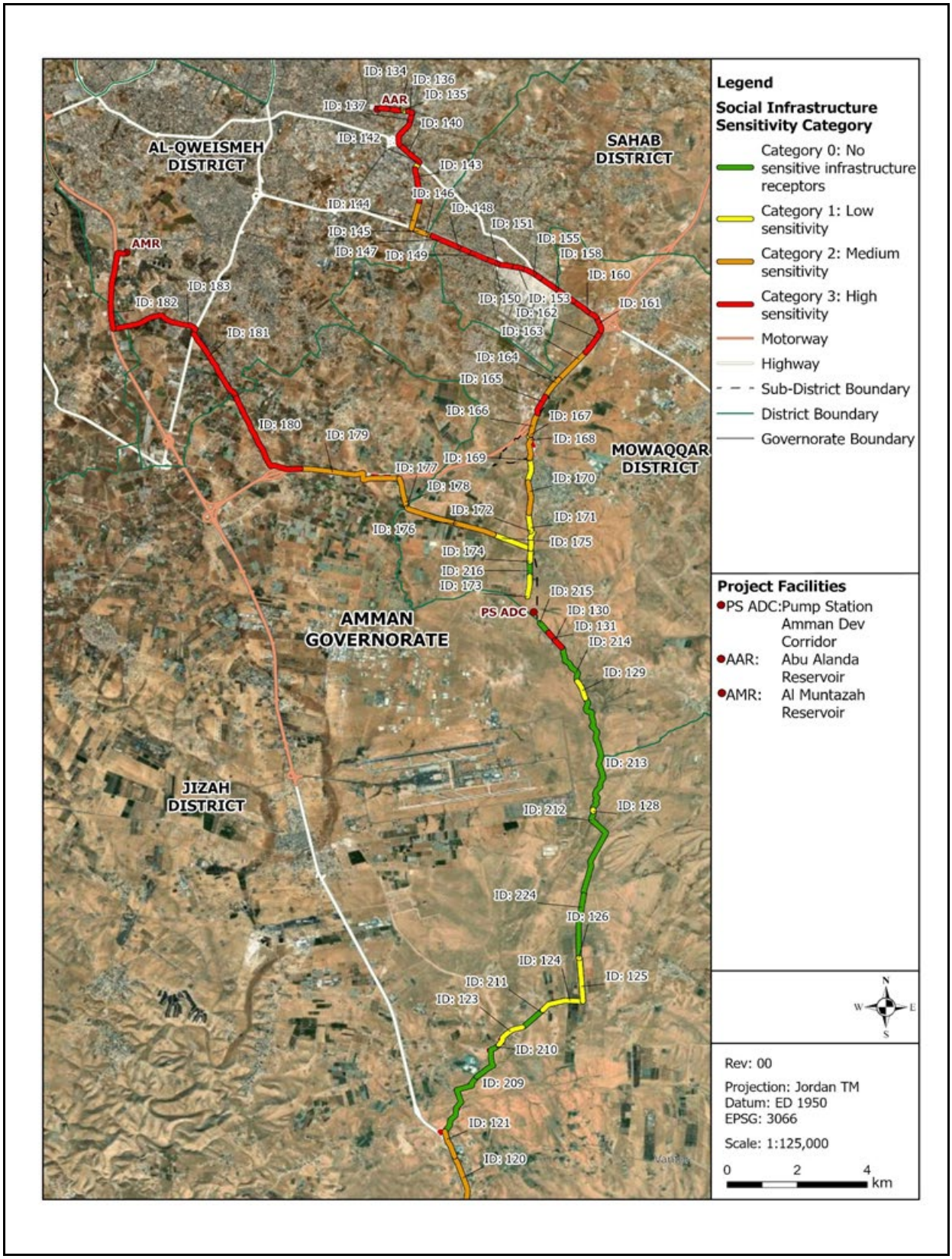


Figure 7-16: Social Infrastructure Sensitivity Mapping, Amman Governorate



7.10 Sensitivities

7.10.1 Vulnerabilities in the Project Context

Within the National Water Conveyance Study Area, certain population groups may face heightened vulnerability to potential Project impacts due to their socio-economic status, reduced access to services, limited ability to influence decision-making, or constrained capacity to cope with disruption. Identifying these groups is essential to ensuring that Project mitigation and engagement measures are inclusive, accessible, and responsive to differentiated needs.

Stakeholder groups in the Study Area who may experience specific vulnerabilities in relation to potential Project impacts have been identified as follows:

- Women, who face structural barriers to mobility and access to transport, economic participation, and representation in public decision-making, as well as heightened risks of experiencing gender-based violence and harassment (GBVH) and sexual exploitation and abuse and harassment (SEAH). Women's limited participation in mixed-gender spaces may also constrain their ability to raise concerns through conventional consultation or grievance channels
- Youth, especially in Badia areas where unemployment is extremely high and where economic opportunities are scarce, making them more vulnerable to project-related expectations, frustrations, and potential livelihood disruptions
- Children, who may be more vulnerable in relation to potential construction community health and safety impacts due to their lack of awareness around construction hazards, or their use of local roads or paths to travel to school
- Households living in informal and unregistered residential areas. These include any households living on state land without formal tenure security, such as herders residing in tents or mixed tent–household structures on state or privately owned land, or agricultural labourers living in tents on or near farms. This also includes unplanned settlements that lack basic municipal services, including regular water supply, electricity, waste management, and infrastructure and who may rely on self-installed service connections, which increases exposure to health and safety risks and leaves residents vulnerable to any construction-related disturbance or access restrictions
- Persons with disabilities, particularly disabled youth, who may face additional barriers to accessing employment, transport, services, and consultation processes
- Casual, seasonal, and informal labourers, particularly in agriculture (including Syrian refugees), who have low and unstable incomes and limited protection against temporary livelihood disruption
- Informal businesses who could be overlooked for any potential compensation measures due to their lack of formal status
- Small scale tourism businesses in and around the Wadi Rum area, that are only just beginning to recover from recent prolonged economic strain, following the dual shocks of the COVID-19 pandemic and regional instability. These businesses could be particularly sensitive to temporary access restrictions or disturbances during construction should they experience them

- Small-scale herders, who operate under increasingly precarious conditions due to declining rangelands, limited access to water, and high feed prices. These households may be particularly sensitive to temporary access restrictions or disturbances during construction should they experience them
- Economically vulnerable households, including those receiving National Aid Fund (NAF) assistance, who typically have limited buffers against even short-term disruptions to income, mobility, or access to services
- Residents of towns and villages who experience respiratory health conditions (e.g. asthma) or existing health conditions relating to the dusty environment (e.g. dry eyes), and who may be more sensitive to potential dust generated during construction

7.10.2 Contextual Sensitivities

Two contextual sensitivities repeatedly raised by stakeholders across the Project footprint were: (i) the legacy of the Diesah Pipeline Project, and (ii) the widespread concern about "wasta" (perceived favouritism / inequity in access to opportunities). These issues were raised across all five Governorates, by local authorities, tribal representatives, women, youth, municipal officials, and business owners, and are essential to understanding the social risk environment for the Project.

