Hashemite Kingdom of Jordan
Aqaba Special Economic Zone Authority (ASEZA)
Aqaba Development Corporation (ADC)

Hashemite Kingdom of Jordan

The Project for Updating ASEZ Master Plan

Final Report (Summary)

September 2024

Japan International Cooperation Agency

Pacific Consultants Co. Ltd.
INGEROSEC Corporation

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سلطة منطقة العقبة الإقتصادية الخاصة
AQABA SPECIAL ECONOMIC ZONE AUTHORITY

شركة تطوير العقبة
AQABA Development Corporation

JICA
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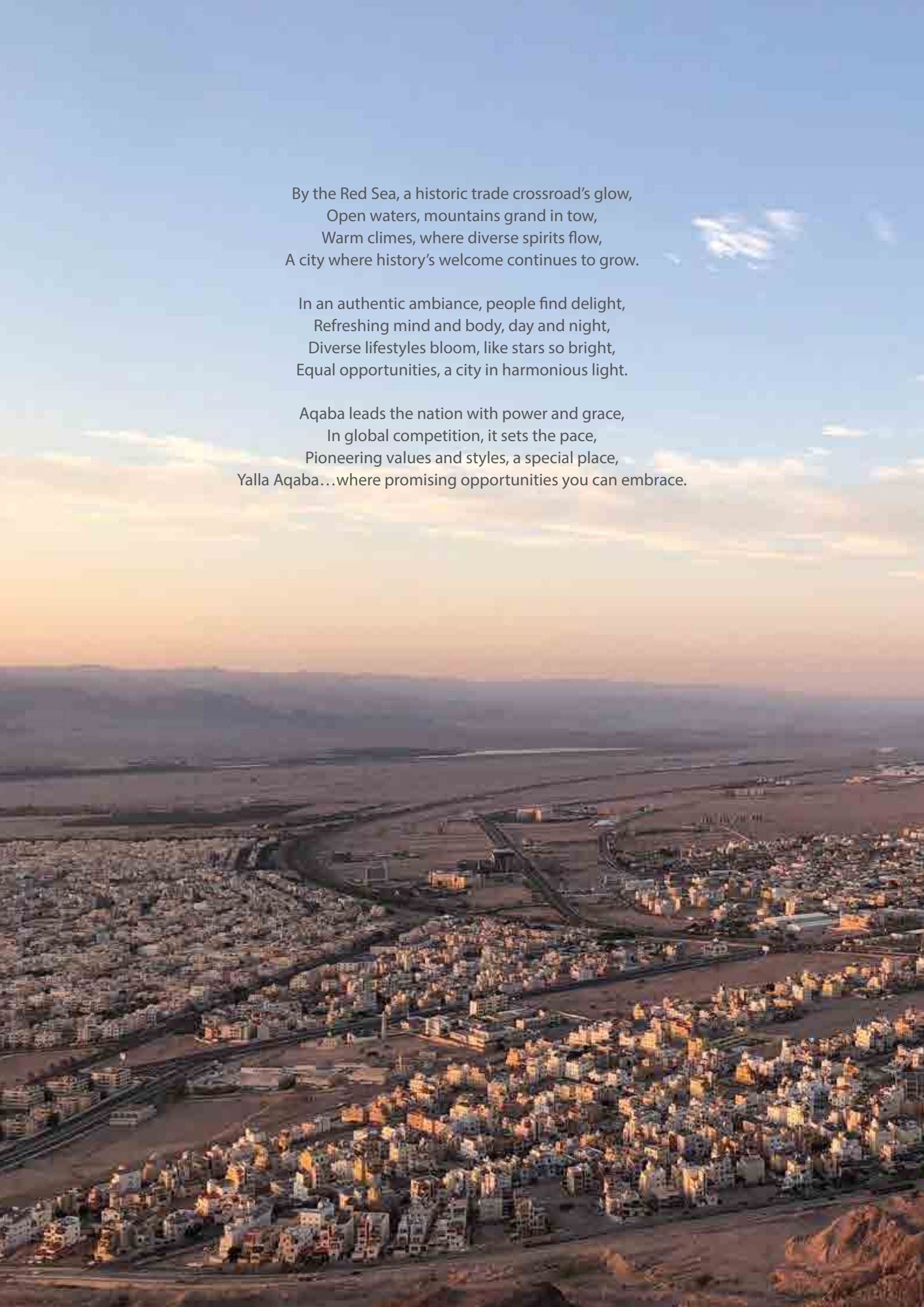
Summary of

ASEZ URBAN DEVELOPMENT MASTER PLAN 2024-2040



By the Red Sea, a historic trade crossroad's glow,
Open waters, mountains grand in tow,
Warm climes, where diverse spirits flow,
A city where history's welcome continues to grow.

In an authentic ambiance, people find delight,
Refreshing mind and body, day and night,
Diverse lifestyles bloom, like stars so bright,
Equal opportunities, a city in harmonious light.

Aqaba leads the nation with power and grace,
In global competition, it sets the pace,
Pioneering values and styles, a special place,
Yalla Aqaba…where promising opportunities you can embrace.

ACKNOWLEDGEMENT

We would like to extend our deepest gratitude to the dedicated individuals and organizations who contributed to the successful completion of the JICA "Project for Updating ASEZ Master Plan".
Our sincere thanks go to the staff of ASEZA (Aqaba Special Economic Zone Authority) and ADC (Aqaba Development Corporation) for their invaluable assistance in data collection, interviews, and consultations. We are also grateful to the private companies operating within ASEZ, as well as the international donors involved in projects within ASEZ, for their cooperation and insights.
We acknowledge the participation of representatives from various central government ministries and the citizens and NGOs of Aqaba, who actively engaged in the Stakeholder meetings as part of the Strategic Environmental Assessment. Their input was essential in shaping the direction of the masterplan.

Special recognition must be given to H.E. Chief Commissioner, whose strong leadership guided the project, and to the Project Leader, the City and Environmental Commissioner, for their unwavering commitment. We are deeply thankful for the core members of ASEZA and ADC, who participated in weekly meetings and study tours to Japan over the course of two years, demonstrating remarkable perseverance and dedication to the project's successful completion.

In this project, ASEZA and ADC took the lead in analyzing the current situation and challenges of ASEZ, and successfully formulated a vision, strategy, and specific projects that will guide the development of ASEZ as a better city by 2040. As we move forward in implementing the masterplan, we trust that those who have been involved in this project will continue to play a central role, bringing together more people and working as One Team to create an even better city for the future.

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ACRONYMS

Acronyms	Full Name
3Rs	Reduce, Reuse, Recycle
ACT	Aqaba Container Terminal
ADC	Aqaba Development Company
ASEZ	Aqaba Special Economic Zone
ASEZA	Aqaba Special Economic Zone Authority
B/C	Benefit-Cost Ratio
BCG	Boston Consulting Group
BCPs	Business Continuity Plans
BRT	Bus Rapid Transit
CAGRs	Compound Annual Growth Rates
CBD	Central Business District
CCTV	Closed-Circuit Television
CEGCO	Central Electricity Generating Company
CO2	Carbon Dioxide
COVID-19	Coronavirus Disease of 2019
CPI	City Prosperity Index
DNA	Deoxyribonucleic Acid
DOS	Department of Statistics
DX	Digital Transformation
EDCO	Electricity Distribution Company
ESG	in Environmental, Social, and Governance
EU	European Union
EV	Elecrtric Vehicle
EWS	Early Warning System
FDI	Foreign Direct Investment
FTAs	Free Trade Agreements
GDP	Gross Domestic Product
GIS	Geographic Information System
GIZ	German Corporation for International Cooperation
ICT	Information and Communication Technologies
IoT	Internet of Things
IT	Information Technology
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
JOD	JORDAN DINAR
KHIA	King Hussien Iinternational Airport
KPIs	Key Performance Indicators
LP Gas	Liquefied Petroleum Gas
LRT	Light Rail Transit
M/P	Masterplan
MPWH	Ministry of Public Works & Housing
MSMEs	Ministry of Micro, Small and Medium Enterprises

Acronyms	Full Name
NEPCO	National Electric Power Company
PM10	Particulate Matter: Those with a diameter of 10 microns or less
PV	Photovoltaics
R&D	Research and Development
SEA	Strategic Environment Assessment
SEZs	Special Economic Zones
SHM	Stakeholder Meetings
SO2	Sulfur Dioxide
TEUs	Twenty-foot Equivalent Units
TRC	Telecommunications Regulatory Commission
TWGs	Technical Working Groups
UK	United Kingdom
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States
USAID	United States Agency for International Development
USD	United States Dollar
USPD	Urban Study and Planning Department

INTRODUCTION

Background

The objective of this plan is to contribute to the economic and social development of Aqaba by updating and preparing an Urban Development Master Plan for the Aqaba Special Economic Zone (ASEZ).

Since the 1990s, the State of Jordan has experienced high economic growth, averaging over 7% annually. However, this growth has faced significant challenges due to the global financial crisis of 2008, the economic slowdown caused by the Syrian crisis since 2011, and the impact of the COVID-19 pandemic starting in 2020. These events have led to a decline in tourism revenues, which are crucial for the country's foreign exchange earnings, an increase in public debt, and a worsening economic and fiscal situation.

ASEZ is pivotal for the stable growth of Jordan and regional stability. It serves as a hub for heavy industry, logistics, and tourism, driving the national economy. For further national development, the enhancement of ASEZ, with a primary focus on tourism, foreign currency acquisition, and employment creation, is essential.

ASEZ attracted over 1 million tourists annually (based on hotel room nights in 2019), though this number dropped to 500,000 in 2020. With a resident population of approximately 200,000, it is equally important to create an urban environment that attracts highly skilled professionals. Additionally, strengthening ASEZ's role as a marine transport and logistics hub is crucial, with a goal to increase the container handling volume at the Port of Aqaba by 2025 to about 2.5 times that of 2019. The key to ASEZ's development lies in enhancing the urban environment and leveraging its unique status as Jordan's sole port city.

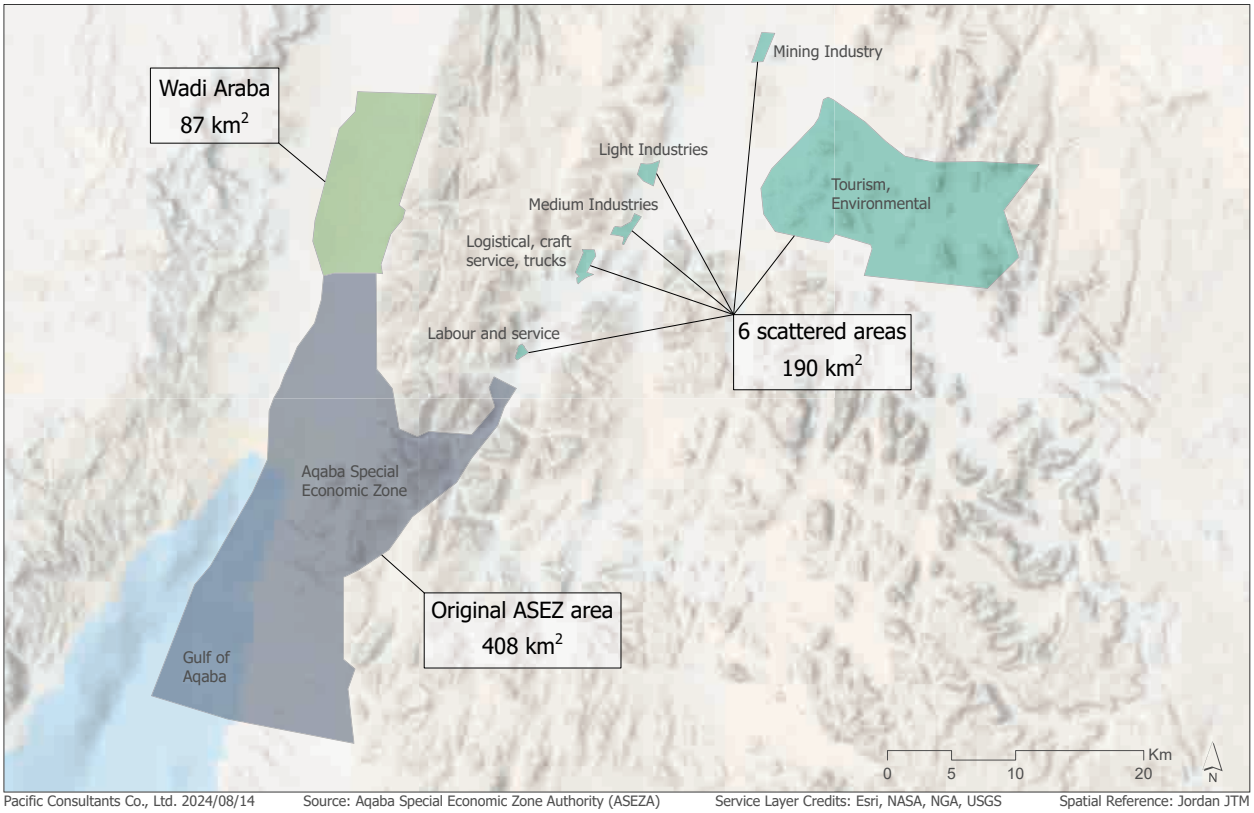
In 2002, following the establishment of Aqaba Special Economic Zone Authority (ASEZA), an Urban Development Master Plan (M/P) targeting 2020 was formulated and endorsed by ASEZA's Board of Commissioners. The Aqaba Special Economic Zone Law, enacted in 2000, outlines ASEZA's establishment, responsibilities, and roles, including the planning, design, and implementation of development projects within ASEZ (ASEZ Law, Articles 9 and 10). The Board of Commissioners is also tasked with determining land use to promote development investment (ASEZ Law, Article 5).

The M/P endorsed in 2002 provided a comprehensive and long-term perspective on land use and investment directions within ASEZ, encompassing tourism, commercial, industrial, and logistics development sectors. The ASEZ Design Guideline 2001, based on the initial M/P, detailed land use, urban functions, development procedures, and standards. Under these guidelines, ASEZA has facilitated regional development through significant investments in urban and industrial projects, including commercial and residential areas, tourism facilities, and the expansion of ports and the airport, thereby boosting regional economic activities and urban appeal.

Building on the previous M/P's functions, the new M/P will incorporate the following concepts:

"The ASEZ M/P defines the long-term strategy for ASEZA to organize and manage growth within ASEZ. It serves as a guide to establish goals and policies for coordinating development, including land use, development intensity, access and circulation, utility provision, and the protection of environmental, cultural, and historical resources. The M/P provides a framework for current and future land uses and circulation systems, establishing development density and capacity, utility systems' location and capacity, and the direction and phasing of future growth. It directs proposed development policies and actions, ensuring cohesive and sustainable development."

The target area of the project encompasses the entire ASEZ, covering 651.5 km^2, as shown in the next figure. Wadi Araba and the 6 scattered areas were newly added to the area within ASEZ.



Pacific Consultants Co., Ltd. 2024/08/14 Source: Aqaba Special Economic Zone Authority (ASEZA) Service Layer Credits: Esri, NASA, NGA, USGS Spatial Reference: Jordan JTM

Map of the area within ASEZ

Collaborative Development of the Master Plan

The master plan was collaboratively developed by ASEZA, the Aqaba Development Corporation (ADC), and the Japan International Cooperation Agency (JICA). This effort involved close collaboration with government agencies and active participation from local stakeholders. In addition to the Joint Coordination Committee (JCC), in which important subjects are consulted and approved by the top management of ASEZA and ADC, the project team and the Technical Working Groups (TWGs) for four sectoral groups—Smart City, Urban Planning, Transport and Logistics, and Industrial Development—were established.

Through the development, seven field studies by the Japanese expert team had been conducted to hold comprehensive field surveys, data collection, JCC meetings, TWGs, and meetings with different stakeholders in Aqaba and Amman were implemented. Besides these field studies, regular meetings and TWGs were held, and extensive information collection and analysis were executed. Two Stakeholder Meetings (SHM) were also held to gather opinions and concerns from residents and local stakeholders regarding the master plan, ensuring that these inputs were reflected in the final plan.

This collaborative approach ensured that the master plan was not only comprehensive and well-informed but also reflective of the needs and aspirations of the local community. Through these efforts, the master plan aims to contribute to the sustainable economic and social development of Aqaba, fostering a well-planned and vibrant urban environment in ASEZ.

JCC Meeting

Preparation Meeting for JCC

Stakeholder Meeting

Interview at the Library

Technical Working Group Session

Discussion on Land Use

Discussion on Infrastructure

RELATED PLANS, STUDIES, and TRENDS

Overview

The master plan has been developed considering the related plans and studies:

Relevant plans at the national level have been reviewed, including the relevant legislation for ASEZ's development, which encompasses a comprehensive list and overview of the pertinent legal systems.

Additionally, existing plans within ASEZ have been taken into account, such as the ASEZA Master Plan 2001-2020, the draft ASEZ Master Plan 2010-2030, and the Aqaba M/P Technical Commentary. Moreover, related studies conducted by donor agencies have been examined. Planned projects within ASEZ have been scrutinized, including those proposed by ASEZA, ADC, and private investors.

Relation with the ASEZA Strategic Plan

ASEZA launched its 2024-2028 strategy in May 2024 to transform ASEZA into a pioneering institution for a sustainable and smart zone, and a global destination for investment, tourism, and commerce. The mission is to stimulate and enhance economic activity and the business environment within the Aqaba Special Economic Zone and the surrounding region, aligning with the Sustainable Development Goals and international best practices, in order to bolster the national economy and improve the quality of life.

The strategy has seven pillars: 1) Tourism, 2) Investment, 3) Sustainable Growth, 4) Smart Cities, 5) Skills Development and Local Community Development, 6) Entrepreneurship and Innovation, 7) Institutional Development. It aims to make Aqaba a unique destination for sustainable tourism in the Red Sea, a desirable global investment hub, and a resilient, adaptable region. It seeks to turn Aqaba into a smart city to improve quality of life and governance, make it a regional hub for skills development, entrepreneurship, and innovation, and ensure ASEZA works as an efficient, effective institution with advanced services, systems, and technical capabilities. Each pillar has its strategic goal, and strategic goal KPIs. Under the seven pillars fall 26 strategic objectives, strategic objectives KPIs and 197 projects for the next five years.

Among the seven pillars of the strategic plan, especially four pillars of tourism, investment, sustainable growth, and smart cities, has significant interconnection with the urban development master plan. Given their significant interconnection, both plans have been coordinated to ensure consistency. The urban development master plan outlines long-term policies and projects up to 2040, while the strategic plan selects and details goals achievable by 2028. Additionally, the strategic plan includes numerous soft measures outside the scope of the urban development master plan.

The urban development master plan guides the city's long-term growth and projects until 2040, while the 2024-2028 strategic plan focuses on achievable goals like tourism, investment, sustainable growth, and smart cities. Both plans coordinate to ensure consistency and adjust periodically to capture new opportunities and challenges, fostering sustainable growth through aligned long-term and short-term objectives.

Global Challenges

These insights provide a comprehensive framework for informing the urban development master plan in Aqaba, emphasizing sustainability, innovation, climate resilience, and social inclusion as integral components of its strategic vision.

Decarbonization: Globally, the push for decarbonization is driven by commitments to achieve net-zero emissions by 2030 or 2050, as outlined in the Paris Agreement. This involves extensive efforts to promote renewable energy sources like solar and wind power, alongside increasing global investments in Environmental, Social, and Governance (ESG) initiatives. In Jordan, initiatives aim to optimize energy generation and storage capabilities, crucial steps in aligning economic growth with sustainable practices, particularly in regions like ASEZA, which are poised to attract significant renewable energy investments.

Digital Transformation (DX): The global landscape of digital transformation (DX) is reshaping industries through advancements in technology, enhancing efficiency and innovation. However, it also brings challenges such as digital divides and privacy concerns that need to be managed carefully. In Jordan, DX initiatives are crucial, highlighted by the National Strategy for Financial Inclusion aimed at leveraging digital tools to bolster economic growth. Within ASEZA, promoting DX not only fosters economic revitalization but also necessitates investments in digital infrastructure and support for startups. These efforts aim to position Jordan as a hub for digital innovation while ensuring inclusive growth

across sectors.

Climate Change: Climate change remains a pressing global issue with rising temperatures and sea levels leading to more frequent and severe extreme weather events. International frameworks like the Paris Agreement underscore the urgency of reducing greenhouse gas emissions and adapting to climate impacts. In Jordan, the effects of climate change, such as the rapid decline of the Dead Sea, underscore the need for robust climate adaptation strategies. Integrating these strategies into ASEZA's development plans is crucial to mitigating risks and ensuring sustainable growth in the face of environmental challenges.

Inclusiveness: Global efforts towards inclusiveness aim to distribute economic benefits equitably, particularly crucial in the post-pandemic recovery phase. In Jordan, inclusiveness is prioritized through policies supporting refugees and vulnerable populations, ensuring access to essential services like education and healthcare. ASEZA's development must foster an inclusive environment that respects cultural diversity and provides equitable opportunities for all residents. This approach not only supports social cohesion but also enhances the region's attractiveness as a sustainable and inclusive urban center.

Comparative Evaluation of City Indexes for Aqaba

Comparing Aqaba's urban indicators using UN-Habitat's City Prosperity Index (CPI) reveals several challenges and areas for improvement.

