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Urban Planning & Infrastructure in Migration Contexts-Jordan

VISION, AREA PLANNING, & ACTION PLAN REPORT

Al Hussein Neighbourhood

23 December 2024

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Project Manager: Herman Pienaar
Project Supervision HQ: Niina Rinne**,** Jia Cong Ang
Project Supervision Jordan Office: Deema Abu Thiab
Project Manager Jordan Office: Ayah Hammad

Contributors Jordan Office: Alia Asad, Ledia Nimri, Mai Qunaibi, Tina Hakim
Contributors HQ: Ludovica Brambilla, Sammy Muinde
Greater Mafraq Municipality Contributors: Suhaib Harahsha, Mazeed Khazaaleh
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Abbreviations

BAU	Business As Usual
BRT	Bus Rapid Transit
DLS	Department of Lands and Survey
GCM	Global Compact for Migration
GIS	Geographic Information System
GMM	Greater Mafraq Municipality
GPS	Global Positioning System
JNUP	Jordan National Urban Policy
LTRC	the Land and Transport Regulatory Commission
MoE	Ministry of Education
MoH	Ministry of Health
MoLA	Ministry of Local Administration
MOWI	Ministry of Water and Irrigation
PWD	People with Disabilities
RFP	Request For Proposal
SDG	Sustainable Development Goal
SECO	Swiss State Secretariat for Economic Affairs
SME	Small Medium Enterprises
UN-HABITAT	United Nations Human Settlements Programme
UPIMC	Urban Planning and Infrastructure in Migration Contexts
WAJ	Water Authority of Jordan
YMC	Yarmouk Water Company

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Executive Summary

In a country that has welcomed approximately 4 million refugees due to instability in the region, migration is profoundly associated with the history of Jordan, whereby the various waves have played a key role in shaping the country's political, economic, social, and urban characteristics. The Urban Planning and Infrastructure in Migration Contexts (UPIMC) programme recognizes the need to support municipalities with a long-term strategic approach in connecting migration and displacement affected neighbourhoods with access to public services through financeable infrastructure investments.

Approach

The UPIMC programme is being implemented in three countries: Cameroon (Douala), Egypt (New Damietta), and Jordan (Amman, Irbid, and Mafraq). This report is a product of the programme implementation in Mafraq.

The programme consists of four interlinked components: (1) spatial analytics and urban profiling, (2) developing a strategic vision and scenario building, (3) defining prioritised infrastructure investments and establishing linkage to financing, and (4) contributing to knowledge exchange. In the first component, the UPIMC team developed **the Mafraq Spatial Profile** based on a spatially focused cross-sectoral situational analysis of urban settlements hosting displaced populations, allowing local stakeholders to get a comprehensive spatial understanding of the existing situation as a basis for decision-making, long-term urban development strategies, and infrastructure investment planning. The spatial profile identified and mapped challenges, provisions, and gaps in public infrastructure services in coordination with humanitarian interventions at the national, regional, city, and neighbourhood levels. A Geographic Information System (GIS) program was utilized to undertake the spatial analysis throughout the profile, which included measuring the accessibility to basic services within 5, 15, and 30-minute distances at different scales, and measuring the demand on infrastructure networks.

This report is the output of the second component and builds on the developed spatial profile. Based on a comprehensive selection criteria and stakeholder consultations during the first component, Al Hussein Neighbourhood in Mafraq was selected as the pilot neighbourhood for the development of a shared strategic vision and scenarios, the outlining of an action plan for achieving this vision, and the identification of prioritized projects and infrastructure investments, which aim to improve the quality of life of refugees and host communities living in one of the most affected neighbourhoods in Mafraq City following the influx of refugees. The chapters of this report comprehensively outline this process.

Vision

As this report shows, the development of a shared strategic vision was highly participatory and inclusionary, involving critical institutional stakeholders together with representatives from civil society. Through a community consultation workshop, the residents of Al Hussein Neighbourhood proposed several key words to be embedded within the vision statement of their neighbourhood. Accordingly, the neighbourhood's vision statement was formulated, taking the needs and aspirations of the neighbourhood in the coming 15 years into consideration. The Al Hussein neighbourhood Vision thus calls for "An Investment-Attractive, Well-Developed, Inclusive, and Resilient Neighbourhood, Empowering Its Community and Attracting Investments for a Brighter Future."

Scenario Building

The scenario building process analysed how the urban situation in Al Hussein Neighbourhood could develop over the next fifteen years in relation to the built environment. This considered the possible events, or what were referred to as "variables", that would result in large changes to the built environment, and the expected impacts and probabilities of these developments. The variables that were assessed are: 1) Population Growth; 2) Urban Footprint; 3) Needed Projects; 4) Climate Risk & Natural Hazards; and 5) Local Economic Development

To build these scenarios, detailed data on the current state of the neighbourhood was collected using a combination of methods, namely GIS mapping and on-site surveying and observation. This data was then thoroughly analysed in relation to the five selected variables to determine how Al Hussein Neighbourhood could be spatially and functionally configured in 2039.

Two scenarios were developed; Firstly, the "Business As Usual (BAU)" scenario visualized the neighbourhood in 2039 if no or minimal measures are implemented. Secondly, the "Optimal" scenario rethinks the mosaic of the Al Hussein Neighbourhood to establish a clear link between

what should be done to transform the neighbourhood into an investment-attractive, well-developed, inclusive, and resilient neighbourhood based on the formulated vision, and how the different sectors can support this transition. This optimal scenario includes 11 needed projects that should be implemented in the next 15 years. A scoring matrix (Annex B) was developed to identify the highest priority projects according to their urgency, their transformative social, environmental, economic, and spatial impacts, as well as their alignment with the existing governmental plans and the views of the local community and key stakeholders. By conducting a technical assessment of each project and consulting the community and relevant governmental institutions, the optimal scenario was finalized, and the needed projects were prioritized to determine when they should be implemented.

The Blueprint for Implementation: The Al Hussein Neighbourhood Action Plan

The blueprint for achieving the optimal Al Hussein Neighbourhood by 2039 has been formulated by translating the strategic recommendations proposed in the optimal scenario into implementable actions through a detailed action plan that can tackle incremental spatial, environmental, social, and economical transformations. This action plan provides an overarching framework that guides the Greater Mafraq Municipality (GMM) and the key stakeholders from the relevant entities to ensure a proactive and manageable approach to implement the needed changes at the neighbourhood level. It outlines how to coordinate the identified needed projects in Al Hussein Neighbourhood. Within this context, needed projects were collectively assessed, whereby projects with possible synergies were grouped together to ensure that the limited available resources are utilized in the most efficient and cost-effective way to deliver the highest possible impact.

This action plan is split into short-, mid-, and long-term phases, with each spanning five years, starting from 2025 and ending in 2039. The short-term phase (2025-2029) is the period in which the high priority needed projects identified through the scoring matrix must be implemented. These projects include upgrading water and sewerage networks; upgrading road and sidewalk networks; enhancing street lighting in the critical areas; implementing flood mitigation interventions; developing the commercial area; rehabilitating residential buildings of critical and substandard conditions; and installing a bus stop shelter. The mid-term phase (2030-2034) consists of the medium-priority projects, including rehabilitating the existing Al Hijazi Railway Park; constructing a public park; and upgrading the existing public schools. Finally, the long-term phase (2035-2039) includes constructing a new public school.

The action plan in this report outlines the actions needed for each project and the implementation sequence to follow during these phases. Several factors were taken into consideration, including the urgency of the situation, spatial overlaps between projects, the cost-efficiency of the implementation, alignment with governmental plans and strategies, as well as alignment with donors/financiers' strategies and current interests.

Project Briefs were developed (Annex C) for each high-priority projects to begin the mobilization of resources in 2025. They describe the project, its objective, beneficiaries, impact, partners, life cycle, time-line, and financial details. These briefs will link the prioritized infrastructure investments to potential partners for financing and implementation.

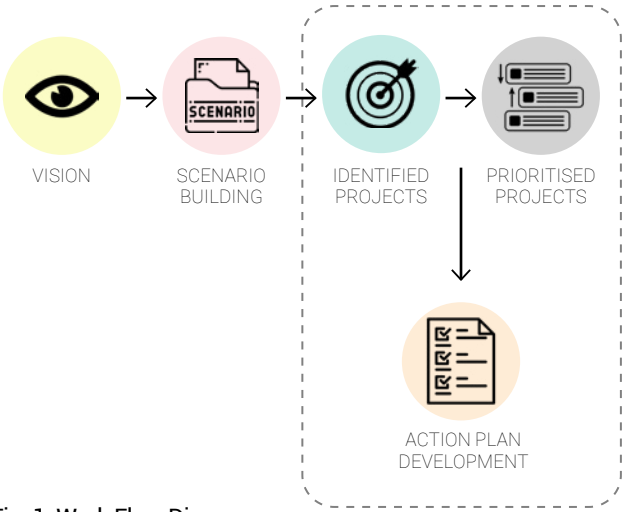


Fig. 1: Work Flow Diagram

Introduction

With over 55% of the global population currently residing in urban areas, a figure projected to rise to 68% by 2050, cities face increasing challenges in meeting the diverse needs of their inhabitants. Urban spaces have become the primary destination for migrants and displaced populations, with more than 60% of refugees and 80% of internally displaced persons (IDPs) seeking shelter in cities. This trend intersects with growing climate change challenges, posing unprecedented difficulties for cities and local governments in ensuring the well-being, integration, and social cohesion of urban dwellers, particularly in the most vulnerable neighborhoods. The urgency for long-term sustainable solutions tailored to urban environments highlights the need for a stronger connection between humanitarian and development efforts, especially in the face of protracted crises and displacement.

About UPIMC Programme
UN-Habitat's Urban Planning and Infrastructure in Migration Contexts (UPIMC) programme has partnered with the Swiss State Secretariat for Economic Affairs (SECO) to improve access to reliable services and socio-economic opportunities for migrants and host communities in urban settlements. UPIMC supports various municipalities hosting displaced populations in developing long-term strategies that harness their potential to bolster resilience to current and future challenges. UPIMC promotes multi-sectoral collaboration among UN-Habitat, national and local governments, humanitarian actors, development partners, and international financial institutions to develop sustainable interventions that build inclusive, safe, resilient, and sustainable urban environments. The programme is currently implemented in three countries: Cameroon, Egypt, and Jordan.

Approach and Methodology
UPIMC employs the phased methodology of UN-Habitat's Urban Lab, an integrative urban planning and design facility. The methodology, characterized by its flexibility and adaptability, revolves around three primary areas of focus:

(1) Understanding the City: Identifying key trends, challenges, and opportunities through comprehensive analysis.
(2) Planning the City: Validating needs and designing solutions through participatory activities aimed at strategic planning.
(3) Transforming the City: Determining how, where, and when changes should be implemented to achieve optimal results within the available resources.

To operationalize this approach, the UPIMC programme comprises four interconnected components:

- **Spatial Profiling:** Conducting detailed cross-sectoral analysis to understand the urban landscape and identify intervention areas.
- **Strategic Vision, Area Planning, and Action Planning:** Designing strategies and plans to guide transformation at the local level.
- **Prioritized Infrastructure Investments and Linkage to Finance:** Translating plans into tangible projects connected to financial opportunities.
- **Knowledge Exchange:** Promoting collaboration and sharing insights among stakeholders to foster innovation and sustainability.

Objectives
UPIMC aims to contribute to national and international efforts to improve the quality of life for migrants and host communities by supporting effective, evidence-based investments for durable solutions at the local level. The programme seeks to mitigate vulnerabilities associated with migration and displacement, empowering local governments and stakeholders to foster integration and sustainable development for both migrants and host communities. By doing so, UPIMC significantly contributes to achieving the Sustainable Development Goals (SDGs) at the local level.

The programme goes beyond analysis, using its spatial profiling process as a catalyst for action. By pinpointing critical challenges and their precise locations, it sets the stage for developing urban visions and action plans for selected pilot areas. This approach ensures impactful local interventions targeting migrants, displaced populations, and host communities. It's not just about understanding the context; it's about planning, transforming, and achieving sustainable change at the local level.

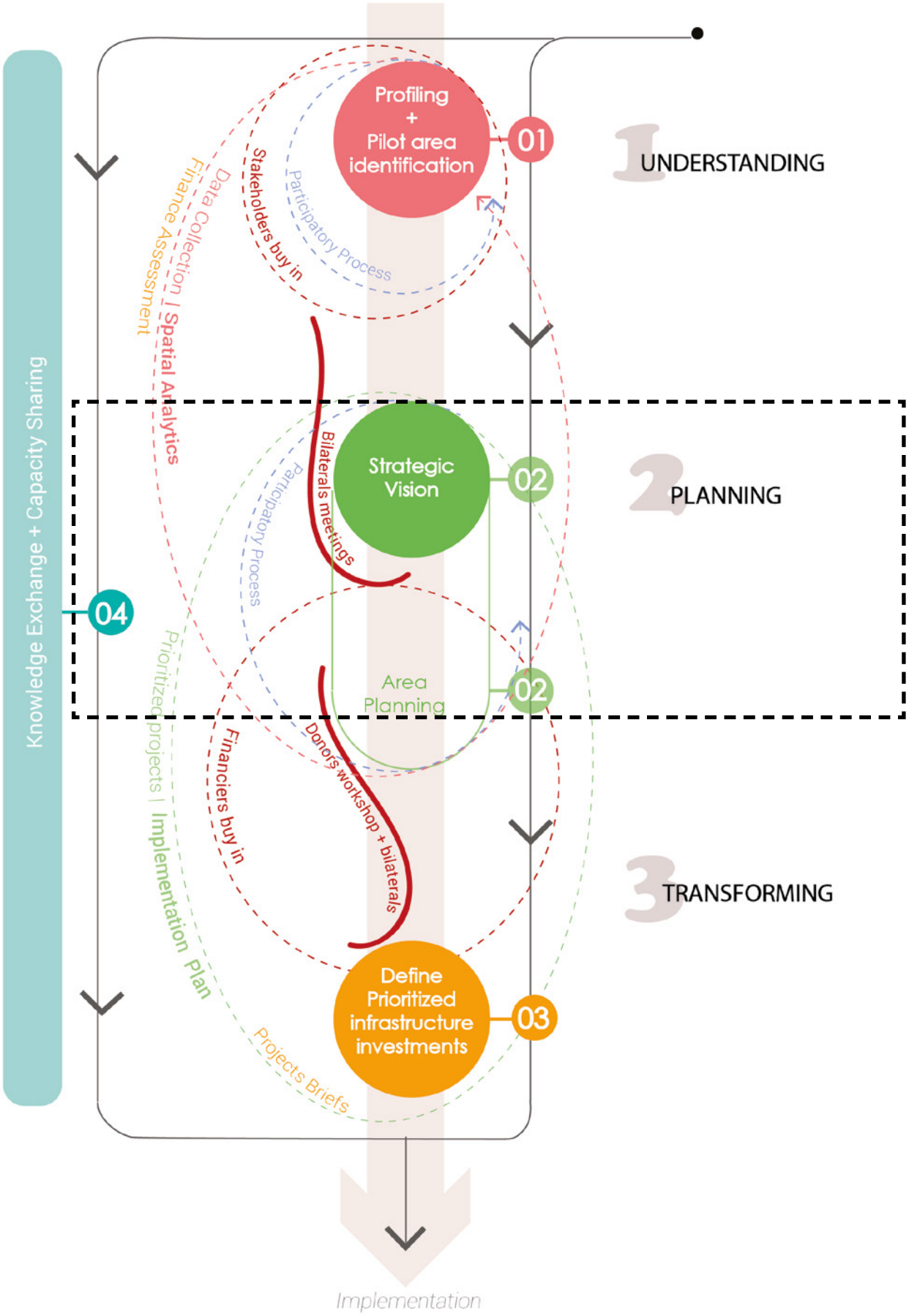


Fig. 2: The UPIMC programme overall process. Source: UN Habitat

About this Document- UPIMC Spatial Profiling Component
In the first phase, UPIMC develops spatial profiles through a comprehensive cross-sectoral and multi-level analysis of urban areas hosting migrants and displaced populations. This provides a spatial understanding of the dynamics, challenges, and opportunities of migration and urban development in the pilot cities, which will crucially inform long-term decision-making in urban development and infrastructure planning. The profiling exercise maps critical intervention areas and their precise locations and is used to identify the pilot neighbourhood through participatory validating workshops. While the spatial profile is a stand-alone document, it functions as a road map guiding subsequent steps taken by UPIMC in the selected neighbourhood. It is therefore essential to consider it while reading the vision, scenarios, and action plans that are developed during the second and third phase.

This publication comprises the spatial profiling of the city of Mafraq, in Jordan and represents the first component of the project in the city. The profiling exercise is to be used to inform the transformation of the city and especially of its most vulnerable neighbourhoods through targeted interventions in alignment with global objectives and trends. This approach encapsulates the essence of 'localizing,' linking global objectives to the very grassroots level. Moreover, the detailed analysis of dynamics and priorities that are identified at the city and neighbourhood levels can crucially inform broader development trajectories in the country and the region.

Target Audience
The Spatial Profile provides entry points for national and international practitioners who seek to develop long term development strategies in their cities, as well as donor organizations and potential financiers. At the same time, this profile targets grassroots individuals, who are the primary change-makers in their communities, by providing a spatialised overview of the main potentials and opportunities of the profiled cities.

UPIMC in Jordan
The UN-Habitat Jordan office has an established presence in Jordan, including contextual experience within the Jordanian context and partnerships with key stakeholders. On the ground, the UN-Habitat Jordan team is engaging the relevant actors, including the local community, and agencies, including local NGOs and CBOs, to explore catalytic development projects to improve access to basic needs and infrastructure as well as incremental changes in the enabling policy environment that will contribute to the delivery of long-term visioning and priority areas. It provides necessary logistical support to ensure the success of the UPIMC programme, most importantly regarding on-the-ground coordination and ensuring a multi-stakeholder approach and the completion of deliverables within the established time-lines. Additionally, Phase 2 benefits from the existing synergies with other UN-Habitat Jordan programme activities in Mafraq, including the development of a water-sensitive master plan of Greater Mafraq Municipality and an urban observatory.

Two of the most significant challenges faced by the UN-Habitat Jordan team during phase 2 was the limited municipal capacities and lack of up-to-date data in the Greater Mafraq Municipality. This resulted in difficulties when developing the Spatial Profile and formulating strategic analysis and spatial mapping. In the context of GMM's uniqueurbanizationissues,includingrapidpopulationgrowth,it was found that, when data was available, it often proved to be outdated, further complicating the task of accurately assessing the challenges and opportunities for strategic sustainable development in GMM. However, within these challenges lie significant opportunities for transformative impact. Including opportunities such as, supporting the development of municipal staff's capacities and their understanding of sustainable development approaches, to enhance the resilience and adaptability of this important local governance structure. Additionally, supporting in the collection and analysis of data offers the opportunity to leverage local and national partnerships in Jordan to establish interconnected and collaborative data collection and management systems. Furthermore, the participatory data collection methods implemented by the UN-Habitat supports in enhancing the accuracy of data as well as increasing community involvement and ownership in the decision-making process.

Al Hussein Neighbourhood, Mafraq City (UN-Habitat, 2024)

Moving from Assessment to Strategic Vision and Area Planning

The spatial profile has established and summarised the challenges and opportunities that impact Mafraq City in Jordan. Understanding these challenges and opportunities, which span categories of urbanisation, climate change, socio-economic challenges, refugee policy and land management, provides a contextual framework to the current status of Mafraq City. These challenges and opportunities are aligned to the SDGs and have been verified by stakeholders through engagement sessions hosted by UN-Habitat.

Building upon the spatial and analytical work under the first component of the UPIMC Programme and the concluded recommendations for the selection of Al Hussein Neighbourhood as the pilot area in Mafraq City, this document intends to cover the second component, which is to "Develop a Strategic Vision, Area Planning & Action Planning" for Al Hussein Neighbourhood.

Al Hussein Neighbourhood has an area of 0.39 km^2, a total population of 9,226 inhabitants based on the 2015 census, and, accordingly, a population density of 23,565 person/km^2.

Al Hussein Neighbourhood specifically stands out as the most vulnerable neighbourhood heavily impacted by the influx of refugees, hosting the highest concentration compared to other neighbourhoods within the city. Its vulnerability is exacerbated by the intersection of two Wadi streams, significantly increasing the risk of floods in Al-Hussein.

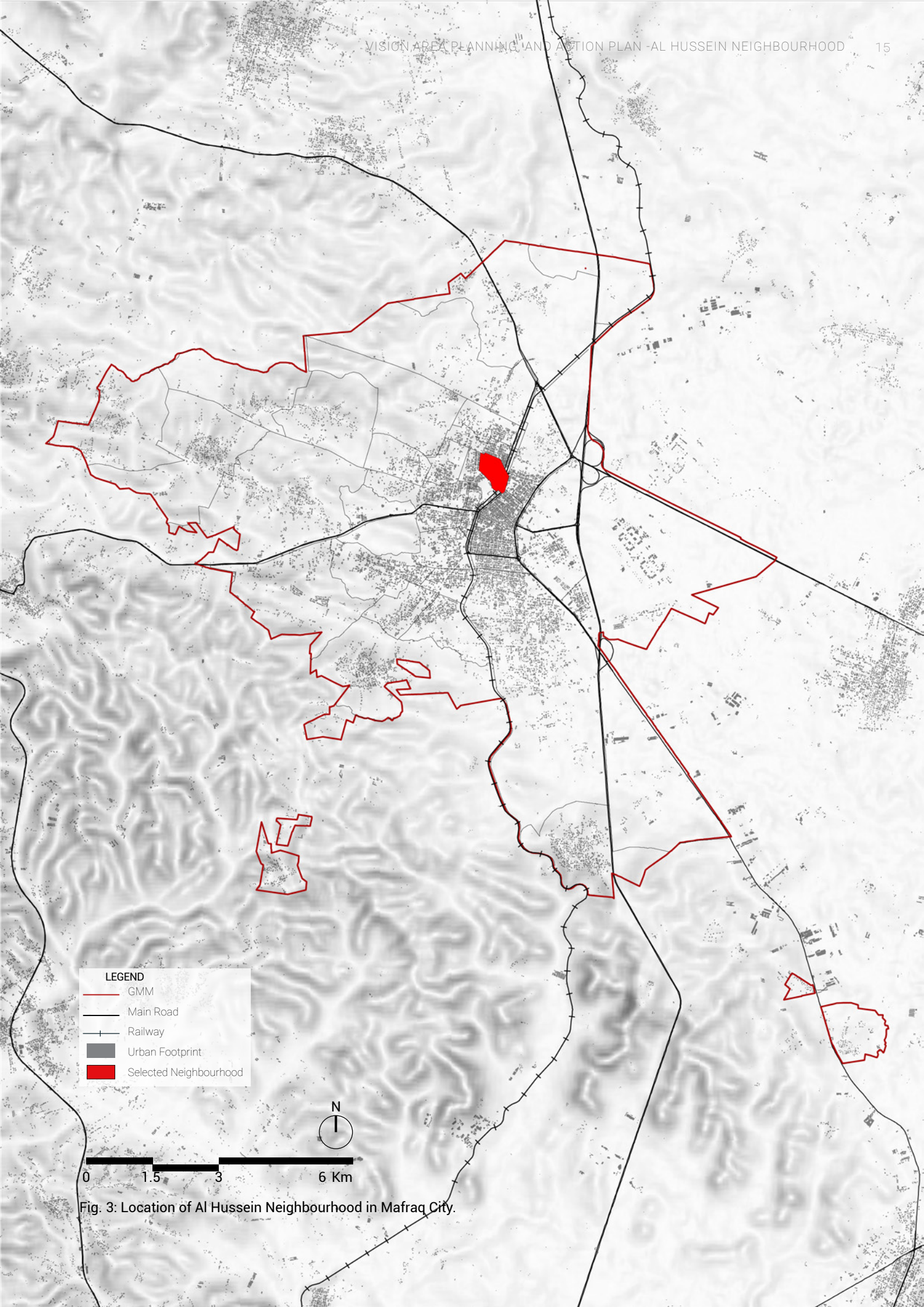


Fig. 3: Location of Al Hussein Neighbourhood in Mafraq City.

Voices from the Community and Stakeholders- Detecting the Challenges and Needs

UN-Habitat conducted two interactive workshops, one with key stakeholders on the 5th of February and another with the local community on the 6th of March. Through which participants mapped challenges, needs, and opportunities, using the Maptionnaire tool - an engagement platform that enables city planners to collect local insights and make evidence based decisions. This participatory exercise ensures comprehensive understanding of the qualitative aspects of the neighbourhood, as well as to gain better understanding of the challenges, needs, and opportunities of the Al-Hussein Neighbourhood.

Findings from the mapping exercises indicate major alignment around challenges and needs between both groups. The challenges and needs are further classified based on the SDGs and explored in the text below.

SDG 1: No Poverty

Cross-cutting SDGs

The local community highlighted the issue of poverty within the neighbourhood and lack of job opportunities, especially for those over 40 years of age.

Accordingly, interventions such as the creation of job opportunities in the neighbourhood through **SME funding programs** were suggested by both groups. According to the local community SME's could include hair salons, fruit markets, tailor and catering businesses.

SDG 3: Good Health and Well Being

Cross-cutting SDG

According to the findings uploaded to Maptionnaire, the main challenges surrounding the healthcare system is limited access due to its overstretched capacity with the exponential growth in population. The local community also highlighted that there is a lack of medication at the primary health center within the neighbourhood. Moreover, residents flagged that the neighbourhood lacks a center for people with disabilities.

The local community require the construction of **a comprehensive health centre or an upgrade to the existing primary health centre** within the neighbourhood **to a comprehensive one,** as well as **building a center for people with disabilities and speech issues.** Despite stakeholders identifying access to healthcare as one of the challenges, they did not propose any interventions to address it.

SDG 4: Quality Education

Cross-cutting SDGs

Both groups highlighted that access to education is hindered due to the growing population. Residents focused particularly on the lack of girl schools, this could have been exacerbated by the closure of a girls school, pinpointed through Maptionnaire. Key stakeholders also mentioned, the lack of availability of public land to establish schools. Moreover, residents stressed the lack of public school buses, which requires students to travel for an hour to reach their place of education.

The local community require the **establishment of more schools including nurseries,** with a particular request for **primary and secondary girls schools,** as well as **establishing an adult literacy center.** Moreover, residents require providing **public school transportation**. Despite stakeholders identifying access to education as one of the challenges, they did not propose any interventions to address it.

SDG 6: Clean Water and Sanitation

Cross-cutting SDGs

The water, sewerage, and rainwater drainage networks present the biggest challenges for Al Hussein Neighbourhood. Main issues include overstretched water network, making water service weak and limited. No rainwater drainage network, exacerbating flash floods and flooding of the wadi. The wadi is considered a major health hazard within the neighbourhood, it continuously floods,the buildings within its buffer zone are prone to collapse. Residents also mapped multiple broken manholes, and the need to maintain and enhance the sewerage network. Moreover, residents highlighted a big issue around cleanliness and accumulation of waste across the whole neighbourhood, causing health hazards, partly due to the lack of waste collectors.

Both groups were aligned around the required interventions which include, **upgrading the water and sewerage networks** and **building a rainwater drainage network.** A project which focuses on **solving the issue of the wadi,** suggestions include **a retaining wall.** Residents also highlighted the importance of **climate change adaptation and mitigation action at local level.**

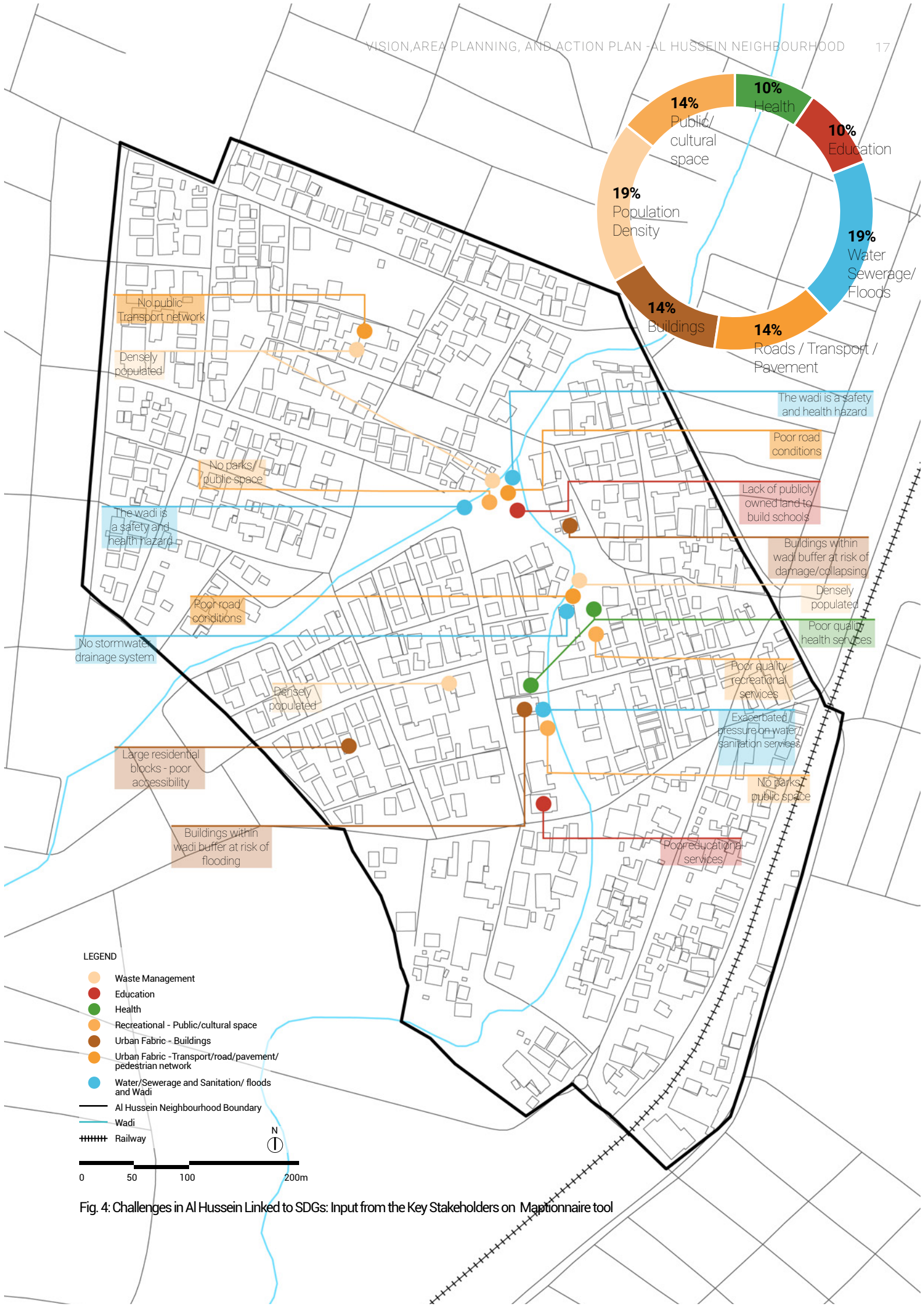


Fig. 4: Challenges in Al Hussein Linked to SDGs: Input from the Key Stakeholders on Maptionnaire tool

SDG 10: Reduced Inequality

Cross-cutting SDG

One area of contradiction between the local community and key stakeholders is refugees. Key stakeholders identified the big number of refugees as a challenge, while the local community does not, instead they highlight the lack of refugee support organizations. However, residents have requested for supporting actions for refugees, including **providing support payments, subsidizing the electricity bill,** and **free healthcare.**

SDG 11: Sustainable Cities and Communities

Cross-cutting SDGs

The findings mapped on Maptionnaire show that both groups consider the urban fabric of the neighbourhood to be one of the biggest challenges. Including but not limited to the streetscapes, buildings and public facilities. Key stakeholders consider overcrowding as one of the main challenges, with 5 repetitions. However, not once mentioned by the local community. Both groups agree on the following challenges; in regards to the streetscape, no public transport system, poor road and pedestrian network, poor planning and zoning, hindering accessibility and connectivity, lack of maintenance to old buildings that are prone to collapse. Moreover, participants mentioned poor access to recreational facilities, with no parks or public open spaces, as well as, the lack of cultural facilities. The local community highlighted the hindered feeling of safety for women in public spaces, which is an issue that should be addressed.

As such, in regards to streetscape and accessibility, the needed interventions include **rehabilitating the road and pedestrian infrastructure networks, extend a public transport route into the neighbourhood,** and **enhanced street lighting.** Additionally, residents suggest **installing traffic and pedestrian crossing lights** to make walking around their neighbourhood safer.

Regarding public recreational facilities, the needed interventions include **building safe and accessible parks and public open spaces,** ensuring these spaces are inclusive for vulnerable populations including women and people with disabilities. As well as **building cultural and recreational centers,** the local community suggests can be used to offer awareness raising sessions for youth about various topics such as, but not limited to drugs and the importance of cleanliness.

Another need is the **general cleanliness and beautification of the neighbourhood,** through **improving solid waste management** and **general greening of the neighbourhood.**

Furthermore, residents mentioned the need for home/building renovation over nine times, this is due to the poor condition of existing buildings, that pose a real threat to residents safety. As such interventions include**, the renovation and restoration of old buildings and homes, especially those located next to the wadi. A modern social housing development is proposed, designed to meet the needs of vulnerable populations, including low-income families, refugees, widows, divorcees, and the elderly.**

In conclusion, when comparing the two challenges maps—one mapped by key stakeholders and the other by neighborhood residents—a clear distinction emerged. The stakeholders concentrated on broader, large-scale issues, such as those affecting the Wadi stream, while the residents highlighted a variety of challenges spread throughout the neighborhood. This difference underscores the importance of local community participation in decision-making processes, as their detailed insights contribute to a more comprehensive and effective development strategy.

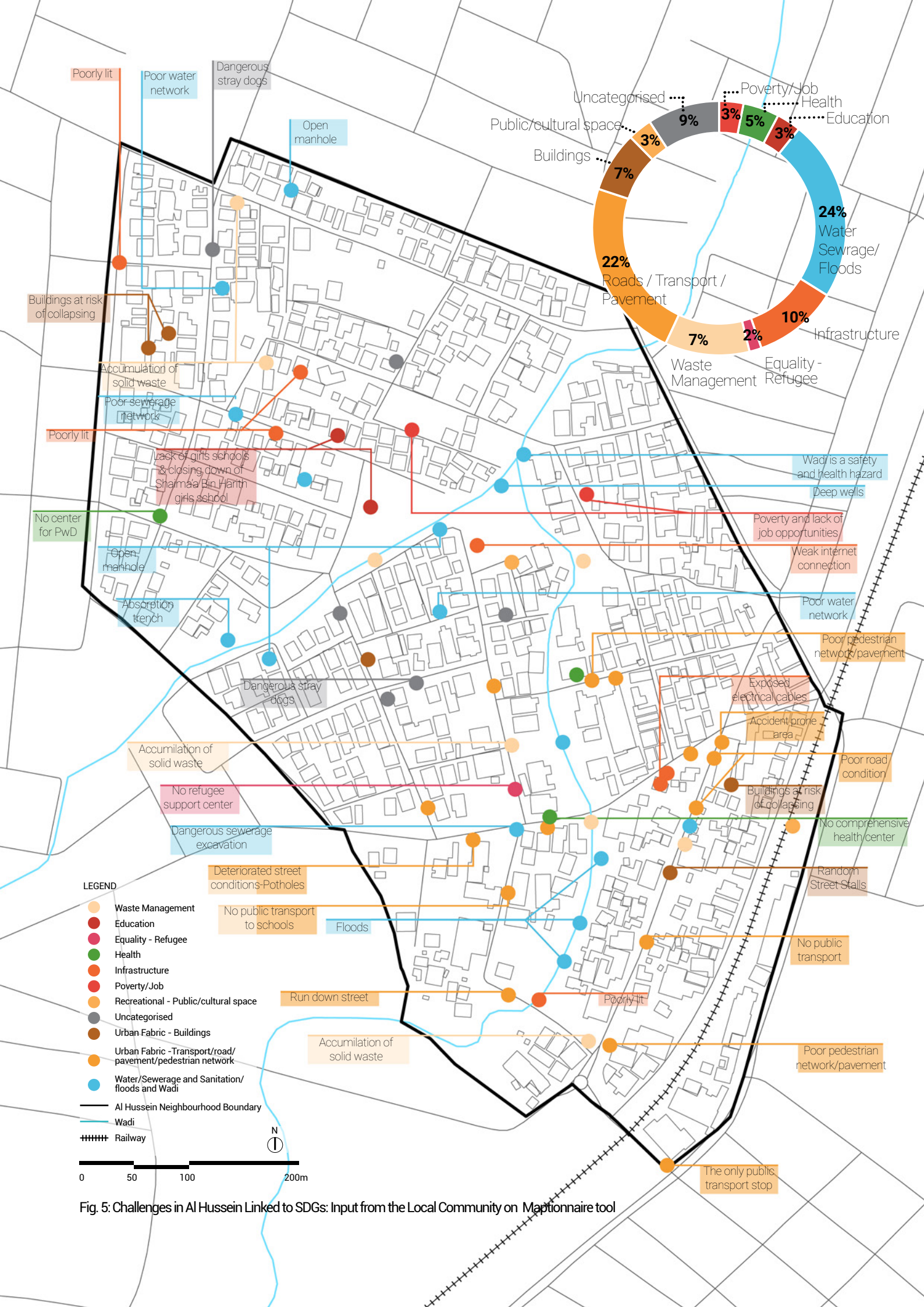
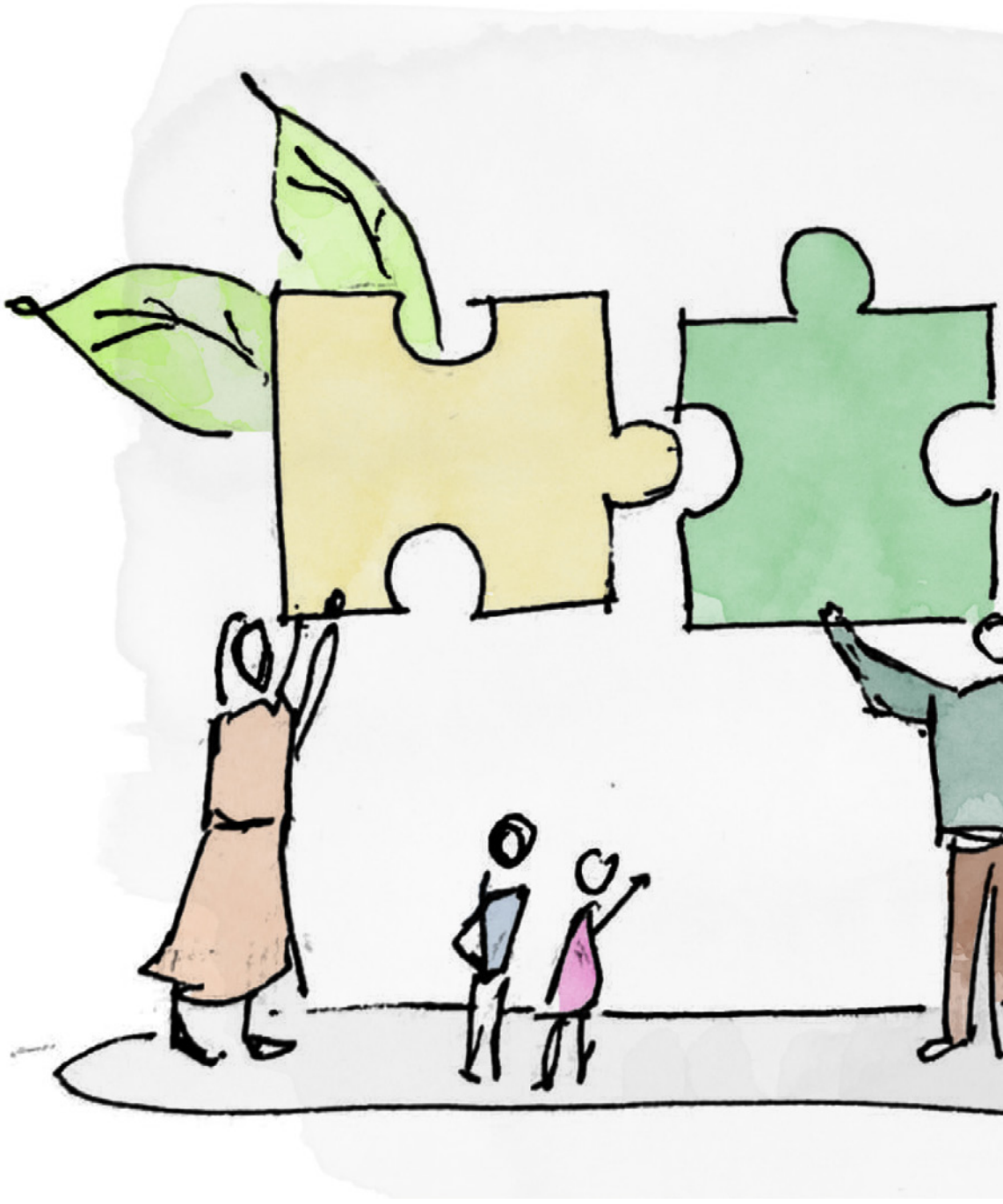
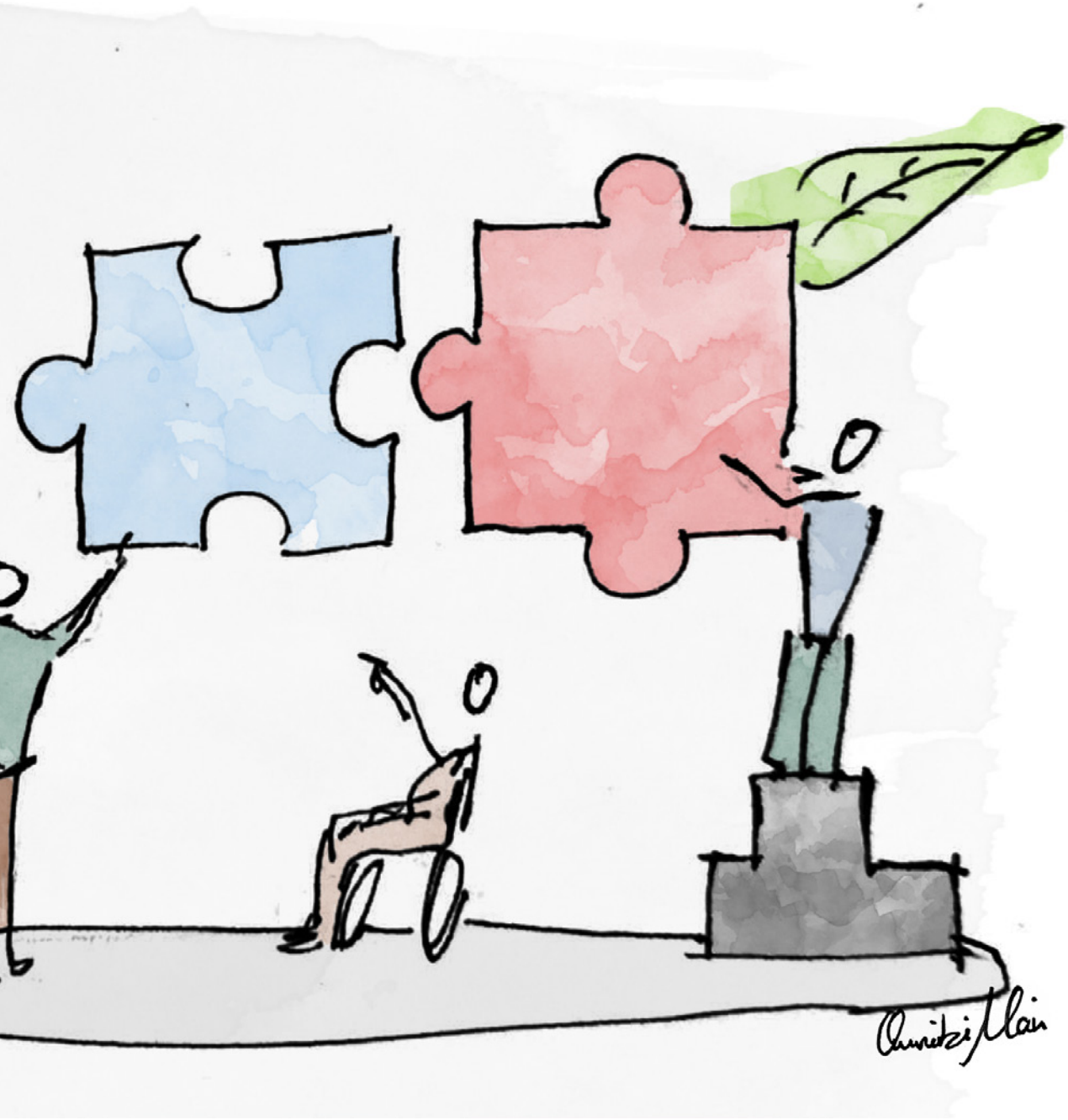


Fig. 5: Challenges in Al Hussein Linked to SDGs: Input from the Local Community on Maptionnaire tool





01

VISION

Vision Workshop

This phase of the project is considered highly participatory and inclusionary, involving critical institutional stakeholders together with representatives of civil society to provide input to the visioning process.