7.10.2.1 Diesah Pipeline Legacy

Feedback from stakeholders demonstrated high awareness of the Diesah Pipeline Project construction period – including the conflictual nature of implementation and incidences of violence, perceptions of exclusion and lack of fairness in benefit allocation, and the belief that this Project did not deliver adequate local benefits despite crossing local lands. Many stakeholders explicitly referenced the Diesah Pipeline Project as a warning of "what can go wrong" if local communities are not engaged fairly and transparently, and if benefit expectations are not met. In this sense, Diesah acts as a strong contextual risk signal: stakeholders are already comparing the AAWDC Project to the Diesah Pipeline Project and expect it to avoid the same conflict drivers and construction related negative impacts, particularly around compensation, security, hiring, contract allocation, water benefit expectations, and grievance responsiveness.

7.10.2.2 Wasta

Across the ESIA Study Area, the demand for fairness, transparency, equitable inclusion, and non-discrimination in employment, procurement and compensation was strongly linked to concerns about wasta. Wasta is widely understood in Jordan as obtaining advantages, access, or preferential treatment through personal relationships or social influence, and is commonly associated with unfairness, favouritism and exclusion. Because of this, if community members perceive that jobs, equipment contracts, land compensation, or social investment are being distributed unfairly, this can very quickly generate grievance and social tension.

These two key contextual sensitivities together strongly shape local expectations and concerns with the AAWDC Project.

7.11 Cultural Heritage

7.11.1 Cultural Heritage Baseline Approach

The cultural heritage baseline aims to build on the previous 2022 ESIA baseline, which listed 46 terrestrial archaeological sites, 39 of which were concentrated around Amma, and incorporates additional review of gaps identified in that earlier study. Notably, the 2022 ESIA lacked sufficient coverage for the southern alignment, including Wadi Rum, the marine and offshore zones, and intangible heritage associated with local communities and traditional land use.

This chapter therefore expands the study to ensure comprehensive coverage of cultural heritage across the full Study Area. This includes a revised and detailed baseline assessment for both tangible (archaeological) and intangible (cultural) heritage, supplemented by site reconnaissance and stakeholder engagement. The work was designed in compliance with the Jordanian Law of Antiquities No. 23 (2004), ASEZA regulations, and international lender policies (IFC Performance Standard 8, EBRD Performance Requirement 8, and EIB Standard 10) and UNESCO.

7.11.1.1 Overview of Cultural Heritage in Jordan

Jordan possesses a long and continuous record of human occupation, with cultural layers spanning prehistoric, classical, Islamic, and modern periods. This deep history shaped a diverse and dynamic cultural landscape where tangible and intangible heritage are closely intertwined.

Within the Project's wider STUDY AREA, communities maintain strong ties to traditional practices related to land use, pastoralism, oral expression, and communal governance. Regional trade routes, pilgrimage paths, and heritage sites also influence the cultural setting and continue to serve as focal points for cultural identity and social life.

Jordan's archaeological record spans more than 100,000 years and reflects repeated cycles of settlement, mobility, pastoralism, and exchange. The Aqaba–Amman corridor lies at the intersection of several major historical processes: long-distance caravan routes, maritime connections through Aqaba, pilgrimage routes linking the Hijaz to the Levant, and agricultural development in the central plains. Archaeological evidence along the corridor includes prehistoric camps, stone-built enclosures, burial cairns, fortifications, water-harvesting systems, agricultural installations, religious structures, and modern-period infrastructure such as the Hejaz Railway.

Although individual sites have been documented, the broader landscape context is fragmented due to historic survey limitations. Archaeological remains appear as dispersed clusters rather than large settlement complexes, reflecting mobile land use across the Badia. Many features survive only as low-relief stone structures or surface scatters, yet they collectively illustrate millennia of use of this desert environment.

Wadi Rum: Cultural Landscape Overview

Wadi Rum contains one of the world's most extensive corpuses of ancient rock art and inscriptions. These inscriptions—Thamudic, Nabataean, early Arabic, and later Islamic—record pastoral life, journeys, religious expressions, tribal identities, and social interactions across more than twelve millennia. The landscape holds prehistoric camps, burial features, ancient water installations, and routeways used for trade and pilgrimage. The desert topography itself is a central cultural element: for Bedouin communities, specific mountains, passes, and wadis have traditional names, associations, and stories that continue to shape local identity.

Tourism and vehicle activity have intensified pressure on the fragile sandstone surfaces, altering sediment patterns and damaging some heritage features. The area's Outstanding Universal Value (OUV) depends on the continuity between the tangible archaeological record and intangible Bedouin knowledge systems. Any development in or near Wadi Rum must therefore consider both material and living heritage.

7.11.1.2 Cultural Historic Setting

Table 7-16: Summary of Historic Periods Used in the Classification of Archaeological Resources of AAWDC Project

Historic Group	Historic Period (Sub-groups)	Date
Prehistory Archaeological Sites (BC)	Paleolithic	40,000-8000BC
	Neolithic Age	8000-4200BC
	Chalcolithic Age	4200-3200BC
	Bronze Age	3200-1200BC
	Iron Age	1200-539BC
	Nabatean Age	539-200BC
Pre-Islam Historic Sites (AD)	Roman Age	200BC-333AD
	Byzantine Age-Classical	333-636AD
Islamic Historic Sites	Early Islamic Period	636-650AD
	Umayyad Period	650-750AD
	Abbasside Period	750-950AD
	Fatimid Period	950-1171
	Ayubi-Mamluk Period	1171-1516
	Ottoman Period	1516-1918
Modern Islamic Heritage Sites	Modern Period	1918AD – present

Early Prehistoric, Chalcolithic, and Bronze Age

The earliest evidence in the Project region consists of flint scatters, blade cores, and small seasonal camps. These traces are most frequent along natural corridors such as Wadi Yutum, where topography and access to water made the area suitable for repeated short-term occupation. The Chalcolithic and Bronze Age periods are poorly represented in available datasets; however, parallel research in adjacent areas suggests that this reflects limited survey coverage rather than absence of activity. Burial cairns, stone enclosures, and small pastoral installations identified elsewhere in the southern desert indicate that similar sites may be present along the alignment but remain undocumented.

Iron Age and Nabataean Periods

During the Iron Age, the southern Jordanian desert functioned as a contact zone between settled regions and nomadic groups. Although site visibility from these periods is low, the corridor's proximity to Humayma and Nabataean water systems indicates strong regional activity. later Nabataean influence is particularly notable through inscriptions, cairns, and travel routes around Wadi Rum, where camel caravan traffic linked Aqaba (Ayla) to Petra and the wider Nabataean network.

Roman and Byzantine Periods

Roman and Byzantine features are more readily identifiable and are often associated with defensive or administrative infrastructure. The Qatraneh and Hasa forts represent well-preserved examples of military and pilgrimage support structures along the ancient route to Mecca. Towers, enclosures, and agricultural terraces appear intermittently throughout the Badia, showing attempts to regulate movement and manage water in an arid landscape. The Cave of the Seven Sleepers near Amman is a key religious site from the late Roman–Byzantine era and illustrates the region's spiritual significance.

Early Islamic to Ottoman Periods

From the 7th century onward, the region formed part of major pilgrimage and trade routes. Caravan stations, water reservoirs, stairways, cleared paths, and resting places can still be identified, particularly near Qatraneh and along the Desert Highway corridor. Ottoman-period Hajj forts, including those at Qatraneh and Hasa, remain structurally significant and demonstrate continued use of this corridor for centuries. The landscape bears the imprint of sustained human movement rather than dense settlement, with structures spread at intervals suited to long-distance travel.