Aqaba faces higher unemployment rates and lower standards in health and education compared to similar cities globally. This underscores the need for targeted efforts in job creation, healthcare, education, social equity, and civic engagement.

Comparative Development of Red Sea Coastal Cities

Aqaba is strategically positioned among developing Red Sea coastal cities, including NEOM, Eilat, Sharm El Sheikh, and Hurghada. Each city has unique development plans and characteristics aimed at enhancing tourism and economic growth. NEOM, a futuristic project in Saudi Arabia, emphasizes sustainability, innovation, and urban living redesign. Eilat, in Israel, focuses on tourism and smart city initiatives, while Sharm El Sheikh in Egypt aims for environmental sustainability and ecotourism. Hurghada, also in Egypt, emphasizes its resort offerings and water sports.

Aqaba aims to differentiate itself by blending international resort appeal with local cultural experiences, enhancing its attractiveness and competitiveness in the region.

Aqaba's Strategic Path Forward

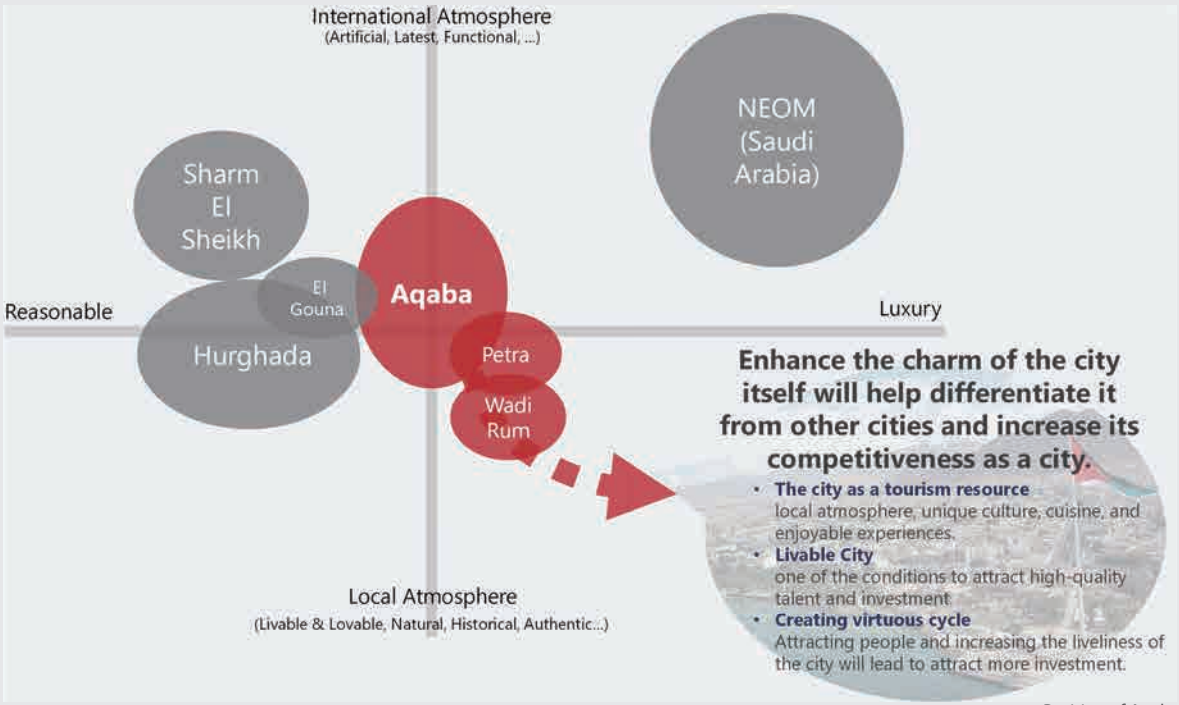
Aqaba stands at a critical juncture among Red Sea coastal cities, uniquely positioned to set itself apart by integrating its international resort appeal with the cultural richness of the Golden Triangle. Nestled alongside Petra and Wadi Rum, Aqaba offers a distinctive blend of modern amenities and authentic local experiences, making it a compelling destination for global travelers.

To enhance its competitiveness, Aqaba must elevate its charm as a cultural hub where visitors can immerse themselves in local traditions and atmosphere. Strengthening the city's allure not only enhances its value as a tourist hotspot but also attracts investments that contribute to its economic vitality and sustainability.

In aligning with global imperatives such as decarbonization, Aqaba can leverage its strategic location for sustainable energy initiatives while embracing digital transformation to innovate its tourism infrastructure. Addressing climate resilience through robust urban planning and environmental stewardship further ensures Aqaba's long-term viability as a resilient urban center.

Comparative assessments using the City Prosperity Index (CPI) underscore areas for improvement in healthcare, education, and social equity. By prioritizing these areas, Aqaba can foster inclusive growth that benefits all residents and enhances its reputation as a livable city that attracts diverse talents and investments.

Touristic Places Along Red Sea
©Open Street Map Contributors



Position of Aqaba

CURRENT SITUATION ANALYSIS

CURRENT SITUATION ANALYSIS

Natural Environment

Ecosystem and Protected Areas

- Aqaba's ecosystem is highly diverse, with numerous plant and animal species, including key migratory bird routes. The Gulf of Aqaba has rich marine biodiversity, including many endemic fish and coral species, seagrass beds, and endangered sea turtles. Vegetation ranges from acacia to sand dunes.
- The following are the protected areas in ASEZ.

  Aqaba Bird Observatory(0.5km2)- Jordan's first dedicated bird observatory for ecotourism and environmental education.

  Wadi Rum Protected Area(741.8km2)- Protected area registered as a World Heritage Natural and Cultural Complex

  Aqaba Marine Reserve(2.8km2)- Protected area approved by decree and Council of Ministers decision in 2020, integrating the previous AQABA Marine Park. The purpose of the establishment is to achieve a marine reserve that supports the protection of healthy coral reefs and marine ecosystems while supporting the socio-economic development of Aqaba.

Environmental Protection

- ASEZ prioritizes environmental protection through rigorous pollution monitoring. In 2022, air quality checks revealed SO2 and PM10 levels exceeding standards in specific areas due to industrial and vehicular activities. Water quality monitoring showed minimal sewage impact, ensuring marine safety. A 2024 noise survey identified traffic as the primary noise source. These efforts reflect ASEZ's commitment to environmental protection and sustainable development.

Challenges

- **Considering environmentally friendly urban development**
  - Addressing contamination risks from increased solid waste and sewage, exhaust gas
  - Increased environmental impacts associated with development, disasters associated with climate change, etc.

Socio-Economic Trends

Demographics

- The population of Aqaba Governorate and Jordan has seen consistent growth. As of the end of 2022, Jordan's population is estimated at 11,302,000, with Aqaba Governorate's population at 222,800. Aqaba's population is mainly urban, with 78.9% residing in Aqaba District.
- Aqaba's population includes a significant number of non-Jordanians, primarily from Arab-Asian and Arab-African countries, driven by job opportunities and conflicts in their home countries.
- Migration trends shows more in-migration than out-migration, particularly from Amman, Zarqa, Irbid, Karak, Tafilah, and Ma'an.
- The governorate has a young population, with 34.5% aged 0-14 and 63.5% of working age.
- Housing in Aqaba is predominantly apartments, with high vacancy rates. The average household size is 4.9, and the average annual household income is 10,303.3 JOD, slightly below the national average. Aqaba's poverty rate is 19.2%, higher than the national average of 14.4%.

Society

- Lifestyle-related indices from various surveys indicate that 98% of households in the nation have access to safe water and sanitation. Most households own durable goods, with 99% owning a television. Health insurance is held by 63% of households in Aqaba.
- Poverty affects 15.7% of the population, with a fertility rate of 2.7 (2.6 in Aqaba). The infant mortality rate is 19 per 1,000 live births (10 in Aqaba). Vaccination coverage for infants is 86% nationally and 76% in Aqaba. Domestic violence affects 26% of women (19% in Aqaba).
- Educational enrollment rates are high among Jordanians but lower for non-Jordanians, especially for older students. Literacy in Aqaba is 91.4%. In terms of higher education, many students pursue commerce, business, IT, and humanities, with gender differences seen in fields like engineering for males and health sciences for females.
- In Aqaba Governorate, the labor force comprises 68,531 individuals, with an overall unemployment rate of 15.7% (11.5% for men and 37.9% for women). Due to the COVID-19 pandemic, the 2021 unemployment rate rose to 23.4%. Unemployment is notably high among those

under 29 and over 55. From 2004 to 2015, the labor force grew by 37,675, with an annual growth rate of 7.5%. The labor force participation rate was 55.6% in 2015, higher than the national average of 46.7%. Over 80% of Jordanian and non-Jordanian women in Aqaba hold permanent employment, though non-Jordanian males have higher rates of temporary work.

- Income-wise, Aqaba has the highest percentage (27.9%) of workers earning JOD 500+ per month, and the lowest (1.3%) earning less than JOD 200. The average monthly wage is JOD 631 in the public sector and JOD 484 in the private sector. The informal sector remains significant, constituting 44% of employment.

Economy

- Jordan's GDP in 2021 was $45.74 billion, with the economy mainly driven by the tertiary sector (45% of GDP) and a significant portion of GDP (10%) from remittances. The informal sector accounts for 15.2% of GDP.
- The country has FTAs with several regions but needs improvements in trade facilitation. In 2018, consumer goods dominated exports (55.6%), with major destinations being the U.S. and Saudi Arabia. Imports were led by crude materials (55%), with Saudi Arabia and China as major sources. Al Aqaba Customs handled 51% of cargo volume. Key exports included fertilizers and pharmaceuticals, while imports featured passenger cars and petroleum products.

Investment

- Jordan's foreign direct investment (FDI) peaked at USD 3.5 billion in 2006 but has since declined to around USD 600 million in 2021 due to global financial crises, regional instability, and the COVID-19 pandemic. The government aims to attract FDI by minimizing restrictions and promoting public-private partnerships, particularly for infrastructure.
- Jordan's business environment ranked 75th out of 190 countries in the World Bank's Doing Business 2020 report. The country ranks sixth in the MENA region, excelling in credit accessibility but needing improvement in construction permits, investor protection, business startups, and contract enforcement. Challenges such as high business costs, complex licensing, and limited financial services remain.
- In ASEZ, the targeted investment of USD 9 billion by 2020 was exceeded, reaching USD 12 billion by 2017. About 80% of this investment focused on tourism, with large-scale projects like the Ayla and Saraya projects, and the Marsa Zayed project, reflecting the region's significant potential for continued investment in tourism development.

Challenges

- **Employment as a source of domestic workers in Jordan**
  - Deterioration of unemployment rate due to the increase in the working-age population
  - Sluggish opportunities for women to enter society and employment rate
- **Improvement of living environment to cope with population growth**
  - Deterioration in efficiency of urban management due to population growth.
  - Increased need for new housing, urban facilities and services due to changes in population composition.
  - Aging of homes over time and decreased safety against disasters.
  - Increase in the number of poor people due to unemployment, etc.
- **Standard of medical care and education to foster healthy lifestyles**
  - Increased needs for health, medical, and welfare services
  - Decline in the educational environment and quality of education, such as shortage of schools due to population growth

Land Use

Development Trends

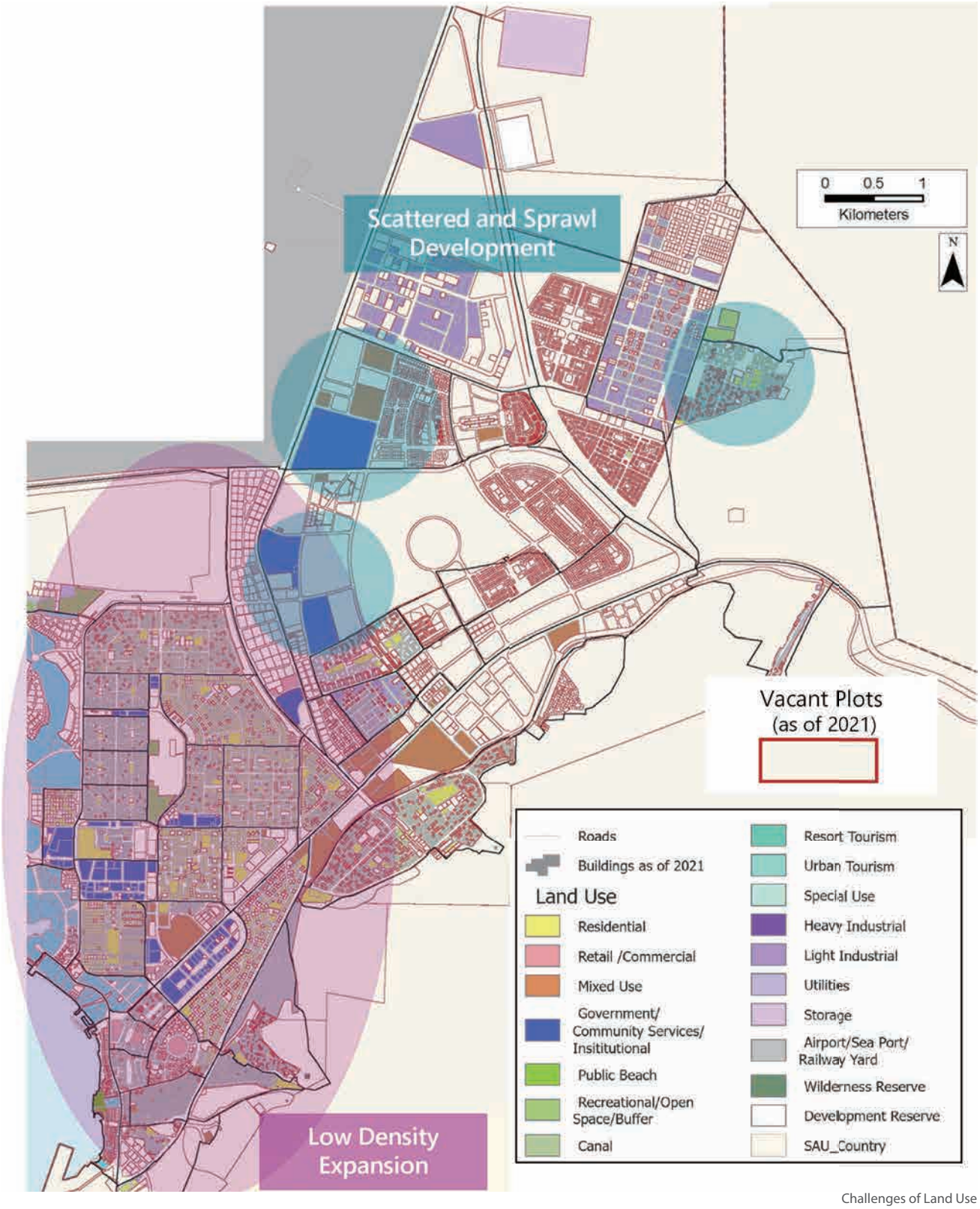
- The urban development trends in ASEZ show significant progress in Commercial and Residential sectors in the city center and north, while the northeastern residential areas remain partially developed. The New Business District has unused land, and Mixed-Use zones along Al-Hussien Bin Ali Street and east of Jordan Valley Highway are largely underutilized. Development in Urban Tourism area is progressing, while development in the Resort Tourism area in the south is limited. Transportation hubs like the airport and ports are actively developing, but rail yards are inactive. Industrial zones and recreational spaces are partially developed compared to planned allocations.
- The land ownership breakdown reveals that developed areas are predominantly owned by the Private Sector, while undeveloped lands are mostly owned by ASEZA or ADC. Mixed Use land along Al-Hussien Bin Ali Street is privately owned but remains undeveloped. In the Resort Tourism area east of Truck Road, most land is privately owned and undeveloped, with some residential development on ASEZA and ADC-owned parcels.
- Overall, low-density expansion and scattered & sprawl development is taking place. Many vacant and reserved plots exist in the city center decreasing the continuity and quality of the area, while unplanned and random land use is happening in the expansion area, increasing the cost of infrastructure development and management. These are caused by disconnected development with no phasing plan.

Planning & Management

- Residential areas in ASEZ lack diversity due to zoning that primarily supports single-use types, while significant portions of Commercial and Mixed-Use zones remain underused, potentially due to excessive planning and a lack of integrated building concepts. Despite available vacant spaces, there is a noticeable absence of planned parks and recreational areas.
- Building regulations vary across districts, leading to uniformity within districts but limited enhancement of public spaces. Industrial and residential developments in suburban areas are disconnected from city services, resulting in inefficiencies. ASEZ also faces challenges in defining a clear urban identity and implementing preservation strategies for key areas.
- Operationally, monitoring of the 2012 land use plan is inadequate, and GIS tools are underutilized for effective town planning. Outdated building guidelines and ad hoc architectural reviews further complicate development processes, lacking anticipation of future regulatory changes.

Challenges

- **Promotion of appropriate development management**
  - Lack of proper understanding of development trends and status of urban use
  - No focus on infill development and densification
  - Lack of guidance and consolidation of development based on function and characteristics of the area
  - Lack of phasing of development based on growth demand and connectivity
- **Creating Identity and Attractiveness**
  - Unclear identity of the city
  - Lack of charm around downtown area befitting as gateway of the city
  - Lack of accessibility and visibility to the waterfront area
  - Slightly dilapidated image of the Old Town area
  - Large number of underutilized land and vacant houses
  - Lack of connectivity between the downtown area, historic sites, gated resorts, large scale projects, etc.
  - Lack of diverse recreational facilities for residents and tourists
- **Land use that harmonizes tourism, industry, residence, etc.**
  - Uniform housing style with site-specific land use rules
  - Lack of public space and inadequate maintenance
  - Existence of industrial sites that are not in harmony with residential areas due to sprawl development
  - Increased need for work and residential environments suitable for new work style



Challenges of Land Use

Urban Design

Design Guidelines

- The ASEZA Design Guidelines regulate all new construction and modifications within ASEZ. Managed by the Urban Study and Planning Department (USPD) since 2022, these guidelines cover comprehensive aspects including architectural design, landscape, environmental standards, and community planning. The process involves sequential reviews from concept to construction verification, ensuring compliance with set standards before issuing permits. Existing structures predating these guidelines are exempt from corrective measures. Specific guidelines also address diverse zones like town, coastal, and industrial areas, although mega projects currently lack standardized criteria and are evaluated case by case. Future plans include developing uniform planning criteria for such large-scale ventures.
- In the ASEZ, planning maps for each district define specific land uses, establishing building regulations like setback, floor area ratio, maximum height, building-to-land ratio, and number of floors based on site categories. These regulations guide construction but do not outline the district's future vision within ASEZ. Landowners can propose alternate building uses, subject to approval and fee payment to ASEZA, potentially allowing developments that diverge from original site plans, which could impact local environments, such as erecting tall buildings in zones designated for low-rise structures.
- The guidelines lack sufficient visual aids and clear explanations, leading to frequent redesigns by developers. Proposed revisions aim to enhance clarity and align with ASEZA's urban development goals.

Operation

- Operational challenges include the need for better integration of design standards and regulations across ASEZA departments, with a call for transparency through consolidated online resources.
- Large-scale developments by private investors require individual consultations with ASEZA, bypassing specific building restrictions outlined in the guidelines. This process involves reviewing project plans in alignment with Jordanian laws, ASEZA's development directives, and past project precedents, allowing for flexibility in design elements like colors and non-standard designs. Improving transparency by consolidating all relevant regulations on ASEZA's website would facilitate early-stage planning for developers and designers.
- Stakeholder resistance to guideline updates highlights the importance of a phased approach and knowledge-sharing through a centralized project database.

Challenges

- **Structure and Content of Design Guidelines**
  - Need for updating guidelines to reflect the revised Master Plan.
  - Lack of visual aids and detailed illustrations for qualitative and quantitative provisions.
  - Proposal to include additional design references and graphical documentation.
- **Operation of Design Guidelines**
  - Complexity due to comprehensive coverage across various fields.
  - Lack of clarity in the relationship between guidelines, land use plans, and individual bylaws.
  - Proposal to establish a working group for guideline updates and centralize information dissemination.
  - Need for clear guidelines on building restrictions and project review processes for Mega Projects.
- **Capacity Building and Stakeholder Engagement**
  - Resistance and challenges among staff regarding guideline updates.
  - Lack of centralized database for past projects and architectural administration.
  - Proposal for creating a database and promoting understanding and cooperation among stakeholders.

Tourism Development

Tourism Industry in ASEZ

- Aqaba, Jordan's sole port city, offers a mild climate year-round and is a prime winter destination. Key tourist attractions include diving, the ancient ruins, and the UNESCO World Heritage Site Wadi Rum, forming the Golden Triangle with Petra. Tourism is dominated by domestic visitors, though international numbers vary seasonally.
- Despite efforts to boost tourism employment, most jobs are informal and held by migrant workers, with highly educated Jordanians seeking better opportunities abroad.
- Aqaba's tourism development plans include a USAID-supported strategic plan (2002-2007) focusing on entertainment, market access, and promotion, but some urban planning actions remain unrealized. A 2022 GIZ report for MSMEs highlights Aqaba's appeal for diving.

