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بلدية اربد الكبرى
Greater Irbid Municipality

VISION, SCENARIO BUILDING, & ACTION PLAN REPORT

Urban Planning & Infrastructure in Migration Contexts-Jordan

Al Afrah Neighbourhood

24 May 2023

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Abbreviations

BAU	Business As Usual
DLS	Department of Lands and Survey
GIM	Greater Irbid Municipality
GIS	Geographic Information System
GPS	Global Positioning System
KFW	Kreditanstalt für Wiederaufbau (German Development Bank)
MoE	Ministry of Education
MoH	Ministry of Health
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
UN-HABITAT	United Nations Human Settlements Programme
UPIMC	Urban Planning and Infrastructure in Migration Contexts
WAJ	Water Authority of Jordan

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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 and Irbid). This report is a product of the programme implementation in Irbid.

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 Irbid 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 Afrah neighbourhood in Irbid 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 infrastructure investments, which aim to improve the quality of life of refugees and host communities living in one of the most affected neighbourhoods in Irbid 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 Afrah 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 Afrah Neighbourhood Vision thus calls for "A Sustainable and Inclusive Neighbourhood that Empowers its Community."

Scenario Building

The scenario building process analysed how the urban situation in Al Afrah 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 Afrah neighbourhood could be spatially and functionally configured in 2037.

Two scenarios were developed; Firstly, the "Business As Usual (BAU)" scenario visualized the neighbourhood

in 2037 if no or minimal measures are implemented. Secondly, the "Optimal" scenario rethinks the mosaic of Al Afrah neighbourhood to establish a clear link between what should be done to transform the neighbourhood into an inclusive, liveable, and sustainable 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 Afrah Neighbourhood Action Plan

The blueprint for achieving the optimal Al Afrah neighbourhood by 2037 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 Irbid Municipality (GIM) and 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 Afrah 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 2023 and ending in 2037. The short-term phase (2023-2027) is the period in which the high priority needed projects identified through the scoring matrix must be implemented. These projects include upgrading of Al Sarih Comprehensive Health Centre, constructing public transport bus stops; upgrading the main road and sidewalk networks in the identified areas at district level; updating the land-use plan; upgrading the Al Sarih Elementary Boy's School; public parks development; upgrading the sewerage network in the identified areas; and upgrading the local road and sidewalk networks in the identified areas at neighbourhood level. The mid-term phase (2028-2032) consists of the medium-priority projects, including upgrading the sewerage network in the remaining areas; upgrading the road and sidewalk network in the remaining areas at neighbourhood level; and constructing one new school. Finally, the long-term phase (2033-2037) includes constructing two new schools .

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.

Investment cards were developed (Annex C) for the high-priority projects to begin the mobilisation of resources in 2023. They describe the project, its objective, beneficiaries, impact, partners, life cycle, timeline, and financial details. These cards will link the prioritized infrastructure investments to potential partners for financing and implementation.

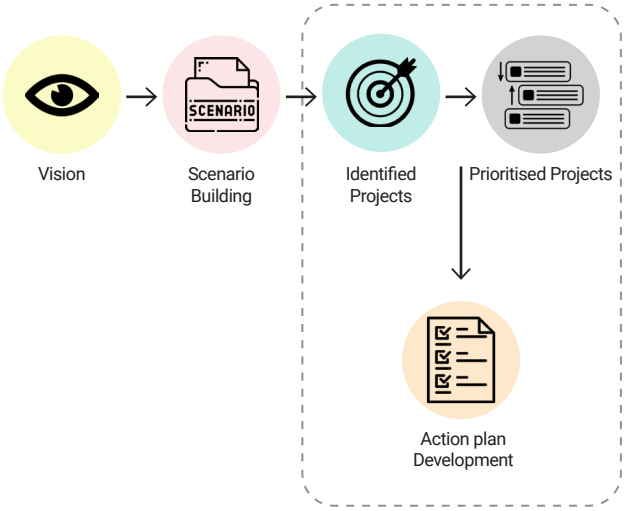


Fig. 1: Work Flow Diagram

UPIMC Programme

By conducting activities that go beyond a pure planning stage, the Urban Planning and Infrastructure in Migration Context (UPIMC) Programme endeavours to support the prioritization of infrastructure investments and their linkage to financing, which will benefit migrant communities and all urban dwellers with a better quality of life and access to economic opportunities. Accordingly, the scope of work will also ensure significant contributions to the Sustainable Development Goals (SDGs) by supporting the selected cities and neighbourhoods to become increasingly inclusive, safe, resilient, and sustainable. This will allow for the necessary shift from short term emergency interventions to long term development investments. The programme will achieve this through the following four interlinked components:

- **Spatial Analytics and Urban Profiling**

Under the first component, this programme has developed urban profiles based on a spatially focused cross-sectoral situational analysis of urban settlements hosting displaced populations. This allowed local stakeholders to get a comprehensive spatial understanding of the existing situation as a basis for decision making on long-term urban development strategies and infrastructure investment planning. The urban profiling itself will build upon data already collected by the various actors using a participatory and area-based approach. It will develop a baseline that can be used as a consultative mechanism to support vertical and horizontal integration of stakeholder requirements including government entities at various levels and other relevant stakeholders. It will also be used to select suitable pilot areas within the cities, where more detailed scenario building will be conducted under the second component. The Amman Spatial Profile can be accessed here, and the Irbid Spatial Profile can be accessed here.

- **Develop a Strategic Vision and Scenario Building**

Building upon the analytical work and the recommendations for the selection of the pilot areas under the first component, this component consists of developing strategic visioning and scenario building for urban development in the selected neighbourhoods. It is based on a comprehensive planning charrette, which is highly participatory and inclusionary, involving critical institutional stakeholders together with representatives of civil society (displaced, migrants, host communities, etc.) and the private sector. Participants will provide direct inputs into the visioning process, which will facilitate discussion on strategic urban development visions, possible interventions, related individual interests, technical opportunities and/or constraints, as well as political objectives. The scenario building will identify where strategic infrastructure interventions are needed, which will then be prioritized through a technical assessment. The scenario will be supported by an action plan that outlines what could be done where and when.

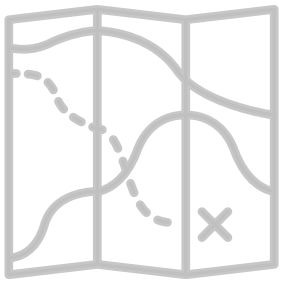
- **Define Prioritized Infrastructure Investments and Linkage to Financing**

The urban profiles, scenarios, and action plans from the first and second components set out the rationale and evidence to support decision-makers in identifying interventions for prioritized investment in municipal services that are both financially realistic and viable. It will aid in prioritizing investments through an assessment of the economic, social, and environmental potential as well as of the sustainable impact of the proposed interventions on the city and its migrant communities. The technical and financial feasibility of prioritized interventions will further be detailed through technical assistance and consultative bilateral engagements with national and local authorities, donors, and development banks, including through analysing city budgets, capital spend potential, as well as investment platforms, such as UN-Habitat's Cities Investment Facility. The proposed prioritized infrastructure interventions and anchor points (where catalytic projects can be linked to existing city/neighbourhood priorities and policies for financing) will then be presented and validated in a workshop with key local authority, development partners, and, where possible, the private sector. This will include linking them to potential partners for financing and detailed pre-feasibility studies.

- **Knowledge Exchange**

This last component will build and foster knowledge exchange and awareness in the cities among stakeholders for the importance of good data management and urban observatory platforms for future use. Through forums and digital media, the programme will also connect cities at the national and international levels through events and international conferences, including the Cities Investment Platform events. It will also make use of UN-Habitat's platforms and those of partners.

COMPONENT #1

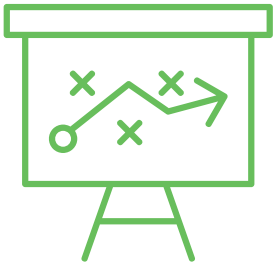


Spatial Analytics & Urban Profiling

Multi-Sectoral Spatial Analysis

Profile Preparation & Pilot Area Identification

COMPONENT #2



Develop Strategic Vision & Scenario Building

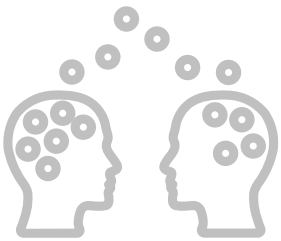
Identification of potential economic opportunities
Finalisation & dissemination of action plan

COMPONENT #3

Define Prioritized Infrastructure Investments & Linkages To Financing

Impact assessment framework of proposed infrastructure

COMPONENT #4



Knowledge Exchange & Capacity Sharing

City-to-city knowledge exchanges

Capacity sharing sessions with local authorities to continue to monitor and guide infrastructure implementation

Introduction

Moving from Assessment to Strategic Vision and Scenario Building

The spatial profile has established and summarized the challenges and opportunities that impact Irbid 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 Irbid 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 Afrah neighbourhood within Al Sarih District as the pilot area in Irbid City, this document intends to cover the second component, which is to "Develop a Strategic Vision and Scenario Building" for urban development in Al Afrah neighbourhood.

Al Afrah neighbourhood has an area of 1.2 km^2, a total population of 8,658 inhabitants based on the 2015 census, and, accordingly, a population density of 7,215 person/km^2. It is one of the neighbourhoods in Irbid City that was most affected by the influx of refugees. It has the highest refugee presence and limited access to public facilities, services, and transportation, in comparison to the other neighbourhoods within the Al Sarih District.

Al Afrah neighbourhood in Irbid City represents the typology of a neighbourhood that lacks access to public facilities and public transportation, and needs infrastructure network and road maintenance.

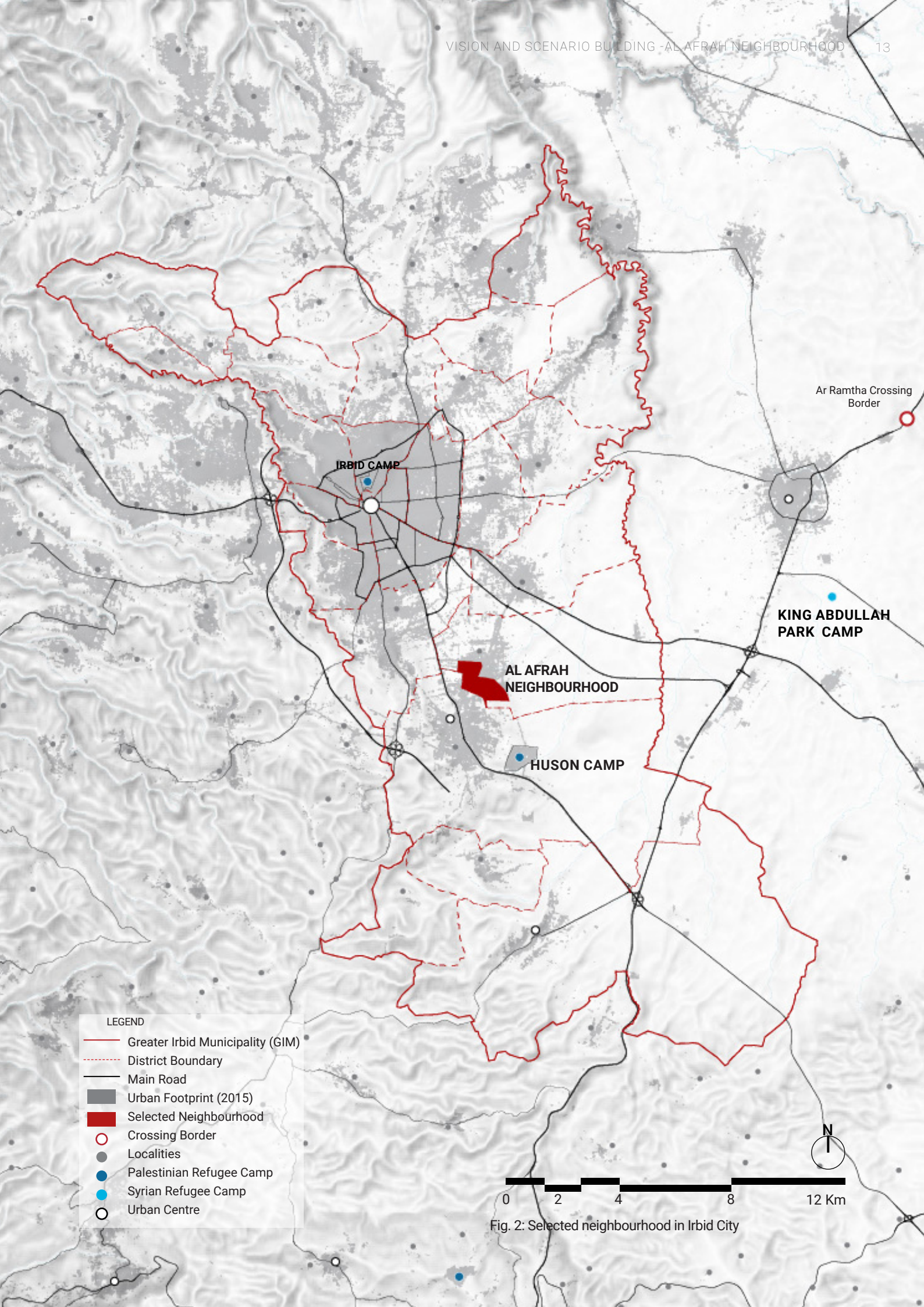


Fig. 2: Selected neighbourhood in Irbid City

Background - Challenges and Interventions Needed at Al Afrah Neighbourhood

Based on the spatial analysis conducted for the pilot neighbourhood in Irbid City (Al Afrah) and the challenges, needs, and opportunities highlighted by the neighbourhood's residents, this section summarizes the identified challenges and the needed interventions at Al Afrah in relation to the SDGs.

SDG 3: Good Health and Well Being

The analysis revealed that there is a lack of access to health care facilities within a 5- and 15-minute walking distance at Al Afrah neighbourhood. This was validated by the neighbourhood residents. Accordingly, the needed intervention is **to construct a comprehensive health centre within the neighbourhood that includes a 24-hour emergency centre.**

SDG 6: Clean Water and Sanitation

Residents described the water service as weak, uneven, and limited. They also explained that the sanitation network needs regular maintenance. This is aligned with the capacity analysis conducted that revealed that the water and sewerage networks within the neighbourhood are overloaded. Therefore, the needed intervention is to **upgrade the water and sewerage networks to accommodate the increase in population.**

SDG 9: Industry and Infrastructure

The residents mentioned the need for road maintenance, installing speed bumps, adding pedestrian crossings, and enhancing the street-lighting in general. The field visits conducted by the UN-Habitat team confirmed that the roads need rehabilitation and more lighting. Furthermore, the residents also mentioned the they suffer from poor storm-water drainage. Accordingly, the needed intervention is **to rehabilitate the road infrastructure** and to **add more lighting poles in the neighbourhood**. There is additionally a need **to provide periodic maintenance to the storm-water drainage system** and relocate the drains based on the proper levels.

SDG 11: Sustainable Cities and Communities

The analysis revealed the limited commercial areas within the neighbourhood, which was further emphasised by the residents. Additionally, they mentioned the lack of public recreational facilities in the neighbourhood.

Therefore, the needed interventions are **to encourage diversity in commercial facilities, a nursery, and a capacity building training centre.** Regarding the public recreational facilities, the needed interventions include **creating more secured play areas, parks, and green open spaces, adding more lighting poles, shaded seating areas, and a bazar.**

As for transportation, the analysis showed that the neighbourhood residents have no access to public transport means within 5- and 15-minutes walking distances. Moreover, residents highlighted the need for public transport stops and routes, and that taxis refuse to take rides inside, to, and out of the neighbourhood because of its deteriorated roads. They also highlighted the lack of a pedestrian bridge or tunnel on the main street (Al Sarih Street), which threatens their safety. The needed interventions in this regard is **to extend a public transport route into the neighbourhood and to add a fixed stop at the central area of the neighbourhood.** Additionally, a pedestrian bridge/tunnel on the main street is highly necessary.

Furthermore, the unequal distribution of janitors and waste containers was highlighted as a challenge concerning solid waste management in the neighbourhood. Accordingly, the needed intervention, is **to add waste containers and assign more janitors to serve the neighbourhood equally and efficiently.**

Another highlighted need is **the general beautification of the neighbourhood**. Residents suggested increasing the green elements by adding trees and utilizing rooftops and vacant lots for urban agriculture. They also suggested relocating cow and sheep farms outside of the neighbourhood, and providing a solution for stray dogs.

Al Afrah neighbourhood. Source: UN-Habitat Jordan

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 20th of March 2022, the UN-Habitat Jordan team held the Neighbourhood Validation Workshop at Al Sarih Youth Centre located in Al Sarih District, within Al Afrah neighbourhood (the selected neighbourhood). 24 participants attended the workshop, most of whom were residents of Al Afrah neighbourhood, including heads of some Community-Based Organisations (CBOs) and NGOs in the district, as well as women, youth, elderly, and refugee representatives, to ensure the inclusion of diverse age groups, genders, nationalities, and abilities within the neighbourhood. Additionally, representatives from the Greater Irbid Municipality (GIM), the Ministry of Local Affairs (MoLA), and the livelihood unit at UNHCR attended the workshop.

The workshop started by informing the residents of Al Afrah neighbourhood about the UPIMC Programme and its objectives. This was followed by a recap of the first stage of profiling and analytics, as well as an explanation of the intended deliverables of the current stage, which aims to 'Develop a Strategic Vision and Scenario Building'. The vision formulation session began with the UN-Habitat team providing a brief explanation of the vision formulation process, its importance, and the steps to develop the vision of their neighbourhood.

Next, an interactive session was held with the residents, where they were divided into three groups for an open discussion to identify and select keywords that represent their concerns and that should be included in the vision statement of their neighbourhood. Through this exercise, they expressed their perspectives on how they see their neighbourhood in the upcoming 15 years.

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

Stakeholders holding group discussions during the vision workshop. Source: UN-Habitat

Vision Formulation

The residents of Al Afrah 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 into the vision statement.

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

- Sustainable
- Safe
- Aware-community
- Inclusive
- Integrated
- Clean
- Accessible
- Capable
- Cohesive
- Empowering
- Green
- Well-planned
- Well-served
- Vibrant

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

Vision Key Words Word Cloud

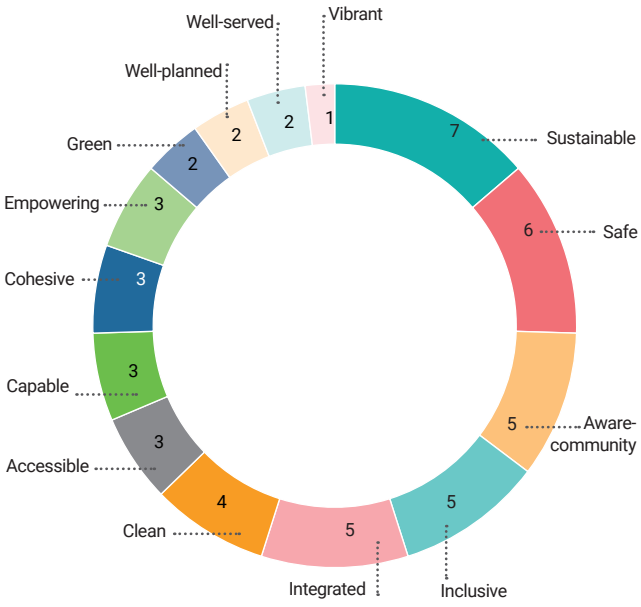


Fig. 3: Frequency of Vision Key Words proposed by Al Afrah residents

Stakeholders 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 Afrah Vision states:

A Sustainable and Inclusive Neighbourhood that Empowers its Community

Sustainable **Inclusive** **Empowering**

Objectives:

The objectives indicate what needs to be accomplished to achieve the above vision for Al Afrah neighbourhood. These include:

- Improve walkability in the neighbourhood
- Enhance public facilities' accessibility to all the community members
- Improve provision of infrastructure services
- Create self-reliant and diverse neighbourhood
- Beautify the neighbourhood using green elements

Link to Irbid City Vision:

The formulated vision of the Al Afrah neighbourhood is linked to the larger city vision for "A modern city that is knowledgeable, sustainable, and well-planned, embracing its heritage and attracting investments as a regional hub for education, economic prosperity, and natural and human resources." This linkage has been established through embedding the same main principles of sustainability, inclusiveness, and empowerment as key themes in the Al Afrah neighbourhood vision.

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

CHALLENGES

Accessibility and Mobility: Poor access to public transport means

Public Facilities:

- Lack of a comprehensive health care facility
- Lack of diverse commercial activities
- Lack of green, public, and open spaces

Basic Infrastructure Services:

- The overloaded water network
- Poor storm-water drainage
- Road infrastructure is deteriorated, no pedestrian crossings
- Lack of periodic maintenance for the manholes, some manholes are kept open
- Variance in the water supply
- The neighbourhood is poorly lit

NEEDS

Accessibility and Mobility:

- Extend a public transport route into the neighbourhood and a fixed bus stop
- Install pedestrian traffic lights

Public Facilities:

- Establish a comprehensive health care facility.
- Construct a capacity building training centre to increase awareness, a nursery, and diversify the commercial activities.
- Construct public open spaces
- Add beautification elements (greenery, etc..)

Basic Infrastructure Services:

- Upgrade water and sewerage networks
- Rehabilitate of the road infrastructure and add more lighting poles
- Conduct periodic maintenance for the storm-water drainage system
- Add waste containers and assign more janitors

OPPORTUNITIES

Public Facilities:

- Available vacant lands to establish the needed facilities (health centre, capacity building training centre, public park, and nursery).
- Existing schools to accommodate urban agriculture initiatives.

Accessibility and Mobility:

- Existing public transport routes adjacent to the neighbourhood
- GIM's will to support the neighbourhood's improvement
- Local community's will to support the neighbourhood's imrovement

AL AFRAH VISION 2037

A Sustainable and Inclusive Neighbourhood that Empowers its Community

OBJECTIVES

- Improve provision of infrastructure services
- Enhance public facilities' accessibility to all the community members
- Create self-reliant and diverse neighbourhood
- Improve the walkability in the neighbourhood
- Beautify the neighbourhood using green elements

CITY OF IRBID VISION 2030

A modern city that is knowledgeable, sustainable, and well-planned, embracing its heritage and attracting investments as a regional hub for education, economic prosperity, and natural and human resources

Fig. 4: Al Afrah's Vision interlinkage with challenges, needs, opportunities, and the Irbid City's Vision

02

SCENARIOS

Introduction

The challenges, needs, and opportunities identified in the spatial profiles and verified with the local community 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 Afrah's development until 2037.

Why Scenario Building?
Scenario building provides an opportunity to make assumptions on 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 a 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 Irbid Municipality and the vision formulated for Al Afrah 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) Planned Needed Projects; 4) Climate Risk & Natural Hazards; and 5) Local Economic Development.

WHAT ARE THE RESEARCH QUESTIONS?

- Given the context of the Greater Irbid Municipality and the vision formulated for the Al Afrah 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 Irbid Municipality to work towards durable solutions for host and refugee communities in Irbid City and Al Afrah 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

The fieldwork for Al Afrah 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 and their current condition (including sidewalks and public stairs), available building functions, such as public facilities, 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[1], and then validating the accuracy of the dataset by comparing it to Google Earth and through field observations. 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 11 zones.

Simultaneously, the team developed a questionnaire with 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 Afrah neighbourhood 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.

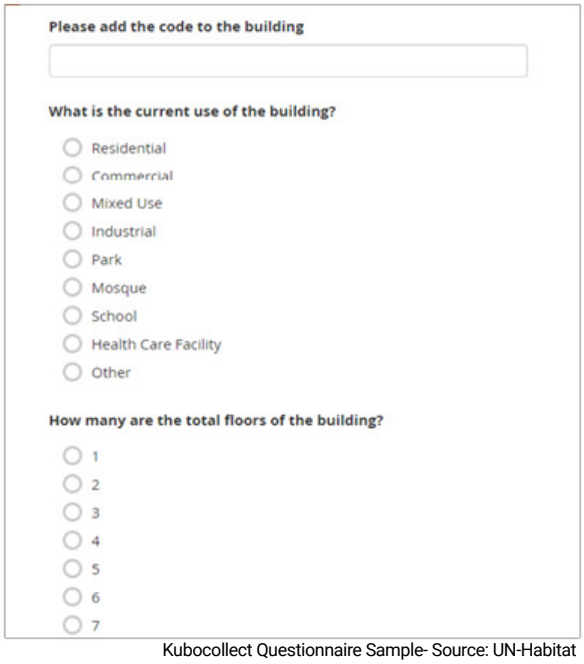
The data collected was integrated into the available GIS data to obtain an accurate portrayal of the neighbourhood, which would inform the development of the "Business as Usual (BAU)" and the "Optimal" scenarios. Ultimately, the data was used to calculate the maximum capacity of the neighbourhood as well as to 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. 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:

- Limited accessibility to some of the buildings.
- Difficulties in collecting data on residents' nationalities, refugee status, and income, due to the sensitivity of these topics.

Consequently, some of the lessons learned include:

- The field investigation is highly needed to validate the availbale GIS layers.
- The best approach was to update the GIS maps once all the fieldwork data collection was done 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 Afrah neighbourhood, the data was thoroughly analyzed in relation to the five selected variables.

This section explains the scenario building process, which aims to analyse how the urban situation in Al Afrah 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 Afrah could be spatially and functionally configured in 2037. The first scenario is the "Business As Usual (BAU)" scenario, which intends to visualize the neighbourhood in 2037 if no or minimal measures are taken into account for the future. The second scenario is the "Optimal" scenario, which will rethink the mosaic of the Al Afrah neighbourhood in alignment with the Local Strategic Plan for Greater Irbid Municipality (GIM) 2019 -2023 and aims to inform the development of GIM's future strategic plans. This 'Optimal' scenario will aim to establish a clear link between what should be done to move Al Afrah neighbourhood towards the formulated vision of an inclusive and sustainable neighbourhood that empowers its community and how the different sectors can support this transition.

In the following pages, the five selected variables are explained more broadly and their interlinkages are analysed.

UN-Habitat team 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 Afrah 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 2.3% in 2019. Irbid Governorate has an estimated annual growth rate of 2.3%.[2]

Al Afrah neighbourhood has an area of 1.2 km^2, a total population of 13,844 inhabitants, based on the data collected in the field investigation, and, accordingly, a population density of 11,536 persons/km^2. Based on the 2015 Census, the refugee residents represent 37.4% of Al Afrah's neighbourhood population, whereby 36.6% are Syrian, 0.02% are Iraqis, 0.8% are Palestinians. It is worth mentioning that this 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 included.

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

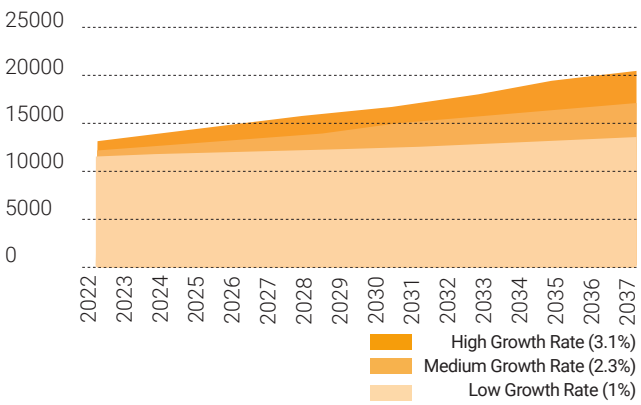


Fig. 5: Population Distribution according to the Growth Rate Scenarios

- **Low Growth Outcome:** The population growth rate will decrease to 1%. Under normal circumstances, the population growth rate in Irbid Governorate decreases by around 0.1% annually. 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 Irbid Governorate at 2.3%.
- **High Growth Outcome:** The population growth rate will increase to 3.1%. This rate is based on the highest population growth rate reached in Irbid 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 slow down to only 1% per year over the next fifteen years, this would still result in an additional 2,228 residents, or an increase of approximately 16%. If Al Afrah neighbourhood were to maintain an annual growth rate of 2.3% (Medium Outcome), matching the current estimated growth rate of Irbid Governorate, this would result in an a total population of 19,471 inhabitants by 2037, which is an additional 5,627 people and is a 41% increase from the current population. Finally, if the growth rate in Al Afrah neighbourhood was to increase to 3.2%, this would result in an additional 8,041 residents by 2037, or a 58% increase.

In addition to these projected growth rates, refugee surges may occur in the next 15 years, which could cause a sudden spike in population. However, refugee surges like this are difficult to predict, and, if this occurs, an additional 6.2% population growth rate can be added to the projected number of the medium growth outcome, to accommodate for any possible crisis influx on 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 Irbid Governorate.

Another outcome to consider, is the possibility of having voluntary repatriation of a portion of the remaining refugee population. This outcome might happen in Irbid City given the high percentage of Syrian refugees residing in it and its close proximity to Syria. Additionally, some of these refugees might move to the capital city, Amman, seeking better life and job opportunities.

AL AFRAH
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 2,228 inhabitants, equal to an increase of 16%.

+16%

population increase by 2037

Total population: 16,072 inhabitant
Density (person/km²): 13,393

Outcome 2: Medium Population Growth (2.3%)

Using the Irbid Governorate annual growth rate of 2.3%, forecasting shows that if Al Afrah continues to grow without any sudden changes in external circumstances, then the population would grow to 19,471 inhabitants by 2037, which is an additional 5,627 residents and a 41% increase from the current population.

+41%

population increase by 2037

Total population: 19,471 inhabitant
Density (person/km²): 16,226

Outcome 3: High Population Growth (3.1%)

Taking into consideration the highest growth rate under normal circumstances in Irbid Governorate over the last decades, then Al Afrah could see a high population growth rate of 3.1%. This would result in an additional 8,041 residents by 2037, or a 58% increase from the current population.

+58%

population increase by 2037

Total population: 21,884 inhabitant
Density (person/km²): 18,237

Outcome 4: Large increase in population due to new unpredictable influx (+6.2%)

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 Irbid City. Therefore, this outcome considers any possible influx by adding 6.2%, which is the highest previous increase in the growth rate in Irbid Governorate in 2013, to the medium growth outcome (+2.3%), resulting in an additional 1,207 refugees.

+6.2%

Increase to the **medium growth outcome (+41%)**

Total population: 20,678 inhabitant
Density (person/km²): 17,232

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. 6: Al Afrah Population Growth Outcomes

Variable: Urban Footprint

As previously discussed, the forecasted population growth could affect the expansion of the urban footprint of Al Afrah 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 Al Afrah neighbourhood, the residential land use comprises of types A, B, C, D, and agriculture, constituting 6.3%, 42.9%, 37%, 2.6%, and 7.8% of the neighbourhood's area respectively. Around 2.8% of the land use in the neighbourhood is commercial and 0.2% is religious facilities. According to the dominant land use categories in Al Afrah and the bylaw 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 bylaw.