Modern and Contemporary Periods

Modern heritage is represented by the Hejaz Railway, Arab Revolt sites, military posts, early agricultural developments, and the expansion of Aqaba as a maritime and industrial centre. In several locations, 20th-century infrastructure overlaps earlier heritage zones, complicating site preservation but also reflecting continuity of use.

7.11.2 Tangible Heritage by Study Area

The Project crosses a landscape with a long and complex human history. Archaeological work in southern and central Jordan shows that people have moved through and settled in this region for thousands of years, using it as a corridor between major centres such as Aqaba, Amman, Madaba, Kerak, and Wadi Rum. Although some areas near Aqaba and Amman have been studied in detail, large sections of the proposed pipeline route remain poorly recorded. Many surveys in Maan, eastern Madaba, and the Wadi Yutum region were never published, and several known sites have suffered from looting or erosion. What is clear from past investigations is that the wider region holds remains from nearly every major period, from the Paleolithic to the Ottoman and modern era, yet the current record is incomplete, and gaps in data are significant.

The 2022 ESIA identified 46 archaeological sites along the route. These include flint scatters, pottery spreads, stone circles, burial areas, towers, agricultural features, and historic structures. They vary in density by district, from Amman through Madaba, Kerak, Tafeileh, Maan, and down to Aqaba. Important sites such as the Qatraneh and Hasa forts and the Cave of the Seven Sleepers illustrate how the region functioned as a transport and pilgrimage network over many centuries. The pipeline corridor near Wadi Rum is especially sensitive: Wadi Rum is a UNESCO World Heritage Site known for its extensive rock art, inscriptions, and long sequence of occupation. Only two sites were previously recorded near Wadi Yutum, but this area is almost certain to contain more archaeology, as it served as a major routeway in antiquity and lies near known multi-period settlements such as Humayma.

A review of the data sources for tangible heritage has increased the number of sites within the Project foot print from 46 listed in 2022 EISA to 142, which have not been assessed.

Large gaps remain in the current understanding of the area. Several historic periods are missing in the record simply because systematic fieldwork has not been carried out. The region between Aqaba and Amman contains poorly documented prehistoric sites, caravan routes, and Islamic-period features that have never been fully mapped. The absence of data does not indicate an absence of heritage; rather, it reflects limited research access, unpublished survey results, and the challenging desert terrain.

Taken together, the available evidence shows that the Study Area contains a wide range of tangible heritage, potentially much of it vulnerable and under-studied Wadi Rum

The Wadi Rum section of the Project intersects a landscape of exceptional archaeological density. Rock art panels and inscriptions appear on cliff faces, boulders, and canyon walls. Prehistoric camps are identifiable through lithic scatters, hearths, and small structural remains, while cairns and burial features occupy elevated ridges and low terraces. Nabataean and later Islamic inscriptions mark routeways, resting places, and areas of pastoral activity. Water installations, ancient wells, and diversion systems appear near natural springs and seasonal drainage lines. These features are spatially diffuse but interconnected, forming a coherent cultural landscape.

- Aqaba and the Hejaz Railway Corridor

Aqaba has a layered archaeological record beneath its modern expansion, but the Project's main interaction is with the broader historic landscape approaching the Hejaz Railway corridor. Surviving railway features include embankments, cuttings, stone buildings, sidings, and bridge remnants. The railway played a central role in the Arab Revolt and remains a potent element of Jordan's modern heritage. Archaeological deposits from earlier periods may also survive beneath or adjacent to modern infrastructure.

- Solar Photo-Voltaic (PV) Development Area (Qweirah Region)

The proposed solar PV footprint lies within an area containing scattered prehistoric material, low stone structures, and possible burial features. These remains reflect pastoral and short-term seasonal use rather than permanent settlement. Limited earlier survey coverage means that the density, distribution, and significance of sites in this zone remain uncertain, and detailed survey will be required to establish the full heritage context.

- OHTL Corridor

The overhead transmission line corridor crosses extensive open desert where surface archaeology is often subtle. Cairns, scatters, low wall alignments, and ephemeral camps are characteristic of this zone. These features are vulnerable to disturbance because they are low-profile and difficult to detect without systematic survey. The area between Wadi Yutum and Jafr holds particularly high potential for undiscovered early and Islamic-period features.

7.11.3 Intangible Cultural Heritage

Baseline data collection combines desktop research with field investigation. It includes a review of the National Inventory of Intangible Cultural Heritage, UNESCO and International Council on Monuments and Sites (ICOMOS) databases, and academic and ethnographic literature relating to the right of way from Aqaba to Amman. Regional inventories maintained by the Ministry of Tourism and Antiquities, the ASEZA, and the Petra Development and Tourism Region Authority (PDTRA) were also reviewed. Field investigations and stakeholder engagement are designed to document Intangible Cultural Heritage (ICH) elements associated with traditional crafts, oral traditions, culinary heritage, pastoral practices, and ritual or social customs connected to the communities along the route.

Particular attention was given to the Bedouin communities inhabiting the southern and central governorates. Their oral poetry, camel husbandry, weaving, tent-making, navigation skills, and ecological knowledge form integral components of the region's intangible heritage, expressing deep connections with the desert environment. Documentation of these practices was undertaken through participatory interviews and observation, with consent and cultural sensitivity.

Community and stakeholder engagement is central to the Intangible Cultural Heritage Impact Assessment (ICHIA) and questions on ICH were incorporated for community and stakeholder meetings, communities were invited to identify heritage elements of importance to them and to reflect on how Project activities might influence any ICH.

The impact assessment evaluates how Project activities may affect identified ICH elements. Impacts are categorised as direct (affecting practices or spaces essential to heritage expression), indirect (affecting access, environment, or social conditions), or cumulative (resulting from broader patterns of regional change). Each impact is evaluated for its magnitude, duration, reversibility, and overall significance. Positive impacts, such as those that enhance awareness, safeguarding, or community resilience, are also identified.

Mitigation measures are developed in line with the UNESCO Mitigation Hierarchy which prioritizes avoidance and minimisation. Recommendations may include adjustments to Project design, the inclusion of community co-management mechanisms, or support for documentation and transmission initiatives. Offsetting is not considered applicable, as ICH, like Outstanding Universal Value in World Heritage contexts, is irreplaceable and cannot be compensated once lost.

Finally, the reporting and integration phase synthesizes all findings into a single framework. The ICHIA is coordinated with the WRPA HIA and broader ESIA processes to ensure that intangible heritage considerations are fully integrated into Project design, environmental management, and social development planning.

Survey and documentation methods combine ethnographic, participatory, and spatial techniques consistent with UNESCO's community-based inventorying approach. Primary and secondary data was collected through a structured and ethically grounded process.

Existing inventories, archives, and research were reviewed to establish a baseline understanding of ICH elements across the STUDY AREA. Semi-structured interviews and oral-history recordings were conducted with practitioners, craftspeople, and community elders, focusing on the cultural expressions, rituals, and knowledge systems closely associated with the landscapes traversed by the Project. Interviews were guided by bilingual questionnaires and conversation prompts tailored to specific domains of heritage, such as oral traditions, performing arts, social practices, and traditional craftsmanship.