Tourism Related Infrastructure

- Tourism infrastructure includes Tourist Information Centers, cruise ship facilities, and an international airport with recovered flights post-COVID.
- Aqaba faces challenges in enhancing its appeal due to insufficient urban infrastructure and public transportation. Private buildings separate the downtown and beaches, and the lack of pedestrian-friendly infrastructure, along with unclean old town areas, reduces its charm. The absence of public transport connecting South Beach and downtown limits tourist mobility and experience.
- Sustainable tourism is at risk due to environmental impacts from increased tourism and development, necessitating better waste and sewage treatment infrastructure.

Challenges

- **Tourism as a key industry**
  - Lack of carrying capacity and quality of accommodations, etc.
  - Insufficient waterfront and downtown attractions as unique tourism resources
  - Lack of a pleasant pedestrian environment and tourist circulation
  - Lack of access to southern beach areas
  - Limited length of stay of tourists
  - Lack of local products such as souvenirs
  - Lack of a clear identity compared to other cities along the Red Sea coast.

Industrial Development

Other Industries in ASEZ

- Aqaba, Jordan's only coastal city, holds strategic importance due to its port facilitating trans-border logistics to Iraq, Syria, and parts of Saudi Arabia.
- ASEZ has strategically focused on sectors such as manufacturing, like garment manufacturing, food processing, and petrochemicals. The garment industry, supported by foreign-owned factories under FTAs with the US and EU, employs mainly migrant workers. Aqaba lacks strong geopolitical advantages compared to other SEZs across all industries, facing stiff competition from closer manufacturing hubs with similar trade agreements. The reliance on foreign labor further hinders its ability to create substantial local employment, impacting its global competitive position.
- Despite incentives like tax exemptions and streamlined labor procedures, Jordan faces challenges in developing a skilled workforce and enhancing logistics efficiency. The region's economic strategy emphasizes high-value industries and services, aligning with Jordan's broader economic modernization goals. Future strategies aim to foster knowledge-intensive industries to create sustainable employment for Jordanians.
- BCG has conducted a UK-supported survey on industrial development since 2019 and targeted six priority areas for ASEZ such as (i) tourism & lifestyle, (ii) creative industries, (iii) logistics & transport, (iv) manufacturing, (v) green growth and (vi) vocational skills & education.

Challenges

- **Industries other than tourism**
  - Lack of a business environment that attracts high value-added industries
  - Lack of education and vocational training opportunities to meet employment needs
  - Labor market mainly composed of migrant workers
  - Inconvenient commuting environment due to inconsistent industrial land use and transportation
  - Underutilization of coastal land for further port or industrial facilities
  - Impacts of industrial development on marine resources

Transport and Logistics

Road Network

- In Aqaba, the current road transport system is structured to keep logistics separate from downtown and residential areas, utilizing well-maintained national and regional roads managed by ASEZA.
- Traffic congestion is currently not a significant issue due to the city's compact layout and adequate road capacity, though challenges include heavy reliance on private vehicles and limited public transport options. The road network follows ASEZA's guidelines with hierarchies ranging from national to local roads, ensuring efficient circulation within residential, commercial, and industrial zones.
- Recent traffic surveys highlight increasing volumes, particularly on major arteries like Sharif Hussein bin Ali Boulevard, necessitating future traffic management and infrastructure enhancements to sustain urban growth and safety.

Public Transport

- In Aqaba, 89 buses operate across 16 authorized routes managed by Aqaba Transport Company (ATC) and private operators. However, there are significant operational challenges: buses lack designated stops and operate without fixed schedules, which hinders reliability and convenience for passengers. Most routes originate from the central terminal, requiring transfers for passengers, reducing convenience. Coordination issues between operators and service level management also pose challenges, despite efforts to improve route alignment and service quality. Satisfaction surveys indicate mixed feelings among users, with calls for smarter transport solutions to enhance system efficiency and user experience.
- Inter-city bus services operated privately, mainly connects to Amman, with additional routes to destinations like Al-Karak and Irbid.

Logistics

- Aqaba serves as the nation's sole port, supporting the country's economy through multiple sea gateways including the container terminal and southern port. The strategic positioning of Aqaba highlights the importance of improving the logistics condition, not only for Jordan but for the region.
- Logistics cargo flow is well separated from urban activities by the parallel road and the backroad.
- The railway is currently not used, but there are plans to rehabilitate it to carry goods to and from the south.
- Other logistical infrastructure —air freight, logistics village, warehouses, silos, liquid storage, customs, Golden Triangle City, and track yards— also plays critical role in regional trade.

Pedestrian and Cycling

- In Aqaba, promoting pedestrian and cycling infrastructure is key to enhancing urban circulation and fostering a healthy, sustainable environment.
- While walkways along major roads adhere to ASEZA guidelines, challenges include obstacles like street furniture and limited shade.
- Cycling infrastructure is gradually being developed, starting with a dedicated lane along Al-Farouk Street, planned to expand across the city in phases.

Traffic Management

- Traffic management in Aqaba faces challenges including high on-street parking occupancy impacting traffic flow and city aesthetics, inadequate pedestrian safety measures, and limited utilization of traffic data from disparate sources— ASEZA, ATC, and traffic police.

Challenges

- **Transportation strategies consistent with urban development**
  - Transportation demand in response to new urban development
  - Lack of linkage of various transportation modes and services
- **Convenience of transportation for residents and tourists**
  - Inadequate public transport services
  - Lack of accessibility between transportation hubs (bus terminal, ferry/ cruise terminal, airport)
  - Existence of on-street parking
  - Inefficient urban transportation services and mobility management
  - Increased environmental impact due to increased traffic demand
- **Logistics capacity as a trading port to support the development of the country**
  - Increase in volume handled as a trading port, increase in containers
  - Underutilized railway infrastructure

Infrastructure

Drinking Water

- Drinking water system, managed by the Aqaba Water Company, includes wells, reservoirs, and a desalination plant, serving urban and rural areas. In 2024, the Water Masterplan was updated with a plan tailored to future demand requirements.

Wastewater

- The wastewater system in Aqaba includes gravity and pumping pipes directing sewage to a treatment plant in the northern area, with additional private treatment plants in the south. The existing plant, operational since 1986, will expand its mechanical treatment capacity to 40,000 m3/day, addressing increased sewage volumes.

Wastewater Reclamation

- The wastewater reclamation system in Aqaba treats sewage for reuse in industrial, agricultural, and urban settings. Approximately 76.5% of treated wastewater is reused, with systems supplying reclaimed water to farms, industrial areas, and residential firefighting.

Rainwater Drainage

- Rainwater drainage is managed by MPWH for highways and by ASEZA for municipal roads. Systems include wadis, rainwater channels, and culverts to direct runoff.

Irrigation

- In Aqaba, an irrigation network supplies water to open spaces via pipelines. Treated wastewater, known as reclaimed water, is also utilized near the treatment site and airport through the Agricultural Reuse System (ARW).

Electricity

- Aqaba's power supply involves CEGCO for generation, NEPCO for transmission, and EDCO for distribution. Challenges include difficulty in obtaining ASEZA's permission for new substations, space limitations, electricity theft, and voltage loss issues.

Telecommunication

- Aqaba involves regulation by the TRC, with services provided by private companies, including multiple towers per provider impacting urban aesthetics. Coordination for GIS database updates is needed.

Waste Management

- ASEZA faces increasing waste generation due to industrialization and population growth. Urbaser and MAB manage waste disposal under ASEZA's oversight. Plastic bag regulations and plans for landfill site expansion are underway, addressing challenges like food waste dominance and open dump risks.

Gas

- In Aqaba, Egyptian Fajr Natural Gas Company supplies natural gas to industrial sites like a power plant and factories, expanding to Al-Quwayrah industrial estate by 2025. Future plans include providing LP gas to households pending plant construction.

Challenges

- **Proper management in existing infrastructure**
  - Poor stormwater drainage that causes flooding during rainfall
  - Lack of stormwater drainage channels, dams, etc.
  - Management loss or leakage related to water supply, existence of illegal drainage
  - Aging of water and sewerage facilities
  - Inefficient operation of individual stormwater drainage networks by developers
  - Pollution of marine and other natural environments due to illegal dumping of waste into stormwater infrastructure and polluted water from factories, etc.
  - Inadequate power distribution to some commercial areas
  - Voltage loss due to technical problems such as electrical equipment and non-technical problems such as power theft
  - Environmental impact of waste disposal and sluggish recycling
- **Capacity of supply treatment facilities to serve urban expansion**
  - Insufficiency of water resources due to gradual decrease in water intake from wells and increasing water demand due to population growth and industrial attraction.
  - Insufficient reservoir capacity for water supply
  - Growing demand for gray water and wastewater from future urban development
  - Growing demand for electricity from population growth and industrial attraction
  - Increased waste disposal demand from population growth and industrial attraction
  - Deterioration in efficiency of service provision due to future urban expansion

Disaster Management

Climate Change and Flood Risk Management

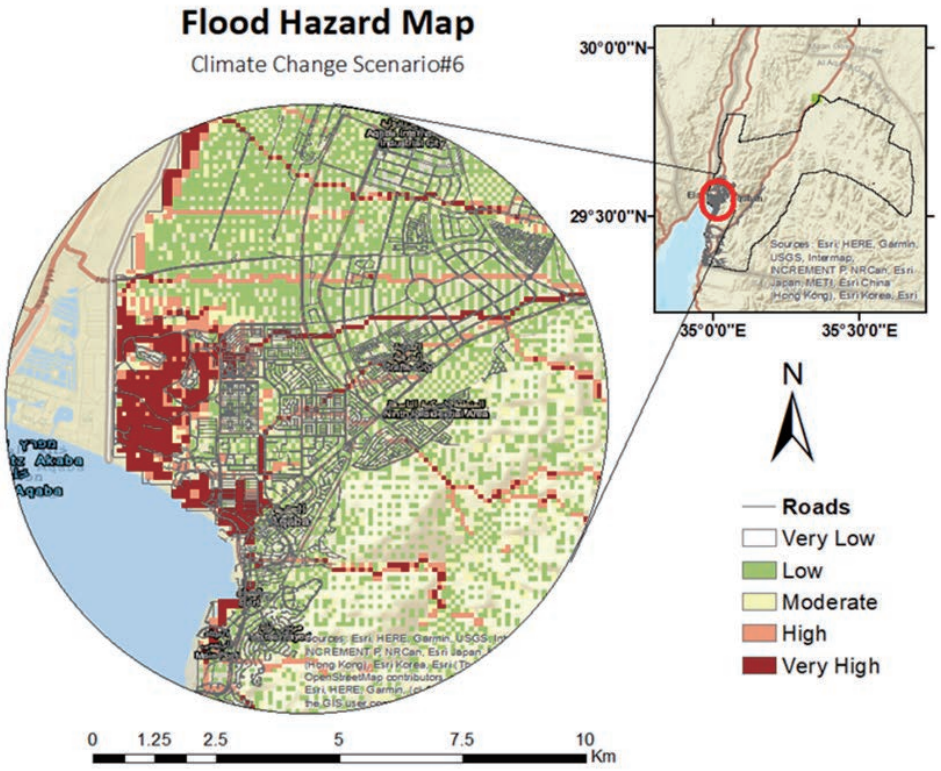
- In Aqaba, flood risk management faces challenges due to its hyper-arid climate with sporadic but intense rainfall events, exacerbated by urbanization and impermeable surfaces. Historical floods, like the 2006 disaster, underscore the need for robust mitigation strategies. The USAID-supported flood protection master plan introduced measures like cascading dams, yet it lacked climate change adaptation and comprehensive rainfall data.
- JICA study involved climate change analysis and flood modeling to create flood hazard maps based on different climate change scenarios. The analysis showed that the climate change continues to affect the existing and future developing areas in Aqaba with different ranks of flood hazards. Flood hazards are exacerbated by inadequate wadi flood inventories and development in flood-prone zones. Climate scenarios predict up to a 300% increase in rainfall, posing severe risks to areas like ASEZ, Tala Bay Resort, and northern Aqaba. Impact assessments highlight heightened flood risks, necessitating strategic mitigation measures.
- The land value and limited short coastal line land in Aqaba sometimes give no options, as geographic constraints push urban planners to develop in high-hazard areas. In such a case, comprehensive resilience-informed planning for mitigation measures systems and preparedness for local communities is highly recommended.
- Current efforts include 32 dams and an early warning system (EWS) with rainfall and water level monitors, but these need integration and improved forecasting capabilities.

Seismic Risk Management

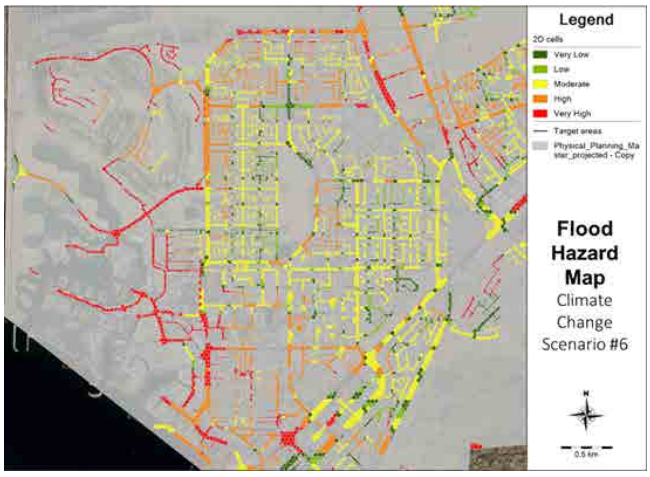
- Aqaba is in a seismically active region along the Dead Sea Transform Fault System. Notable historical earthquakes include the 1068 Hejaz earthquake and the 1995 Gulf of Aqaba earthquake, both causing significant damage. Seismic hazard assessments indicate a high risk, with Peak Ground Acceleration of 0.20 mm/s and high spectral acceleration values, necessitating robust structural designs.
- Major studies, including the 2008 micro-zonation study and the 2011 UNDP Disaster Risk Assessment, highlight Aqaba's vulnerabilities. The 2008 study identified seismic risk zones, while the 2011 study estimated potential damage, including severe impacts on residential buildings, infrastructure, and human casualties.
- Adaptation measures proposed include updating earthquake risk maps, enforcing seismic-resistant building codes, establishing an Early Warning System (EWS), and enhancing public awareness to improve earthquake preparedness and resilience.
- The current seismic risk situation in Aqaba includes the implementation of a Seismic-resistant Buildings Code, limited testing laboratories, challenges in building rehabilitation, and inadequate public awareness and training. Additionally, there is no established Early Warning System (EWS) for seismic activities.

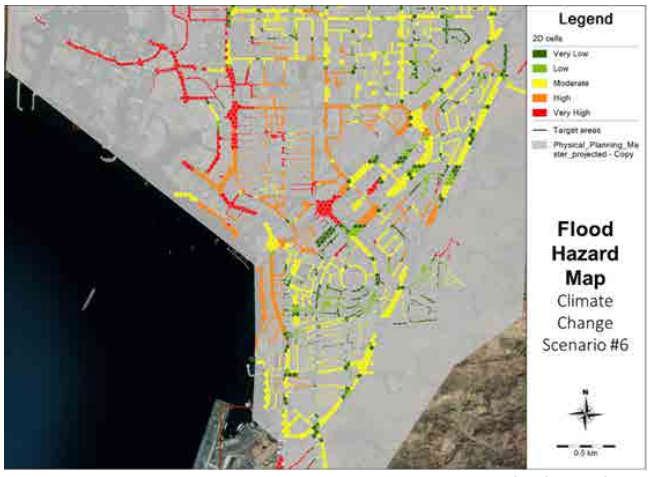
Challenges

- **Data Management and Monitoring**
  - Insufficient management and monitoring of critical data for natural hazards, including seismic risks and climate change.
  - Lack of an integrated disaster information database/platform for documenting and monitoring seismic events, rainfall impacts, and other natural hazards.
- **Early Warning Systems and Forecasting**
  - The existing Early Warning System (EWS) lacks comprehensive capabilities for both seismic events and floods, hindering timely forecasts and integrated responses.
- Infrastructure Guidelines and Urban Planning
  - Absence of guidelines and standards for seismic and flood protection in infrastructure design, neglecting climate change impacts.
  - Need for comprehensive strategic planning integrating seismic resilience and green infrastructure with efficient rainwater management systems.
- Public Awareness and Institutional Measures
  - Insufficient public awareness and community involvement in disaster risk management, including seismic and flood preparedness.
  - Urgent need to restructure the Disaster Risk Management Department to enhance resilience frameworks and innovative financing methods.



Flood Hazard Map





Flood Hazard Map

Smart City (Utilization of ICT)

Smart City Activities and Preferred Approach

- ASEZ, ADC, and related organizations are each making efforts to utilize ICT. Key activities include e-services for permits and licenses, including applications for work and investment permits, dynamic digital dashboard supporting economic strategies, GIS data utilization, environmental monitoring including aquatic and air quality assessments, CCTV system, online tourism information and the Jordan Pass, offering pre-paid access to local attractions and more.
- However, these activities do not make enough use of ICT, and they face many challenges, such as limited cross-field or collaborative applications, proper management and storage of data collected from these activities, and limited use of data (including public sharing with citizens) for more efficient city management. It is necessary to offer city services that leverage ICT technology and maximize the use of data obtained.
- In addition, to be qualified as a Smart City, a comprehensive Smart City vision, consistent planning, better data integration, and greater public accessibility are required to achieve Smart City objectives and fully enhance urban living conditions in Aqaba.

Sector-Wise Activities and Challenges in ASEZ

Sector	Items	Issues/Challenges
Governance	E-Services (Digitalization of Administrative Services)	■ The use of E-Services is limited to the digitization of various applications and the digitization of administrative services. ■ The apps do not provide any other service such as tourist information, information from ASEZA, etc.
	Open Data /Digitalization of Statistical data	■ Statistical data is not well organized in ASEZA, are not well shared (opened) to the public, or even within ASEZA. ■ No mechanisms for collecting and organizing data.
	Use of Spatial Data (GIS)	■ Less activities of managing and updating the data, as well as sharing and utilizing data between organizations. ■ Advanced use of GIS data is not being made. ■ Data is not open to the public (not used as open data) and is only managed within each organization.
	Public Participation	■ No mechanism for public participation in the planning and implementation phases of the projects.
Mobility	Public Transportation Services	■ Bus Location System has been established in Aqaba Transport Company, but the information is only used within the company and not available for users. ■ Inadequate service level (no bus stops, users lack real-time bus route information and arrival times.)
	Mobility as a Service	■ Each public transport service in Aqaba provides its own services at its own service level, making it impossible to obtain information on public transport services centrally and making it less convenient for citizens and very difficult for tourists and other visitors to use.
Environment	Environment Monitoring	■ Monitoring Stations and real-time monitoring are being carried out, but data are not centrally managed and are not widely available as open data, making it difficult to be used for variety of purposes or linked to other data.
	Disaster Management (EWS)	■ The system is designed for administrative purposes and does not provide real-time information or open data to citizens.
Living	Security (CCTV Monitoring System)	■ CCTV is used for security purposes and its images are not widely available to the public. ■ The implementation of image analysis technology is limited and has not been utilized for multipurpose other than security, such as monitoring traffic and human flow.
	Healthcare, Education	■ Not yet observed.
Economy	Use of ICT for Tourism	■ The use of the website is limited to providing tourist information and does not offer services such as direct hotel and sightseeing reservations or selling local products.
Energy	Renewable Energy, Smart Grid, etc.	■ Not yet observed.