On the 6th of March 2024, the UN-Habitat Jordan team held the Neighbourhood Vision Workshop at Jordan Engineers Association - Professional Associations Complex in Mafraq City, which is very close to Al Hussein neighbourhood. A total of 26 participants attended the workshop, all of whom were residents of Al Hussein Neighbourhood, attendees included the head of the neighbourhood (Mukhtar Al Hara), women, youth, refugees, and representatives of people with disabilities, to ensure the inclusion of diverse age groups, genders, and nationalities within the neighbourhood. Additionally, representatives from MoLA and GMM attended the workshop.

The workshop started by informing the residents of Al Hussein neighbourhood about the UPIMC Programme and its objectives. This was followed by a recap of the first stage of profiling and analytics, participants were then divided into three groups, where an open discussion and mapping exercise highlighting neighbourhood challenges was conducted.

Next, the UN-Habitat team provided an explanation of the intended deliverables of the current stage 'Vision, Area Plan & Action Plan', through the vision formulation process, its importance, and the a step by step guide on how to develop their neighbourhood vision. An open discussion with the residents was held to identify and select keywords that should be included in the vision statement of their neighbourhood. Through this exercise, they expressed their perspectives on how they would like to see their neighbourhood transform in the upcoming 15 years.

The session ended with each group presenting their collectively identified keywords of the neighbourhood's vision.

Image during the vision session.
Source: UN-Habitat

Vision Formulation

The residents of Al Hussein Neighbourhood proposed several key words that they believe should be embedded within the vision statement of their neighbourhood. The frequency in which a key word was suggested was taken into consideration. For example, an often repeated word indicated its importance compared to a words that were not repeated or that were repeated less. Accordingly, the highest number of times a certain key word was suggested among residents indicates that this word is of the highest priority and that it would be beneficial to incorporate it into the vision statement.

Therefore, the proposed key words have been organized according to their level of importance from the residents perspectives. As shown in the word-cloud figure, the proposed key words are the following:

- Prosper
- Developed
- Safe
- Sustainable
- Inclusive
- Green

The figure highlights the frequency in which each word was repeated. For example, the key word "Prosper" had the highest number of repetitions, while the words "Green" was only mentioned once.

Vision Key Words Word Cloud

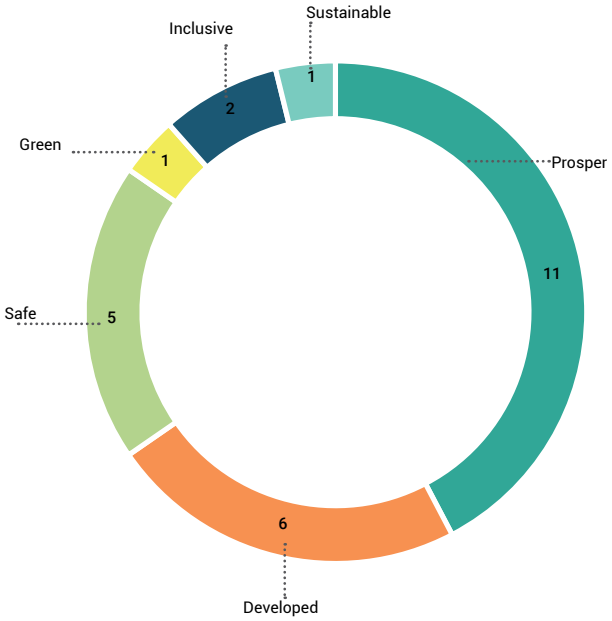


Fig. 6: Frequency of Vision Key Words proposed by Al Hussein residents

Stakeholders and local community representatives brainstorming and sharing their perspectives during the vision workshop.
Source: UN-Habitat

Vision at a Glance

Accordingly, the UN-Habitat team and the neighbourhood residents generated the neighbourhood's vision statement that takes into consideration their needs and aspirations for their neighbourhood in the coming 15 years. The Al Hussein Vision states:

An Investment-Attractive, Well-Developed, Inclusive, and Resilient Neighbourhood, Empowering Its Community and Attracting Investments for a Brighter Future

Prosperous

Well Developed

Resilient

Empowering & Inclusive

Objectives:

The objectives indicate what needs to be accomplished to achieve the above vision for Al Hashmi Al Janoubi Neighbourhood. These include:

- Create job opportunities
- Enhance flood adaptation and mitigation of the neighbourhoods infrastructure and enhance safety of people
- Improve provision of infrastructure services
- Enhance public facilities' accessibility to all the community members
- Improve the walkability in the neighbourhood
- Beautify the neighbourhood using green elements

Link to Mafraq City Vision:

When formulating the vision for Al Hussein Neighbourhood, the aim was to ensure its link to the city of Mafraq vision, "Together towards a modern model city that the citizen deserves and where the best services are provided." This was established by embedding the main pillars of a modern city, with a focus on enhancing service delivery in the Al Hussein neighbourhood vision.

Accordingly, the efforts to translate the Al Hussein neighbourhood's vision into tangible actions on the ground, will support GMM in achieving it's vision, especially if replicated in the various neighbourhoods of Mafraq.

CHALLENGES

Accessibility and Mobility:

- Poor access to public transport means
- Poor pedestrian network

Public Facilities:

- Lack of a comprehensive health care facility
- Lack of cultural centres
- Lack of adequate public spaces
- Lack of schools (specifically for girls)

Basic Infrastructure Services:

- No storm-water drainage system
- Road infrastructure is deteriorated, no public transport
- Wadi flooding
- Neighbourhood is poorly lit
- Buildings are old and prone to collapse

NEEDS

Accessibility and Mobility:

- Improve pavements and pedestrian network
- Introduce public transportation to the neighbourhood

Public Facilities:

- Establish a comprehensive health care facility.
- Provide a school for girls, a nursery, and a centre specialized for people with disabilities.
- Construct public open spaces
  Add beautification elements (greenery, etc..)

Basic Infrastructure Services:

- Upgrade water and sewerage networks
- Improve flood adaptation and mitigation around Wadi
- Rehabilitate the road infrastructure and add more street lighting
- Build a storm-water drainage system
- Improve solid waste management system
- Rehabilitate old buildings/homes

OPPORTUNITIES

Public Facilities:

- Available primary health centre
- Existing nearby parks
- The Hijaz Railway intersects the Neighbourhood, offering significant potential as an attractive public space
- Transform abandoned buildings to cafes or museums

Local community and Government

- GMM's will to support the neighbourhood's improvement
- Local community's will to support the neighbourhood's improvement

AL HUSSEIN VISION 2039

A Prosperous, Well-Developed, Inclusive, and Resilient Neighbourhood, Empowering Its Community and Attracting Investments for a Brighter Future

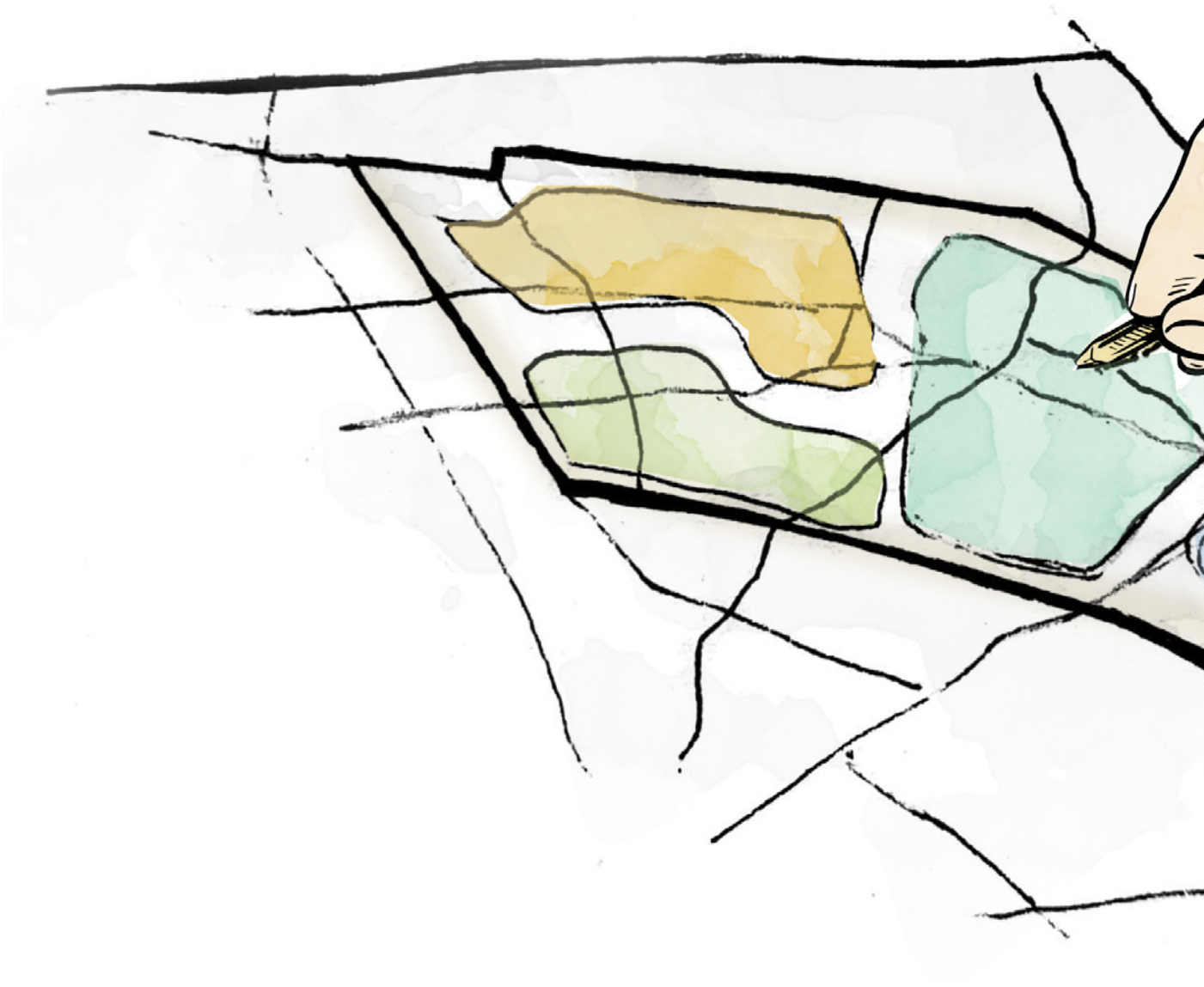
OBJECTIVES

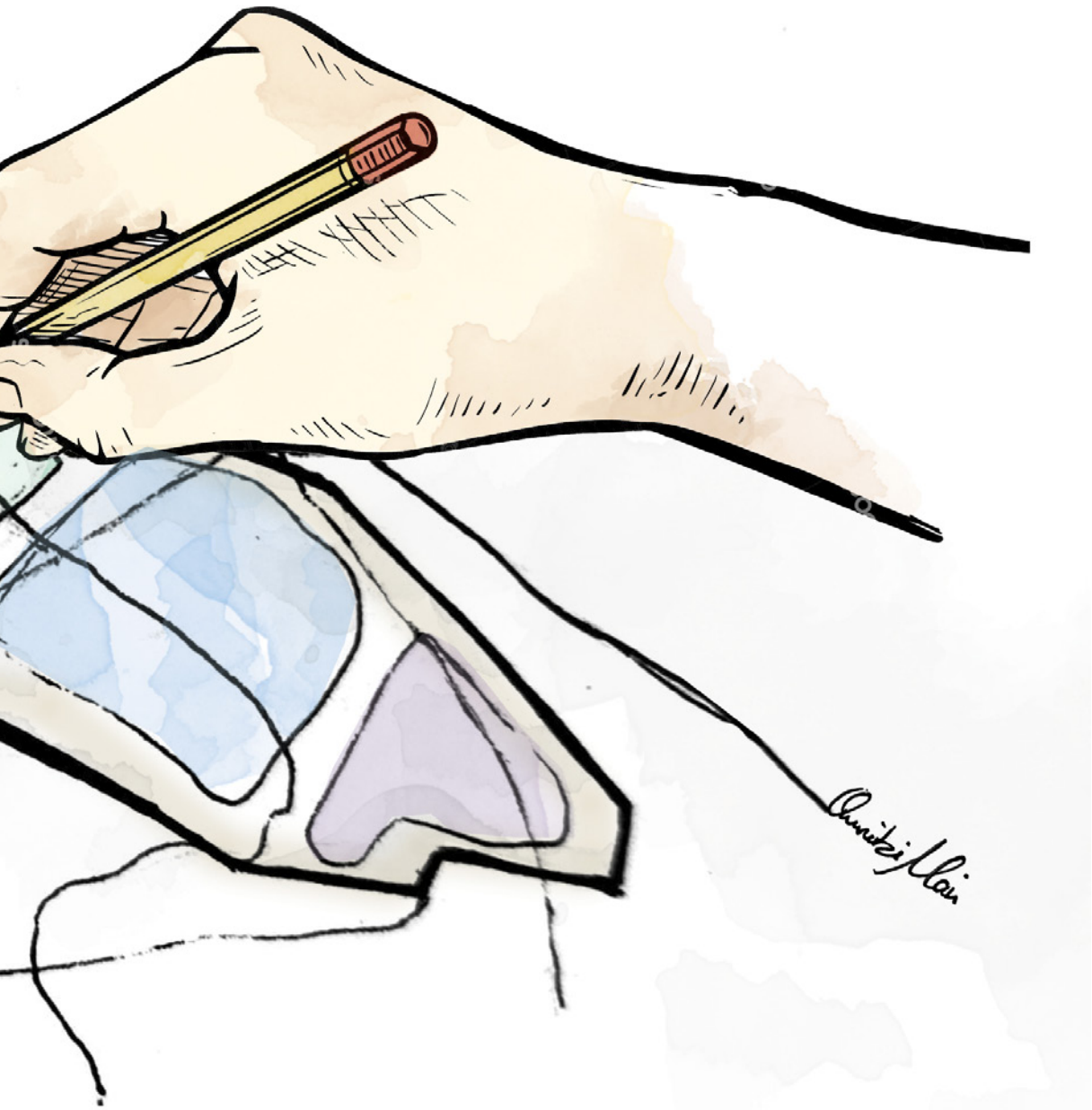
- Create job opportunities
- Strengthening Neighbourhood resilience and safety
- Improve provision of infrastructure services
- Enhance public facilities' accessibility to all
- Improve the walkability in the neighbourhood
- Beautify the neighbourhood by enhancing cleanliness and greenery

CITY OF MAFRAQ VISION

Together towards a modern model city that the citizen deserves and where the best services are provided

Fig. 7: Al Hussein's Vision interlinkage with challenges, needs, opportunities, and the Mafraq City Vision





02

AREA PLANNING

Introduction

The challenges, needs, and opportunities identified in the previous section of this report point to certain trends that will affect the neighbourhood's development trajectory. These trends, or variables, will be used to project possible future scenarios for Al Hussein's development until 2039.

Why Scenario Building?
Scenario building for sustainable development provides an opportunity for participants to make guided assumptions about the future, including, but not limited to, how the built environment may change over time. It is a way to imagine, explore, create, and measure possible future conditions, both desirable and undesirable, and assess the probability and impact of the different scenarios on the area in accordance with past and present trends.

Additionally, scenario building can guide long-term planning, including policies, strategies, and plans, to help align the desired and likely future circumstances, while outlining the important milestones along the way. These scenarios can enable policy and decision makers to grasp the long-term requirements for sustainable development and growth, and to mitigate possible complications with foresight, including through developing adaptive strategies.

Scenario building for urban contexts' will often follow the 'chain of plausibility' approach, which includes a detailed review of all possible events and future developments. Using this approach, scenario building starts with establishing assumptions or minimum conditions that are required for any of the scenarios to develop. Next, variables that are likely to spark a chain of events that will result in a series of potential impacts are identified. Based on the trends identified in the Spatial Profile, the most important variables are selected and the likely directions of these variables are thereafter determined.

What is a Variable?
In this exercise, a variable is a development or an event that has the potential to cause a change in an urban situation. An assumption is based on the direction that a variable is most likely to proceed (e.g. increases or decreases in specific conditions).

The outcomes of each isolated variable are broadly outlined and then explored in a more composite manner when combined together as part of the potential scenario.

The research questions that were considered in the scenario building process are the following:

- Given the context of the Greater Mafraq Municipality and the vision formulated for Al Hussein Neighbourhood, how can the area be developed to support more inclusive and resilient communities?
- Which events would lead to large changes in the built environment?
- What is the expected impact and likelihood?

The main variables selected are: 1) Population Growth; 2) Urban Footprint; 3) Needed Projects; 4) Climate Risk & Natural Hazards; and 5) Local Economic Development.

WHAT ARE THE RESEARCH QUESTIONS?

- Given the context of the Greater Mafraq Municipality and the vision formulated for Al Hussein neighbourhood, how can the area be developed to support more inclusive and resilient communities?
- Which events would lead to large changes in the built environment?
- What is the expected impact and likelihood?

WHAT ARE THE OVERALL ASSUMPTIONS?

WHAT ARE THE KEY VARIABLES THAT AFFECT BOTH SUSTAINABLE DEVELOPMENT AND URBAN PLANNING CONSIDERATIONS IN THE AREA?

- What are the outcomes which would influence the direction of the area's future development? <----
- ----> What are the actions that enable this?
- ----> What are the impacts upon the area as a result of the identified outcome?

WHAT ARE THE SCENARIOS THAT THE COMBINATION OF THE VARIABLES COULD RESULT IN?

- Will they positively, negatively, or marginally affect the area?
- How likely will the scenario occur?
- What are the spatial, environmental, and socio-economic impacts on the area?

It is important to note that it is common for variables to influence one another (e.g. population growth may present correlations to the total urban footprint in an area).

OVERALL ASSUMPTIONS

- There is continued political stability in Jordan.
- There is continued support from the Greater Mafraq Municipality to work towards durable solutions for host and refugee communities in Mafraq City and Al Hussein Neighbourhood.

SELECTED VARIABLES

- Population Growth
- Urban Footprint
- Needed Projects
- Climate Risk & Natural Hazards
- Local Economic Development

Methodology

To build the scenarios, detailed data on the current state of the neighbourhood was collected using a combination of methods, namely Geographic Information System (GIS) mapping and on-site surveying and observation. Below is an explanation on the data collection methodology.

Data Collection
Data collection for the Al Hussein Neighbourhood was carried out in partnership with students from Hashemite University. Beforehand, a comprehensive training session was conducted to introduce the methodology and provide them with the requisite skills to effectively utilize the tool.

The fieldwork for Al Hussein Neighbourhood entailed collecting data and assessing the current state of the neighbourhood in terms of building density, building conditions, number of floors built, vacant lands, types of public space (including sidewalks), the available public facilities and their current condition (such as schools and health centres), the accessibility of the neighbourhood, and the available economic activities.

The data collection began with obtaining the parcel plan from the Department of Land and Survey (DLS), downloading the building from an open source, and then validating the accuracy of the dataset by comparing it to Google Earth and through field observation. The buildings were then mapped and given codes that correlate with the parcel number, which facilitated the field surveying work by providing navigation guidance in the field. The neighbourhood was divided into 6 zones.

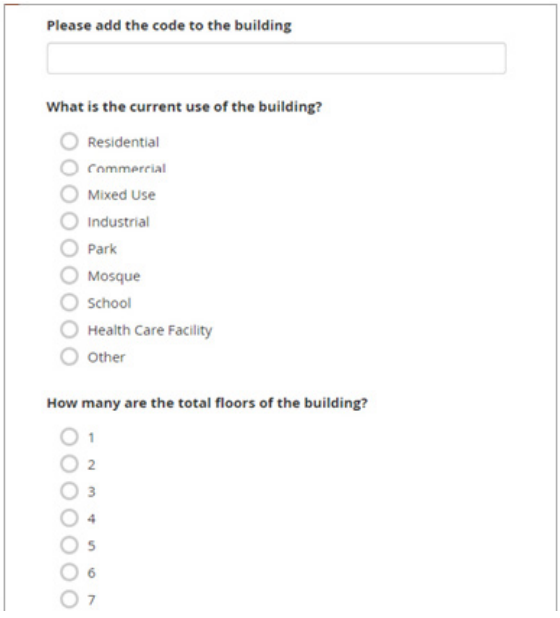
Simultaneously, the team utilized a comprehensive questionnaire developed in the previous phase of the UPIMC. This questionnaire included multiple categories on the Kobo Toolbox to collect and manage data for the scenario building process. In the next steps, the fieldwork was conducted at Al Hussein over several visits, and included surveying the neighbourhood, mapping the current situation of the built environment, and filling out the questionnaire using the Kobo application.

The data collected was integrated into the available GIS data to obtain an accurate portrayal of the neighbourhood, which would inform the development of the "Business as Usual (BAU)" and the "Optimal" scenarios. Ultimately, the data was used to calculate the maximum capacity of the neighbourhood and produce and conduct spatial analyses to help assess the future housing, public facilities, and population needs. Additionally, it assisted in identifying the infrastructure interventions needed to improve the livelihood opportunities and quality of life in the neighbourhood.

Questionnaire
The questionnaire (Annex A) had three main objectives. Firstly, it aimed to categorize the element that is being assessed, either a building, vacant land, public space, public transport stop, solid waste dumpster, or a health hazard area. Each categorization would then branch into a series of requests that included adding the Global Positioning System (GPS) location of the element, capturing a picture, and other assessment questions. Secondly, the questionnaire aimed to assess the socio-economic conditions of the different zones and buildings within the neighbourhood through an external visual assessment of the buildings and identifying the economic activities within and around them (if any). Thirdly, the questionnaire aimed to assess the walkability, accessibility, and inclusivity of streets and public spaces, including sidewalks, and to identify the activities surrounding them.

The criteria used to assess the conditions of the elements is as follows:

- **Good:** Routine maintenance required, no apparent problems.
- **Fair:** Minor repair required, minor repairable problems.
- **Substandard:** Major repair required, apparent failure, including significant problems.
- **Critical:** Urgent repair and/or replacement required, extensive damage or missing element(s).



Kubocollect Questionnaire Sample- Source: UN-Habitat

Challenges and Lessons Learned

There were a few challenges that became apparent on site and throughout the data collection process, including:

- Absence of street names on Google Maps complicates street documentation.
- Unclear house numbers and unlabeled landmarks hinder navigation and data collection.
- Inconsistent labeling of unpaved roads poses challenges in describing them accurately during data collection

Consequently, some of the lessons learned include:

- The field investigation is highly needed to validate the available GIS layers.
- The best approach was to update the GIS maps once all the fieldwork data was collected to avoid duplication.
- This methodology lead to more accurate calculations of existing and forecasted populations for the upcoming 15 years, which assisted in the development of more realistic scenarios.

Scenario Building Process

After collecting detailed data for Al Hussein neighbourhood, the data was thoroughly analysed in relation to the five selected variables.

This section explains the scenario building process, which aims to analyse how the urban situation in Al Hussein neighbourhood could develop over the next fifteen years in relation to the built environment. Accordingly, it endeavours to determine the events that would result in large changes to the built environment as well as the expected impacts and probabilities of these developments. The complex interrelationships between variables, priorities, and realities have been simplified to provide two scenarios of how Al Hussein neighbourhood could be spatially and functionally configured in 2039.

The first scenario is the "Business As Usual (BAU)" scenario, which intends to visualize the neighbourhood in 2039 if no or minimal measures are taken into account for the future. The second scenario is the "Optimal" scenario, which rethinks the Mosaic of Al Hussein Neighbourhood in alignment with the Greater Mafraq Municipality's (GMM) Local Development Plan 2024-2028. This 'Optimal' scenario aims to establish a clear link between what should be done to move Al Hussein Neighbourhood towards the formulated vision of a Prosperous, Well-Developed, Inclusive, and Resilient Neighbourhood and how the different sectors can support this transition. In the following pages, the five selected variables are explained more broadly and their inter-linkages are analysed.

Hashemite Students conducting the field investigation exercise. Source: UN-Habitat

Variable: Population Growth

Unplanned urbanization puts pressure on basic services, public facilities, and the environment, while often leading to an inefficient use of resources. A major variable that will impact the future of Al Hussein Neighbourhood is the population size. The growth or decline of both the host and refugee communities will determine future infrastructure provision needs and potential economic growth, heavily impacting the development of the neighbourhood's scenarios.

Population Growth

Natural population growth can drastically change the built environment. Jordan is characterized by rapid urbanisation and urban growth, with the annual population growth rate being 2.2% in 2022.[1] Mafraq Governorate has an estimated annual growth rate of 2.2%.[2]

Al Hussein Neighbourhood has an area of 0.39 km^2, a total population of 13,197 inhabitants based on the data collected in the field investigation, and, accordingly, a population density of 33,840 person/km^2. Based on the 2015 Census, the refugee residents represent 45.9% of Al Hussein neighbourhood's population, whereby 8.2% are Palestinians, 37.6% are Syrians, and 0.1% are Iraqis. It is worth mentioning that the percentage of Palestinian refugees only takes into consideration Palestinians who do not hold Jordanian citizenship, whereby the actual number of Palestinians in this neighbourhood is higher if those with Jordanian citizenship are also included.

The projected growth outcomes are shown in the graph, illustrating high, medium, and low growth outcomes where the assumptions are as follows:

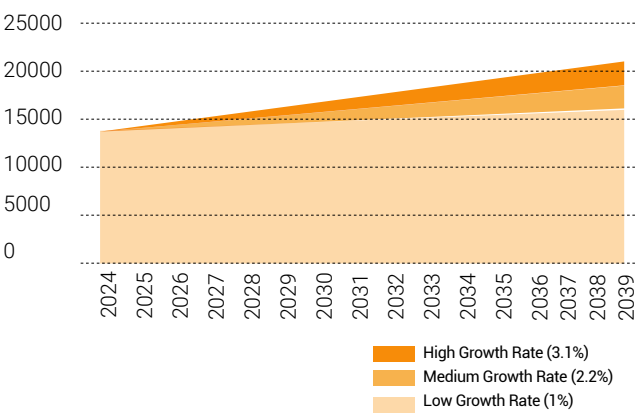


Fig. 8: Population Distribution according to the Growth Rate Scenarios

- **Low Growth Outcome:** The population growth rate will decrease to 1%. Under normal circumstances, the population growth rate in Mafraq Governorate has decreased by 0.1% since 2020. Based on this, an estimate of 1% was calculated to be the lowest possible growth rate in the following years.
- **Medium Growth Outcome:** The population growth rate will follow the same annual growth rate of Mafraq Governorate at 2.2%.
- **High Growth Outcome:** The population growth rate will increase to 3.1%. This rate is based on the highest population growth rate reached in Mafraq Governorate under 'normal' circumstances and before the Syrian refugee crisis. 'Normal' circumstances in this context refers to a stable situation where no internal or external conflict occurs in the area that would cause sudden demographic changes.

If the neighbourhood's population growth rate were to gradually decrease over the next fifteen years to 1%, this would still result in an additional 2,124 residents, or an increase of approximately 16%. If Al Hussein Neighbourhood were to maintain an annual growth rate of 2.2% (Medium Outcome), matching the current estimated growth rate of Mafraq Governorate, this would result in an a total population of 18,291 inhabitants by 2039, which is an additional 5,094 person and is a 39% increase from the current population. Finally, if the growth rate in Al Hussein Neighbourhood was to increase to a growth rate of 3.1%, this would result in an additional 7,665 residents by 2039, or a 58% increase from the current population.

In addition to these projected growth rates, refugee surges may occur within the next 15 years, which could cause a sudden spike in population. However, refugee surges are difficult to predict, and, if this occurs, an additional 6.3% population growth rate can be added to the projected number of the medium growth outcome, to accommodate for any possible crisis influx in the area. The suggested percentage is based on the highest previous increase in the growth rate that occurred in 2013 due to the Syrian refugee influx in Mafraq Governorate.

Another outcome to consider is the possibility of having voluntary repatriation of some portion of the remaining refugee population. This outcome can be neglected in the Mafraq context as it is unlikely to happen. Based on the current trends since the opening of the voluntary return in 2021, a minimal number of refugees actually returned.[3]

AL HUSSEIN NEIGHBOURHOOD POPULATION GROWTH OUTCOMES

Outcome #1: Low Population Growth (1%)

The population growth rate under normal circumstances decreases to 1%. This would result in an increase of only 2,124 inhabitants, equal to an increase of 16%.

+16%

Population increase by 2039

Total population: 15,321 inhabitants
Density (person/km²): 39285

Outcome #2: Medium Population Growth (2.2%)

Using the Mafraq Governorate annual growth rate of 2.2%, forecasting shows that if Al Hussein continues to grow without any sudden change in external circumstances, then the population would grow to 18,291 inhabitant by 2039, which is an additional 5,094 person and a 39% increase from the current population.

+39%

Population increase by 2039

Total population: 18,291 inhabitants
Density (person/km²): 46900

Outcome #3: High Population Growth (3.1%)

Taking into consideration the highest growth rate under normal circumstances in Mafraq Governorate over the last decades, then Al Hussein could see a high population growth rate of 3.1%. This would result in an additional 7,665 residents by 2039, or a 58% increase from the current population.

+58%

Population increase by 2039

Total population: 20,862 inhabitants
Density (person/km²): 53,492

Outcome #4: Large increase in population due to new unpredictable influx (+6.3%)

If conflict, disaster, or related life-threatening events in Jordan or the surrounding region occurs, it is possible that another influx of refugees will be settled in Mafraq City. Therefore, this outcome considers any possible influx by adding 6.3%, which is the highest previous increase in the growth rate in Mafraq Governorate, to the medium growth outcome (+39%), resulting in an additional 1,152 refugee.

+6.3%

Increase to the **medium growth outcome (+39%)**

Total population: 19,443 inhabitants
Density (person/km²): 49,855

Outcome #5: Refugee Decline Population (-??%)

Though entirely unpredictable, population decline resulting from the voluntary repatriation of some portion of the remaining refugee population may occur.

-??%

Unpredictable decrease in population

Represents existing 1000 inhabitant

Represents forecasted additional 1000 inhabitant

Represents forecasted additional refugee 1000 inhabitant

Fig. 9: Al Hussein Neighbourhood Population Growth Outcomes

Variable: Urban Footprint

As previously discussed, the forecasted population growth could affect the expansion of the urban footprint of Al Hussein Neighbourhood. This, in conjunction with the density of the built areas, will define how much more land needs to be developed to accommodate the projected population growth. To predict the possible impact of the population growth on the urban footprint variable, the maximum capacity of the neighbourhood was calculated based on the current land use plan.

It should be noted here that the residential zones of Jordan are categorised into seven main types: Residential types A, B, C, and D, as well as agriculture residential, rural residential, and residential with special regulation. Residential type A category represents the least affordable typology while residential type D is the most affordable one. In the Al Hussein Neighbourhood, residential land use consists of type D only, covering 72% of the area. Commercial land use occupies approximately 8%, while parks account for 1%, wadi areas for 2%, and roads for 17% of the neighbourhood's total land use. According to the dominant land use categories in Al Hussein and the by-law of Building and Planning of Cities and Villages (2022), the regulations followed are as shown in the below table.

The field investigation revealed that there is a discrepancy between the assigned land use types and the actual building uses on the ground. For example, it was found that there are mixed-use buildings on land assigned for either commercial or residential uses. This indicates that the commercial activities within the assigned residential areas are informal and that the residential floors on designated commercial land are violating the current by-law.

Maximum Neighbourhood Capacity

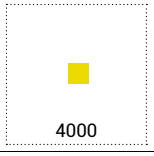
To calculate the current population (2024), as well as the maximum capacity in the neighbourhood, three main factors were taken into consideration; (1) the land use plan of the neighbourhood, (2) the average household size in GMM, which is 5.2[4], and (3) the assumed number of apartments per floor based on the land use types: 2 apartments per floor for residential land use type D. The assumption of the number of households per floor is based on the nature of the neighbourhood, the city context, the field investigations, as well as the land use regulations.

Consequently, if all available vacant lands are in-filled according to the land use typology and if the existing buildings are upgraded to the maximum number of residential floors according to the by-law, then the maximum capacity of the neighbourhood would be 34,330 inhabitants. Under these circumstances, the neighbourhood would have a maximum population density of 88,026 person/km^2. Accordingly, the neighbourhood is predicted to reach the maximum capacity based on the growth outcomes as follows:

- **Low Growth Outcome (1%):** The neighbourhood can reach its maximum capacity in 2120. Whereby in 2039, 45% of the maximum capacity would be reached.
- **Medium Growth Outcome (2.2%):** The neighbourhood can reach its maximum capacity in 2068. 53% of the maximum capacity will be reached by 2039.
- **High Growth Outcome (3.1%):** The neighbourhood can reach its maximum capacity in 2055, which means almost 61% of the maximum capacity will be reached by 2039.

Therefore, infill and vertical densification are considered sub variables throughout this scenario building process. The vertical densification sub variable covers the increase in the density of existing built up areas within the neighbourhood. Meanwhile, the infill sub variable covers the potential infill of the vacant lands assigned as residential land use.

The map indicates the buildings with the potential for vertical densification through constructing more floors, to reach the maximum capacity of their land use regulations. However, the maximum infill capacity of vacant lands were not visualised, even though they were taken into consideration in the calculations for the maximum capacity. This is due to the lack of a clear plot subdivision plan, as shown in the map, which made it difficult to subdivide the vacant lands in the neighbourhood according to the land use regulations.

Residential Buildings	Agriculture	Type A	Type B	Type C	Type D
Plot Area (m^2)	 4000	 1000	 750	 500	 250
Percentage of Built-up Area	15%	39%	45%	51%	55%
Number of Floors	2 and one roof	4	4	4	4
Number of Apartments per Floor	-	-	1	2	2

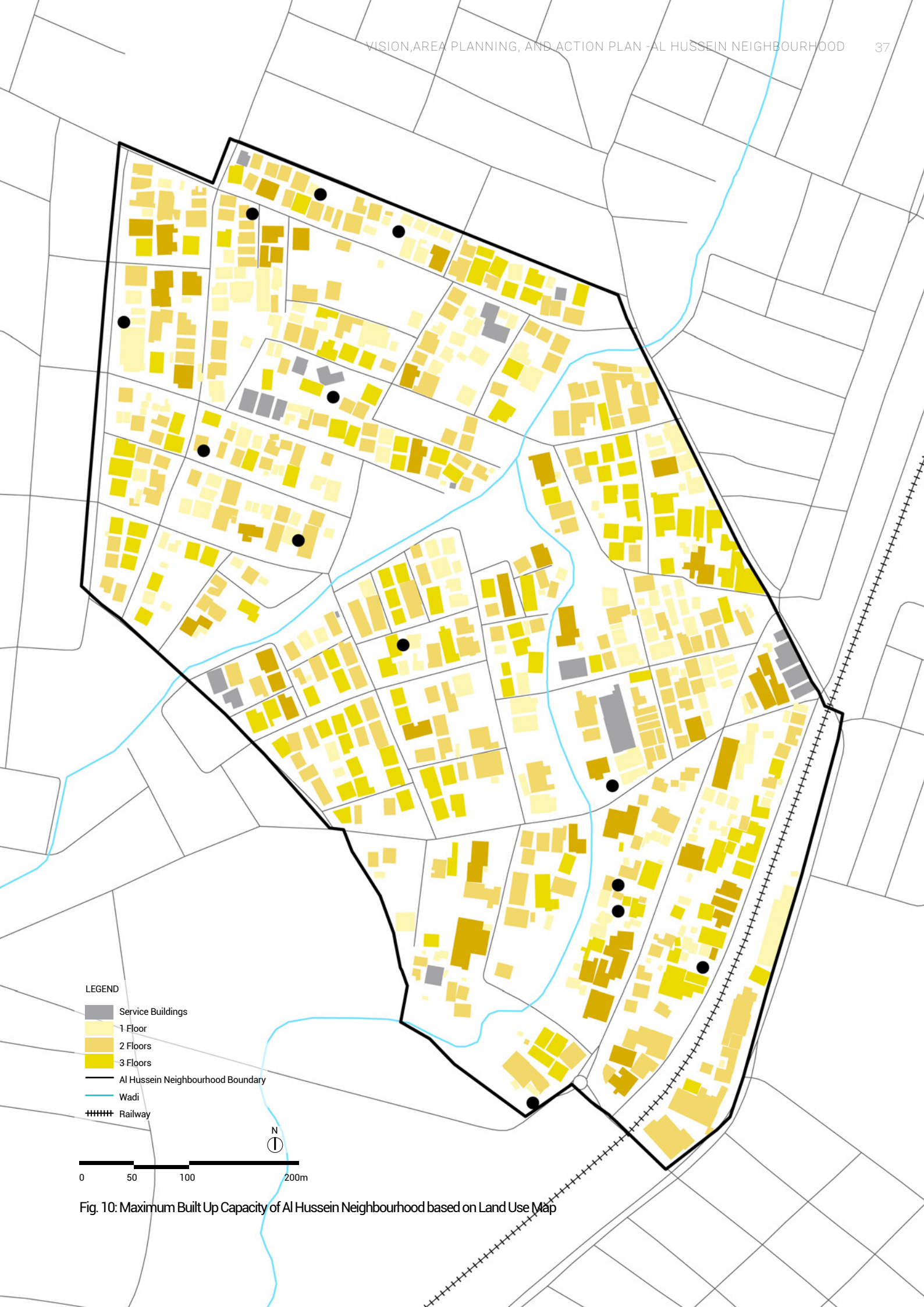


Fig. 10: Maximum Built Up Capacity of Al Hussein Neighbourhood based on Land Use Map

Conditions of Residential Buildings
To determine the possibility of vertically densifying existing residential buildings in Al Hussein neighbourhood, a visual assessment for the buildings was conducted during the field investigation, and buildings were categorised according to their condition into 4 main categories; good, fair, substandard, and critical. The buildings that were in good condition constitute 30% of the total buildings, while the buildings in fair condition constitute 32%. Buildings in good condition have no apparent structure problems and are therefore more likely to expand vertically than the other buildings, if their land use regulations allow.

On the other hand, buildings in substandard and critical conditions, which are concentrated mainly on the northern edge of the neighbourhood, as shown in the map, represent 24% and 14% of the total residential buildings respectively. Buildings in substandard condition mainly showed the need for major repair, apparent structure issues, and significant problems, while buildings in critical condition are in need of urgent repair and/or replacement, and suffer from extensive damage or missing element(s). Buildings in substandard and critical condition are unlikely to expand vertically if no improvements took place. This will be taken into consideration when developing the scenarios, specifically when proposing the residential buildings that can be vertically expanded to accommodate the forecasted increase in population by the year 2039.

The current condition of the school building is good, whereas the health center was assessed as being in fair condition. Additionally, the majority of the commercial buildings are in fair condition.