Maximum Neighbourhood Capacity

To calculate the current population (2022), 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 GIM, which is 5.3, and (3) the assumed number of apartments per floor based on the land use types: 1 apartment per floor for residential land uses A, B and D, 2 apartments per floor for residential land use type C, and 1 household per building for agriculture residential land use type. The assumption of the number of households per floor is based on the suburban nature of the neighbourhood, 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 60,481 inhabitants. Under these circumstances, the neighbourhood would have a maximum population density of 50,401 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 2170. Whereby in 2037, 27% of the maximum capacity would be reached.
- **Medium Growth Outcome (2.3%):** The neighbourhood can reach its maximum capacity in 2087. 32% of the maximum capacity will be reached by 2037.
- **High Growth Outcome (3.1%):** The neighbourhood can reach its maximum capacity in 2070, which means almost 91% of the maximum capacity will be reached by 2037.

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.

Figure 6 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

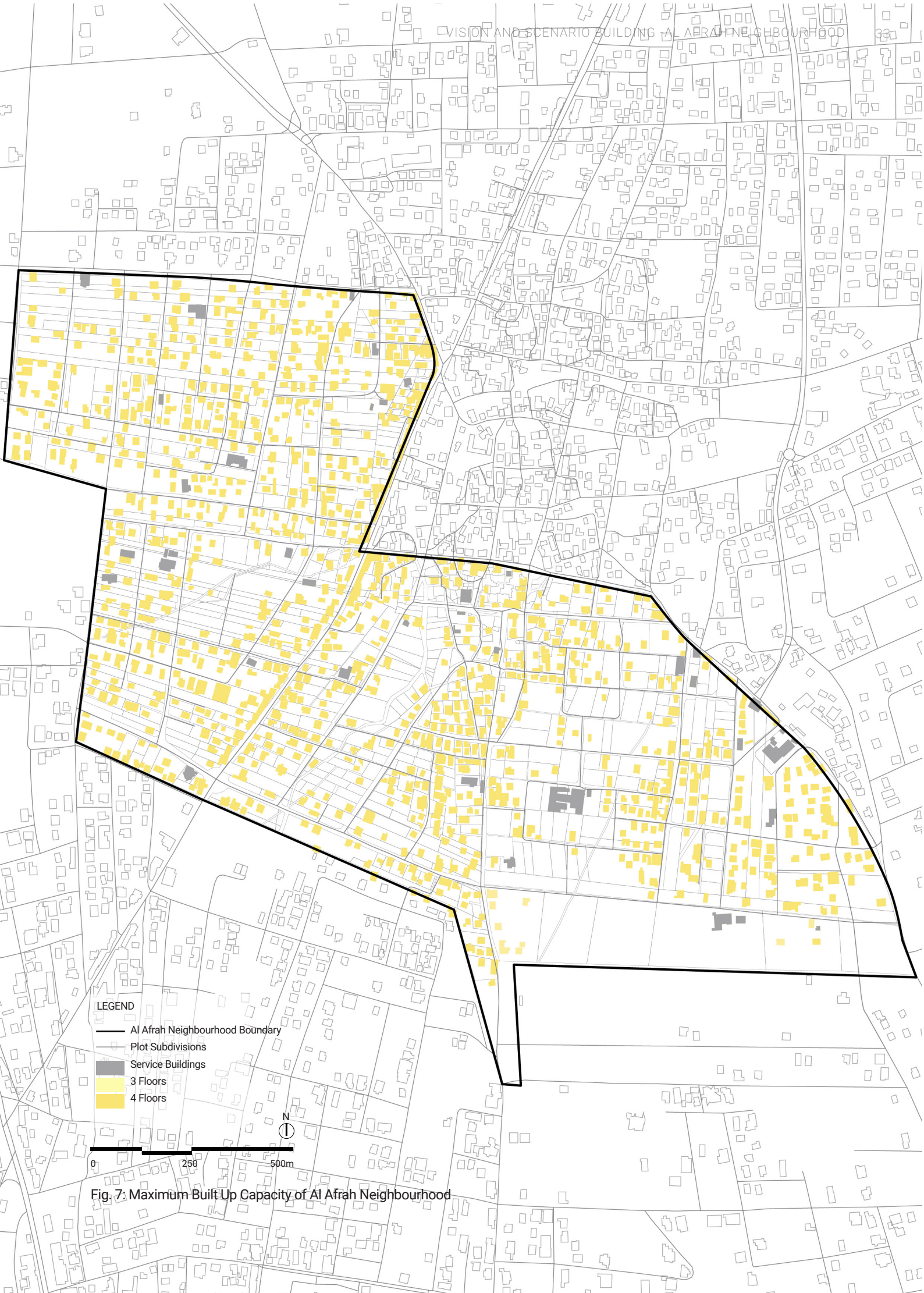


Fig. 7: Maximum Built Up Capacity of Al Afrah Neighbourhood

Conditions of Residential Buildings

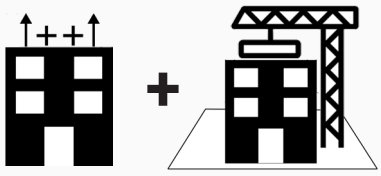
To determine the possibility of vertically densifying existing residential buildings in Al Afrah neighbourhood, a visual assessment for the buildings was conducted during the field investigation, and buildings were categorised according to their condition into 4 main categories; good, fair, substandard, and critical.

The buildings that were in good condition constitute 47% of the total buildings, while buildings in fair condition constitute 40%. Buildings in good condition have no apparent structural problems and are therefore more likely to expand vertically than the other buildings, if their land use regulation allow. As shown in the map, most of Al Afrah neighbourhood buildings are in good or fair conditions.

On the other hand, buildings in substandard and critical condition, which are scattered sporadically in the neighbourhood, as shown in the map, represent 11% and 2% of the total 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 renovations are made. 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 2037.It is worth mentioning here that most of the service buildings are in a good condition.

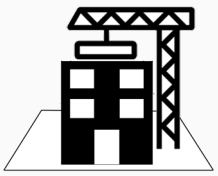
Outcome 1: Infill and Vertical Densification

To respond to the projected increases in population in 2037, this outcome forecasts different ratios of densification and infill according to the low, medium, and high population projections.



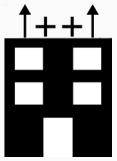
Outcome 2: Full Infill

This outcome forecasts a full infill of all vacant lands in Al Afrah 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 Afrah neighbourhood, according to the maximum capacity of their land use regulations.



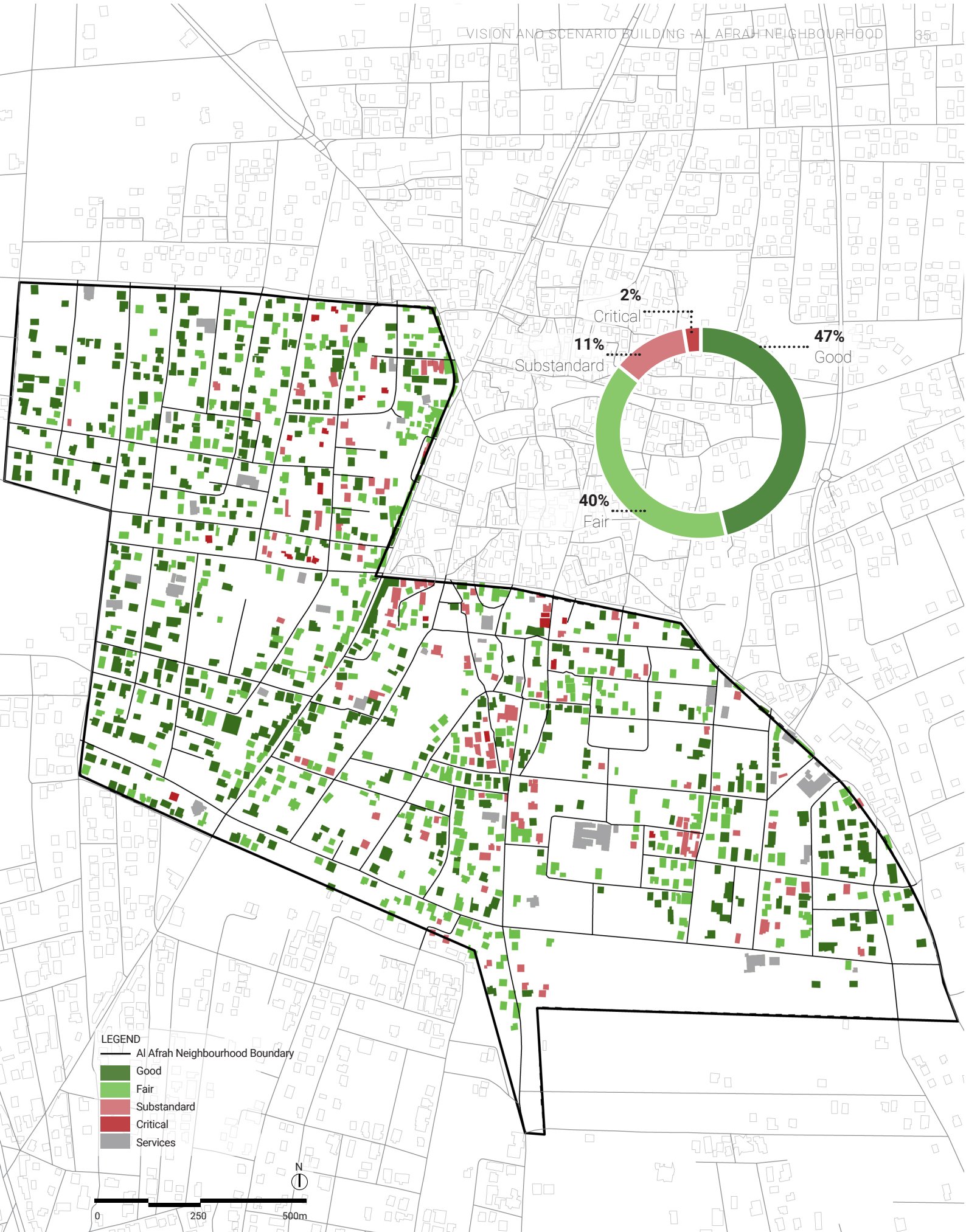


Fig. 8: Existing buildings' condition in Al Afrah Neighbourhood

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 more inclusive, sustainable, and liveable area. 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 on the quality of life of the neighbourhood's residents will be significant.

Additionally, these projects will increase the economic development potential of the neighbourhood and increase its desirability as a place to live and work, which will eventually facilitate the achievement of the formulated vision for the neighbourhood.

Needed 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 (2022). 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 very high load on the existing water network in the eastern and north-western parts of the neighbourhood, while there are areas at the northern and central parts of the neighbourhood that show low load as they have lower population densities given their land use types (residential A, B, and commercial) as shown in the Figure below.

In the future and in order to visualise the capacity versus demand in the year 2037, the forecasted maximum population was accommodated by vertically densifying all good condition residential buildings and through infilling some vacant lands according to the land use. With this increase, the load will multiply by 1.5 in comparison to the existing load. **This indicates the significant need to upgrade the existing water network as a proactive measure to accommodate the forecasted capacity of the neighbourhood by year 2037.**

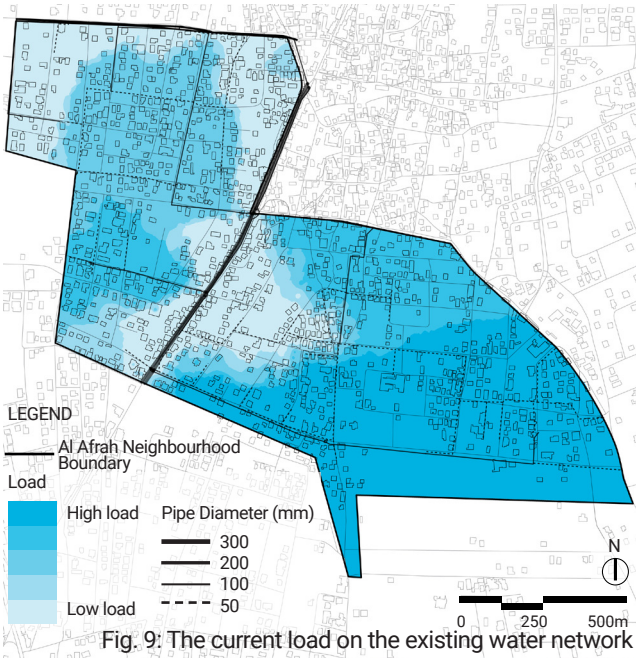


Fig. 9: The current load on the existing water network

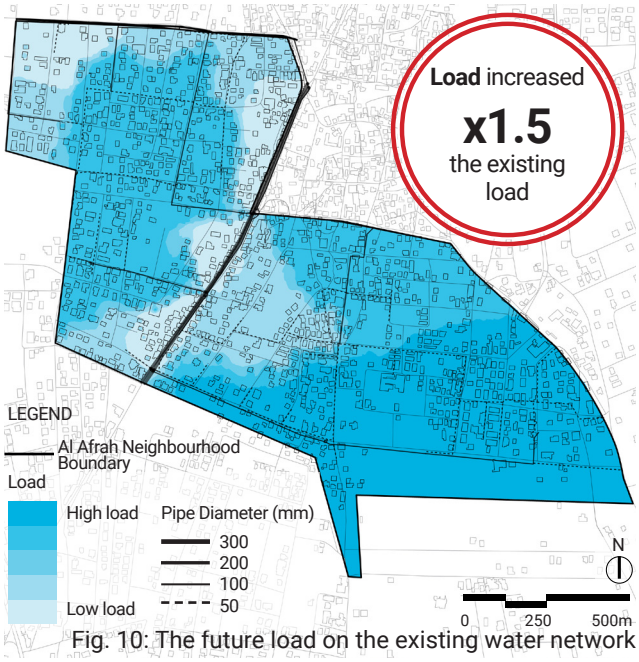


Fig. 10: The future load on the existing water network

- **Sewerage Service:**

The capacity/demand assessment tool measured the load on the existing sewerage network and revealed that there is a relatively low load at the neighbourhood level. Based on the forecasted maximum capacity of the neighbourhoud in the year 2037, the load will multiply by 1.5 in comparison to the existing load which will result in a moderate load on the sewerage network. Additionally, the lack of periodic maintenance for the manholes was frequently mentioned by the residents. The fact that some manholes are kept open without lids threatens the safety of people, causes bad odors, and the emergence of different pests. This indicates the urgent **need to provide periodic maintenance to the manholes as well as to upgrade the existing sewerage network in the future to accommodate the forecasted increase in population** as a proactive measure.

- **Electricity Service:**

The analysis revealed that the access to the electricity is currently stable in general. However, some of electrical posts are not properly distributed. Accordingly, **improvements to the spatial distribution of the electrical posts should be considered.** Furthermore, **a potential opportunity would be to utilize the renewable energy sources to provide the electrical energy services at the neighbourhood level.** This is aligned with the GIM's efforts to achieve the fourth strategic goal of their Local Strategic Plan (2019 - 2023) to strengthen the developmental role of the municipality by raising the projects' preparedness to ensure their sustainability through optimum utilization of natural resources, such as the use of clean energy.

- **Solid Waste Management:**

The field investigation revealed that there are public and private waste containers that are currently serving the residents. The private containers belong to a particular household. GIM provides waste collection services for both the public and private containers. However, solid waste management has been highlighted as a challenge, specifically regarding the unequal distribution of janitors and infrequency of the waste collection service. Accordingly, **improving the efficiency of solid waste collection and it's general management must be considered throughout the scenario building process.** This is aligned with the fourth strategic goal of GIM's Local Strategic Plan (2019 -2023) that tackles raising the preparedness of projects to ensure their sustainability through the development of the waste sector and preparing a strategic plan for waste management in the municipality.

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 livelihoods of the neighbourhood's residents.

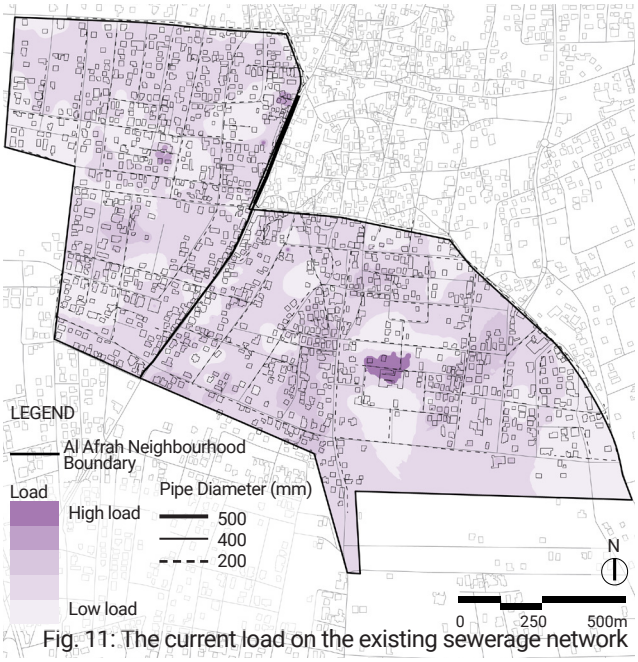


Fig. 11: The current load on the existing sewerage network

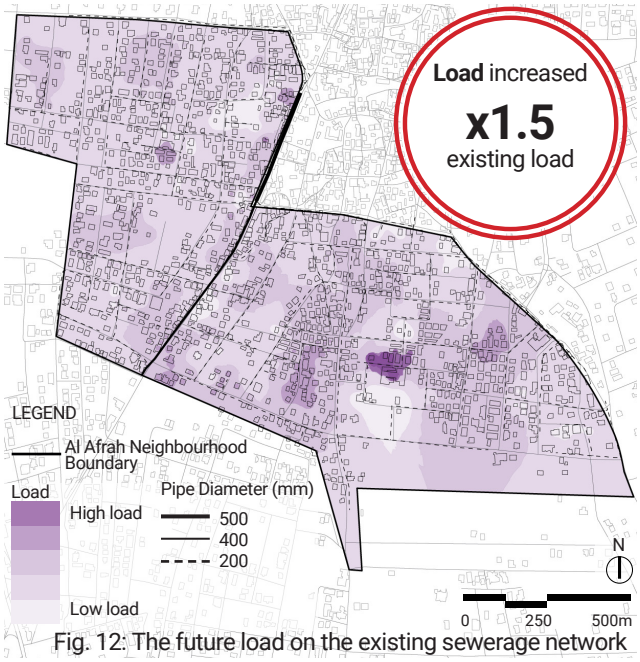


Fig. 12: The future load on the existing sewerage network

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

The street network analysis conducted for accessibility revealed that residents of the neighbourhood have partial access to the existing public facilities. All residents of Al Afrah neighbourhood have access to education and commercial facilities within a 15-minute walking distance. However, Al Afrah neighbourhood is served with health care centres from surrounding neighbourhoods so only 17.5% of its residents can access health care centres within a 15-minute walking distance. In addition, the neighbourhood residents do not have access to public parks. The challenges related to the public services' provision are further analysed below.

- **Educational Facilities:**

There are two public schools located within the neighbourhood, one of which was identified during the field investigation and was not previously included in the data received. Al Afrah neighbourhood is also served with public schools located in the surrounding neighbourhoods. Based on the analysis, 28.1% of the population have access to public schools within a 5-minute walking distance and 100% within a 15-minute walking distance. According to the 2015 census, students make up 27.8% of the total population in the Liwa of Bani Obeid, in which Al Afrah neighbourhood is located. Accordingly, there are currently 3,849 people between the ages of 6 to 17 years old (considered as the student population) in Al Afrah neighbourhood. Based on the data received from the Ministry of Education (MoE), the current number of students who are enrolled in the existing public schools in the neighbourhood is 728 students. This means that around 3,121 students within the neighbourhood either go to private schools or nearby public schools or have dropped out. It should be noted that 99.4% of the student population within Al Afrah neighbourhood have access to the nearby public schools within a 15-minute walking distance. The maximum expected increase of the student population for the target year is an additional 1,900 students.Accordingly, to identify the needed number of schools to be constructed /upgraded to accommodate the future expected number of students, the capacity of the existing public schools was analyzed, whereby one school can be vertically expanded to include 6 additional floors, and one school can be expanded to include 4 additional floors, in accordance with the bylaw and taking into consideration the regulations of the urban multi-use typology in which schools are under. **In total, the vertical expansion of the existing schools** can meet the educational needs of the expected future student population. Nearby public schools that can be accessed within a 15-minute walking distance were also considered.

- **Commercial Facilities:**

The current commercial facilities serving the residents in the neighbourhood are mainly concentrated along the Al-Sarih main street that runs in from North to South in the

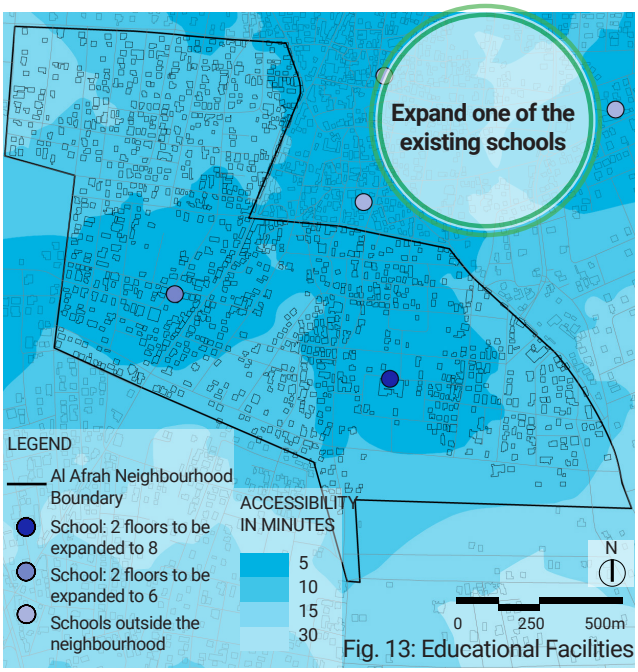


Fig. 13: Educational Facilities

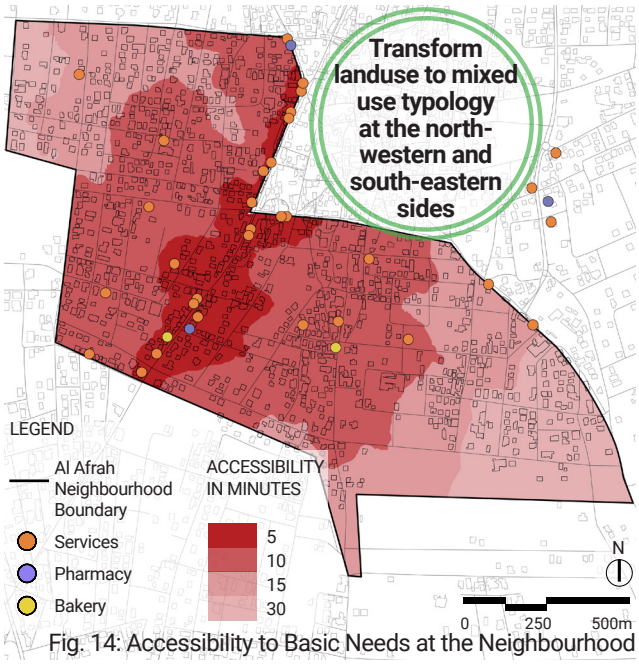


Fig. 14: Accessibility to Basic Needs at the Neighbourhood

middle of the neighbourhood, in addition to some services scattered sporadically in the neighbourhood. This has resulted in some residents, especially the ones living in the south-eastern and north-western parts, walking long distances to fulfil their basic needs at the market, pharmacy, bakery, vegetable and fruit shop, butchery, and water stores. Therefore, and based on the analysis, it is necessary to add commercial/mixed-use areas that include the necessary commercial centres for basic needs at the identified unserved areas within the neighbourhood. **This can be achieved through updating the existing land use plan of the neighbourhood, whereby some vacant residential land can be re-designated as mixed-use typology at the north-western side. In the south-eastern side, there are vacant commercial lands that can be assumed to be occupied by 2037, which would thus fulfill the basic needs of residents in this area.**

- **Health Care Facilities:**

The residents explained that a main challenge faced in the neighbourhood is the lack of a health care facility and a 24-hour emergency centre. The two public comprehensive health centres in the surrounding northern and southern neighbourhoods are serving Al Afrah neighbourhood's residents and are accessible to 17.5% and 82.5% of the residents within a 15 and 30-minute walking distances respectively. According to the Ministry of Health standards, the catchment area of a comprehensive health care centre is a 10km service radius, which means that Al Afrah neighbourhood is considered spatially covered by the surrounding health centres.

Currently, the two adjacent health centres cover only between 14% and 20% of their designated plot areas, whereas according to the regulations, the centres can be horizontally expanded to cover 50% of the plot area and vertically expanded up to 8 floors. Accordingly, if both centres are vertically and horizontally expanded, they would be sufficient to cover the needs of the forecasted future population. **Accordingly, the needed intervention is to upgrade the existing comprehensive health centres through vertical and horizontal expansion.**

- **Recreational Facilities:**

According to the street network analysis, there are no parks or recreational facilities in Al Afrah, nor in the nearby neighbourhoods. This forces children to play in the streets. 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. **Accordingly, there is a need to develop public spaces.** This is aligned with GIM's efforts to achieve the third strategic goal of their Local Strategic Plan (2019 - 2023) to improve the quality of services provided to citizens through the construction and rehabilitation of public parks.

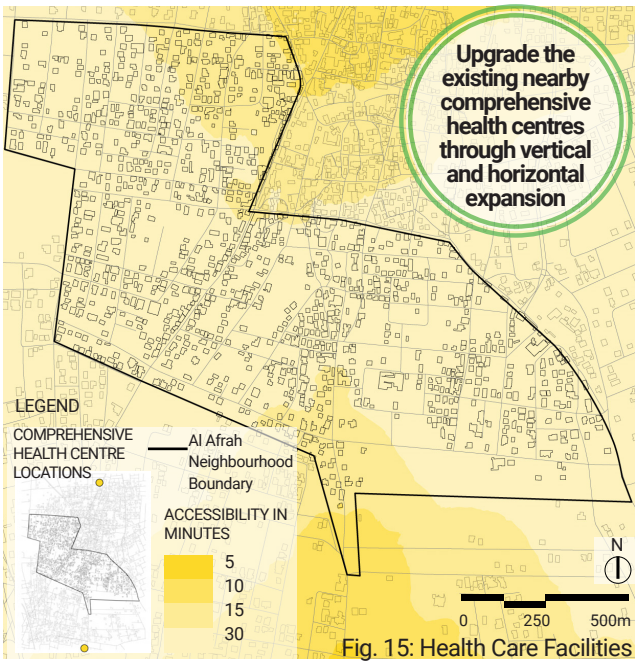


Fig. 15: Health Care Facilities

Fig. 16: Recreational Facilities

Needed 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 in the Al Afrah 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 and that the neighbourhood is poorly lit. 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 optimal scenario. **In summary, some roads in the neighbourhood need infrastructure improvement. Additionally, lighting poles should be added to all the roads within the neighbourhood.**

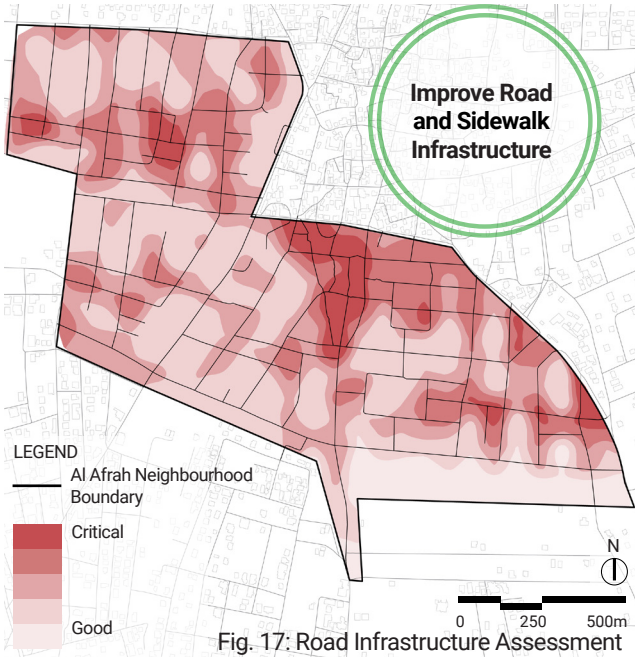


Fig. 17: Road Infrastructure Assessment

- **Sidewalks:**

The team evaluated the conditions of the existing sidewalks during the field investigation. Most of the areas lacked sidewalks, while the existing sidewalks in other areas were found to be in very poor condition. This negatively impacts the walkability of the neighbourhood, which was extensively highlighted by the residents. **Therefore, sidewalk construction and rehabilitation are needed to serve residents and people with disabilities, promote walkability, and increase pedestrian safety while commuting.**

- **Public Transportation:**

The field investigation revealed that there is only one official bus stop in Al Afrah neighbourhood, as shown in the map below. This bus stop was not included in the GIS data received from GIM for the first component of the project, therefore the previous analysis revealed the lack of transportation means at the neighbourhood. Moreover, the residents explained that the only bus route available runs along Al Sarih street and sometimes does not even cover its whole designated route, making public transport unreliable due to unpredictable timings and the bus's insufficient route.

The accessibility to the nearest bus stop is considered unsafe due to the lack of pedestrian infrastructure including pathways, bridge, and traffic lights on the

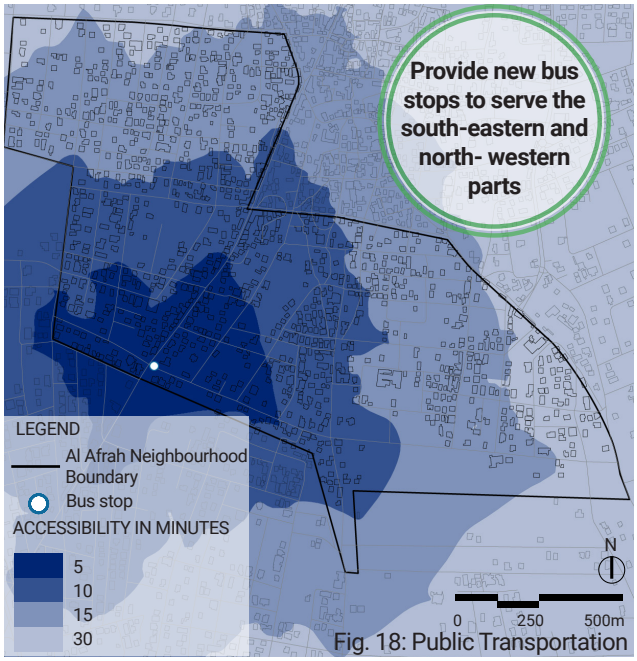


Fig. 18: Public Transportation

main street. Additionally, the issue of traffic jams was highlighted by the residents, where people double-park and block streets, as a result of the lack of parking spaces in clustered areas.