Visual, audio, and spatial documentation was undertaken where appropriate, including photographic records, georeferenced mapping of heritage spaces, and short audio recordings of songs, stories, or oral expressions (subject to consent). All data collection adhered to ICH and UNESCO ethical requirements, ensuring Free, Prior, and Informed Consent (FPIC) before recording, storage, or publication. Information deemed sensitive by participants was excluded from public reporting and will remain archived under controlled access in consultation with the Ministry of Culture and local communities.

Field findings were validated through follow-up discussions with community representatives and relevant authorities to ensure accuracy, cultural appropriateness, and alignment with community perspectives.

ICH desktop studies and partial surface reconnaissance (in vehicles and on foot) were used to identify cultural heritage sites within the Study Area. The list of identified sites would not be expected to include

all ICH, archaeological sites, and other cultural heritage features within the Study Area. This is due to the relatively rapid coverage and the difficulty of recognising archaeological sites from the surface, since archaeological sites are largely underground and often concealed from view.

The ICHIA was developed in coordination with national and regional institutions that hold statutory or cultural mandates for heritage management. Key stakeholders and information sources include the Ministry of Culture, Ministry of Tourism and Antiquities, Department of Antiquities (DoA), ASEZA, PDTRA and Royal Society for the Conservation of Nature (RSCN), among others. Engagement with these bodies ensured methodological alignment with national safeguarding strategies and compliance with international standards and lender requirements. In particular, both the DoA and ASEZA provided extensive information and permissions to perform the work.

The Project conducted a desktop review of readily available historical, archaeological, and cultural heritage information pertinent to the STUDY AREA, with support and consultation from experts at the DoA. The team identified and consulted information sources pertinent to this ICHIA Statement and are included in Table 7-17.

Table 7-17: Sources of Information

Source	Type	Description
Department of Antiquities	Various	Information on known ICH and support to the Project
ECO Consult	Various	Shapefiles, documents, drawing, and other correspondence detailing the proposed works and assessment undertaken so far
UNESCO	UNESCO World Heritage Site	Descriptions and assessment of the OUV of the WRPA and the Cultural Space of the Bedu in Wadi Rum
UNESCO	UNESCO World Heritage Site	WRPA Sate of Conservation reports and 2003 Management Plan
MEGAJordan	Online Geographical Information System (GIS)	Online GIS repository of site data, published by the Department of Antiquities and the Getty Institute
Google Earth	Satellite imagery	Information on topography and geology of the STUDY AREA
USAID	HIA	Previous HIA undertaken in 2025 to assess the Disi-Aqaba Pipeline
Various	Research papers, journal articles, books	Various sources found online and as hard copies
Project Information (Client Data)	Technical and Planning Documents	Data provided by the Project proponent, including pipeline alignment, utility corridor information, and infrastructure design parameters used in assessing cultural heritage impacts
Local Community Consultations	Primary Information Source	Insights from Bedouin and local communities within Wadi Rum, Ma'an, and Aqaba Governorates on oral traditions, social practices, and community heritage values
Arabian Rock Art Heritage Project	Technical and Research Documentation	Provides scientific data and photographic records of rock art and inscriptions in the southern and northeastern deserts of Jordan (e.g., Wadi Rum, Hisma Basin, Wadi Salma)

Source	Type	Description
Royal Society for the Conservation of Nature (RSCN	Technical and Research Documentation	Provides scientific data and photographic records of rock art and inscriptions in the southern and northeastern deserts of Jordan (e.g., Wadi Rum, Hisma Basin, Wadi Salma)
Petra Development and Tourism Region Authority	Technical and Research Documentation	Insights on ICH from Bedouin and local communities

7.11.3.1 Recognised Intangible Cultural Heritage in Jordan

UNESCO Protected Intangible Cultural Heritage in Jordan

Jordan is a State Party to the *UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage* and has made significant progress in documenting and promoting its living heritage. As of 2024, seven elements practised in Jordan are inscribed on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity (Table 7-18). These elements represent the country's diverse cultural expressions, ranging from hospitality traditions and culinary practices to social rituals, craftsmanship, and the living Bedouin heritage of Wadi Rum and Petra.

Table 7-18: UNESCO-Recognised ICH Elements in Jordan

Year	Element	Associated Communities/Regions	Description
2008	Cultural Space of the Bedu in Petra and Wadi Rum	Wadi Rum, Petra	Jordan's first inscription, this element represents the oral poetry, knowledge of nature, tribal customs, and traditional skills of the Bedouin communities of southern Jordan. The cultural space includes practices of camel breeding, navigation, and storytelling that shape Bedouin identity and their relationship with the desert environment
2018	As-Samer in Jordan	Nationwide	A collective performing art combining dance, rhythmic movement, and sung poetry, traditionally performed at weddings and community celebrations. As-Samer strengthens social bonds and transmits oral literature across generations
2021	Arabic Calligraphy: Knowledge, Skills and Practices	Amman, Irbid, Zarqa, and national art institutions	A regional inscription emphasising the art of Arabic script as a key cultural expression. In Jordan, calligraphers, teachers, designers, and artisans maintain diverse calligraphic traditions in educational, religious, and artistic contexts
2022	Date Palm: Knowledge, Skills,	Jordan Valley, Aqaba, Ma'an	A multinational inscription highlighting the cultivation, processing, and use of the date palm. In Jordan, it is practiced

Year	Element	Associated Communities/Regions	Description
	Traditions and Practices		in the Jordan Valley and southern oases, linking agricultural heritage to social and festive traditions
2022	Al-Mansaf in Jordan: A Festive Banquet and Its Social and Cultural Meanings	Nationwide	Jordan's national dish, Mansaf, symbolises generosity, unity, and identity. The preparation and communal consumption of Mansaf are central to family gatherings, weddings, and tribal events, reflecting deep-rooted Bedouin customs of hospitality
2024	Arabic Coffee, a Symbol of Generosity	Nationwide	An extended multinational inscription recognising the centrality of Arabic coffee (gahwa sada) in Arab hospitality. In Jordan, coffee rituals accompany reconciliation councils, celebrations, and daily hospitality, symbolising honour and respect
2024	Henna: Rituals, Aesthetic and Social Practices	Southern and central Jordan	A transnational inscription representing the social, ritual, and artistic uses of henna. In Jordan, henna adornment is integral to weddings and festive events and is practiced by women in both rural and urban communities

7.11.3.2 Jordanian National Inventory

Jordan maintains a National Inventory of Intangible Cultural Heritage, coordinated by the Ministry of Culture and the Department of Antiquities, with technical support from UNESCO (Table 7-19). The inventory follows the five UNESCO ICH domains: oral traditions and expressions; performing arts; social practices, rituals and festive events; knowledge and practices concerning nature and the universe; and traditional craftsmanship.

Safeguarding measures include documentation projects, community-based inventorying, awareness campaigns, and collaboration with academic institutions such as Yarmouk University and the University of Jordan. The National Committee for Intangible Cultural Heritage oversees nominations, monitoring, and the periodic reporting process to UNESCO.