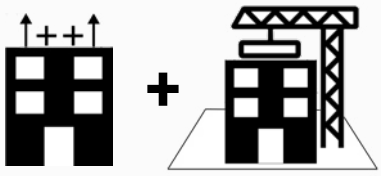
Abandoned Residential Buildings
During field investigation, only one building was found to be abandoned.

In summary, Urgent housing improvement and rehabilitation are necessary for buildings in substandard and critical conditions in Al Hussein Neighbourhood. These renovations can incorporate socioeconomic opportunities for residents, such as integrating rooms designed for home-based businesses based on residents' skills. Additionally, incorporating spaces for "taelela" rentals—gatherings where people discuss life issues, with catering possibly provided by women in the house—could be beneficial. Including agricultural spaces is also a possibility. This project aims to have a dual impact: enhancing housing quality and providing livelihood opportunities for residents. This vision was strongly endorsed by residents during the vision workshop. Addressing this project is crucial to improving the quality of life for the vulnerable population in the area.

It's worth noting that the GMM Local Development Strategy for 2024-2028 prioritizes easing access to the housing market for the most disadvantaged portions of the population. This objective is also in line with the Jordan National Urban Policy, which emphasizes the importance of bridging the gap between housing demand and supply.

Outcome 1: Infill and Vertical Densification

To respond to the projected increases in population in 2039, this outcome forecasts different ratios of densification and infill according to the low, medium, and high population projections.



Outcome 2: Full Infill

This outcome forecasts a full infill of all vacant lands in Al Hussein Neighbourhood according to the maximum capacity of its land use typology.

Outcome 3: Full Vertical Densification

This outcome forecasts a full vertical densification of all existing buildings in Al Hussein Neighbourhood, according to the maximum capacity of their land use regulations.

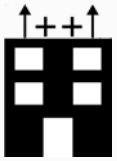


Fig. 11: Existing buildings' condition in Al Hussein Neighbourhood

Variable: Needed Projects

While there are multiple projects that could be considered as critical enablers for transformative change in the neighbourhood, three needed projects have been identified, which, if implemented, would transform the neighbourhood into a Prosperous, Well-Developed, Inclusive, and Resilient Neighbourhood. Each of the needed projects involve multiple smaller-scale projects that will be implemented over several stages in the upcoming years. These projects have been identified as being particularly necessary and impactful to the future growth of the area. While each project will yield specific benefits over time on its own, the combined impact will be significant on the quality of life of the neighbourhood's residents. Additionally, these projects will increase the economic development potential of the neighbourhood, enhance its investment attractiveness, and increase its desirability as a place to live and work, which will eventually facilitate the achievement of the formulated vision for the neighbourhood.

Catalytic Project #1: Improvements to the Infrastructure Networks

The basic infrastructure services are affected by the population growth and the urban footprint variables. Consequently, the population growth and increase in urban footprint will increase the demand on basic infrastructure services including electricity, water, and sewerage.

- **Water Service:**

A capacity versus demand assessment analysis was conducted for the existing water network using the GIS capacity/demand assessment tool. The tool measured the demand in comparison to the capacity of the existing water network and analysed the sufficiency of the network (whereby high load means low network sufficiency) by factoring in the pipes' diameter and length, as well as the number of people in the neighbourhood currently being served in 2024. The results designated areas of high and low load on the tested infrastructure network. Overall, the water capacity/demand assessment revealed that there is a 32.8% of the neighbourhood's area is currently experiencing very high load on the existing water network, as shown in the figure below. In the future and according to the maximum capacity of the neighbourhood, the load will multiply by 3.6 in comparison to the existing load. This indicates the significant **need to prioritize upgrading the existing water network in the areas currently experiencing high load**.

- **Sewerage Service:**

The capacity/demand assessment tool measured the load on the existing sewerage network and revealed that there is a relatively high load at the neighbourhood level. This indicates that the sewerage network is serving a larger population than it is designed to. Based on the maximum capacity of the neighbourhood, the load will multiply by

Fig. 12: Current load on the existing water network

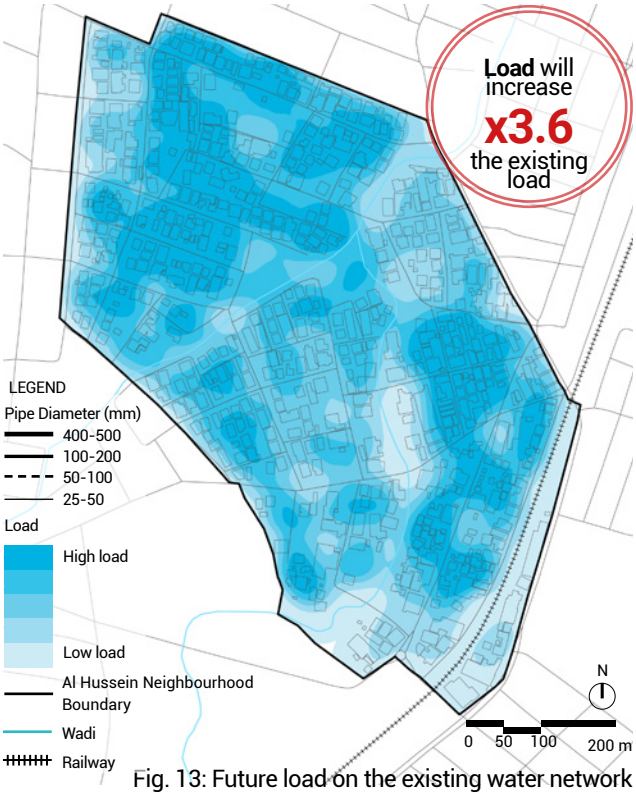


Fig. 13: Future load on the existing water network

3.3 in comparison to the existing load. This indicates the significant **need to prioritize upgrading the existing sewerage network in the areas currently experiencing high load** as a proactive measure to accommodate the maximum capacity of the neighbourhood. This is aligned with the proposed project number 1.8 in the Greater Mafraq Municipality's Local Development Plan 2024-2028, which aims to increase the coverage of the sewage system and stands as a top priority.

- **Electricity Service:**

In regard to the electricity service, the analysis revealed that the access to electricity is currently stable in general. **The electricity provider should consider to factor in the projected population growth of the neighbourhood and pro-actively undertake upgrades to the electrical grid. Furthermore, prioritizing the enhancement of street lighting is imperative to enhance safety at the neighbourhood level.** Furthermore, a potential opportunity would be to utilize the renewable energy sources to provide the electrical energy services at the neighbourhood level. This initiative corresponds with the objectives outlined in the Jordan National Energy Strategy 2020-2030, which emphasizes enhancing energy security through measures such as improving energy efficiency, diversifying the energy mix, increasing the proportion of renewable energy in the overall energy portfolio, curbing carbon emissions, and lowering energy expenses.

- **Solid Waste Management:**

Solid waste management poses a significant challenge, particularly due to the unequal distribution of janitors and waste containers across the neighbourhood. Some areas are deprived of any waste collection services altogether. Moreover, indiscriminate disposal of waste in the wadi stream exacerbates the issue, transforming it into a hazardous area detrimental to public health. Throughout the field investigation, solid waste containers were mapped and a service catchment area of 100 meters was considered as shown in the map. This revealed that the northern-western and eastern parts of the neighbourhood lack solid waste containers. The challenge will be exacerbated by the predicted increase in population. Accordingly, **improving the efficiency of solid waste collection and its general management must be considered throughout the scenario building process.**

It is important to note here that the densification of the neighbourhood will significantly increase existing pressures on infrastructure networks. Therefore, investment in upgrading the networks to serve the surge of future populations is essential for the continued livelihood of the neighbourhood's residents. This is aligned with the action plan outlined in the Greater Mafraq Municipality's Local Development Plan spanning from 2024 to 2028.

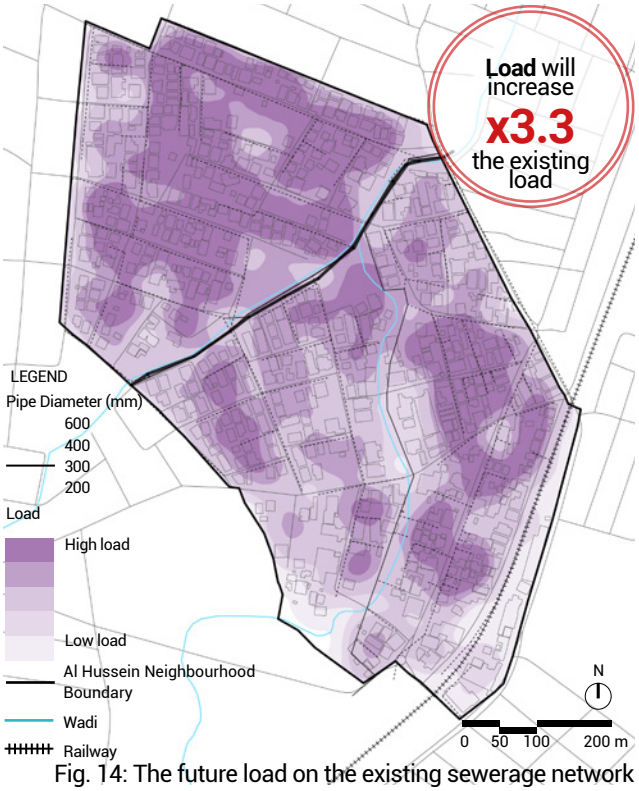


Fig. 14: The future load on the existing sewerage network

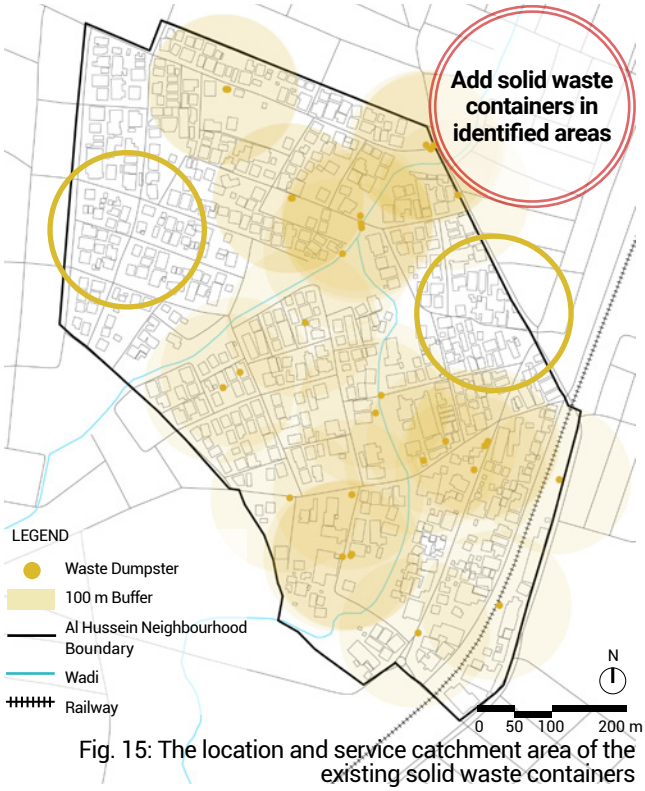


Fig. 15: The location and service catchment area of the existing solid waste containers

Catalytic Project #2: Improved Access to the Public Facilities and Commercial Activities

A street network analysis conducted for accessibility revealed that all residents of the Neighbourhood have access to educational and healthcare facilities within a 15-minute walk. However, only 58.6% of Al Hussein's population is served by public parks, and 90.7% have access to the commercial hub within a 15-minute walk from surrounding areas. The challenges related to the provision of public services are further analysed below.

- **Educational Facilities:**

Within the neighbourhood, there is only one public school, Shaima Bint Al Hareth Primary Mixed School. Since the school is operating in a rented building, it's anticipated that this school will require replacement, following the Ministry of Education's (MoE) future strategy that mandates the replacement of rented school buildings. Therefore, this school was not considered in the Neighbourhood's developed action plan. Based on the analysis, 28.4% of the population have access to the existing public school (Shaima Bint Al Hareth School) within a 5-minute walking distance and 100% within a 15-minute walking distance. Public schools within a 15-minute walking distance include Abu Bakr Al-Siddiq Primary School for Boys, Fawzi Al Mulqi Secondary School for Boys, and the King Abdullah II Ibn Al Hussein Center for Excellence. It is important to note that the King Abdullah II Ibn Al Hussein Center for Excellence was not included in the analysis, as it serves only gifted students. Spatially, 100% of the student population within Al Hussein neighbourhood have access to the nearby public schools within a 15-minute walking distance. However, as aforementioned, many residents, specifically mothers, explained that they have difficulty accessing schools due to distance and lack of public transportation. According to the 2015 census, students make up 35% of the total population in Mafraq city. Accordingly, there are currently 4,619 people between the ages of 5 to 19 years old (considered the student population) in Al Hussein neighbourhood. Based on the data received from the MoE, 200 students are currently enrolled in the neighbourhood's existing public school. This means that around 3,295 students in the neighbourhood either go to private schools or nearby public schools, or have dropped out. The maximum expected increase of the student population for the target year is an additional 2,683 students. It's noteworthy that two school projects are currently under development. One, funded by the EU, will accommodate 1,170 students and is expected to begin operating in September 2024. The other, funded by USAID, will accommodate 1,324 students and is expected to begin operating in 2027. Both schools will include a nursery.

To address the growing educational needs**, it is advisable to vertically expand the existing neighbouring schools,** Abu Bakr Al-Siddiq Primary School for Boys and Fawzi Al Mulqi Secondary School for Boys. With capacities currently at 382 on 1 floor and 600 students across 2 floors, respectively, the Abu Bakr Al-Siddiq School could incorporate 3 additional floors, while the Fawzi Al Mulqi School could add 2, aligning with the MOE's preference of a maximum of four floors for public school buildings. This expansion would allow the schools to accommodate 1,402 and 1,200 students, respectively. Considering that only 25% of the Neighbourhood's student

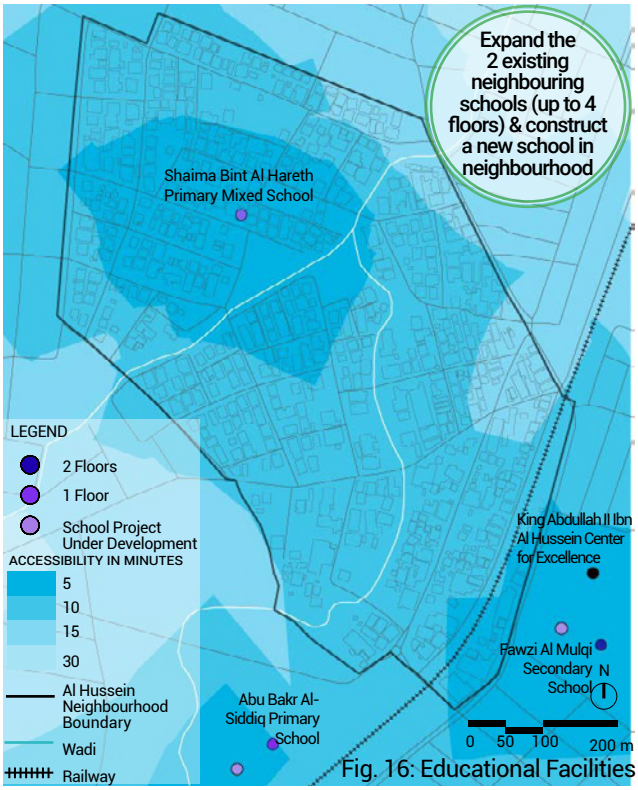


Fig. 16: Educational Facilities

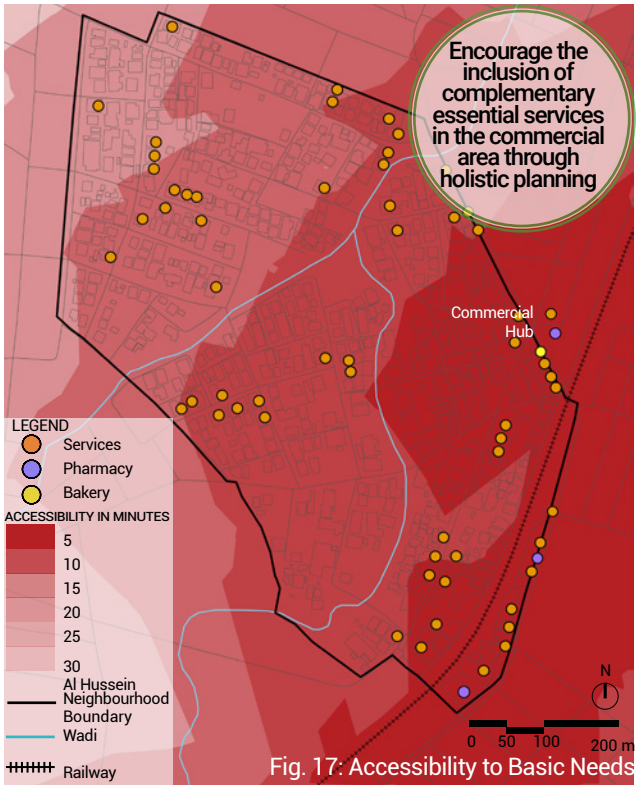


Fig. 17: Accessibility to Basic Needs

population will enrol in the school projects currently under development when operational, **it is also recommended to construct a new school within the Neighbourhood to accommodate up to 1,500 students.**

- **Commercial Facilities:**

The current commercial facilities serving the residents in the neighbourhood are scattered and fragmented which has resulted in residents walking long distances to fulfil their basic needs at the market, pharmacy, bakery, vegetable and fruit market, butchery, and water stores. Currently, all shops for basic needs are located in the main commercial road in Mafraq City, which serves as the central hub for these services. Although 90.7% of the Neighbourhood's population can access this hub within a 15-minute walk, **it is recommended to develop well-planned commercial areas within the neighbourhood that consolidate all essential shops. This can be achieved by encouraging the inclusion of missing services in the current designated commercial areas during the licensing process.**

- **Health Care Facilities:**

The residents explained that a main challenge faced in the neighbourhood is the poor health care services available and the lack of a 24-hour emergency centre. This provided necessary qualitative information of the situation, which was different from the spatial analysis, which instead showed that the neighbourhood was well-served by the existing primary health centre. According to the by-laws and regulations of the Ministry of Health (MoH), the minimum population size to be served by a comprehensive health centre is 15,000 inhabitants. However, as the current population falls below this threshold and the health center operates in a rented building, expansion to a comprehensive facility is constrained by MoH regulations. **Therefore, the recommendation is to enhance the quality of service offered by the existing primary health center.**

- **Recreational Facilities:**

Public spaces play a vital role in improving the quality of life for urban residents and can be considered as avenues for enhancing social cohesion, fostering economic opportunities, improving health and wellbeing, and providing ecological solutions to climate change. Al Hussein currently lacks its own parks or recreational facilities. However, 58.6% of the Neighbourhood's population can access the public parks in neighboring areas, such as the Al Hijazi Railway Park and Al Hussein Park, within a 15-minute walk, and 100% can do so within a 30-minute walk. Nevertheless, while the existing nearby parks are considered to be spatially accessible, the lack of People with Disabilities (PWD)-friendly facilities means that, in reality, it is inaccessible by all community members on the ground. **Accordingly, there is a pressing need to enhance the inclusivity of existing nearby parks, establish a public park, and create innovative public spaces such within the neighbourhood. This will ensure equitable access for all residents and foster social cohesion.**

This is aligned with GMM's endeavor outlined in project number 1.6 of their Local Development Plan (2024 - 2028), which is considered high priority and aims to establish multi-functional, green areas catering to various scales and purposes. The objective is to ensure access to safe space for families, women and children, while fostering community engagement through the provision of spaces for events.

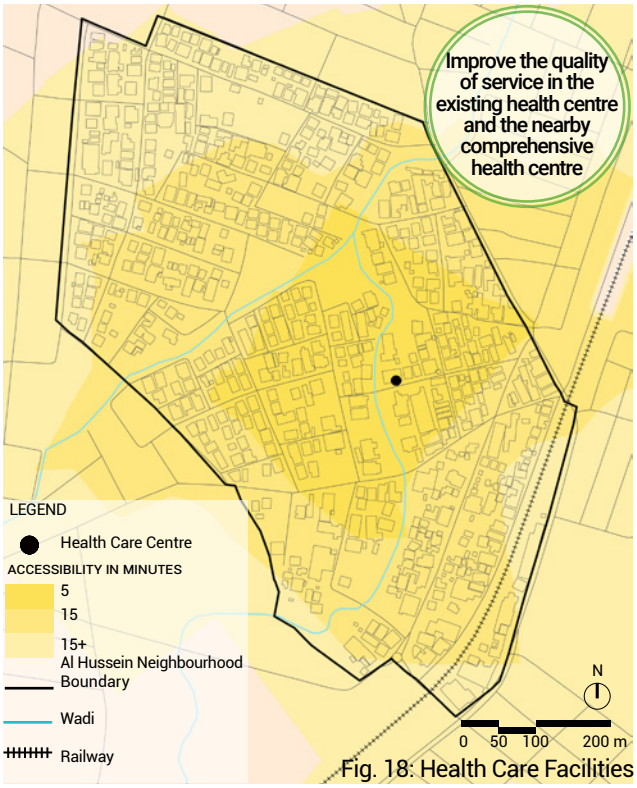


Fig. 18: Health Care Facilities

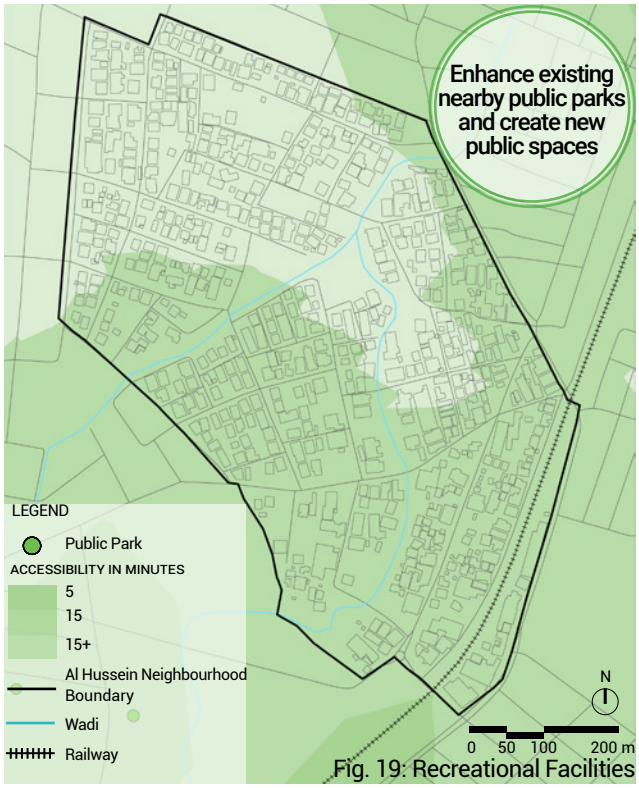


Fig. 19: Recreational Facilities

Catalytic Project #3: Improved Walkability and Access to Public Transportation

Accessible and inclusive transport ensures the everyday mobility of people. The transport infrastructure consists of the networks used by vehicles and pedestrians to commute from one place another. Promoting walkability is a key factor that must be considered when designing the built environment because it fosters more attractive, convenient, healthy, and efficient neighbourhoods.

With regard to accessibility and connectivity, there are many interventions needed at Al Hussein neighbourhood, including upgrading the road infrastructure, sidewalks, and means to access public transportation.

- **Roads:**

The residents stressed that the overall existing road network is deteriorated. The field investigation included an evaluation of the road infrastructure conditions, which were rated as good, fair, substandard, or poor, as shown in the figure below. This assessment will be considered when developing the action plan of the neighbourhood. **In summary, road infrastructure improvement is needed in the neighbourhood.** This correlates with Project 1.3 of the Greater Mafraq Municipality's Local Development Plan for 2024-2028, which prioritizes enhancing road safety—a critical initiative.

- **Sidewalks:**

The team evaluated the conditions of the existing sidewalks during the field investigation. Most of the areas were found to lack sidewalks, while the existing sidewalks in other areas were found to be in very poor condition. Both these situations negatively impact the walkability of the neighbourhood. **Therefore, sidewalk improvements are needed to serve residents and people with disabilities, promote walkability, and increase pedestrian safety while commuting.**

- **Public Transportation:**

The street network analysis, which considered the spatial location of the existing bus stops and public transportation routes showed that approximately 13% of the neighbourhood's population can reach the nearest bus stop within a 15-minute walk, while 95% can do so within a 30-minute walk. Additionally, residents highlighted the lack of transportation options for school children, along with the extended time it takes them to reach the nearest public transportation.

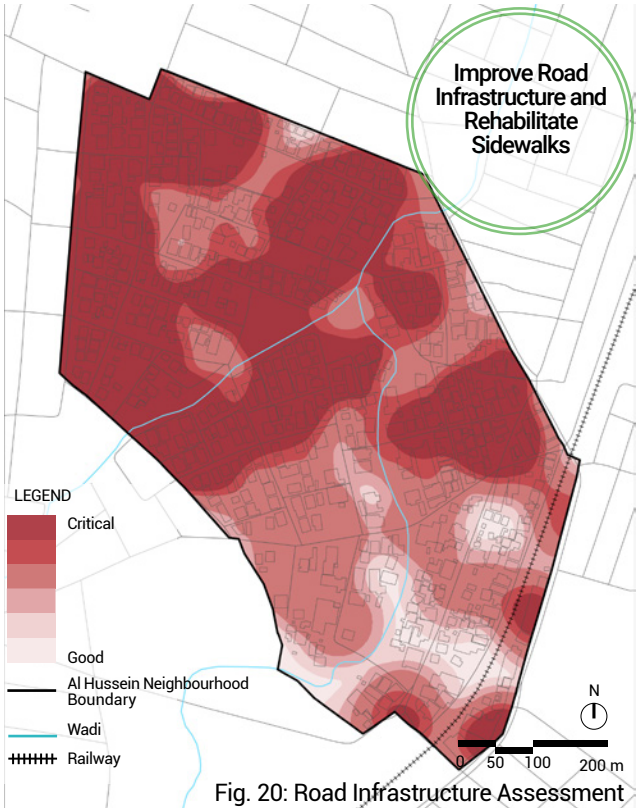


Fig. 20: Road Infrastructure Assessment

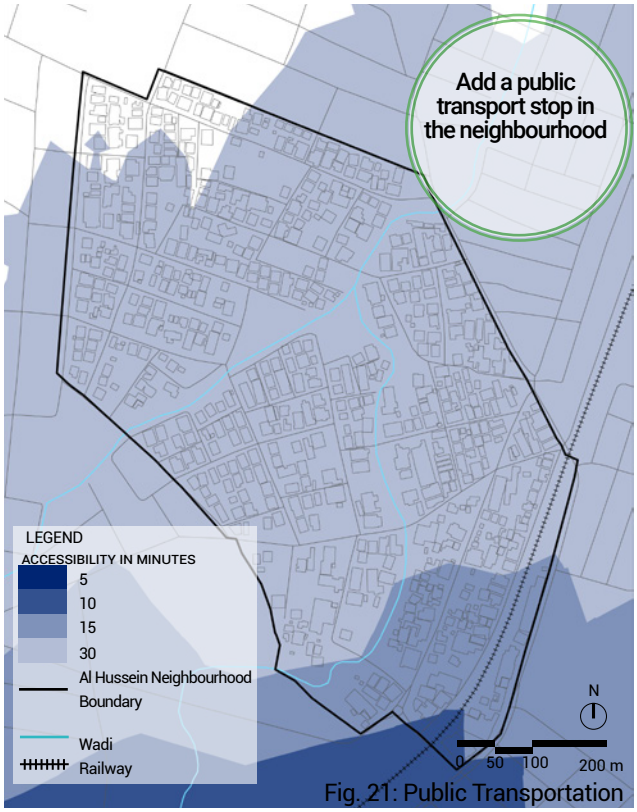


Fig. 21: Public Transportation

The increased population that has been forecasted will similarly have poor access to public transportation routes and bus stops.

Accordingly, there is a significant need to install a bus stop shelter within the neighbourhood to improve connectivity for residents.

Previous projects under "Improved Walkability and Access to Public Transportation " are aligned with the targeted goal of enhancing access to safe and sustainable urban services and projects outlined in the Greater Mafraq Municipality (GMM) Local Development Plan (2024-2028). These projects include:

- 1.1 Creation of an urban public transportation system linking: the university, the residential Neighbourhoods, the main commercial area, the hospitals increasing the reachability of the main services to everyone
- 1.2. Creation of a pedestrian-cycle mobility
- 1.3. Improved safety of the roads

All of the proposed interventions under the needed projects variable are aligned with the Greater Mafraq Municipality's Local Development Plan for 2024-2028, the Jordan Economic Modernisation Vision under the main pillar of "Advancing Quality of Life for All", and the Jordan National Urban Policy.

Outcome #1: Minimal Implementation of Needed Projects If minimal implementation of the planned needed projects is undertaken and the population reaches it's forecasted estimate for the year 2039, the resident's quality of life, access to resources, and livelihood opportunities will be significantly compromised.	**MINIMAL**
Outcome #2: Partial Implementation of Needed Projects If only a partial implementation of the proposed needed projects is completed, there would be some benefits to the residents regarding their standards of living and access to resources. The suggested improvements to the public facilities provision in the neighbourhood would improve the ease of living and increase the economic opportunities for the residents. Additionally, the installation of public transport stops within the neighbourhood will increase the connectivity of the area, people, goods, services, and economic opportunities. The infrastructure network upgrades are as well crucial, so upgrading them would significantly effect the liveability of the neighbourhood. However, partial Improvements do not guarantee a good quality of life for all residents, especially with the forecasted increase in population, and might hinder other possible opportunities.	**PARTIAL**
Outcome #3: Extensive Implementation of All Needed Projects This outcome reflects the implementation of all needed projects. The infrastructure networks are essential for the liveability of the area, while the ease of accessibility to public transport means coupled with access to public facilities will ensure the connectivity of people as well as access to resources and new economic opportunities in the neighbourhood, all of which will ensure a well developed, inclusive, resilient, and enabling neighbourhood that provides a good quality of life for its residents.	**FULL**

Variable: Climate Risk & Natural Hazards

One of the key natural hazards that Mafraq is vulnerable to is flash floods. A study conducted jointly by the Civil Protection Office in Mafraq Governorate and the French Foreign Ministry indicates that floods are likely to occur in the GMM when the intensity of rainfall exceeds 15mm per hour. This risk is particularly high for households situated in areas encroaching upon natural drainage zones, such as wadis.[5] Wadi Mafraq significantly exacerbates the issue of flooding in the city.[6] The GMM has identified nine flood hotspot areas due to insufficient drainage capacity, with Al Hussein being one of them. According to the vulnerability assessment outlined in the Mafraq Spatial Profile, the Al Hussein Neighbourhood is particularly vulnerable to flash floods due to the two Wadi streams within the neighbourhood. The wadi stretches approximately 11 km in length, with a significant portion, 1.22 km, passing through the Al Hussein Neighbourhood. It runs through the center of the city, dividing it into east and west. The wadi requires additional municipal effort, in terms of periodic cleaning, especially during winter, to avoid the accumulation of waste in the drains and the occurrence of flooding.[7]

The flooding of the main wadi causes damage to houses and infrastructure, displacing many, particularly those living in close proximity to the wadi. This is primarily due to non-compliance with the amended Jordanian regulations for water resource protection for the year 2019, involving construction within the wadi's designated buffer zone—a mandated 10 meters, as illustrated in the map.[8]

Moreover, these floods have a greater effect on vulnerable populations, such as women and children, due to school closures and forced absences, in which mothers are expected to stay home with their children, which consequently affects their income.[9] Recently, with the assistance of MOLA, the GMM has erected retaining walls along the Mafraq Valley and implemented culverts to enhance stormwater drainage and safeguard nearby residents from potential winter flooding.[10] These measures aim to protect nearby residents from potential flooding during the winter season. However, **the buildings within the buffer zone require specific attention and further studies to address any potential negative impacts from flooding of the wadi.** It should be noted here that UN-Habitat and the GMM are currently collaborating on a Flash Floods Risk Assessment and Hazard Mapping project in Mafraq Wadi, Jordan. Accordingly, there was a mitigation intervention that has been identified south of Al Hussein Neighbourhood on a GMM owned land that if implemented will positively reduce the impact of floods on the neighbourhood.

It is also important to conduct training sessions in rainwater harvesting solutions and technologies. These trainings aim to build the capacities of the local community to implement these techniques at the household level, thereby mitigating the impact of flash floods. This initiative aligns with both the local development strategy and the JNUP.

Outcome #1: No specific climate change mitigation or adaptation actions are taken, leading to increasing vulnerability for local communities If no actions are taken, the impacts of climate change are going to continue to worsen for the foreseeable future. Flood events will increase in severity and frequency, causing increasing levels of damage to the economy and peoples lives.	**NONE**
Outcome #2: Climate change adaptation actions are taken leading to reduced vulnerabilities for local communities While these adaptation actions are able to protect the local communities from some of the impacts of climate change, ie. Improve flood protection in vulnerable areas, they do not fully result in an overall improved outcome. These actions will not have any effect upon the wider climate change impacts, which is necessary to slow climate change on a global level. As such, the impacts are likely to continue to worsen.	**ADAPTATION MEASURES**
Outcome #3: Both mitigation and adaptation strategies are taken, leading to reduced vulnerabilities and the improved resilience of local communities Necessary interventions will be implemented and will contribute to the potential reduction of detrimental impact of climate change on the communities who live in Mafraq and in Al Hussein Neighbourhood in particular. This outcome assumes that this will happen in conjunction with both national actions as well as global efforts. Adaptation measures will result in both a better understanding of the most risk affected communities, the targeting of more resilient infrastructure to protect vulnerable groups from flooding, as well as the introduction of livelihoods that are more resilient to the impacts of climate change. Overall, this outcome combines mitigation and adaptation actions to assist in shaping a resilient community with reduced vulnerabilities to climate change and build local capacity by training municipal staff in managing bioretention systems and related flood control strategies	**ADAPTATION + MITIGATION MEASURES**

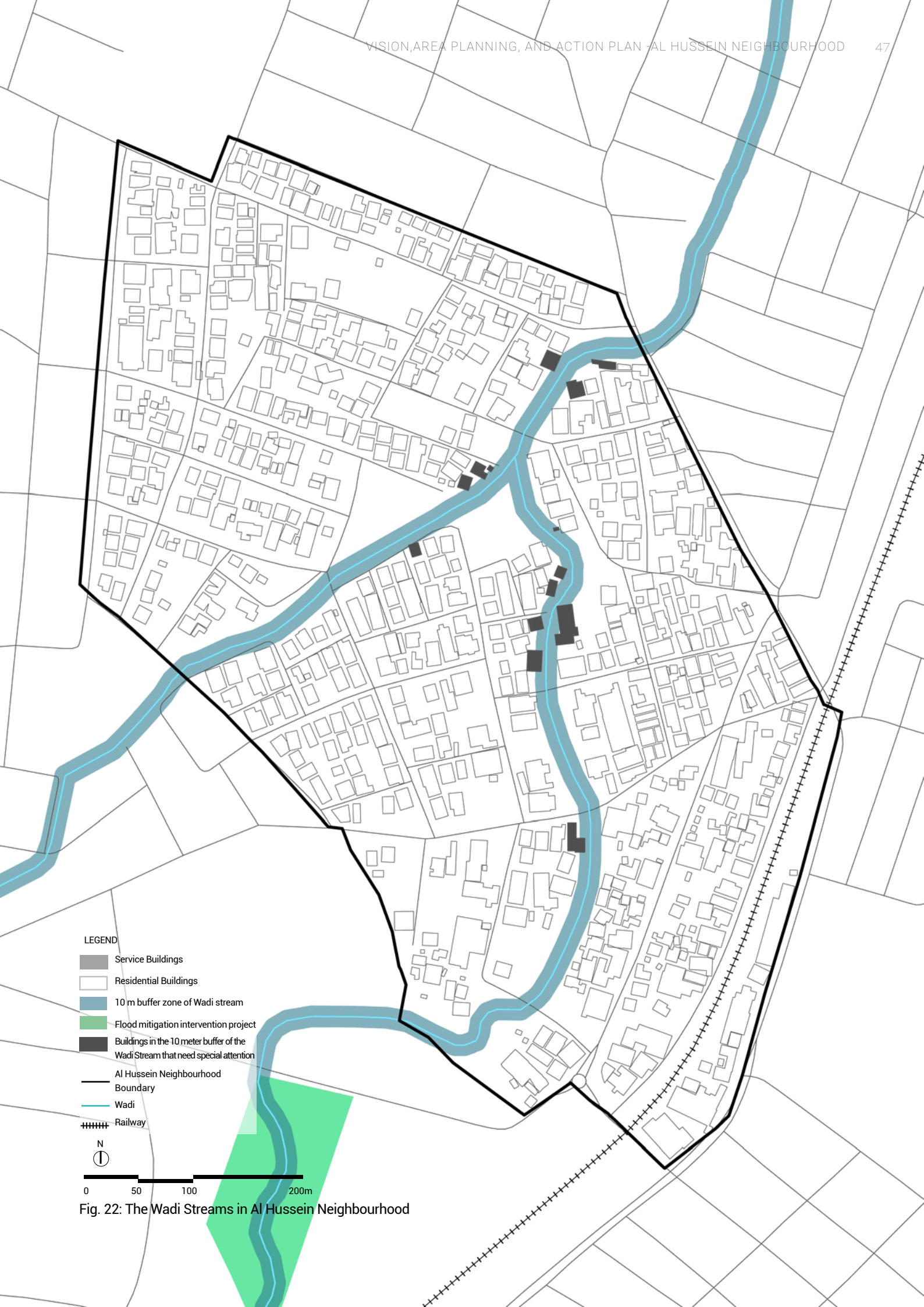


Fig. 22: The Wadi Streams in Al Hussein Neighbourhood

Variable: Local Economic Development

Jordan faces many economic challenges, such as high unemployment and poverty rates. Unemployment rates at the national level have risen sharply over the years, from 13% in 2015[11] to 21.4%[12] as of the 4thQuarter of 2023. The Unemployment Rate for males has reached 18.9% during the fourth quarter of 2023 against 29.8% for females.[13] At the governorate level, Mafraq recorded the highest unemployment rate at 24.8%.[14] Based on the Report of Poverty Status in Jordan, the highest percentage of poverty was recorded in Mafraq Governorate[15]. As of 2016, the poverty rate in Mafraq Governorate is estimated at 19.2%, which is higher than the Kingdom's rate of 14.4%.[16] The demographic dependency of GMM is around 69%,[17] higher than the national level of 61.4%.[18] This highlights the importance of preparing plans that will meet the needs of the population in terms of education, job opportunities, health, and open recreational spaces. Mafraq governorate, as a region, has a high proportion of economically inactive people. This is exacerbated by the fact that, on average, the region has the greatest number of disabilities per household.[19] Additionally, GMM's inability to significantly reduce debt and annual deficits is impacting the financial stability and the city's structure of expenditures.

A combination of factors were taken into consideration when developing the Local Economic Development variable. The factors include the significant working-age population (ages 20-64, which constitute around 48% of the neighbourhood's total population), the strategic location of the neighbourhood, the land use plan of the neighbourhood, and the potential of implementing the needed projects, which could provide great potential for local economic development in the neighbourhood. Furthermore, a key factor in promoting solutions that integrate refugees with host communities in a planned and coordinated way is to leverage the potential inclusive economic benefit that the investments in the area can have for all. When considering the land use plan of Al Hussein neighbourhood and the potential for how the proposed needed projects could impact the future economic development of the neighbourhood, two main outcomes are concluded that are tied to the spatial dynamics of the neighbourhood. These are generally based on policy measures, infrastructure investments, and land-use strategies that would help enable (if implemented) or continue to constrain (if not implemented) the economic vibrancy and development potential in the area.

Outcome 1: Natural economic growth resulting in marginally improved access to opportunities
Currently, based on the existing situation and the field investigation, a total of 169 job opportunities are available in the neighbourhood. This means that only 3% of the working-age population in the neighbourhood are provided with formal job opportunities within the neighbourhood, and logically, a high percentage of the population are currently working in informal jobs. This outcome considers the natural economic growth in the neighbourhood based on the full utilization of the current areas under the commercial land use typology. Accordingly, following the current trend, if these areas are implemented, with various commercial/ services activities at the ground floor level, an additional 86 job opportunities would be provided, which is equal to only 51% increase in job opportunities for the working-age population living in the neighbourhood.

Outcome 2: Significant economic growth resulting in substantially improved access to opportunities for both hosts and refugees
This outcome considers the potential increase in job opportunities if all proposed needed projects are implemented in the neighbourhood. Being comprehensive, if the two identified neighbouring schools were actually upgraded, an additional 135 opportunities will be provided. Additionally, if the proposed school was constructed to fulfil the forecasted demand, another 150 opportunities will be generated. Furthermore, if the current vacant commercial land use areas were utilized with commercial and/or service facilities, another 86 job opportunities will be available. Other possible increases in job opportunities could be related to the creation of new public spaces and improvements to the existing nearby public spaces, which have been estimated to be around 6 opportunities. Overall, these developments will provide a 229% increase in opportunities for the working-age population in the neighbourhood, including the host community and refugees. Another potential sector for generating livelihood opportunities lies in the unique nature and potential of Mafraq City. Mafraq ranks as the second major contributor to agricultural production following the Jordan Valley. However, the economic benefits are hindered by the limited availability of water. User. To tackle this challenge, it's essential to provide training to the local community in water harvesting techniques at the household level. Additionally, empowering them with enhanced agricultural skills to cultivate crops, process products, and sell them from their homes will be crucial for generating income. This approach closely aligns with the proposals put forward by participants from the local community during the vision workshop. With proper training and support, they could spearhead agri-food-related tourism ventures. As a result, up to 10 job openings could potentially be created. Furthermore, houses could be rehabilitated to create an enabling environment for home-based businesses, thereby generating livelihood opportunities for the community. However, the number of potential job opportunities that this initiative could generate cannot be estimated at this time, as it requires further studies.