Questtionaire Survey

Overview of Questionnaire Survey

	For Residents	For Visitors
Survey Period	From December 2022 to March 2023	From January 2023 to March 2023
Method of Distribution	**December 2022 to January 2023:** Distribute URL to ASEZA/ADC employees via intra-organizational email **February-March 2023:** • Requested ZAIN, a telecommunications company in Aqaba, on February 8 to send an SMS containing a link to a questionnaire survey to a total of 60,796 residents in ASEZ. • Place posters in various locations in the city • Distribute flyers at shopping malls and public facilities in the city with university student volunteers • Place posters, etc. in the facilities of hotels and bus companies	• Place posters in various locations in the city • Installing posters, etc. in the facilities of hotels and bus companies • Place posters and flyers at airports and directly request questionnaire responses to airport users

Flyer for the Qestionnaire Survey

Notice of the Survey Displayed in a Café

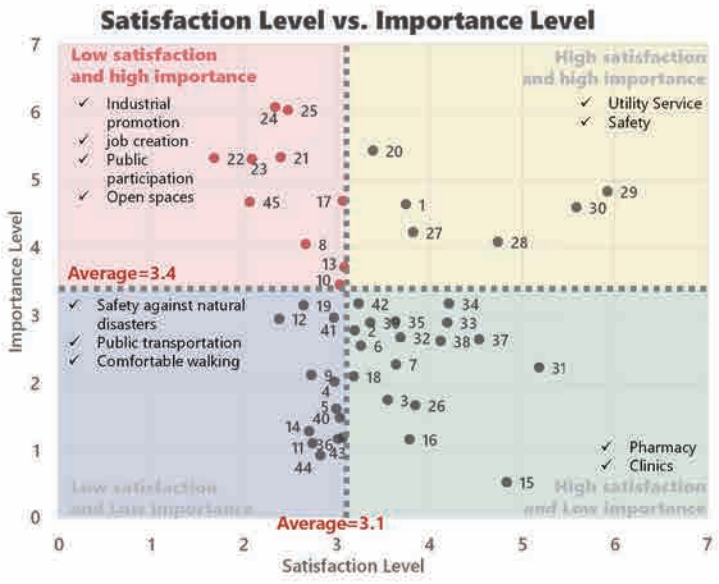
Citizen's Support

Rollup Displayed in ASEZA Office

SUMMARY of the QUESTIONNAIRE SURVEY

1. Residents (1482 Responses)

- A large number of people (67%) want to continue living in the ASEZ, followed by 19% who probably will.
- When choosing a place to live, the size and quality of the house are considered most important, followed by the security of the area, the price of the house, and the environment for raising children.
- The attractiveness of the city is low, especially for entertainment, open space, and cultural facilities.
- Most residents perceive the beach/sea as a landmark of the city, but are less aware of ruins and architecture.
- Many respondents indicated they would use public transportation if bus stops were closer to their home or workplace, attributing the lack of coverage in their area as the main reason for non-use. Also, respondents want more space for pedestrians to relax and a continuous pedestrian-friendly environment. They seek to shift vehicular space to prioritize pedestrians, and many feel the current situation needs improvement, advocating for expanded public beach areas and better pedestrian pathways and public transportation access.
- Opinions on landscape regulations and building aesthetics varied. Many favored overall strengthening, followed by partial measures or mitigation. Some called for stricter rules, while others suggested easing restrictions. Similar sentiments were expressed regarding commercial building aesthetics, suggesting a need for a location-specific review of regulations and guidance.
- Although the results show that the digitization of administrative services is the most important, there is a growing demand for digitization regarding other services as well (payment, transport, security).
- The survey evaluated satisfaction and importance across 45 living environment factors. Areas of high importance but low satisfaction (red in the portfolio) include parks, public beaches, schooling environments, hospital medical services, local industry support, employment security, work environments, and resident involvement in urban development. Notably, industrial issues are highlighted. Conversely, safety from natural disasters, public transportation, and pedestrian comfort were perceived as less important, suggesting a need for resident education. Utility services and safety received high satisfaction and importance ratings, indicating potential strengths to further enhance.



1. Provision of need-based housing area
2. Development of industrial sites to enhance economic activity
3. Development of resorts
4. Development and facility location in the Bay Area
5. Location of facilities and use of space appropriate to the city center
6. Widespread transport accessibility
7. Road network development
8. Comfortable parks
9. Greenery in town centers
10. Public beaches
11. Sport facilities
12. Entertainment facilities
13. School education environment
14. Education environment outside of school
15. Health services of pharmacy
16. Health services of clinic
17. Health services of hospitals
18. Appropriate tax collection
19. Promotion of commercial industry
20. Promotion of the tourism industry
21. Promotion of the manufacturing industry
22. Promotion of agriculture industry
23. Promotion of fishing industry
24. Employment and job security
25. Ensuring a productive working environment
26. Gender-neutral social status
27. Creating a society free of racism
28. Measures against crime
29. Stable water supply
30. Stable power supply
31. Stable communication environment
32. Convenience of public transport
33. Pedestrian spaces for comfortable walking
34. Situation of road used daily
35. Securing parking spaces
36. Availability of public transport information
37. Ensuring traffic safety
38. Conservation of the natural environment
39. Use of renewable energy sources
40. Waste disposal and recycling initiatives
41. Ensuring safety against natural disasters
42. Planned urban development
43. Urban branding
44. Public access to administrative information
45. Ensuring opportunities for public participation in planning decisions

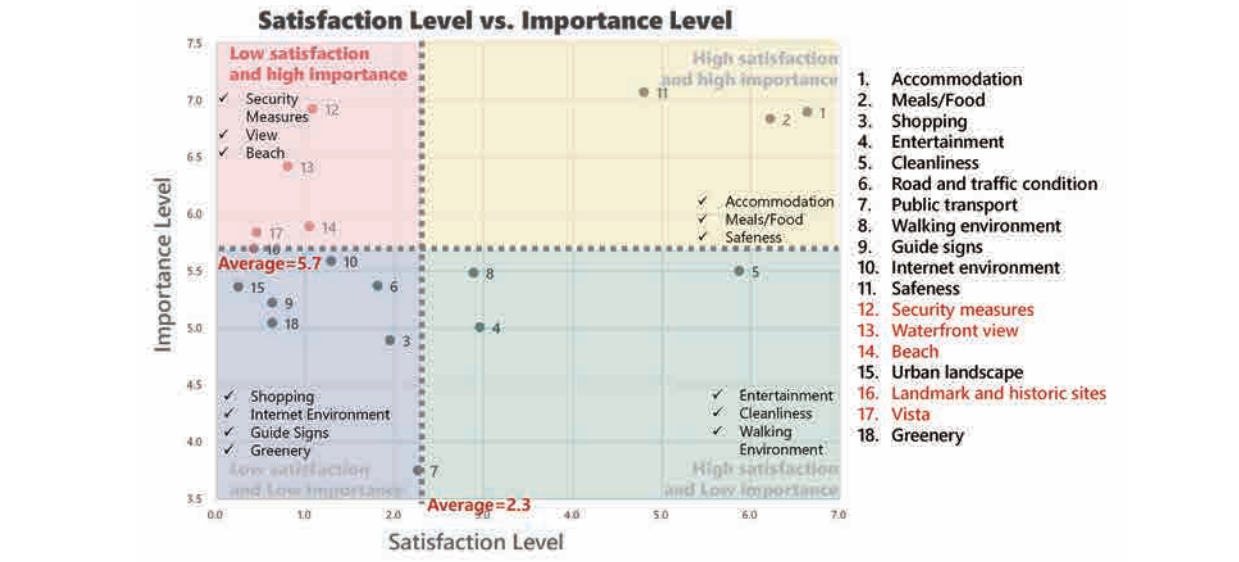
Challenges

▶ **Priority concerns for local residents**

- Promotion of industry (promotion of manufacturing, agriculture, fisheries)
- Job creation (job security, good work environment)
- Improvement of urban services (schooling environment, medical services)
- Expansion of open spaces (parks, public beaches)
- Promotion of residents' participation in urban development

2. Visitors (288 Responses)

- The results show that two to three days are the average length of stay in Aqaba.
- The main reasons for visiting ASEZ was sightseeing / holiday at 40%, followed by relaxation at 19% and marine leisure at 17%. Only a few percent came for business, visiting family, etc.
- The preferred location of stay was at hotels in the city center (49%), followed by residential area at 21%. 37% stayed in 5-star hotels and 35% in 4-star hotels, followed by 17% staying in AirBnBs.
- The means of transportation used in Aqaba was Taxi, followed by private cars and walk. Many respondents indicated that the public transportation could be improved by increasing stops nearby tourist destination, increasing number of rides. Also, respondents want more space for pedestrians to relax.
- It was found that the image of Aqaba is strongest for its beautiful beaches, followed by its image as a safe town and resort. Most tourists do not have an image of Aqaba as an industrial city.
- Most tourists perceive the characteristic of the city as unique and the atmosphere is nice, with beach/sea and Mountain range as a symbolic landmark of the city. However, they are less aware of the archaeological sites and architectural attractiveness of Aqaba.
- Regarding the public beaches, many respondents desire an increase in space, and a continuous walking environment along the coast.
- Downtown was the most visited location within Aqaba, followed by city/public beach, resorts, Aqaba castle, but with less tendency to visit Aqaba Marine Park, Islamic Ayla and the bird observatory.
- 92% of the respondents answered that they would or might want to come back to Aqaba again. For those who would like to, once in every few years (37%) or once a year (15%) was the preferred frequency.
- The survey evaluated satisfaction and importance across 18 visiting environment factors. Areas of high importance but low satisfaction (red in the portfolio) include Security Measures, Waterfront View, Beach, Landmark and Historical Sites and Vista. Notably, Urban Design issues are highlighted. Shopping, Road and Traffic condition, Public Transport, Guide signs, Urban Landscape, Greenery and Internet environment were perceived as less important, but the satisfaction level was also low. Accommodation, Meals/Food and Safety received high satisfaction and importance ratings, indicating potential strengths to further enhance.



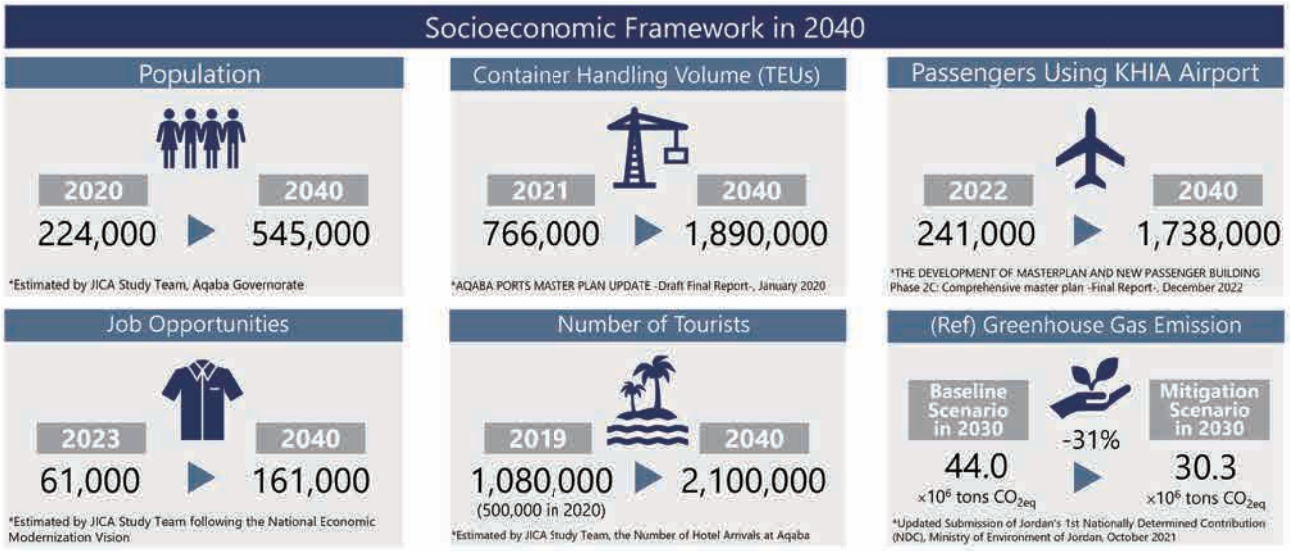
Challenges

▶ **Priority concerns for visitors**

- Improvement of public transportation and pedestrian environment
- Improvement of urban design and landscape in the city and waterfront as a "Beach resort"
- Improvement of historical sites as a tourism resource

DEVELOPMENT VISION AND URBAN STRUCTURE

SOCIO-ECONOMIC FRAMEWORK



Socioeconomic Framework in 2024

Population

- The goal in Aqaba Governorate (including suburbs), is to reach a total population of 545,000 by 2040, which is 2.9 times more than the population in 2015. This is based on projecting that the population will keep growing as it has in the past. As a SEZ, ASEZA has a strategic objective to attract population inflows from other cities in the country and needs to become a place that can offer Jordan's domestic working population jobs in new industries such as ICT-based industries. If the city cannot generate job opportunities and the population inflow from other cities will be low, the population is projected to be around 350,000 by 2040.

Job Opportunities

- The number of employed persons in Aqaba Governorate is estimated to be approximately 61,000, based on the 2021 statistical data published by the DOS. Based on the social security data of workers by sector in Aqaba Governorate and the sector specific compound annual growth rates (CAGRs) of the employees from the Economic Modernization Vision of the country, the estimated total number of jobs in Aqaba Governorate in 2040 is about 163,800, including those in the informal sectors. This assumes that the jobs will be created at a consistent rate in accordance with the objectives of the Economic Modernization Vision. The population projections indicate that the future population of ASEZ will depend largely on the migration of people, and how many job opportunities are created will have a direct impact on it.

Number of Tourists

- The data that can be used to estimate the future tourism demand, which is the city's main industry, is the number of hotel arrivals. The data has been gathered since 2014, but the numbers have varied a lot, and they dropped sharply because of the coronavirus pandemic from 2020. They started to rebound from 2022 but fell again in 2023 because of the Gaza conflict. We estimate that the Gaza conflict will reduce tourism in 2024, but it will rebound gradually after that, reaching 2.1 million tourists by 2040, a modest goal. It is likely that the tourist capacity of Aqaba will have to increase by two times for hotels and by two to three times for other services, since the number of hotel guests does not include cruise ship passengers or people staying in private homes, who should also be counted.

Other Frameworks

- The figure also shows other frameworks from related studies. The AQABA Ports Masterplan expects that the ACT will handle 2.5 times more containers in 2040, with a total of 1,890,000 TEUs. The comprehensive masterplan of the airport predicts that the number of passengers using KHIA airport will increase by 7.2 times in 2040, reaching 1,738,000. Jordan's 1st nationally determined contribution sets a goal of reducing the greenhouse gas emission by 31% by 2030.

DEVELOPMENT DIRECTION

Considering the current situation, trends, and identified challenges in various sectors, as well as the future framework for ASEZA, the urban development directions for ASEZA are organized from two perspectives: Urban Development Directions and Urban Management Directions, as outlined below.

Urban Development Directions

1. Developing High-Quality Living Society for One and All

ASEZ aims to improve living conditions and urban services, considering future population growth. This includes expanding residential areas, creating attractive living spaces, and efficient urban management. Enhancing education, medical services, infrastructure, public transportation, and walkability is also essential.

2. Developing Competitive Opportunities to Attract New Industries and Human Resources

To create jobs for Jordan's growing population, ASEZ aims to increase competitiveness and attract new industries and investments. This involves systematic land allocation, utilizing airports and ports, and strengthening the road network. Improving tourism resources, integrating the city with resorts, and enhancing local attractions are also key.

3. Developing Resilience and Preserving Invaluable Natural Environment

ASEZ focuses on providing safe living and investment spaces by understanding disaster risks and implementing mitigation measures. Promoting environmentally friendly practices, renewable energy use, and waste management is essential for preserving the natural environment.

Urban Management Directions

1. Improvement of Analytical Capabilities Based on Statistical Data

ASEZA needs to improve data collection and centralization to enable effective urban planning and industrial development.

2. Effective Monitoring of Progress of Plan Implementation

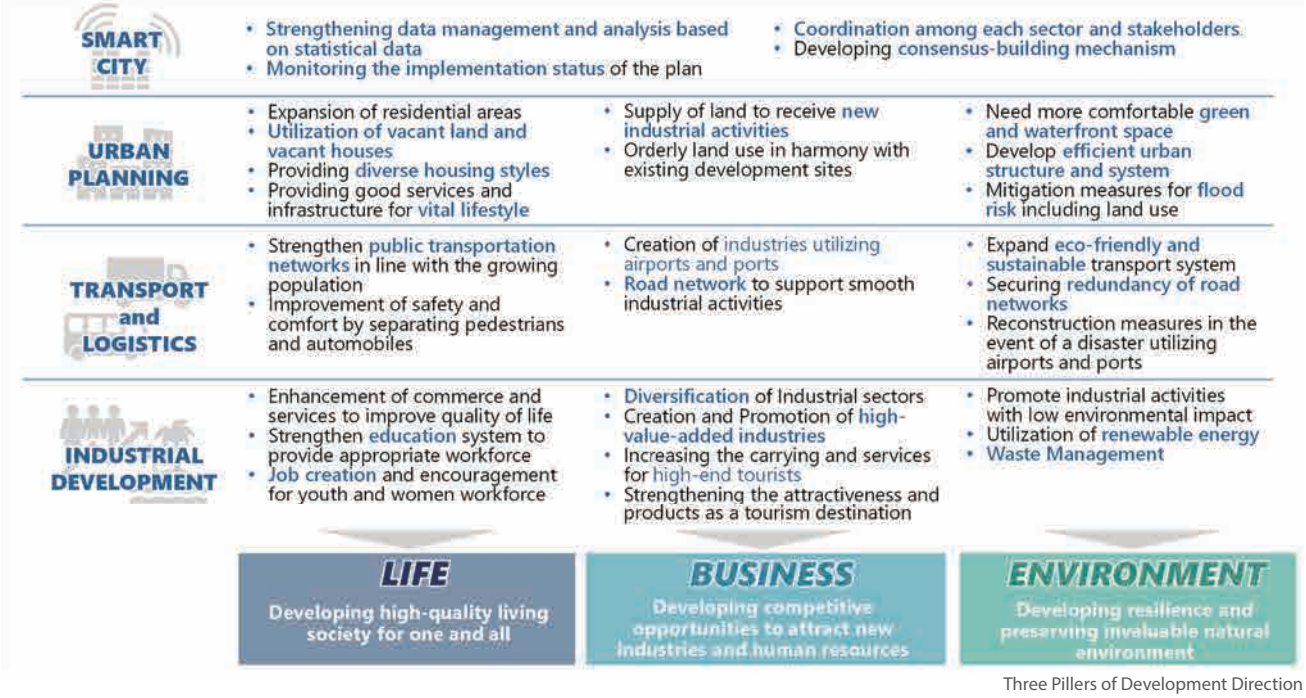
ASEZA needs to establish a system to monitor and manage the implementation status of urban development plans.

3. Ensuring Consistency Among Plans and Projects of Each Sector

ASEZA needs to ensure alignment and coordination among ASEZA, ADC, government agencies, and donors for cohesive urban development activities.

4. Formation of Public Participation and Consensus-Building Mechanisms

ASEZA needs to encourage resident participation in urban planning to increase satisfaction and trust, ensuring policies meet local needs. Establishing clear decision-making processes and mechanisms to incorporate resident and visitor feedback is also necessary.



Three Pillers of Development Direction

DEVELOPMENT VISION & STRATEGY

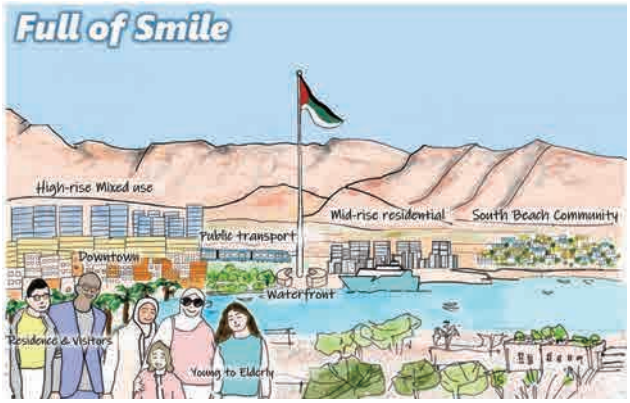
Development Vision

Yalla! AQABA

-Authenticity and Promising Opportunities-

The city envisions an authentic oasis where residents and workers thrive amidst the rich tapestry of the region's history, culture, and geography, realizing a colorful, healthy, and comfortable lifestyle.
Leveraging highly skilled talent, the city will cultivate new investment opportunities while creating a safe and nature-rich environment in harmony with green growth, building towards a prosperous future.

Development Strategies



QUALITY of LIFE

- From Expansion-Oriented to Value-Driven Development -

- Providing lands for residences, business, and services corresponding to diverse values
- Enhancing industry and improvement of the working environment to support healthy and comfortable lifestyles
- Ensuring a walkable environment that promotes health and a smooth mobility environment
- Creating living spaces and public spaces with a sense of diversity

OPPORTUNITY of BUSINESS

- From Labor Intensive to High Value-Added Tourism, Industries and Education -

- Ensuring employments and workplaces for the people in high value-added industries
- Promoting digital transformation and green growth that contribute to regional economy
- Creating competitive investment environment by strengthening transport networks and infrastructure.
- Guiding sophisticated urban landscape for existing urban areas and newly developed areas.

VALUE of ENVIRONMENT

- From Gray Infrastructure to Green Infrastructure -

- Preserving the beautiful natural environment of the Red Sea and harmony with urban space.
- Decarbonizing business activities and expanding of renewable energy.
- Promoting use of renewable energy in mobility and bicycle use.
- Stably supplying water, electricity, and so on to meet demand and properly treating wastewater and waste.
- Preserving and managing abundant marine resources, natural resources, clean air, and rich ecosystems.
- Strengthening the resilience of buildings and infrastructure and introducing green infrastructure to minimize damage from disasters.
- Ensuring views to the Red Sea and producing public spaces using green.

SMART GOVERNANCE

- Efficient Urban Management and Monitoring –

To ensure the effective execution of the vision and strategies, three management frameworks are established to enhance the activation system in ASEZA and ADC.

As explained below, using digital (smart) technology to collect data, communicate information, and work collaboratively with other organizations and residents is essential for managing and monitoring urban areas efficiently. It is also important to keep track of the progress and outcomes of the planned projects, and to adjust the plan as needed according to the results.