Table 7-19: Nationally Recognised (Non-Inscribed) ICH in Jordan

UNESCO Domain	Element	Associated Communities/ Regions	Description
Oral Traditions and Expressions	Nabati poetry and oral verse	Bedouin tribes	Traditional poetic form used to commemorate tribal events, express values of honour, and transmit oral history
	Storytelling (hakawati)	Urban centres (e.g., Amman, Irbid, Salt)	Narrative storytelling performed in cafés and community spaces,

UNESCO Domain	Element	Associated Communities/ Regions	Description
			preserving folktales and moral lessons
	Proverbs and oral genealogies	Rural and Bedouin communities	Use of sayings and genealogical recitation to transmit ethical values and lineage knowledge
Performing Arts	Dabke (folk dance)	Nationwide; especially northern and central governorates	Line dance performed at social gatherings and weddings; symbol of communal unity and celebration
	Rababa and mijwiz music	Southern desert and rural areas	Traditional string and reed instruments used in Bedouin song and oral poetry
	Zajal and sung poetry	Amman, Zarqa, Salt	Improvised sung poetry performed at community festivals and informal gatherings
Social Practices, Rituals and Festive Events	Tribal reconciliation councils (majalis al-sulh)	Bedouin and tribal communities	Customary dispute-resolution assemblies using dialogue, mediation, and symbolic rituals such as the “cup of coffee” ceremony
	Wedding and engagement rituals	Nationwide	Series of customs including henna nights, music, and communal feasting that affirm social bonds
	Religious and seasonal festivals	Nationwide	Celebrations such as Eid al-Fitr, Eid al-Adha, and harvest festivals marking communal cooperation and gratitude
Knowledge and Practices Concerning Nature and the Universe	Camel breeding and racing traditions	Wadi Rum, Ma’an, Aqaba	Knowledge of camel care, lineage, and desert navigation; integral to Bedouin identity and desert ecology
	Traditional herbal medicine	Ajloun, Karak, Ma’an	Local healers’ knowledge of medicinal plants, mineral waters, and holistic treatment
	Water-sharing and irrigation customs (qanat and sabeel)	Jordan Valley, Karak	Traditional systems of equitable water distribution, managed through communal rules and oral agreements
Traditional Craftsmanship	Sadu weaving	Bedouin women	Hand-woven textiles using goat and camel hair, featuring geometric designs used for tents and furnishings

UNESCO Domain	Element	Associated Communities/ Regions	Description
	Pottery and ceramics	Madaba, Karak, Salt	Craftsmanship of household pottery and decorative ceramics using inherited techniques
	Embroidery (tatreez)	Women's cooperatives nationwide	Embroidered motifs reflecting regional identities and social status, often used in traditional dress
	Jewellery-making and metalwork	Madaba, Karak, Amman	Production of silver jewellery, amulets, and decorative objects with symbolic motifs
	Leatherwork and saddle-making	Ma'an, Wadi Rum	Traditional production of saddles, harnesses, and bags, often ornamented with beadwork
	Basketry and palm-frond weaving	Jordan Valley, Aqaba	Craft using date-palm leaves for household and agricultural tools

7.11.3.3 Other Intangible Cultural Heritage and Additional Discussions

Jordan's rich ICH encompasses a diverse array of practices, expressions, knowledge systems, and skills that are passed down through generations and shape community identity, social cohesion, and relationships with the environment. This section highlights examples of oral traditions, performing arts, social practices, traditional craftsmanship, and ecological knowledge that are documented or recognised within Jordan, particularly in regions intersected by the Project pipeline corridor, including the Jordan Valley, Karak, Ma'an, and Wadi Rum. These elements reflect the interplay between urban, rural, and Bedouin communities, demonstrating how language, ritual, and craft continue to sustain cultural identity and resilience. Understanding these living traditions is crucial to assess the potential impacts of the Project and for designing effective safeguarding and mitigation measures.

7.11.3.4 Oral Traditions and Expressions

Table 7-20 lists examples of oral traditions and expressions practiced in Jordan. These include a range of spoken and sung forms such as poetry, storytelling, and oral histories that transmit collective memory, moral values, and cultural identity across generations. Oral heritage in Jordan often reflects Bedouin, rural, and urban influences, demonstrating how language and narrative continue to shape social cohesion and regional identity.

Along the Gulf of Aqaba, coastal communities preserve oral traditions linked to seafaring and fishing life. Local fishermen refer to named reefs and currents such as Fara'un Island and Tiran, transmitting navigation knowledge and moral stories through generations. These narratives, often recounting shipwrecks, trade voyages, or pilgrim journeys, embody community memory of the Red Sea and contribute to Jordan's maritime oral heritage.

Table 7-20: Oral Traditions and Expressions in Jordan

Element	Community/ Region	Transmission Method	Current Status	Description
Nabati poetry and oral verse	Bedouin tribes	Oral singing and recitation in community gatherings	Actively practiced	Traditional poetic form used to commemorate tribal events, and transmit oral history
Storytelling (hakawati)	Urban centres (Amman, Irbid, Salt)	Oral storytelling in cafés and community spaces	Actively practiced	Narrative storytelling preserving folktales and moral lessons
Proverbs and oral genealogies	Rural and Bedouin communities	Recitation of sayings and genealogies across generations	Continuing	Ethical, cultural, and lineage knowledge transmitted orally
Rock Art Traditions and Oral Memory	Nationwide, but particularly in wadis	Oral storytelling; observation and imitation of motifs; intergenerational transmission through craft, education, and community tourism	Continuing/Revitalised	Rock engravings depicting hunters, animals, and inscriptions embody ecological knowledge and moral codes of desert life. Contemporary initiatives reinterpret rock art through living craftsmanship, heritage education, and guided storytelling
Maritime navigation stories and reef toponyms	Aqaba coastal communities	Oral transmission among fishers and sailors	Continuing	Local place names and stories referencing reefs and ship routes, preserving community memory of the sea

7.11.3.5 Rock Art

Rock art in Jordan's desert landscapes reflects the deep cultural and ecological knowledge of local communities, particularly Bedouin groups in the southern Badia and Wadi Rum. These sites are closely linked with oral traditions, storytelling, ritual use, and traditional navigation or seasonal knowledge. While the petroglyphs themselves are tangible, the intangible values lie in the stories, meanings, and knowledge transmitted. Rock art thus represents a nexus between material expression and living cultural practice, revealing how memory, belief, and environmental experience are visually encoded within Jordan's landscapes.

In southern Jordan, particularly in the Wadi Rum region, rock art serves as a bridge between prehistoric representations and enduring cultural memory. Thousands of engravings depict ibex, gazelle, oryx, ostriches, and hunters on foot or mounted on camels or even ostriches. As documented by Farès, these images record both individual and communal hunting practices that extend from the Bronze Age to the present. Among Bedouin tribes, hunting has persisted as a deeply moral and physical discipline associated with courage, endurance, and generosity. Oral recollections among elders describe not only the techniques of tracking and trapping but also the ethical codes of sharing game and protecting the poor. Such traditions exemplify the continuity between tangible rock art and living intangible heritage, where environmental knowledge and social values remain embedded in desert lifeways.

In the northeastern Badia, recent documentation projects such as the Badia Epigraphic Survey have revealed extensive rock art and Safaitic inscriptions that reflect the creativity and worldview of early desert societies. Engravings on basalt surfaces depict camels, horses, ostriches, hyenas, and, notably, a

rare elephant figure at Wadi Salma, the first of its kind recorded in Jordan. These images are not merely artistic expressions, but visual narratives connected to oral traditions, environmental adaptation, and symbolic thought. The combination of inscriptions and imagery illustrates a form of communication linking survival, spirituality, and identity within a harsh landscape. The persistence of these motifs across centuries demonstrates the deep relationship between people and environment in Jordan's deserts, where intangible knowledge systems continue to inform community identity and cultural memory.