In summary, the local economic development variable addresses the potential at the neighbourhood to increase formal job opportunities, decrease the unemployment rate in the neighbourhood, and simultaneously decrease the informal economy in the area. This is aligned with the recent Jordan Economic Modernisation Vision, the JNUP, and the GMM Local Development Plan 2024-2028.

Outcome 1: Natural economic growth resulting in marginally improved access to opportunities

This outcome assumes that a few activities will continue to occur based on the natural economic growth in the neighbourhood. This is limited to the opening of new commercial/services stores in the commercial land use areas according to the maximum utilization of the neighbourhood's land use plan, and assuming that each store would provide 2 job opportunities. This would result in an increase in the informal economy in the neighbourhood due to the minimal formal job opportunities available according to the natural economic growth.

+255

Total increase in opportunities when vacant commercial land use areas are utilized: +86

+51%

Total increase in opportunities for hosts and refugees

TOTAL: 255 Job Opportunities

Outcome 2: Significant economic growth resulting in substantially improved access to opportunities for both hosts and refugees

The actions that could possibly enable significant improvement in economic growth would include :

- Expediting of the implementation of the various needed projects proposed, including infrastructure interventions, the upgrading of public facilities such as schools, and construction of a new school, construction of a public park , and improvements to existing nearby public spaces, as well as the potential utilization of the existing vacant commercial land use areas. These interventions will result in multiplier effects, whereby each would leverage the next.
- Harnessing the agricultural potential in Mafraq City, with the aid of training and support, the local community could lead the way in pioneering agri-food-related tourism ventures.
- Rehabilitate houses to create an enabling environment for home-based businesses.
- Easing the legal and regulatory limitations for refugees to find employment.

+285 +255 +6 +10

Total increase in opportunities when needed projects are implemented

+229%

Total increase in opportunities for hosts and refugees

TOTAL: 556 additional job opportunities in the neighbourhood by 2039

Business As Usual Scenario

+39%
Population
increase by 2039

Increase in population: 5,094 hosts & refugees
Total Population: 18,291 inhabitants

Variables	Population Growth	Urban Footprint	Needed Projects	Climate Risk & Natural Hazards	Local Economic Development
Outcome #1	**Low Growth Scenario:** the population growth rate will decrease to 1%.	**Infill and Vertical Densification approach** to accommodate the forecasted addition in population for year 2039	**Minimal implementation** of needed projects	**No** mitigation or adaptation measures	**Natural Economic Growth**
Outcome #2	**Medium Growth Scenario:** the population growth rate follows the estimated annual growth rate of Mafraq Governorate, 2.2%.	**Full infill approach** to accommodate the forecasted addition in population for year 2039	**Partial implementation** of needed projects	**Mitigation** measures	**Increase** Business and livelihood opportunities are increased, providing additional jobs and local economic stimulus
Outcome #3	**High Growth Scenario**: the population growth rate will increase to 3.1%.	**Full vertical densification approach** to accommodate the forecasted addition in population for year 2039	**Extensive implementation** of all needed projects	**Mitigation and adaptation** measures	
Outcome #4	**Large increase in population due to new unpredictable influx**				
Outcome #5	**Refugee Decline Population** (-??%)				

PROBABILITY	Highly Unlikely	Unlikely	Likely	**Highly Likely**
IMPACT	**Significant Deterioration**	Slight Deterioration	Slight Improvement	Significant Improvement

Scenario

Population growth remains at 2.2% amongst the host and refugee communities and partial implementation of the recommended actions are taken to address planning & development measures.

Likely Impact

Based on the context and the current trend in Mafraq City, the built footprint will continue to expand at different ratios of vertical densification and infill to accommodate the natural increase of population by the year 2039 (estimated to be 5,094 inhabitants). Based on the most likely circumstances, 50% of the buildings that are in good condition and that can be vertically densified have been assumed here to be densified, and all residential vacant lands have been in-filled. The buildings in critical and moderate conditions that can be vertically expanded by the law were ignored as it is unlikely that they can be expanded up if no improvements to their conditions occur. Vertically densifying only 50% of the residential buildings in good condition and infilling all residential land will accommodate 100% of the forecasted population within the neighbourhood by 2039.

Vacant lands designated for commercial use can be utilized for infill development. This would generate livelihood opportunities through the opening of commercial/services shops, based on the natural economic growth. Never the less, this increase in built footprint will add pressure to the existing infrastructure networks that are already in some areas under high load, specifically the water and sewerage networks. Additionally, the challenges related to the provision of and accessibility to public facilities will be further exacerbated.

Furthermore, significant investment in needed projects in the neighbourhood is unlikely as there are no major plans for the neighbourhood in the GMM Local Development Plan for the upcoming 5 years. Additionally, current plans from relevant ministries, such as the Ministry of Health and the Water Company (Yarmouk), do not include significant projects for the area. The only exception is the Ministry of Education, which has two school projects currently under development on the periphery of the neighbourhood. This lack of investment will further diminish job and livelihood opportunities.

This situation represents the business as usual scenario for Al Hussein Neighbourhood. In this scenario, the neighbourhood will not achieve the vision formulated with the local community.

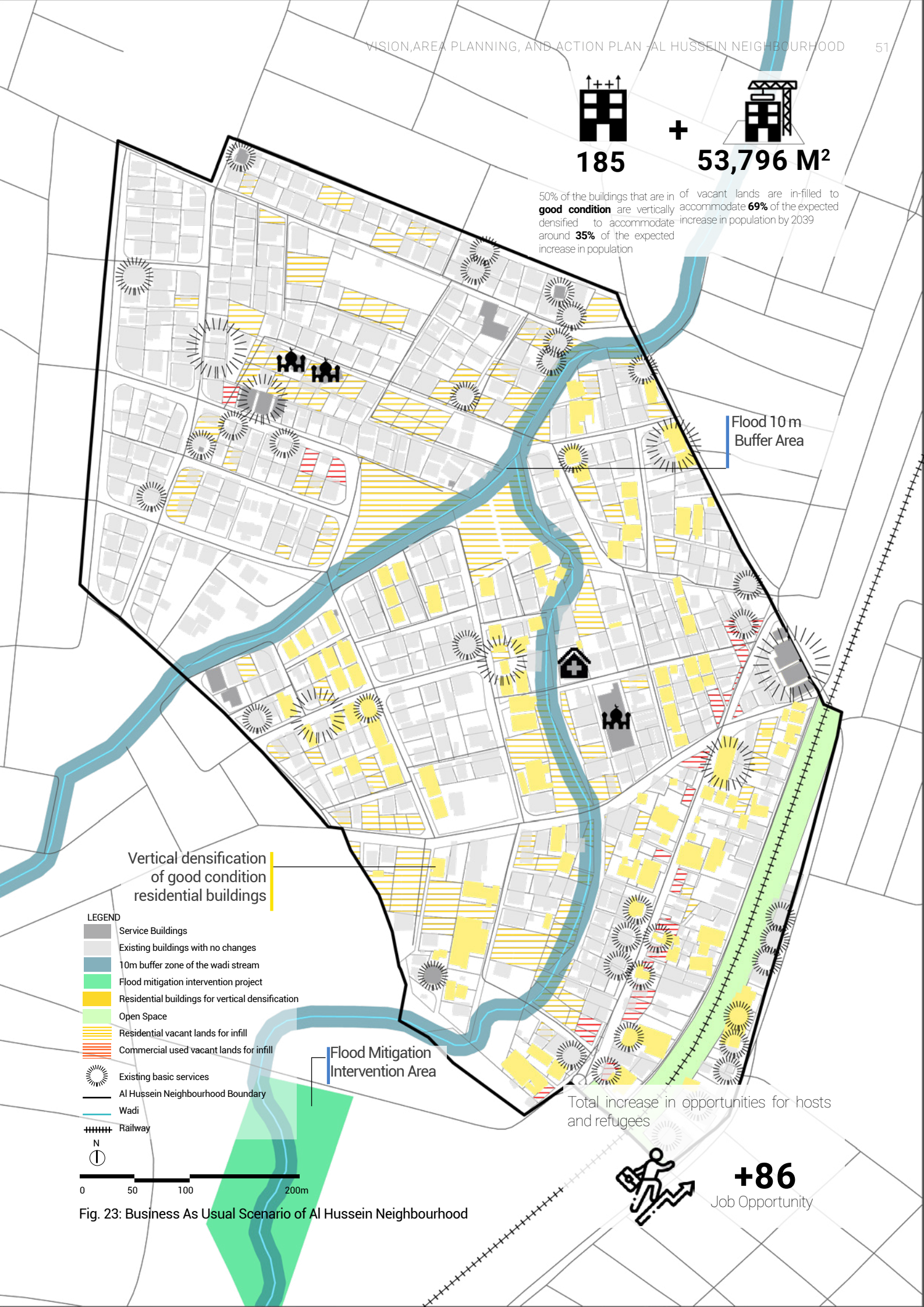


Fig. 23: Business As Usual Scenario of Al Hussein Neighbourhood

Optimal Scenario- Planning for a Prosperous, Well-Developed, Inclusive, and Resilient Neighbourhood

+6.3%
Increase to the **medium growth outcome (+39%)**

Increase in population: 5,094 hosts & 1,152 refugees
Total Population: 19,443 inhabitants

Variables	Population Growth	Urban Footprint	Needed Projects	Climate Risk & Natural Hazards	Local Economic Development
Outcome #1	**Low Growth Scenario:** the population growth rate will decrease to 1%.	**Infill and Vertical Densification approach** to accommodate the forecasted addition in population for year 2039	**Minimal implementation** of needed projects	**No** mitigation or adaptation measures	**Natural Economic Growth**
Outcome #2	**Medium Growth Scenario:** the population growth rate follows the estimated annual growth rate of Mafraq, 2.2%.	**Full infill approach** to accommodate the forecasted addition in population for year 2039	**Partial implementation** of needed projects	**Mitigation** measures	**Increase** Business and livelihood opportunities are increased, providing additional jobs and local economic stimulus
Outcome #3	**High Growth Scenario**: the population growth rate will increase to 3.1%.	**Full vertical densification approach** to accommodate the forecasted addition in population for year 2039	**Extensive implementation** of all needed projects	**Mitigation and adaptation** measures	
Outcome #4	**Large increase in population due to new unpredictable influx**				
Outcome #5	**Refugee Decline Population** (-??%)				

PROBABILITY	Highly Unlikely	Unlikely	**Likely**	Highly Likely
IMPACT	Significant Deterioration	Slight Deterioration	Slight Improvement	**Significant Improvement**

Scenario

For a well developed, inclusive, and resilient neighbourhood, the population growth rate considered is 8.5% to include any unpredictable increase in the population due to a new influx of migrants. Accordingly, this scenario proposes improving all residential buildings in good conditions for vertical expansion, vertically expanding buildings in good condition, and infilling 100% of the available residential vacant lands to accommodate the expected increase in population (estimated to be 6,246 inhabitants). Moreover, all proposed needed projects should be implemented by 2039.

Likely Impact

Residential buildings in critical and substandard conditions must undergo immediate rehabilitation to improve the quality of life for their residents and create an enabling environment for home-based businesses. Regarding public services, vacant land designated for commercial use must be utilized in a well-planned manner to consolidate essential shops and encourage the inclusion of missing services during the licensing process, as proposed in the map. Enhancing the quality of service offered by the existing primary health center and expanding the nearby Mafraq Comprehensive Health Center to meet current and future demand is a significant opportunity for the neighbourhood. Regarding educational facilities, constructing a new school within the neighbourhood to accommodate up to 1,500 students and expanding the nearby existing schools will address the expected increase in the student population. Given the lack of available public land within the neighbourhood, a public-private partnership could be a viable solution. Additionally, creating new public park, along with improvements to existing nearby public parks, will provide innovative areas for community interaction.

Upgrading the sewerage and water infrastructure networks is essential to meet existing and future demand. Adding solid waste containers in unserved areas and improving the efficiency of solid waste collection and management are also necessary steps. Enhancing street lighting is crucial for neighbourhood safety, and installing photovoltaic cells will reduce utility bills and improve the quality of life.

To mitigate the impact of flash floods, it is crucial to implement flood mitigation interventions at the wadi stream areas within the neighbourhood and the identified southern site, with special consideration for existing structures within the 10-meter buffer. Improving walkability through road infrastructure enhancements, including sidewalks, and constructing a bus stop shelter within the neighbourhood will significantly improve connectivity for residents.

By designating space for public facilities and making targeted infrastructure improvements, a robust foundation can be created to support increased economic activity and livelihood opportunities in the neighbourhood..

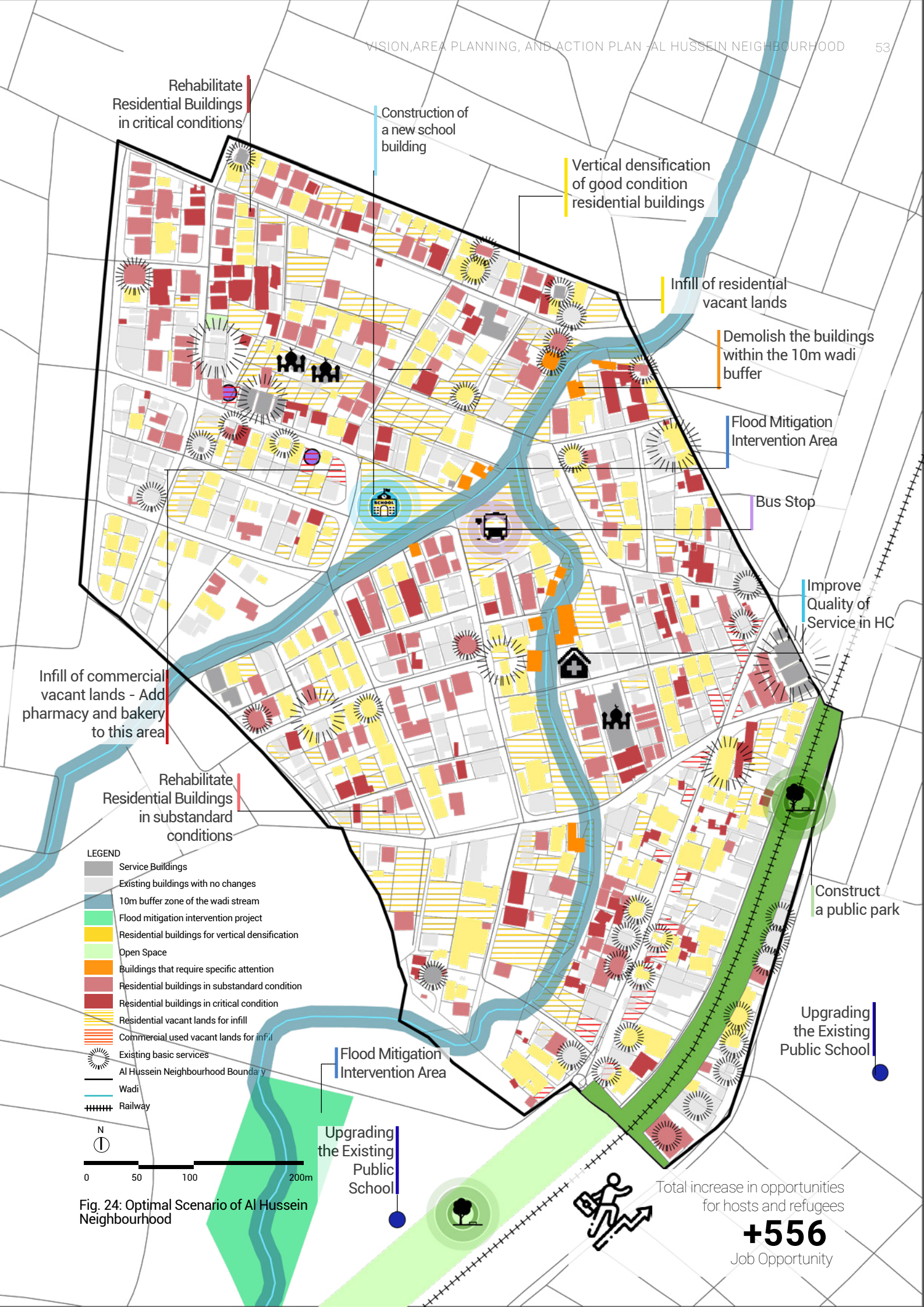


Fig. 24: Optimal Scenario of Al Hussein Neighbourhood

Prioritization of Needed Projects

To move forward with the development of the action plan, it is necessary to assess the identified projects and prioritize the investment projects to select those that should be implemented over the first five years of the implementation plan.

To do so, a scoring matrix was developed to identify the highest priority projects according to their urgency, transformative social, environmental, economic, and spatial impacts, as well as the alignment with the existing governmental plans. Additionally, this scoring considers the assessments of the local community and key stakeholders regarding the needed projects that have been identified for the Al Hussein Neighbourhood.

The scoring matrix measured each of the aforementioned transformative impacts at the equal weight of 20 points each, while the urgency, alignment with existing governmental plans, and the local community and key stakeholders assessments were each weighed at 5 points respectively. The total scoring weight is 100 points.

Accordingly, the following needed projects were assessed and scored:

1. **Water and Sewerage Network Upgrading;**
2. **Street Lighting Enhancement**
3. **Roads and Sidewalk Upgrading;**
4. **Housing Improvement and Upgrading;**
5. **Flood Mitigation Interventions;**
6. **Commercial Area Development;**
7. **School Construction;**
8. **School Upgrading;**
9. **Public Park Construction;**
10. **Al Hijazi Railway Park Rehabilitation;**
11. **Bus Stop Shelter Installation**

PRIORITY SCORING CRITERIA		
Technical Priority: Rate the urgency to implement the project within the short term period of the action plan? **(5 Points)**		
TRANSFORMATIVE IMPACT	**Social Impact (20 Points)**	**Provision of Basic Needs:** How many basic needs services does the project provide?
		Inclusivity: Does the project enhance the inclusivity of refugees and vulnerable groups
		Safety: How much does the project impact the safety of residents?
		Well Being: How much does the project improve the well-being of the residents?
	Environment Impact (20 Points)	**Natural Resource Consumption:** Rate the level of reduction the project can have on the natural resource consumption? (Water, fossil fuel)
		Climate Mitigation: Rate the potential level the project mitigates the climate change impact?
		Climate Adaptation: Rate the climate change adaptation potential level of the project?
		Healthy Ecosystem: Rate how much the project can contribute to creating a healthy ecosystem?
	Economic Impact (20 Points)	**Job Creation/livelihood opportunities:** How many job opportunities can the project create? (Direct and indirect)
		Diversity: Does the project diverse job opportunities?
	Spatial Impact (20 Points)	**% of Beneficiaries** from the project
		Connectivity: Does the project improve the connectivity of people to their basic needs?
		Butterfly Effect of needed projects: proximity of the project to the other needed projects and/or improves the residents' accessibility to the other projects
Alignment with the relevant governmental plans: is the project aligned with the existing relevant governmental plan/strategy **(5 Points)**		
Key Stakeholder Assessment (5 Points)		
Local Community Assessment (5 Points)		
Total (100 Points)		

Table. 1: The Priority Scoring Matrix- Template of Al Hussein Neighbourhood

IDENTIFIED PROJECTS NEEDED FOR AL HUSSEIN NEIGHBOURHOOD										
Infrastructure Investments Projects					**Public Services Projects**					
1. Water & Sewerage Networks	**2.** Street Lighting Enhancement	**3.** Road& Side walk Upgrading	**4.** Housing Improvement and Upgrading	**5.** Flood Mitigation Interventions	**6.** Commercial Area Development	**7.** School Construction	**8.** School Upgrading	**9.** Public Park Construction	**10.** Public Park Rehabilitation	**11.** Bus Stop Shelter Installation

03

STAKEHOLDER ENGAGEMENT

Vision and Scenario Building Validation Workshops

As part of the participatory process adopted throughout the project, validation workshops were held with the key stakeholders including relevant governmental entities, and the local community representatives to validate the vision and developed scenarios of the Al Hussein neighbourhood as follows:

Validation Workshops - Key Stakeholders

On the 26th of June 2024, the UN-Habitat Jordan team held a workshop with the Greater Mafraq Municipality and key stakeholders from the relevant development ministries and entities to discuss the Al Hussein Neighbourhood's vision, which was formulated in a participatory manner with the local community, as well as the developed scenarios for the next 15 years. The scenarios include the "Business As Usual (BAU)" and the "Optimal", where the BAU reveals the neighbourhood's condition in 2039 if partial implementation of needed planning actions were taken, while the optimal envisions the neighbourhood's situation with all the needed actions implemented.

The workshop was held at the UN-Habitat office in Amman and included 14 representatives from various relevant entities, including the Greater Mafraq Municipality, the Ministry of Local Administration, the Ministry of Water and Irrigation, the Ministry of Education, the Ministry of Planning and International Cooperation, the Ministry of Tourism and Antiquities, the Department of Statistics, the Land Transport Regulatory Commission, and the Housing and Urban Development Corporation.

The workshop began with a presentation of the challenges, opportunities, and needs identified through the Spatial Analytics and Urban Profiling component of the project, as well as those discussed with the local community during the previous workshop in March. Following this, the presentation continued with the vision keywords and statements developed in collaboration with the local community.

Afterward, the assumptions and variables that would impact the scenario-building process were discussed in-depth. These variables included population growth, urban footprint, needed projects, climate risk and natural hazards, and local economic development. Finally, the "Business as Usual" Scenario was presented before moving on to the participatory session to develop the "Optimal Scenario" with the key stakeholders.

The following recommendations were proposed for consideration when finalizing the optimal scenario for the Al Hussein Neighbourhood:

- The Al Hussein Health Center will be relocated to a new facility near the neighborhood, and this project is currently in progress. **Therefore, it will not be included as a needed project in the action plan development.**
- The GMM owns public land on the periphery of the neighbourhood's boundary, designated for park development. This land can be proposed for the needed public park project to facilitate easy implementation.
- Consider adding a vocational training center within the neighbourhood to enhance local skills and employment opportunities.
- It was also mentioned that the new school projects include a social hall, with playgrounds available for families in the afternoons. These schools will also incorporate education for persons with disabilities (PWDs).

In the last session of the workshop, and after all the detailed discussions on the situation of the neighbourhood, there was a scoring exercise where the participants voted on the highest priority projects that should be implemented in Al Hussein Neighbourhood in the next five years from their point of view.

The results showed a majority of votes for the Rehabilitation of Critical Areas of the Roads and Sidewalks, then equal votes for the Housing Improvement and Upgrading, Bus Stop Shelter Installation, Mafraq Comprehensive Health Center Rehabilitation, and School Construction.

Images during the validation workshops with the key stakeholders- Source : UN-Habitat

Validation Workshop - Local Community

The UN-Habitat team held a workshop with the local community and relevant stakeholders from GMM on the 9th of July 2024, at Jordan Engineers Association - Professional Associations Complex in Mafraq City, which is very close to Al Hussein neighbourhood. A total of 29 participants attended the workshop, all of whom were residents of Al Hussein Neighbourhood, attendees included women, youth, refugees, and representatives of people with disabilities, to ensure the inclusion of diverse age groups, genders, and nationalities within the neighbourhood. Additionally, representatives from MoLA and GMM attended the workshop.

The workshop aimed to discuss and validate the neighbourhood's vision, which was formulated with the local community in a participatory workshop in March, as well as to discuss and validate the developed variables and 'Business as Usual' scenario, and to work together on finalizing the developed 'Optimal' Scenario.

The workshop started by discussing the neighbourhood's vision and keywords that were previously formulated, where the residents validated and confirmed their approval of the formulated vision. Then the variables and the 'Business as Usual' Scenario were presented to give the participants a clear idea of the findings before moving on to the participatory session for the finalization of the 'Optimal Scenario'.

The participants were then divided into three groups of around 10, where each group was assisted by a UN-Habitat team member. In this session, the groups discussed and validated the needed projects and identified the preferred location of the needed projects, to develop the 'Optimal Scenario' from their point of view. This exercise assisted in finalizing the developed optimal scenario.

In the last session of the workshop, and after all the detailed discussions on the situation of the neighbourhood, the residents participated in the scoring exercise where they voted on the most urgent projects that should be prioritised for implementation in Al Hussein neighbourhood over the next five years.

According to the scoring, the prioritized projects, in order of preference, are: installing a bus stop, rehabilitating roads and sidewalks, improving and upgrading housing, implementing flood mitigation interventions, upgrading water and sewerage networks, and rehabilitating Al Hijazi Railway Park.

Images during the workshop with Al Hussein Neighbourhood residents
Source : UN-Habitat

Conclusion- High-Priority Needed Projects

After the validation of the needed projects, the technical assessment, as well as the local community and stakeholder assessments, the priority scoring matrix was completed and the highest-scoring needed projects were identified. These identified projects are the high-priority needed projects that must be implemented within the short term (the first five years) period of the optimal scenario action plan.

The high-priority needed projects include:

1. **Water and Sewerage Network Upgrading;**
2. **Roads and Sidewalk Upgrading;**
3. **Flood Mitigation Interventions;**
4. **Commercial Area Development;**
5. **Housing Improvement and Upgrading;**
6. **Bus Stop Shelter Installation.**

Accordingly, the short term implementation plan was developed, as shown in the following section.

PRIORITY SCORING CRITERIA		
Technical Priority: Rate the urgency to implement the project within the short term period of the action plan? **(5 Points)**		
TRANSFORMATIVE IMPACT	**Social Impact (20 Points)**	**Provision of Basic Needs:** How many basic needs services does the project provide?
		Inclusivity: Does the project enhance the inclusivity of refugees and vulnerable groups
		Safety: How much does the project impact the safety of residents?
		Well Being: How much does the project improve the well-being of the residents?
	Environment Impact (20 Points)	**Natural Resource Consumption:** Rate the level of reduction the project can have on the natural resource consumption? (Water, fossil fuel)
		Climate Mitigation: Rate the potential level the project mitigates the climate change impact?
		Climate Adaptation: Rate the climate change adaptation potential level of the project?
		Healthy Ecosystem: Rate how much the project can contribute to creating a healthy ecosystem?
	Economic Impact (20 Points)	**Job Creation/livelihood opportunities:** How many job opportunities can the project create? (Direct and indirect)
		Diversity: Does the project diverse job opportunities?
	Spatial Impact (20 Points)	**% of Beneficiaries** from the project
		Connectivity: Does the project improve the connectivity of people to their basic needs?
		Butterfly Effect of needed projects: proximity of the project to the other needed projects and/or improves the residents' accessibility to the other projects
Alignment with the relevant governmental plans: is the project aligned with the existing relevant governmental plan/strategy **(5 Points)**		
Key Stakeholder Assessment (5 Points)		
Local Community Assessment (5 Points)		
Total (100 Points)		

Table. 2: The Priority Scoring Matrix- Template of Al Hussein Neighbourhood

*: Priority Needed Project

IDENTIFIED PROJECTS NEEDED FOR AL HUSSEIN NEIGHBOURHOOD										
Infrastructure Investments Projects					**Public Services Projects**					
1. Water & Sewerage Networks	**2.** Street Lighting Enhancement	**3.** Road& Side walk Upgrading	**4.** Housing Improvement and Upgrading	**5.** Flood Mitigation Interventions	**6.** Commercial Area Development	**7.** School Construction	**8.** School Upgrading	**9.** Public Park Construction	**10.** Public Park Rehabilitation	**11.** Bus Stop Shelter Installation
5	2	5	5	5	0	0	0	0	2	5
1	0	0	1	0	3	1	1	1	1	5
0	0	0	5	0	5	0	0	5	5	5
2	5	5	5	5	2	2	2	2	0	5
2	5	5	5	5	2	5	2	5	5	2
5	0	0	2	5	0	0	0	0	0	0
5	2	5	5	5	2	2	2	5	0	5
2	2	5	5	5	2	2	2	2	2	2
5	5	5	5	5	5	0	2	5	5	5
0	0	7.5	15	7.5	15	15	15	7.5	7.5	7.5
0	0	0	5	0	5	5	5	5	0	0
10	10	8	4	10	6	4	4	10	10	10
5	5	5	5	0	5	5	5	5	0	5
6	2	6	2	6	0	2	4	6	6	2
5	5	5	5	5	5	0	0	0	5	5
2	2	5	5	3	2	5	5	1	1	5
5	4	5	5	5	5	1	2	1	3	5
60*	49	71.5*	84*	71.5*	64*	49	51	60.5	52.5	73.5*

Action Plan- Planning for a Prosperous, Well-Developed, Inclusive, and Resilient Neighbourhood

+6.3%
Increase to the **medium growth outcome (+39%)**

Increase in population: 5,094 hosts & 1,152 refugees
Total Population: 19,443 inhabitants

Variables	Population Growth	Urban Footprint	Needed Projects	Climate Risk & Natural Hazards	Local Economic Development
Outcome #1	**Low Growth Scenario:** the population growth rate will decrease to 1%.	**Infill and Vertical Densification approach** to accommodate the forecasted addition in population for year 2039	**Minimal implementation** of needed projects	**No** mitigation or adaptation measures	**Natural Economic Growth**
Outcome #2	**Medium Growth Scenario:** the population growth rate follows the estimated annual growth rate of Mafraq, 2.2%.	**Full infill approach** to accommodate the forecasted addition in population for year 2039	**Partial implementation** of needed projects	**Mitigation** measures	**Increase** Business and livelihood opportunities are increased, providing additional jobs and local economic stimulus
Outcome #3	**High Growth Scenario**: the population growth rate will increase to 3.1%.	**Full vertical densification approach** to accommodate the forecasted addition in population for year 2039	**Extensive implementation** of all needed projects	**Mitigation and adaptation** measures	
Outcome #4	**Large increase in population due to new unpredictable influx**				
Outcome #5	**Refugee Decline Population** (-??%)				

PROBABILITY	Highly Unlikely	Unlikely	**Likely**	Highly Likely
IMPACT	Significant Deterioration	Slight Deterioration	Slight Improvement	**Significant Improvement**

After considering the feedback from the community, the Greater Mafraq Municipality, and other key stakeholders from relevant ministries during the validation sessions, which aligned with the proposed optimal scenario, minimal changes were made to update the optimal scenario and formulate the action plan for Al Hussein Neighbourhood, as presented on the following page. In conclusion, the action plan for Al Hussein Neighbourhood includes the following actions:

- **Population Growth:** Consider a population growth rate of 8.5% to account for any unpredictable increase due to a new influx of migrants.
- **Housing Expansion:** To accommodate the expected population increase, vertically expand buildings in good condition and infill available residential vacant lands.
- **Housing Rehabilitation:** Rehabilitate residential buildings in critical and substandard conditions to improve the quality of life for residents, ensuring an enabling environment for home-based businesses. Give particular consideration to structures within the 10-meter wadi stream buffer zone.
- **Commercial Development:** Encourage the commercial development of identified vacant lands on the north-western and south-western sides of the neighborhood. This includes consolidating essential shops during the licensing process, allowing residents to apply for vocational licenses, including basic needs stores, on residential land.
- **Educational Facilities:** Vertically and/or horizontally expand the two nearby existing public schools and construct a new school in the neighborhood. Given the lack of available public land within the neighbourhood, a public-private partnership could be a viable solution.
- **Public Park Rehabilitation:** Rehabilitate the existing public park, "Al Hijazi Railway Park," by adding needed facilities such as shading, seating,etc.
- **Public Park Construction:** Utilize the existing public land to develop a public park that incorporates innovative ideas to enhance livelihood opportunities, such as a market and a vocational training center.
- **Infrastructure Upgrades:** Upgrade the sewerage and water infrastructure networks to accommodate current and future demand.
- **Solid Waste Management:** Add solid waste containers in identified unserved areas.
- **Electrical and Lighting Improvements:** Improve the spatial distribution of electrical posts and enhance street lighting. Additionally, encourage the installation of photo-voltaic cells to reduce utility bills.
- **Flood Mitigation:** Implement flood mitigation interventions in areas surrounding the wadi streams.
- **Road and Walkability Improvements:** Enhance the walkability of the neighbourhood through improvements to road infrastructure, including sidewalks.
- **Public Transportation:** Install a bus stop shelter to improve connectivity in the neighbourhood.

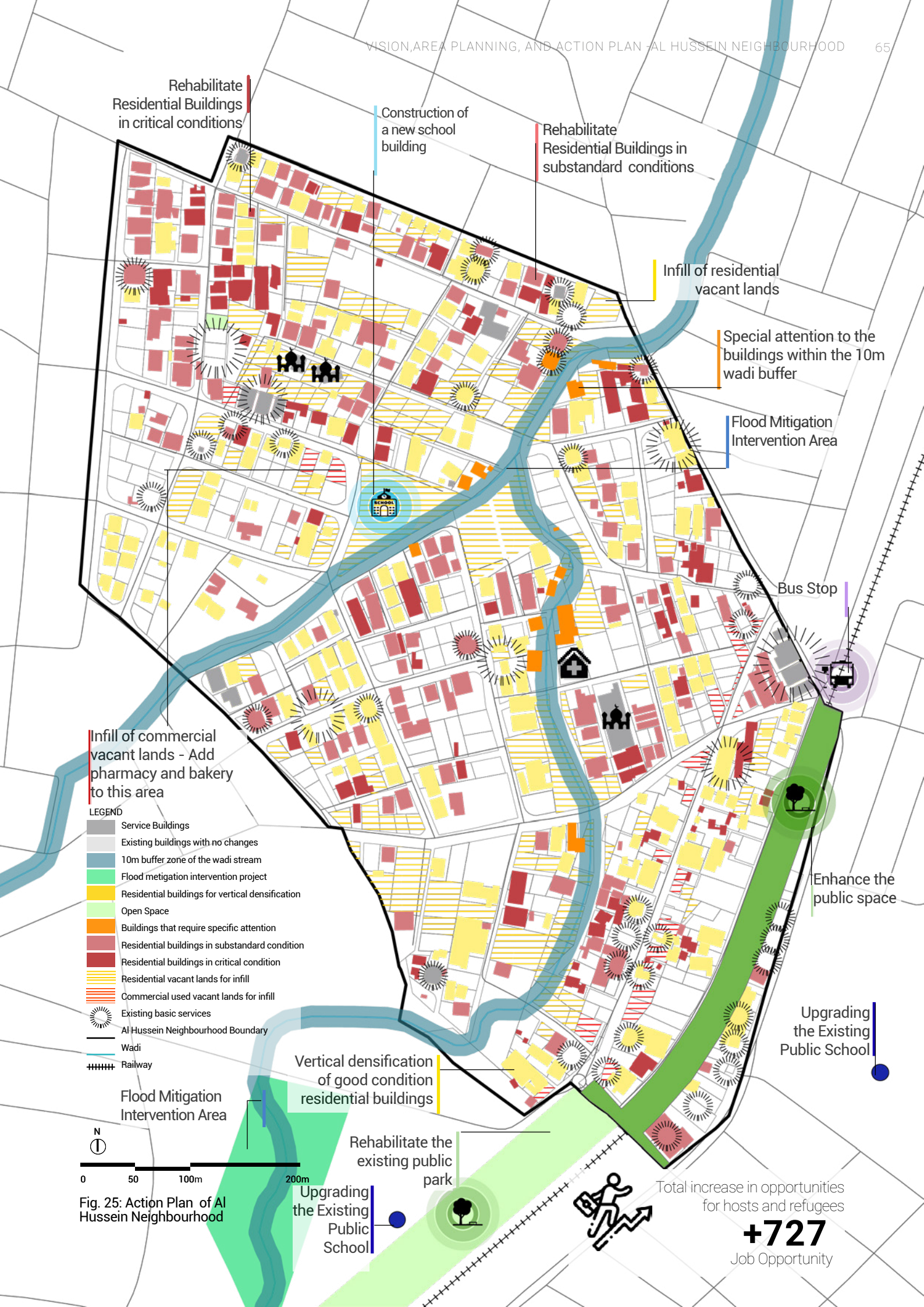
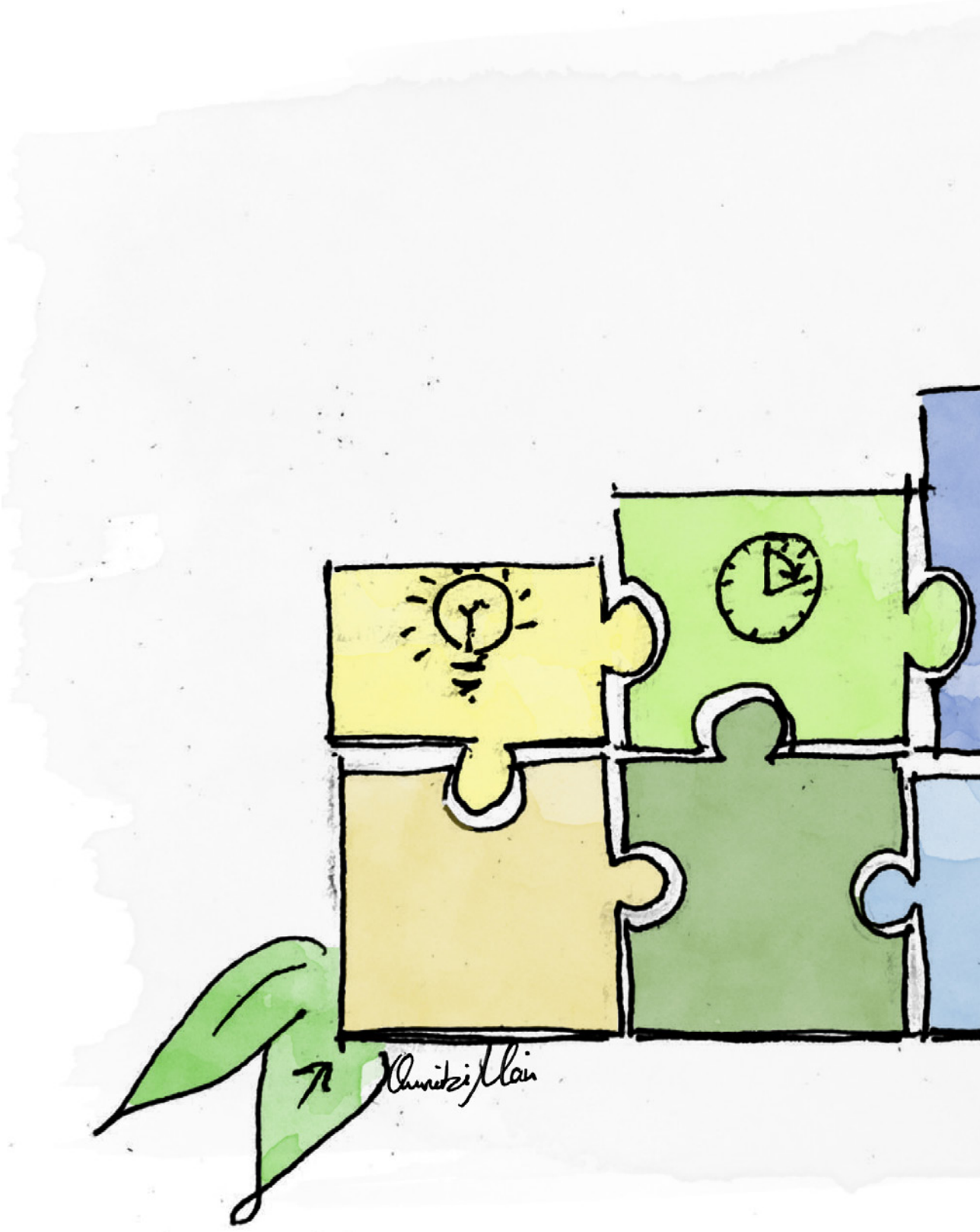
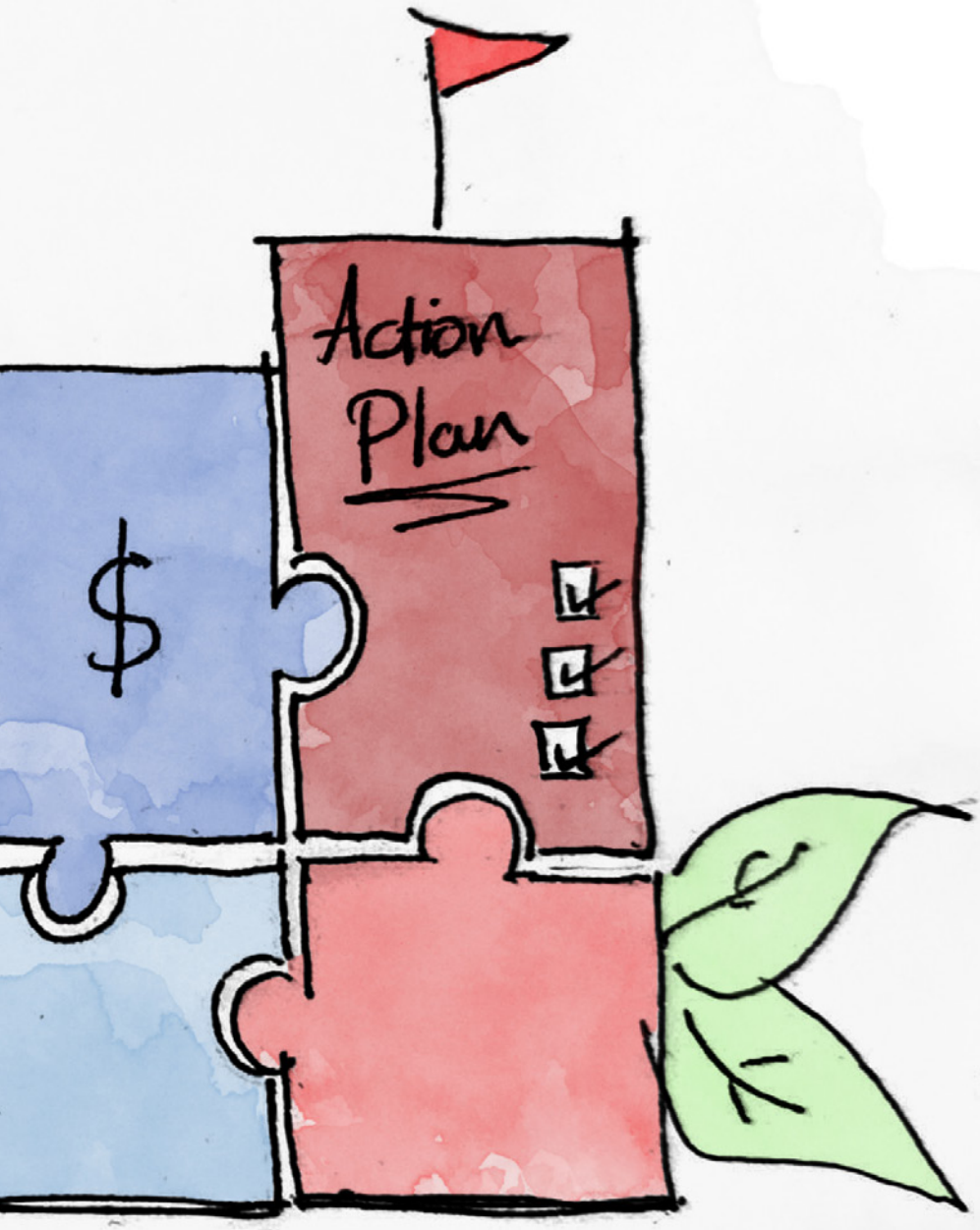


Fig. 25: Action Plan of Al Hussein Neighbourhood





04

THE BLUEPRINT FOR IMPLEMENTATION: AL HUSSEIN ACTION PLAN

Translating the Action Plan into Catalytic Actions in Al Hussein Neighbourhood

To realise the formulated vision for "*An Investment-Attractive, Well-Developed, Inclusive, and Resilient Neighbourhood, Empowering Its Community and Attracting Investments for a Brighter Future*" by 2039, and to achieve the action plan for the Al-Hussein Neighbourhood, specific actions must be taken. Accordingly, transforming the strategic recommendations proposed in the action plan into implementable initiatives requires a detailed implementation plan that can tackle incremental spatial, environmental, social, and economical transformations. These actions are not solely the responsibility of the Greater Mafraq Municipality (GMM), but also concern other relevant actors who undertake development at the local level, such as the Yarmouk Water Company (YMC) and the Ministries of Health and Education. The primary aim of the implementation plan is to provide an overarching framework that guides GMM and the key stakeholders from the relevant entities to ensure a proactive and manageable approach to implement the needed changes at the neighbourhood level. Guided by the holistic approach of the optimal scenario and action plan, this implementation plan outlines how to coordinate the identified needed projects in Al Hussein neighbourhood. Within this context, needed projects must be collectively assessed, whereby projects with possible synergies can be grouped together to ensure that the limited available resources are utilized in the most efficient and cost effective way to deliver the highest possible impact.