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 extend the public transport route to cover the whole neighbourhood and add three bus stops at the south-eastern and north-western parts of Al Afrah.** Furthermore, **there is a significant need to provide pedestrian traffic lights on main streets and improve the walkability means in general in the neighbourhood.**

All proposed interventions for the needed project #3 are aligned with the Local Strategic Plan for GIM (2019 - 2023).

Moreover, all the proposed interventions under the needed projects variable are aligned with the Jordan Economic Modernisation Vision under the main pillar of "Advancing Quality of Life for All."

Outcome #1: Minimal Implementation of Planned Needed Projects If minimal implementation of the planned needed projects is undertaken and the population reaches it's forecasted estimate for the year 2037, 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 improvement of the public transport network might increase the connectivity of the area, people, goods, services, and economic opportunities. The infrastructure network upgrades are the most 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 The optimal scenario would be the implementation of all needed projects. The infrastructure networks are essential for the liveability of the area, while the transport network 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 sustainable, enabling neighbourhood that provides a good quality of life for its residents.	**FULL**

Variable: Climate Risk & Natural Hazards

Irbid Governorate is vulnerable to various natural hazards, which is evident through hydrological and meteorological events that are caused by drastic climate change occurrences and account for 97% of the national disasters.[3,4] Such hydrological and meteorological events are associated with wide variations in temperatures during the summer and winter and have resulted in extreme weather events such as droughts, heat waves, storms, and flash floods. These events have impacted and will continue to impact the residents unless adaptation and mitigation measures are taken.

On a regional level, Irbid Governorate witnessed an incremental growth of built-up areas at the expense of agricultural lands between 2006 and 2015.[5] The drastic growth in urban areas in 2011 coincided with the influx of Syrian refugees.[6] Additionally, agricultural lands comprise the highest share of lands within GIM's unplanned area, constituting 52% the total land coverage. These lands are a very important asset and play a crucial role in adapting and mitigating climate risks when preserved. Moreover, green infrastructure and public spaces are also considered important adaption and mitigation methods for extreme weather conditions such as floods and heatwaves.

Green Cover in Al Afrah Neighbourhood

During the field investigation, agricultural lands were mapped as shown in Figure 17. These lands were found to be classified as residential lands (either type A, B, C, or D), except land in the south-eastern edge of the neighbourhood, which are classified as agricultural residential. These lands need to be preserved to reduce the carbon footprint and to absorb rainwater runoff in order to reduce flash flood vulnerability. This should happen while further developing green spaces and infrastructure, which will protect built-up areas and urban communities, while also acting as catalysts for developing sustainable and resilient livelihoods and fostering local economic development.

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. Urban sprawl will continue to happen at the expense of agricultural lands and extreme weather events will increase in severity and frequency, causing damage.	**NONE**
Outcome #2: Climate change adaptation actions are taken, leading to reduced vulnerability for local communities While these adaptation actions are able to protect the local communities from some of the impacts of climate change, ie. preserving agricultural lands, they do not fully result in an overall improved outcome. These actions will not have any impact upon the wider climate change impacts such as reducing overall greenhouse gas emissions, 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 vulnerability and improve resilience of local communities Adaptation measures will result in both a better understanding of the most risk affected communities, the preservation of agricultural lands, as well as a more resilient infrastructure to protect vulnerable groups from extreme weather events and to introduce livelihoods that are more resilient to the impacts of climate change. The mitigation measures will help to reduce the impact the communities are already having on the environment, such as through increasing the green cover. Overall, this outcome combines mitigation and adaptation actions to assist in shaping a resilient community with reduced vulnerability to climate change.	**ADAPTATION + MITIGATION MEASURES**

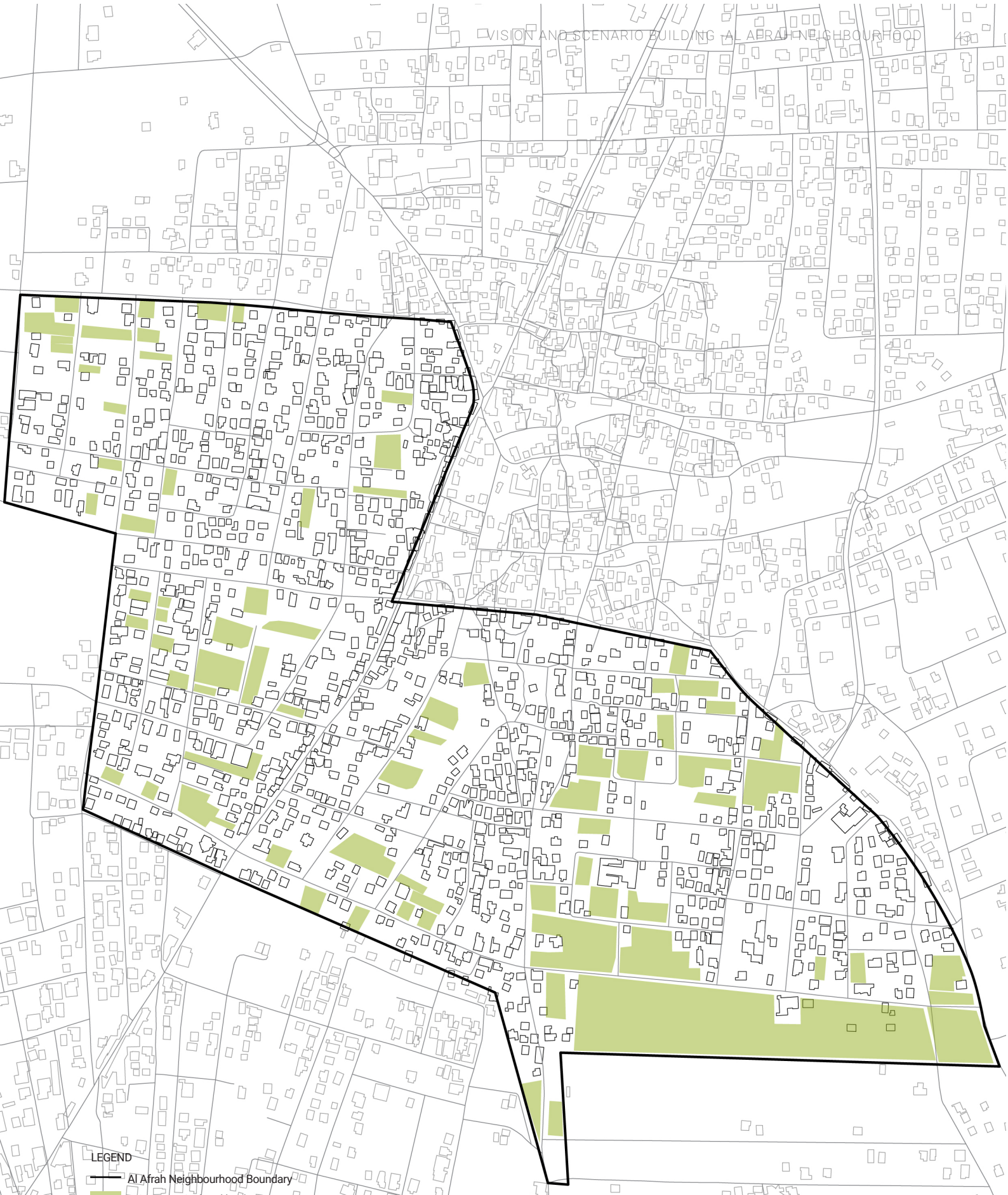


Fig. 19: Existing Agricultural Land in Alafrah Neighbourhood

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[7] to 22.8%[8] as of the 1st Quarter of 2022. The unemployment rate has especially increased among young people between 15-24 years old (47.7%) and women (31.5%).[9] The demographic dependency of GIM reached 66.7%, which is higher than the governorate rate of 66.4%, and the national level at 61.4%.[10] This highlights the importance of preparing plans that will meet the needs of the population in terms of education, health, open and recreational spaces, as well as job opportunities. Additionally, GIM'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 18-64, who constitute around 57% of the Liwa'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 Afrah 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 both 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 374 job opportunities are available in the neighbourhood. This means that only 5% 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 utilized, with various commercial/services activities, an additional 240 job opportunities would be provided, which is equal to around 64% 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 identified schools was actually upgraded, an additional 153 opportunities will be provided. Similarly, if the two adjacent comprehensive health centres serving the neighbourhood residents were upgraded, then another 56 opportunities will be generated. Furthermore, if the land use of the identified areas were transformed to a mixed use typology, another 8 job opportunities, in addition to the 240 already existing opportunities from the assigned commercial land use vacant areas, will be available. Other possible increases in job opportunities could be related to the creation of new public spaces, which have been estimated to be around 6 opportunities. Overall, these developments would provide a 124% increase in opportunities for the working-age population in the neighbourhood, including the host community and refugees.

In summary, the local economic development variable addresses the potential to increase formal job opportunities, decrease the unemployment rate, and simultaneously decrease the informal economy in the neighbourhood. This is aligned with the recent Jordan Economic Modernisation Vision.

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.

+240

Total increase in opportunities when vacant mixed land use areas are utilized: +240

+64%

Total increase in opportunities for hosts and refugees

TOTAL: 614 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 the implementation of the various needed projects proposed, including infrastructure interventions, the upgrading of public facilities such as two of the existing schools and the two adjacent comprehensive health centres, and the creation of two public parks, transforming residential land uses into mixed-use land use, 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.
- Easing the legal and regulatory limitations for refugees to find employment.

+319 +56 +248 +6

Total increase in opportunities when needed projects are implemented: +460

+168%

Total increase in opportunities for hosts and refugees

TOTAL: 837 opportunities in the neighbourhood by 2037

Business As Usual Scenario

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 2037	**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 Irbid Governorate, 2.3%.	**Full infill approach** to accommodate the forecasted addition in population for year 2037	**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 2037	**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 2.3% amongst the host and refugee communities and none of the recommended actions are taken to address planning and development measures.

Likely Impact

Based on the context and the current trend in Irbid 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 2037 (estimated to be 5,627 inhabitants). Based on the most likely circumstances, all residential buildings on lands classified as residential B. C, and D, that are in good condition and that can be vertically densified have been assumed here to be densified to their maximum number of floors according to their land use, and some residential A and B vacant lands have been in-filled, to accommodate the increase in population for the year 2037.

The full utilization of the current areas under the commercial land use would generate 240 livelihood opportunities through the opening of several commercial/ services shops, based on the natural economic growth.

Nevertheless, this increase in built footprint will add pressure to the existing water and sewerage infrastructure networks, whereby the existing water network is already serving a higher population than it was designed to.

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 Local Strategic Plan for GIM for the upcoming year, nor in the current plans of relevant ministries such as the Ministries of Education and Health, and the Yarmouk Water Company. This will further contribute to diminishing job and livelihood opportunities.

This situation represents the 'Business As Usual' scenario for Al Afrah neighbourhood. In this scenario, the neighbourhood will not achieve the vision formulated with the local community.

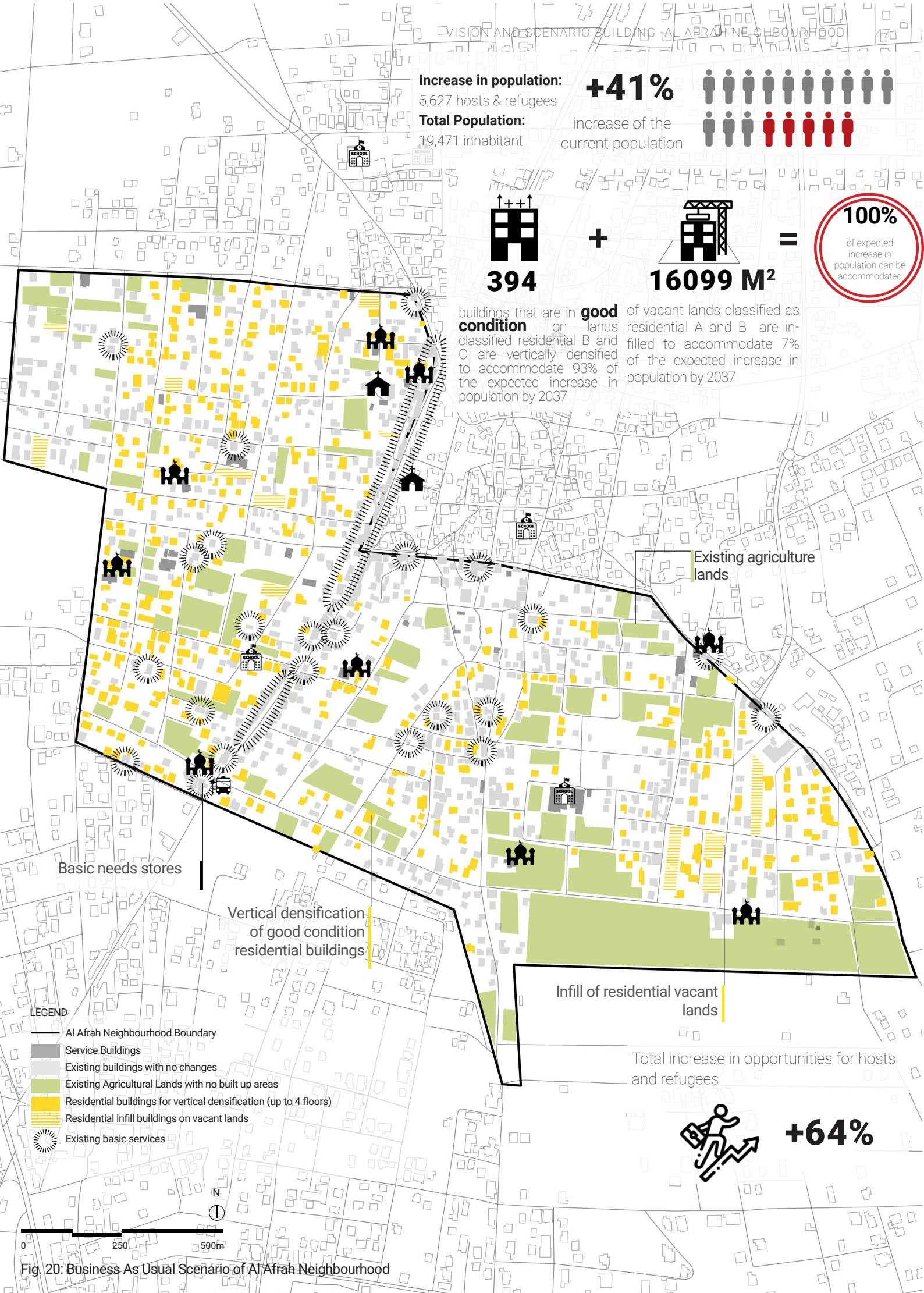


Fig. 20: Business As Usual Scenario of Al Afrah Neighbourhood

Optimal Scenario- Planning for a Sustainable and Inclusive Neighbourhood that Empowers its Community

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 2037	**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 Irbid Governorate, 2.3%.	**Full infill approach** to accommodate the forecasted addition in population for year 2037	**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 2037	**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 resilient and sustainable 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 vertically expanding the buildings in good condition on residential land use types B and C, and infill some available residential vacant lands to accommodate the expected increase in population (estimated to be 6,834 inhabitants), while preserving agricultural lands through converting their current land use into agriculture residential land use. Moreover, all proposed needed projects would be implemented by 2037.

Likely Impact

There are available vacant lands in the north-western and the south-eastern sides of the neighbourhood that lack accessibility to basic needs within a 15-minute walking distance. Therefore, the identified vacant land in the north-western part is best positioned to serve as a mixed-use area in the future, in addition to transforming the existing commercial land use at the south-eastern part into mixed use. Accordingly, commercial enterprises and small industries could be developed. Furthermore, vertically expanding the two existing adjacent comprehensive health centres will fulfill the existing and future demands. As for the educational facilities, to fulfill the expected increase in student population, the two existing public schools can vertically expand. Additionally, two public parks can be created on the identified vacant public lands. Moreover, the water infrastructure network should be upgraded to accommodate the existing and future demand. As for the sewerage network, there should be periodic maintenance to the manholes and proactive measures that take into consideration the future increase in population. In addition to this, it is necessary to improve the efficiency of solid waste collection and it's general management. In regard to the electricity service, improvements to the spatial distribution of the electrical posts must be considered. Furthermore, installing PV cells will improve the quality of life, as utility bills will decrease. The walkability in the neighbourhood can also be enhanced through road infrastructure improvements, including sidewalks, and by adding pedestrian traffic lights. Finally, accessibility to public transportation could be enhanced by adding two bus stops and expanding the bus route to cover the whole neighbourhood.

By providing designated space for mixed uses and public facilities, as well as through targeted improvements in water, sewerage, energy, and road infrastructure, a robust foundation can be created to support improved economic activity and livelihood opportunities in the neighbourhood.

1. **Water and Sewerage Network - Upgrading-Critical Areas;**
2. **Road and Sidewalk Rehabilitation - Critical Areas;**
3. **Mixed-use Development;**
4. **Upgrading of Existing Schools;**
5. **Comprehensive Health Centre Upgrading;**
6. **Public Park Development;**
7. **Constructing Public Transport Bus Stops**

Increase in population: 5,627 hosts +1,207 influx migrants

Total Population: 20,678 inhabitant

+6.2%

Increase to the **medium growth outcome (+41%)**

3 Convert Residential Landuse to Mixed Landuse

394

all buildings that are in **good condition** on lands classified residential B and C are vertically densified to accommodate 76% of the expected increase in population by 2037

+

30553 M²

of vacant lands classified as residential A,B, and C are infilled to accommodate 24% of the expected increase in population by 2037

=

100% of expected increase in population can be accommodated

7 Proposed bus stop

Proposed area for a public park **6**

3 Mixed land use proposed on existing commercial land use

Convert landuse of existing agriculture lands from residential to agricutlture residential typology

6 Proposed public park

Proposed bus stop **7**

Vertically expand the public school to 5 floors **4**

Mixed land use proposed on existing commercial land use **3**

Vertical densification of all good condition residential buildings

Infill of residential vacant lands

Vertically expand the public school to 5 floors **4**

Total increase in opportunities for hosts and refugees

+124%

LEGEND

- Al Afrah Neighbourhood Boundary
- Service Buildings
- Existing buildings
- Existing Agricultural-Residential Land use area
- Residential buildings for vertical densification (up to 4 floors)
- Residential infill buildings on vacant lands
- Existing basic services
- Proposed mixed land use on existing commercial land use
- Proposed public space
- Existing agriculture lands on residential landuse (to be preserved)
- Existing public educational facilities to be upgraded (vertical expansion)
- Proposed Bus Stops

N

0 250 500m

Fig. 21: Optimal Scenario of Al Afrah Neighbourhood

Prioritization of Needed Projects

To move forward with the development of the optimal scenario 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 action plan implementation.

To do so, a scoring matrix 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. Additionally, this scoring considers the assessments of the local community and key stakeholders regarding the needed projects that have been identified for Al Afrah 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-Critical Areas;**
2. **Road and Sidewalk Rehabilitation - Critical Areas;**
3. **Mixed-use Development;**
4. **Upgrading of Existing Schools;**
5. **Upgrading of Al Sarih Comprehensive Health Centre;**
6. **Public Park Development;**
7. **Constructing Public Transport Bus Stops**

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 create 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 Afrah Neighbourhood

Infrastructure Investments Projects		Public Services Projects				
1. Water & Sewerage Networks Upgrading-Critical Areas	**2.** Road & Side walk Rehabilitation-Critical Areas	**3.** Mixed-use Development	**4.** Upgrading of existing Schools	**5.** Upgrading of Al Sarih Comprehensive Health Centre	**6.** Public Park Development	**7.** Constructing Public Transport Bus Stops

03

STAKEHOLDER ENGAGEMENT

Vision and Scenario Building Validation Workshops

As part of the participatory process adopted throughout the project, several 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 Afrah neighbourhood as follows:

Validation Workshops - Key Stakeholders

On the 16th of October 2022, the UN-Habitat Jordan team held a workshop with the Greater Irbid Municipality team and relevant key stakeholders to discuss the Al Afrah neighbourhood 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 2037 if the needed planning actions were partially implemented, while the 'optimal' envisions the neighbourhood's situation with all the needed planned actions implemented.

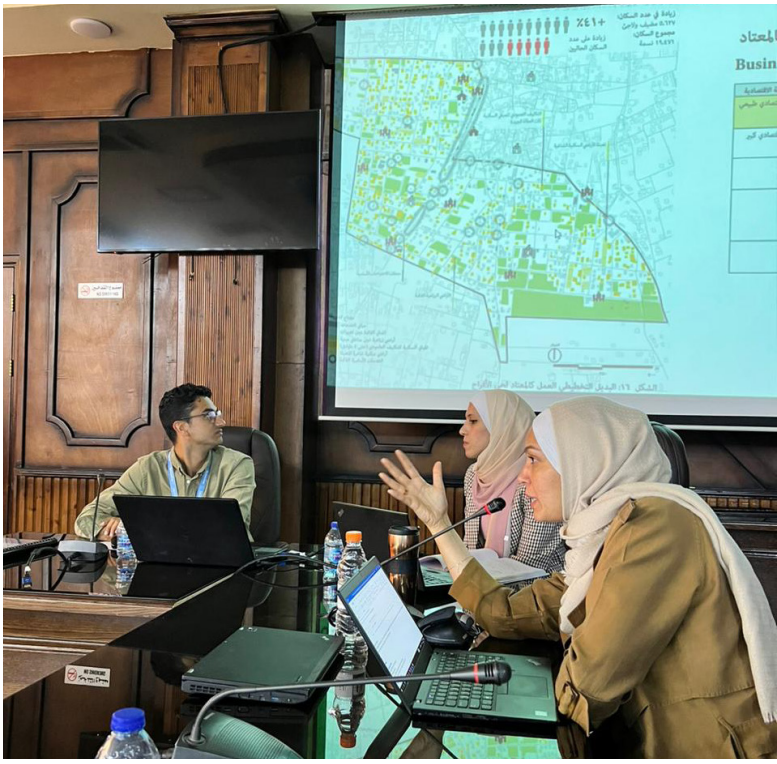
The workshop was held at the Greater Irbid Municipality office in Irbid, in the presence of the Mayor, and 15 representatives from different departments in GIM, including the GIS and planning departments, and the Al Afrah Area Manager, in addition to representatives from relevant stakeholders including the Ministry of Water and Irrigation, the Ministry of Local Affairs, and Irbid District Electricity Company. The workshop started by presenting the challenges, opportunities, and needs that were identified throughout the Spatial Analytics and Urban Profiling component of the project. Next, the presentation continued with the vision keywords and statement, which were developed with the local community. After that, the assumptions and variables that would impact the scenario building process were discussed in-depth. These variables include; the population growth, urban footprint, needed projects, Climate Risk & Natural Hazards, and local economic development.

In the end, the two developed scenarios were presented, which started various fruitful discussions. The participants agreed with the process and results, and made the following recommendations that will be taken into consideration when updating the optimal scenario:

- It was suggested that the high population growth outcome be considered for the optimal scenario. This developed into a discussion where all parties agreed that the "large increase in population due to new unpredictable influx" is more resilient.
- It was questioned why there are two scenarios and not three, with a medium, more achievable scenario added. Therefore, it was decided that the medium scenario would be part of the plan to achieve the optimal.
- A representative from the Ministry of Water and Irrigation explained that the Yarmouk Water Company are currently studying the area to provide cost estimates for upgrading the water and sewerage networks. This was later validated.
- Regarding land use, some representatives had reservations around being able to prevent land owners from building on their land, even if it is currently being used for agricultural purposes. There was a fruitful discussion around having to prevent the encroachment of buildings on agricultural land by changing the land use and implementing regulations. On the other hand, the GIM team advised maintaining (or preserving) the land use of designated commercial plots as is, because it is allowed within the local commercial land use to add housing. Additionally, the identified residential vacant lands on the north-western side of the neighbourhood should be changed to local commercial land use as to provide the residents of that area with basic services within a 15-minute walking distance.
- An important point made by the Mayor was that improving the road and sidewalk network, specifically in one neighbourhood (Al Afrah), would create big disparities between it and the rest of the areas around it. It was suggested instead to upgrade a network that connects the neighbourhoods together, for example, and to leave the smaller neighbourhood roads for the municipality to improve. Accordingly, the name of the project was modified to include the main roads and sidewalks networks at district level.
- There was a general expression of difficulties when dealing with the local community and trying to enforce certain regulations, which is where successful participatory planning and raising awareness helps.

There were generally no major changes on the proposed optimal scenario from GIM's perspective.

Finally, the identified needed projects were scored with the participants to identify the priority projects to be implemented during the short-term phase of the optimal scenario action plan. This will be further explained in the following sections.



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

Vision and Scenario Building Validation Workshop - Local Community

The UN-Habitat team held a workshop with the local community and relevant stakeholders from GIM on the 13th of November 2022, at the Youth Centre in Al Sarih District, close to Al Afrah neighbourhood. 14 people attended the workshop, mainly from Al Afrah neighbourhood, including women and refugees to ensure equal representation, in addition to a representative from the Ministry of Local Administration.

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 the developed variables and 'Business as Usual' scenario, and to work together in finalizing the developed 'Optimal' Scenario.

The workshop started by discussing the neighbourhood's formulated vision using the previously identified keywords by the local community, where the residents validated and confirmed their approval of the vision. Following this, the variables were presented to the participants, along with the 'Business as Usual' Scenario, 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 two groups of seven, where each group was assisted by two UN-Habitat team members. In this session, the groups discussed and validated the variables one by one, while mapping solutions in the neighbourhood and identifying the preferred locations of the needed projects, to develop the 'Optimal Scenario' from their point of view, as shown in the figures. This exercise assisted in finalizing the developed optimal scenario. Some of the important points that came up were:

- Since the water network upgrades that took place in the north-western area of the neighbourhood, the residents felt a difference in the quality of the service.
- There is an allocated budget for 2023, of 60,000 Jordanian Dinars (JD) to purchase the needed medical equipment for Al Sarih Health centre.

In the last section 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 identified neede projects that should be prioritised in implementation at Al Afrah neighbourhood in the next five years.

According to the scoring, the highest priority projects that were voted for in order of preference are:

- Rehabilitating the Road and Sidewalk Networks in Critical Areas
- Upgrading the Existing Health Centre
- Constructing a Public Park

Images during the workshop with Al Afrah Neighbourhood residents.
Source: UN-Habitat Jordan

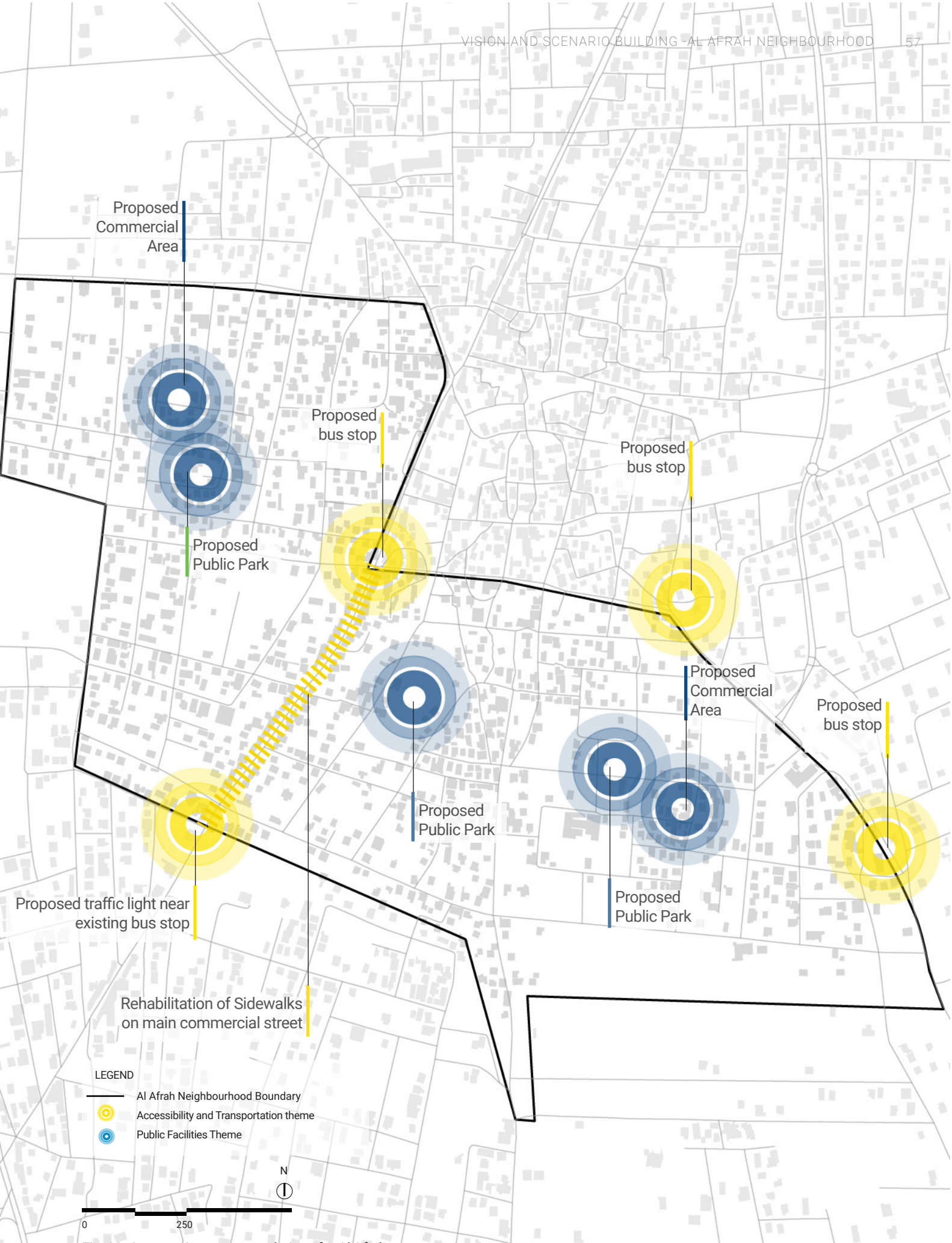


Fig. 22: Community recommendations for Al Afrah

Validation Bilateral Sessions with Relevant Government Entities

Ministry of Education (MoE)
The recommendations for the school capacities, and number of current and forecasted students in Al Afrah neighbourhood were validated with the MoE. According to the by-law and the urban multi-use typology regulations', which include schools, it is mandated that 8 floors are the maximum number allowed. However, according to the MoE, schools are usually authorised to have a maximum of 4 floors for the childrens' ease of movement. Additionally, according to the Ministry's future strategy, all rented school buildings should be replaced with Ministry-owned property in the future. As for new school construction, the MoE's regulations state that the minimum area of the plot land area for a new school building must be 5,000m^2. Finally, the MoE's regulations state that each new school can accommodate a maximum of 1,500 students.