1. Develop Data Platform/Dashboard to Obtain, Consolidate and Organize Various Data

Urban planning should rely on research of social, economic, and spatial data over time, and a database should be created and distributed widely.

a) Conduct Basic Surveys

- Conduct surveys to obtain statistical data over time in cooperation with the national government (population, industry, economy, etc.)
- Set future projections based on trends of actual data

b) Establishment of Database

- Use digital technology to gather data efficiently
- Organize and publish statistical information
- Update and utilize GIS data properly

2. Strengthen Cooperation / Collaboration Mechanism for Project Implementation

The aim is to create a system where relevant sectors exchange information and cooperate from the design to the implementation of the projects. Also, public involvement in the planning stage of significant plans and project must be achieved.

a) Inter-Organizational Collaboration

- Share mutual information and collaborate among related sectors from the initial stage of each project
- Foster project development with public-private collaboration

b) Building Consensus

- Seek input from residents and visitors in the planning process, based on their ongoing needs
- Establish a systematic consensus-building process within ASEZA when formulating plans

3. Establish Periodical Monitoring / Reviewing / Revising System of the M/P

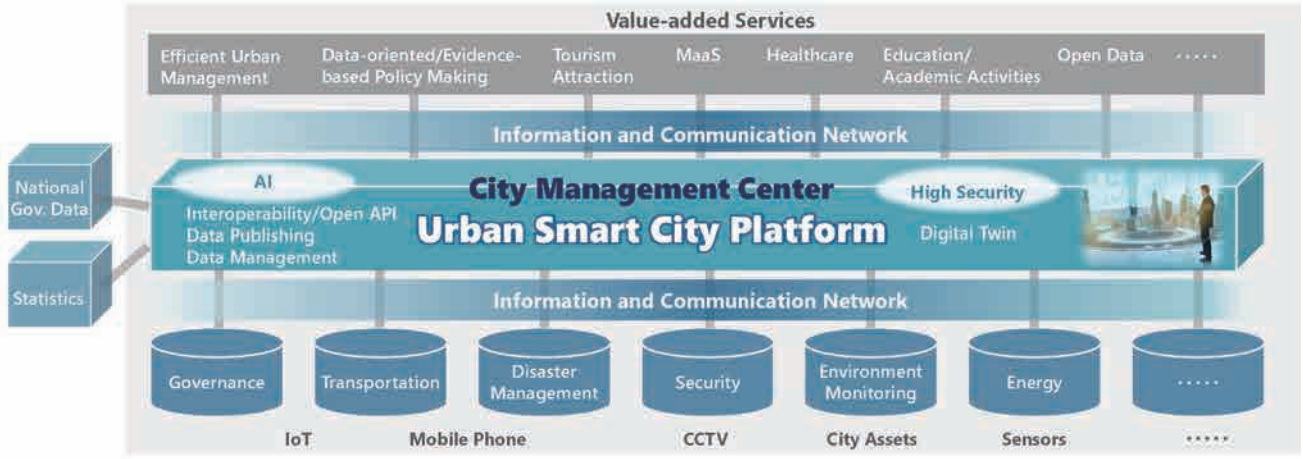
- The progress and outcomes of the M/P should be tracked and evaluated over time. Also, it is recommended that the relevant plans and guidelines will be revised, and proper guidance will be given.

a) Update Guidelines

- Update related guidelines based on the new M/P
- Organize data on construction activities, etc. based on the guidelines

b) Review of Plans Based on Evaluation

- Monitor the implementation status and impact of projects and related activities stated in the M/P
- Continuously review/revise the contents of the M/P based on the monitoring results



Urban Smart City Platform

URBAN STRUCTURE

Towards a "Compact and Networked City"

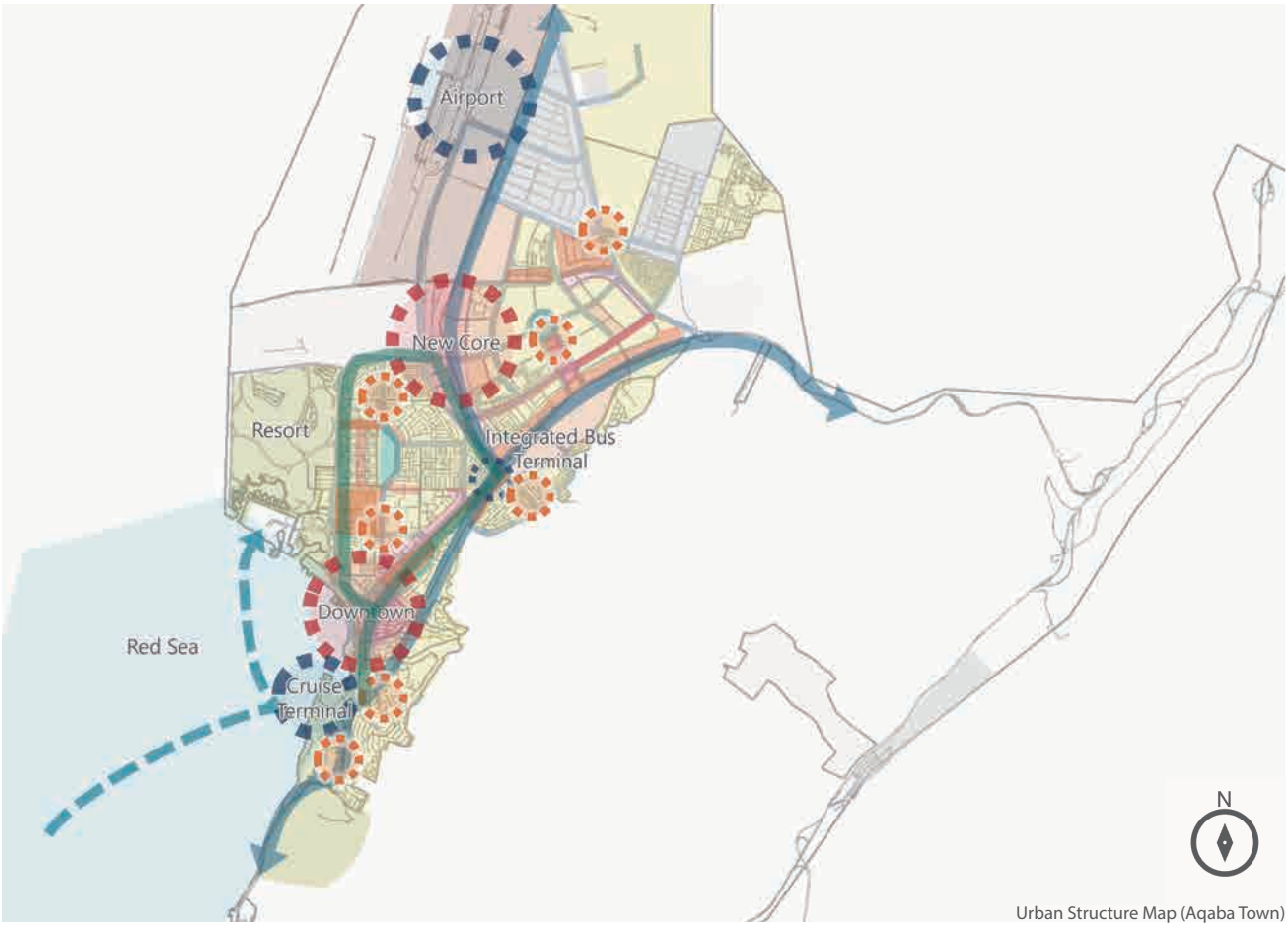
In Aqaba, urban development has been characterized by expansive growth, leading to a decrease in city density due to numerous vacant plots in central areas and unplanned, scattered development in suburban areas. This has resulted in low-density sprawl and inadequate livable environments and public services, causing resident dissatisfaction. Insufficient personnel and financial resources for infrastructure and public service maintenance have exacerbated administrative challenges. To address these issues, a shift from expansion-oriented to intensive urban development is necessary. This involves prioritizing infill development within existing urban areas, gradually expanding development areas in response to demand, and consolidating development based on function and characteristics to create a well-defined urban space.

ASEZ's urban transformation concept, "Compact and Networked city," aims to promote compactness by guiding development to appropriately sized areas and optimizing land use focusing on "quality" and "value", while "networking" will enhance connectivity to ensure coordinated urban functionality.

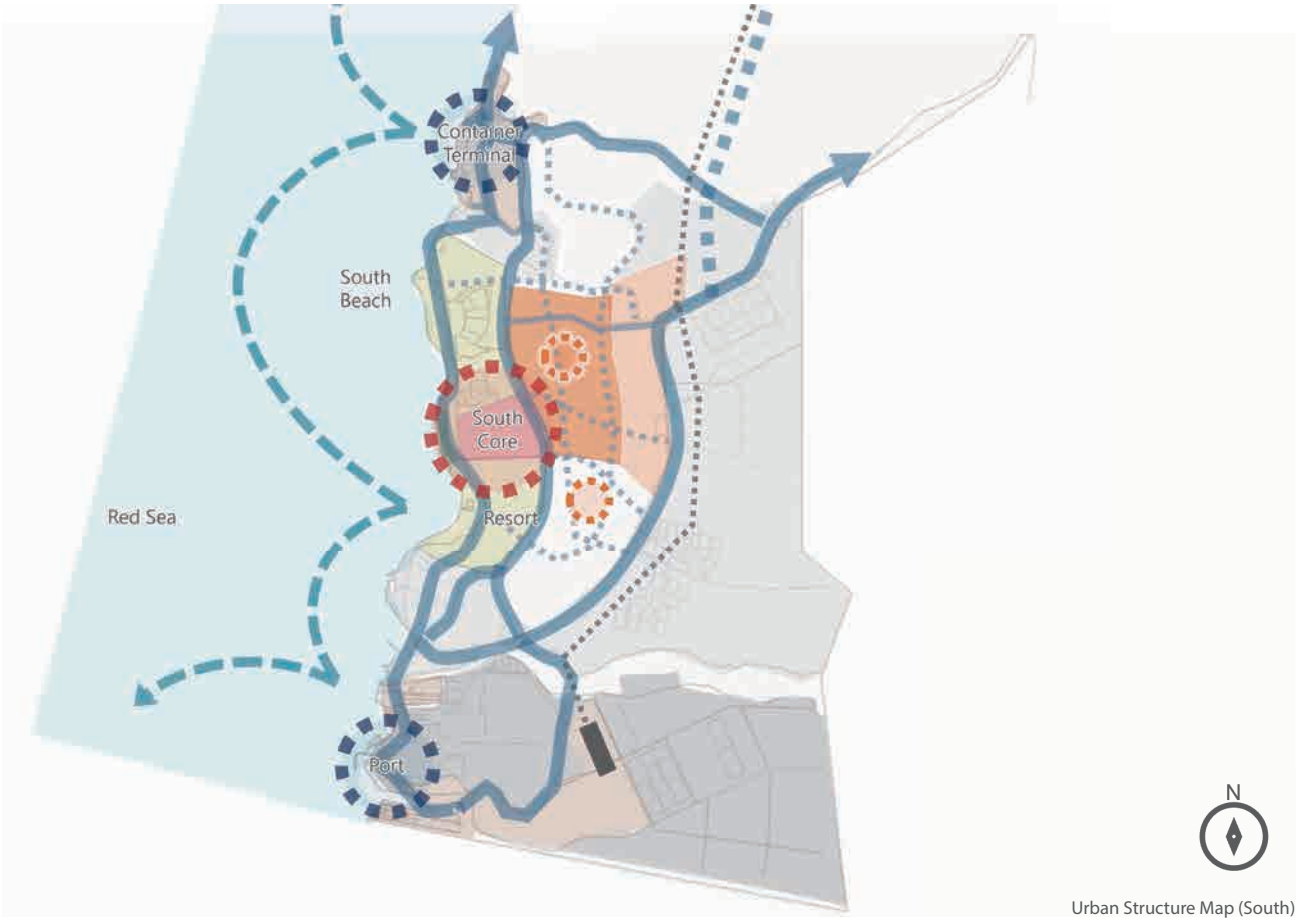
Given the southern region's value due to its coastline and natural environment, focusing on its development alongside the city center is crucial. To attract investment and skilled individuals, ASEZ must provide a sophisticated living environment and guide development throughout the region, including urban design.

HUB	
Regional Interaction Hubs	
Downtown	• The symbolic center of Aqaba, including the Aqaba Fortress, Revolt Plaza, hotels and shops • Waterfront space in Al Hafayer (approach to the sea from downtown, securing views and harmonizing private development)
NEW Business Core	• New business center to be filled with advanced service and industries
South Core	• Function of services for residents and visitors in the South Beach area
Regional Transport Hubs	
Airport	• Gateway from the air where expansion project is underway • Construction of an international convention center, an aircraft museum, etc.
Cruise Terminal	• Waterfront development to enhance the function and attractiveness of the sea gateway to Aqaba and Jordan • Marsa Zayed project is underway (development of a complex buildings, hotels, commercial, residential, entertainment and financial districts)
Container Terminal	• Development and operation through concession business. Strengthening port functions to increase handling volume and decarbonize is underway
Ports	• Aqaba New Port and port facilities consisting of various industrial terminals
Community Hubs	
AREA	
Commercial Area	• Enhancement of commercial and service facilities for consumers • Enhancement of hotels, restaurants, and entertainment facilities for visitors • Guidance of business facilities to conduct new business activities
Residential Area	• Providing good housing especially for families • Providing small-scale living service for single workers
Residential + Industrial Integration Area	• Attracting business establishments and educational institutions, etc., mainly along the roadside of the truck road network • Providing residence for high-skilled human resources, etc. • Supply of second homes and workcation-friendly housing in resort areas
Industrial Area	• Attracting industries around transportation terminal such as airports and ports that take advantage of convenience of transportation and logistics
Resort Area	• Resort development by private operators and provision of a variety of activities
NETWORK ····· : Future	
Regional Transportation Axis	• Establish a road and transportation network that will serve as the backbone of transportation between each hubs • Wide-area public transportation routes (highway buses, LRT, etc.)
Public Transportation Axis	• Enhancing connectivity through public transportation to increase mobility in the city
Walkable Network	• Providing comfortable mobility spaces for pedestrians in central areas of Aqaba, such as downtown (old town), New Business Core and resorts (Barrier-free, landscape, vegetation, slow mobility)
Waterfront and Maritime Networks	• Connecting people and good with the world through a maritime network • Connecting the waterfront with each other's attractions (landscape, coastalline, pleasure boats)

Legend of the Urban Structure



Urban Structure Map (Aqaba Town)



Urban Structure Map (South)

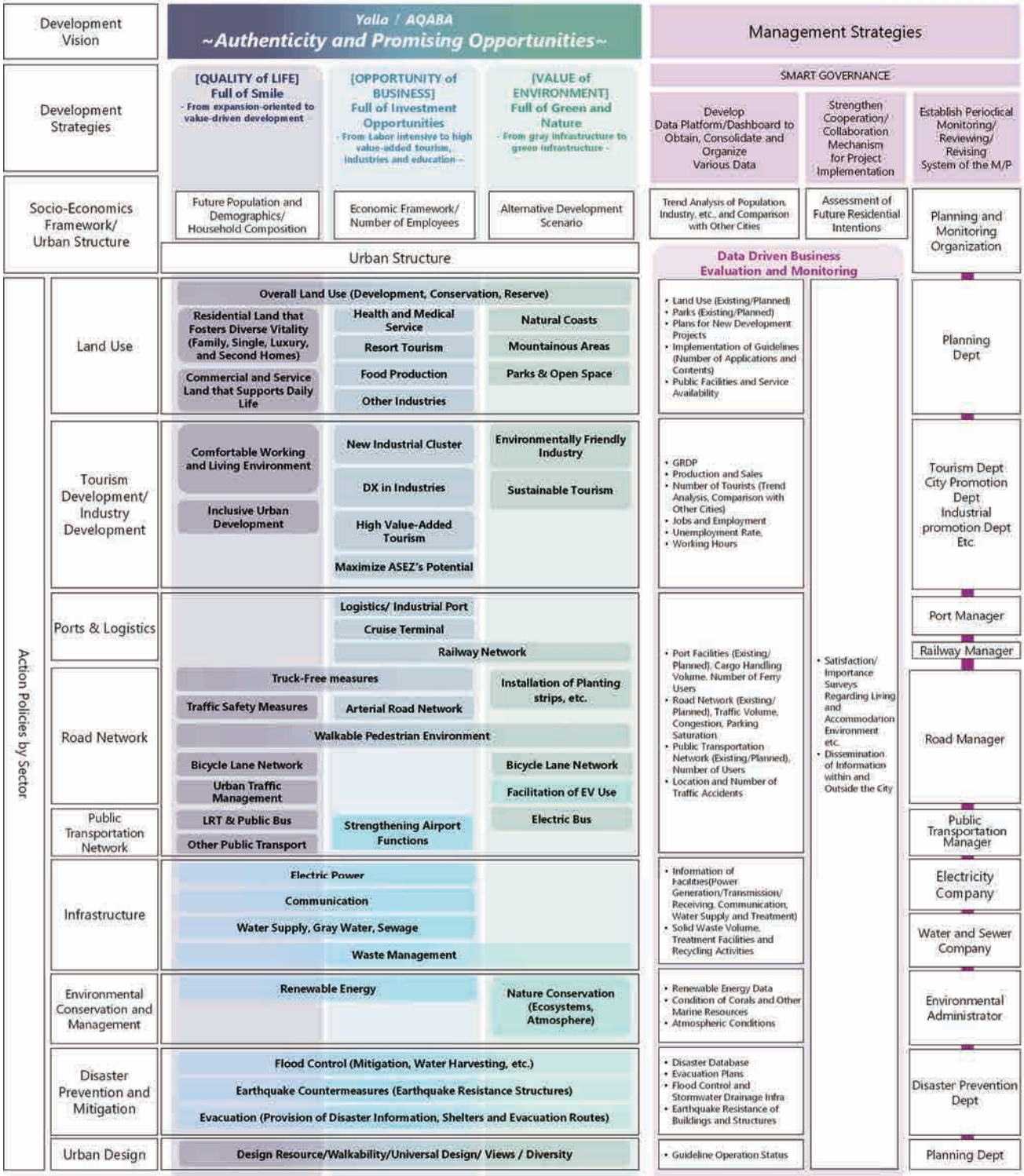
DEVELOPMENT STRATEGIES BY SECTOR AND ZONE

8 Sectors

9 Zones

DEVELOPMENT STRATEGIES by SECTOR

In this chapter, we organize the status and the proposed content for the development strategies,
Based on the urban development vision, three basic strategies and current status and issues of each sector, the development strategies for each sector has been updated based on discussion with relevant organizations.



Land Use

QUALITY of LIFE	• Provision of residential areas to accommodate diverse lifestyles. • Allocation of commercial / service areas to enhance convenience of daily life. • Formation of urban spaces where diverse values are integrated through effective mixed use (commercial/residential mix, business/residential mix). • Appropriate layout of parks, schools, cultural facilities, etc. • Improvement of urban density and quality through optimization of areas.
OPPORTUNITY of BUSINESS	• Revitalization of downtown as a bustling center of ASEZ. • Creation of business environment to attracts new industries. • Promotion of tourism development in the southern area. • Expansion and zoning of industrial areas considering the geographical and environmental conditions. • Creation of a comfortable and sophisticated working and living environment to attract highly skilled human resources from inside and outside Jordan. • Focus on sustainable land use and phasing to avoid scattered development.
VALUE of ENVIRONMENT	• Promotion of land use in consideration of climate change and disaster risks. • Creation of green spaces and waterfront areas to relax and enjoy. • Preservation and appropriate use of nature conservation areas. • Creation of urban structure with high energy efficiency for decarbonization.

Based on the policy, the land use category and map were updated. The major changes are as follows.

Residential: To accommodate diverse lifestyles, the residential land use was divided into three categories (low-rise, mid-rise, high-rise) to accept different types of housing from villas to high rise residential complex (up to 27m). Also, small shops/ offices, and community service facilities will be allowed in residential areas to make the neighborhoods attractive and convenient.

Commercial: To make a city where residents can access essential daily services by walking short distances and have different areas for leisure and entertainment activities, the land use was divided into two categories. The community commercial area is in community hubs that offer daily shopping facilities, offices, sports facilities, etc., while the commercial area is situated in core areas that have big commercial and service facilities such as commercial complexes, hotels, etc.

Mixed Use: To enhance convenience and liveliness while avoiding disorderly development, the mixed-use land use was divided in to two categories. Commercial Oriented Mixed Use is designated to enhance integrated development of residential and commercial areas, including entertainment and service facilities.

Business Oriented Mixed Use is designated to allow residential areas in harmony with business, clean industry and educational facilities.