As outlined below, the Al Hussein Neighbourhood is divided into three main phases (short-, mid, and long-term), with each phase spanning five years, starting from 2025 and ending in 2039.

- **Short-Term Phase:** The short-term phase spans from 2025 until 2029 and is the period in which the high priority needed projects must be implemented. These include the upgrading the water and sewerage networks in critical areas; upgrading the road and sidewalk networks in critical areas, enhancing street lighting in the critical road areas, implementing flood mitigation interventions, developing the commercial area, improving and upgrading residential buildings in critical and substandard conditions, and installing a bus stop.
- **Mid-Term Phase:** This phase extends over the period of 2030 until the year 2034. The medium priority projects have been identified based on the scoring matrix and must be implemented during this phase. These projects include upgrading the water and sewerage networks in the remaining areas; upgrading the road and sidewalk networks in the remaining areas, enhancing street lighting in the remaining road areas, constructing a public space; rehabilitating existing Al Hijazi Railway park; rehabilitating the existing health centre; and upgrading the existing schools.
- **Long-Term Phase:** This phase includes implementing the remaining needed project, during the period between 2035 and 2039, which is constructing a new school.

It should be noted here, that this implementation plan has been **validated and updated with the key relevant stakeholders and GMM team**. To monitor the implementation of these actions, and to ensure the implementation plan continues to be 'fit for purpose' and responsive to change, **this plan must be reviewed and updated every 3 years by the assigned committee which includes all involved entities.**

No.	Project Name	Implementation Plan Phases		
		Short Term (2025-2029)	Mid Term (2030-2034)	Long Term (2035-2039)
1	**Upgrading the Water and Sewerage Networks**			
2	**Enhancing Street Lighting**			
3	**Upgrading the Road and Sidewalk Networks**			
4	Rehabilitating **Residential Buildings in Critical & Substandard Conditions**			
5	**Implementing Flood Mitigation Interventions**			
6	**Developing the Commercial Area**			
7	**Constructing a New School**			
8	**Upgrading the Existing Public Schools**			
9	**Constructing a Public Park**			
10	**Rehabilitating the Existing Al Hijazi Railway Park**			
11	**Installing a Bus Stop Shelter**			

Fig. 26: All needed projects/implementation time line over the implementation plan phases

TOWARDS AL HUSSEIN NEIGHBOURHOOD ACTION PLAN

ACTION PLAN (2025-2039)

SHORT

SHORT TERM PHASE 2025-2029

- Upgrading Water and Sewerage Networks
- Upgrading Road and Sidewalk Networks
- Enhancing Street Lighting in the Critical Areas
- Implementing Flood Mitigation Interventions
- Developing the Commercial Area
- Rehabilitating Residential Buildings of Critical and Substandard Conditions
- Installing a Bus Stop Shelter

MID

MID TERM PHASE (2030-2034)

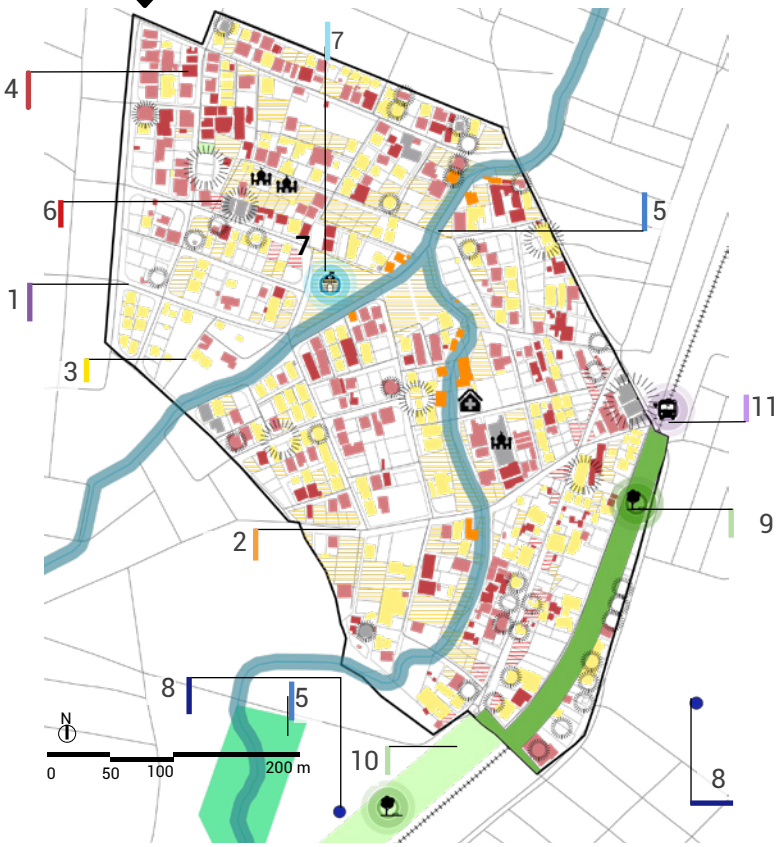
- Rehabilitating the Existing Al Hijazi Railway Park
- Constructing a Public Park
- Upgrading the Existing Public Schools

LONG

LONG TERM PHASE (2035-2039)

- Constructing a New Public School

ACTION PLAN OF AL HUSSEIN NEIGHBOURHOOD



No.	Project Name
1	Upgrading the Water and Sewerage Networks Project
2	Enhancing Street Lighting Project
3	Upgrading the Road and Sidewalk Networks Project
4	Rehabilitating Residential Buildings in Critical and Substandard Conditions Project
5	Implementing Flood Mitigation Interventions Project
6	Developing the Commercial Area
7	Constructing a New School Project
8	Upgrading the Existing Public Schools Project
9	Constructing a Public Park Project
10	Rehabilitating the Existing Al Hijazi Railway Park Project
11	Installing a Bus Stop Shelter Project

Fig. 27: Al Hussein Implementation Plan Diagram

Short-Term Phase (2025 -2029)

As explained earlier, the identified high-priority projects must be implemented within the short-term phase of this implementation plan. These projects include:

- Upgrading the Water and Sewerage Networks
- Upgrading the Road and Sidewalk Networks
- Enhancing Street Lighting
- Implementing Flood Mitigation Interventions
- Developing the Commercial Area
- Improving and upgrading residential buildings in critical and substandard conditions
- Installing Bus Stop

This section covers the actions needed for each project and the implementation sequence to follow during the period between 2025 and 2029. Several factors were taken into consideration in identifying these actions and this sequencing, including the urgency of the situation, spatially-overlaps between projects, the cost-efficiency of the implementation, alignment with governmental plans and strategies, as well as alignment with donors/ financiers strategies and current interests.

To maximise the impact, efficiency, and cost-effectiveness of implementation, the aforementioned projects were collectively analysed to detect synergies and, accordingly, identify the most economical process for implementing the action plan.

Therefore, spatial-overlaps between projects were identified so that these projects can be implemented in a gradual order that ensures the optimal utilisation of available resources. This includes upgrading the water and sewerage networks as well as the road and sidewalk infrastructure in overlapping areas. Accordingly, the road and sidewalk upgrades should begin in the same areas designated for water and sewerage network improvements. In parallel, street lighting enhancements must be undertaken in these areas where road and sidewalk upgrades are in progress.

The beneficiaries for these projects will be the total population of Al Hussein Neighbourhood, including the host community and refuges (13,197 residents currently), as well as some residents and visitors from nearby areas.

Project Briefs were developed (Annex C) for the high-priority projects to begin the mobilization of resources in 2024. They describe the project, its objective, beneficiaries, impact, partners, life cycle, time-line, and financial details. These briefs will link the prioritized projects to potential partners for financing and implementation.

ICON	PROJECT	SHORT TERM PHASE (2025-2029)				
		2025	2026	2027	2028	2029
	Upgrading the Water Network					
	Upgrading the Sewerage Network					
	Upgrading the Road & Sidewalk Networks					
	Enhancing Street Lighting in the Road					
	Implementing Flood Mitigation Intervention					
	Developing the Commercial Area					
	Rehabilitating residential buildings in critical & substandard conditions					
	Installing a Bus Stop Shelter					

Fig. 28: The priority projects/implementation time-line of the short term phase

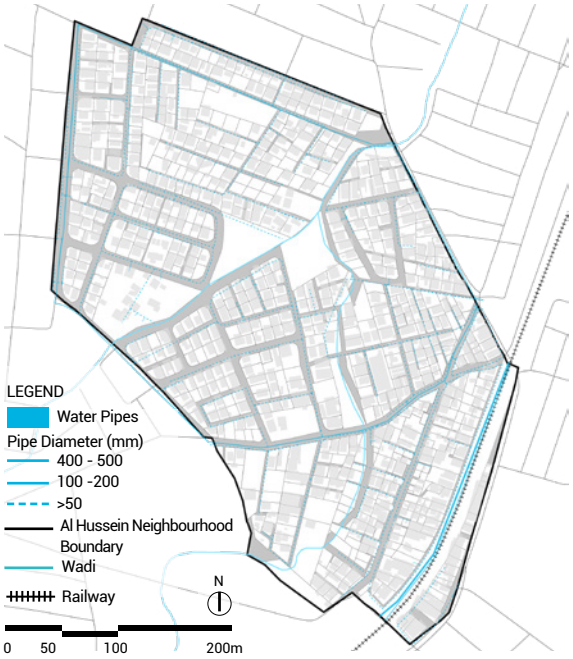


Fig. 29: Water Network Upgrading Project

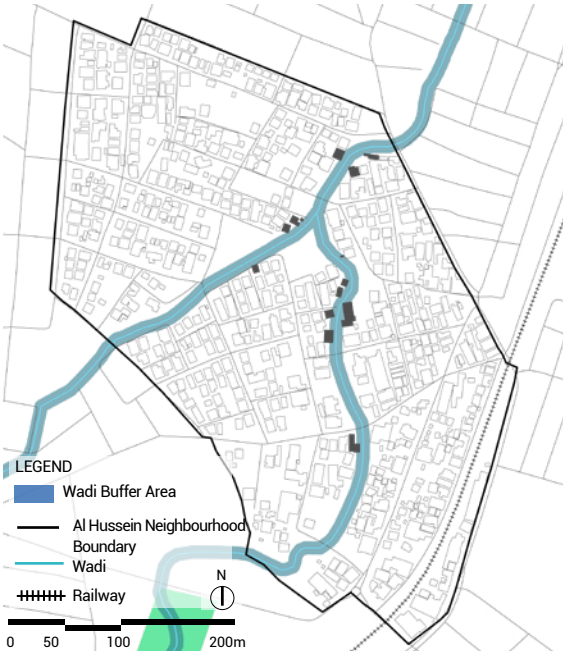


Fig. 30: Flood Mitigation Intervention Area Project

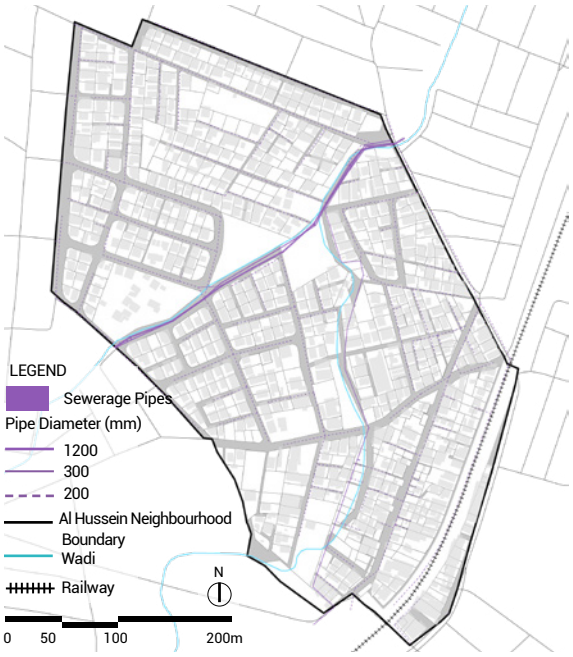


Fig. 31: Sewerage Network Upgrading Project

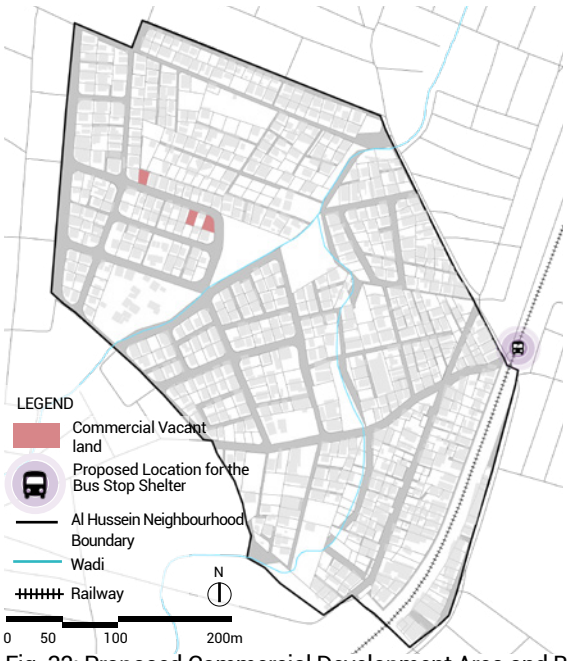


Fig. 32: Proposed Commercial Development Area and Bus Stop Shelter Installation Area Projects

Fig. 33: Road & Sidewalk Networks' Upgrading Project

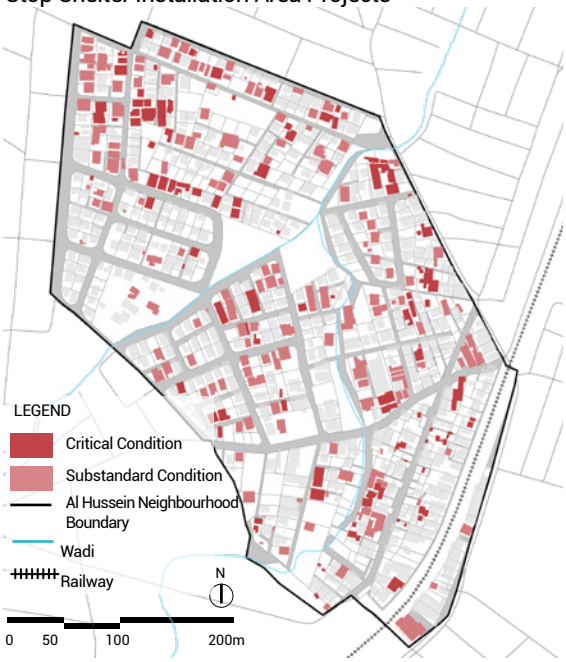


Fig. 34: Critical & Substandard Residential Buildings Rehabilitation Project

• Actions for the Years 2025 -2029

To initiate the work in Al Hussein neighbourhood, the first step is to identify the available resources at the involved entity for the implementation of each high-priority projects. This includes developing the project budget, whereby the possible in-house contributions and the needed investment for the project implementation are calculated. If needed, the next step is to begin mobilizing resources from interested financiers/donors to implement the project during the short-term phase of the action plan. It is necessary to prepare the budget and initiate the process of seeking a financier/donor to support the implementation of all the prioritised projects in this year. Accordingly, the year 2025, can be considered a mobilisation year to secure the needed funding, prepare the detailed work plans, identify the roles and responsibilities, and prepare for the procurement process for all the priority projects that must be implemented within this phase of the action plan.

Given the simplicity and quick applicability of the commercial development project in the identified northwestern area of the neighbourhood, it is recommended that this initiative be undertaken in 2025. The relevant GMM team should be encouraged to prioritize establishing essential shops on the available commercial vacant lands.

In 2026, the pre-construction phase for upgrading the water and sewerage networks in the neighbourhood should begin. This includes preparing the Request For Proposal (RFP) for developing the detailed design for the bidding process, holding the bid evaluation, and selecting a consultant. The consultant, in coordination with the Yarmouk Water Company (YMC), Ministry of Water and Irrigation, and Jordan Water Company, should then start conducting the needed studies, developing the detailed design drawings, and, upon approval from YMC, prepare the construction RFP for the implementation bidding process. After the evaluation and selection of the contractor, the implementation should start in 2027.

This should be directly followed by upgrading the road and sidewalk networks infrastructure at the same locations, as these projects overlap spatially and excavation works will already be necessary for the sewerage and water network upgrades. **Consequently, street light enhancements should also be undertaken in these areas**. **Additionally, coordination with the Land and Transport Regulatory Commission (LTRC) is essential to ensure that bus stop area is considered during the road and sidewalk upgrades**. This approach will result in a more cost-efficient implementation. Therefore, the Greater Mafraq Municipality (GMM) should start developing the concept and detailed designs for the road and sidewalk infrastructure at the areas overlapping with the water and sewerage networks upgrading within Al Hussein neighbourhood. Accordingly, the construction RFP must be prepared to hold the bidding process and select a contractor. The implementation should start in 2027. Simultaneously, the LTRC should mobilize the necessary resources to install the required bus stop shelter and initiate the implementation process. This process should begin with preparing and announcing a RFP for the design and construction of the bus stop shelter in the proposed area.

On the other hand, given that two streams of the Wadi of Mafraq cross the neighbourhood, the pre-construction phase for flood mitigation interventions at the periphery of Wadi Al Mafraq should begin concurrently with the upgrades to water, sewerage, roads, and sidewalks in 2026. This will ensure effective resource planning. The project aims to mitigate the impact of flash floods at both the neighbourhood and city levels by implementing suitable interventions, which will be determined through further studies. After mobilizing the needed resources, the required actions include preparing the design RFP for the bidding process, holding the bidding, evaluating received bids, and selecting the consultant. Afterwards, the survey work should be initiated, the concept designs should be developed for the optimal flood mitigation intervention, and the detailed designs should be finalized. Following the design process, the construction RFP for the bidding process must be prepared to select a contractor and initiate implementation on the ground in 2029.This sequence would result in a more comprehensive and tangible impact on ground, whereby these projects will enhance the provision of water and sewerage services, reduce the current load, minimise the water loss due to the replacement of the existing deteriorated pipes, mitigate floods impact, enhance accessibility and mobility, promote walkability, as well as increase pedestrian safety in these identified areas. To align efforts, regular coordination meetings should be conducted between the YMC, LTRC, and GMM teams. The estimated direct beneficiaries of these projects are around 13,500 to 19,500 inhabitants of the current and forecasted population of Al Hussein Neighbourhood respectively, including the host community and refugees.

Regarding the project "Rehabilitating residential Buildings in Critical & Substandard Conditions," the identification of necessary actions must include community consultation sessions to engage residents throughout the project process. This will support the identification of needs, challenges, and available opportunities, as well as the development of the design. The design should create an enabling environment by incorporating socioeconomic opportunities for residents. For example, integrating rooms designed for home-based businesses based on residents' skills, such as nurseries or hairdressing salons. The project is estimated to benefit approximately 5000 inhabitants. The following pages present the breakdown of actions and the proposed time-frame for each project.

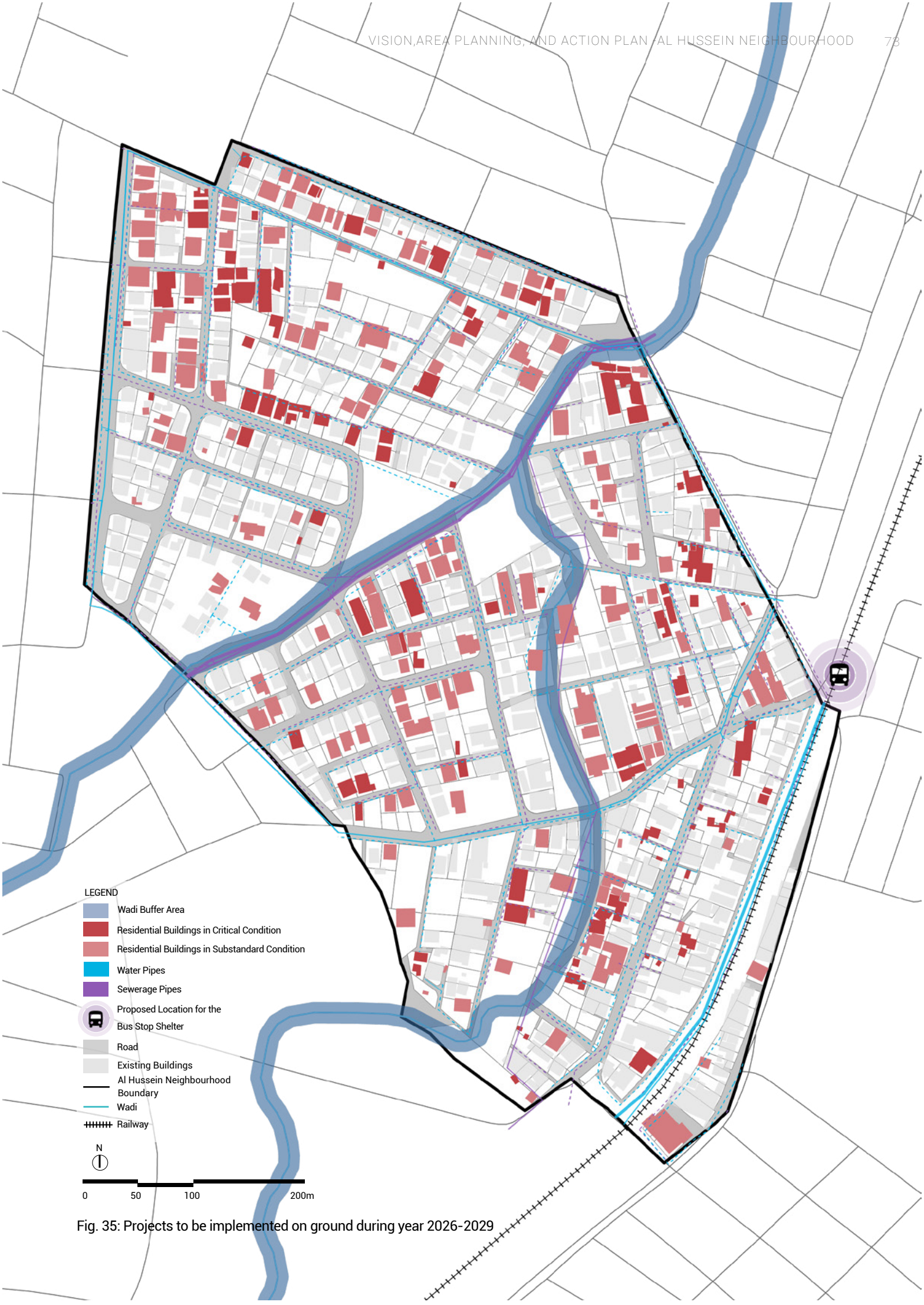
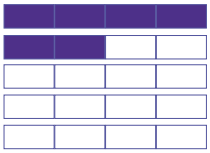
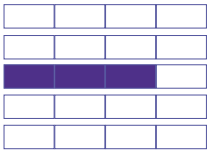
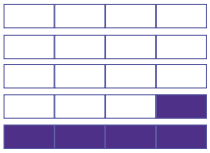


Fig. 35: Projects to be implemented on ground during year 2026-2029

UPGRADING THE WATER AND SEWERAGE NETWORKS

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the project budget, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	YMC, in coordination with MOWI & WAJ	
02	Prepare the Design and Supervision RFP for the bidding process of the networks and conveyor lines and to expand the purification stations connected to them (if necessary) & announce the bid. The RFP must include conducting a detailed technical assessment, conducting an environmental impact assessment, identifying needed pipes' specifications, including pipe diameter and material for the upgrading of the existing networks, developing the design, and preparing the construction RFP.	YMC,in coordination with MOWI & WAJ	
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	YMC, in coordination with MOWI & WAJ	
04	Conduct a detailed technical assessment for the water and sewerage networks at Al Hussein neighbourhood and identifying connecting points.	Consultant under the supervision of YMC, MOWI, & WAJ	
05	Prepare and finalize the detailed design drawings for upgrading the water and sewerage networks in the critical areas and obtain needed approvals.	Consultant under the supervision of YMC, MOWI, & WAJ	
06	Prepare the construction RFP for the bidding process & announce the bid.	YMC in coordination with MOWI & WAJ, & Consultant	
07	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	YMC in coordination with MOWI & WAJ, & Consultant	
08	Implementation of the construction work *	Contractor under the supervision of YMC, MOWI, WAJ & Consultant	

* The upgrading of the water and sewerage networks should be coordinated with the road and sidewalk network upgrades, the wadi flood mitigation efforts(managed by GMM), and the bus stop shelter installation project (managed by LTRC). shelter installation (responsible entity: LTRC).

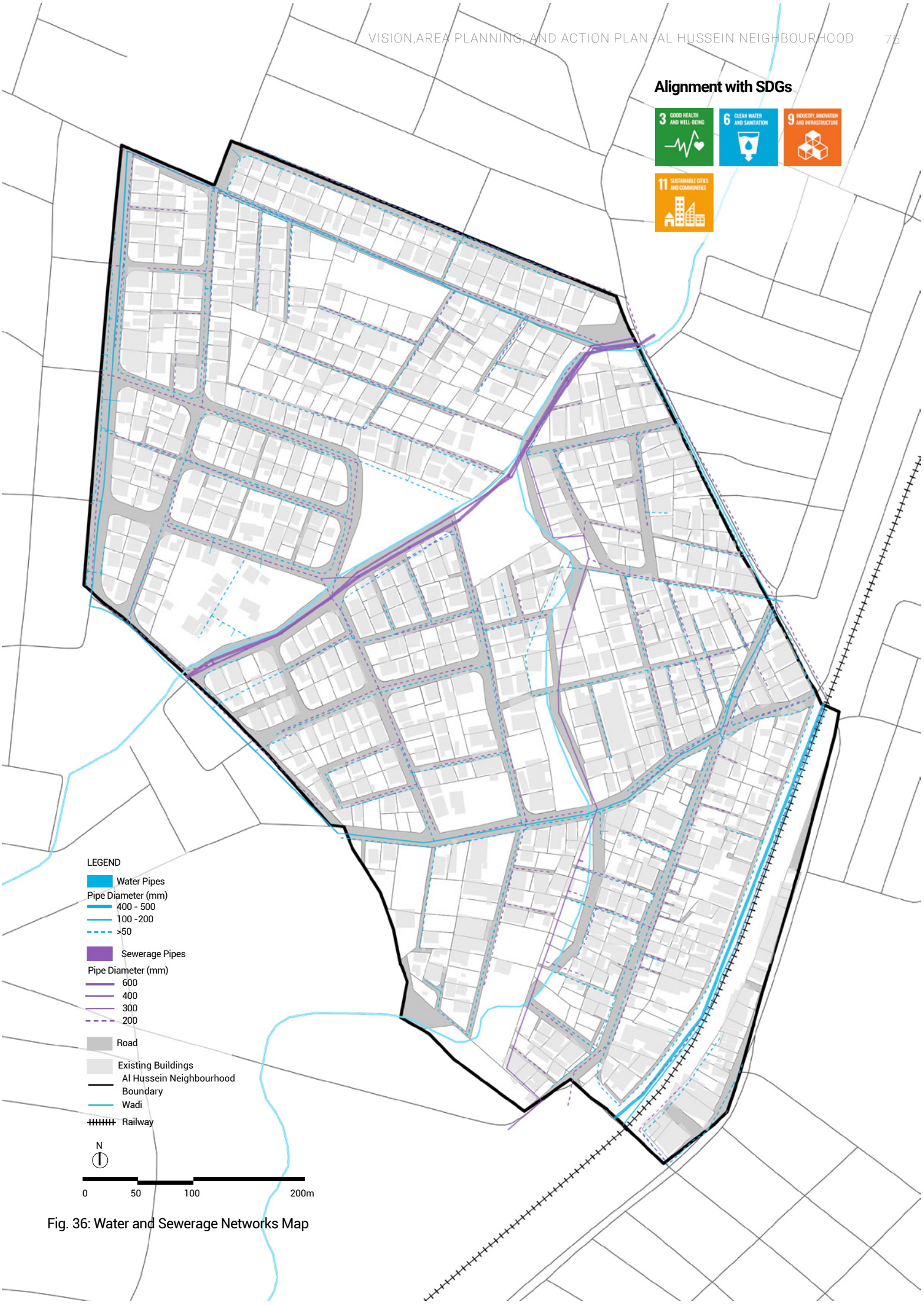
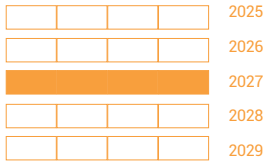
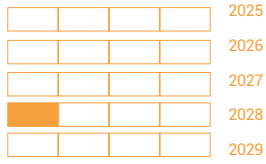
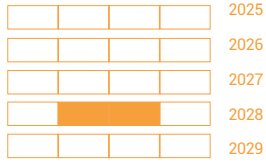
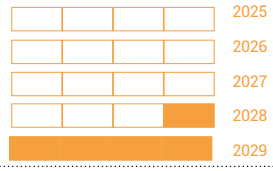


Fig. 36: Water and Sewerage Networks Map

UPGRADING THE ROAD AND SIDEWALK NETWORKS

	Actions	Responsible Entity	Year (Quarters)
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	GMM	
02	Develop the concept and detailed design for roads and sidewalks to be inclusive and sustainable. Use porous materials to mitigate climate change impacts, include ramps for accessibility, and add street lighting to enhance safety.	GMM	
03	Prepare the construction RFP for the bidding process and announce the bid.	GMM	
04	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GMM	
05	Implementation of the construction work *	Contractor under GMM's supervision	

*The upgrade of the road and sidewalk networks must be coordinated with the wadi flood mitigation efforts within the neighbourhood, the upgrading of water and sewerage networks (managed by YMC), and the installation of bus stop shelters (managed by LTRC).

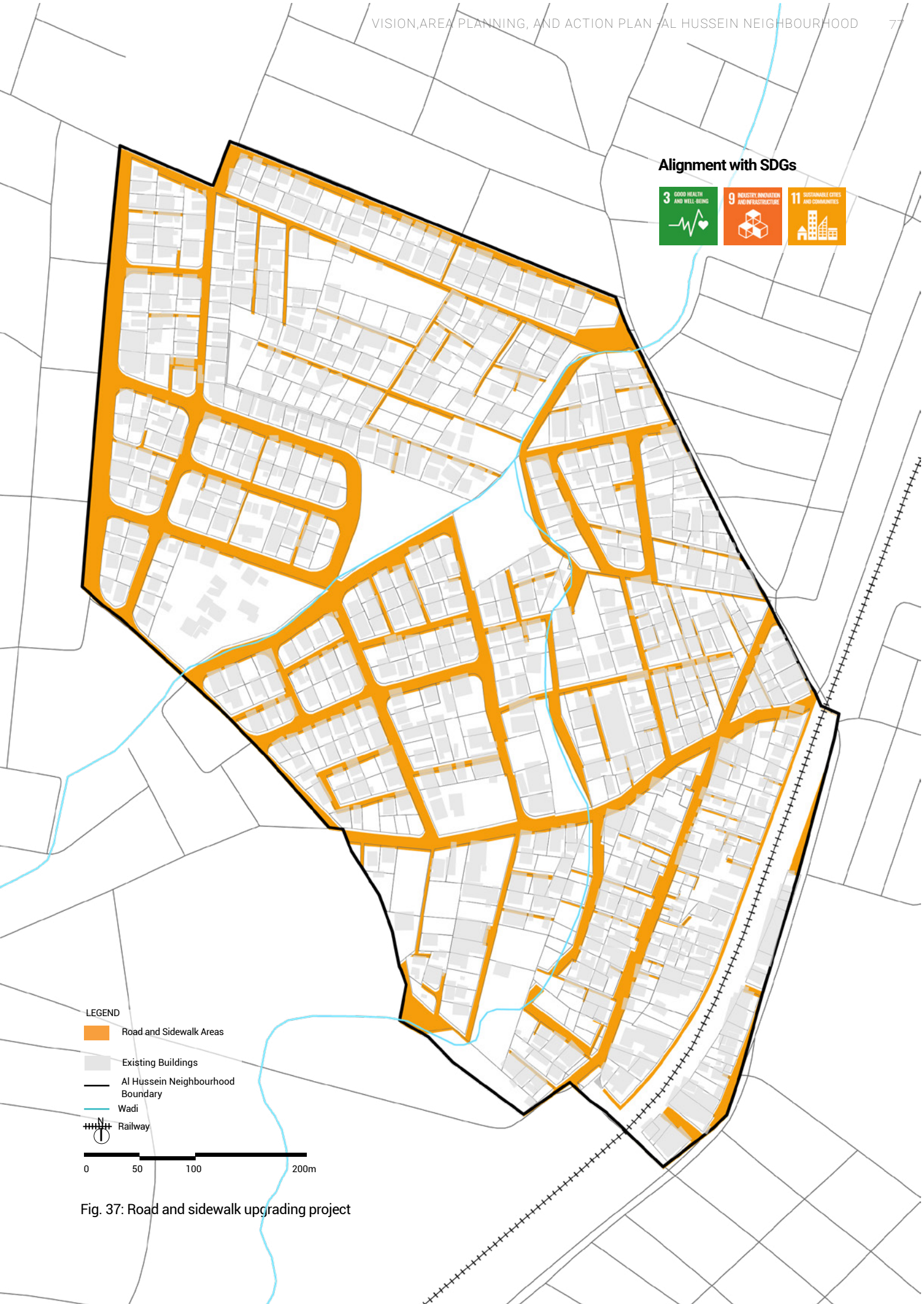
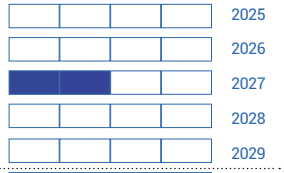
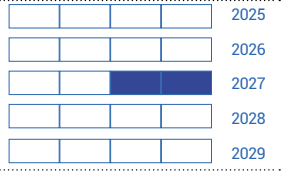
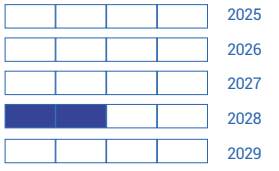
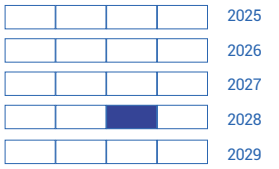
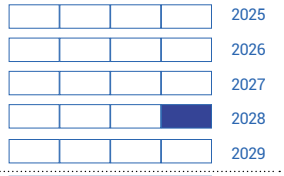
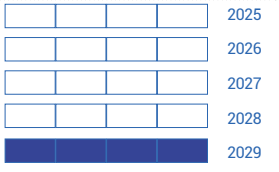


Fig. 37: Road and sidewalk upgrading project

IMPLEMENTING FLOOD MITIGATION INTERVENTION PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities	GMM	
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include developing the concept and detailed designs for the flood mitigation intervention.	GMM	
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GMM	
04	Initiate survey work and develop the concept design.*	Consultant under the supervision of GMM	
05	Finalize the detailed design drawings and obtain needed approvals.*	Consultant under the supervision of GMM	
06	Prepare the construction RFP for the bidding process and announce the bid.	GMM & Consultant	
07	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GMM & Consultant	
08	Implementation of the construction work.*	Contractor under the supervision of GMM & Consultant	

*The wadi flood mitigation efforts within the neighbourhood must be coordinated with the road and sidewalk network upgrades (managed by GMM) and the water and sewerage network upgrades (managed by YMC).

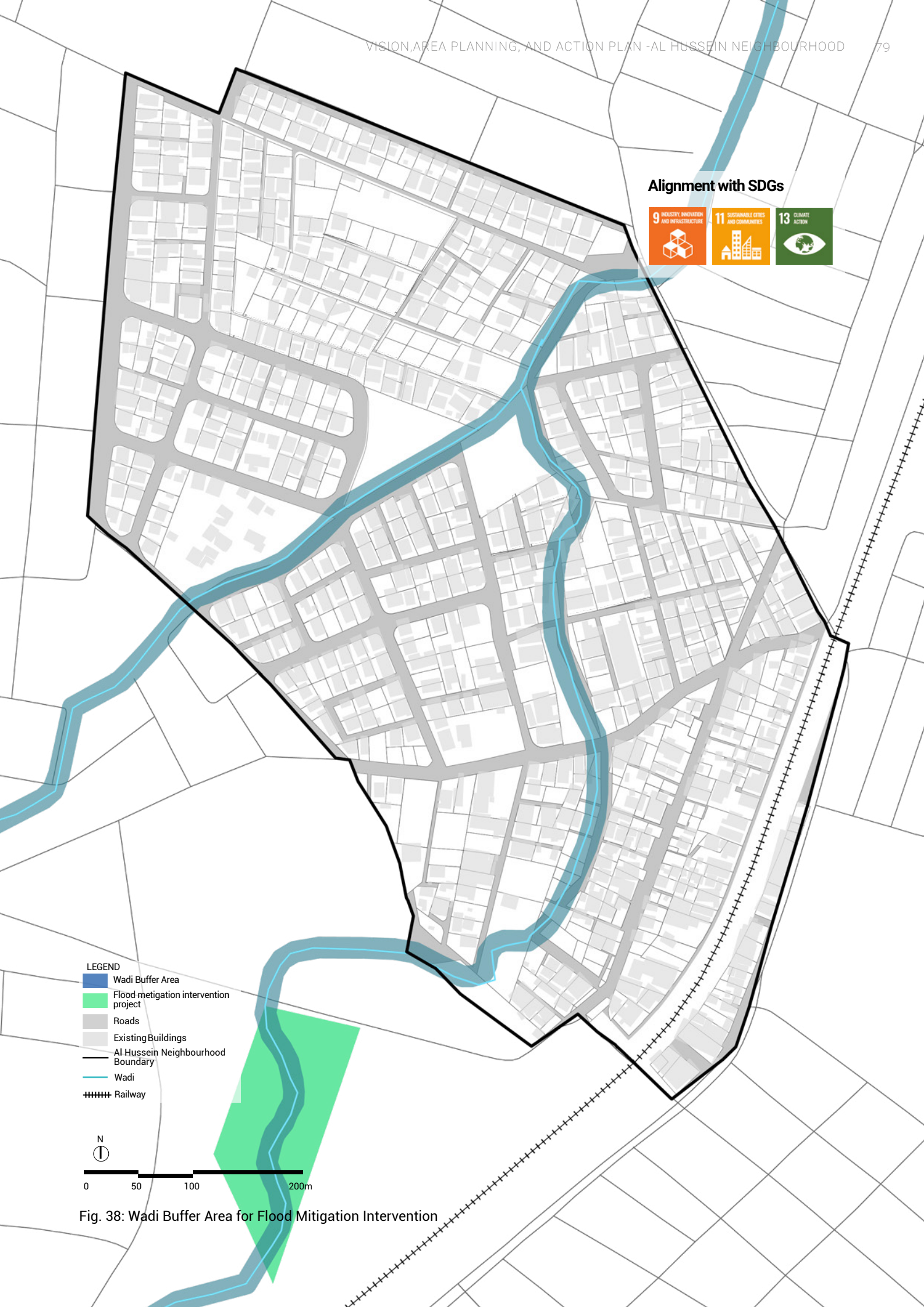
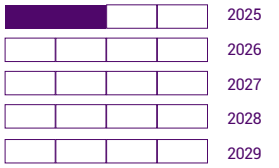
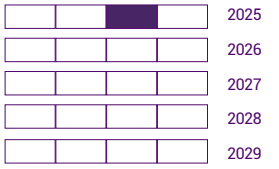
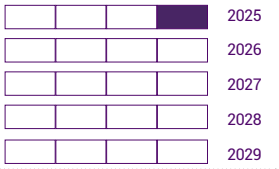
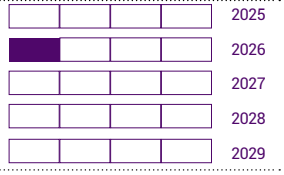
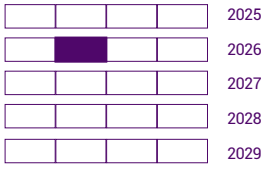
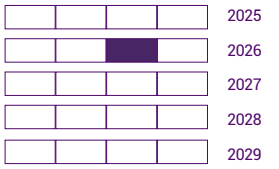
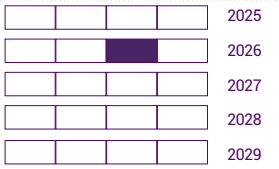
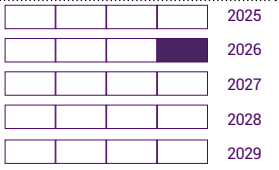


Fig. 38: Wadi Buffer Area for Flood Mitigation Intervention

INSTALLING A BUS STOP SHELTER PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Mobilize resources	LTRC	
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include developing the detailed designs for the flood mitigation intervention.	LTRC	
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	LTRC	
04	Initiate survey work.	Consultant under the supervision of LTRC	
05	Finalize the detailed design drawings and obtain needed approvals.*	Consultant under the supervision of LTRC	
06	Prepare the construction RFP for the bidding process and announce the bid.	LTRC & Consultant	
07	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	LTRC & Consultant	
08	Implementation of the construction work.*	Contractor under the supervision of LTRC & Consultant	

*The installation of the bus stop shelter must be coordinated with the project of upgrading the road and sidewalk networks (managed by GMM).