Based on this information, the existing public school located on the western side of the neighbourhood occupies a rented building, which, according to the MoE's future strategy, will need replacement. The building, however, has recently been refurbished, and so replacing it is not within the Ministry's short-term plans. The other existing public school on the eastern side of the neighbourhood, Al Sarih Elementary Boys' School, is Ministry-owned and during the time of the meeting, the Royal Scientific Society was conducting a structural evaluation of the building, due to the appearance of cracks on the walls, and it was found that the foundations are weak, and this requires rehabilitation of the school building, with the possibility of vertical expansion. Furthermore, opposite the school building is a Ministry-owned empty plot of land which is 2,500m^2. Therefore, according to MoE's regulations, there is a need to acquire an empty plot of land adjacent to this one for the needed new school construction, or replace it with another plot of land large enough to cover the requirements for establishing the new school. In the event that this is not possible, the MoE can study the possibility of establishing a school with a small area or kindergarten on the land owned by the Ministry. Additionally, two other plots of land are also needed to build the other two needed new schools.

Therefore, to accommodate for the increase in the student population by 2037, **the existing, Ministry-owned, public school needs rehabilitation and to be vertically expanded by 2 floors,** with up to the 4 floors being authorised by MoE, **to accommodate for an additional 500 students.** Additionally, although the MoE is in the process of aquiring 4 plots of land adjacent to Al-Afrah neighbourhood to construct new schools, which will serve part of Al Afrah's residents as shown on the map, it is necessary to meet the needs of the existing demand and the future forecasted student population in the Al Afrah neighbourhood by constructing three new public schools with a total capacity of 4,000 students.

Ministry of Health (MoH)
The recommendations for the current healthcare centre in Al Afrah neighbourhood were validated both with the local population as well as with MoH. According to the Ministry of Health standards, the catchment area of a comprehensive health care centre is a 10km service radius, which means that Al Afrah neighbourhood is spatially covered by the surrounding health centres. However, the local community expressed the lack of service provision and equipment. According to the MoH, the Al Sarih comprehensive health centre building is new, and there is enough space to upgrade the facilities within. Therefore, vertical expansion is not needed. Accordingly, and as aforementioned, there is an allocated budget for 2023 to buy the needed medical equipment for Al Sarih health centre. **Therefore, the needed intervention is to upgrade the service provision and medical equipment in the existing Al Sarih comprehensive health centre through increasing staff and medical equipment, and building capacities, to serve the existing and forecasted increase in population.**

Land Transport Regulatory Commission (LTRC)
In the consultation with the LTRC, there was a discussion on the bus stops needed in Al Afrah neighbourhood, which was recommended through the studies, and validated through the community workshops. The LTRC validated the locations of the proposed bus stops as they are aligned with the current bus routes. They expressed their willingness to construct the designated bus stops as there is an adequate budget available. Accordingly, the recommendation is to **extend the public transport route to cover the whole neighbourhood and to add the four designated bus stops in Al Afrah.**

Ministry of Water and Irrigation (MoWI)
The MoWI indicated that there is a project titled "Improving Sanitation Services for for Syrian Refugees and Host Communities-Phase IX/X" funded by the KFW, which aims to provide sanitation services to different parts of the governorates of Irbid, Jerash, Ajloun and Ramtha. This project, which is currently in the bidding stage, was taken into consideration while preparing the action plan for the "Upgrading the Sewerage Network" project, given that the Al-Sarih district in Irbid Governorate - which includes the Al-Afrah neighborhood - is among the areas that will be served in the project funded by KFW.

Yarmouk Water Company
For the water and sewerage network upgrading recommendations, the data was validated with the Yarmouk Water Company, which is in charge of the networks in Irbid City. In the recent meeting, it was highlighted that as part of the JICA-funded project, the north-western part of the neighbourhood's water network has been recently upgraded, which has resolved the load issue that was identified in the analysis. Additionally, through the same project, in cooperation with Yarmouk Water Company, the network in the eastern parts of the neighbourhood will also be upgraded. There are currently no future plans for the sewerage network. Accordingly, since the water network upgrades have been covered, there is no need to consider the water network upgrades as a needed project in the action plan. Therefore, the recommendations are to **upgrade the existing sewerage network in the future to accommodate the existing and forecasted increase in population** as a proactive measure.

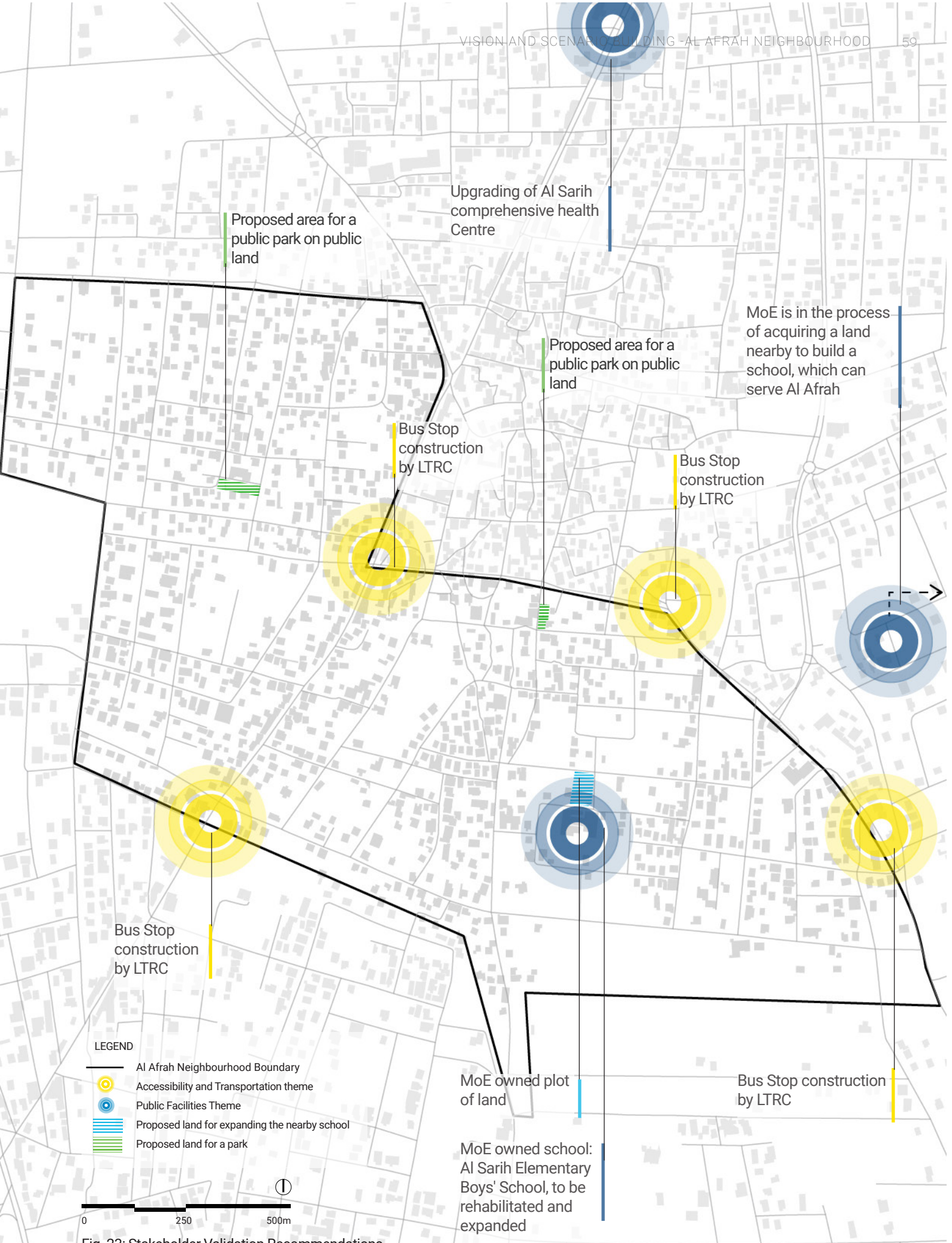


Fig. 23: Stakeholder Validation Recommendations

Conclusion-High-Priority Needed Projects

Based on 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: **2.Upgrading the Main and Local Road & Sidewalk Networks, 3.Upgrading of Al Sarih Comprehensive Health Centre, 4.Updating the Land-use Plan, 5.Upgrading the Al-Sarih Elementary Boys' School, 6.Public Parks Development, and 7. Constructing Public Transport Bus Stops.** Accordingly, the short term action 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 create 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 of Al Afrah Neighbourhood
*: Priority Needed Project

IDENTIFIED PROJECTS NEEDED FOR AL AFRAH NEIGHBOURHOOD							
Infrastructure Investments Projects		**Public Services Projects**					
1. Upgrading the Sewerage Network Project	2. Upgrading the Main and Local Road & Sidewalk Networks	3. Upgrading of Al Sarih Comprehensive Health Centre	4. Updating the Land-use Plan	5. Upgrading the Al-Sarih Elementary Boys' School	6. Public Parks Development	7. Constructing Public Transport Bus Stop	8. Constructing New Schools
5	5	2	5	2	5	2	0
1	0	1	4	1	1	0	1
5	5	5	0	5	5	5	5
2	5	5	2	2	2	2	0
2	5	5	2	5	5	2	5
5	0	0	5	0	0	5	0
5	5	2	5	2	2	0	2
5	5	2	5	2	5	0	2
5	5	2	5	2	5	5	2
0	10	15	20	15	10	15	15
0	0	5	5	5	0	0	5
6	10	10	2	10	10	8	10
0	5	0	5	0	0	5	5
1	5	1	1	1	1	4	1
5	5	0	0	5	5	5	5
5	4	2	2	1	4	3	1
3	5	5	3	3	4	3	0
55	79*	62*	71*	61*	64*	64*	59

Optimal Scenario - Final Version

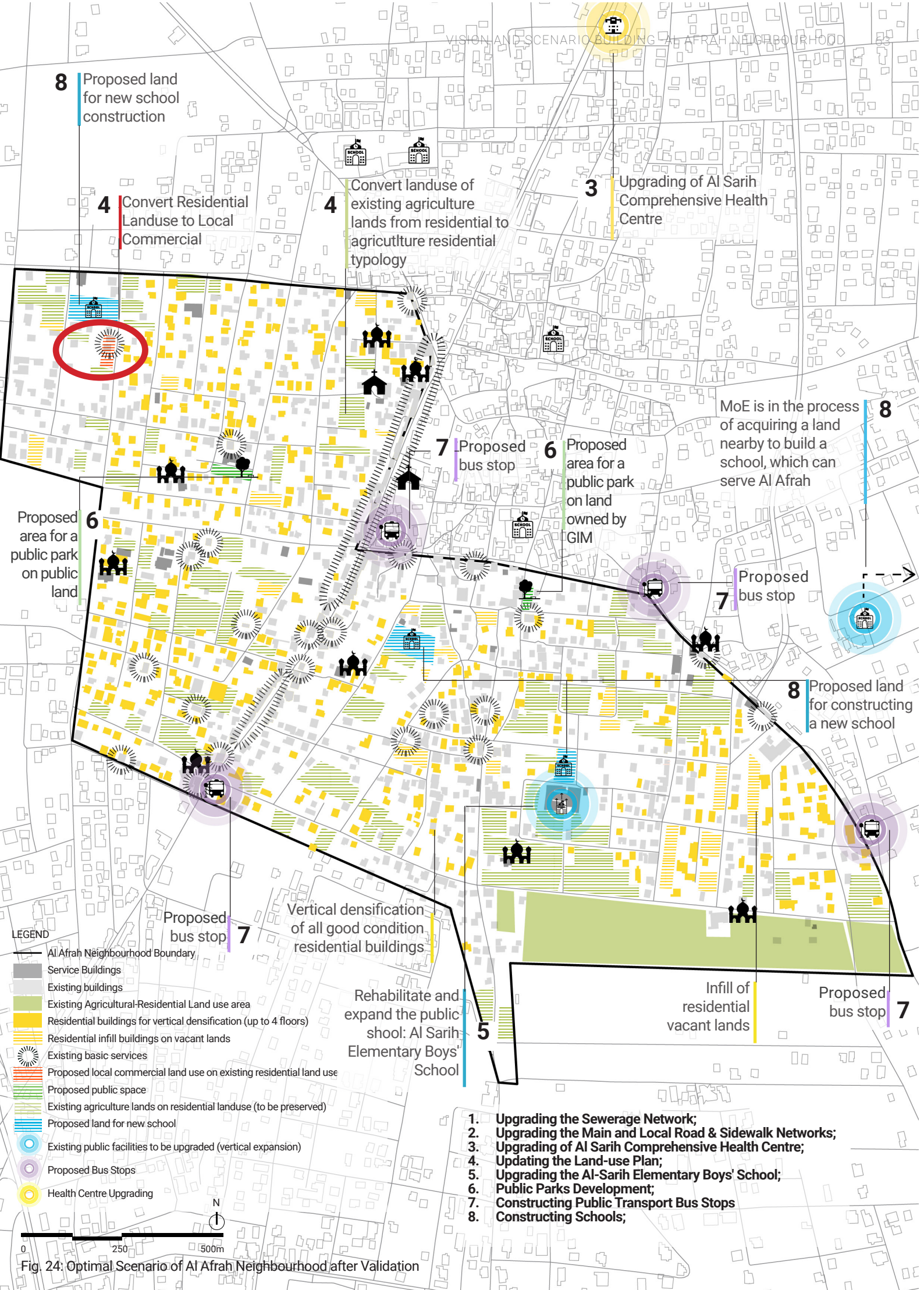
Variables	Population Growth	Urban Footprint	Needed Projects	Climate Risk & Natural Hazards	Local Economic Development
Outcome #1	**Low Growth Scenario:** the population growth rate will decrease to 1%.	**Infill and Vertical Densification approach** to accommodate the forecasted addition in population for year 2037	**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 Irbid Governorate, 2.3%.	**Full infill approach** to accommodate the forecasted addition in population for year 2037	**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 2037	**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 taking into consideration the feedback received from the community, the Greater Irbid Municipality, and other key stakeholders from the relevant ministries/institutions during the validation sessions, the optimal scenario has been updated, as presented on the following page.

In conclusion, the final version of the Al Afrah neighbourhood's optimal scenario includes the following actions:

- Consider a population growth rate of 8.5% to include any unpredictable increase in the population in case of a new influx of migrants.
- Accommodate the expected increase in population through the vertical densification of buildings that are in good condition, and the infill of residential vacant lands types B and C.
- Upgrade Al Sarih Comprehensive Health Centre through increasing staff and medical equipment, and building capacities, to serve the existing and forecasted increase in population.
- Encourage the development of local commercial land use of the identified vacant lands on the north-western side of the neighbourhood.
- Upgrade Al-Sarih Elementary Boys' School located in the south-eastern part of the neighbourhood, and build a school or kindergarten, as MoE deems appropriate, on the 2500m^2 vacant plot of land opposite Al-Sarih Elementary Boys' School which is owned by MoE.
- Construct two new schools on the other proposed lands.
- Construct two new public parks on the proposed public land, on the north-western and north-eastern parts of the neighbourhood.
- Upgrade the sewerage infrastructure networks to accommodate the future demand.
- Improve solid waste management and collection services.
- Improve the spatial distribution of the electrical posts.
- Enhance the walkability of the neighbourhood through improvements to road and sidewalk infrastructure networks and by adding pedestrian traffic lights, specifically along the Al Sarih main street.
- Add 3 new bus stops along the bus route, to the north and eastern parts of the neighbourhood, and provide an adequate bus stop (with seating and shade) to the existing informal stop on the southern part of the neighbourhood.
- Preserve valuable agricultural land by converting the land use of existing agriculture lands from residential to an agriculture residential typology.



1. **Upgrading the Sewerage Network;**
2. **Upgrading the Main and Local Road & Sidewalk Networks;**
3. **Upgrading of Al Sarih Comprehensive Health Centre;**
4. **Updating the Land-use Plan;**
5. **Upgrading the Al-Sarih Elementary Boys' School;**
6. **Public Parks Development;**
7. **Constructing Public Transport Bus Stops**
8. **Constructing Schools;**

Fig. 24: Optimal Scenario of Al Afrah Neighbourhood after Validation

IT'S TIME FOR ACTION

04

THE BLUEPRINT FOR IMPLEMENTATION: AL AFRAH ACTION PLAN

Translating the Optimal Scenario into Catalytic Actions in Al Afrah Neighbourhood

To realise the formulated vision for "*A Sustainable and Inclusive Neighbourhood that Empowers its Community*" by 2037, and to achieve the optimal scenario for Al Afrah neighbourhood, specific actions must be taken. Accordingly, transforming the strategic recommendations proposed in the optimal scenario into implementable actions requires a detailed action plan that can tackle incremental spatial, environmental, social, and economical transformations.

These actions are not solely the responsibility of the Greater Irbid Municipality (GIM), but also concern other relevant actors who undertake development at the local level, such as the Yarmouk Water Company and the Ministries of Health and Education.

The primary aim of the action plan is to provide an overarching framework that guides GIM 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, this action plan outlines how to coordinate the identified needed actions in Al Afrah neighbourhood. Within this context, needed actions must be collectively assessed, whereby actions 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 positive impact.

As outlined below, the Al Afrah neighbourhood action plan is divided into three main phases (short-, mid-, and long-term), with each phase spanning five years, starting from 2023 and ending in 2037.

- **Short-Term Phase:** The short-term phase spans from 2023 until 2027 and is the period in which the high-priority needed projects must be implemented. These projects include upgrading of Al Sarih Comprehensive Health Centre, constructing public transport bus stops; upgrading the main road and sidewalk networks in the identified areas at district level; updating the land-use plan; upgrading the Al Sarih Elementary Boy's School; public parks development; upgrading the sewerage network in the identified areas; and upgrading the local road and sidewalk networks in the identified areas at neighbourhood level.
- **Mid-Term Phase:** This phase extends over the period of 2028 until the year 2032. The medium priority projects have been identified based on the scoring matrix and must be implemented during this phase. These projects include Upgrading the sewerage network in the remaining areas; upgrading the road and sidewalk network in the remaining areas at neighbourhood level; and constructing one new school.
- **Long-Term Phase:** This phase includes implementing the remaining needed project, during the period between 2033 and 2037, which is constructing two new schools.

It should be noted here that upgrading the sewerage network was not originally identified as a priority project for the short-term plan, but ,due to the fact that there will be continued work on upgrading the water network through the JICA-funded project, it is most efficient to also upgrade the sewerage network simultaneously.

Additionally, this action plan was **validated with the key relevant stakeholders and GIM**, and was updated according to the minor comments that were received.

To monitor the implementation of these actions, and to ensure the action plan continues to be 'fit for purpose' and responsive to change, **this action plan must be reviewed and updated every 3 years by the assigned committee that includes all concerned stakeholders.**

No.	Project Name	Implementation Plan Phases		
		Short Term (2023-2027)	Mid Term (2028-2032)	Long Term (2033-2037)
1	**Upgrading of Al Sarih Comprehensive Health Centre**			
2	**Constructing Public Tansport Bus Stops**			
3	**Upgrading the Main Road & Sidewalk Networks at District Level**			
4	**Updating the Land-use Plan**			
5	**Upgrading Al Sarih Elementary Boys' School**			
6	**Public Parks Development**			
7	**Upgrading the Sewerage Network Project**			
8	**Upgrading the Road and Sidewalk Networks at the Neighbourhood Level**			
9	**Constructing Three New Schools**			

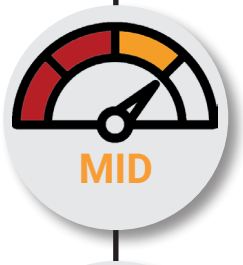
Fig. 25: All Needed Projects/Implementation Timeline over the Implementation Plan Phases

TOWARDS AL AFRAH NEIGHBOURHOOD OPTIMAL SCENARIO

ACTION PLAN (2023-2037)

SHORT-TERM PHASE 2023-2027

- Upgrading of Al Sarih Comprehensive Health Centre
- Constructing Public Transport Bus Stops
- Upgrading the Main Road and Sidewalk Networks in the Identified Areas at District Level
- Updating the Land-use Plan
- Upgrading the Al Sarih Elementary Boy's School
- Public Parks Development
- Upgrading the Sewerage Network in the Identified Areas
- Upgrading the Local Road and Sidewalk Networks in the Identified Areas at Neighbourhood Level



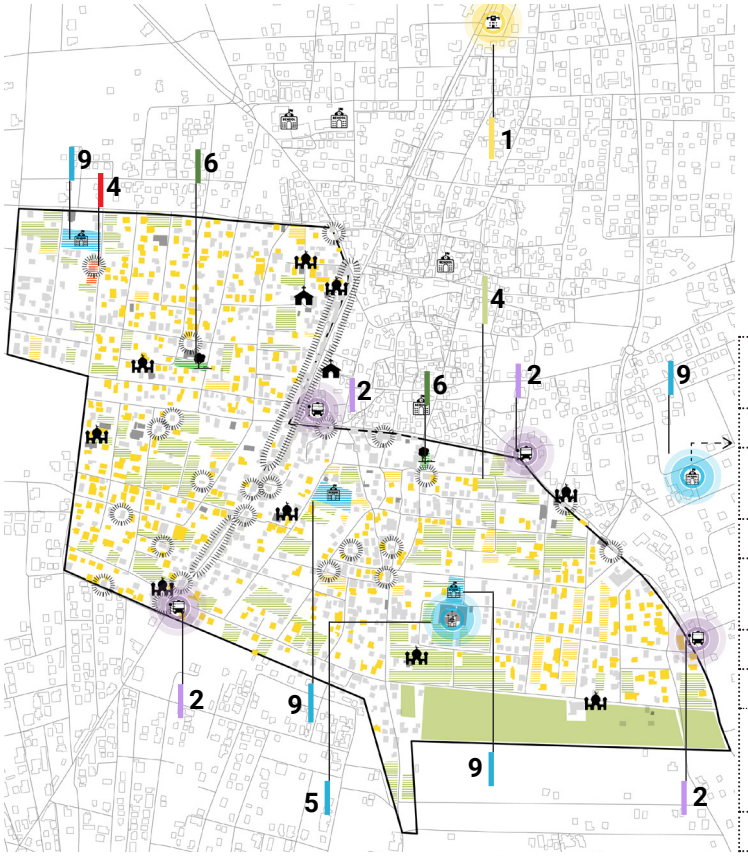
MID-TERM PHASE (2028-2032)

- Upgrading the Sewerage Network in the Remaining Areas
- Upgrading the Road and Sidewalk Network in the Remaining Areas at Neighbourhood Level
- Constructing a New School

LONG-TERM PHASE (2033-2037)

- Constructing Two New Schools

OPTIMAL SCENARIO OF AL AFRAH NEIGHBOURHOOD BY 2037



No.	Project Name
1	Upgrading of Al Sarih Comprehensive Health Centre
2	Constructing Public Tansport Bus Stops
3	Upgrading the Main Road & Sidewalk Networks at District Level
4	Updating the Land-use Plan
5	Upgrading Al Sarih Elementary Boys' School
6	Public Parks Development
7	Upgrading the Sewerage Network Project
8	Upgrading the Road and Sidewalk Networks at the Neighbourhood Level
9	Constructing New Schools

Fig. 26: Al Afrah Action Plan diagram

Short-Term Phase (2023 -2027)

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

- Upgrading of Al Sarih Comprehensive Health Centre
- Constructing Public Transport Bus Stops
- Upgrading the Main Road and Sidewalk Networks in the Identified Areas at District Level
- Updating the Land-use Plan
- Upgrading the Al Sarih Elementary Boy's School
- Public Parks Development
- Upgrading the Sewerage Network in the Identified Areas
- Upgrading the Local Road and Sidewalk Networks in the Identified Areas at Neighbourhood Level

This section covers the actions needed for each project and the implementation sequence to follow during the period between 2023 and 2027. Several factors were taken into consideration to identify these actions and this sequencing, including the urgency of the situation, spatial overlaps between projects, the cost-efficiency of the implementation, the alignment with governmental plans and strategies, as well as the alignment with donors/ financiers strategies and current interests.

To maximise the impact, efficiency, and cost-effectiveness of implementation, the above 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 sewerage network in the areas where the water network will be upgraded through the JICA-funded project, as mentioned in the previous chapter. Additionally, it would be efficient to also upgrade the local roads and sidewalks in the areas that overlap with the water and sewerage network upgrades within the neighbourhood immediately after the final handover of the water and sewerage networks, which includes a year of monitoring and maintenance. This has been added as a project under the title 'Upgrading the Road and Sidewalk Network in the Identified Areas at the Neighbourhood Level'. These projects' timelines overlap and must all be done in accordance to one another.

The beneficiaries for these projects will be the total population of Al Afrah neighbourhood, including the host community and refuges (currently around 14,000 residents), as well as some residents and visitors from nearby areas.

Investment cards were developed (Annex C) for the high-priority project to begin the mobilisation of resources in 2023. They describe the project, its objective, beneficiaries, impact, partners, life cycle, timeline, and financial details. These cards will link the prioritized infrastructure investments to potential partners for financing and implementation.

ICON	PROJECT	SHORT TERM PHASE (2023-2027)				
		2023	2024	2025	2026	2027
	Upgrading of Al Sarih Comprehensive Health Centre					
	Constructing Public Transport Bus Stops					
	Upgrading the Main Road and Sidewalk Networks in the Identified Areas at District Level					
	Updating the Land-use Plan					
	Upgrading the Al Sarih Elementary Boys' School					
	Public Parks Development					
	Upgrading the Sewerage Network in the Identified Areas					
	Upgrading the Local Road and Sidewalk Networks in the Identified Areas at Neighbourhood Level					

Fig. 27: The Priority Projects/Implementation Time-line of the Short-term Phase

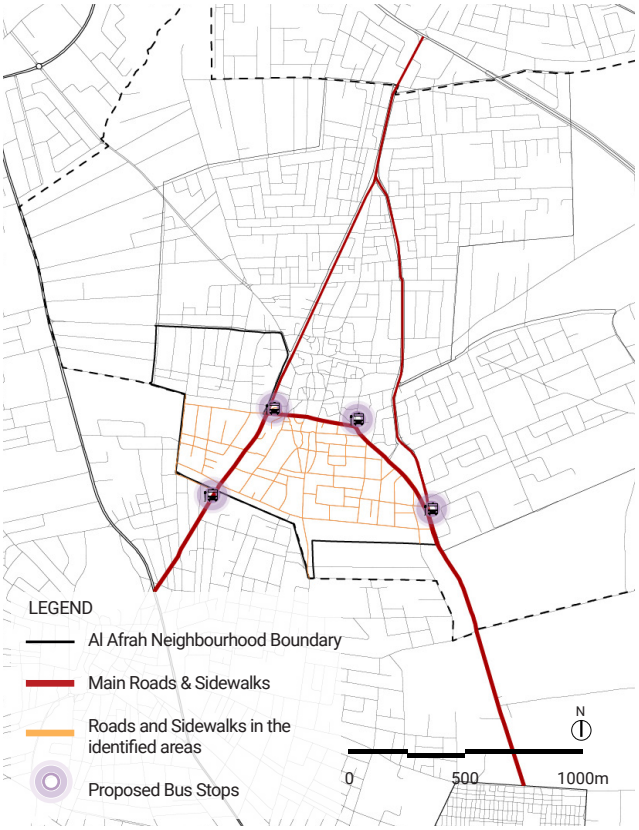


Fig. 28: Upgrading the Main Road and Sidewalk Networks in the Identified Areas at District Level

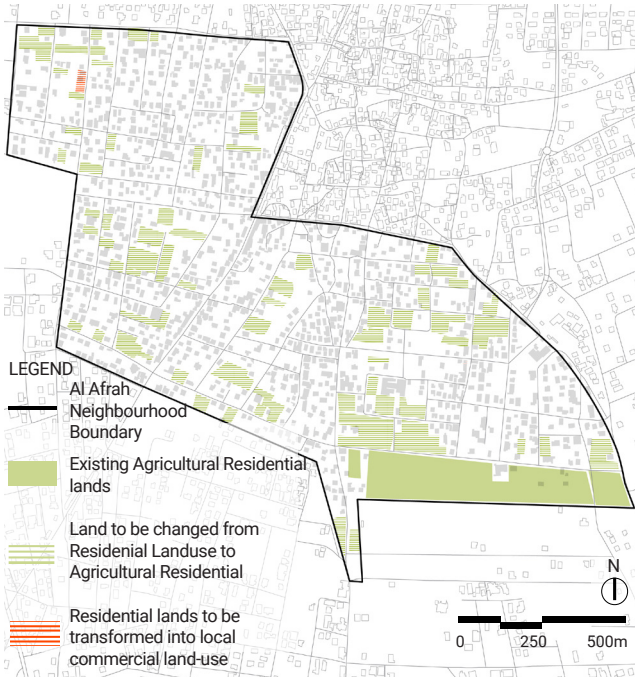


Fig. 29: Upgrading the Land-use Plan

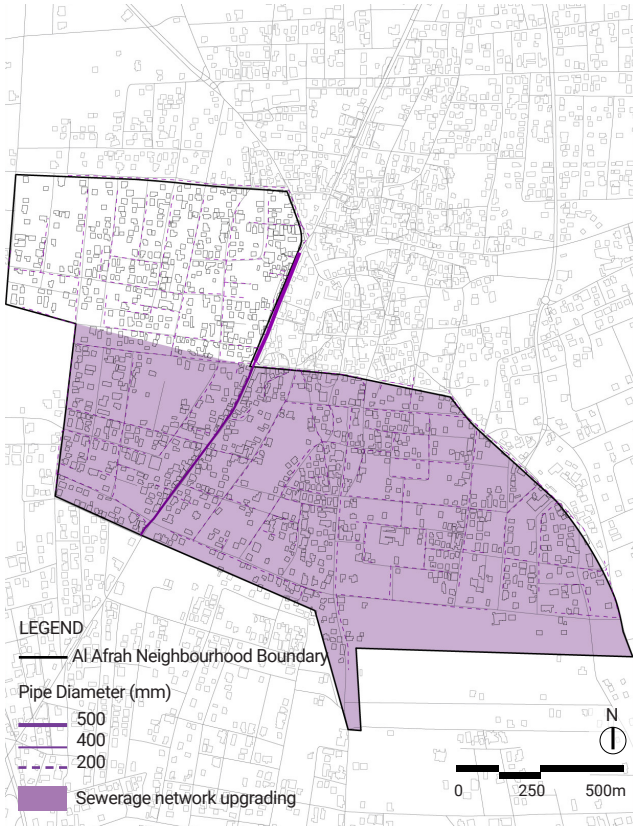


Fig. 30: Upgrading the Sewerage Network

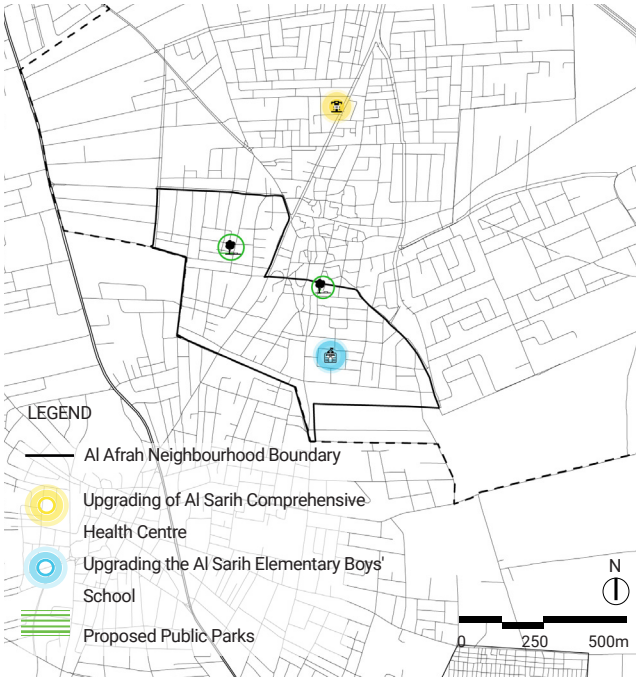


Fig. 31: Upgrading the Al Sarih Elementary Boys' School and Public Park Development

• Actions for the Year 2023

To initiate the work in Al Afrah Neighbourhood, the first step is to identify the available resources that the involved entities have for the implementation of each high-priority project. 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.