Contemporary heritage initiatives continue to renew these traditions through artistic and educational practices. In northern Jordan, the community of Umm al-Jimal has revitalised basalt carving inspired by ancient rock art as part of a UNESCO-supported programme that trains women in heritage-based craftsmanship, storytelling, and cultural interpretation. Participants use local materials and motifs to create art pieces, host guided tours and teach children about their town's archaeological and cultural legacy. These living practices transform rock art from a static remnant of the past into an active medium for community identity, creativity, and intergenerational knowledge transmission.

Together, the rock art traditions of Wadi Rum, the Black Desert, and Umm al-Jimal illustrate the diversity of Jordan's ICH, revealing a continuum from prehistoric hunting ethos to contemporary oral traditions and community livelihoods.

For a full discussion of the rock art and how it relates to tangible heritage in the WRPA, see WRPA HIA Statement.

7.11.3.6 Performing Arts

Table 7-21 presents examples of performing arts recognised or documented within Jordan. This domain includes traditional music, dance, and theatrical forms that serve as expressions of creativity and community identity. Performing arts in Jordan often accompany social and festive events, embodying the aesthetic values, rhythms, and narratives of Jordanian and broader Arab cultural traditions.

Table 7-21: Performing Arts in Jordan

Element	Community/ Region	Context of Performance	Current Status	Description
Dabke (folk dance)	Northern and central governorates	Weddings, festivals, communal events	Actively practiced	Line dance performed at social gatherings; embodies communal identity
Rababa and mijwiz music	Southern desert and rural areas	Accompanies tribal poetry and ceremonies	Continuing	Traditional string and reed instruments used in Bedouin song and oral poetry
Zajal and sung poetry	Amman, Zarqa, Salt	Improvised sung poetry at community festivals	Continuing	Improvised sung poetry performed at social and festive events

7.11.3.7 Social Practices, Rituals, and Festive Events

Social practices and festive events in Jordan embody the rhythms of community life, marking moments of religious observance, national importance, and local celebration. These living traditions foster collective identity and continuity across generations, bringing together families, neighbours, and visitors in shared acts of participation and expression. Many of these events reflect the interplay between

heritage and modernity, celebrating long-standing customs while embracing contemporary art, music, and performance.

Across the country, festivals and public gatherings strengthen social cohesion and provide economic and cultural opportunities. National holidays, such as Independence Day, and religious celebrations, like Eid al-Fitr and Mawlid al-Nabi, unite communities through shared values and collective remembrance. Meanwhile, regional festivals (e.g., the Jerash Festival of Culture and Arts) demonstrate the vitality of local creativity and its role in sustaining traditional knowledge, crafts, and performance practices.

In southern Jordan, cultural expressions such as camel racing in the Wadi Rum area demonstrate how deeply rooted Bedouin traditions continue to evolve within changing social and economic landscapes. These events not only preserve aspects of tribal identity and heritage but also connect communities through recreation and cultural diplomacy, as seen in national and international racing festivals.

In Aqaba and surrounding coastal settlements, informal rituals accompany fishing and sailing activities. Fishermen may recite prayers for safe return, observe seasonal taboos on fishing in certain reef zones, or perform offerings at the start of the fishing season. Though modest in scale, these practices illustrate spiritual connections between communities and the marine environment, aligning with the UNESCO ICH domain of “social practices, rituals and festive events”.

Table 7-22 summarises key examples of Jordan’s major festivals and community events, illustrating the diversity and contemporary relevance of this domain of ICH.

Table 7-22: Social Practices, Rituals, and Festive Events in Jordan

Element	Community/ Region	Associated Occasion	Current Status	Description
Jerash Festival of Culture and Arts	Jerash	Late July–Early August (annual)	Actively celebrated; draws national and international visitors	Major summer festival, the largest in Jordan, featuring music, dance, theatre, and crafts held among Roman ruins, celebrating national and regional heritage
Aqaba Traditional Arts Festival	Aqaba	February (annual)	Actively practised; supports local artisans and tourism	Festival highlighting Bedouin and coastal traditions through crafts, music, and performing arts
Azraq Festival	Azraq	Annual (variable dates)	Active; regionally attended community event	Local celebration of crafts, regional dance, and traditional foods reflecting oasis culture
Amman International Film Festival	Amman	2–10 July (annual)	Active; growing regional reputation	Showcases Arab and international cinema with screenings, Q&A sessions, and cultural exchange
Fuheis Festival	Fuheis (near Amman)	August (annual)	Actively celebrated; strong community participation	Folk heritage celebration combining music, crafts, and local performances
Medaina Festival	Petra and Wadi Rum	New	Active; combines cultural and tourism promotion	Immersive desert event and festival blending music, art,

Element	Community/ Region	Associated Occasion	Current Status	Description
				and Bedouin heritage experiences
Jordan International Food Festival	Various cities	August (annual)	Active; promotes food heritage and tourism	Culinary event featuring Levantine and global cuisine alongside live performances
Echoes of Heritage Festival	Various cities	July (annual)	Active; emphasises tangible and intangible heritage	Cultural performances, storytelling, and crafts in a historic fortress setting
Ayla Red Sea Half Marathon	Aqaba	December (annual)	Active; integrates culture and recreation	Marathon and cultural event combining sport, music, and tourism promotion
Independence Day of Jordan	Nationwide	25 May (annual)	Widely celebrated nationwide	National day marked by parades, performances, and public celebrations of cultural identity
Jordan Rally	Various desert routes	Annual (variable dates)	Active; attracts regional tourism	International motor rally showcasing Jordan's desert landscape and adventure culture
Amman Design Week	Amman	Biennial (check 2025 edition)	Active; hybrid heritage–innovation focus	Biennial event promoting design, architecture, and traditional craftsmanship
Dead Sea Marathon	Dead Sea Region	Spring (annual)	Active; promotes health and regional tourism	Athletic and cultural tourism event along the Dead Sea's unique landscape
Madaba Mosaic Festival	Madaba	Annual (variable dates)	Active; promotes local artisanship	Cultural event showcasing mosaic craftsmanship and heritage workshops
Camel Racing Festivals	Diesah–Wadi Rum, Aqaba Governorate	Major events across the Middle East, including the Sheikh Zayed International Festival in the UAE, Crown Prince Festival in the KSA, and Arab Cup Festival (September–January).	Actively practised; significant regional participation and heritage value	Annual camel racing events central to Bedouin heritage, featuring community gatherings and friendly competition

7.11.3.8 Religious Practices

Jordan is an ideal destination for those seeking cultural knowledge and spiritual enrichment. Jordan values its ethnically and religiously diverse population, consequently providing for the cultural rights of all its citizens. This spirit of tolerance and appreciation is one of the central elements contributing to the stability and peace in Jordan. Today, more than 92 percent of Jordanians are Muslims, and approximately eight percent are Christians. Most Christians belong to the Greek Orthodox Church, but there are also

Greek Catholics, Roman Catholics, Syrian Orthodox, Coptic Orthodox, Armenian Orthodox, and a few Protestant denominations.