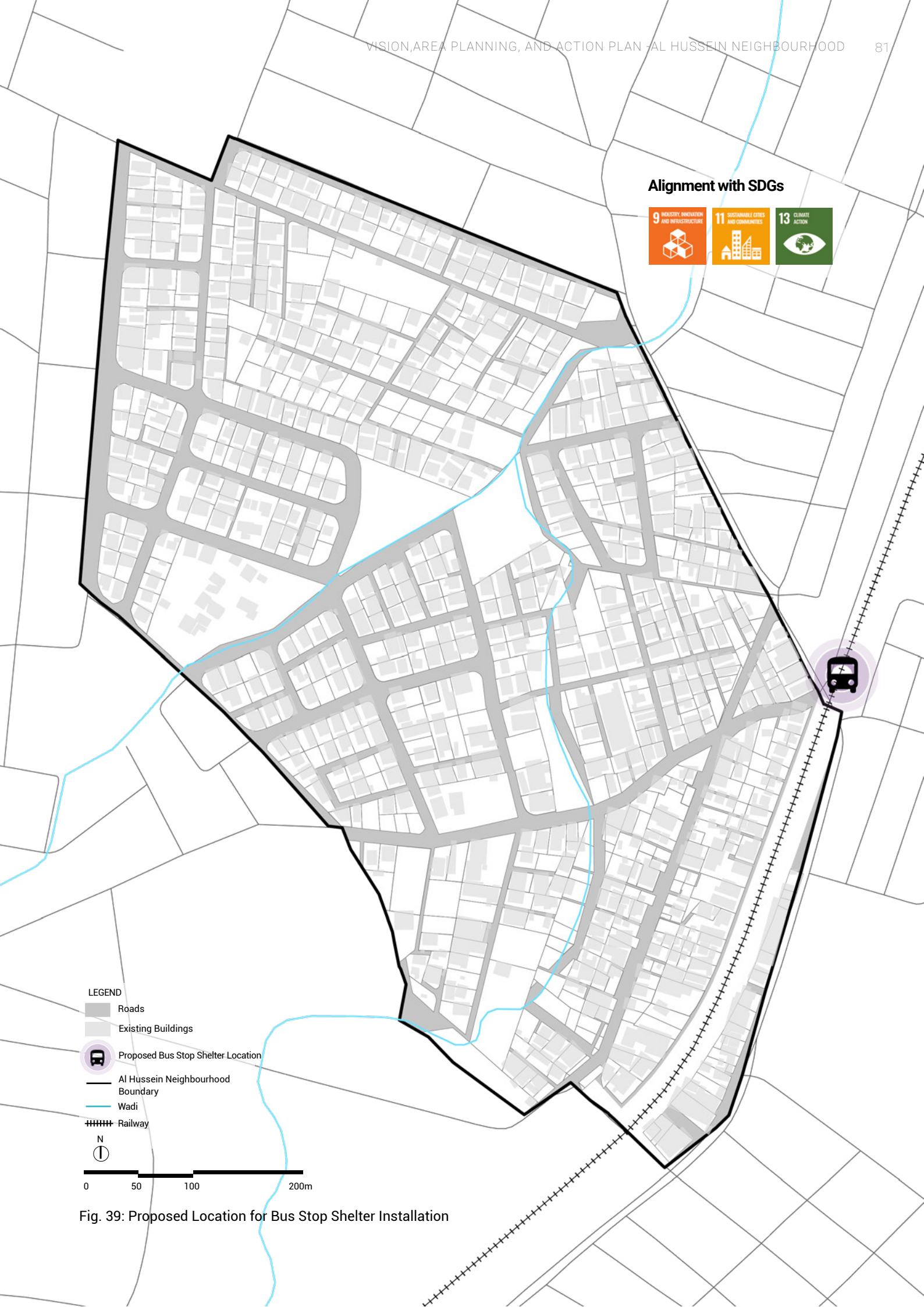
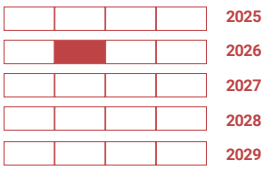


Fig. 39: Proposed Location for Bus Stop Shelter Installation

REHABILITATING RESIDENTIAL BUILDINGS IN CRITICAL AND SUBSTANDARD CONDITIONS PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	Responsible Committee from relevant governmental entities and the donor	
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include developing the concept and detailed design	Responsible Committee from relevant governmental entities and the donor	
03	Hold the bid evaluation and selection and accordingly negotiate and award the contract.	Responsible Committee from relevant governmental entities and the donor	
04	Conduct the technical assessment and community consultation sessions to identify the needs, challenges, and opportunities	Consultant under the supervision of the responsible Committee from relevant governmental entities and the donor	
05	Develop the concept design, conduct community consultation sessions, and gain the needed approvals.	Consultant under the supervision of the responsible Committee from relevant governmental entities and the donor	
06	Finalize the detailed design drawings.	Consultant under the supervision of the responsible Committee from relevant governmental entities and the donor	
07	Prepare the construction RFP for the bidding process and announce the bid.	The responsible Committee from relevant governmental entities and the donor & the Consultant	
08	Hold the bid evaluation and selection and accordingly negotiate and award the contract.	The responsible Committee from relevant governmental entities and the donor & the Consultant	
09	Implementation of the construction work.	Contractor under the supervision of the responsible Committee from relevant governmental entities and the donor	

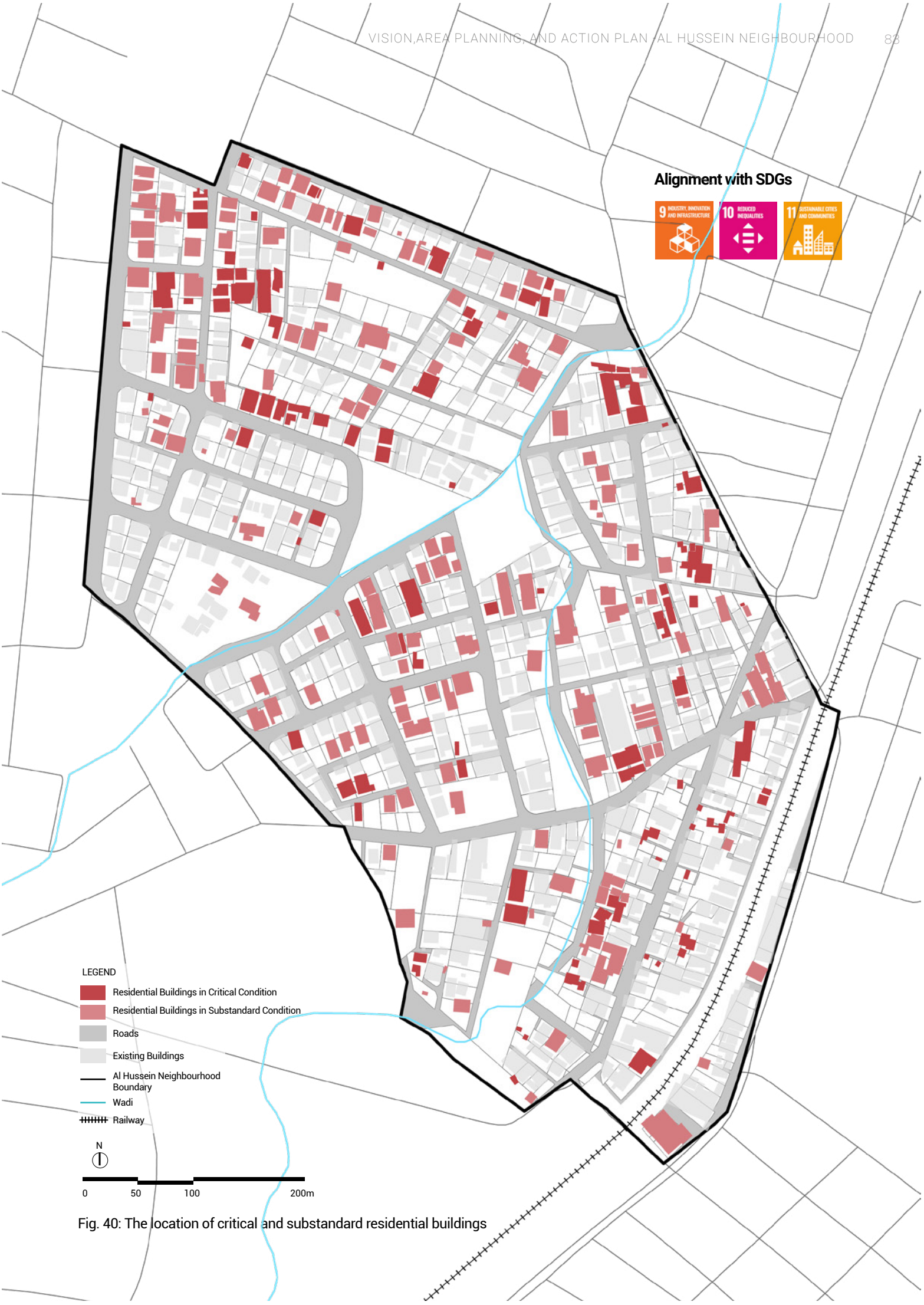


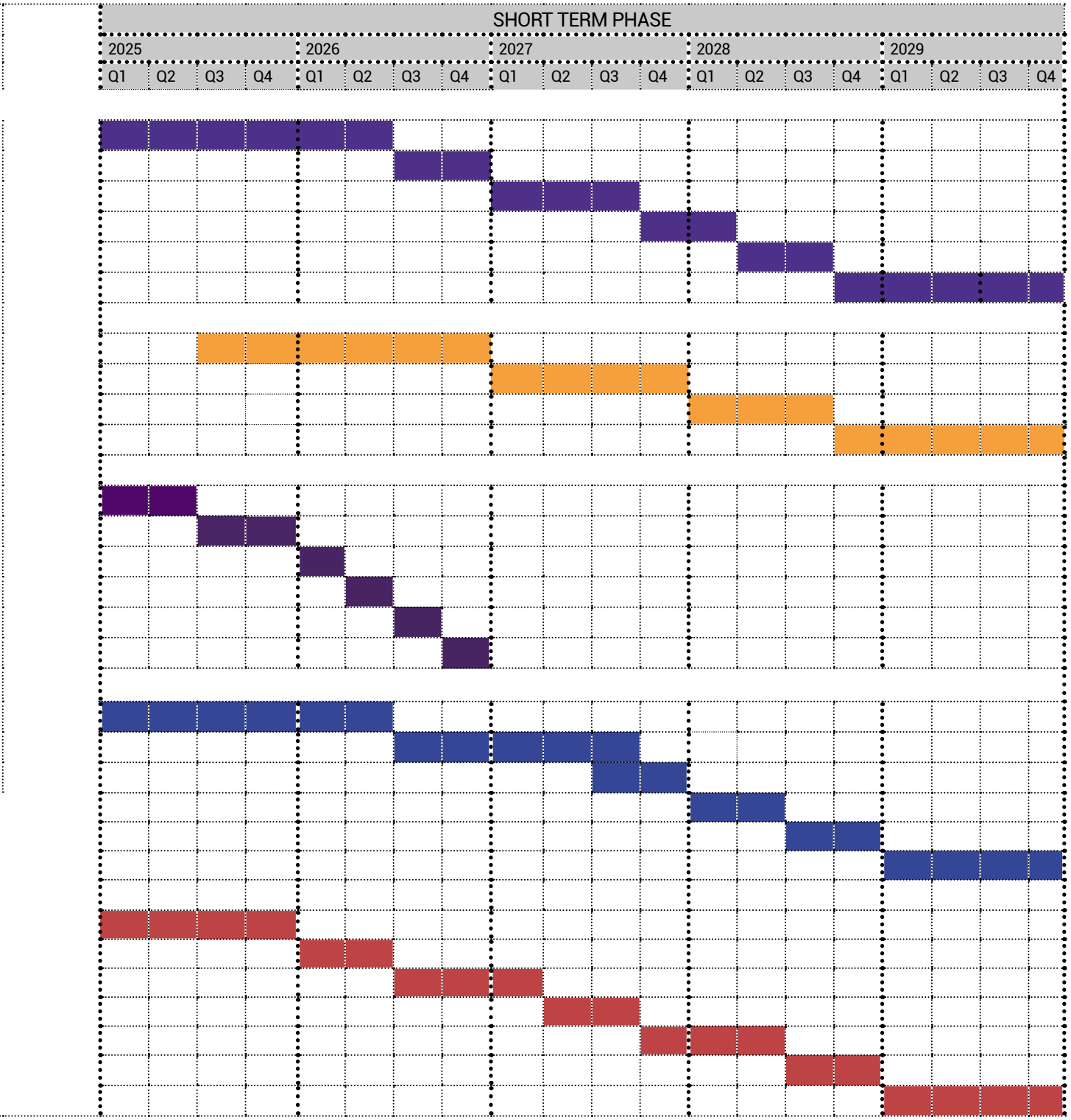
Fig. 40: The location of critical and substandard residential buildings

- **Time Frame of the Short Term Phase Actions**

NO.	PROJECT /ACTION
Upgrading the Water and Sewerage Networks Project	
01	Prepare the project budget, mobilize resources, prepare the detailed work plan, and identify the roles
02 & 03	Prepare the design RFP for the bidding process, hold the bid evaluation, and select consultant.
04	Conduct technical assessment and identify the connecting points
05	Prepare and finalize the detailed design drawings
06 & 07	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select consultant.
08	Implementation of the construction work*
Upgrading the Road and Sidewalk Networks Project	
01	Prepare the project budget
02	Develop the concept and detailed designs for the roads and sidewalks
03 & 04	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select contractor.
05	Implementation of the construction work*
Installing a Bus Stop Shelter Project	
01	Mobilize resources
02 & 03	Prepare the design RFP for the bidding process, hold the bid evaluation, and select consultant
04	Initiate survey work
05	Finalize detailed design drawings and obtain needed approvals
08	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select contractor
09	Start and finalized construction work*
Implementing Flood Mitigation Interventions Project	
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities
02 & 03	Preparing the design RFP for the bidding process, hold the bid evaluation, and select consultant
04	Initiate survey work and concept design development
05	Finalize the detailed design drawings and obtain needed approvals
06 & 07	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select contractor.
08	Implementation of the construction work*
Rehabilitating Residential Buildings in Critical and Substandard Conditions Project	
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities
02 & 03	Prepare the design RFP for the bidding process, hold the bid evaluation, and select consultant
04	Conduct technical assessment, & community consultation sessions to identify needs, challenges, and opportunities
05	Develop the concept design, conduct community consultation sessions, and obtain needed approvals.
06	Finalize the detailed design drawings
07 & 08	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select contractor
09	Implementation of the construction work

* Actions to be coordinated and aligned due to spatial overlap

Table. 3: Action plan for the short term phase (2025-2029).


SHORT TERM PHASE
2025
2026
2027
2028
2029
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4

Mid-Term Phase (2030 -2034)

The identified projects that can be implemented within the mid-term phase of the Al Hussein Action Plan include:

- Rehabilitating the Existing Al Hijazi Railway Park
- Constructing a Public Space
- Upgrading the Existing Public Schools

This section covers the actions needed for each project and the implementation sequence to follow during the period between 2030 and 2034.

Throughout the year 2030, it is necessary to prepare the budget and initiate the process of seeking a financier/donor (if needed) to support the implementation of the selected projects.

Upgrading the Existing Al Hussein Comprehensive Health Centre

The RFP documents should be prepared for the design and construction to rehabilitate the centre, followed by the actual implementation. Accordingly, this project would adequately serve the existing and future populations of Al Hussein and the other neighbourhoods in Al Mafraq City. The project will benefit around 350,000 inhabitants including host communities and refugees.

Upgrading the Existing Al Hijazi Railway Park

The relevant Jordan Hijazi Railway Corporation team should develop the design RFP in 2030, which includes holding a technical assessment for the public park, conducting community consultations to identify needs, developing the concept design, and preparing the finalized detailed designs and RFP documents for the construction bidding process. The construction must start in 2033.

Public Space Construction

As for the public space construction, preparing the design RFP, holding the evaluation, and selecting the consultant should all occur by the end of 2031. Consequently, the survey work should start in 2032. To initiate the concept design process for the public space, consultations with the local community should take place through workshops to identify their needs and support the design process. Once the concept design is developed and validated by the local community and relevant stakeholders, the detailed designs should be prepared by the mid of 2033. The public space construction project will benefit the whole population of Al Hussein Neighbourhood.

Upgrading the Existing Public Schools

Regarding the upgrading of the existing two public schools near the neighbourhood, the RFP documents should be prepared for the design and construction to rehabilitate and expand the schools in 2032, followed by the actual implementation in 2033. The upgraded existing public schools will be operational by 2034.

The following pages present the breakdown of actions and the proposed time frame for each project.

ICON	PROJECT	MID TERM PHASE (2030-2034)				
		2030	2031	2032	2033	2034
	Rehabilitating the Existing Al Hijazi Railway Park					
	Constructing a Public Space					
	Upgrading the Existing Public Schools					

Fig. 41: The projects/implementation time-line of the mid term phase

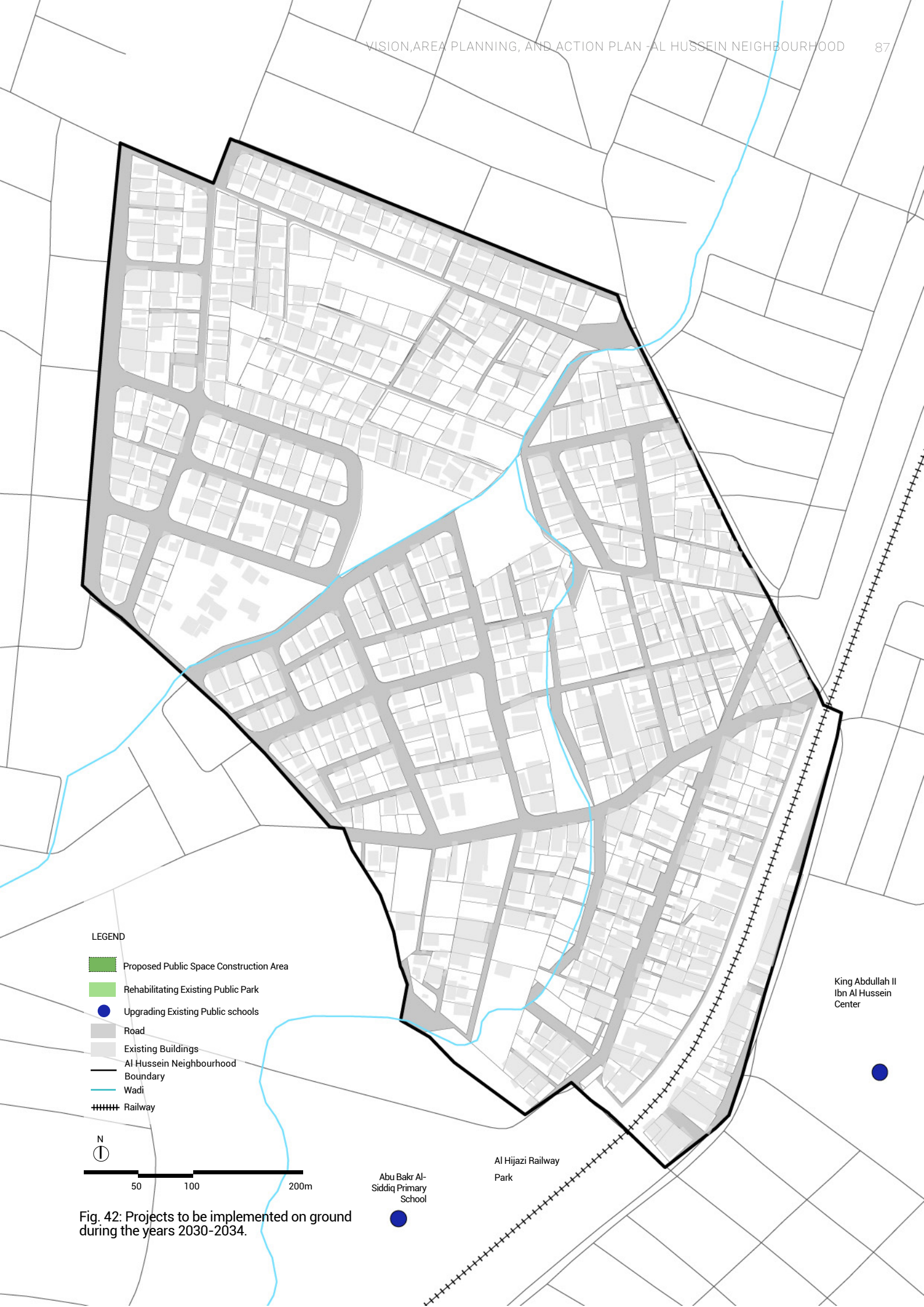


Fig. 42: Projects to be implemented on ground during the years 2030-2034.

REHABILITATING THE EXISTING AL HIJAZI RAILWAY PARK

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the project budget, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	Jordan Al Hijazi Railway Corporation	2030 2031 2032 2033 2034
02	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a technical assessment in a participatory manner with the local community, developing the concept and detailed design drawings for rehabilitating the existing park, and preparing the construction RFP.	Jordan Al Hijazi Railway Corporation	2030 2031 2032 2033 2034
03	Hold the bid evaluation and selection and accordingly negotiate and award the contract.	Jordan Al Hijazi Railway Corporation	2030 2031 2032 2033 2034
04	Conduct technical assessment and community consultation sessions to identify challenges, needs, and opportunities. Prepare and validate the concept design with the key stakeholders and the local community.	Consultant under the supervision of Jordan Al Hijazi Railway Corporation	2030 2031 2032 2033 2034
05	Prepare and finalize the detailed design drawings for the rehabilitation of the existing park and obtain the needed approvals	Consultant under the supervision of Jordan Al Hijazi Railway Corporation	2030 2031 2032 2033 2034
06	Prepare the construction RFP for the bidding process and announce the bid.	Consultant under the supervision of Jordan Al Hijazi Railway Corporation	2030 2031 2032 2033 2034
07	Hold the bid evaluation and selection and accordingly negotiate and award the contract.	Jordan Al Hijazi Railway Corporation & Consultant	2030 2031 2032 2033 2034
08	Implementation of the construction work	Contractor under the supervision of Jordan Al Hijazi Railway Corporation & Consultant	2030 2031 2032 2033 2034

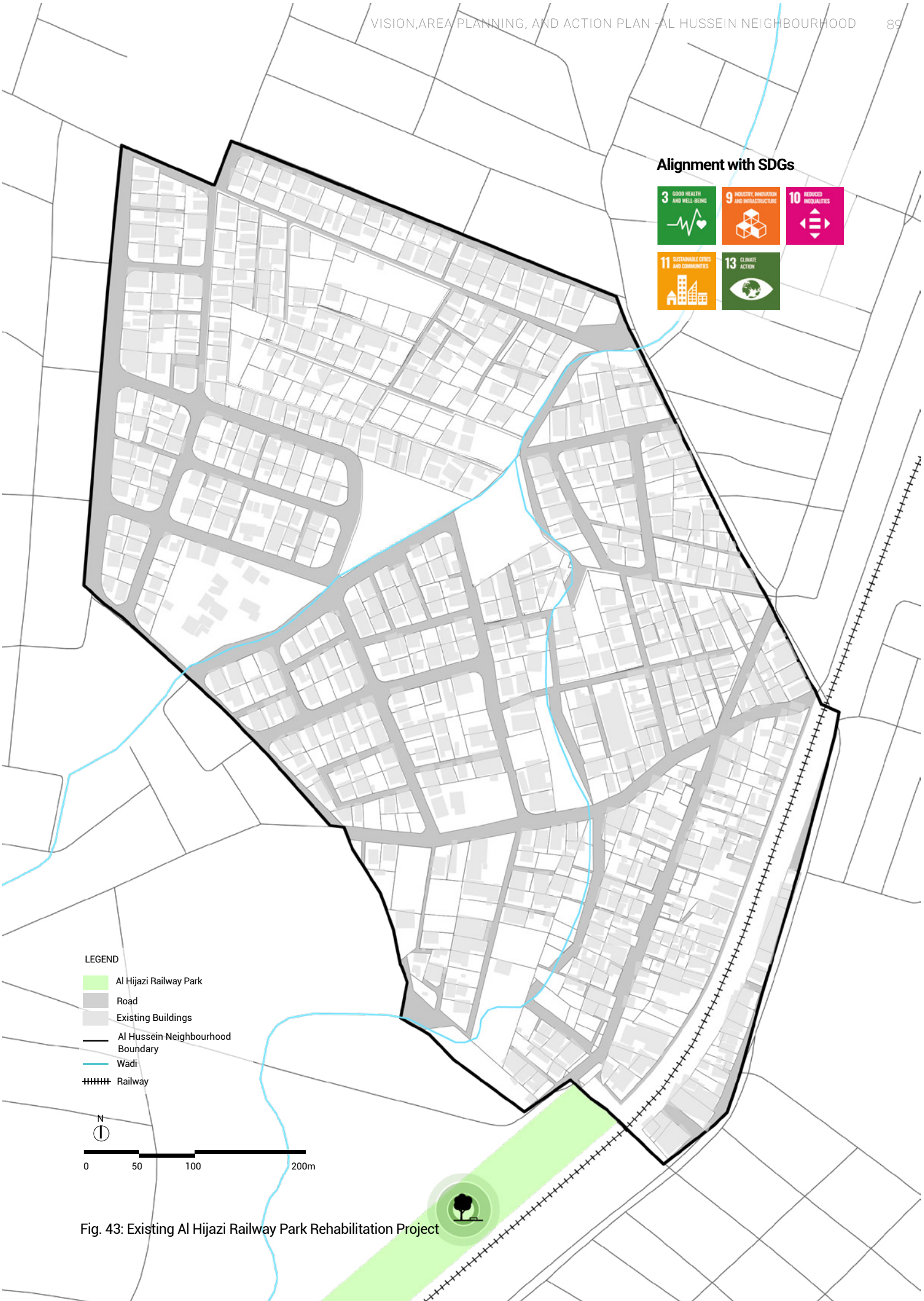
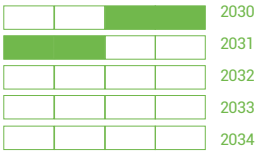
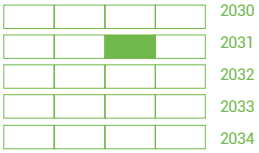
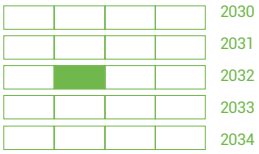
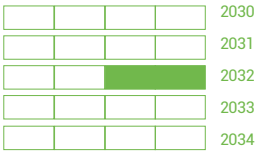


Fig. 43: Existing Al Hijazi Railway Park Rehabilitation Project

PUBLIC SPACE CONSTRUCTION PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the preliminary project budget, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	GMM	
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include survey work as well as developing the concept and detailed designs for a safe, inclusive, and accessible public parks.*	GMM	
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GMM	
04	Initiate survey work.	Consultant under the supervision of GMM	
05	Conduct community consultation workshops to identify needs and participatory develop the concepts.	Consultant under the supervision of GMM	
06	Develop the concept design for the public space in Al Hussein Neighbourhood, conduct community consultation workshops to validate the concept designs, and develop the final project budget.	GMM & Consultant	
07	Finalize detailed design drawings and obtain the needed approvals	GMM & Consultant	
08	Prepare the construction RFP for the construction bidding process and announce the bid, hold the bid evaluation and selection, and negotiate contract.	GMM & Consultant	
09	Implementation of the construction work	Contractor under the supervision of GMM	

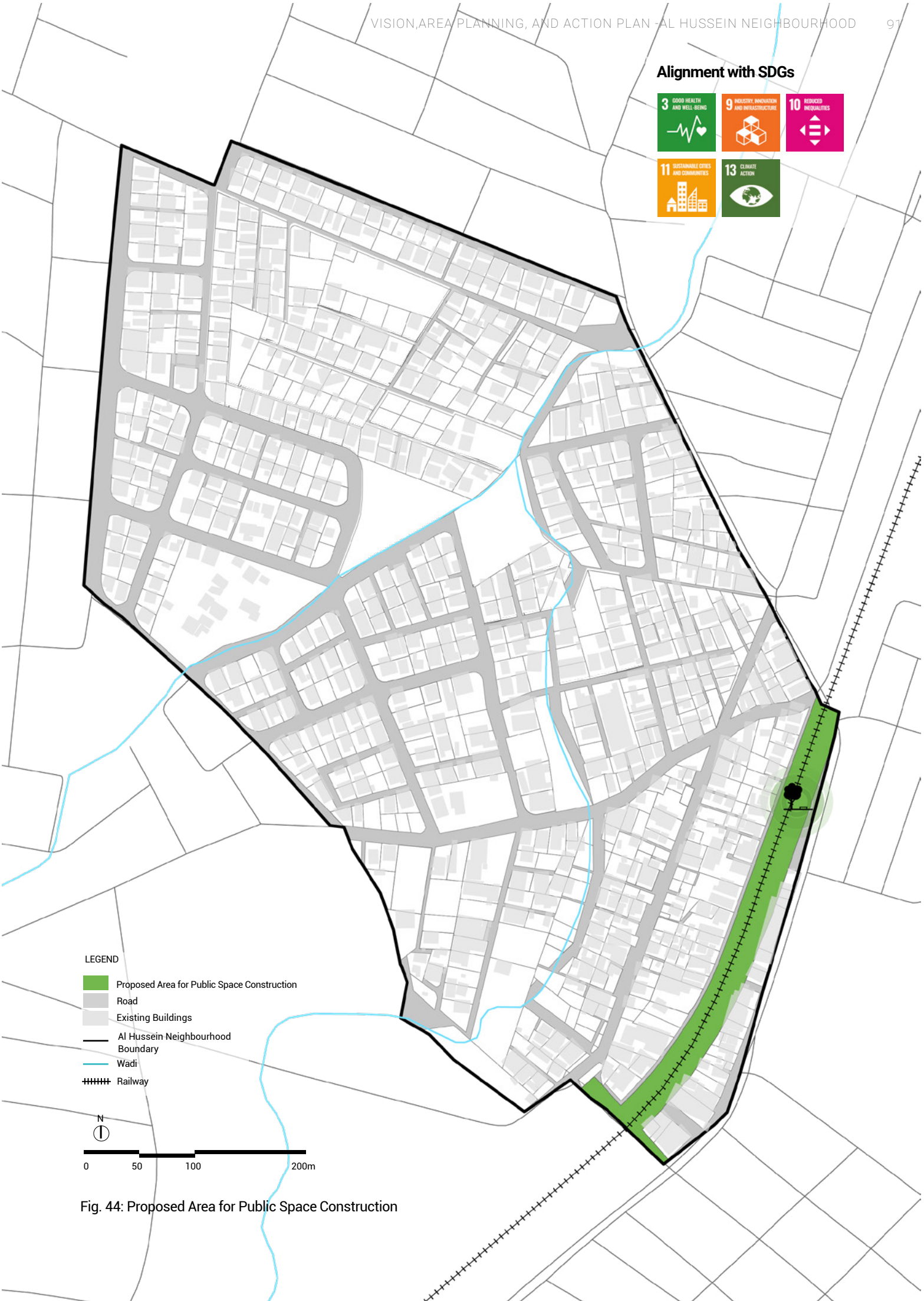


Fig. 44: Proposed Area for Public Space Construction

UPGRADING THE EXISTING PUBLIC SCHOOLS PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Conduct a field visit to assess and identify possible expansion, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	Ministry of Education (MoE)	2025 2026 2027 2028 2029
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include developing the concept and detailed designs for the needed expansion.	MoE	2025 2026 2027 2028 2029
03	Hold the bid evaluation and selection, and, accordingly, negotiate and award the contract.	MoE	2025 2026 2027 2028 2029
04	Develop the concept design.	Consultant under the supervision of MoE	2025 2026 2027 2028 2029
05	Finalize the detailed design drawings and gain the needed approvals.	MoE & Consultant	2025 2026 2027 2028 2029
06	Prepare the construction and rehabilitation RFP for the bidding process and announce the bid. The RFP must include the details of the needed rehabilitation and construction.	MoE & Consultant	2025 2026 2027 2028 2029
07	Hold the bid evaluation and selection, and, accordingly, negotiate and award the contract.	MoE & Consultant	2025 2026 2027 2028 2029
08	Implementation of the construction and rehabilitation work	Contractor under the supervision of the MoE & Consultant	2025 2026 2027 2028 2029
09	Operate upgraded public schools	MoE	2025 2026 2027 2028 2029

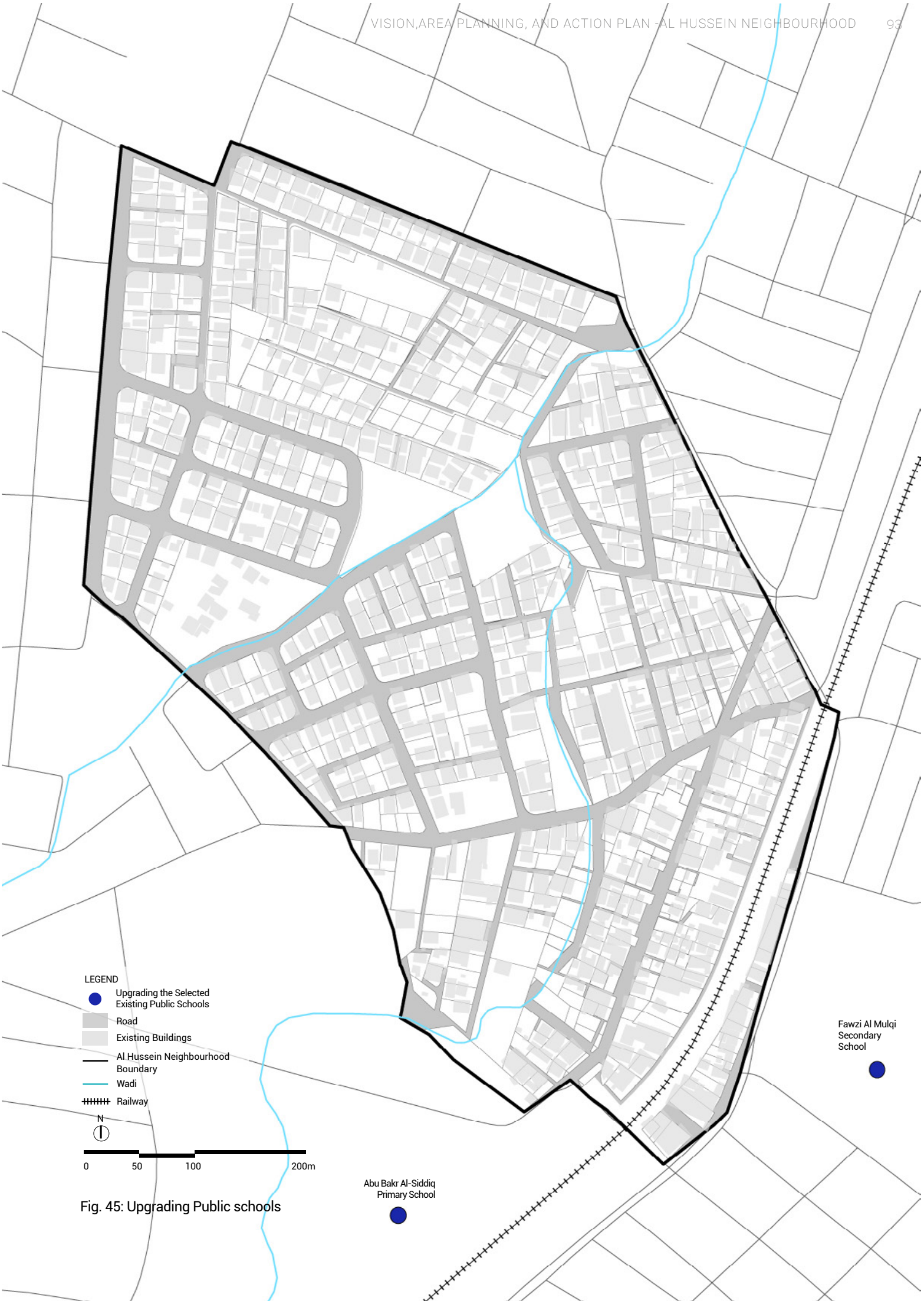
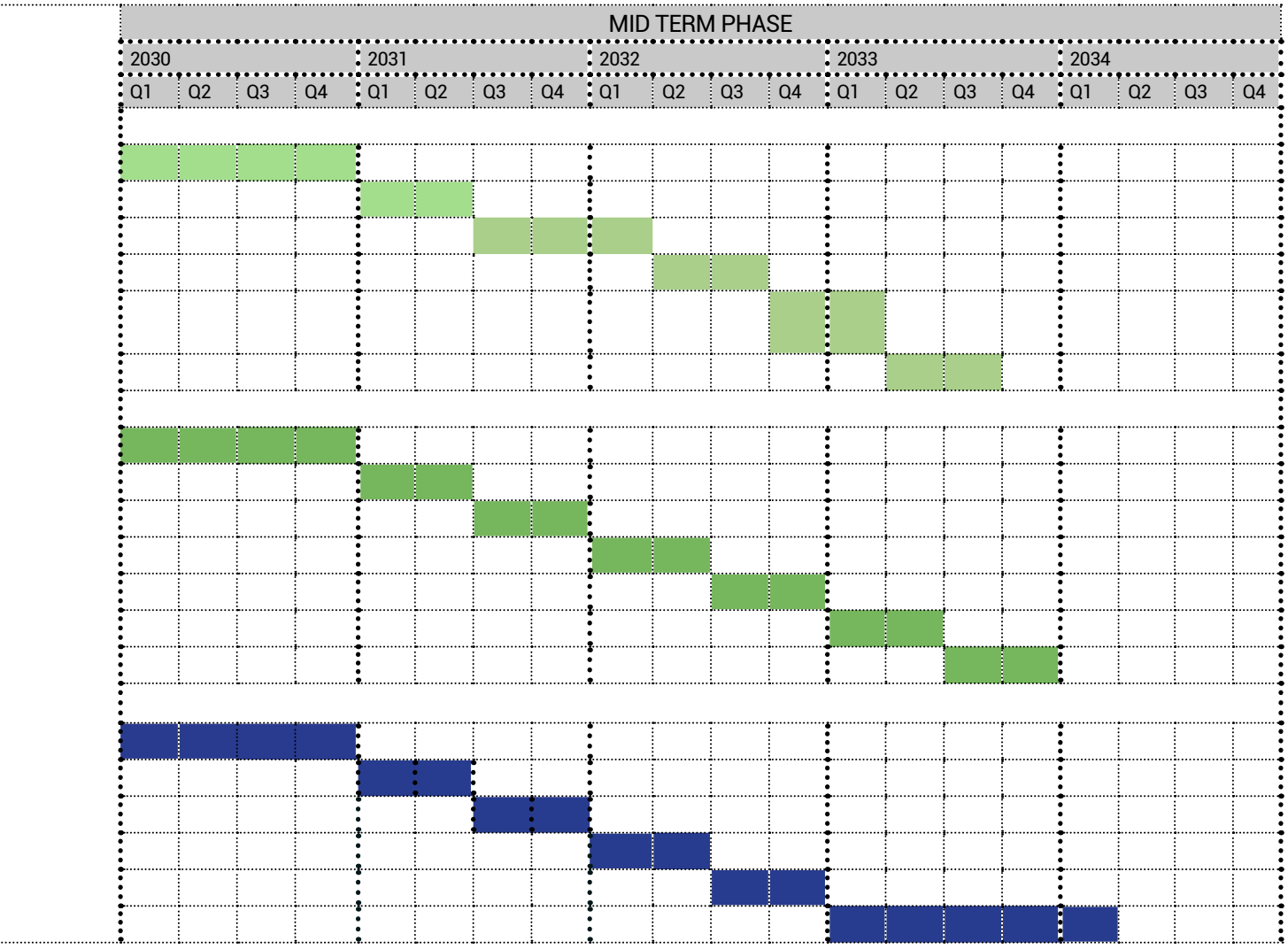


Fig. 45: Upgrading Public schools

- **Mid Term Phase Actions/Time Frame**

NO.	PROJECT /ACTION
Rehabilitating the Existing Al Hijazi Railway Park Project	
01	Prepare the project budget , mobilize resources, prepare the detailed work plan, and identify the roles
02 & 03	Prepare the design RFP for the bidding process, hold the bid evaluation, and select consultant.
04	Conduct technical assessment, conduct community consultation sessions, and develop concept
05	Prepare and validate the concept design with the key stakeholders and the local community
0 6& 07	Finalize the detailed design drawings & Prepare the construction RFP for the bidding process and select contractor.
08	Implementation of the construction work
Constructing Public Space Project	
01	Prepare the project budget , mobilize resources, prepare the detailed work plan, and identify the roles
02 & 03	Prepare the design RFP for the bidding process, hold the bid evaluation, and select consultant.
04	Conduct technical assessment, conduct community consultation sessions, and develop concept
05	Prepare and validate the concept design with the key stakeholders and the local community
06	Prepare and finalize the detailed design drawings
07 & 08	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select contractor.
09	Implementation of the construction work
Upgrading the Existing Public Schools Project	
01	Field visit, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities
02 & 03	Prepare the expansion design RFP for the bidding process, hold the bid evaluation, and select consultant
04	Develop the concept design
05	Finalize the detailed design drawings and obtain needed approvals
06 & 07	Prepare the construction & rehabilitation RFP, hold the bid evaluation, & select contractor
08	Start and finalize construction and rehabilitation work; & Operate upgraded public schools

Table. 4: Action plan for the mid term phase (2030-2034).