Accordingly, the year 2023 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.

In addition to mobilising resources, upgrading the Al Sarih Comprehensive Health Centre should be done by the end of 2023 as there is an allocated budget for 2023 to do the needed upgrading by the MoH. The upgrading will include increasing the number of staff and building their capacities to deliver high quality service, and increasing the medical equipment.

As for updating the land-use plan, it should begin in 2023 by introducing local commercial land-use in the identified residential areas of the neighbourhood shown in the figure. Additionally, agricultural lands within the neighbourhood should be preserved as part of the action plan. Therefore, it is recommended that GIM changes the land-use of the current and mapped agricultural lands within Al Afrah neighbourhood from residential, to agricultural residential. This will help prevent encroachment on agricultural land, preserve and build a green network within the neighbourhood, as well as mitigate the effects of flash floods. It is recommended that GIM should start working on making the amendments to the land-use plan to re-classify the identified land plots starting from 2023, according to the Building and Planning of Cities and Villages by-law. The process starts from the municipality and is transferred to MoLA to obtain the final approvals. This process can take up to one year.

Regarding upgrading the Al Sarih Elementary Boys' School project, the needed approvals should be obtained from the Royal Scientific Society before allocating the budget, as a structural evaluation was done by them to assess the building condition.

Upgrading the Sewerage Network in the Identified Areas
The sewerage network upgrading was not originally identified as a high-priority project. However, due to the fact that the Yarmouk Water Company is upgrading the water network in the neighbourhood as part of the ongoing water network upgrading project funded by JICA, it is recommended that the sewerage network be upgraded simultaenously in order to be more efficient and economical. Additionally, the water and sewerage networks upgrading should be coordinated with the main road and sidewalks network upgrading at the district and neighbourhood levels.

Therefore, as the Yarmouk Water Company is in charge of both networks, both projects should be coordinated in terms of time, resources, and construction. Additionally, this project to be coordinbated with MoWI and WAJ. Given that project titled "Improving Sanitation Services for for Syrian Refugees and Host Communities-Phase IX/X" that is funded by the KFW will include Al-Sarih district, and since the budget for the water network upgrading is already secured, the preparetion of the RFP of the design and supervision of the implementation of sewerage networks, conveyor lines, and the expansion of the purification plants connected to them, and the announcing of the bid to consultants should all be done by the end of 2023 in order to select a consultant.

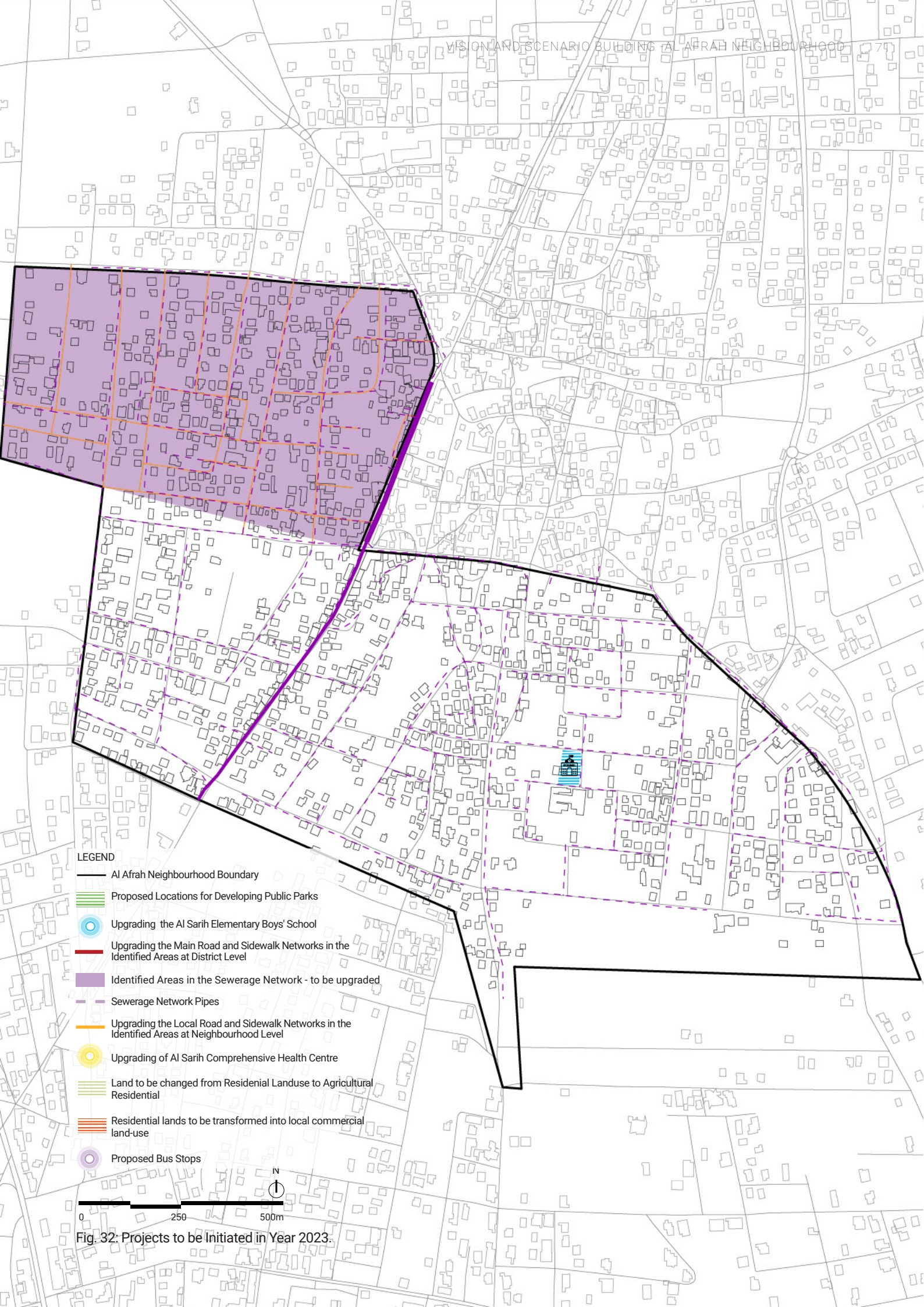


Fig. 32: Projects to be Initiated in Year 2023.

• Actions for the Years 2024 -2025

Constructing Public Transport Bus Stops
The design and construction RFP, bidding proposal, evaluation, and selection of a contractor for this project should be done in the second quarter of 2024. This is followed by developing the detailed design of the bus stops and obtaining the needed approvals, which should be done by the third quarter of 2024. Finally, the construction of the bus stops should start in the last quarter of 2024 and be finalised in the first quarter of 2025. It is worth noting here that the bus stops and the upgrading of the main road and sidewalk networks spatially overlap. Therefore, both projects need to be coordinated, where the constructed bus stops' locations and structures will need to be reassessed, possibly moved when the upgrading of the main road and sidewalk networks project starts.

Upgrading the Main Road and Sidewalk Networks in the Identified Areas at District Level
After allocating the project budget by the end of 2024, the design preparations for upgrading the main roads and sidewalks in the identified areas should start in 2025. The Greater Irbid Municipality (GIM) would be in charge of this phase, which includes the concept and detailed design of the roads and sidewalks, innovatively thinking of them as socially and environmentally sustainable spaces. This will be followed by preparing the construction Request for Proposal (RFP), and holding the bid for the implementation of the roads. The evaluation and selection of the contractor should be done by the end of 2025.

Upgrading the Al Sarih Elementary Boys' School
Regarding the upgrading of the existing Al Sarih Elementary Boys' School, the design RFP documents should be prepared for the needed expansion and rehabilitation, and the evaluation and selection of the consultant should be done by the end of 2024. This will be followed by developing the concept design, final detailed design drawings, BoQs and obtaining the needed approvals, which should all be done by be finalised in the second quarter of 2025. After that, the construction RFP documents should be prepared, and the evaluation and selection of the consultant should be done by the end of 2025 in order to start with the implementation.

Public Parks Development
As for the public parks development, preparing the design RFP, holding the evaluation, and selecting the consultant should all occur in 2024. Consequently, the survey work should start in 2025. To initiate the concept design process for the two parks, 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 end of 2025. The public parks development project will benefit the whole population of Al Afrah neighbourhood as well as the communities of the neighbouring areas as there are no public parks in the area.

Upgrading the Sewerage Network in the Identified Areas
Evaluation of the bids received and selection of the consultant should take place in early 2024. After that, the technical assessments, and detailed design drawings should be completed by the end of 2024 in order to prepare the construction RFP and announce the bid, evaluate the bids received, and select a contractor in the third quarter of 2025 and start construction work.

Upgrading the Local Road and Sidewalk Networks in the Identified Areas at Neighbourhood Level
As for the roads and sidewalks within the neighbourhood, the upgrading work should be done in coordination with the water and sewerage upgrading project. Therefore, allocating the budget, preparing the design and construction RFP, and selecting the contractor should all be done well in advance, beginning in 2024 and ending in fourth quarter of 2025. Accordingly, when the water and sewerage networks are being finalised, a one year should be considered for post-implemetation monitoring and maintenance, then the road and sidewalk upgrades in the same areas should take place.

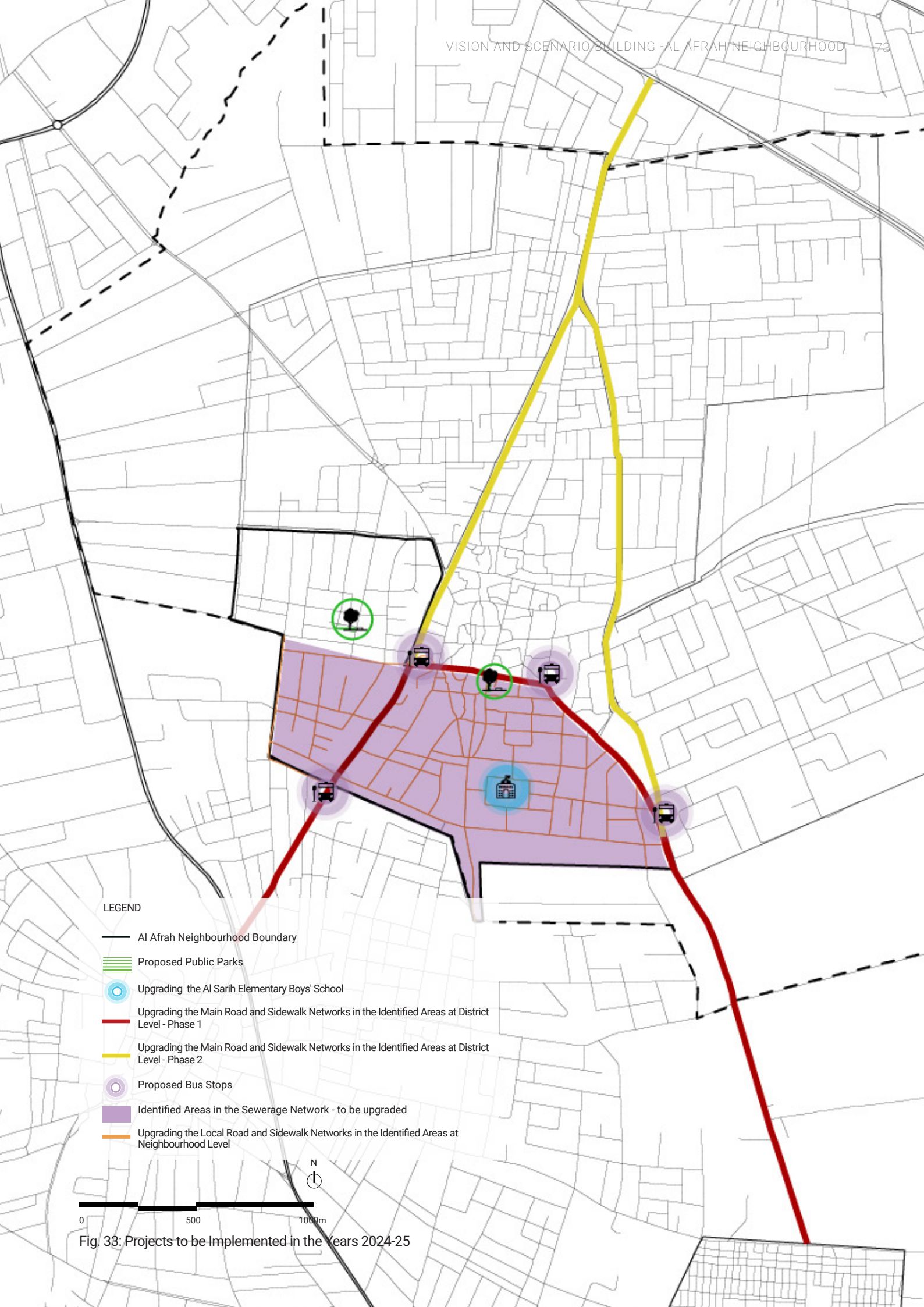


Fig. 33: Projects to be Implemented in the Years 2024-25

• Actions for the Years 2026-2027

Upgrading the Sewerage Network in the Identified Areas
Construction work continues and sould be completed by the end of the third quarter of 2026, in coordination with the ongoing water network upgrading project funded by JICA.

Upgrading the Main Road and Sidewalk Networks in the Identified Areas at District Level
The implementation is divided into two phases as shown in the figure, whereby the implementation of phase 1 can start in early 2026, and phase 2 will be implemented after that. Both should be completed by the end of the second quarter of 2027. Accordingly, this project would enhance the connectivity of the neighbourhoods to one another, as well as enhance walkability, improve access to basic services, and increase economic activities as a result of the rehabilitation of the main commercial roads.

Upgrading the Al Sarih Elementary Boys' School
As for the school rehabilitation and expansion, the construction work should start in early 2026. It is expected to take around nine months, so that the school is operational by the start of the school year in 2026. Accordingly, this project would adequately serve the existing and future student populations of Al Afrah neighbourhood.

Public Parks Development
Building on the actions from the years 2024-2025, the detailed design drawings for the two parks should be completed by mid-2026, and the needed approvals should be obtained. Following this, the construction RFP must be prepared to hold the bidding process, evaluate the received bids, and select a contractor by the end of 2026. Construction of the two parks should be finalised by early 2027.

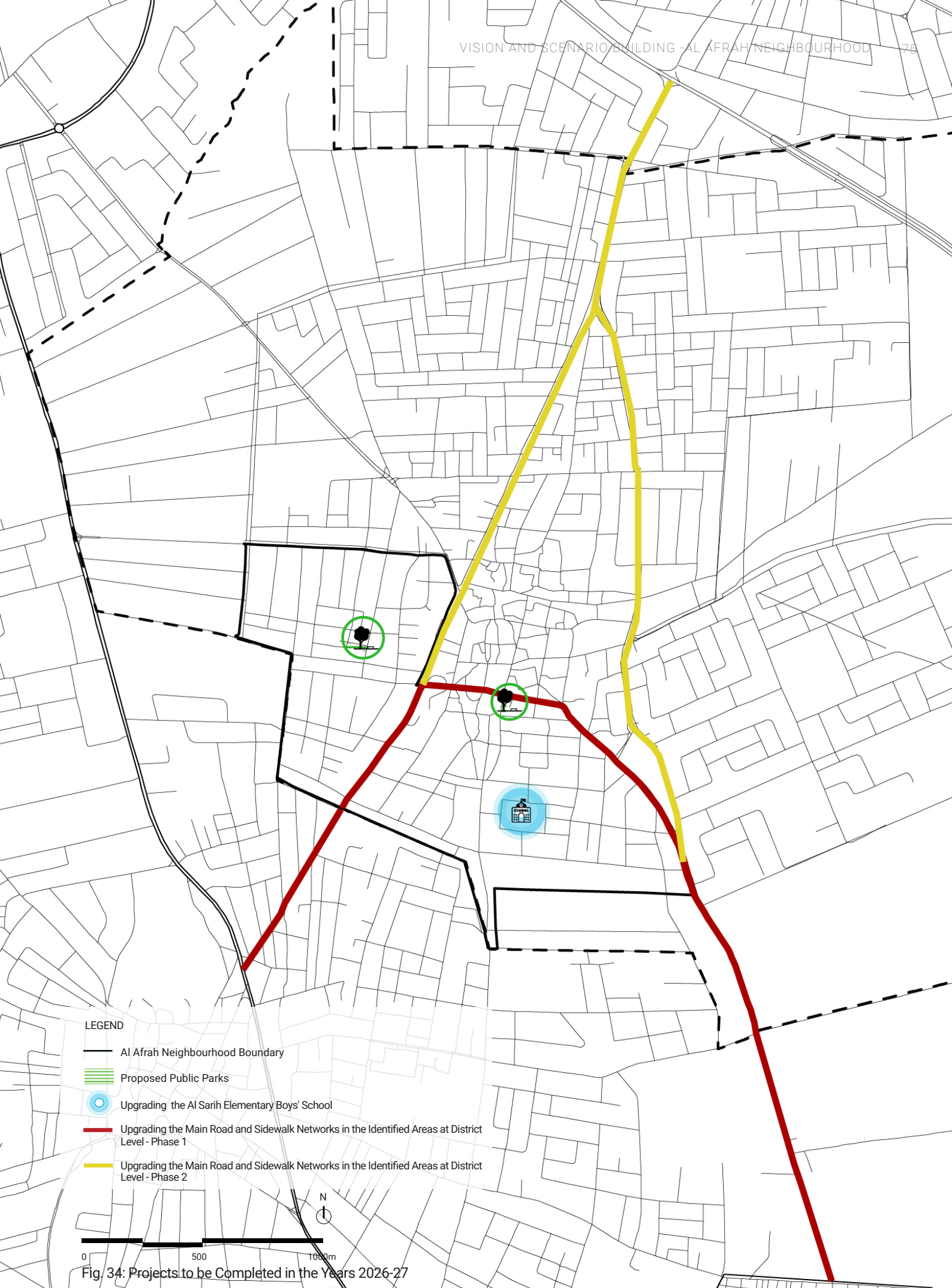
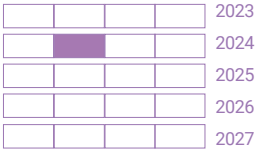
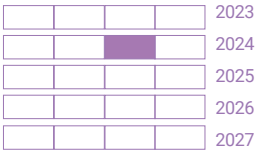
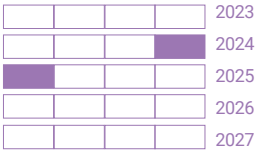


Fig. 34: Projects to be Completed in the Years 2026-27

CONSTRUCTING PUBLIC TRANSPORT BUS STOPS PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Allocate the budget for the project, prepare the detailed work plan, and identify the roles and responsibilities.	Land and Transport Regulatory Commission (LTRC)	
02	Prepare the design and construction RFP for the bidding process and announce the bid. The RFP must include survey work, developing the detailed designs, and implementation of construction work for the bus stops.	LTRC	
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	LTRC	
04	Finalize detailed design drawings and obtain the needed approvals.	Contractor under the supervision of LTRC and in coordintaion with GIM	
05	Implementation of the construction work.	Contractor under the supervision of LTRC and in coordintaion with GIM	

* Bus stops need to be reassessed, and possibly replaced, in coordination with the road and sidewalk upgrading in the area

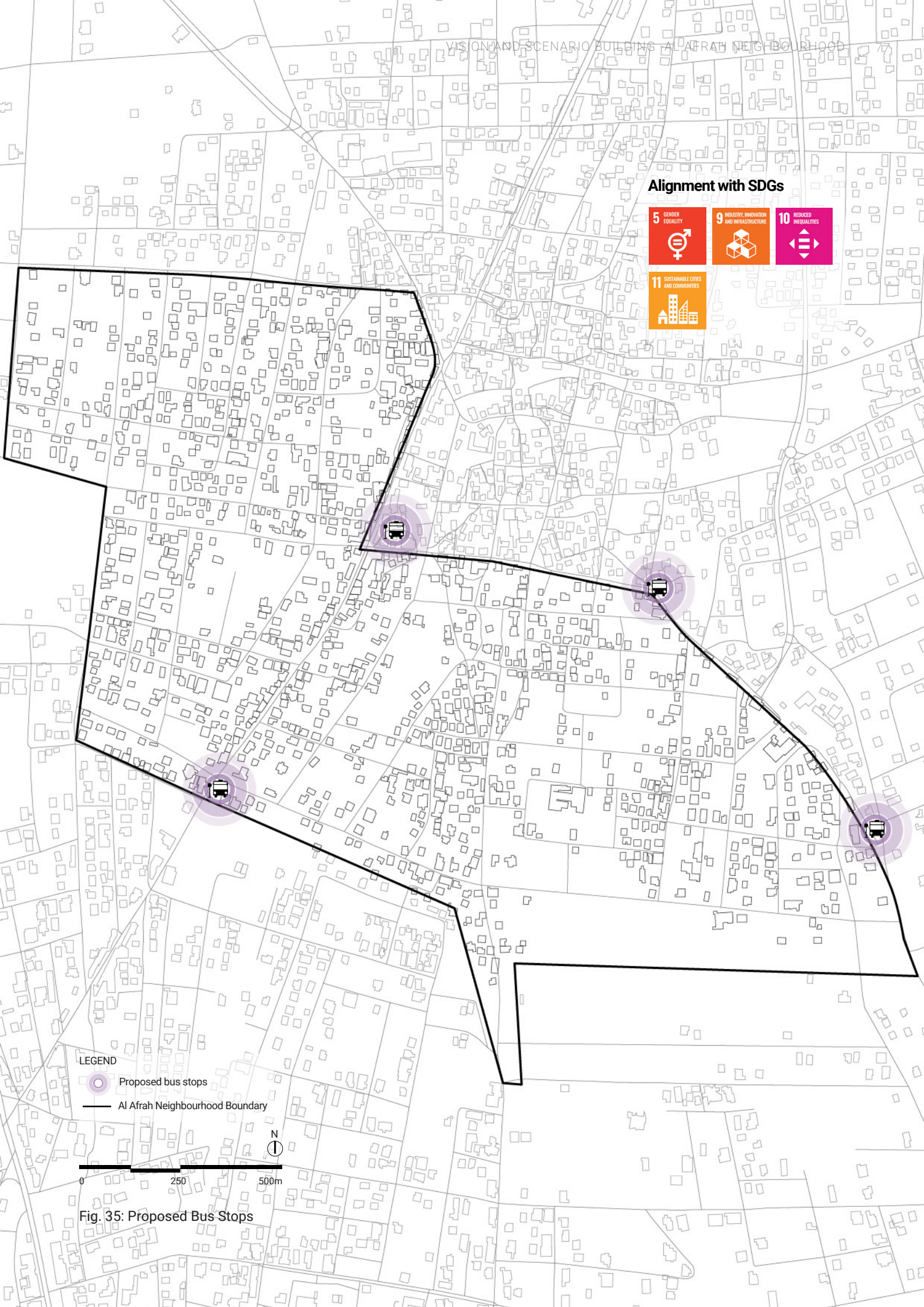
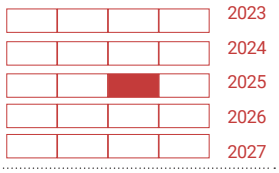
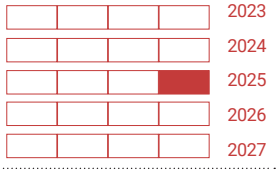


Fig. 35: Proposed Bus Stops

UPGRADING THE MAIN ROAD AND SIDEWALK NETWORKS AT THE DISTRICT LEVEL PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the project budget for the identified main roads network, prepare the detailed work plan, and identify the roles and responsibilities.	GIM	
02	Develop the concept and detailed design for the identified main roads and sidewalks to be inclusive and sustainable; e.g. using porous material to assist in mitigating the climate change impact and including ramps.	GIM	
03	Prepare the construction RFP for the bidding process and announce the bid.	GIM	
04	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GIM	
05	Implementation of the construction work for phase 1	Contractor under GIM's supervision	
06	Implementation of the construction work for phase 2*	Contractor under GIM's supervision	

* The upgrade of the main roads within the neighbourhood boundary should be coordinated with the upgrading work of the water and sewerage networks, and needs to take into consideration the porposed and existing bus stops.

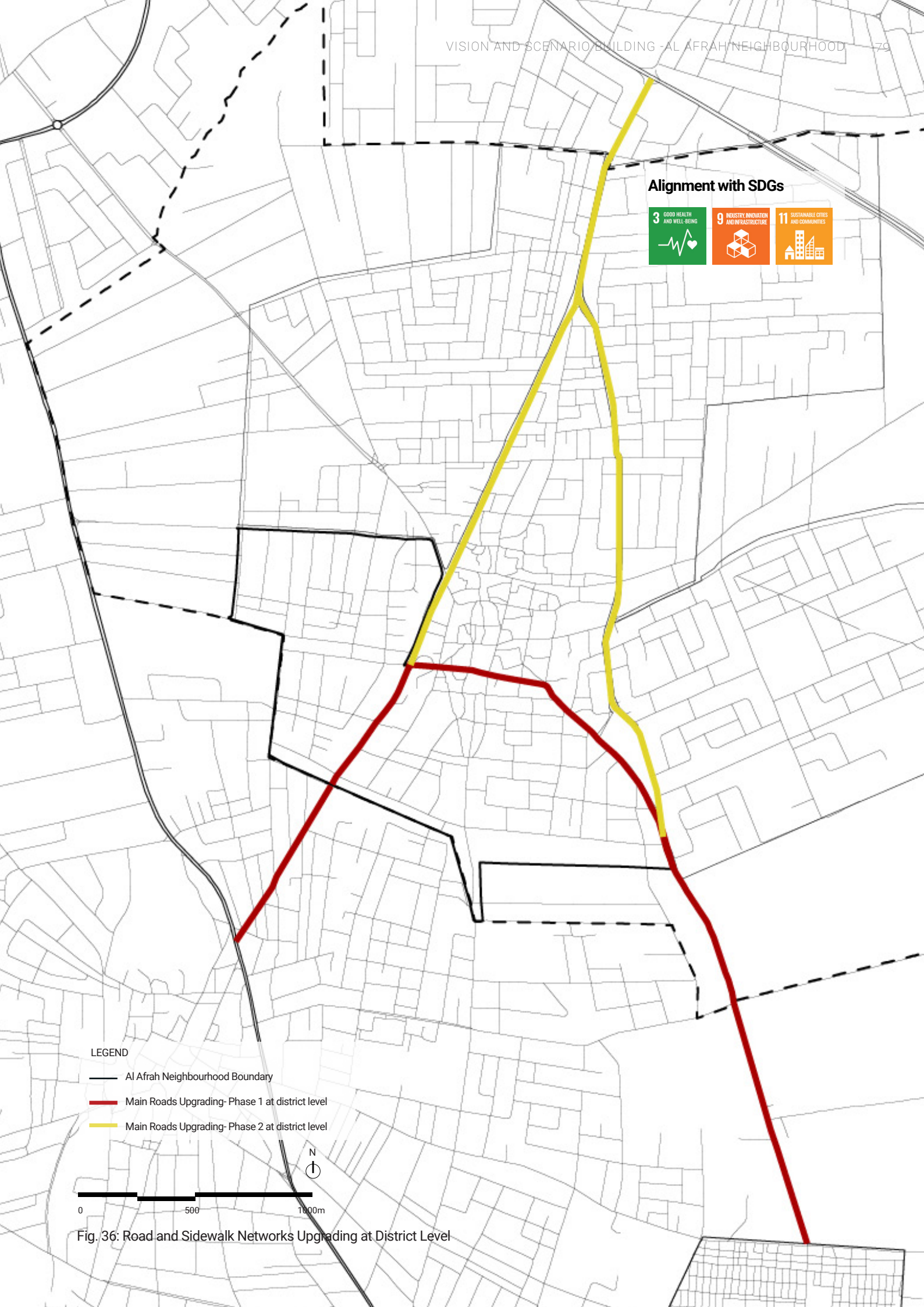


Fig. 36: Road and Sidewalk Networks Upgrading at District Level

UPGRADING THE AL SARIH ELEMENTARY BOY'S SCHOOL PROJECT*

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the project budget, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	Ministry of Education (MoE)	2023 2024 2025 2026 2027
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include developing the detailed designs for the needed expansion.	MoE	2023 2024 2025 2026 2027
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	MoE	2023 2024 2025 2026 2027
04	Develop the concept design.	Consultant under the supervision of MoE	2023 2024 2025 2026 2027
05	Finalize the detailed design drawings, BOQ and obtain the needed approvals.	Consultant under the supervision of MoE	2023 2024 2025 2026 2027
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	2023 2024 2025 2026 2027
07	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	MoE & Consultant	2023 2024 2025 2026 2027
08	Implementation of the construction and rehabilitation work	Contractor under the supervision of the MoE & Consultant	2023 2024 2025 2026 2027
09	Operate the upgraded school	MoE	2023 2024 2025 2026 2027

* The Royal Scientific Society has evaluated the foundations of the school building, therefore the needed approval for this project must be obtained from it.