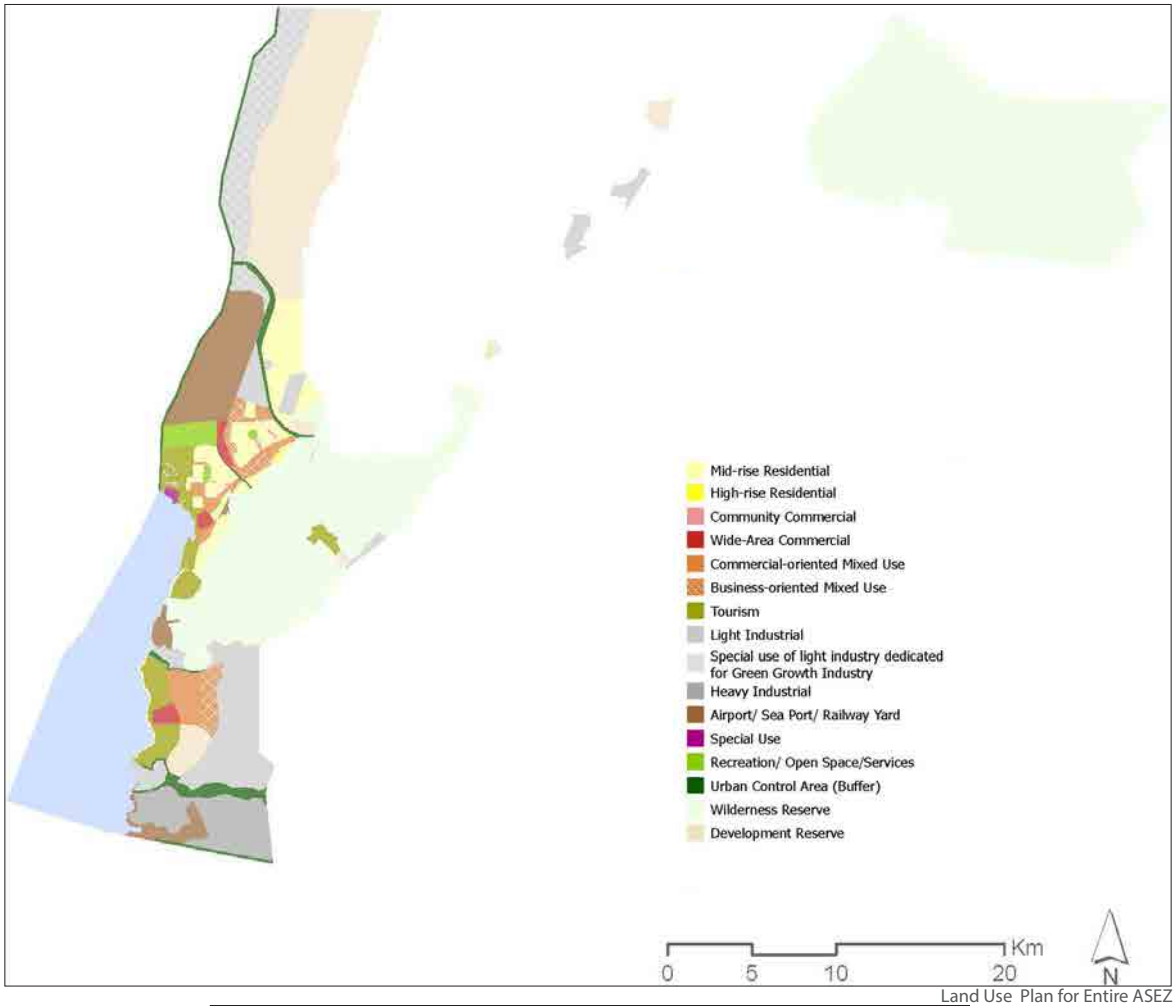
Tourism: The area is designated for tourism-related and service facilities, including residential, hotel, commercial, and entertainment facilities.

Light Industrial: The area is designated for light industrial and service facilities, except those that pose a hazard. A zoning plan will be developed to determine the allowed industry in each area (i.e. Logistics, Green Growth Industry, Manufacturing, etc.).

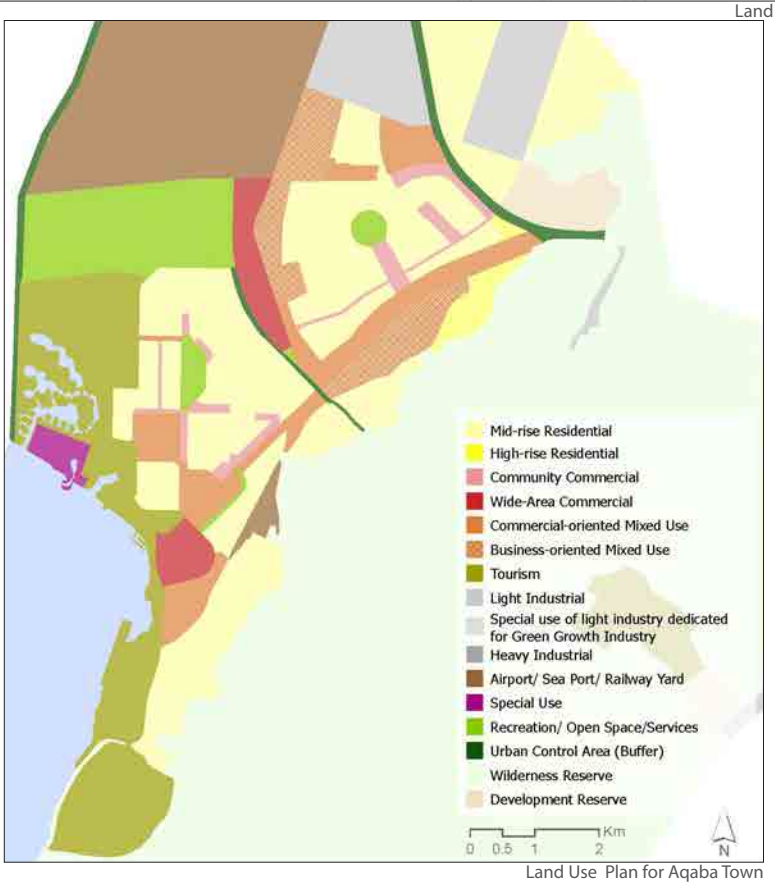
Heavy Industrial: The area is designated for only industries requiring proximity to the sea, given its potential future shortage of industrial area in the south and its proximity to the tourist areas and marine reserve.

Recreational / Open Space: The area is designated for parks, public beaches, and open spaces to enhance recreation for everyone.

Development Reserve: The land is set aside for urban growth in the future to improve gradual development.



Land Use Plan for Entire ASEZ



Land Use Plan for Aqaba Town

Urban Design

QUALITY of LIFE	**Creating diversity in living spaces and enhancing walkability** • Design of diverse spaces according to lifestyles • Realization of urban space with walkability
OPPORTUNITY of BUSINESS	**Guiding a sophisticated urban landscape in existing and newly developed areas** • Design of central commercial districts with a sense of liveliness and identity • Design of symbolic design in newly developed areas • Guidance of unique resort landscape
VALUE of ENVIRONMENT	**Preserving views to the Red Sea and creating public space with greenery** • Preservation of views to the Red Sea • Preservation of greenery and natural scenery

Identity of ASEZ

The primary role of landscape and urban design is to realize the future vision of the city, utilizing the region's resources through design. Below are the selected resources and characteristic of Aqaba's landscape and urban design based on the policy.

1. Quality of Life: Ruins and historical sites, Mosques, Façade made of stones
2. Opportunity of Business: Small-scale commercial clusters, Large Resort hotels along the coastline
3. Value of Environment: The Red Sea, Mountain range, Plantation and greenery, Desert, Wadi

Building and Landscape Design

To support a future population of 545,000, Aqaba must enhance its urban design, embracing diversity and varied lifestyles. While taking into consideration harmony with the surrounding nature and views, new residential districts will be allowed a certain degree of freedom and individuality in design image and color, thereby adding value and creating an attractive and competitive area with a variety of options.

The central commercial district will feature high-rise buildings and flexible advertising while maintaining harmony with surroundings. The new core's mixed-use buildings will have innovative designs. Al Hafayer and South Beach will develop unique resort landscapes, ensuring accessibility and preserving Red Sea views with controlled building heights.

Walkability & Universal Design

High walkability is essential, achieved by creating safe, pedestrian-friendly spaces, regulating vehicle access, widening sidewalks. Measures include car-free zones, providing proper parking, reducing road lanes, introducing woonerfs, adding rest areas, forming green walkways, and improving pedestrian crossings. Universal design features will include sloped crosswalks, multilingual signage, barrier-free beach access, and safe playgrounds / public spaces.

Scenic Views and Greenery

To preserve the scenic views of the Gulf of Aqaba, regulations will establish vista points and vista lines where views must not be obstructed by new buildings or structures. Height restrictions, rooftop installations, and outdoor advertising will be controlled to maintain clear views. Additionally, green spaces integrated with pedestrian areas and regulations for PV panel installations aim to harmonize urban development with natural landscapes, ensuring sustainable and visually appealing environments throughout the ASEZ.

Priority Districts

The priority districts for urban design are as follows.

1. Pr. Muhammad St.: Formation of roadside scenery with views of the Red Sea
2. City Center Area along K. Hussein St.: Flexible urban design encompassing diverse urban functions
3. Old Town/ Shallalah: Inheritance of traditional townscape
4. New Core: Area with modern urban design as the new gateway to ASEZ
5. New Residential Area: Creating a Competitive and Attractive Housing
6. South Community: Creating a new hub connecting the ocean and the mountains

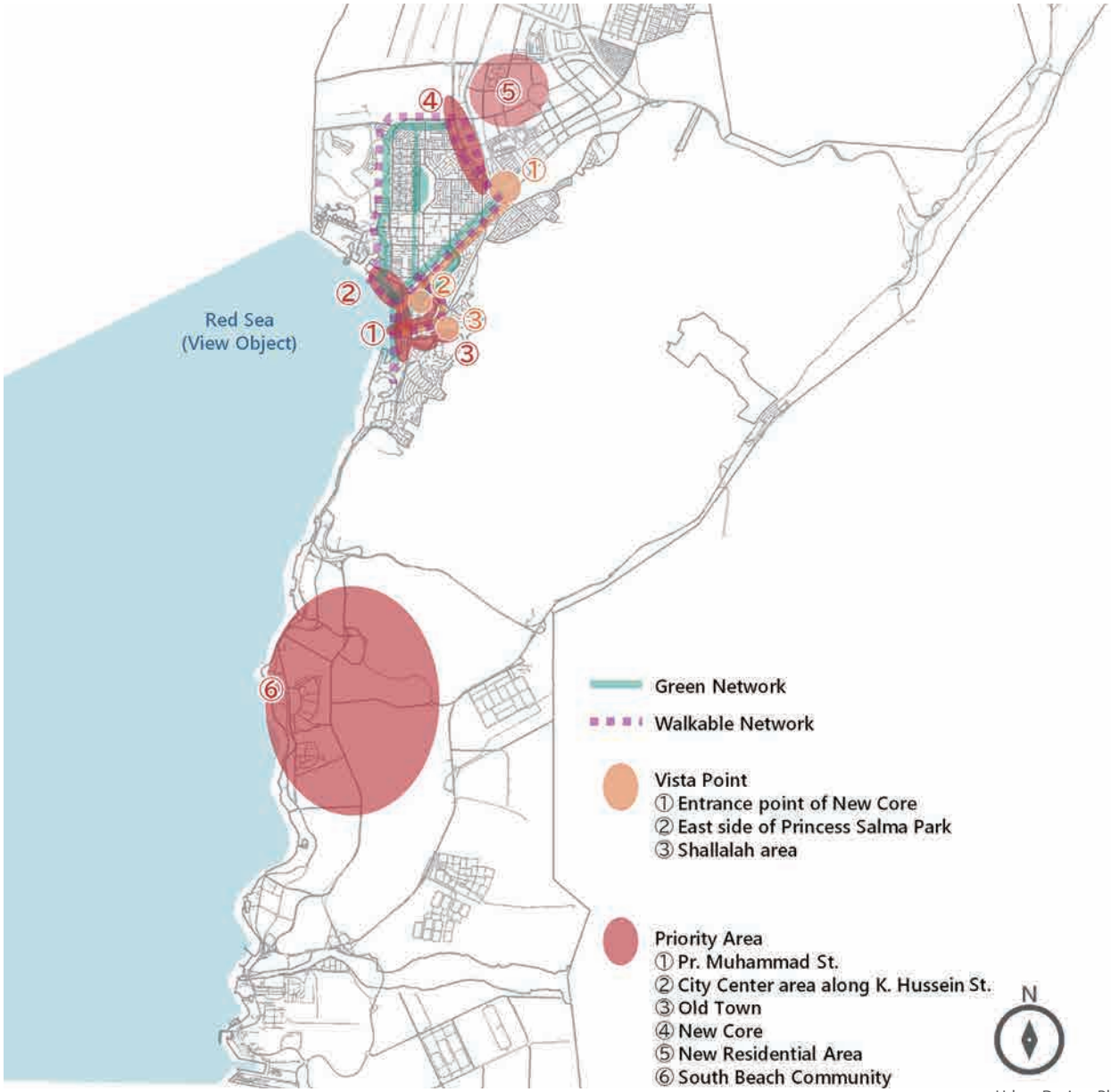
From Revolt Plaza to Pr. Mohammad St.

View from Old Town Area

Tunisian Hammamet Gardens,
Part of Green and Walkable Netwalk

View from New Core Area

View from East Side of Princess Salma Park



Urban Design Plan

Tourism & Industrial Development

QUALITY of LIFE	• Attract new industries by creating a comfortable working and living environment • Attract new industries by promoting inclusive urban development
OPPORTUNITY of BUSINESS	• Develop a new industrial cluster with wide supporting industries. • Increase value-added in industries through DX • Develop high value-added and diversified tourism products. • Maximize Regional Potential
VALUE of ENVIRONMENT	• Develop environmentally friendly industries • Develop sustainable tourism

Growth Scenarios

In the short term, ASEZ will focus on sustainable tourism and attract export industries like garment and food processing through SEZ and FTA advantages. Medium to long-term goals include developing infrastructure for industrial clusters and promoting new sectors such as medical, IT, smart agriculture, and renewable energy. National policies are required to support infrastructure like waste treatment and solar power to reduce electricity costs and attract investments. ASEZ-specific incentives like subsidies and tax exemptions and to provide essential office and commercial spaces are also necessary to complement these efforts to attract knowledge-based industries.

Diversification of Industries

To enhance the quality of life in Aqaba, efforts focus on diversifying industries and promoting inclusive urban development. Currently, Aqaba's garment industry relies heavily on migrant workers due to low local employment. To shift towards sustainable growth, emphasis is on developing knowledge industries that can utilize Jordan's skilled workforce. Initiatives like the Aqaba Digital Hub aim to attract IT companies with incentives like tax exemptions. Urban planning prioritizes inclusivity across all demographics, fostering environments conducive to education, business, and senior care. Addressing gaps in women's employment in tourism through improved transportation and childcare is critical, alongside enhancing local commercial and entertainment offerings for community engagement.

Adding Higher Value to Industries

ASEZ's strategy for economic growth involves several key initiatives. Firstly, the aims are to establish new industrial clusters, focusing on knowledge-intensive sectors to attract high-skilled human resources and create employment opportunities for Jordanians. Digital transformation is pivotal, especially in agriculture, fisheries, and tourism, to enhance productivity and value-added services.

Diversification of tourism products is another priority, emphasizing high value-added offerings and reducing dependency on seasonal peaks. Efforts include improving tourism expenditure per person and increasing local resource utilization to boost economic benefits within Jordan.

Maximizing regional potential is integral through export processing, logistics enhancements, renewable energy projects like solar power, and comprehensive commercial developments. These initiatives aim to capitalize on ASEZ's strategic location and natural resources, fostering sustainable economic growth and development in the region.

Maintaining Sustainability

ASEZ will also focus on sustainable industry development by promoting environmentally friendly initiatives. This includes expanding photovoltaic power generation, smart mobility related industry and green hydrogen industry.

To sustain tourism quality in Aqaba, protecting natural assets like coral reefs is crucial. Development plans must carefully balance necessary beach facilities while preserving a buffer zone from the coastline to prevent environmental degradation. Without adequate waste and sewage facilities, large-scale resort development in ASEZ could harm the environment, emphasizing the need for sustainable tourism practices.

These strategies aim to enhance ASEZ's environmental sustainability while fostering economic growth through green industries and responsible tourism practices.

Transport and Logistics

QUALITY of LIFE	• Minimizing the impact of heavy trucks in the ASEZ city center • Strengthening the public transport system • Ensuring traffic safety • Realizing smooth road traffic by urban traffic management
OPPORTUNITY of BUSINESS	• Strengthening the regional arterial road network that allows logistics vehicles to travel safely and smoothly • Improving airport functions for the improvement of convenience for domestic/ international tourists and visitors and developing commercial facilities for the improvement of airport operation & management • Contributing to high-value-added tourism • Strengthening port functions that contribute to the national economy and ASEZ regional development • Introduction of economical and highly efficient freight transport modes
VALUE of ENVIRONMENT	• Securing a bicycle-use environment and promoting bicycle use that contributes to CO2 emission reduction and public health • Promotion of EV use

Road Network

To reduce truck traffic in Aqaba's city center, short-term measures propose grade separations at key intersections to improve traffic flow and safety. Mid-term measures suggest rerouting trucks using existing or new roads, while long-term plans involve constructing a road connecting the Dead Sea and Desert Highways to divert heavy trucks entirely, requiring Jordanian government action. To prevent road congestion on Sharif Hussein St, and improve the pedestrian connectivity between Downtown and the Waterfront, a bypass road network to reroute traffic around the city center is also proposed.

Public Transport

To address increasing car ownership and prevent future traffic congestion, promoting public transport use is essential to maintain a preferable residential environment and reduce greenhouse gas emissions. As short-term measures, it is proposed to reorganize the bus network, including the southern area and suburbs, and to designate bus stops and timetables. To implement eco-friendly buses, smart solutions, on-demand buses and passenger rail services is also proposed for the enhancement. As Mid-term measures, introducing Bus Rapid Transit (BRT) and Light Rail Transit (LRT), along with relocating the bus terminal is recommended. Sea taxis and flying taxis are also proposed for future transport options.

Logistics

King Hussein International Airport's (KHIA) master plan aims to boost passenger and cargo capacity with new terminals and commercial developments, alongside improved flood prevention and transport access. Aqaba's port facilities plan includes new cruise terminals, decarbonization of the container terminal, relocation of the ferry terminal and enhanced logistics infrastructure. The railway network development focuses on connecting the Aqaba Container Terminal with the Madounah Dry Port and extending freight rail to support bulk cargo transport and connectivity to the South Industrial area.

Traffic Management

Accident-prone areas were identified through local interviews. Insufficient pedestrian crossings and jaywalking issues are prevalent, with foot bridges and traffic lights recommended.

While traffic congestion is minimal, downtown sees peak hour congestion. Strategies include improving intersection capacity, removing on-street parking, and adopting one-way streets. Currently, nine signalized intersections lack proper adaptive control due to sensor failures.

Parking issues are significant, with illegal on-street parking reducing capacity and safety, necessitating more off-street parking and stricter enforcement.

EV adoption by increasing strategically placed charging stations is also important to enhance urban mobility, sustainability, and improving convenience.

Promotion of bicycle use with dedicated lanes, parking, and shared-bicycle services is also proposed.

Infrastructure (Urban Utility)

VALUE of ENVIRONMENT

- Upgrading water supply, sewage and wastewater treatment system corresponding to future urban and industrial development
- Developing rainwater drainage system considering future conditions and rainfall
- Ensuring stable electricity supply in the future
- Promoting telecommunication business with collaboration between public sector and private sector
- Upgrading and expanding waste treatment facilities and improving waste management system

Each utility sector currently operates independently with separate business and operational plans. To ensure consistency with future urban and land use plans, these plans need to be reviewed and updated. The following outlines the development directions for each sector based on current conditions:

Drinking Water

The water supply system needs to be updated for future urban structures, addressing issues like leakage and theft. New water sources and improvements in water efficiency are essential. The distribution system requires updating, especially for large-scale developments. Countermeasures for aging infrastructure focus on effective maintenance and leakage prevention.

Wastewater

The sewage system must align with future urban plans, determining sewage volumes and facility needs. Expansion of treatment plants and establishing treatment zones are crucial. System improvements include optimizing flow and addressing illegal drainage. Maintenance plans should consider lifecycle costs to ensure long-term efficiency.

Wastewater Reclamation

Expanding reclaimed water use, especially for agriculture and industry, reduces reliance on freshwater. System improvements involve network expansion and better distribution facilities. Addressing aging infrastructure with lifecycle-focused maintenance plans ensures sustainability. New treatment plants in industrial zones will support increased reclaimed water use.

Rainwater Drainage

Effective rainwater drainage planning includes assessing current conditions, defining watershed boundaries, and establishing drainage capacity. Detailed plans must be developed for runoff and drainage channels. Conservation policies for wadis and end-of-stream treatments are also necessary to manage flood risks and support urban growth.

Irrigation

Planning for expanded irrigation involves studying crop needs and reclaimed water availability. Increasing reclaimed water use supports agriculture and industry. New reservoirs and infrastructure development are essential. Maintenance plans ensure sustainable water use, supporting agricultural productivity and sustainability.

Electricity

The electricity business plan needs updating to align with the M/P. This includes revising the distribution network and infrastructure for future demands, and collaboration between public and private sectors is essential. The plan should integrate renewable energy sources and efficient energy use strategies.

Telecommunication

Updating the telecommunication plan is crucial for stable services aligned with urban development, for attracting IT based industry and for realizing smart city initiatives. This involves revising infrastructure based on land use and population distribution. Public-private collaboration is key. The plan should enhance network coverage, capacity, and technology to meet future demands and support regional growth.

Waste Management

Upgrading the waste management plan and system is vital for an eco-friendly urban environment. This includes improving and expanding waste treatment facilities for future development. The plan should focus on sustainable practices and efficient waste processing. Implementing advanced technologies ensures long-term sustainability and cleanliness in ASEZ.