MID TERM PHASE
2030
2031
2032
2033
2034
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4

Long-Term Phase (2035-2039)

The identified project that can be implemented within the long-term phase of this action plan is "Constructing a new public school."

This section covers the actions needed for each project and the implementation sequence to follow during the period between 2035 and 2039.

Throughout the year 2035, the budget should be prepared to start mobilizing resources and seeking a financier/donor (if needed) to support the implementation of a new school. This includes securing the needed land plots for the school construction project.

The pre-construction phase for constructing the school should begin in 2036. This includes preparing the RFP for developing the concept and detailed design for the bidding process, holding the bid evaluation, and selecting a consultant. The consultant, in coordination with the relevant entity, should then start conducting the needed studies, developing the concept and detailed design drawings, and, upon approval, preparing the construction RFP for the implementation bidding process. After the evaluation and selection of the contractor, the implementation should take place between 2038 and 2039. The constructed school should be operational in 2039.

The following pages present the breakdown of actions and the proposed time frame for the construction of a new school project.

ICON	PROJECT	LONG TERM PHASE (2035-2039)				
		2035	2036	2037	2038	2039
	Constructing a new school					

Fig. 46: The projects/implementation time-line of the long term phase

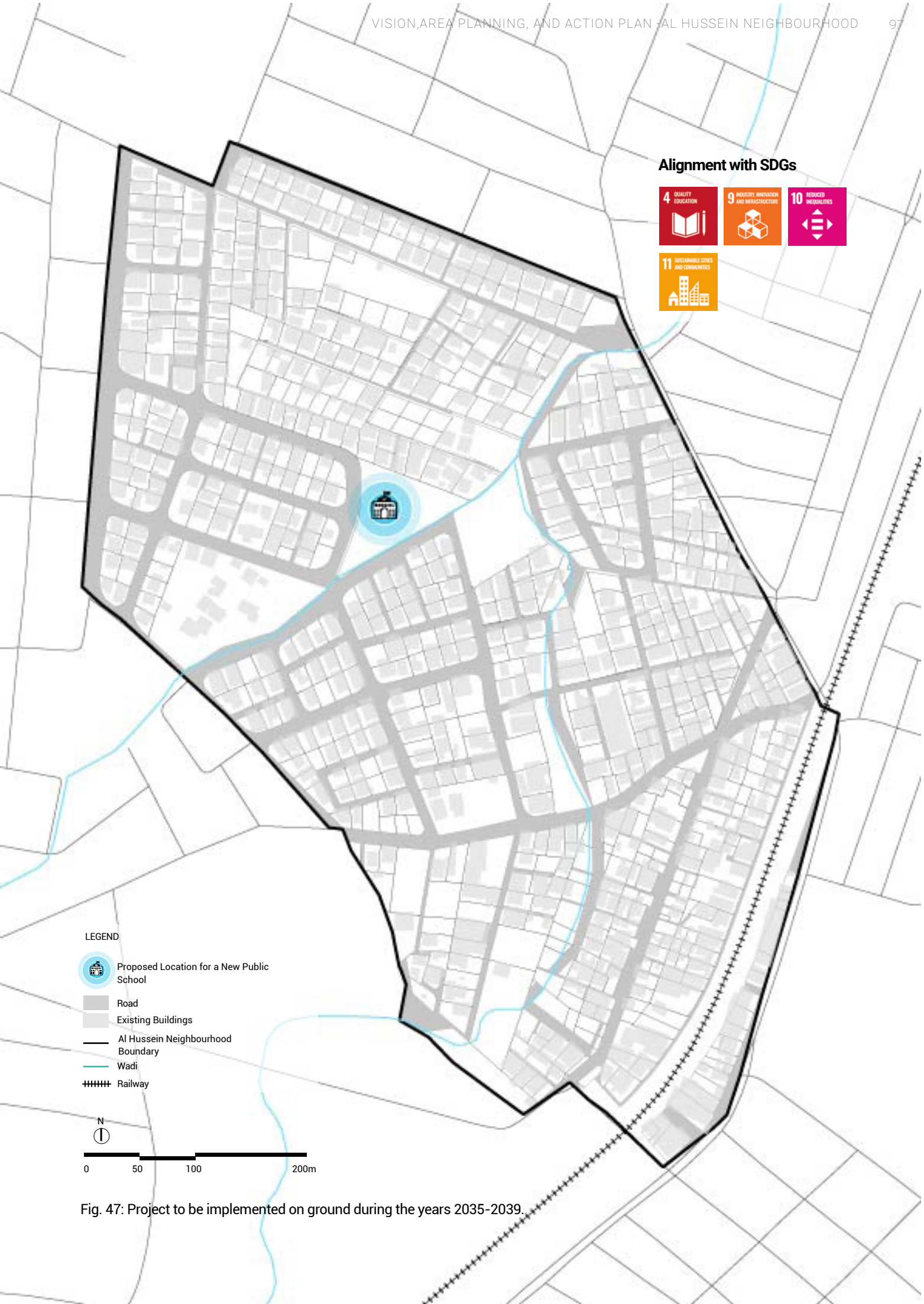


Fig. 47: Project to be implemented on ground during the years 2035-2039.

CONSTRUCTING A NEW PUBLIC SCHOOL PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Identify land, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	Ministry of Education (MoE)	2035 2036 2037 2038 2039
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include developing the concept and detailed designs.	MoPWH	2035 2036 2037 2038 2039
03	Hold the bid evaluation and selection, and, accordingly, negotiate and award the contract.	MoPWH	2035 2036 2037 2038 2039
04	Develop the concept design.	Consultant under the supervision of MoPWH	2035 2036 2037 2038 2039
05	Finalize the detailed design drawings and gain the needed approvals.	MoPWH & Consultant	2035 2036 2037 2038 2039
06	Prepare the construction RFP for the bidding process and announce the bid.	MoPWH & Consultant	2035 2036 2037 2038 2039
07	Hold the bid evaluation and selection, and, accordingly, negotiate and award the contract.	MoPWH & Consultant	2035 2036 2037 2038 2039
08	Implementation of the construction work	Contractor under the supervision of the MoPWH & Consultant	2035 2036 2037 2038 2039
09	Operate new school	MoE	2035 2036 2037 2038 2039

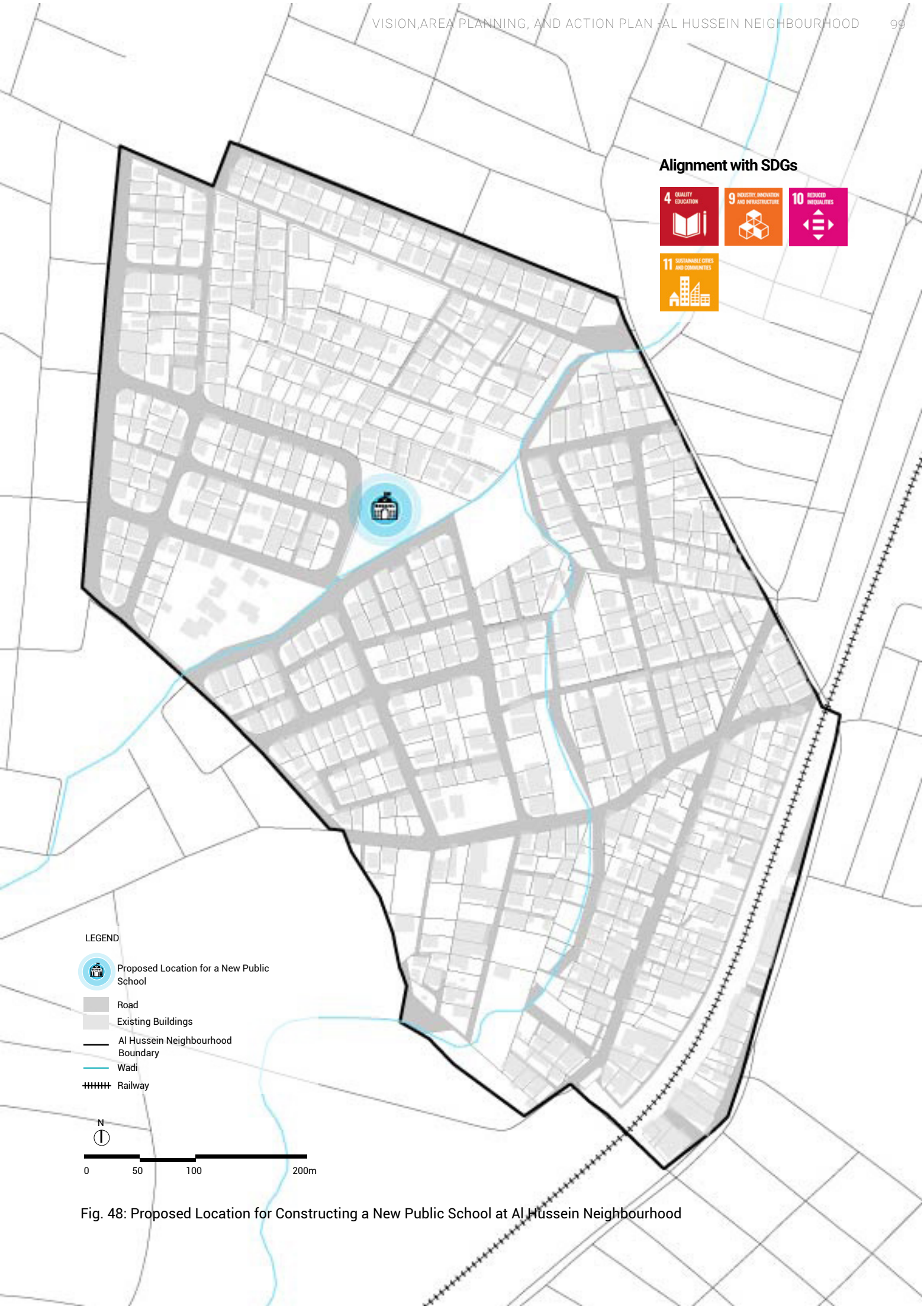
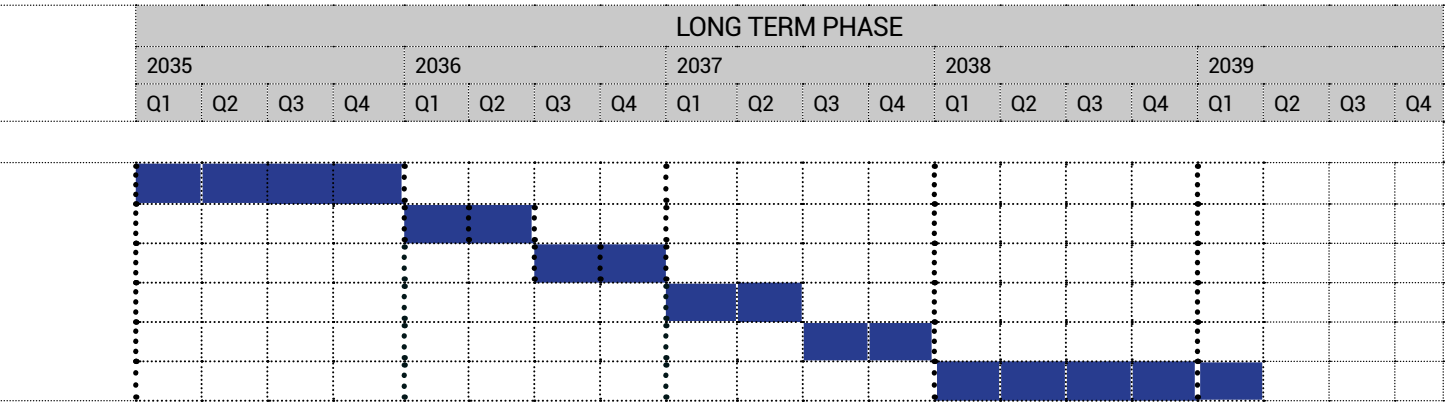


Fig. 48: Proposed Location for Constructing a New Public School at Al Hussein Neighbourhood

- **Long Term Phase Actions/Time Frame**

NO.	PROJECT /ACTION
Constructing a New School Project	
01	Identify land, mobilize resources,, prepare the detailed work plan, and identify the roles and responsibilities
02 & 03	Prepare the design RFP for the bidding process, hold the bid evaluation, and select consultant
04	Develop the concept design
05	Finalize the detailed design drawings and obtain needed approvals
06 & 07	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select contractor
08 & 09	Implementation of the construction work ; & Operate new school

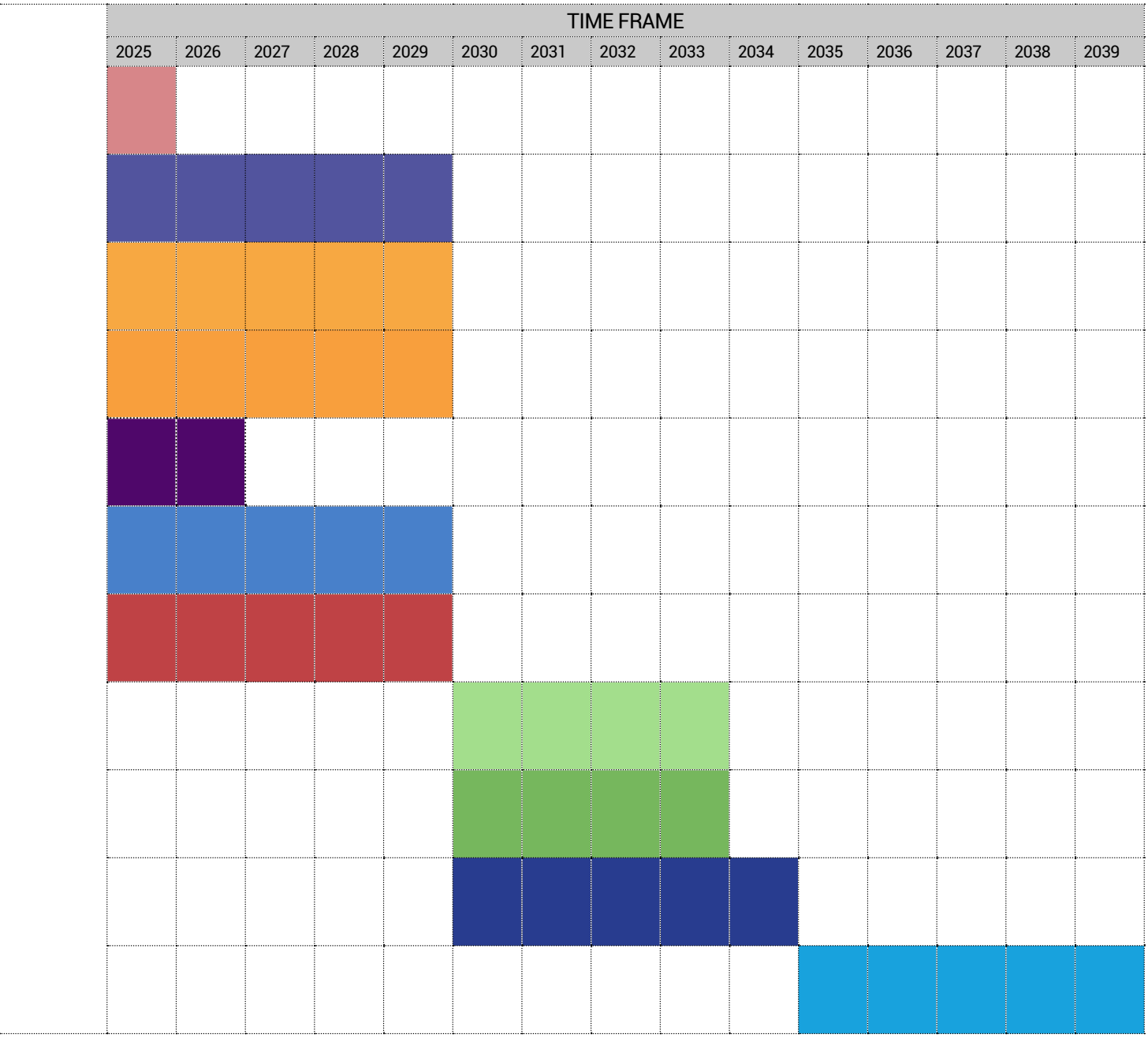
Table. 5: Action plan for the long term phase (2035-2039).


LONG TERM PHASE
2035
2036
2037
2038
2039
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4

Al Hussein Action Plan/Time Frame

ICON	PROJECT
	Developing the Commercial Area
	Upgrading the Water and Sewerage Networks Project
	Upgrading the Road and Sidewalk Networks Project
	Enhancing Street Lighting in the Road
	Installing a Bus Stop Shelter Project
	Implementing Flood Mitigation Interventions Project
	Improving Residential Buildings in Critical and Substandard Conditions Project
	Rehabilitating the Existing Al Hijazi Railway Park Project
	Constructing a Public Space Project
	Upgrading the Existing Public Schools Project
	Constructing a New School Project

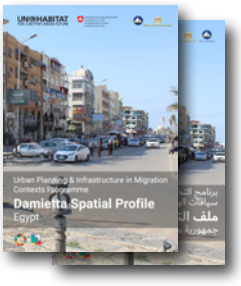
Table. 6: Al Hussein Action Plan Time Frame


TIME FRAME
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039

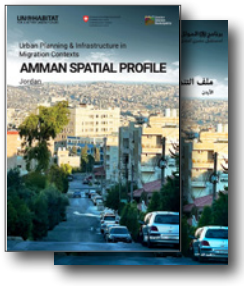
Library of resources

UPIMC Spatial Profiles

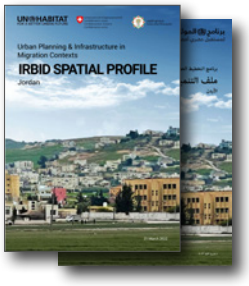
Douala 4 Spatial Profile, Cameroon



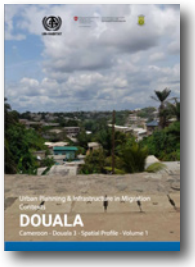
Damietta Spatial Profile, Egypt



Amman Spatial Profile, Jordan

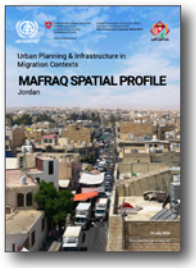


Irbid Spatial Profile, Jordan



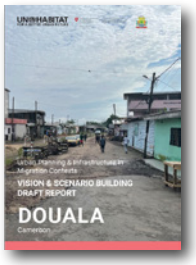
Douala 3 Spatial Profile, Cameroon

Kafr El Battikh Spatial Profile, Egypt



Mafraq Spatial Profile, Jordan

UPIMC Vision, Area Planning and Action Plans



Vision, Scenario Building, and Action Plan for the subdivision of Douala 4

Vision, Scenario Building, and Action Plan for the city of New Damietta, Egypt

Al Hashimi Al Janoubi Vision, Scenario Building and Action Plan

Al Afrah Vision, Scenario Building and Action Plan

Vision, Scenario Building, and Action Plan for the subdivision of Douala 3 - Upcoming

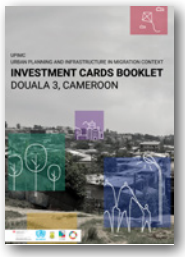
Vision, Scenario Building, and Action Plan for Kafr El Battikh city - Upcoming

Vision, Scenario Building, and Action Plan for the subdivision of Al Hussein neighbourhood - Upcoming

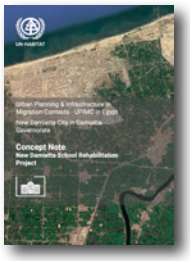
UPIMC Project Briefs

Douala 4, Cameroon

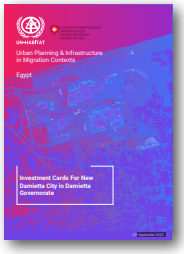
Douala 3, Cameroon



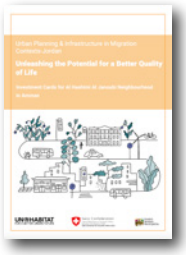
Kafr El Battikh, Egypt



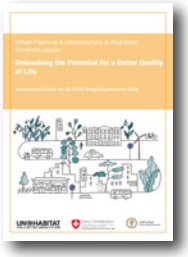
Damietta, Egypt



Amman, Jordan

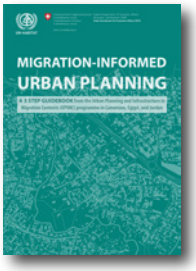


Irbid, Jordan



Scan or click to access all the resources!

Scan or click to watch the video!

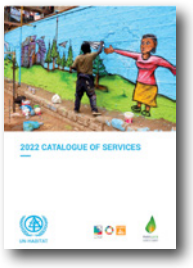


Migration-Informed Urban Planning

UN-Habitat's Integrated Urban Solutions

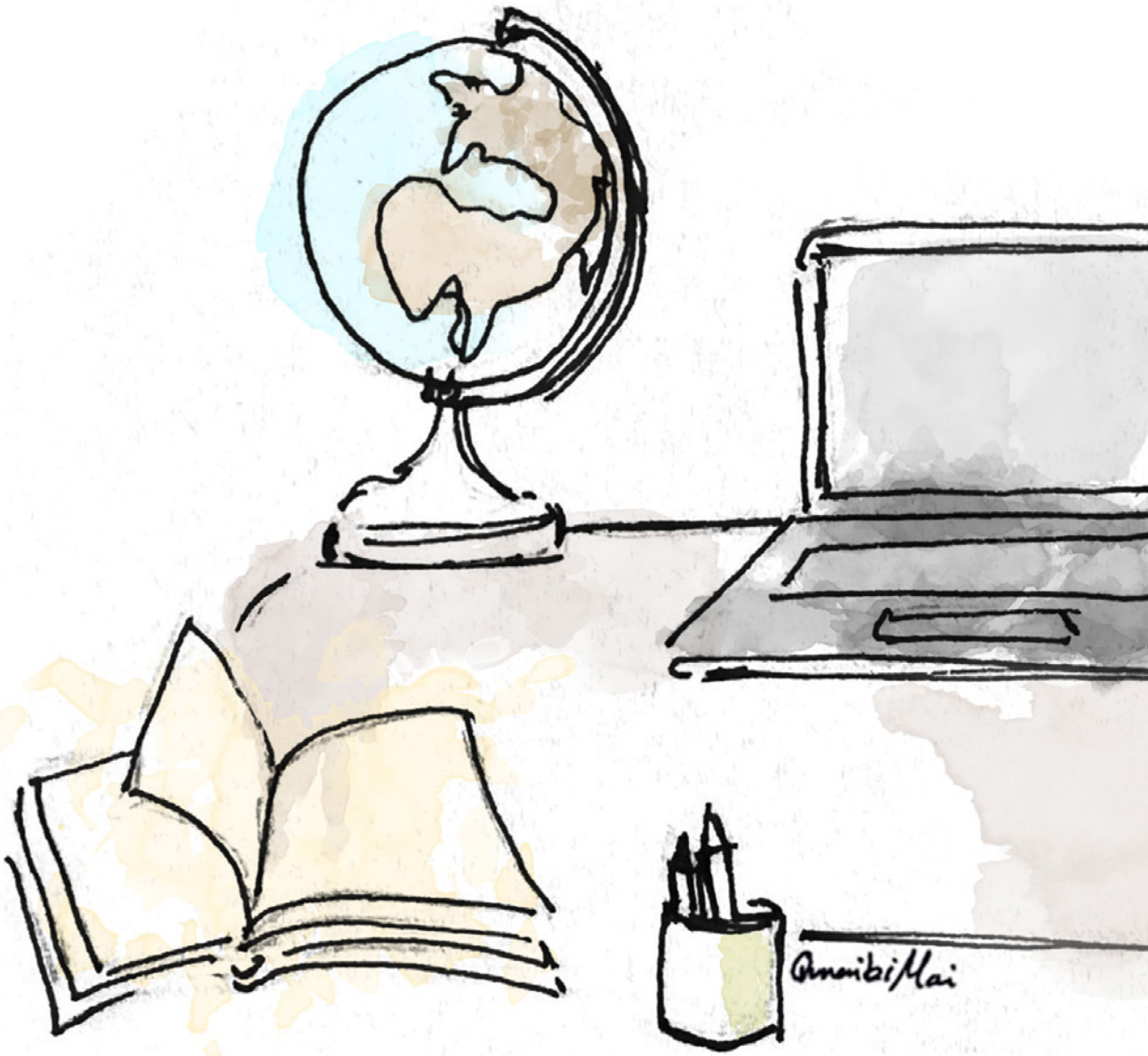
As crisis and displacement are crucially and increasingly connected with urbanisation and sustainable development, UN-Habitat is committed to supporting national and local governments driving integrated urban solutions. UN-Habitat will continue advancing global knowledge and practices on sustainable urban approaches, integrating local experiences into broader discussions and efforts to achieve the SDGs and implement the New Urban Agenda to leave no one and no place behind.

To do so, UN-Habitat explores multi-scale and evidence-based integrated urban planning as an alternative approach to address migration and displacement scenarios, providing durable solutions to bridge the gap between humanitarian and development practices in contexts of protracted crisis and displacement.



Explore UN-Habitat's Catalogue of services

Learn more about Planning for Humanitarian Development Practice


AmanibiMai

05

ENDNOTES

1 DOS. (2022). Population Interactive Report. Retrieved 8 May, 2024, from https://dosweb.dos.gov.jo/population

2 DOS. (2022). Estimated Population of the Kingdom by Governorate and Sex (2004-2022) -Interactive Report. Retrieved 8 May, 2024, from https://dosweb.dos.gov.jo/population/

3 Jordan Times. (2022, January 5). 5,800 refugees returned from Jordan to Syria in 2021 — UNHCR Batool Ghaith. Retrieved from https://www.jordantimes.com/news/local/5800-refugees-returned-jordan-syria-2021-%E2%80%94%C2%A0unhcr#:~:text=AMMAN%20%E2%80%94%20In%202021%2C%20approximately%205%2C800,when%20it%20comes%20to%20return%E2%80%9D.

4 Rjoub, A. (2019). The types and locations of informal housing in al-Mafraq City of Jordan. Architecture Research. Retrieved May 30, 2023, from http://article.sapub.org/10.5923.j.arch.20190903.01.html

5 Greater Mafraq Municipality. (2023). Crisis and Risk Management Plan for Greater Mafraq Municipality (2023/2024). Retrieved from GMM.

6 Al-Amoush, H., Alshabeeb, A. R., Al-Adamat, R., Al-Fugara, A., Alayyash, S., Shdeifat, A., Al-Tarazi, E., & Rajab, J. (2017). The Use of GIS Techniques and Geophysical Investigation for Flood Management at Wadi Al-Mafraq Catchment Area. Retrieved Octobore, 24, 2023 from https://www.researchgate.net/publication/322083066_The_Use_of_GIS_Techniques_and_Geophysical_Investigation_for_Flood_Management_at_Wadi_Al-Mafraq_Catchment_Area

7 GMM-Local Development Unit, Khazaleh, M. (2023). GMM Presentation. Retrieved from GMM.

8 Ministry of Water and Irrigation. (2019). The amended regulations for water resource protection for the year 2019. Retrieved from: https://www.mwi.gov.jo/EBV4.0/Root_Storage/AR/EB_Pages/Monitoring_report_for_the_year_2019_1.pdf

9 UN-Habitat. (2019). Increasing the resilience of both displaced persons and host communities to climate change-related challenges in Jordan and Lebanon: Regional Project/Programme Proposal (Publication No. 1(2)). https://www.adaptation-fund.org/wp-content/uploads/2019/01/For-Web_Jordan-Lebanon_5th-of-Feb-2019-resubmission-AF-CN-Jordan-and-Lebanon.pdf

10 GMM. (2023). The Greater Mafraq Municipality has started installing new energy-efficient LED lighting units. Retrieved October 15, 2023, https://mafraq.gov.jo/index.php/2018-02-16-08-58-00/item/845-bldyt-almfraq-alkbry-tbd-a-lm-btrkyb-whdt-nrt-led-jdydt-mwfr-l-ltqyh.html

11 Department of Statistics. (2015). Jordan in Figures 2015. Retrieved from http://dosweb.dos.gov.jo/wp-content/uploads/2017/11/JordanInFigures2015.pdf

12 Department of Statistics. (2023). Unemployment Rate during the Fourth Quarter of 2023. Retrieved May 2024 from https://dosweb.dos.gov.jo/DataBank/News/Unemployment/2023/unemp_Q4_e_2023.pdf

13 Ibid.

14 Ibid.

15 The Department of Statistics. (2010).

16 International Labour Organization. (2016). (publication). Local Economic Development Strategy For Mafraq Governorate . Retrieved June 26, 2023, from https://www.ilo.org/wcmsp5/groups/public/---arabstates/---ro-beirut/documents/publication/wcms_456506.pdf.

17 ILO Regional Office for Arab States. (2016). Local Economic Development Strategy For Mafraq Governorate. Retrieved October 23, 2023 from https://www.ilo.org/wcmsp5/groups/public/---arabstates/---ro-beirut/documents/publication/wcms_456506.pdf

18 GIM. (2019). Strategic Local Plan for GIM 2019-2023.

19 UNHCR & ILO. (2019). Vulnerability Assessment Framework- Population Study 2019. Retrieved September 19, 2023 from https://reliefweb.int/report/jordan/vulnerability-assessment-framework-population-study-2019

06

ANNEX A: QUESTIONNAIRE

What is the element that you are assessing?

- ◯ Building
- ◯ Vacant Land
- ◯ Public Space
- ◯ Public Transportation Stop
- ◯ Solid Waste Dumpster
- ◯ Hazard Area (Threat)

What is your current location?

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)

Please take a picture of the element you are assessing

Click here to upload file. (< 5MB)

Describe the hazard area? (any threats)

Is the public transportation stop formal?

- ☐ Yes
- ☐ No

Describe the public space you are assessing?

- ○ Park
- ○ Road
- ○ Playground
- ○ Stairs

Add the street name

_____

Please add the code to the building

_____

What is the current use of the building?

- ○ Residential
- ○ Commercial
- ○ Mixed Use
- ○ Industrial
- ○ Park
- ○ Mosque
- ○ School
- ○ Health Care Facility
- ○ Other

How many shops are there?

_____

What is the average rent in the building?

_____

Please describe the current use?

_____

How many are the total floors of the building?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

How many floors are below street level?

_____

Rate the condition of the public space

- Good
- Fair
- Substandard
- Critical

How many floors are the residential floors?

_____

How many are floors are the other uses?

_____

Rate the current condition of the building

- Good
- Fair
- Substandard
- Critical

Is the public space inclusive?

- Yes
- No

Does the public space need improvement?

- Yes
- No

Describe the needed action urgency for public space improvement?

- [ ] Immediate- Short Term
- [ ] Moderate - Mid Term
- [ ] Mild - Long Term

Describe the needed improvement?

_____

What are the needed actions/interventions (short term) in the public space? if any

_____

What are the medium term actions needed (if any)

_____

What are the long term actions needed (if any)

_____

Is there any economic activity at the building?

- ( ) Yes
- ( ) No

Is the economic activity formal or informal?

- [ ] Formal
- [ ] Informal

Please describe the economic activity (e.g. commercial, day care, etc..)

_____

What is the range of fees at the economic activity?

_____

What is the range of salaries at the economic activity?

_____

Is the public park operational?

- [ ] Yes
- [ ] No

Is there any informal activity on ground?

- ( ) Yes
- ( ) No

Please describe the current informal activity use?

_____

What is the nationality of the business owner?

- [ ] Jordanian
- [ ] Syrian
- [ ] Palestinian with Jordanian Nationality
- [ ] Iraqi
- [ ] Palestinian
- [ ] Other

How many workers are working there?

_____

What are the nationalities of the workers?

- [ ] Jordaninan
- [ ] Palestinian
- [ ] Palestinian with Jordanian Nationality
- [ ] Syrian
- [ ] Iraqi
- [ ] Egyptian
- [ ] Others

How many of the workers are Jordanians?

_____

How many of the workers are Syrian refugees?

_____

How many are Palestinian Refugees with Jordanian Nationalities?

_____

How many are Palestinian Refugees?

_____

How many are Iraqi Refugees?

_____

How many are Egyptian Migrants?

_____

Please specify the nationality and the number of workers of the other nationality?

_____

What is the daily average income from the informal activity?

_____

Please take a picture of the economic activity

Click here to upload file. (< 5MB)

Please take a picture of the informal activity

Click here to upload file. (< 5MB)

Is the public space inclusive?

- ○ Yes
- ○ No

Is the public space accessible?

- ○ Yes
- ○ No

Is there sidewalks on the road?

- ☐ Yes
- ☐ No

How many sidewalks?

- ☐ 1
- ☐ 2

Describe the level of the sidewalk's walkability?

- ☐ Walkable
- ☐ Walkable with obstructions
- ☐ Unwalkable
- ☐ No sidewalk

Sidewalk 2: Describe the level of the sidewalk's walkability?

- [ ] Walkable
- [ ] Walkable with obstructions
- [ ] Unwalkable
- [ ] No sidewalk

Is the sidewalk accessible?

- [ ] Yes
- [ ] No

Sidewalk 2: Is the sidewalk accessible?

- [ ] Yes
- [ ] No

Do the sidewalk need improvement?

- [ ] Yes
- [ ] No

Sidewalk 2: Do the sidewalk need improvement ?

- [ ] Yes
- [ ] No

Describe the needed intervention and the urgency??

_____

Sidewalk 2: Describe the needed intervention and the urgency?

_____

Take a picture of the sidewalk

Click here to upload file. (< 5MB)

Sidewalk 2: Take a picture of the sidewalk

Click here to upload file. (< 5MB)

Is there any informal activity on the sidewalk?

- [ ] Yes
- [ ] No

Sidewalk 2: Is there any informal activity on the sidewalk?

- [ ] Yes
- [ ] No

Describe the informal activity?

_____

Sidewalk 2: Describe the informal activity?

_____

Take a picture of the informal activity on the sidewalk

Click here to upload file. (< 5MB)

Sidewalk 2: Take a picture of the informal activity on the sidewalk

Click here to upload file. (< 5MB)

Any notes

_____

07

ANNEX B: SCORING CRITERIA

Priority Scoring Criteria		
Criterion		
Technical Priority: Rate the urgency to implement the project within the short term period of the action plan? **(5 Points)**		
Transformative Impact	**Social Impact (20 Points)**	**Provision of Basic Needs:** How many basic needs services does the project provide?
		Inclusivity: Does the project enhance the inclusivity of refugees and vulnerable groups
		Safety: How much does the project impact the safety of residents?
		Well Being: How much does the project improve the well-being of the residents?
	Environment Impact (20 Points)	**Natural Resource Consumption:** Rate the level of reduction the project can have on the natural resource consumption? (Water, fossil fuel)
		Climate Mitigation: Rate the potential level the project mitigates the climate change impact?
		Climate Adaptation: Rate the climate change adaptation potential level of the project?
		Healthy Ecosystem: Rate how much the project can contribute to creating a healthy ecosystem?
	Economic Impact (20 Points)	**Job Creation/livelihood opportunities:** How many job opportunities can the project create? (Direct and indirect)
		Diversity: Does the project diverse job opportunities?
	Spatial Impact (20 Points)	**% of Beneficiaries** from the project
		Connectivity: Does the project improve the connectivity of people to their basic needs?
		Butterfly Effect of needed projects: proximity of the project to the other needed projects and/or improves the residents' accessibility to the other projects
Alignment with the relevant governmental plans: is the project aligned with the existing relevant governmental plan/strategy **(5 Points)**		
Key Stakeholder Assessment (5 Points)		
Local Community Assessment (5 Points)		
Total		

Priority Scoring Criteria					
Scoring					Total
No=0	Medium Urgency = 2	High Urgency = 5			5
5	Based on the No. of Basic Needs Served: Basic Needs: Food, water, Medicine, Education, Recreation				20
Yes = 5	No = 0				
No impact= 0	Low impact = 2	High impact = 5			
No impact= 0	Low impact = 2	High impact = 5			
No impact= 0	Low impact = 2	High impact = 5			20
No impact= 0	Low impact = 2	High impact = 5			
No impact= 0	Low impact = 2	High impact = 5			
No impact= 0	Low impact = 2	High impact = 5			
No = 0	Indirect =7.5	Direct =15			20
Yes= 5	No=0				
1%-20%=2	20%-40% = 4	40%-60%=6	60%-80%=8	80%-100%=10	20
Yes= 5	No=0				
to 1 Project= 1	to 2 Projects =2	3 to 5 Projects =3	6 to 8=4	9 to 11=5	
Yes= 5	No=0				5
1%-20%=1	20%-40% = 2	40%-60%=3	60%-80%=4	80%-100%=5	5
1%-20%=1	20%-40% = 2	40%-60%=3	60%-80%=4	80%-100%=5	5
					100

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ANNEX C: PROJECT BRIEFS

Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life

Projects' Brief for Al Hussein Neighbourhood in Mafraq

30 December 2024

UN-HABITAT

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO

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UN-HABITAT

UN-Habitat Jordan 2024

United Nations Human Settlements Programme (UN-Habitat)
63, Tayseer Na'na'ah Street, South Abdoun, Amman, Jordan.
Tel: +962799 1222 23
Jordan National Programme Coordinator: deema.abuthiab@un.org
UPIMC Jordan Project Manager: ayah.hammadmohd@un.org
www.unhabitat.org

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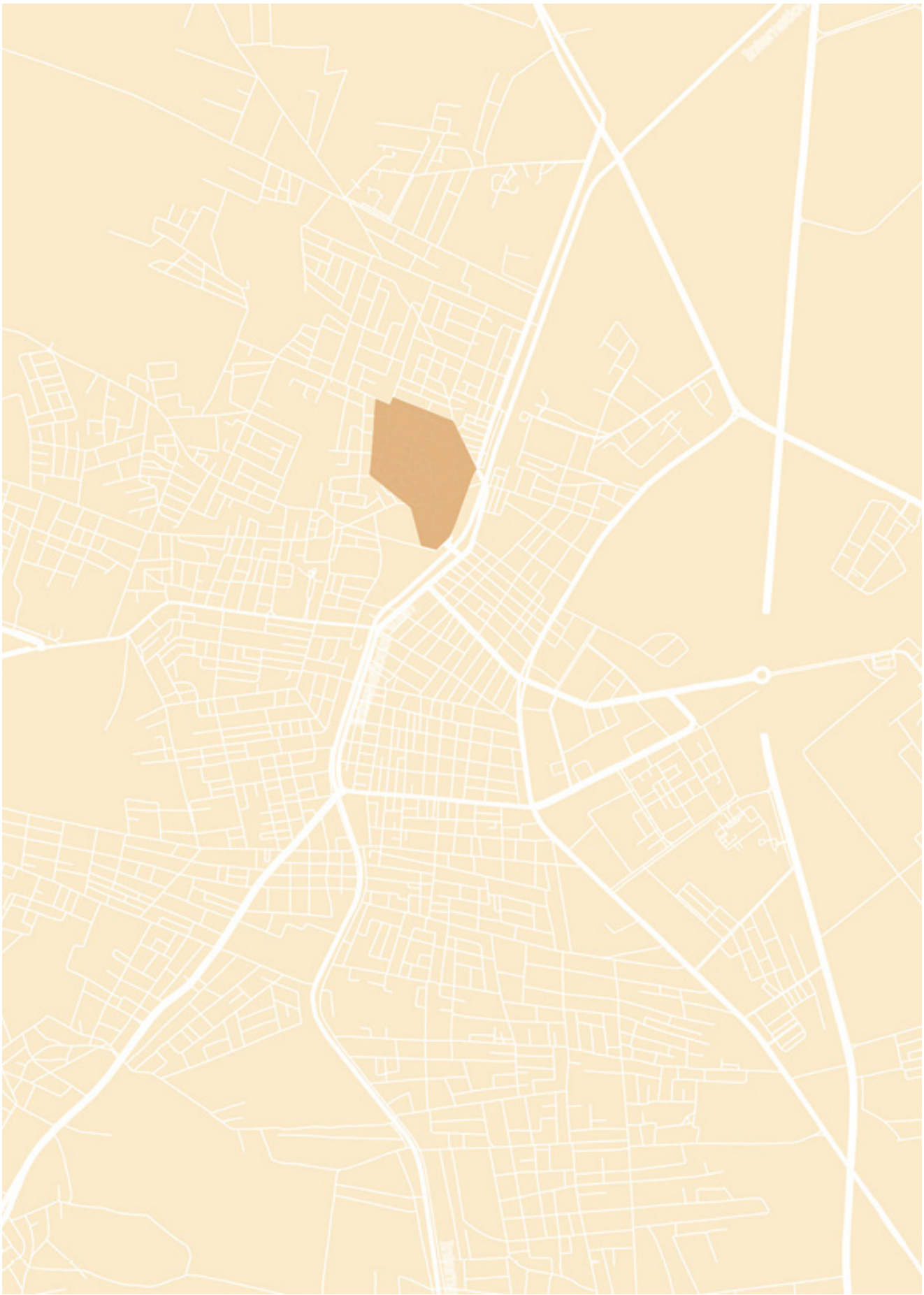

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About the Urban Planning and Infrastructure in Migration Contexts (UPIMC) Programme

Al Hussein, Mafraq

CONTEXT

As part of the Urban Planning and Infrastructure in Migration Contexts (UPIMC) programme, in partnership with the Swiss State Secretariat for Economic Affairs (SECO), UN-Habitat supported the Greater Mafraq Municipality (GMM) in developing long-term strategies that improve access to services and socio-economic opportunities for displaced populations and host communities living in challenging situations, through financeable infrastructure investments. The programme consists of four interlinked components: 1. Spatial analytics and urban profiling; 2. Developing a strategic vision and scenario building; 3. Defining prioritized infrastructure investments and establishing linkage to financing; and 4. Contributing to knowledge exchange.