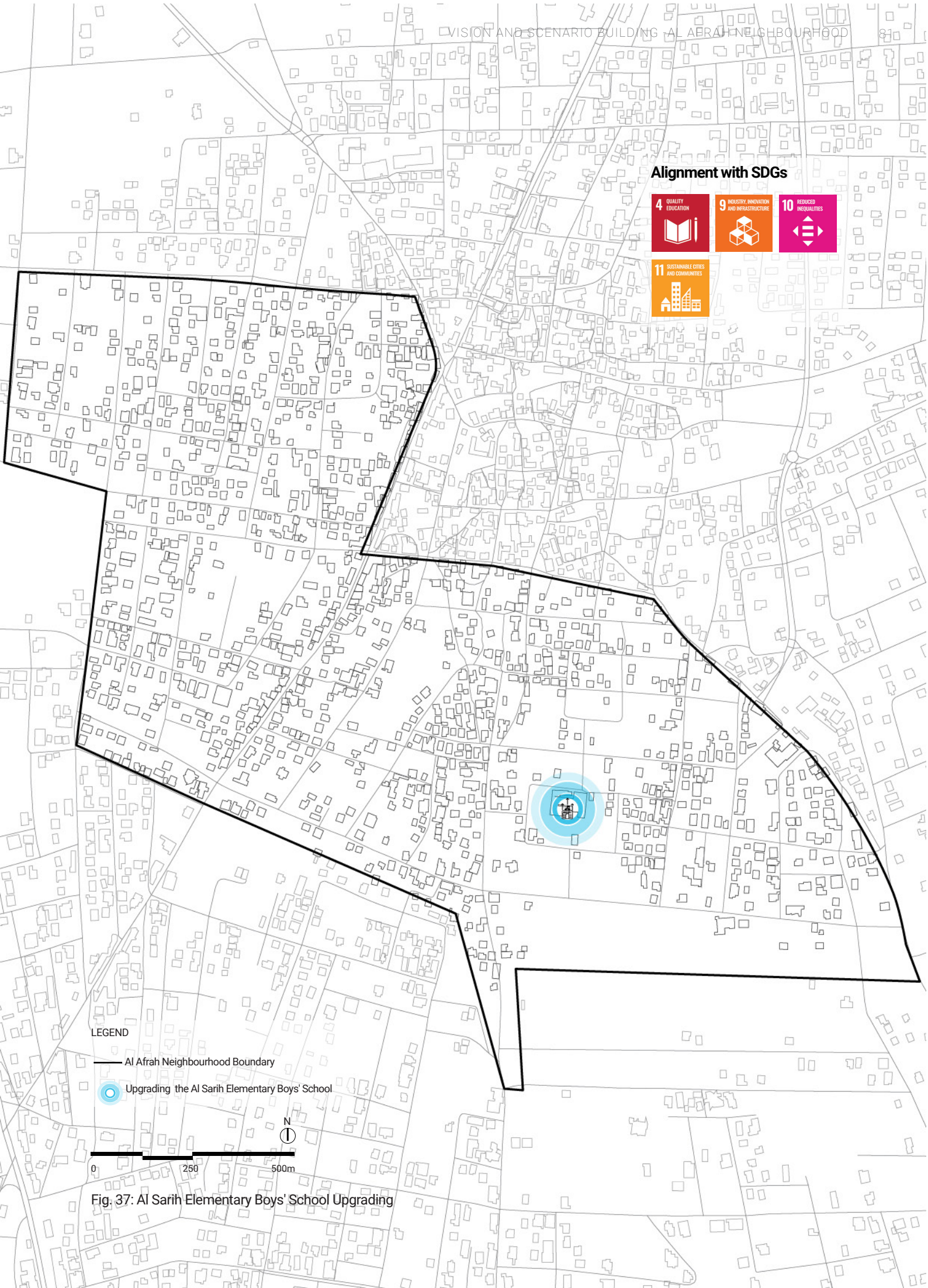
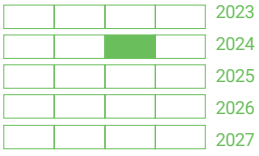
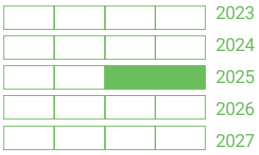
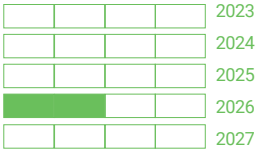


Fig. 37: Al Sarih Elementary Boys' School Upgrading

PUBLIC PARKS DEVELOPMENT PROJECT

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

* These actions can be skipped if the relevant department of the GIM will be doing the concept and detailed designs of the public parks.

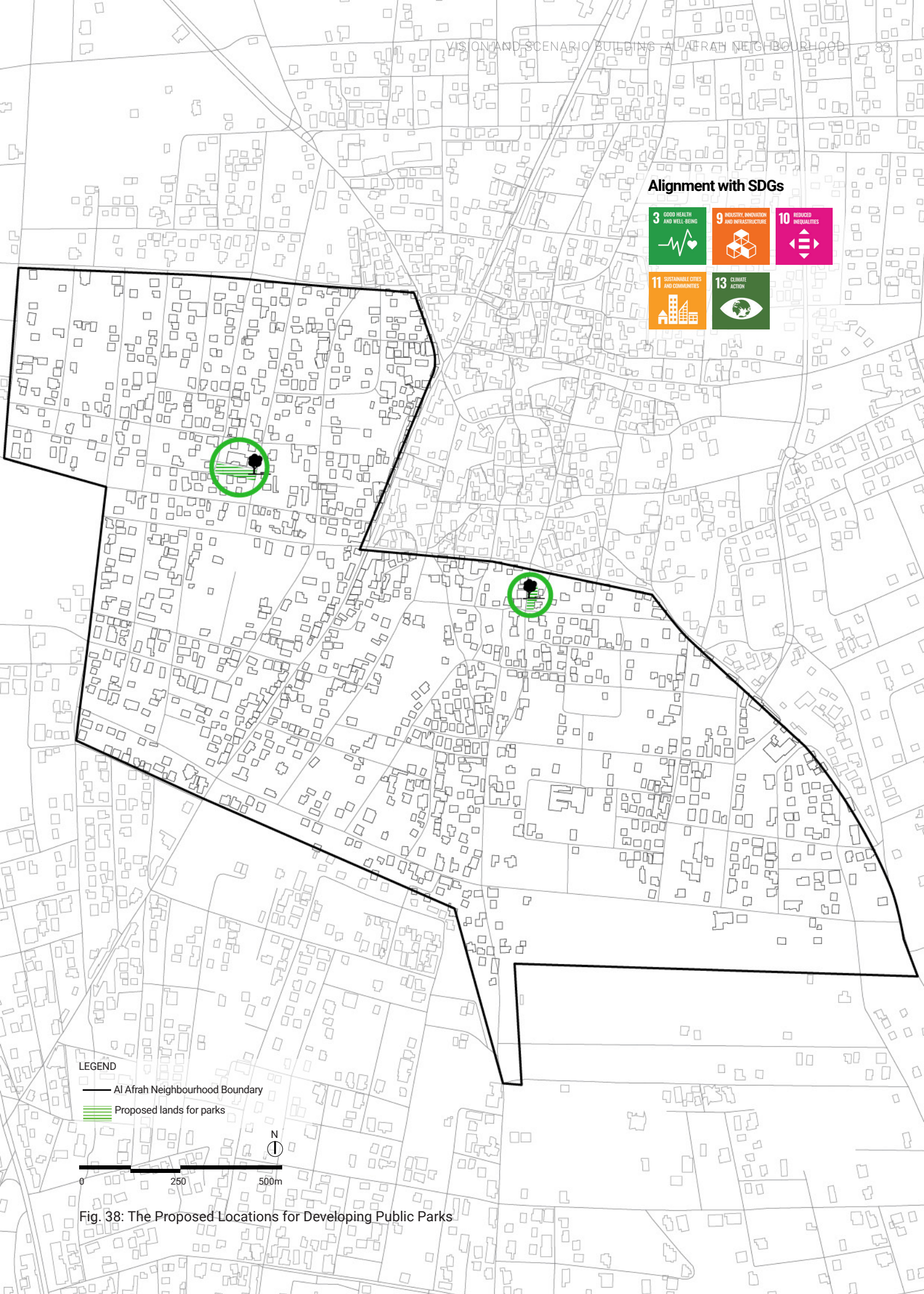
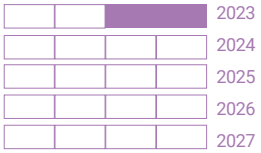
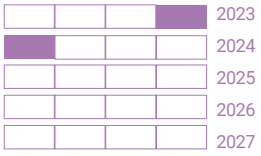
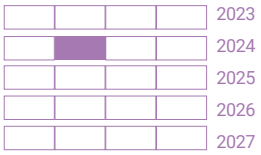
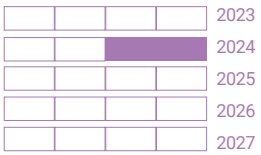


Fig. 38: The Proposed Locations for Developing Public Parks

UPGRADING THE SEWERAGE NETWORK IN THE IDENTIFIED AREAS

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the project budget, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities for the design and implementation of the network and the existing interconnection points, taking into account the need to expand the station to which the network is connected and the conveyor lines for drainage to another station (if necessary).	Yarmouk Water Company **in coordination with MoWA/WAJ**	
02	Preparing the RFP of the design and supervision of the implementation of sewerage networks, conveyor lines, and the expansion of the purification plants connected to them (if necessary), and announce the bid to consultants.	Yarmouk Water Company **in coordination with MoWA/WAJ**	
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	Yarmouk Water Company **in coordination with MoWA/WAJ**	
04	Conduct a detailed technical assessment for the sewerage network in Al Afrah neighbourhood, collect the necessary information for the existing networks to be rehabilitated, and identifying the connection points	Consultant under the supervision of Yarmouk Water Company, Yarmouk Water Company and **MoWA/WAJ**	
05	Prepare and finalize the detailed design drawings for the upgrading of the sewerage network, conveyor lines, and expanding the purification plant to which it is connected (if necessary) in the highlighted area and obtain the needed approvals.	Consultant under the supervision of Yarmouk Water Company and **MoWA/WAJ**	
06	Prepare the RFP of the construction of sewerage networks and all necessary conveyor lines and expansion of the purification plant for the bidding process & announce the bid.	Yarmouk Water Company, **MoWA/WAJ** & Consultant	
07	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	Yarmouk Water Company, **MoWA/WAJ** & Consultant	
08	Implementation of the construction work and all necessary conveyor lines and expansion of the purification plant to which it is connected (if necessary)*	Contractor under the supervision of Yarmouk Water Company, Yarmouk Water Company, **MoWA/WAJ** & Consultant	

* Actions to be coordinated and aligned with the ongoing water network upgrading project funded by JICA which will be done by Yarmouk Water Company. In addition, with GIM in regard to the upgrading of the road and sidewalk networks project .

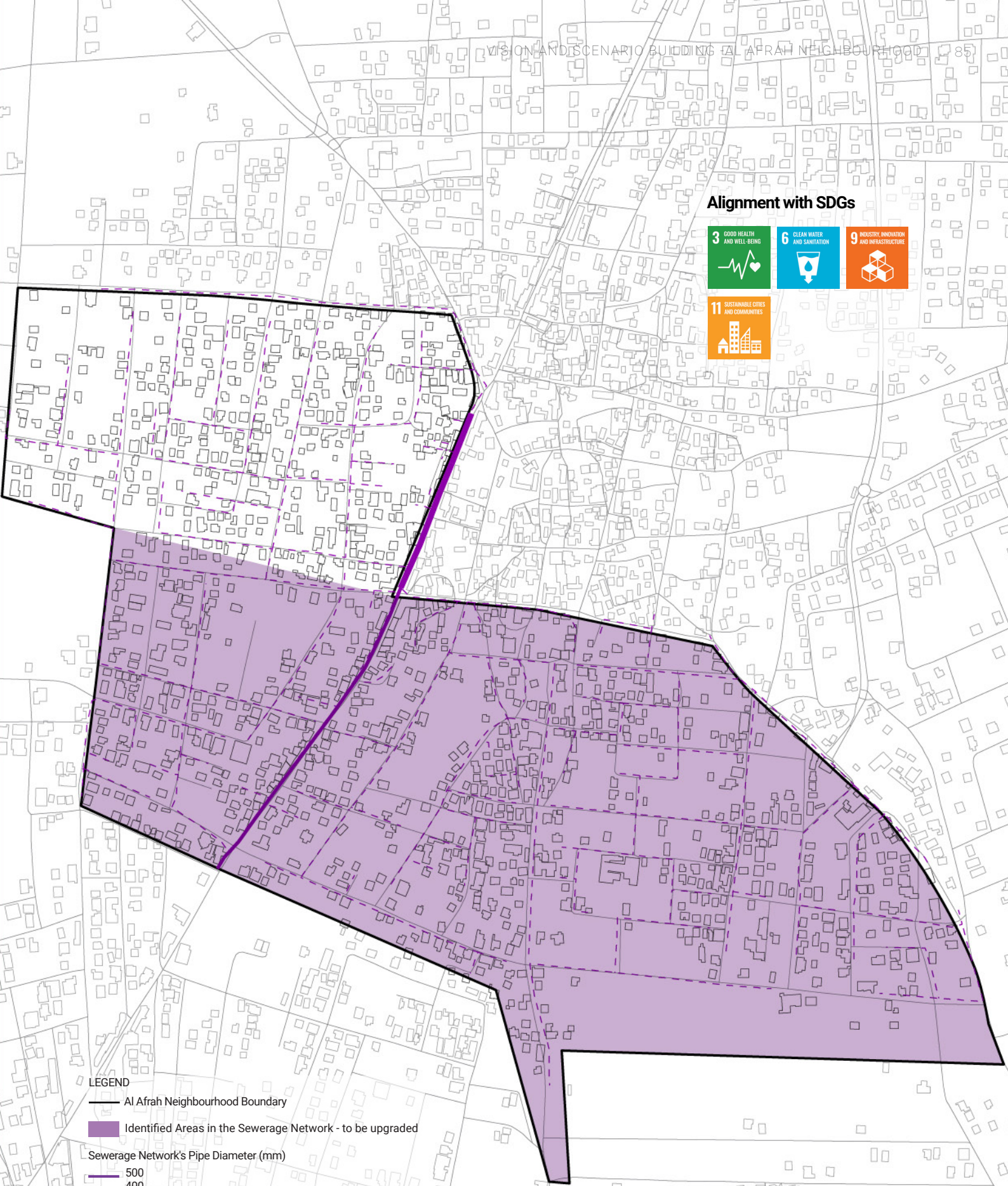
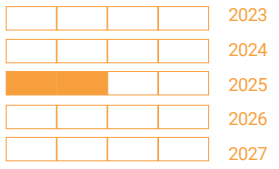
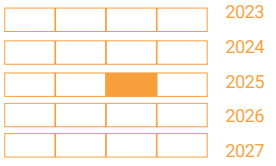
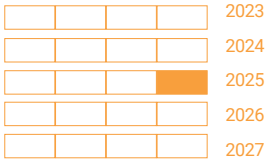
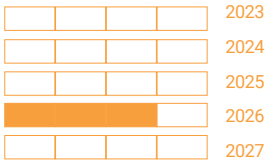


Fig. 39: Identified Areas in the Sewerage Network to be upgraded

UPGRADING THE ROAD AND SIDEWALK NETWORK IN THE IDENTIFIED AREAS AT THE NEIGHBOURHOOD LEVEL PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the project budget for the identified road & sidewalk network, prepare the detailed work plan, and identify the roles and responsibilities .	GIM	
02	Develop the concept and detailed design for the identified local roads and sidewalks to be inclusive and sustainable; e.g using porous material to assist in mitigating the climate change impact and including ramps.	GIM	
03	Prepare the construction RFP for the bidding process and announce the bid.	GIM	
04	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GIM	
05	Implementation of the construction work*	Contractor under GIM's supervision	

* The upgrade of the road and sidewalk network in the identified areas must be coordinated with the upgrading work of the water and sewerage networks.

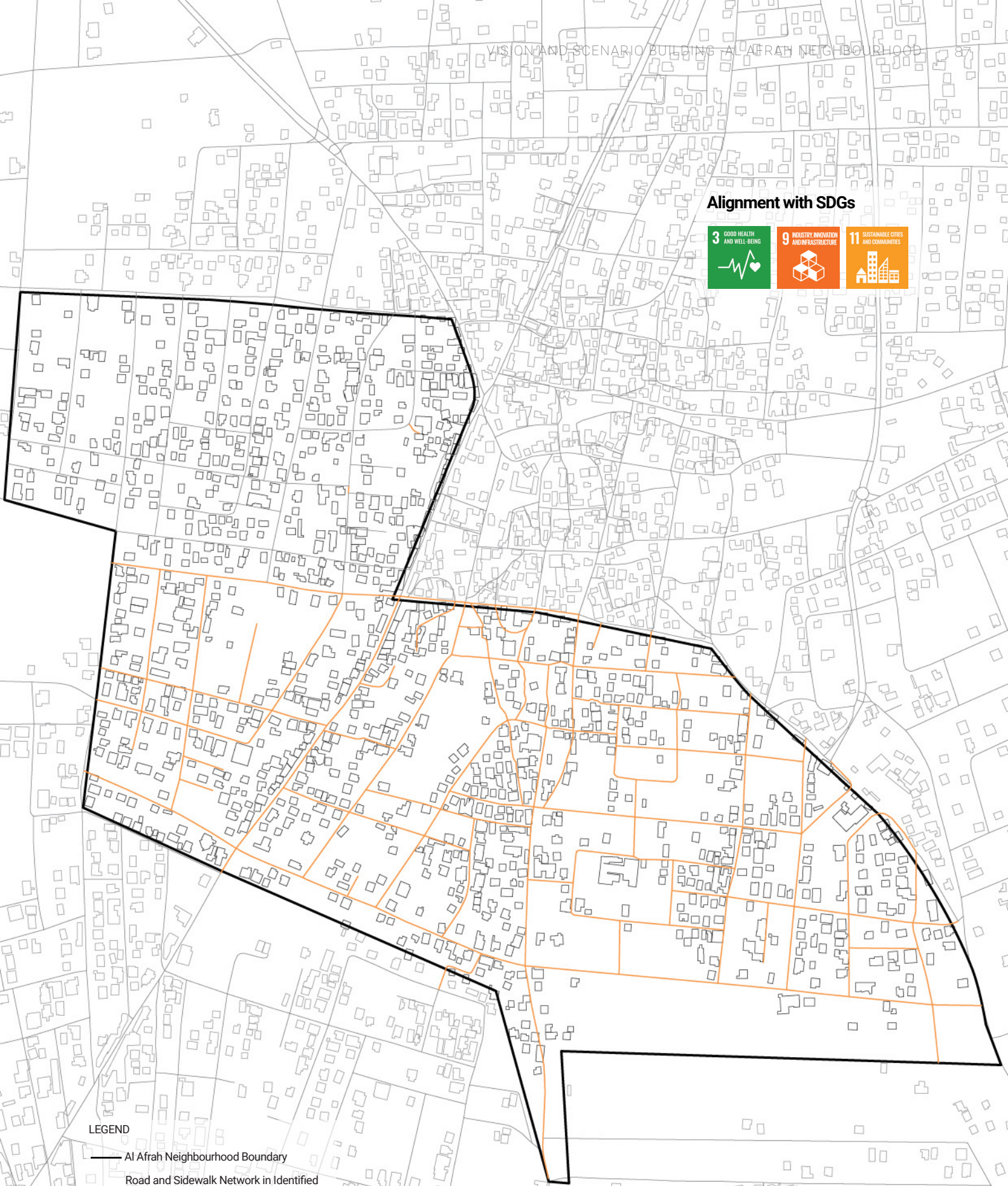


Fig. 40: Upgrading Road and Sidewalk Network in Identified areas at neighbourhood level

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

NO.	PROJECT /ACTION
	Upgrading of Al Sarih Comprehensive Health Centre Project
01	Increasing the number of staff, and building their capacities to deliver high quality service, and increasing the medical equipment.
	Constructing Public Transport Bus Stops Project
01	Allocate the budget for the project, prepare the detailed work plan, and identify the roles and responsibilities
02 & 03	Preparing the design and construction RFP for the bidding process, hold the bid evaluation, and select contractor
04	Finalize the detailed design drawings and obtain needed approvals
05	Implementation of the construction work**
	Upgrading the Main Road and Sidewalk Networks in the Identified Areas at District Level Project
01	Prepare the project budget, the detailed work plan, and identify the roles and responsibilities
02	Develop the concept and detailed design
03 & 04	Prepare the design RFP for the bidding process, hold the bid evaluation, and select consultant.
05	Implementation of the construction work for phase 1
06	Implementation of the construction work for phase 2*
	Updating the Land-use Plan Project
01	Re-classify the identified land plots from residential to local commercial and from residential to agricultural residential
	Upgrading the Al Sarih Elementary Boys' School Project
01	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 & 05	Develop the concept design, finalize the detailed design drawings and obtain needed approvals
06 & 07	Prepare the construction & rehabilitation RFP for the bidding process, hold the bid evaluation, & select contractor
08 & 09	Implementation of the construction and rehabilitation work; & operate upgraded school
	Public Parks Development 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	Initiate survey work
05 & 06 & 07	Conduct community consultation workshops and develop concept design, Finalize detailed design drawings and obtain needed approvals
08	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select contractor
09	Implementation of the construction work
	Upgrading the Sewerage Network in the Identified Areas Project
01	Prepare the project budget, mobilize resources, prepare the detailed work plan and identify the roles and responsibilities for the design and implementation of the network and the existing interconnection points
02 & 03	Preparing the design RFP of the design and supervision of the implementation of sewage networks, conveyor lines, and the expansion of the purification plants hold the bid evaluation, and select consultant
04 & 05	Conduct technical assessment, prepare and finalize the detailed design drawings for the sewerage networks in Al Afrah neighbourhood, and obtain the needed approvals.
06 & 07	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select contractor
08	Implementation of the construction work and all necessary conveyor lines and expansion of the purification plant to which it is connected (if necessary)**
	Upgrading the Local Road and Sidewalk Networks in the Identified Areas at Neighbourhood Level
01	Prepare the project budget, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities
02	Develop the concept and detailed design for the identified local 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**

* These actions can be skipped if the relevant department of the GIM will be doing the concept and detailed designs of the public parks.

** Actions to be coordinated and aligned due to spatial overlap

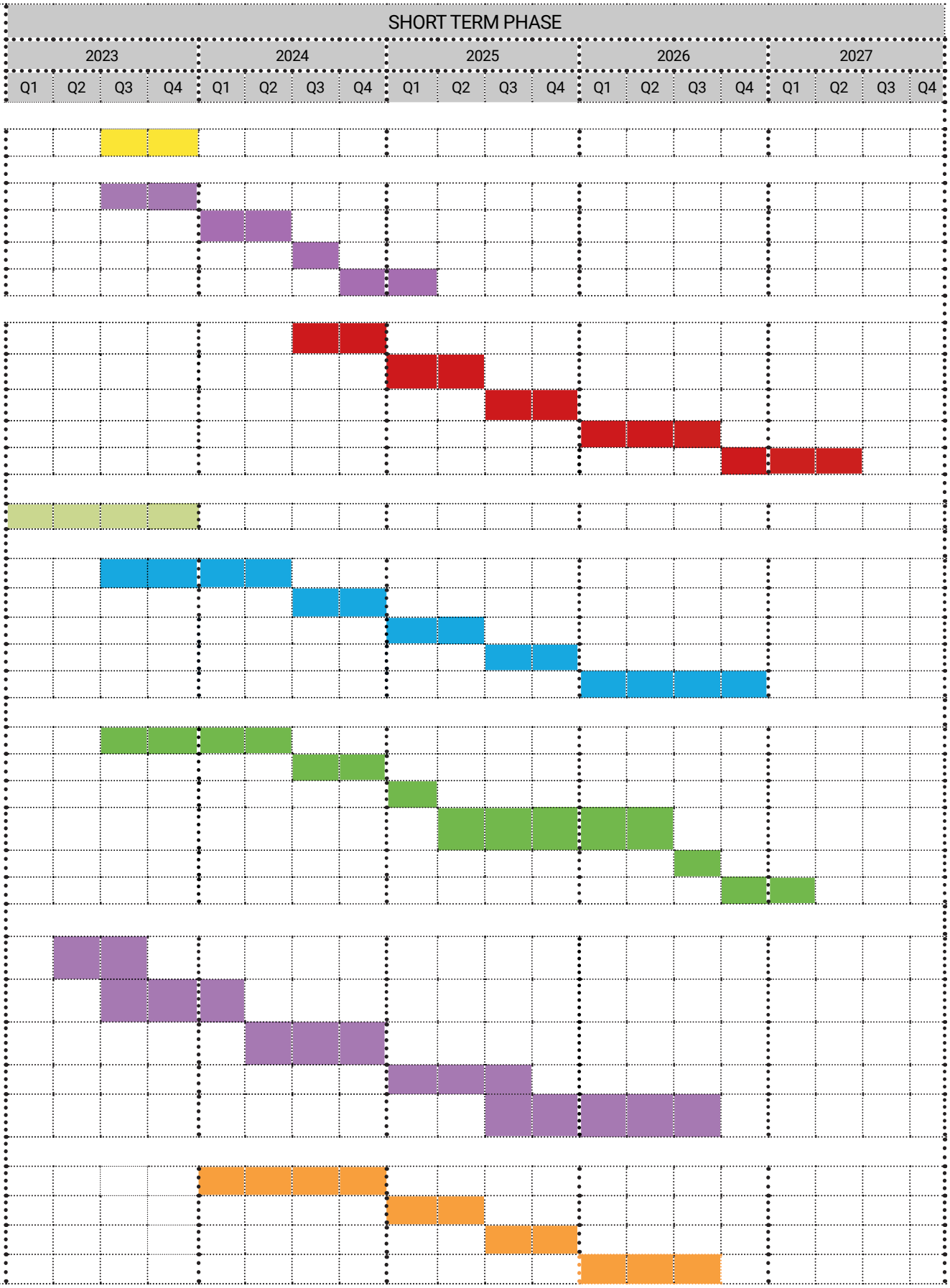


Table. 3: Action Plan for the Short-Term Phase (2023-2027)

Mid-Term Phase (2028 -2032)

The identified projects that can be implemented within the mid-term phase of this optimal scenario action plan include:

- Upgrading the Sewerage Network in the Remaining Areas
- Upgrading the Local Road and Sidewalk Networks in the Remaining Areas at Neighbourhood Level
- Constructing a New School

This section covers the actions needed for each project and the implementation sequence to follow during the period between 2028 and 2032.

As previously explained, the projects were analysed to detect synergies that could maximise the impact, efficiency, and cost-effectiveness of implementation, and, accordingly, the most economical process for implementing the action plan was identified.

Therefore, spatial overlaps between projects were identified so that they can be implemented in a gradual order that ensures the optimal utilisation of available resources. This includes upgrading the sewerage networks in the remaining areas as well as the local road and sidewalk network in the overlapping areas. This has been added as a project under the title 'Upgrading the Local Road and Sidewalk Networks in the Remaining Areas at Neighbourhood Level'. These projects' timelines overlap and must all be done in accordance with one another.

ICON	PROJECT	MID TERM PHASE (2028-2032)				
		2028	2029	2030	2031	2032
	Upgrading the Sewerage Network in the Remaining Areas					
	Upgrading the Local Road and Sidewalk Networks in the Remaining Areas at Neighbourhood Level					
	Constructing a New School					

Fig. 41: The Projects/Implementation Time-line of the Mid-term Phase

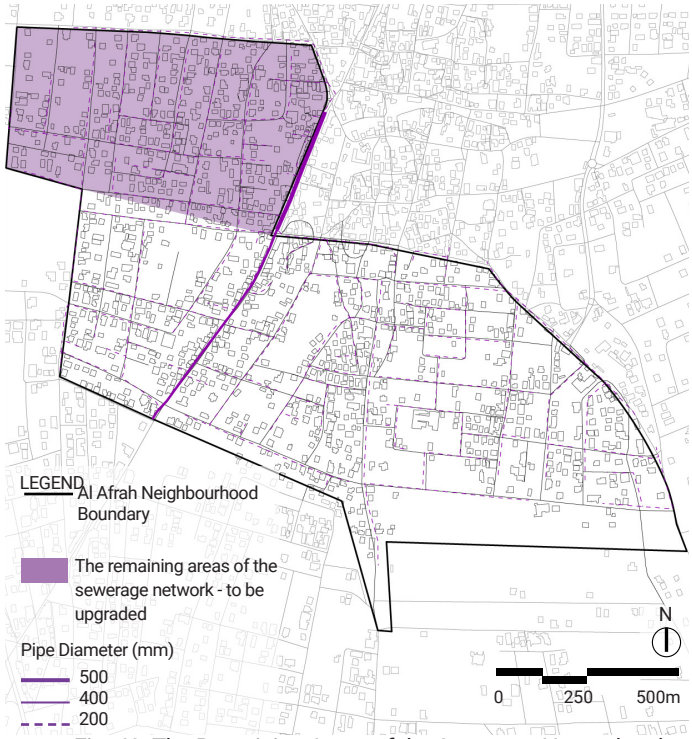


Fig. 42: The Remaining Areas of the Sewerage Network to be Upgraded

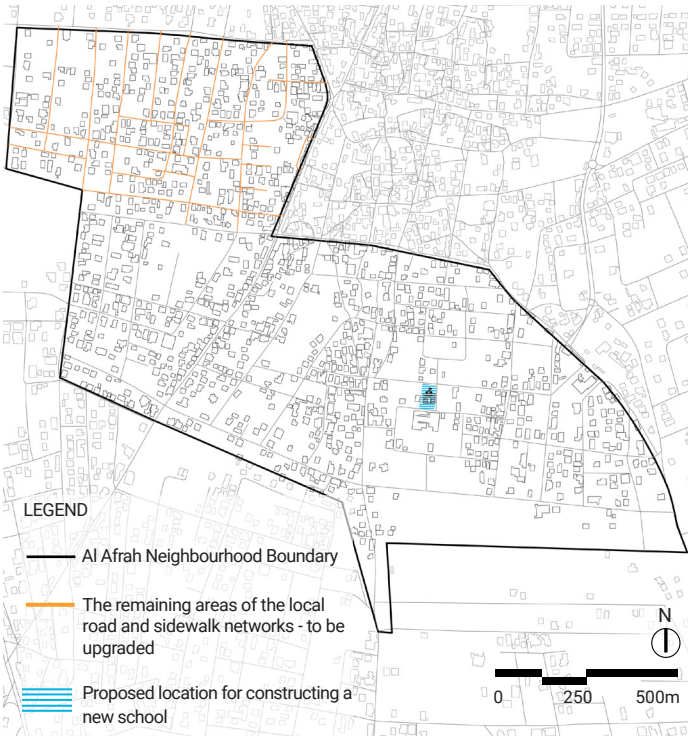


Fig. 43: The Remaining Areas of the Local Road and Sidewalk Networks to be Upgraded and the Proposed Location for Constructing a New School

• Actions for the Years 2028-2032

Throughout the year 2028, 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. Additionally, the pre-construction phase for upgrading the sewerage network in the remaining areas should begin in 2028. This Includes the preparetion of the RFP of the design and supervision of the implementation of sewerage networks, conveyor lines, and the expansion of the purification plants connected to them, and the announcing of the bid to consultants should all be done in the third quarter of 2028 in order to select a consultant.

In 2029, a consultant must be selected. The consultant, in coordination with the Yarmouk Water Company and MoWI/WAJ, should then start conducting the needed studies, developing the detailed design drawings, and, upon approval, prepare the construction RFP for the implementation bidding process. After the evaluation and selection of the contractor, the implementation should start in third quarter of 2030 and en in the third quarter of 2031. Additionally, this project to be coordinbated with MoWI and WAJ.