Gas

The gas business plan requires updating to align with the revised M/P and the distribution of facilities and population. This update aims to ensure.

Disaster Risk Management

VALUE of ENVIRONMENT

- Developing Disaster-Resilient Urban Structure
  - Identifying Disaster Risks and the Safe Zones
  - Risk Informed Urban and Sustainable Development
  - Considering Land Use in response to Disaster Hazard
  - Strengthening buildings and infrastructure to cope with disaster risks
- Promoting accurate and advance warning, safe and secure evacuation and effective emergency response
  - Upgrading the Early Warning System to be accurate and ahead of events.
  - Ensuring secure evacuation actions
  - Securing safe space for evacuation
  - Establishing spaces and functions that enable rapid disaster response activities
- Structuring organizations, people, and companies to be resilient to disasters
  - Increasing Disaster Management Capability of ASEZA
  - Improving Disaster Risk Management Capacity of Residents and Companies
  - Promoting pre-disaster recovery

Perspective and Approaches

To build a disaster-resilient city in ASEZ, two perspectives are crucial: minimizing damage and ensuring early recovery. This involves combining structural (physical infrastructure improvements) and non-structural measures (awareness and training). Short-term actions to protect lives and medium- to long-term measures to build robust infrastructure and educate the public are essential.

Strategies and Actions

To develop a disaster-resilient urban structure in ASEZ, it is crucial to identify disaster risks through hazard and risk maps, considering geological features, past disasters, and population characteristics. Appropriate land use planning, particularly in flood-prone areas, and strengthening buildings and infrastructure are essential.

For effective evacuation and emergency response, early warning systems, evacuation plans, and drills are necessary. Secure evacuation sites, routes, and shelters must be established, considering the needs of vulnerable groups. Establishing emergency response spaces and routes is vital for rapid rescue and firefighting.

Enhancing disaster management capabilities of ASEZA and improving the disaster risk management capacity of residents and companies through education, training, and business continuity plans (BCPs) is essential. Promoting pre-disaster recovery planning ensures a smooth and efficient post-disaster recovery process. This integrated approach will build a resilient urban structure and mitigate disaster risks in ASEZ.

Proposed Strategies in High-Risk Areas

ASEZA and ADC have implemented engineering (hard) and non-engineering (soft) measures to combat flash floods in existing and newly developing areas along Wadi channels. These include constructing dams, dikes, floodwalls, and elevated bridges. However, these measures, designed for specific return periods, may need upgrading for extreme climate events.

Proposed mitigation measures in newly developing areas like Al-Quweria involve both hard (dams, flood storage) and soft (green infrastructure, terracing) interventions. Urban-scale flood risk reduction in Aqaba integrates nature-based solutions and smart infrastructures through land use planning and sustainable stormwater management.

The early warning system in Aqaba requires significant upgrades, including hydrological modeling, X-band radar for rainfall detection, and automated monitoring of water levels and sediment movement to enhance flood forecasting and warning capabilities.

Environment Preservation and Management

VALUE of ENVIRONMENT

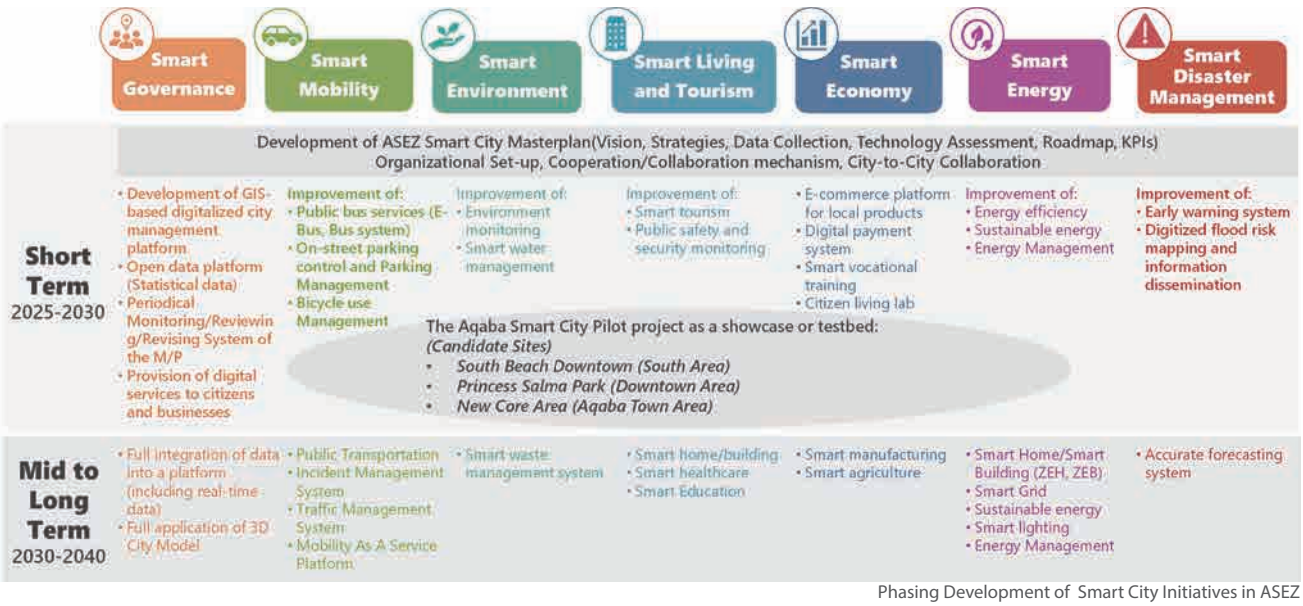
Preservation and management of abundant marine resources, natural resources, clean air, and rich ecological system

- Implementation of environmental monitoring and improvement measures on air quality, water quality, noise and vibration for better life in ASEZ
- Preservation of invaluable natural resources and ecological system
- Create and improve places (aquarium, bird sanctuary) to appreciate nature with animals and birds from the sea and land, and teach children, citizens, and tourists about environmental conservation by making the facilities tourist attractions.
- Preservation of outstanding natural features (Wadi Araba, Red Sea) and development of environmental infrastructure to attract future tourists.
- Promotion of appropriate waste treatment.

Aqaba faces environmental challenges: air quality may worsen with more vehicles and factories; large-scale developments could increase water pollution; waste management lacks separation, incineration, and recycling facilities; future growth might cause noise, vibration, and land subsidence issues; protected areas and ecosystems risk damage from urbanization and tourism; and climate change adaptation and renewable energy use are insufficient.
The strategies to tackle these issues are as shown in the following table.

Item	Strategy (Mitigation Measures and Recommendations)
Air Quality	• Installation of green belts for dust control purposes. • Establishment of bypass roads to avoid trucks into urban areas. • Conduct air quality monitoring in industrial areas. • Establishment of green belts as buffer zones between industrial and residential areas.
Water Pollution	• Monitor proper implementation of water pollution mitigation measures. • If a trend of water quality deterioration in the Gulf of Aqaba is observed, consider requesting additional water pollution control measures.
Waste	• Waste sorting, collection, and recycling. • Promote the 3Rs (Reduce, Reuse, Recycle) of waste. • Installation of wire mesh fencing to prevent runoff.
Noise and Vibration	• Developing bypass to avoid urban areas. • Establishment of green belts as buffer zones between industrial and residential areas.
Land Subsidence	• Monitoring of groundwater use.
Protected Area	• Sewage and waste disposal control through proper urban planning. • Regulating development in coastal area. • Registration of tourism operators and making environmental considerations compulsory. • Set maximum number of tourists per day. • Restrictions of access vehicle.
Ecosystem	• Monitor proper implementation of ecosystem preservation measures. • If effect to the ecosystem is observed, consider requesting additional control measures. • DNA analysis of marine life in the Gulf of Aqaba, and database maintenance. • Simplified monitoring by providing environmental DNA analysis tools. • Facilitate assessment of marine ecosystems by establishing indicator species.
Climate Change	• Climate change adaptation in Aqaba. • Photovoltaic power generation for buildings • Considering solar power, wind power, etc. • Reducing flood risk by using hazard maps • Study measures to address climate change risks and publicize them to the people.

Smart City (Utilization of ICT)



Phasing Development of Smart City Initiatives in ASEZ

Vision for Smart City

As stated in the strategy as Smart Governance, Smart City initiatives are the enablers to realize the vision and strategies with an innovative and sustainable advanced technology, including data integration and information systems, information technology network infrastructure, as well as IoT and other advanced ICTs to improve public services and quality of life.

Based on the current situation the smart city vision for ASEZ is proposed as follows, to clarify the direction.

ASEZ Smart City Vision(Tentative)

"a city with seamlessly integrating advanced Information and Communication Technologies (ICT) and profound wisdom to drive the efficient city management and city services with citizen's centric approach to realize livable and lovable city of ASEZ."

Three Layers for Smart City Development

ASEZ's smart city development comprises three layers:

1. Physical Infrastructure: Includes fiber optic networks, advanced mobile networks, IoT systems, and data centers as foundational elements for data management.
2. Data Platform/Command Center: Focuses on integrating data for efficient city operations and monitoring, with stringent security measures to protect data integrity.
3. Smart City Applications (Service Domains): Encompasses governance, mobility, environment, living and tourism, economy, energy, and disaster management domains, enhancing resident services through ICT.

To achieve ASEZ's smart city vision, key initiatives include developing the data platform, enhancing smart services, and establishing a dedicated organizational structure like the Smart City Unit and City Management Centre. Integration of these layers is vital for seamless and sustainable smart city implementation.

Road Map for Realization

The road map for realizing ASEZ Smart City involves three phases. These steps aim to build consensus among stakeholders, leverage technology for urban improvements, and ensure the effective management of ASEZ's smart city initiatives.

Phase 1 (Preliminary Assessment and Planning): Engage stakeholders, collect and analyze data on infrastructure and demographics, develop a smart city vision, and assess suitable technologies.

Phase 2 (Detailed Planning and Design): Design city infrastructure upgrades, establish digital infrastructure, develop policies and regulatory frameworks, and foster public-private partnerships.

Phase 3 (Implementation and Integration): Implement pilot projects for smart transportation, governance, energy efficiency, and citizen services. Deploy technologies city-wide, ensure interoperability, and conduct capacity building and training for sustainable operation.

A detailed plan is needed for detailed analysis and fostering unified stakeholder collaboration.

DEVELOPMENT POLICY by ZONE

To achieve the vision and development strategies, land use, urban design, and sectoral strategies were integrated into each of the 9 zones tailored to their unique characteristics.

North Area

The general goal for this area is to diversify and add value to ASEZ's industry and tourism by using the new area that was included in the SEZ.

The Wadi Araba Area, newly incorporated into ASEZ, focuses on sustainable development like green industries and agricultural innovation to diversify Jordan's economy. It plans a food-tech industrial cluster and agri-tourism hub. The Al-Quwaira Area, situated along the Desert Highway, is being developed as an industrial park with sectors like light to medium industries and truck logistics. Efforts include ensuring clean industrial practices and integrating with local agriculture. In the Wadi Rum Area, known for its desert landscapes and Bedouin settlements, the focus is on eco-tourism and preserving cultural heritage. Development includes upgrading tourist facilities and managing protected areas to minimize environmental impact while improving local and tourist transportation links.

Center Area

The general goal for this area is to offer the best quality of life and work environment in the nation by enhancing the urban environment in existing areas to highlight the city's charm, while creating spaces that generate new value in new development areas.

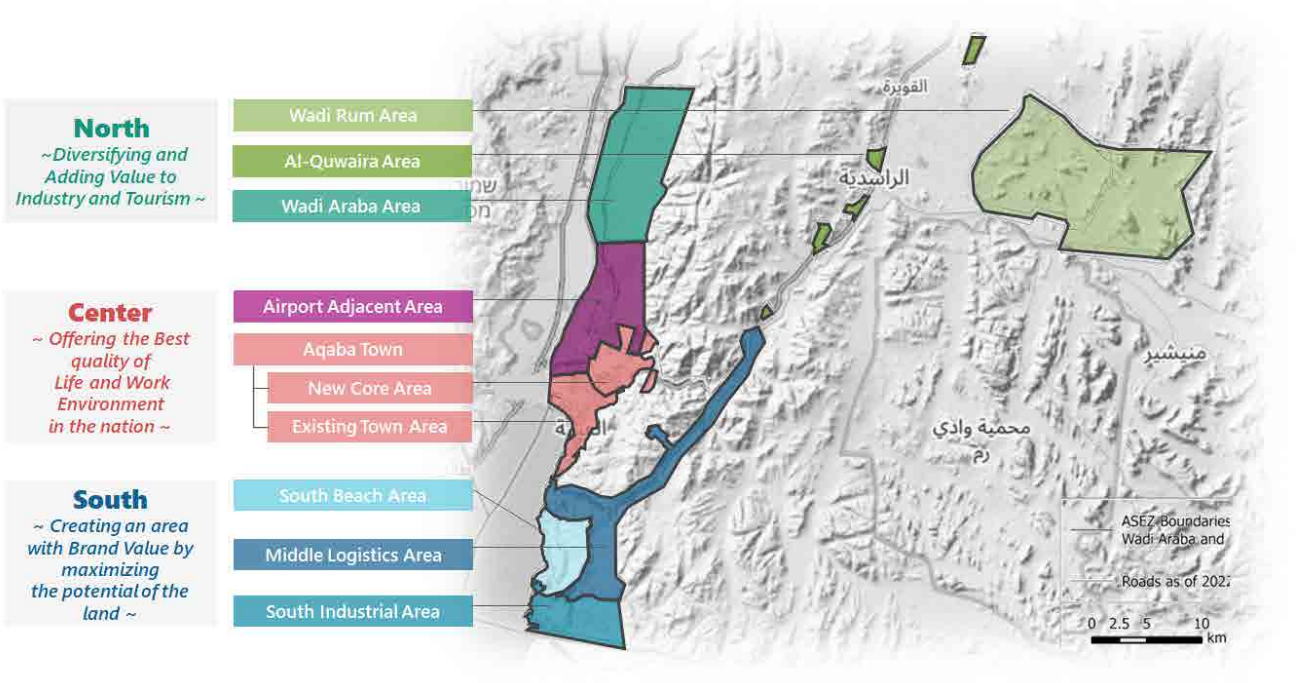
Aqaba Town (existing area) features a historic downtown with a mix of residential areas, emphasizing tourism and cultural heritage, alongside ongoing developments like Marsa Zayed. Aqaba Town (new core area) is evolving into a business and educational hub with medical facilities and sustainable urban infrastructure. The Airport Adjacent Area near the airport focuses on logistics, industry, and agriculture, integrating tourism projects while addressing security concerns.

South Area

The general goal for this area is to enhance its brand value by maximizing the potential of the land.

The South Beach Area, characterized by its coastal prominence and tourist infrastructure like Talabay, aims to maximize its potential while preserving marine environments, focusing on sustainability and wellness. It plans to diversify tourist activities and create a universally accessible beach environment. The Middle Logistics Area serves as a key logistics hub supporting ACT and industrial revitalization, with plans to upgrade infrastructure and integrate with future rail developments. The South Industrial Area focuses on heavy industries and green initiatives, leveraging its port access and proximity to Saudi Arabia for future development like the NEOM project, while implementing measures for environmental protection and flood risk mitigation.

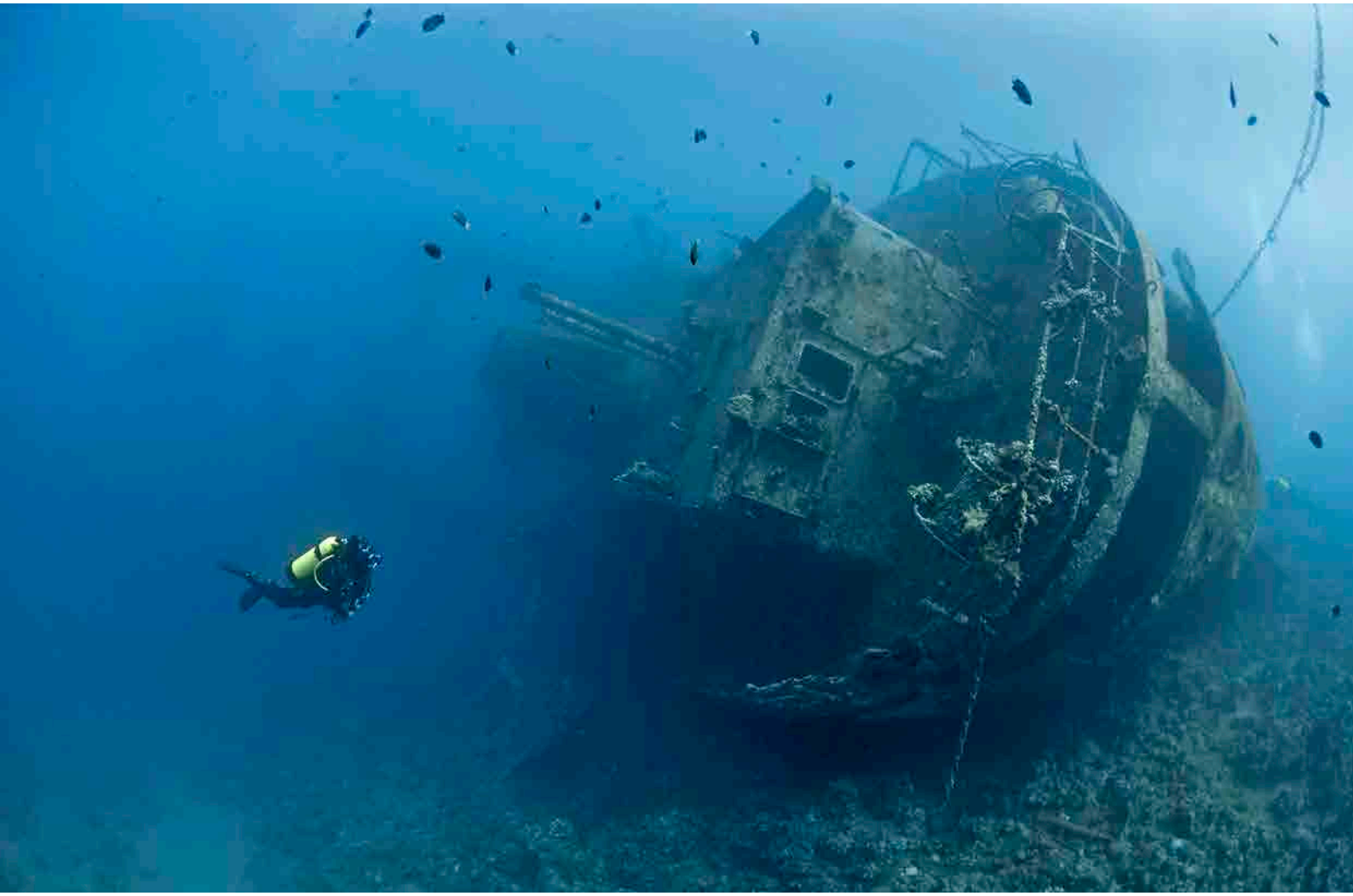
The development policy for each area is shown in the next page.



Setting 9 Areas in ASEZ

Development Strategies by Zone

Area		Development Policies
NORTH	Wadi Rum Area	• **Eco-Tourism** - high value-added activities utilizing the unique nature and landscape • **Managed Tourist Facilities** – with appropriate control for nature preservation
	Al-Quwaira Area	• **Light to Medium Industry** -Complementary industrial area
	Wadi Araba Area	• **Green Industrial Area** - smart agriculture and fishery for food security, high cash value products connecting with manufacturing, renewable energy for decarbonization. • **Agri-Tourism/Recreation** - new experience, food education.
CENTER	Airport Adjacent Area	• **Airport logistics base** - maximizing the proximity to the airport. • **Open innovation hub & test bed** - R&D for new industrial cluster. • **Manufacturing & Processing Cluster** - Food Processing, Pharmaceutical, Cosmetics, etc. • **MICE and entertainment** - complement with planned facilities • **Residential area** – preserved area for future population growth
	Aqaba Town - Existing Town Area	• **"Face of Aqaba"** - Center of Commerce and Entertainment. Public beach, plaza, downtown and historical heritages. • **Infill development with Quality** - Efficient infra- maintenance, lively spaces, green open spaces, qualified public services. • **Redeveloping Old Town and Shallalah** -townscape, view • **Pedestrian network from Waterfront/ Downtown** to surrounding communities, hotels and New Core.
	Aqaba Town - New Core Area	• **Jordan's Southern regional center** - for business, commerce, advanced education & vocational training, medical and so on. • **New working environment** - New CBD, creative industry • **New lifestyle** - Modern and high-quality living environment with effective life-work environment with Mixed use
SOUTH	South Beach Area	• **Internationally competitive tourism/ living environment** - Forming a brand superior in both function and design with residential and economic support activities (commercial, medical, administrative, and others) • **Entertainment corridor** - increasing the variety of activities, including entertainment, recreation and sports. • **Maximizing the proximity to the sea** - securing public access, accessibility, views, proper landscaping. • **New industrial hub** - IT and medical/wellness, incubation.
	Middle Logistics Area	• **Integrative logistics area** – port, railway, warehouse, storage, etc. • **Green Business Park** - recycling industries, waste management.
	South Industrial Area	• **Heavy industry**- taking advantage of its proximity to the port, Enhancing efficiency and effectiveness of land use



PRIORITY PROJECTS

99 PROJECTS

Based on the strategies for developing each sector and the concepts for developing each zone, a long list of 99 priority projects was selected. These projects, which are in progress, planned, or suggested, were grouped into 9 programs according to their location, or related sector. ASEZA and ADC selected the projects, and phases were determined based on priority, distribution, and stakeholder expectations.