In the first component, the Jordan team developed the Mafraq Spatial Profile, which analyzed the national, regional, and city scale, and zooming down to the neighbourhood level. It provided local stakeholders with a comprehensive spatial understanding of the existing situation as a basis for decision-making, long-term urban development strategies, and infrastructure investment planning.

Based on the analysis, the pilot neighbourhood chosen from Mafraq City was Al Hussein. A strategic vision and scenarios were developed for the selected neighbourhood, through a participatory approach that engaged the local community and relevant stakeholders, and based on the spatial analysis and evidence. The optimal scenario developed provides the rationale and evidence in identifying investment projects needed within the neighbourhood, that are both financially viable, and aid in building inclusive, resilient neighbourhoods.

To identify the prioritized investment projects that should be implemented over the short term phase of the optimal scenario action plan, the identified needed projects were scored through a developed prioritization matrix. The scoring matrix was used to identify the highest priority projects according to their urgency, the transformative impact on the social, environmental, economic, and spatial aspects, as well as the alignment with the existing governmental plans. The scoring also considered the assessment of the local community and key stakeholders in identifying the high priority projects.

PURPOSE

The main purpose of this project is to improve access to services and socioeconomic opportunities for displaced populations and the host community in the Al Hussein Neighbourhood through implementing the identified high-priority projects. This will be done by transforming the evidence-based studies into tangible impacts on the ground in the neighbourhood. The project also aims to assist GMM in understanding issues at the neighbourhood level, and implementing infrastructure projects at the local scale. Implementing these projects will help realize the neighbourhood vision, which was formulated with the local community: "An Investment-Attractive, Well-Developed, Inclusive, and Resilient Neighbourhood, Empowering Its Community and Attracting Investments for a Brighter Future."

To achieve the vision and the optimal scenario for Al Hussein by the target year of 2039, the recommendations proposed in the optimal scenario are transformed into implementable projects in a detailed action plan that can incrementally tackle spatial, environmental, social, and economic transformations.

IDENTIFIED HIGH PRIORITY PROJECTS

The identified projects for Al-Hussein neighborhood comprise 11 initiatives, four of which have been designated as high-priority and are recommended for implementation within the short-term action plan. These high-priority projects are as follows:

- Upgrading the Water and Sewerage Networks
- Upgrading the Road and Sidewalk Networks
- Implementing Flood Mitigation Interventions
- Housing Improvement and Upgrading
- Developing the Commercial Area
- Enhancing Street Lighting in the Road
- School Construction
- School Upgrading
- Public Park Construction
- Al Hijazi Railway Park Rehabilitation
- Installing a Bus Stop Shelter

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Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO

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Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life in Al Hussein Neighbourhood of Mafraq

Project Brief:

Upgrading the Water and Sewerage Networks

30 December 2024

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General Information

PROJECT TITLE	Upgrading the Water and Sewerage Networks
PARTNERS	Yarmouk Water Company, Ministry of Water and Irrigation, Water Authority of Jordan
TIME FRAME	5 Years
LOCATION	Al Hussein Neighbourhood, Mafraq, Jordan
ESTIMATED BUDGET	9,600,000 JD 13,450,000 US Dollars
SDGs ALIGNMENT	
ALIGNMENT WITH NATIONAL PRIORITIES	
TARGET BENEFICIARY GROUP	Direct: Current population of Al Hussein: 13,197 inhabitants, in addition to the maximum capacity of the neighbourhood, which is 34,330 inhabitants, including the host community and refugees.
CONTACT PERSON	Ayah Hammad ayah.hammadmohd@un.org

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Upgrading the Water and Sewerage Networks

PROBLEM IDENTIFICATION

A capacity versus demand analysis was conducted on the existing water and sewerage networks, using the GIS capacity/demand assessment tool by factoring in the pipes' diameter and length, as well as the number of people in the neighbourhood currently being served as of 2024. The sufficiency of the existing water and sewerage networks were analysed, whereby high load means low network sufficiency. Accordingly, the assessment revealed that the neighbourhood's networks are under heavy load, highlighting the urgent need for upgrades to accommodate both current and future demands as a proactive measure.

PROJECT OBJECTIVE

The project aims to improve water provision in the water network, as well as the efficiency of the existing sewerage network within the Al Hussein Neighbourhood. This will improve access to adequate water supply, and sewerage services to the current and forecasted population of Al Hussein Neighbourhood.

BENEFICIARIES

Direct beneficiaries include the current and forecasted residents of Al Hussein, including the host community and refugees, around 13,197 residents currently.

PROJECT IMPACT

Jordan is ranked as the second most water scarce country in the world. This project will enhance the water provision in the areas hosting most residents in the neighbourhood. Since the pipes will be upgraded to ones with larger diameters, this would reduce the current load on the networks within the neighbourhood. Furthermore, replacing the pipes with new ones would also assist in minimizing the water loss due to the existing deteriorated pipes. As for the sewerage network, the project will enhance the efficiency of the sewerage network within the neighbourhood in the same way, by replacing pipes with larger diameter ones which are able to better cope with the current and future load. This project is aligned with the action plan outlined in the Greater Mafraq Municipality's Local Development Plan spanning from 2024 to 2028, and supports the achievement of the 2030 Sustainable Development Agenda, specifically SDGs 3, 6, 9, and 11.

PROJECT PARTNER

- **Yarmouk Water Company:** Owner and implementer; Miyuhana will be responsible for the implementation, maintenance, and sustainability of the project
- **Ministry of Water and Irrigation**
- **Water Authority of Jordan**
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on ground.

PROJECT LIFE CYCLE

Feasibility, Detailed Design, Construction, Operation and Maintenance.

PROJECT FINANCIALS

Total cost and sum for the water and sewerage network upgrades:

- Total approximate cost per meter: 375 JD/m = 528 US Dollars/m*
- Total pipe lengths: around 25,570 meters
- Total approximate cost: 9,600,000 JD / 13,450,000 US Dollars*

*(These are preliminary estimates - accuracy: -20% _ +40%)

Current investment commitments and type (municipal budget, LOI): External fund is needed

Investment needs: Detailed studies, Construction, Regular maintenance

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ACTION PLAN

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the project budget, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	YMC, in coordination with MOWI & WAJ	
02	Prepare the Design and Supervision RFP for the bidding process of the networks and conveyor lines and to expand the purification stations connected to them (if necessary) & announce the bid. The RFP must include conducting a detailed technical assessment, conducting an environmental impact assessment, identifying needed pipes' specifications, including pipe diameter and material for the upgrading of the existing networks, developing the design, and preparing the construction RFP.	YMC,in coordination with MOWI & WAJ	
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	YMC, in coordination with MOWI & WAJ	
04	Conduct a detailed technical assessment for the water and sewerage networks at Al Hussein neighbourhood and identifying connecting points.	Consultant under the supervision of YMC, MOWI, & WAJ	
05	Prepare and finalize the detailed design drawings for upgrading the water and sewerage networks in the critical areas and obtain needed approvals.	Consultant under the supervision of YMC, MOWI, & WAJ	
06	Prepare the construction RFP for the bidding process & announce the bid.	YMC in coordination with MOWI & WAJ, & Consultant	
07	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	YMC in coordination with MOWI & WAJ, & Consultant	
08	Implementation of the construction work *	Contractor under the supervision of YMC, MOWI, WAJ & Consultant	

* The upgrading of the water and sewerage networks should be coordinated with the road and sidewalk network upgrades, the wadi flood mitigation efforts(managed by GMM), and the bus stop shelter installation project (managed by LTRC). shelter installation (responsible entity: LTRC).

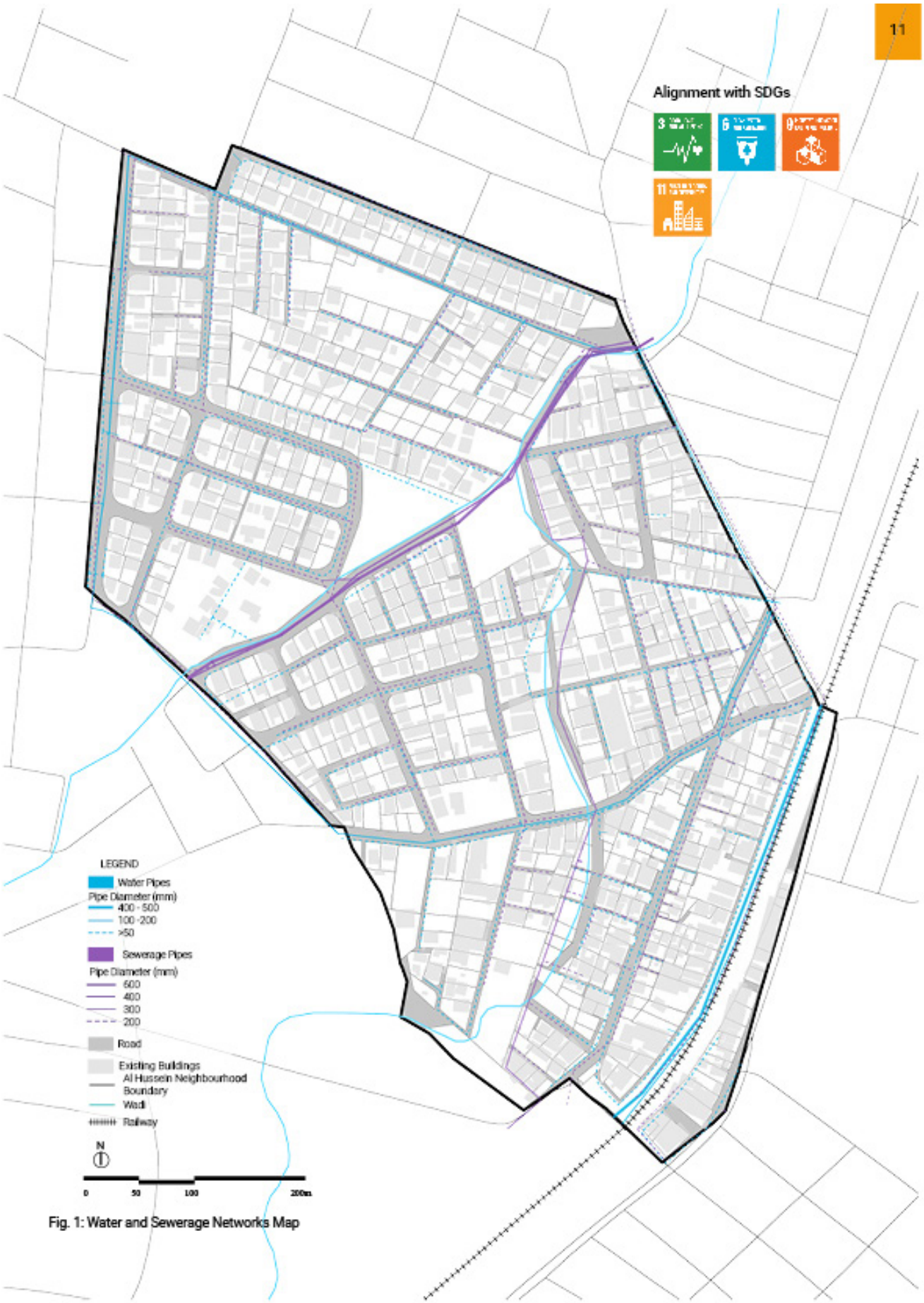

Fig. 1: Water and Sewerage Networks Map

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Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life in Al Hussein Neighbourhood of Mafraq

Project Brief:
Upgrading the Road and Sidewalk Networks

30 December 2024

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General Information

PROJECT TITLE	Upgrading of Road and Sidewalk Networks
PARTNERS	Greater Mafraq Municipality (GMM) and Ministry of Local Adminsration
TIME FRAME	4.5 Years
LOCATION	Al Hussein Neighbourhood, Mafraq, Jordan
ESTIMATED BUDGET	9,710,000 JD 13,600,000 US Dollars
SDGs ALIGNMENT	
ALIGNMENT WITH NATIONAL PRIORITIES	
TARGET BENEFICIARY GROUP	Direct: Current population of Al Hussein: 13,197 inhabitants, in addition to the maximum capacity of the neighbourhood, which is 34,330 inhabitants, including the host community and refugees.
CONTACT PERSON	Ayah Hammad ayah.hammadmohd@un.org

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Upgrading the Critical Areas of the Road and Sidewalk Networks

PROBLEM IDENTIFICATION

The field investigation assessed the current condition of the road and sidewalk infrastructure, revealing the need for rehabilitation. During consultations, residents confirmed these findings and further stressed that the deteriorating and unsafe road and sidewalk networks negatively impact their mobility and access to essential services.

PROJECT OBJECTIVE

"The project aims to enhance the road and sidewalk infrastructure in Al Hussein Neighbourhood. This includes rehabilitating the existing roads and sidewalks and improving street lighting to ensure safer and more accessible public spaces.

BENEFICIARIES

Direct beneficiaries include the current and forecasted residents of Al Hussein, including the host community and refugees; around 13,197 residents currently.

PROJECT IMPACT

The project will promote walkability, enhance connectivity, and increase pedestrian safety while commuting for all residents and visitors. This project is aligned with the are aligned with the projects outlined in the Greater Mafraq Municipality (GMM) Local Development Plan (2024-2028) and supports the achievement of the 2030 Sustainable Development Agenda, specifically SDGs 3, 9, and 11.

PROJECT PARTNER

- **Greater Mafraq Municipality (GMM):** Owner and implementer; GMM will be responsible for the implementation, maintenance, and sustainability of the project.
- **Ministry of Local Adminsration**
- **Donor/financier:** A funding entity(s) is needed to support the implementation the project on ground.

PROJECT LIFE CYCLE

Feasibility, Concept Design, Detailed Design, Construction, and Maintenance.

PROJECT FINANCIALS

Total cost for road and sidewalk rehabilitation:

- Total cost per meter: 37.5 Jordanian Dinar/m² = 52.5 US Dollars/m² *
- Roads and sidewalks within the neighbourhood = 258,884 m²
- Approximate cost for improving the road and sidewalk infrastructure within the neighbourhood– 9,710,000 JD / 13,600,00 US Dollars*

*(These are preliminary estimates - accuracy -20% _ +40%)

Current investment commitments and type (municipal budget, LOI):

- Possible partial coverage by the municipal budget
- External fund is needed

Investment needs: Survey work, Detailed Design Development, Construction, Regular maintenance

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ACTION PLAN

	Actions	Responsible Entity	Year (Quarters)
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	GMM	2025 2026 2027 2028 2029
02	Develop the concept and detailed design for roads and sidewalks to be inclusive and sustainable. Use porous materials to mitigate climate change impacts, include ramps for accessibility, and add street lighting to enhance safety.	GMM	2025 2026 2027 2028 2029
03	Prepare the construction RFP for the bidding process and announce the bid.	GMM	2025 2026 2027 2028 2029
04	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GMM	2025 2026 2027 2028 2029
05	Implementation of the construction work *	Contractor under GMM's supervision	2025 2026 2027 2028 2029

*The upgrade of the road and sidewalk networks must be coordinated with the wadi flood mitigation efforts within the neighbourhood, the upgrading of water and sewerage networks (managed by YMC), and the installation of bus stop shelters (managed by LTRC).

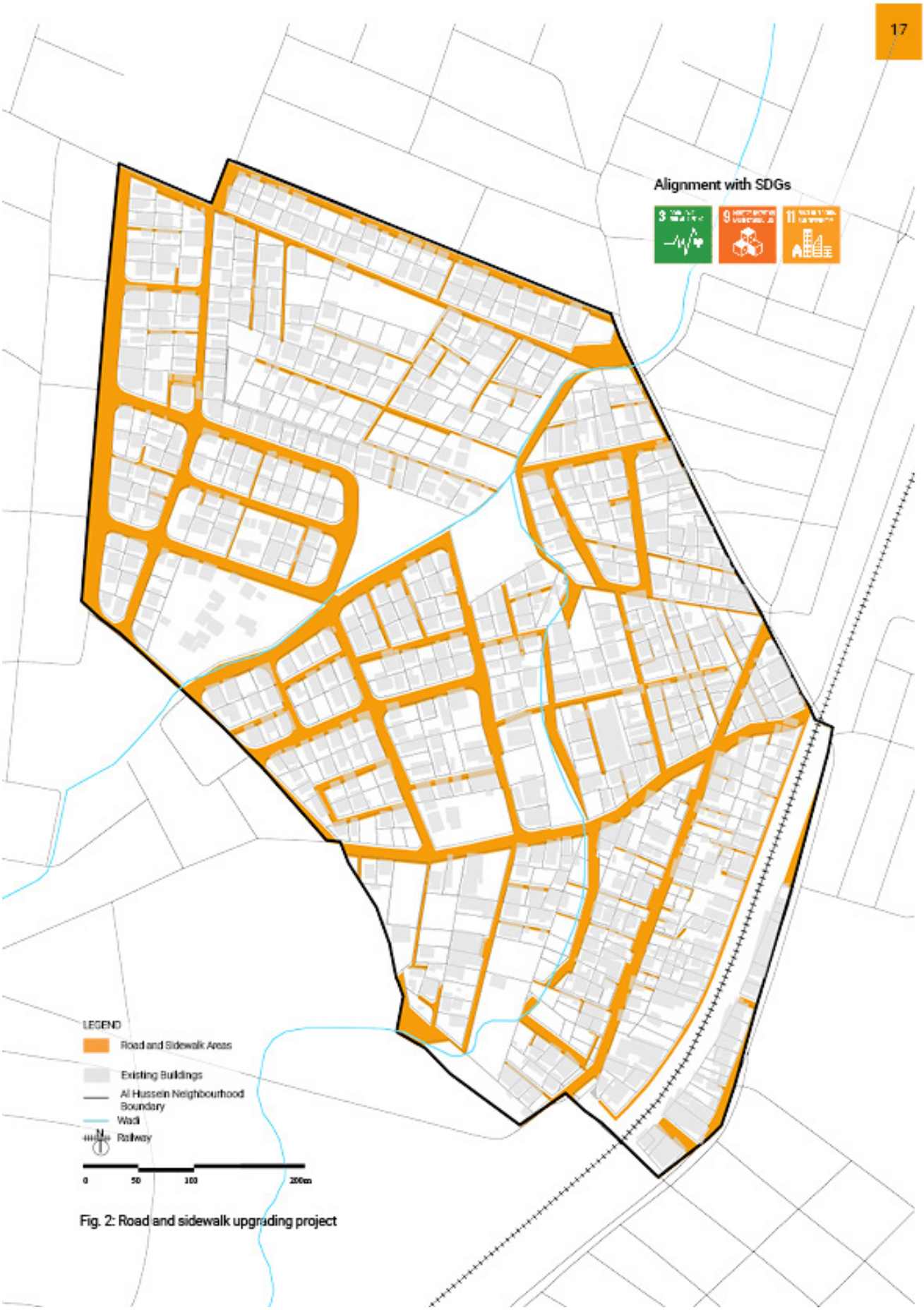

Fig. 2: Road and sidewalk upgrading project

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Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life in Al Hussein Neighbourhood of Mafraq

Project Brief:
Rehabilitating Residential Buildings in Critical and Substandard Conditions

30 December 2024

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General Information

PROJECT TITLE	Rehabilitating residential buildings in critical and substandard conditions Project
PARTNERS	Ministry of Social Development and Ministry of Public Works and Housing
TIME FRAME	5 Years
LOCATION	Al Hussein Neighbourhood, Mafraq, Jordan
ESTIMATED BUDGET	50,000 to 70,000 JD/ Residential Building 70,000 to 140,000 US Dollars/ Residential Building
SDGs ALIGNMENT	
ALIGNMENT WITH NATIONAL PRIORITIES	
TARGET BENEFICIARY GROUP	Direct Beneficiaries: Total Population of Al Hussein Neighbourhood, including the host community and refugees (around 13,197 residents currently).
CONTACT PERSON	Ayah Hammad ayah.hammadmohd@un.org

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Rehabilitating Residential Buildings in Critical and Substandard Conditions

PROBLEM IDENTIFICATION

A substantial portion of residential buildings in Al Hussein Neighborhood, with 24% classified as substandard and 14% as critical, are suffering from severe structural damage, missing elements, and overall deterioration. These conditions make the buildings unsafe for habitation and unsuitable for vertical expansion, which is necessary to accommodate the expected population growth by 2039. Buildings in critical condition require immediate rehabilitation or replacement, while those in substandard condition need significant repairs to ensure safety and liveability. The poor state of these buildings not only affects housing quality but also poses a barrier to urban development. Without intervention, the conditions will continue to worsen, negatively impacting residents' health and well-being. Urgent rehabilitation is vital, not only to restore the structural integrity of these homes but also to create socioeconomic opportunities for the community.

PROJECT OBJECTIVE

The project aims to address the poor condition of residential buildings in Al Hussein Neighbourhood, where 24% are substandard and 14% are in critical condition. These buildings require urgent repairs or replacement due to structural damage and safety issues, making them unsuitable for vertical expansion or accommodating future population growth. The rehabilitation effort will not only improve housing quality but also provide socioeconomic opportunities, such as home-based businesses and community spaces. This initiative is crucial for enhancing the quality of life for the neighbourhood's vulnerable residents and aligns with local development priorities..

BENEFICIARIES

- **Direct Beneficiaries:** Total Population of Al Hussein Neighbourhood, including the host community and refugees (around 13,197 residents currently).

PROJECT IMPACT

The project will improve living conditions for residents by rehabilitating substandard and critical residential buildings while also enhancing economic opportunities through the integration of spaces for home-based businesses or community activities. This dual approach will contribute to the improved quality of life for vulnerable populations and promote sustainable development in the neighbourhood. the project aligns with the GMM Local Development Strategy for 2024-2028, which prioritizes easing access to the housing market for the most disadvantaged populations. It also supports the Jordan National Urban Policy, which emphasizes bridging the gap between housing demand and supply.

PROJECT PARTNER

- **Ministry of Social Development (MoSD):** Owner and implementer, GMM will be responsible for the implementation, maintenance, and sustainability of the project.
- **Ministry of Public Works and Housing** - Buildings Department
- **Donor/financier:** A funding entity(s) is needed to support the implementation the project on ground.

PROJECT LIFE CYCLE

Feasibility studies, Concept and Detailed Design, Construction, Periodic maintenance

PROJECT FINANCIALS

Total cost and sum for rehabilitating residential buildings:

- Residential building approximate rehabilitation cost: 500JD/m² = 700 USD/ m²*.
- Total number of residential buildings in critical conditions: 101
- Average area of residential buildings in critical conditions: 160 m².
- Total number of residential buildings in substandard conditions: 158
- Average area of residential buildings in substandard conditions: 192 m².
- Total area of residential buildings in need of rehabilitation works is: 46,605 m².
- Total approximate cost to rehabilitate one residential building: 50,000 JD to 100,000 JD per building = 70,000 USD to 140,000 USD per building
- Total approximate cost to rehabilitate all buildings: 23,300,000 JD = 32,620,000 USD

*(These are preliminary estimates - accuracy: -20% _ +40%)

Current investment commitments and type (municipal budget, LOI):

- External fund is needed

Investment needs: Detailed Studies, Concept & Detailed Design, and Construction

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ACTION PLAN

	Actions	Responsible Entity	Year (Quarters)
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	Responsible Committee from relevant governmental entities and the donor	2025 2026 2027 2028 2029
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include developing the concept and detailed design	Responsible Committee from relevant governmental entities and the donor	2025 2026 2027 2028 2029
03	Hold the bid evaluation and selection and accordingly negotiate and award the contract.	Responsible Committee from relevant governmental entities and the donor	2025 2026 2027 2028 2029
04	Conduct the technical assessment and community consultation sessions to identify the needs, challenges, and opportunities	Consultant under the supervision of the responsible Committee from relevant governmental entities and the donor	2025 2026 2027 2028 2029
05	Develop the concept design, conduct community consultation sessions, and gain the needed approvals.	Consultant under the supervision of the responsible Committee from relevant governmental entities and the donor	2025 2026 2027 2028 2029
06	Finalize the detailed design drawings.	Consultant under the supervision of the responsible Committee from relevant governmental entities and the donor	2025 2026 2027 2028 2029
07	Prepare the construction RFP for the bidding process and announce the bid.	The responsible Committee from relevant governmental entities and the donor & the Consultant	2025 2026 2027 2028 2029
08	Hold the bid evaluation and selection and accordingly negotiate and award the contract.	The responsible Committee from relevant governmental entities and the donor & the Consultant	2025 2026 2027 2028 2029
09	Implementation of the construction work.	Contractor under the supervision of the responsible Committee from relevant governmental entities and the donor	2025 2026 2027 2028 2029

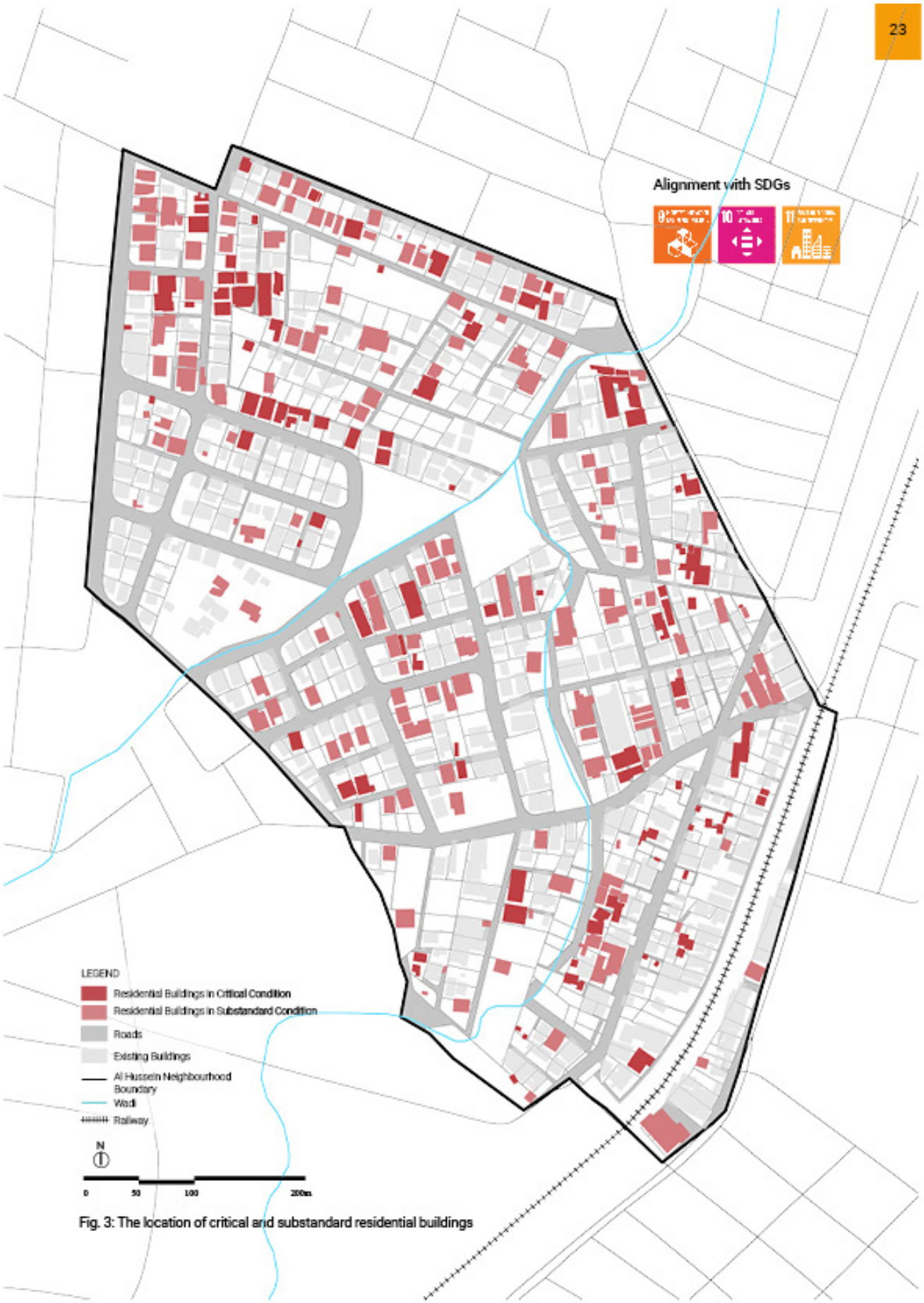

Fig. 3: The location of critical and substandard residential buildings

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Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life in Al Hussein Neighbourhood of Mafraq

Project Brief:
Implementing Flood Mitigation Interventions

30 December 2024

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General Information

PROJECT TITLE	Implementing Flash Flood Mitigation Interventions
PARTNERS	Greater Mafraq Municipality (GMM) and Ministry of Local Adminsration
TIME FRAME	5 Years
LOCATION	Al Hussein Neighbourhood, Mafraq, Jordan
ESTIMATED BUDGET	• **Flood Mitigation Intervention cost at the Wadi Mafraq Area:** 864,980 JD/1,220,000 USD • **Bioretention and Urban Green Space for Flood Mitigation Intervention cost:** 690947JD/$974,400
SDGs ALIGNMENT	
ALIGNMENT WITH NATIONAL PRIORITIES	
TARGET BENEFICIARY GROUP	Direct Beneficiaries: Total Population of Al Hussein Neighbourhood, including the host community and refugees (around 13,197 residents currently). Indirect Beneficiaries: Residents of the Greater Mafraq Municipality (148,940 residents as estimated in 2022.)
CONTACT PERSON	Ayah Hammad ayah.hammadmohd@un.org

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Implementing Flood Mitigation Interventions

PROBLEM IDENTIFICATION

Mafraq is highly vulnerable to flash floods, particularly when rainfall exceeds 15mm per hour, with areas near natural drainage zones, such as Wadi Mafraq, being at the greatest risk. Al Hussein Neighbourhood is especially prone to flooding due to the presence of two wadi streams running through it. The inadequate drainage capacity of these wadis leads to frequent flooding, causing damage to homes and infrastructure, particularly for those living within the wadi's designated buffer zone, in violation of regulations. Vulnerable populations, including women and children, are disproportionately impacted. Visual inspections of Al Hussein and community consultations have highlighted flash floods as a major concern, directly linked to the neighbourhood's stormwater drainage issues. While some mitigation measures have been introduced, further actions, such as enhancing drainage systems and providing community training on rainwater harvesting, are essential.

PROJECT OBJECTIVE

The project aims to mitigate the risk of flash floods in the vulnerable areas of Mafraq, with a specific focus on Al Hussein Neighbourhood. It comprises two primary components:

- **Studies, Planning, and Implementation of the Wadi Buffer:** This involves conducting comprehensive studies to evaluate the wadi buffer, ensuring alignment with water resource protection regulations. The studies will identify strategic interventions to mitigate flood risks and enhance stormwater management in the Al Hussein Neighbourhood. Following the assessments, the plan will focus on implementing these interventions to improve flood resilience and water flow efficiency while promoting sustainable urban development.
- **Implementation of Urban Green Space & Bioretention System:** Establish a 17,200 m² Urban Green Space integrated with a bioretention system capable of storing 1,032 m³ of stormwater. This system is designed to capture and divert excess stormwater from catchment areas ranging between 34,400 m² to 68,800 m², thereby reducing the risk of flash floods in the Al Hussein.

PROJECT IMPACT

The Greater Mafraq Municipality and local communities have identified flash floods as a critical concern, emphasizing the need for adaptive interventions to enhance safety, resilience, and sustainability. This project addresses these challenges by implementing a bioretention system to capture and manage excess stormwater, reducing the frequency and severity of flash floods in Al Hussein Neighbourhood. It will improve stormwater drainage, ensure compliance with water protection regulations, and lower the vulnerability of flood-prone households, particularly those of women and children. By preventing damage to homes and infrastructure, reducing displacement, and mitigating socio-economic impacts, the project will enhance community resilience. Capacity-building efforts in rainwater harvesting will further support long-term flood mitigation and align with local and national development strategies. The project is a key component of the Greater Mafraq Municipality Local Development Plan (2024–2028), the Jordan National Urban Policy, and contributes to achieving the 2030 Sustainable Development Goals, particularly SDGs 9, 11, and 13.

PROJECT PARTNER

- **Greater Mafraq Municipality (GMM):** Owner and implementer, GMM will be responsible for the implementation, maintenance, and sustainability of the project.
- **Ministry of Local Adminsration**
- **Donor/financier:** A funding entity(s) is needed to support the implementation the project on ground.

PROJECT LIFE CYCLE

Feasibility studies, Concept and Detailed Design, Construction, Periodic maintenance

PROJECT FINANCIALS

Total cost and sum for implementing flood mitigation interventions:

- **Flood Mitigation Intervention cost at the Wadi Mafraq Area** within Al Hussein Neighbourhood: 709JD/m = 1000USD/ m*. The total length of the Wadi Mafraq is 1.22 km.
- Approximate total cost: 864,980 JD/1,220,000 USD
- **Bioretention and Urban Green Space for Flood Mitigation Intervention cost:**
- Capital Expenditure (CAPEX): 266203JD/$375,410: Includes costs for design, construction, and equipment for the bioretention system and urban green space.
- Operational Expenditure (OPEX): 221239JD/$312,000 (for 5 years)Total 5-Year Cost: 690947JD/$974,400: Covers maintenance, capacity building, and system operation.

*(These are preliminary estimates - accuracy: -20% _ +40%)

Current investment commitments and type (municipal budget, LOI):

- External fund is needed

Investment needs: Detailed Studies, Concept & Detailed Design, and Construction.

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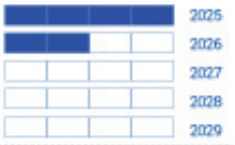
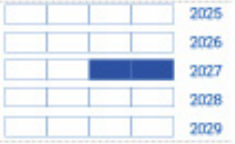
ACTION PLAN

	Actions	Responsible Entity	Year (Quarters)
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities	GMM	
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include developing the concept and detailed designs for the flood mitigation intervention.	GMM	
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GMM	
04	Initiate survey work and develop the concept design.*	Consultant under the supervision of GMM	
05	Finalize the detailed design drawings and obtain needed approvals.*	Consultant under the supervision of GMM	
06	Prepare the construction RFP for the bidding process and announce the bid.	GMM & Consultant	
07	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GMM & Consultant	
08	Implementation of the construction work*	Contractor under the supervision of GMM & Consultant	

*The wadi flood mitigation efforts within the neighbourhoodmust be coordinated with the road and sidewalk network upgrades (managed by GMM) and the water and sewerage network upgrades (managed by YMC).

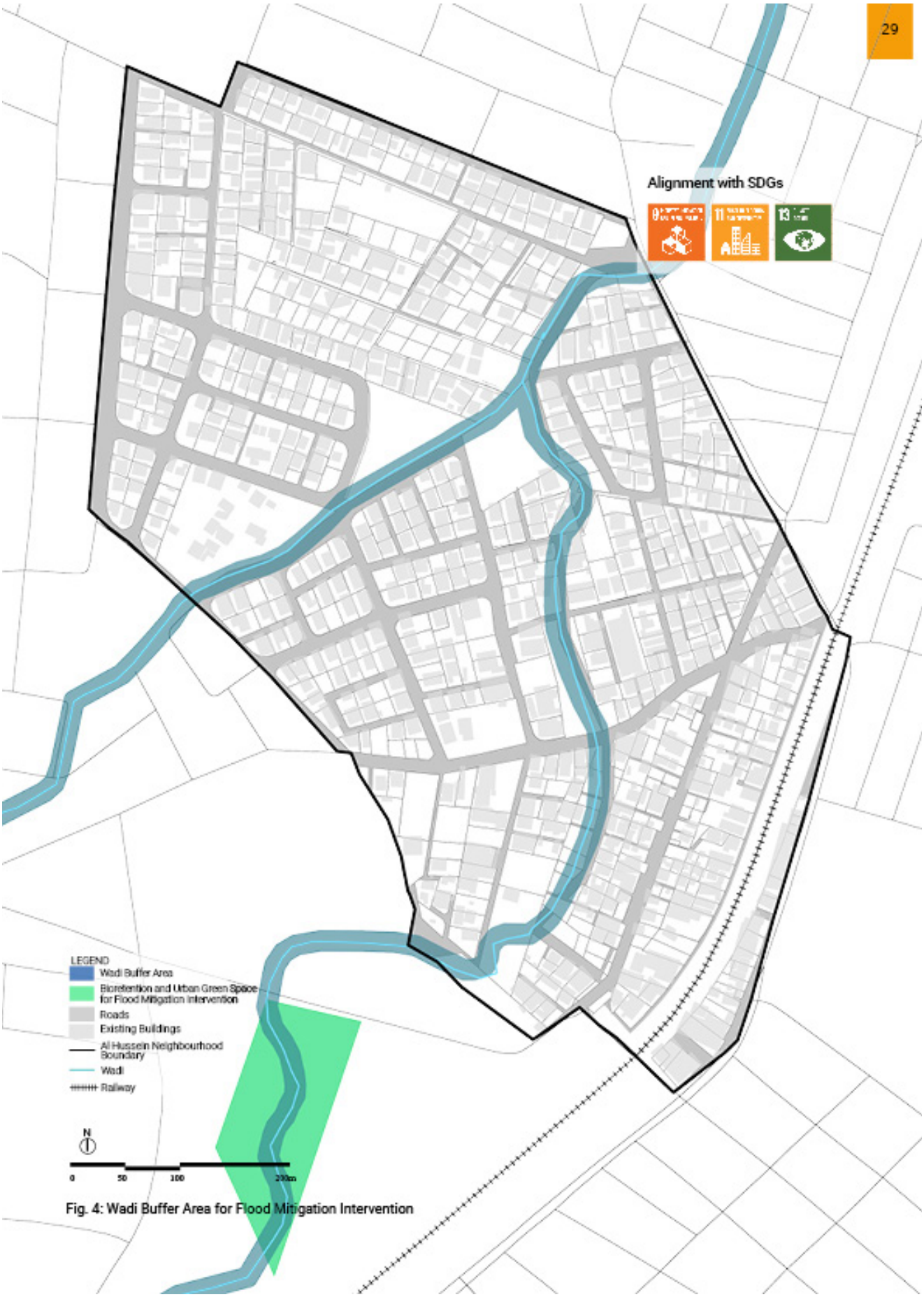


Fig. 4: Wadi Buffer Area for Flood Mitigation Intervention

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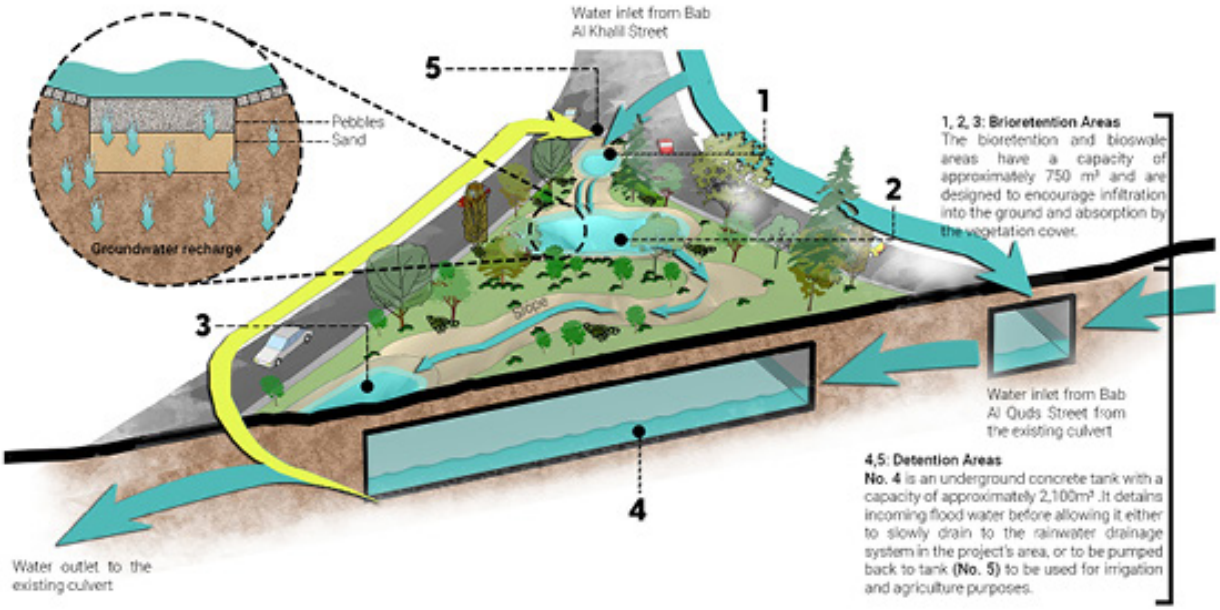
UN-Habitat Flash Flood Intervention Project
The case of: Al Zuhour Green Triangle Project

As part of the UN-Habitat conducted study: "Flood Risk Assessment and Flood Hazard Mapping" study of Downtown Amman, Al Zuhour Green Triangle was a pilot project implemented by UN - Habitat Jordan in one of the 120 locations in Amman.



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During Construction

After Construction Final Project

UN-HABITAT

63, Tayseer Na'na'ah Street,
South Abdoun, Amman, Jordan.
Telephone: +962799 1222 23,
unhabitat-jordan@un.org
Jordan National Programme Coordinator: deema.abuthiab@un.org
UPIMC Programme Jordan Manager: ayah.hammadmohd@un.org
www.unhabitat.org