Within the STUDY AREA, religious places and structures play a vital role in ICH. Across the country, there are more than 7,600 mosques under the oversight of the Ministry of Awqaf and Islamic Affairs. While precise counts for churches and other Christian sacred structures are less systematically published, they collectively reflect the small but long-established Christian presence that has contributed to Jordan's plural cultural landscape.

Religious structures (e.g., mosques, churches, cemeteries, shrines, and other sacred aboveground sites) are not merely architectural landmarks; they also function as hubs of social, educational, and cultural life. Mosques host daily prayers, Friday sermons, Qur'anic recitation sessions, community gatherings, and religious festivals such as Eid and Mawlid, which reinforce communal cohesion, transmit religious knowledge, and maintain long-standing social traditions.

Churches similarly support rites, feast days, and community rituals, and their presence within the broader cultural landscape speaks to Jordan's enduring history of importance in Christianity. Cemeteries, mausoleums, and historic shrines contribute additional layers of intangible heritage through their roles in memorialisation, pilgrimage, inter-generational continuity, and the cultural meaning of place.

Within the STUDY AREA, these heritage values warrant careful consideration. Key factors include the visual and physical relationship of religious sites to the pipeline corridor; access for communities attending these sites; potential disruption to customary movement or seasonal festival gatherings; and the maintenance of inter-community networks anchored in these religious places. As such, religious structures and their associated cultural practices form a critical component of the ICH baseline for the Project (Table 7-23).

Table 7-23: Rituals Associated with Religious Institutions in Jordan

Element	Community/Region	Associated Occasion	Current Status	Description
Friday Congregational Prayer (Jumu'ah)	Nationwide	Every Friday	Widely practised nationwide	Central weekly Islamic gathering involving communal prayer, sermon (khutbah), and social exchange
Ramadan and Eid al-Fitr Observances	Nationwide	Ninth month of the Islamic lunar calendar and end-of-month festival	Universally observed	Month-long fasting, evening gatherings (iftar), Qur'anic recitation, charitable giving (zakat al-fitr), and communal prayers
Mawlid al-Nabi (Prophet's Birthday)	Nationwide	Annual (lunar calendar)	Widely practiced	Religious celebration featuring sermons, Qur'anic recitations, poetry,

Element	Community/Region	Associated Occasion	Current Status	Description
				and devotional gatherings at mosques and public squares
Orthodox Easter and Palm Sunday	Amman, Madaba, Fuheis, Karak, Ma'an	Annual (spring)	Actively celebrated; strong community participation	Christian observances marking Christ's resurrection. Churches host communal meals and charitable outreach
Christmas (Eastern and Western rites)	Amman, Madaba, Fuheis, Karak, Aqaba	25 December and 7 January	Widely celebrated	Major Christian festivals involving mass, family gatherings, and community charity. Churches in major towns host inter-faith visits and seasonal music
Cemetery and Shrine Visits	Throughout STUDY AREA, especially near tribal communities and historic villages	Variable (religious and family commemorations)	Actively practiced	Visiting graves for remembrance and prayer; offerings of flowers, incense, or Quran recitations. Maintains ancestral ties and community continuity
Mosque and Church Educational Circles	Nationwide	Year-round	Active in urban and rural communities	Informal teaching sessions (halaqat) in mosques and catechism or youth meetings in churches that transmit religious knowledge
Pilgrimage to Local Shrines	Select regions, including southern Jordan	Variable (linked to local saints or scholars)	Locally practiced	Visits to tombs or shrines of revered figures for supplication, healing, or blessing; often accompanied by small communal

Element	Community/Region	Associated Occasion	Current Status	Description
				gatherings and hospitality
Friday Congregational Prayer (Jumu'ah)	Nationwide	Every Friday	Widely practised nationwide	Central weekly Islamic gathering involving communal prayer, sermon (khutbah), and social exchange
Ramadan and Eid al-Fitr Observances	Nationwide	Ninth month of the Islamic lunar calendar and end-of-month festival	Universally observed	Month-long fasting, evening gatherings (iftar), Qur'anic recitation, charitable giving (zakat al-fitr), and communal prayers
Mawlid al-Nabi (Prophet's Birthday)	Nationwide	Annual (lunar calendar)	Widely practiced	Religious celebration featuring sermons, Qur'anic recitations, poetry, and devotional gatherings at mosques and public squares
Orthodox Easter and Palm Sunday	Amman, Madaba, Fuheis, Karak, Ma'an	Annual (spring)	Actively celebrated; strong community participation	Christian observances marking Christ's resurrection. Churches host communal meals and charitable outreach
Christmas (Eastern and Western rites)	Amman, Madaba, Fuheis, Karak, Aqaba	25 December and 7 January	Widely celebrated	Major Christian festivals involving mass, family gatherings, and community charity. Churches in major towns host inter-faith visits and seasonal music
Cemetery and Shrine Visits	Throughout STUDY AREA, especially near	Variable (religious and family commemorations)	Actively practiced	Visiting graves for remembrance and prayer; offerings of

Element	Community/Region	Associated Occasion	Current Status	Description
	tribal communities and historic villages			flowers, incense, or Quran recitations. Maintains ancestral ties and community continuity
Mosque and Church Educational Circles	Nationwide	Year-round	Active in urban and rural communities	Informal teaching sessions (halaqat) in mosques and catechism or youth meetings in churches that transmit religious knowledge
Pilgrimage to Local Shrines	Select regions, including southern Jordan	Variable (linked to local saints or scholars)	Locally practiced	Visits to tombs or shrines of revered figures for supplication, healing, or blessing; often accompanied by small communal gatherings and hospitality

7.11.3.9 Mosques

As part of the preliminary analysis of mosques within the STUDY AREA, CH Arabia examined maps and business pages for mosques. Mosques are integral to the region's historical and spiritual landscape. The mosques in this area not only serve as places of worship but also as living representations of local traditions, reflecting a rich blend of architectural styles and regional influences. A preliminary list of mosques idenfitied within the STUDY AREA is presented in Appendix 7-1.

7.11.3.10 Knowledge and Practices Concerning Nature and the Universe

Traditional knowledge in Jordan reflects generations of observation, adaptation, and coexistence within a variable landscape including harsh deserts and Mediterranean environmental zones. Rooted in agricultural and pastoral traditions, these systems of knowledge embody deep ecological awareness and respect for natural cycles. They encompass practices related to weather prediction, animal behaviour, navigation, and sustainable use of scarce resources such as water and grazing land.

Such knowledge continues to inform community resilience and environmental stewardship, even as it faces pressure from modernisation, climate change, and shifting livelihoods. For example, traditional water-harvesting systems, including cisterns, hafirs, and wells, demonstrate historical ingenuity in adapting to arid landscapes and ensuring survival through collective management of water resources.

Pastoralism, whether associated with settled, semi-nomadic or nomadic lifestyles, remains one of Jordan's most enduring cultural systems, representing both a livelihood and an expression of identity for

Bedouin communities across the Qatraneh, Hasa, Jafr, Wadi Rum, Hisma Basin, and Eastern Badia regions. Beyond its economic role, pastoralism embodies deep ecological knowledge of desert navigation, water sources, and seasonal grazing cycles, transmitted orally through family instruction, poetry, and customary law. These practices also structure social relations, emphasising cooperation, hospitality, and respect for the environment. Modernisation, sedentarization, and land use change reshape the pastoral landscape. This heritage is vital to maintaining the cultural continuity and ecological wisdom that underpin Jordan's desert traditions. Today, these knowledge systems are increasingly recognised for their contemporary relevance to sustainability, heritage education, and cultural identity. Preserving and revitalising such practices contributes not only to cultural continuity but also to broader efforts in environmental conservation and community development.