Upgrading of the remaining local road and sidewalk networks at the same locations in the neighbourhood should directly follow the upgrading of the sewerage network, as these projects spatially overlap and excavation works will already need to be undertaken to upgrade the sewerage network, leading to a more cost-efficient development. However, the RFP documents from the Yarmouk Water Company, the MoWI and the Jordan Water Authority must include a complete year for post-implementation monitoring and maintenance. Therefore, one year must be considered between the completion of the upgrading of the sewerage network and the upgrading of the remaining local road and sidewalk networks in spatially overlapping areas.

Therefore, GIM should start developing the concept and detailed designs for the road and sidewalk networks at the areas overlapping with the sewerage networks upgrading in Al Afrah neighbourhood. Accordingly, the construction RFP must be prepared to hold the bidding process and select a contractor. The implementation should start in 2032.

To align efforts, regular coordination meetings must be conducted between the Yarmouk Water Company and GIM teams.

Regarding constructing a new school in the neighbourhood, it is worth mentioning here that the proposed land shown in the map is owned by the MoE and has an area of 2500 m^2. Therefore, according to MoE's regulations, there is a need to acquire an empty plot of land adjacent to this one for the needed new school construction, or replace it with another plot of land large enough to cover the requirements for establishing the new school (the minimum area of the plot land area for a new school building must be 5,000m^2). In the event that this is not possible, the MoE can study the possibility of establishing a school with a small area or kindergarten on the land owned by the Ministry.

The pre-construction phase for the new school should begin in 2029. This includes preparing the RFP for developing the concept and detailed designs 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 in 2031. The constructed school should be operational in early 2032.

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

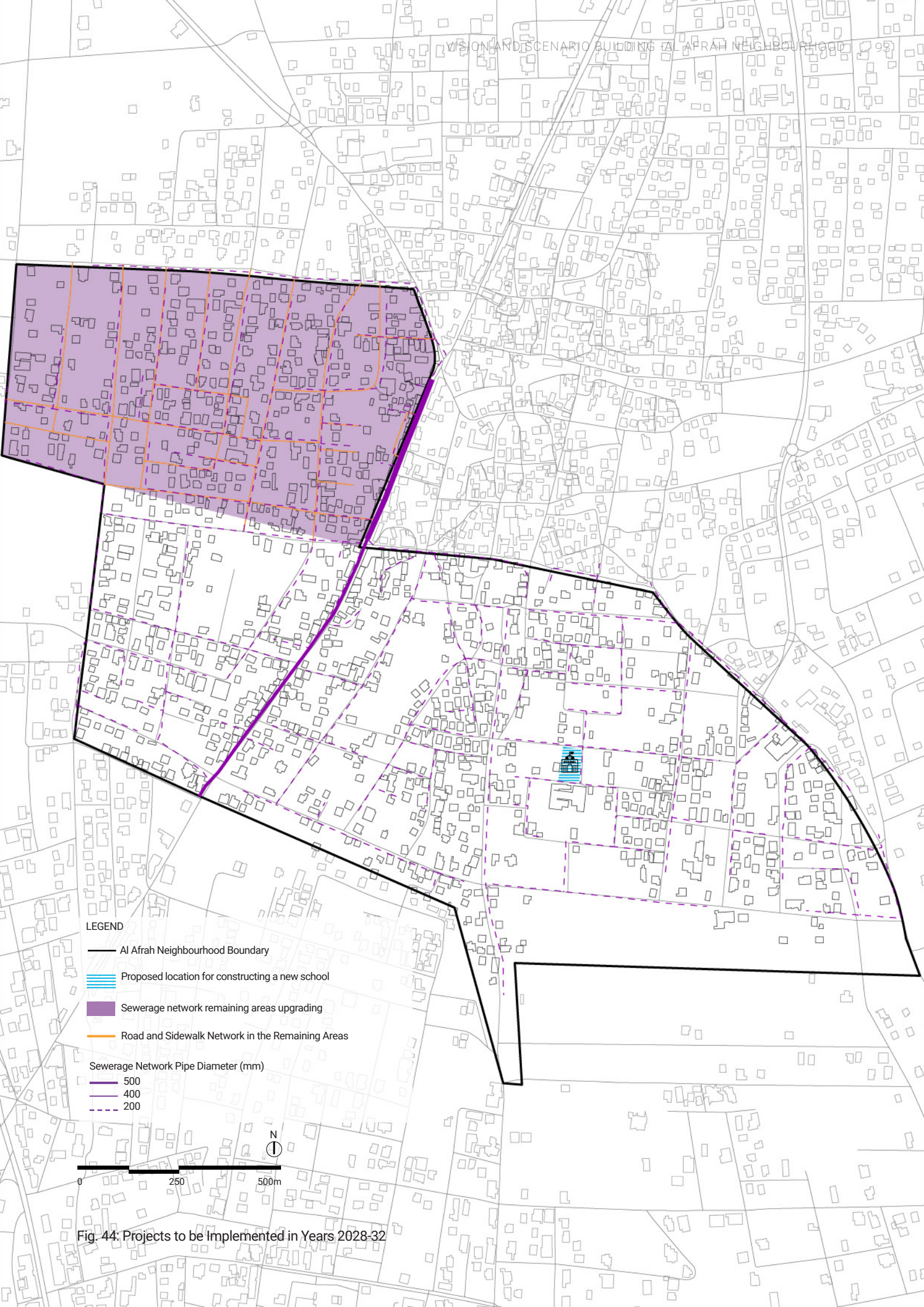
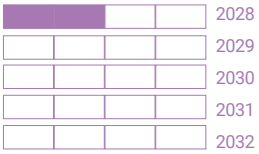
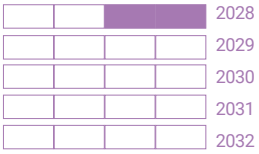
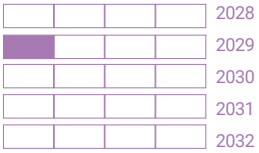
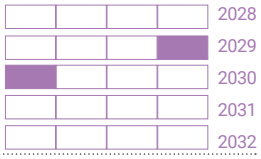
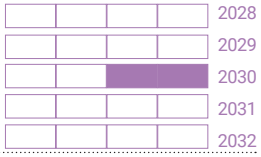
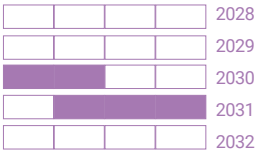


Fig. 44: Projects to be Implemented in Years 2028-32

UPGRADING THE SEWERAGE NETWORK IN REMAINING AREAS PROJECT

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the project budget, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities for the design and implementation of the network and the existing interconnection points, taking into account the need to expand the station to which the network is connected and the conveyor lines for drainage to another station (if necessary).	Yarmouk Water Company in coordination with MoWA/WAJ	
02	Preparing the RFP of the design and supervision of the implementation of sewerage networks, conveyor lines, and the expansion of the purification plants connected to them (if necessary), and announce the bid to consultants.	Yarmouk Water Company in coordination with MoWA/WAJ	
03	Hold the bid evaluation and selection, and, accordingly, negotiate and award the contract.	Yarmouk Water Company in coordination with MoWA/WAJ	
04	Conduct a detailed technical assessment for the sewerage network in Al Afrah neighbourhood, collect the necessary information for the existing networks to be rehabilitated, and identifying the connection points	Consultant under the supervision of Yarmouk Water Company & MoWA/WAJ	
05	Prepare and finalize the detailed design drawings for the upgrading of the sewerage network, conveyor lines, and expanding the purification plant to which it is connected (if necessary) in the highlighted area and obtain the needed approvals.	Consultant under the supervision of Yarmouk Water Company & MoWA/WAJ	
06	Prepare the RFP of the construction of sewerage networks and all necessary conveyor lines and expansion of the purification plant for the bidding process & announce the bid.	Yarmouk Water Company, MoWA/ WAJ & Consultant	
07	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	Yarmouk Water Company, MoWA/ WAJ, & Consultant	
08	Implementation of the construction work and all necessary conveyor lines and expansion of the purification plant to which it is connected (if necessary)*	Contractor under the supervision of Miyuhana, MoWA/ WAJ, & Consultant	

*During the upgrading of the sewerage network in the identified area, the water network pipes could be checked and maintained as needed.

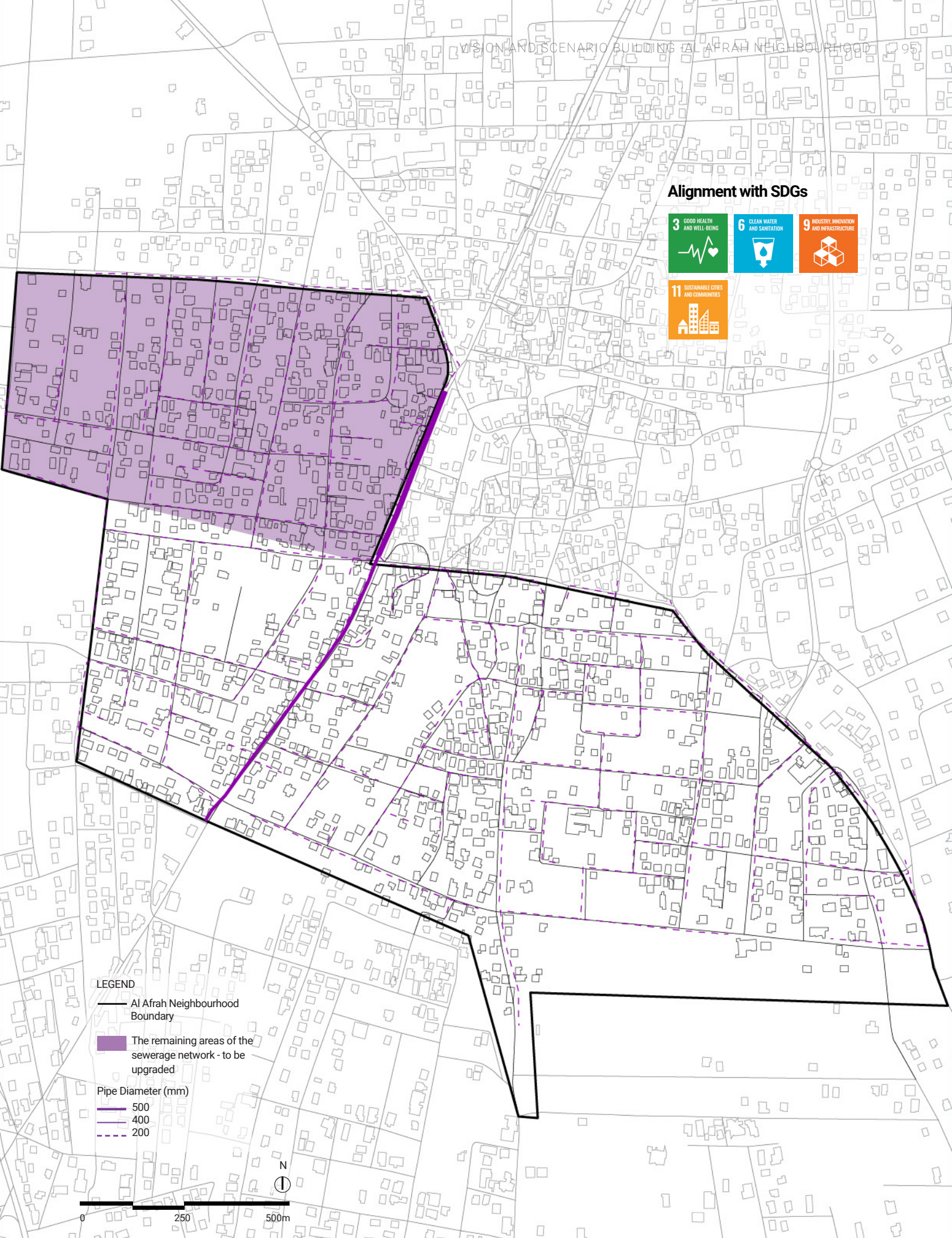
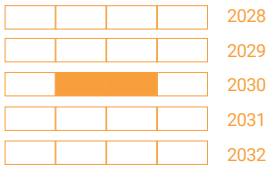
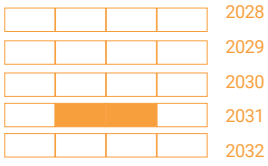
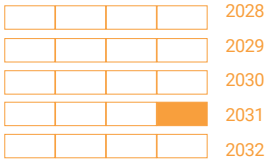


Fig. 45: The Remaining Areas of the Sewerage Network to be Upgraded

UPGRADING THE LOCAL ROAD AND SIDEWALK NETWORKS IN THE REMAINING AREAS AT NEIGHBOURHOOD LEVEL

	Actions	Responsible Entity	Year (Quarters)
01	Prepare the project budget for the remaining road & sidewalk network, prepare the detailed work plan, and identify the roles and responsibilities.	GIM	
02	Develop the concept and final detailed drawings for the remaining local roads and sidewalks to be inclusive and sustainable; e.g using porous material to assist in mitigating the climate change impact and including ramps.	GIM	
03	Prepare the construction RFP for the bidding process and announce the bid.	GIM	
04	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	GIM	
05	Implementation of the construction work*	Contractor under GIM's supervision	

* The upgrade of the local road and sidewalk networks in the remaining areas must be coordinated with the upgrading work of the water and sewerage networks.

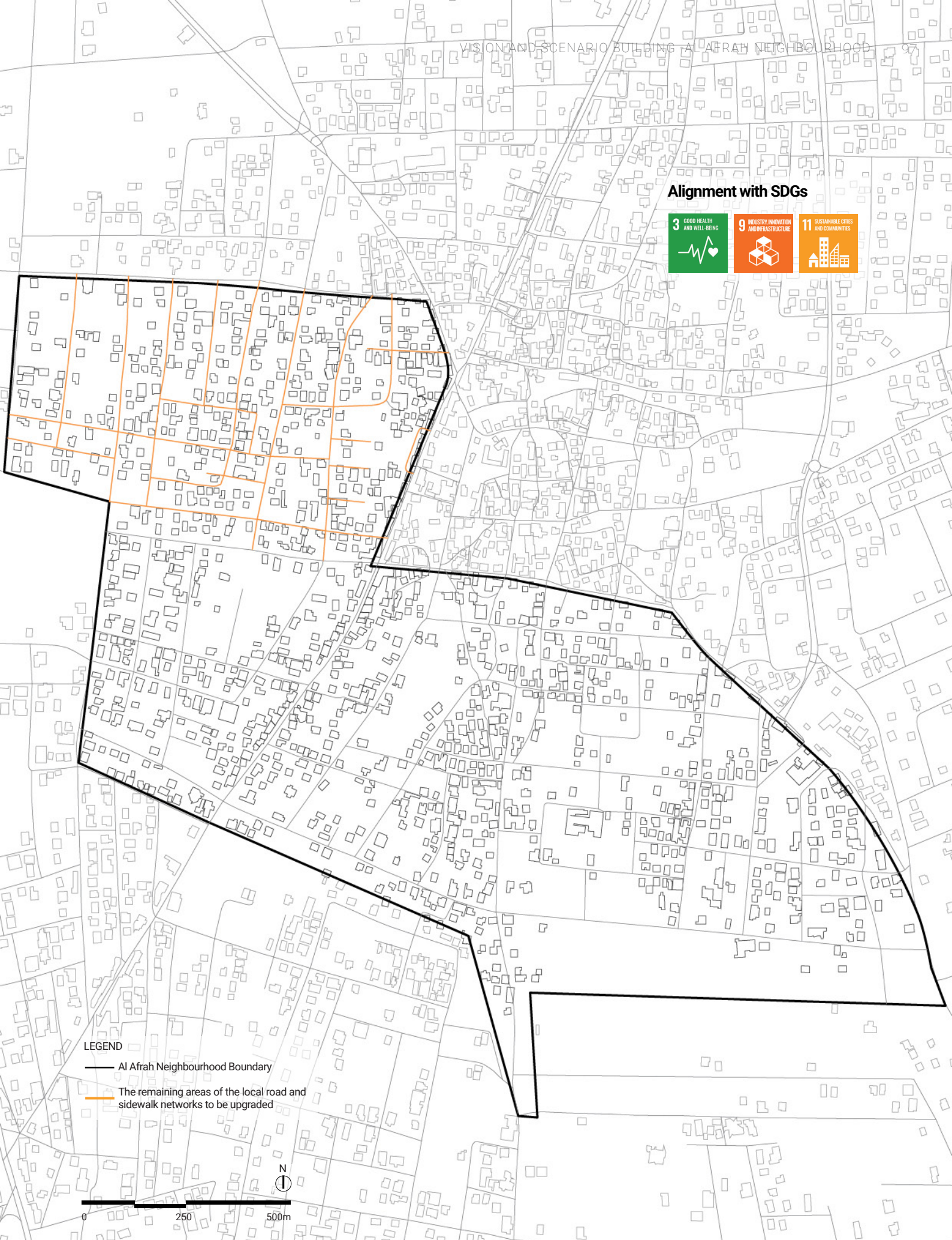


Fig. 46: The Remaining Areas of the Local Road and Sidewalk Networks to be upgraded in the Al Afrah Neighbourhood

CONSTRUCTING A NEW SCHOOL PROJECT*

	Actions	Responsible Entity	Year (Quarters)
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities.	Ministry of Education (MoE)	2028 2029 2030 2031 2032
02	Prepare the design RFP for the bidding process and announce the bid. The RFP must include developing the concept and detailed designs.	MoE	2028 2029 2030 2031 2032
03	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	MoE	2028 2029 2030 2031 2032
04	Develop the concept design.	Consultant under the supervision of MoE	2028 2029 2030 2031 2032
05	Finalize the detailed design drawings and obtain the needed approvals.	MoE & Consultant	2028 2029 2030 2031 2032
06	Prepare the construction RFP for the bidding process and announce the bid. The RFP must include the required construction details.	MoE & Consultant	2028 2029 2030 2031 2032
07	Hold the bid evaluation and selection and, accordingly, negotiate and award the contract.	MoE & Consultant	2028 2029 2030 2031 2032
08	Implementation of the construction work	Contractor under the supervision of the MoE & Consultant	2028 2029 2030 2031 2032
09	Operate new school	MoE	2028 2029 2030 2031 2032

* The MoE can study the possibility of establishing a school with a small area or kindergarten on the land owned by the Ministry.

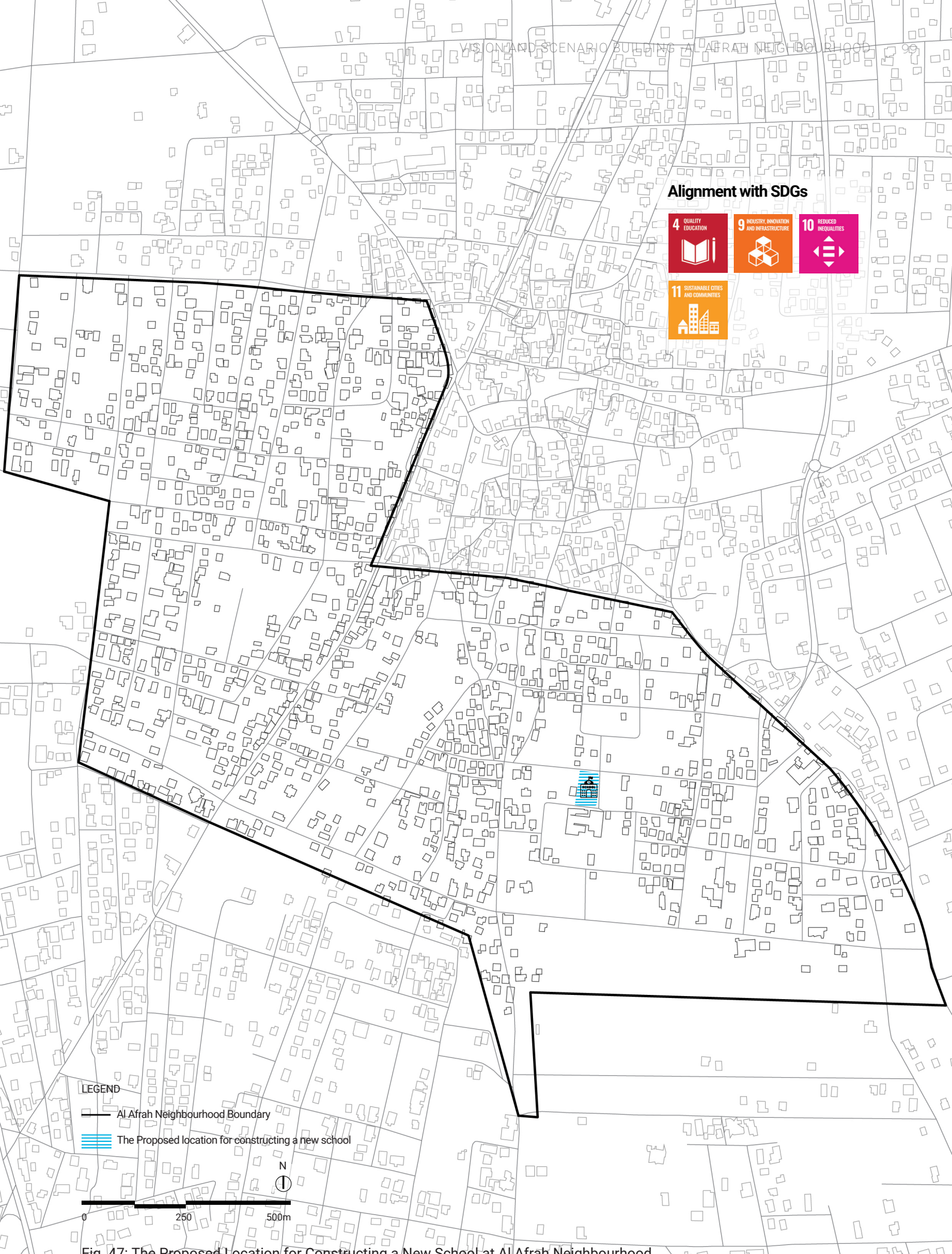


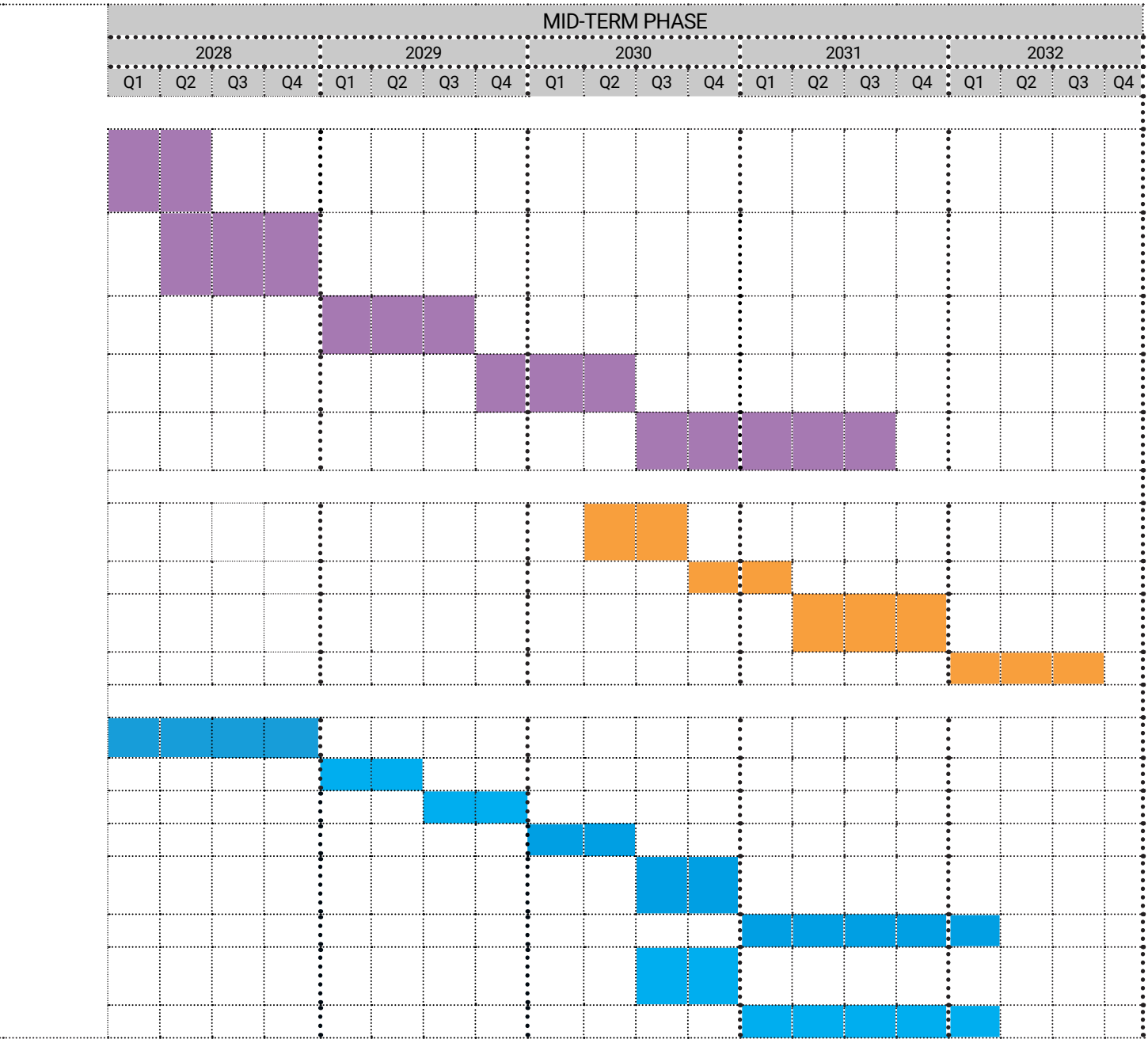
Fig. 47: The Proposed Location for Constructing a New School at Al Afrah Neighbourhood

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

NO.	PROJECT /ACTION
Upgrading the Sewerage Network in Remaining Areas Project	
01	Prepare the project budget, mobilize resources, prepare the detailed work plan and identify the roles and responsibilities for the design and implementation of the network and the existing interconnection points
02 & 03	Preparing the design RFP of the design and supervision of the implementation of sewerage networks, conveyor lines, and the expansion of the purification plants hold the bid evaluation, and select consultant
04 & 05	Conduct technical assessment, prepare and finalize the detailed design drawings for the sewerage networks in Al Afrah neighbourhood, and obtain the needed approvals
06 & 07	Prepare the construction RFP for the bidding process, hold the bid evaluation, & select contractor
08	Implementation of the construction work and all necessary conveyor lines and expansion of the purification plant to which it is connected (if necessary)*
Upgrading the Local Road and Sidewalk Networks in the Remaining Areas at Neighbourhood Level	
01	Prepare the project budget, mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities
02	Develop the concept and detailed design for the identified local 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*
Constructing a New School 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	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
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

* Actions to be coordinated and aligned due to spatial overlap
** The MoE can study the possibility of establishing a school with a small area or kindergarten on the land owned by the Ministry.

Table. 4: Action plan for the mid term phase (2028-2032).


MID-TERM PHASE
2028
2029
2030
2031
2032
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4

Long-Term Phase (2033 -2037)

The identified project that can be implemented within the long-term phase of this optimal scenario action plan is the Constructing Two New Schools.

This section covers the actions needed for the project and the implementation sequence to follow during the period between 2033 and 2037.

Throughout the year 2033, the budget should be prepared to start mobilizing resources and seeking a financier/donor to support the implementation of the above mentioned project. During this phase, the needed land plots for the schools should be secured.

The pre-construction phase for constructing the two schools can begin in 2034 simultaneously, if needed resources are available. Otherwise, one school can be constructed at a time following the same steps explained in the next pages. 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 2036 and 2037. The constructed schools should be operational in 2037.

The following page present the breakdown of actions and the proposed timeframe for the new schools construction project.