No.	Program	Title		Phase 1						Phase2	Phase3
				2025	2026	2027	2028	2029	2030	2031-2035	2036-2040
1	Urban Development - 1) Existing Town Improvement Program	Downtown & Al Hafayer regeneration Project									
2		Upgrading Old Vegetable Market & Tourist Trail Development									
3		Al Matal Corniche Development									
4		Al Matal Development Project									
5		Upgrading Prince Hamzah Sports City									
6		Aqaba Marine Reserve and Science Park Development									
7		Man made beach for Al Hafayer Area									
8		Marsa Zayed Development									
9		Old town / Shallalah Renovation	Old town								
			Shallalah								
10		Downtown Bypass Road Development									
11	Urban Development- 2) New Core Area Development Program	New Core Area Development Project (North Business District, Medical Hub)									
12		Aqaba Filming Hub									
13		Sustainable Housing Area Development									
14		City Entrance Development Project									
15		Culture & Community Center Development									
16		Micro Industrial Area Relocation									
17	Urban Development - 3) South Beach Area Development Program	Aqaba Marine Reserve Promenade Improvement									
18		Masterplan for the Yameniya Heights and South Beach									
19		South Beach Downtown Smart Urban Development									
20		South Beach Tourism Corridor Development									
21		South Beach Hub & Community Planning and Development (South Core, Residential Mixed Use Area)									
22	Urban Development - 4) Plans and Guidelines Development Program	Updating ASEZ Urban/Architectural Design Guidelines									
23		Developing Specific Area Design Guidelines	Downtown								
			King Hussein St.								
			Pr. Mohammad St.								
			Old Town								
			New Residential Area								
			North Business District								
			South Beach Area								
24		Public Beaches Design Guideline (Universal Design)									
25		Walkable Network Development Guideline									
26		Open Spaces Development Guideline									
27		Planned Landscaping (Green Network) Development									
28		Sea Use Master Plan									
29		Revisiting Land Use plan									
30	Smart City Program	Smart City Master Plan Development									
31		Capacity Building for Smart Urban Planning, Development and Management									
32		Smart Governance (Urban Management Improvement)									
33		Smart City Pilot Project									

No.	Program	Title	Phase 1						Phase2	Phase3
			2025	2026	2027	2028	2029	2030	2031-2035	2036-2040
34	Tourism Development Program	Tourism Strategy Development								
35		Upgrade Tourist Service (TIC, Exhibition) in the City Center								
36		Rehabilitation and Promotion of Historical HeritageSsites								
37		Disah Eco-Lodge Project								
38		Upgrading Tourist Facilities in Wadi Rum								
39		Humayma Archaeological Site Preservation and Development								
40		Adventure Tourism Development								
41		Ropeway & Aqaba Terrace Development								
42	Industrial Development Program	Industrial Development & Zoning Guidelines								
43		Gas Pipeline from Industrial Area to Al Quwaira Industrial Area								
44		Al Qwairah Industrial Zone Development								
45		Vehicle Value Added Project								
46		Green Hydrogen Industry Development								
47		New Knowledge-Based Cluster Development (South Beach)								
48		Airport Business Park Development (Education & Skills Development hub)								
49		Sea Water Pipeline and Desalination Plant Development for Wadi Araba								
50		Wadi Araba Techno Park Project								
51	Transportation Improvement Program	Developing Urban Transportation & Smart Mobility Masterplan								
52		Urban Traffic & Mobility Management Improvement Project								
53		Urban Traffic Safety Improvement Project								
54		Facilitation of Bicycle Use								
55		Facilitation of EV Use								
56		9th Area Intersection Improvement Project (Partial Grade-Separation)								
57		Public Bus Service Improvement Project								
58		Integrated Transportation Hub (Bus Terminal) Project								
59		Water Taxi Service Development								
60		LRT Project								
61	Logistics Improvement Program	ACT Decarbonization Project								
62		Enhancing the Use of Mutha Jetty								
63		Enhancing the Use of Old Cement Jetty								
64		Empty Container Depot Project								
65		Durra Border Crossing and Road Access Improvement								
66		New Oil Terminal Development								
67		Expansion of Oil Storage								
68		Developing Heavy Cargo Road								
69		Relocating Ferry Terminal to Durra Crossing								
70		Enhancing Existing LNG tTerminals								
71		Rachidia Truck Village Development								

No.	Program	Title		Phase 1						Phase2	Phase3
				2025	2026	2027	2028	2029	2030	2031-2035	2036-2040
72	Disaster Management & Urban Resilience Improvement Program	Developing Risk Map (Flood, Earthquake)									
73		Developing Design Guideline for Flood Mitigation/Earthquake Urban Resilience									
74		Improving Multi-Hazard Early Warning System									
75		Aqaba North Park Green Infrastructures (Detention Tank)									
76		Modernize All Roundabouts for Green Infrastructure (Prs. Haya Circle, Oryx Hotel Intersection, etc.)									
77		Flood Mitigation for Areas at Risk	New Residential Area								
			Coastal Wadis								
			South Industrial Area								
			Al Quwaira Industrial Area								
78		Water Harvesting in Wadi Yutum									
79		Improvement of High-Density Urban Areas (Old City, Al-Kazan, Al-Radwan, Al-Naser, Al-Rawdah Middle, Al-Remal)									
80	Infrastructure Development Program	Capacity Development for Utilities (Infrastructure) Planning									
81		Developing Road Design Guideline									
82		Road Network Development	South Beach Area								
			North Expansion Area								
			Wadi Araba Area								
83		Wadi Araba Bypass Road Development									
84		Mountain Bypass Construction Project									
85		Update Water and Waste Water Master Plan									
86		Update Water Resource Management Plan Considering Water Supply from Desalination Plant and Future Demand									
87		Upgrade Water and Waste Water Facilities in Expansion Areas									
88		Expand Irrigation Area and Extend Effluent Irrigation System along Secondary Streets									
89		Develop Storm Water Management Plan and System in Line with the Flood Management Planning									
90		Desalination Plant Development									
91		Sustainable Energy and Climate Action Plan for ASEZA									
92		Update Electricity Master Plan									
93		Expand Renewable Energy Generation and Energy Supply System	Al-Quwaira Area								
			Wadi Araba Area								
94		Expand Electricity Supply Plan and Develop Facilities in Expansion Areas									
95		Update Telecommunication Master Plan									
96		Expand the Telecommunication System Plan and Develop Facilities in Expansion Areas									
97	Environment Management Program	Waste Management Project	Municipal Waste Separation (Reduce, Reuse, and Recycle)								
			Green Solid Waste Management Park (Sorting, Recycling, Dumping)								
98		Environmental Monitoring and Emergency Response Plan Devepoment	Gulf of Aqaba (Using Environmental DNA)								
			Air Quality in South Industrial Area								
99		Coral Reef Management Plan									

Shallalah

High-Risk Spot of Flood in Aqaba North Park

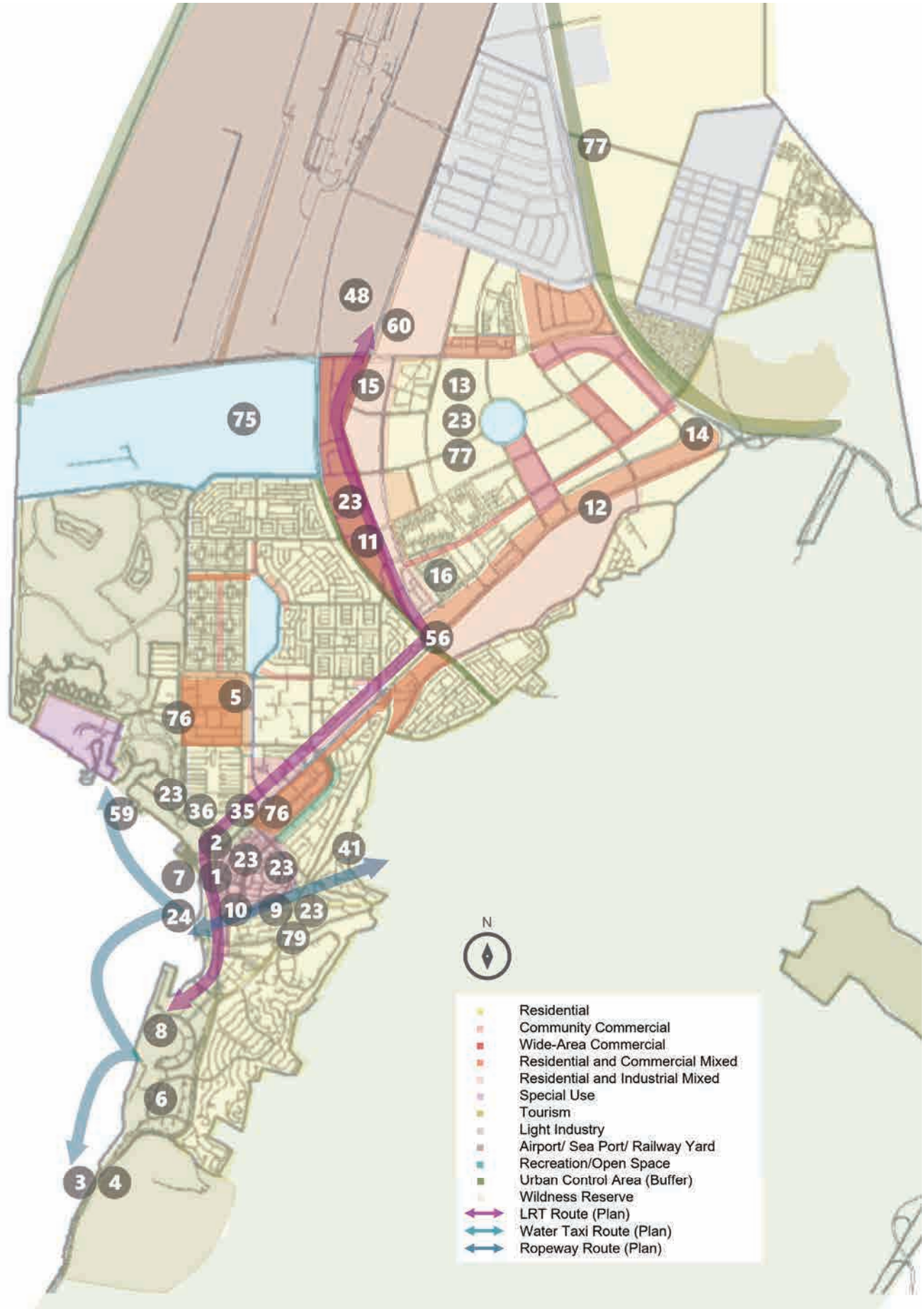
Public Beach and Theater

Al Hafayer Area

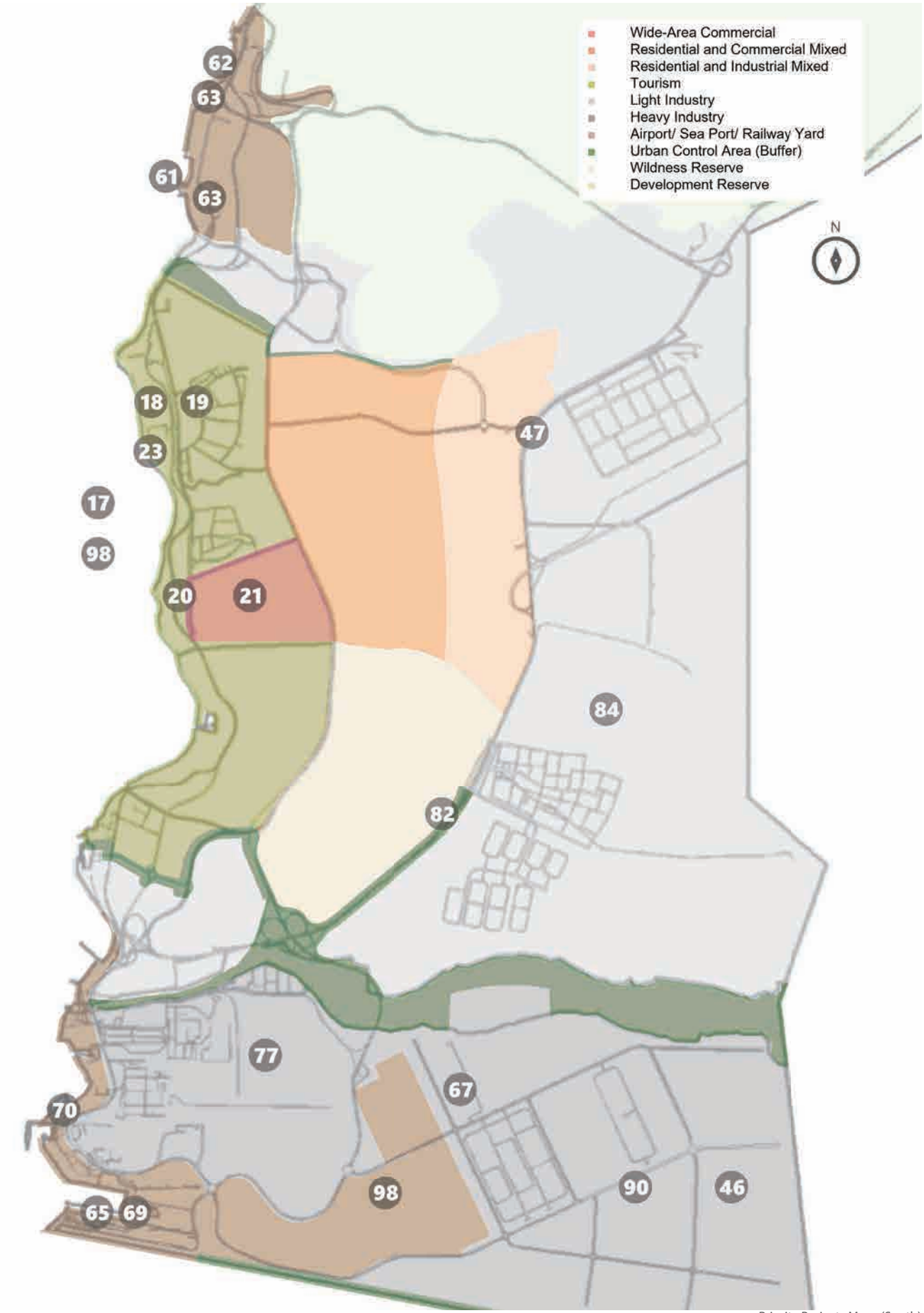
Downtown

Container Terminal

Islamic Ayla Ruin



Priority Projects Map (North)



Priority Projects Map (South)

IMPLEMENTATION STRUCTURE

IMPLEMENTATION & MONITORING

Monitoring Mechanism

1. Setting and Tracking of KPIs Over Time
    - It is desirable to set KPIs for each policy in order to monitor the effectiveness of the initiatives positioned in the M/P. The following points should be considered when setting and monitoring KPIs.
    - Monitoring should be conducted both from the perspective of monitoring the status of implementation (progress, development results, etc.) and from understanding the effects (targets, actual results, impact, etc.).
    - Monitoring is to be conducted by ASEZA on its own to understand the status over time.
    - The KPIs should be defined by using precise numerical values that can be derived from statistical data. Statistical data should rely on national-level surveys done over time, and should enable measuring current and future trends, as well as comparison with other cities. However, for some indicators, ASEZA needs to carry out its own survey and collect the data by itself.
2. Understanding Citizens' Intentions
    - This master plan was based on a questionnaire survey of citizens and visitors to find out how satisfied they are with the environment where they live, stay, and commute. It is important to know whether the actions that will be taken based on this master plan are effective in raising these satisfaction levels.The following aspects should be considered when surveying the opinions of citizens and visitors.
    - Administer a survey to residents and tourists periodically (about once every five years).
    - To compare the changes from the previous survey outcomes, the survey objectives and questions should be mostly consistent.
    - Concentrate on initiatives that have high importance and low satisfaction, and assess the relationship with the progress of the initiatives.

Structure and Process

It is necessary to establish an organizational structure to implement and monitor the initiatives, and to continuously determine the effectiveness of the plan and the need for its review. Specifically, the following processes are required.

- The Delivery Unit and the newly established City Management Center will collaborate and share information on the initiatives (projects) positioned in the plan.
- Data on each sector will be collected in cooperation with the Smart City Officer who will be appointed and established within each sector.
- The Delivery Unit and the City Management Center will annually monitor the progress of the initiatives (projects) implemented by each sector, including details of implementation, budget, progress, and problems and solutions in promoting the initiatives.
- Each sector will report on its initiatives (projects) upon request from the Delivery Unit and the City Management Center.
- The Delivery Unit and the City Management Center will conduct interviews, etc. with those in charge of the project upon receiving reports from each sector regarding the progress of the project, and will examine problems and solutions related to progress.
- The Delivery Unit and the City Management Center compile the reports from each sector and report to the Board of Commissioners on the progress of the plan, solutions to problems, etc.
- The Board of Commissioners receives the reports, evaluates the progress of the plan, and gives instructions for continuous operation and review of the plan.

Securing Budgets and Examining Project Methods

- To proceed with the initiatives and priority projects in the master plan, the project approach, implementation body and cost-sharing for moving forward the projects needs to be considered as follows.
- For each initiative/projects, specify its contents in individual plans, and clarify the contents, scale, implementation period, etc.
- Calculate the project cost (design, construction, maintenance, and operation) required to promote the project based on the plan.
- Evaluate the Benefit-Cost ratio (B/C), income and expenditure (for projects that generate revenue) and conduct interview to private sector to identify potential participation in project implementation, maintenance, and operation to clarify the project approach and budget acquisition (cost sharing).
- For those projects that are difficult to be promoted will need review.

CONCLUSION

In this project, under the cooperation of the JICA study team, ASEZA, and ADC, we conducted opinion hearings and consultations with various related organizations, surveys of residents and Aqaba visitors, and stakeholder meetings held as part of the SEA. Through these activities, we analyzed the current state and challenges of ASEZ from various perspectives and advanced the consideration for updating the master plan.

As a result, the future urban development vision for ASEZ was established as 'Authenticity and Promising Opportunities,' with three key pillars: [QUALITY of LIFE] Full of Smile, from expansion-oriented to value-driven development; [OPPORTUNITY of BUSINESS] Full of Investment Opportunities, from labour intensive to high value-added tourism, industries and education; and [VALUE of ENVIRONMENT] Full of Green and Nature from grey infrastructure to green Infrastructure.

As a socio-economic framework, the future population of Aqaba in 2040 was set at 540,000. In response to this population growth and economic development, the concept of a 'Compact and Networked City' was proposed. This involves optimizing land use and creating hubs with designated functions to enhance the quality and value of urban spaces. By connecting these hubs, the proposal aims to facilitate the movement of people and goods within ASEZ, allowing the urban structure to function collaboratively as a single urban system.

In the land use plan, while maintaining areas with high-purity land use, such as low-rise residential areas that have been established in ASEZ, the new plan aims to create more attractive urban spaces by allowing mixed-use areas that improve convenience and workability through proximity of residential and commercial zones. This includes proposing new land use classifications that permit high-rise buildings. Through repeated consultations with ASEZA and ADC, a new land use plan was developed. It is strongly hoped that appropriate design guidelines will be created in accordance with this land use plan and that they will be implemented with proper enforceability.

Additionally, ASEZA was divided into 9 zones, and specific land use, urban design, and sector-specific strategies were applied to each zone, organizing basic development concepts that take into account the unique characteristics of each zone. Furthermore, specific initiatives and projects for the realization of this master plan were organized into 99 priority projects under 9 development programs. These projects were weighted and prioritized based on their contribution to the three development strategies, the degree of demand from residents, social and environmental acceptability, and ease of implementation.

In updating this master plan, weekly regular meetings with the core project members of ASEZA and ADC, sector-specific discussions through four technical working groups, and counterpart capacity building through training in Japan were conducted. Throughout this process, we always kept in mind the cultivation of ownership by ASEZA and ADC and worked towards consensus building among stakeholders. This master plan involves not only the urban planning department of ASEZA but also broadly encompasses the activities of ASEZA, ADC, and related organizations. It is strongly hoped that organizational cross-functional efforts, collaboration with diverse stakeholders, and activities as a 'One Team' beyond organizational boundaries will continue to be pursued towards the realization of this master plan.

Furthermore, this master plan is not meant to be static over the long term; rather, it should be continuously monitored for progress and for changes in various internal and external conditions surrounding ASEZ. It should be periodically reviewed and adjusted as necessary (for details on this mechanism, refer to the following pages). It is strongly desired that this master plan continues to be utilized, reviewed, and realized as a 'living' document.

Aqaba Special Economic Zone Authority

Aqaba - Prince Hussein Bin Abdullah II Street and Queen Rania Street

TEL: +96232091000

FAX: +96232091056

MAIL: aldiwan@aseza.jo

Po.Box: Aqaba 2565, Jordan

www.aseza.jo