Inherited maritime knowledge is particularly important in the area around the Gulf of Aqaba and encompasses seasonal fishing patterns, boat repair, and understanding of local winds and currents. Traditional fishermen historically used wooden sambuks and sailing dhows, navigating by wind direction and star patterns such as those associated with the shamal wind. This body of ecological and meteorological knowledge reflects the community's adaptive understanding of marine ecosystems.

Table 7-24 below highlights key examples of traditional ecological and cosmological knowledge in Jordan, illustrating the ongoing relationship between people, land, and environment that defines this domain of ICH.

Table 7-24: Knowledge and Practices Concerning Nature and the Universe in Jordan

Element	Community/Region	Knowledge Type	Current Status	Description
Falcon Hunting	Al-Jafr Desert, Ma'an Governorate	Environmental and wildlife knowledge, animal husbandry, and traditional hunting techniques.	Actively practised during the annual hunting season (September–November), it continues as a valued cultural heritage	Traditional Bedouin practice involving the seasonal hunting and training of falcons, requiring specialised ecological knowledge and skills linked to desert life
Camel breeding and racing traditions	Wadi Rum, Ma'an, Aqaba outskirts	Animal husbandry, desert navigation	Actively practiced	Knowledge of camel care, breeding, racing; central to Bedouin identity
Water-sharing and irrigation customs (qanat, sabeel)	Jordan Valley, Karak	Water management and equitable distribution	Continuing	Traditional systems of managing scarce water resources collectively
Traditional herbal medicine	Ajloun, Karak, Ma'an	Ethnobotanical knowledge	Continuing	Use of medicinal plants, mineral waters, holistic remedies in traditional health practises
Traditional Pastoralism	Bedouin and semi-nomadic communities of	Environmental knowledge; livestock care;	Continuing/ Evolving	Traditional mobility, herd management, and environmental care adapted

Element	Community/Region	Knowledge Type	Current Status	Description
and Seasonal Mobility	Maʿan, Wadi Rum, Hisma Basin, and the Eastern Badia	seasonal grazing and navigation practices; oral traditions and social organisation		to arid landscapes. Oral knowledge of pasture cycles, water sources, and animal behaviour passed down through families and tribes, reflecting social values of cooperation and resilience
Traditional fishing and maritime ecology	Aqaba coastal communities	Marine resource management, wind and current knowledge	Continuing, declining in active practice	Inherited knowledge of seasonal fishing grounds, navigation by natural signs, and community-based stewardship of reef ecosystems

7.11.3.11 Traditional Craftsmanship

Traditional craftsmanship in Jordan represents both artistic creativity and practical knowledge, embodying skills passed down through generations that link people to place, material, and identity. These crafts reflect a deep understanding of local environments and resources, from stone and clay to wool, leather, and metal, and serve as tangible expressions of ICH. Table 7-25 presents examples of Jordanian traditional crafts that reflect the country's diversity, resilience, and ongoing transmission of artisanal knowledge.

Although largely replaced by fiberglass vessels, older craftsmen in Aqaba recall the techniques of wooden boat construction, sailmaking, and net repair. These practices reflect the creative adaptation of local materials and coastal conditions, representing a maritime variant of Jordan’s traditional craftsmanship heritage.

Table 7-25: Social Practices, Rituals, and Festive Events in Jordan

Element	Community/ Region	Material/Technique	Current Status	Description
Sadu weaving	Bedouin women in Ma’an/Wadi Rum	Goat and camel hair weaving	Actively practiced	Hand-woven textiles with geometric patterns for tents, furnishings, and clothing
Pottery and ceramics	Madaba, Karak, Salt	Clay shaping and firing	Actively practiced	Household pottery and decorative ceramics using inherited techniques
Embroidery (tatreez)	Women’s cooperatives nationwide	Needlework	Actively practiced	Embroidered motifs reflecting regional identities and social status, used in traditional dress
Basketry and palm-frond weaving	Jordan Valley, Aqaba	Palm leaf weaving	Actively practiced	Use of date-palm leaves for household and agricultural items

Element	Community/ Region	Material/Technique	Current Status	Description
Arab Kohl making (traditional eyeliner)	Bedouin women, southern Jordan	Grinding stibnite and mixing with natural oils or herbs	Continuing	Ancient cosmetic craft used to contour and protect the eyes; practised by Bedouin women and passed down through generations as part of traditional adornment and identity
Wooden dhow and sambuk construction	Aqaba, Red Sea coast	Timber joinery, sail-making, boat maintenance	Rare; limited to older practitioners	Traditional boat-building and maintenance techniques reflecting Red Sea craftsmanship heritage

7.11.3.12 Wadi Rum Intangible Cultural Heritage

Intangible heritage in Wadi Rum is inseparable from the desert environment. Bedouin communities maintain oral histories tied to mountains, passes, ancestral grazing lands, and significant events. Poetry, storytelling, and traditional music encode knowledge of lineage, territory, hospitality, and moral conduct. Camel herding traditions and seasonal migration practices continue in modified form and remain central to community identity. Tribal governance and customary dispute resolution reinforce longstanding relationships between people and place. These practices contribute to the OUV of Wadi Rum and must be understood as active elements of the cultural landscape.

7.11.3.13 Summary for the Project Footprint from Aqaba to Amman for Intangible Cultural Heritage

Across the Badia, intangible heritage is embedded in everyday life. Communities maintain ties to tribal identity, grazing rights, and knowledge of water sources, tracks, and seasonal conditions. Oral traditions recount events associated with caravan routes, early settlement, and conflicts or alliances between tribes. Customary law continues to guide relations over land access, mobility, and conflict resolution. While many communities are now settled, these systems remain influential and shape perceptions of project impacts and responsibilities.

The wider right of way also contains substantial intangible heritage potential. Tribal territories and relationships to land are deeply rooted in memory and lineage. Seasonal grazing routes, traditional wells, and historic stopping points remain central to community narratives. Perceptions of land, mobility, and access are influenced by these traditions, which may not be visible physically but remain active in social systems. Understanding these values is essential for predicting community reactions to land acquisition, access changes, or construction activities.

7.11.4 Assumptions and Limitations

While reasonable efforts were made to gather accurate, up-to-date and relevant information through the extensive review of both primary and secondary sources, the assessment does not claim to represent a complete or exhaustive characterisation of all cultural heritage information along the right of way. Some data may not have been accessible or disclosed. The baseline therefore reflects a “best available information” approach and should be read together with future AAWDC Project documentation which will continue to refine and update heritage information as the Project progresses toward construction.

For these reasons, the baseline should be understood as a composite view built from the best available evidence rather than a comprehensive dataset. The cultural heritage values of the Study Area are likely under-represented in existing records, and additional tangible and intangible heritage may be identified during targeted surveys and construction-phase monitoring. This will be addressed via the ESMP and CHMP.

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Appendices

Appendix 7-1 Table of Mosques in the Study Area