ICON	PROJECT	LONG TERM PHASE (2033-2037)				
		2033	2034	2035	2036	2037
	Constructing Two New Schools					

Fig. 48: The Project Implementation Time-line of the Long-term Phase

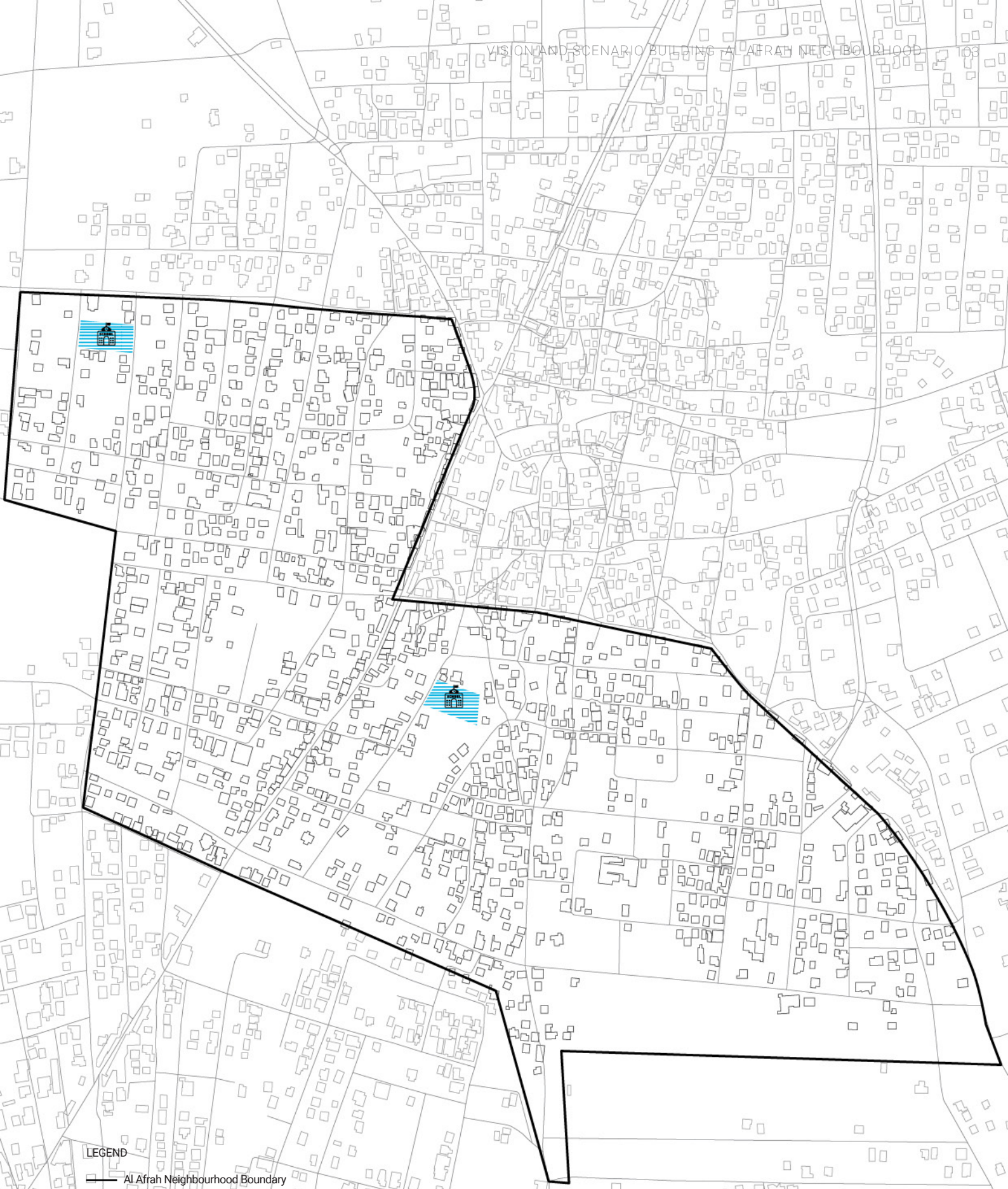
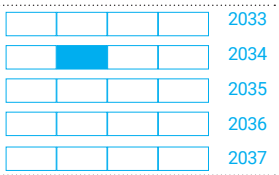
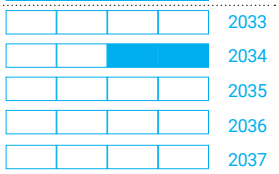
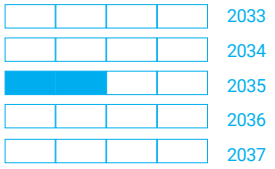
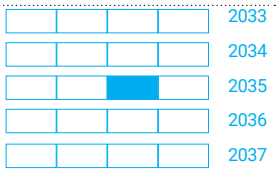
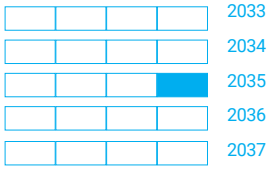
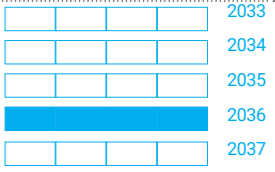


Fig. 49: Projects to be Implemented throughouth the Long-term Phase

CONSTRUCTING TWO NEW SCHOOLS PROJECT

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

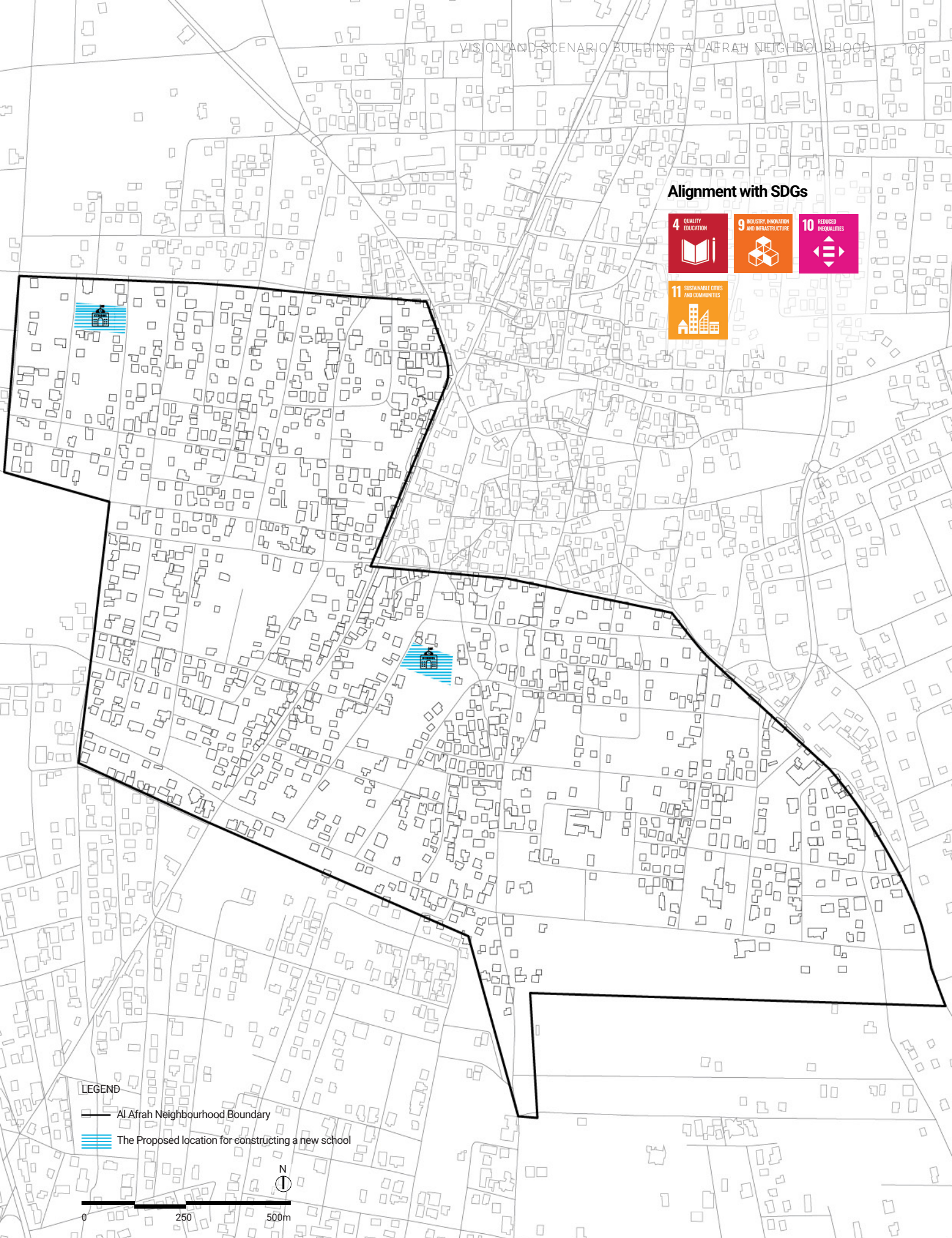
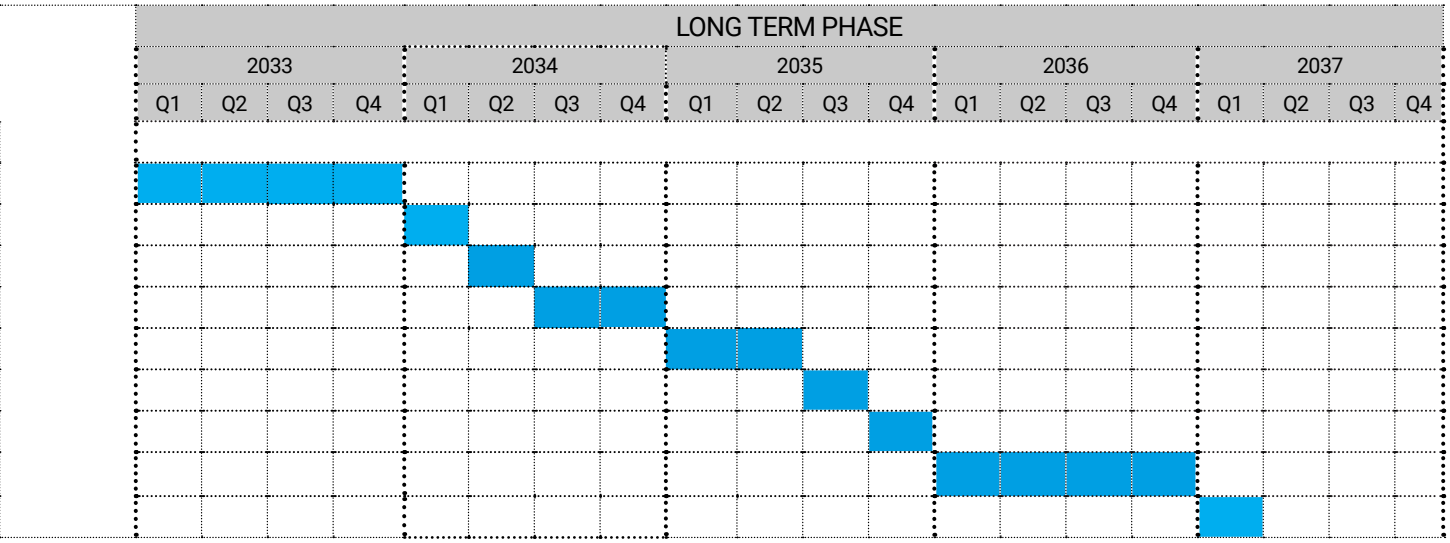


Fig. 50: The Proposed Location for Constructing Two New Schools at Al Afrah Neighbourhood

- ## Long Term Phase Actions/Time Frame

NO.	PROJECT /ACTION
Construction of Two New Schools Project	
01	Mobilize resources, prepare the detailed work plan, and identify the roles and responsibilities
02	Prepare the design RFP for the bidding process
03	Hold the bid evaluation, and select consultant
04	Develop the concept design for the two schools
05	Finalize the detailed design drawings and obtain needed approvals
06	Prepare the construction RFP for the bidding process
07	Hold the bid evaluation, & select contractor
08	Implementation of the construction work
09	Operate new schools

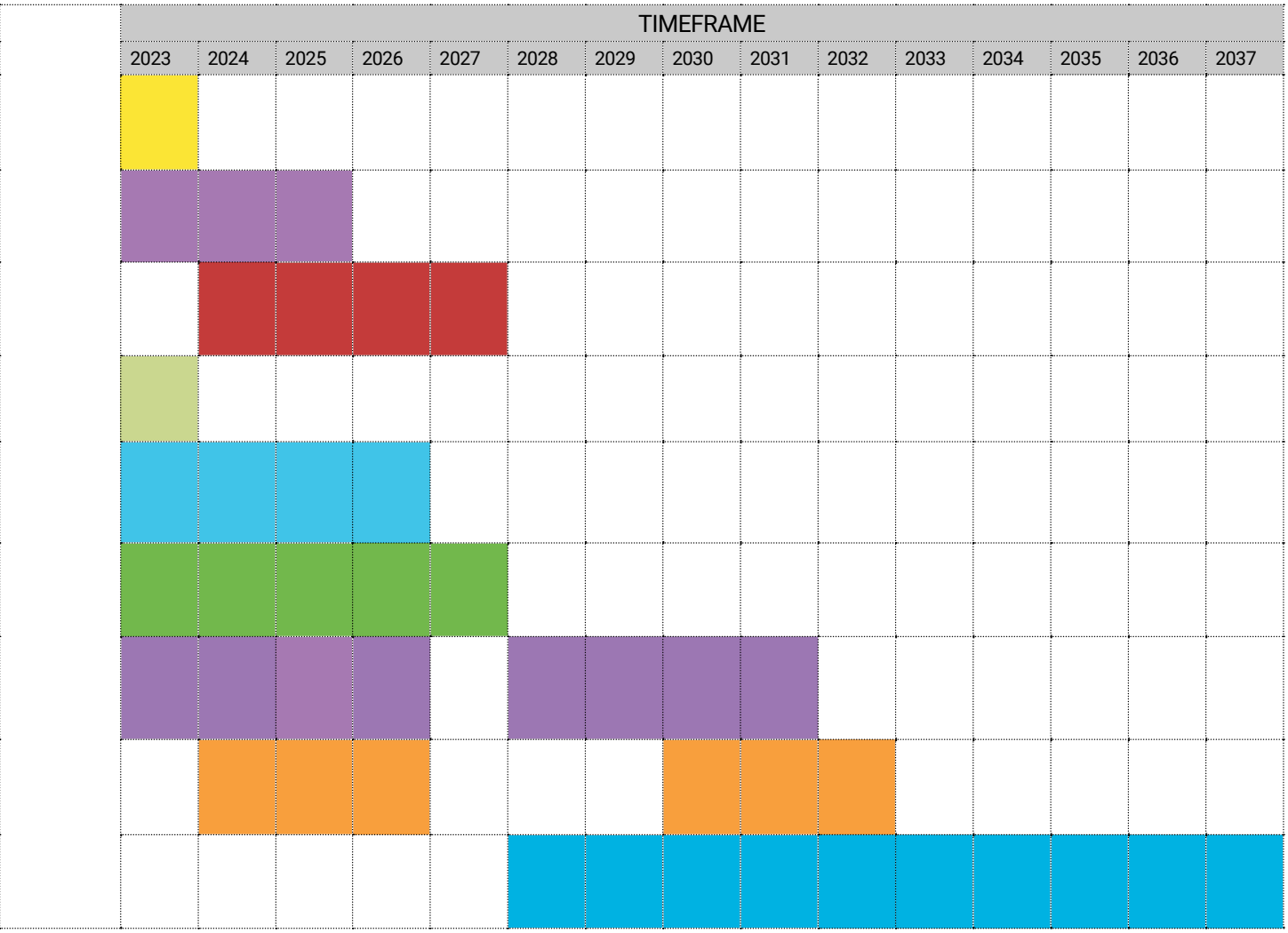
Table. 5: Action plan for the long term phase (2033-2037).


LONG TERM PHASE
2033
2034
2035
2036
2037
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4

Al Afrah Action Plan/Timeframe

ICON	PROJECT
	Upgrading of Al Sarih Comprehensive Health Centre
	Constructing Public Transport Bus Stops
	Upgrading the Main Road and Sidewalk Networks in the Identified Areas at District Level
	Updating the Land-use Plan
	Upgrading the Al Sarih Elementary Boys' School
	Public Parks Development
	Upgrading the Sewerage Network
	Upgrading the Local Road and Sidewalk Networks at Neighbourhood Level
	Constructing Three New Schools

Table. 6: Al Afrah Action Plan/Timeframe


TIMEFRAME
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037

05

ENDNOTES

1 Building Footprints for Al Afrah Neighoruhood, 2022, Retrieved from https://github.com/microsoft/GlobalMLBuildingFootprints

2 Jordan in Figures 2019, Department of Statistics, 2019, Retrieved from http://dosweb.dos gov.jo/DataBank/JordanInFigures/Jorinfo_2019.pdf

3 "29.5 million USD is Jordan's losses due to natural disasters in 30 years", Al Ghad News, 2019, Retrieved from https://alghad.com/29-5-%D9%85%D9%84%D9%8A%D9%88%D9%86-%D8%AF%D9%88%D9%84%D8%A7%D8%B1-%D8%AE%D8%B3%D8%A7%D8%A6%D8%B1-%D8%A7%D9%84%D8%A3%D8%B1%D8%AF%D9%86-%D8%AC-%D8%B1%D8%A7%D8%A1-%D8%A7%D9%84%D9%83%D9%88%D8%A7%D8%B1/

4 7th Water Development Report: Climate change and Disaster Risk Reduction in the Arab Region, ESCWA, 2018, Retrieved from https://www.preventionweb.net/files/61899_escwawaterdevelopmentreport7english.pdf

5 Urban Sprawl Impact on Agricultural Lands in Irbid City, Jordan, IISTE.ORG_Journal of Environment and Earth Science Vol 7, 2017, Retrieved from https://www.researchgate.net/publication/315839313_Urban_Sprawl_Impact_on_Agricultural_Lands_in_Irbid_City_Jordan

6 Ibid.

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

8 22.8 Unemployment Rate during the first Quarter of 2022, Department of Statistics, 2022, Retrieved from http://dos.gov.jo/dos_home_e/main/archive/Unemp/2022/Emp_Q12022.pdf

9 22.8 Unemployment Rate during the first Quarter of 2022, Department of Statistics, 2022, Retrieved from http://dos.gov.jo/dos_home_e/main/archive/Unemp/2022/Emp_Q12022.pdf

10 Strategic Local Plan for GIM 2019-2023, GIM, 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
HIGH URGENCY = 5	No = 0	Medium urgency = 2			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 =5	high impact=10			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 =10	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

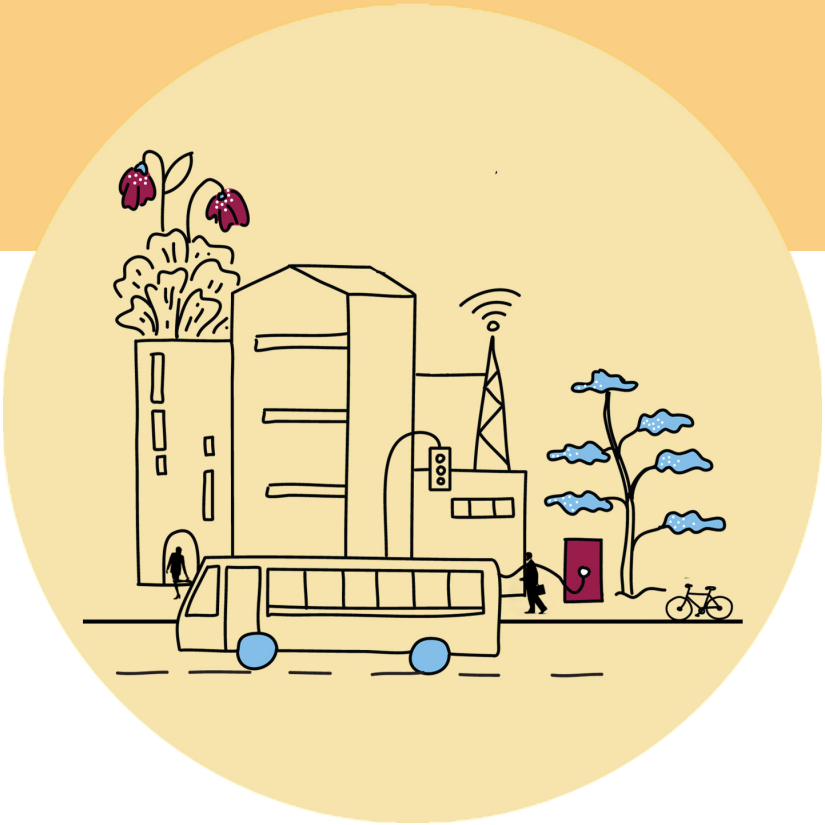
08

ANNEX C: INVESTMENT CARDS

Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life in Al Afrah Neighbourhood of Irbid

Investment Card:
Upgrading the Main Road and Sidewalk Network at District Level



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

بلدية اربد الكبرى
Greater Irbid Municipality

General Information

PROJECT TITLE	Upgrading the Main Road and Sidewalk Network at District Level
PARTNERS	Greater Irbid Municipality (GIM)
TIME FRAME	4 Years
LOCATION	Al Afrah neighbourhood, Al Sarih, Irbid, Jordan
ESTIMATED BUDGET	7,230,000 JD 10,218,400 US Dollars
SDGs ALIGNMENT	
TARGET BENEFICIARY GROUP	**Direct Beneficiaries:** The total population of the Al Afrah neighborhood, including the host community and refuges (around 14,000 residents currently). As well as residents of adjacent neighbourhoods, commuters using these main roads, and business owners on those main roads.
CONTACT PERSON	Aya Hammad ayah.hammadmohd@un.org

Upgrading the Main Road and Sidewalk Network at District Level

PROBLEM IDENTIFICATION

The field investigation of the Al Afrah neighbourhood evaluated the existing road and sidewalk infrastructure conditions, and identified critical areas in need of rehabilitation. During consultations, the residents validated these results and further emphasized that the existing sidewalk and road networks are deteriorated, and unsafe, affecting their mobility and their accessibility to basic services. The main roads are in deteriorating condition and lack proper sidewalks which affects the resdents' access to basic services and connectivity between neighbourhoods.

PROJECT OBJECTIVE

The project aims to improve the main roads and sidewalk infrastructure within Al Afrah Neighbourhood and the continuation of these roads to neighbouring areas, improving the connectivity of neighbourhoods along main routes. Total road lengths are approximately 9.64km

BENEFICIARIES

Direct Beneficiaries: The total population of the Al Afrah neighborhood, including the host community and refuges (around 14,000 residents currently). As well as residents of adjacent neighbourhoods, commuters using these main roads, and business owners on those main roads.

PROJECT IMPACT

The project will enhance connectivity, promote walkability and increase pedestrian safety while commuting for all residents and visitors. This project is aligned with the Greater Irbid Municipality's Strategic Plan for 2019-2023 and supports the achievement of the 2030 Sustainable Development Agenda, specifically SDGs 3, 9, and 11.

PROJECT PARTNER

- **Greater Irbid Municipality (GIM):** Owner; GIM will be responsible for the maintenance and sustainability of the project.
- **Donor/financier:** A funding entity(s) is needed to implement the project on ground.

PROJECT LIFE CYCLE

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

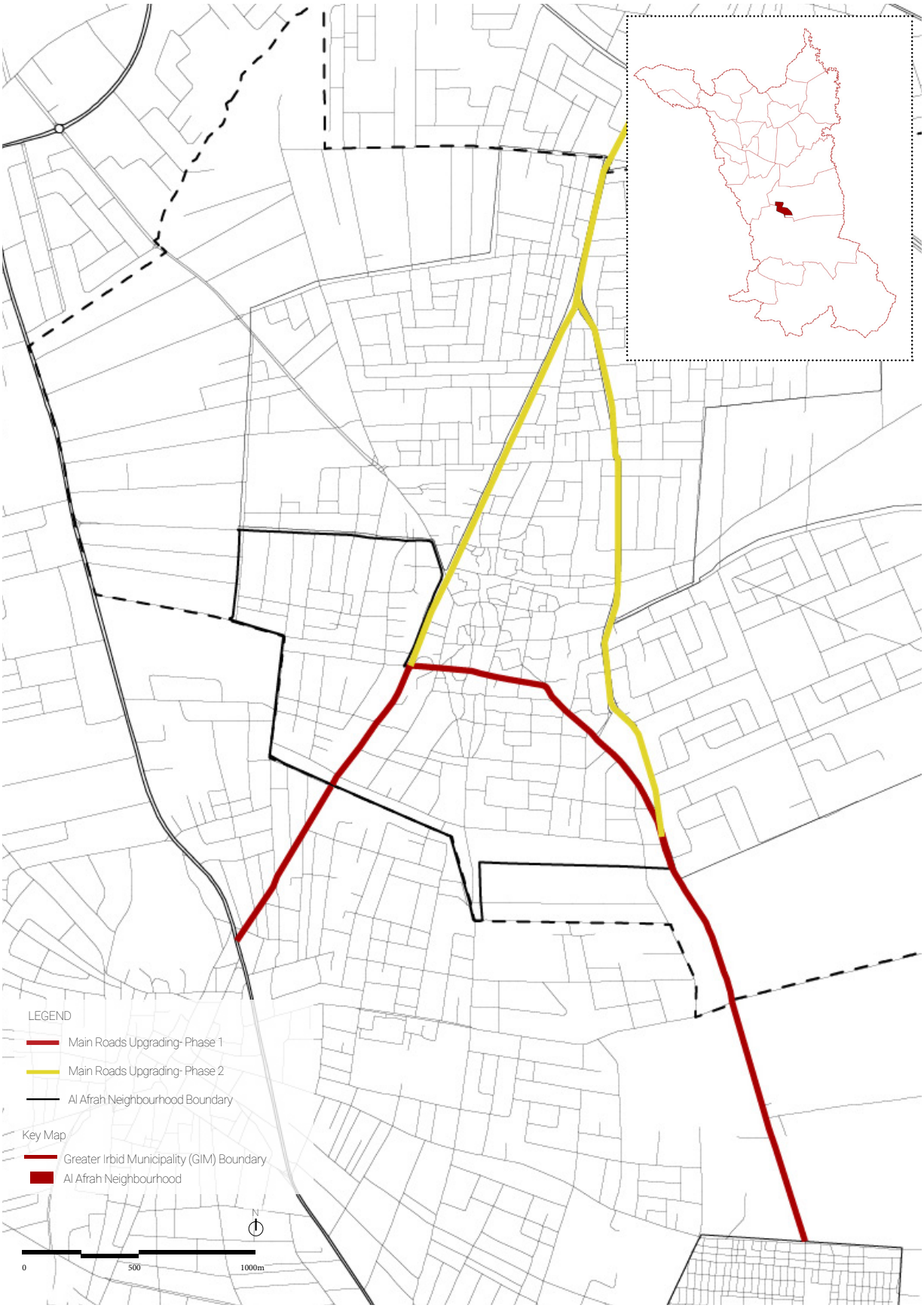
PROJECT FINANCIALS

Total Cost Per Meter: 37.5 JD/ m^2 = 53 US Dollars/m^2 *
Total Road Lengths: 9,640 m
Total Road Area: 192,800 m^2
Total Cost: 7,230,000 JD / 10,218,400 US Dollars*

*(these are preliminary estimates)

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


LEGEND
Main Roads Upgrading- Phase 1
Main Roads Upgrading- Phase 2
Al Afrah Neighbourhood Boundary
Key Map
Greater Irbid Municipality (GIM) Boundary
Al Afrah Neighbourhood
N
0
500
1000m

Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life in Al Afrah Neighbourhood of Irbid

Investment Card:
Upgrading Al Sarih Elementary Boys' School

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Greater Irbid Municipality

General Information

PROJECT TITLE	Upgrading Al Sarih Elementary Boys' School
PARTNERS	Ministry of Education (MoE)
TIME FRAME	4 Years
LOCATION	Al Afrah neighbourhood, Al Sarih, Irbid, Jordan
ESTIMATED BUDGET	500,000 JD 705,000 US Dollars
SDGs ALIGNMENT	
TARGET BENEFICIARY GROUP	Direct: The local community of Al Afrah, and the neighboring communities
CONTACT PERSON	Aya Hammad ayah.hammadmohd@un.org

Upgrading Al Sarih Elementary Boys' School

PROBLEM IDENTIFICATION

There are two public schools in Al Afrah neighbourhood, Ruqaia Mixed Primary School and Al Sarih Elementary Boys' School, which only serve 19% of the current student population in the neighbourhood. According to the spatial analysis conducted and the Ministry of Education's recommendations, the proposed action is to upgrade the Al Sarih Elementary Boys' School by rehabilitating the existing building and expanding it by two additional floors, as per the regulations by MoE, to accommodate for an additional 500 students, and increase the served student population to 32%.

PROJECT OBJECTIVE

To enhance the accessibility of students to public schools and ensure safe educational environment by providing adequate school buildings.

BENEFICIARIES

Direct beneficiaries include the current 533 students of the school as well as the 500 students which the school upgrades will accommodate for, and their immediate families which include around 2,650 people.

PROJECT IMPACT

The project will serve students of the Afrah Neighbourhood and the nearby areas, enhance accessibility, increase literacy, and enforce the integration values among host and refugees' populations. This project will support the achievement of the SDGs 4, 9, 10 and 11.

PROJECT PARTNER

- **Ministry of Education (MoE)**: Owner and implementer; MoE will be responsible for the implementation, maintenance, and sustainability of the project.
- **Donor/financier**: A funding entity(s) is needed to fund the implementation of the project on ground.

PROJECT LIFE CYCLE

Feasibility Study, Survey Work, Concept Design, Detailed Design, Construction, Operation and Maintenance

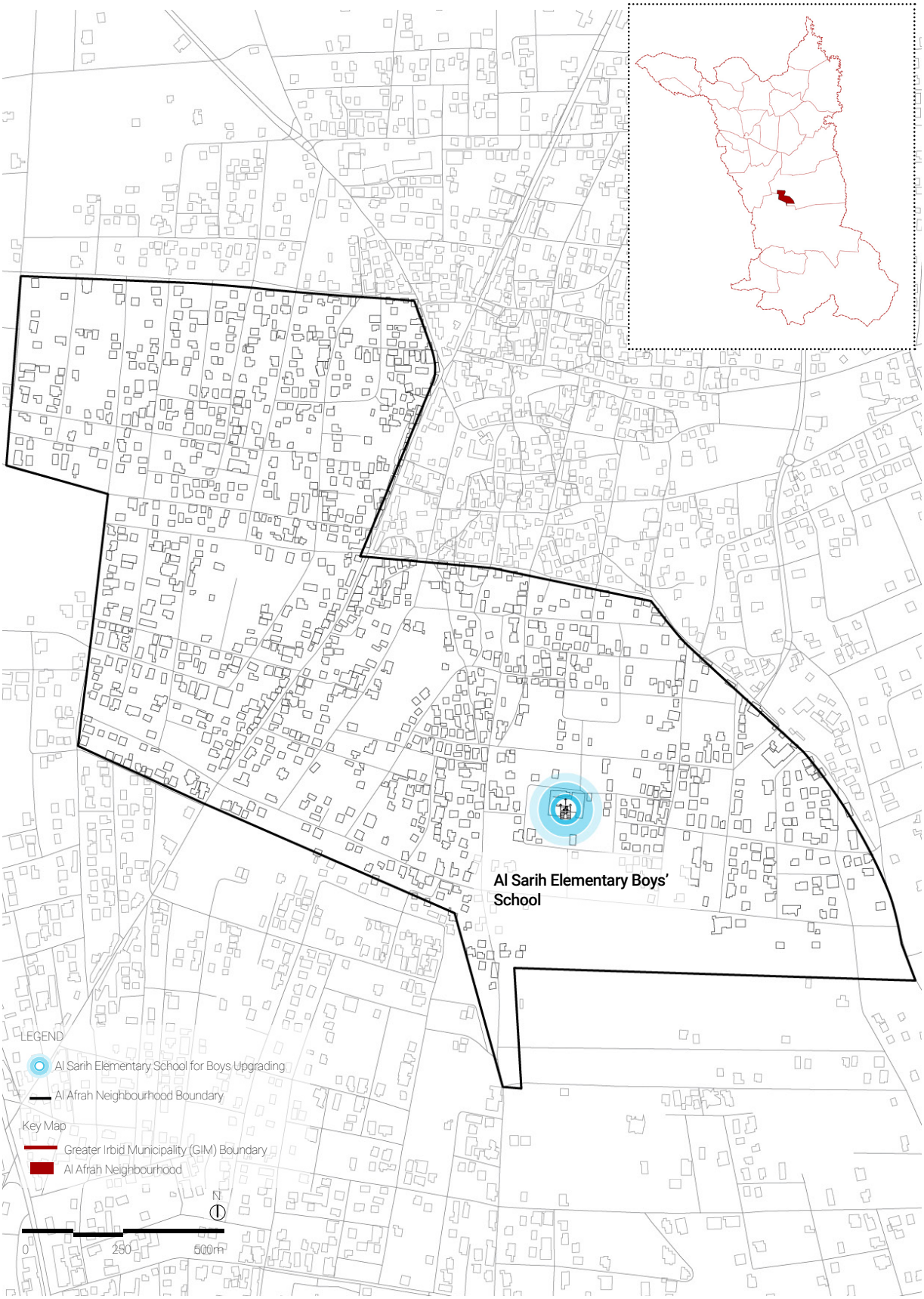
PROJECT FINANCIALS

Total Cost: 500,000 JD/ 705,000 US Dollars

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

- Possible partial coverage by the Ministry of Education budget
- External fund is needed

Investment needs: Feasibility Study, Survey Work, Concept Design, Detailed Design, Construction, Operation and Maintenance.


Al Sarih Elementary Boys' School
LEGEND
Al Sarih Elementary School for Boys Upgrading
Al Afrah Neighbourhood Boundary
Key Map
Greater Irbid Municipality (GIM) Boundary
Al Afrah Neighbourhood
N
0
250
500m

Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life in Al Afrah Neighbourhood of Irbid

Investment Card:
Developing Safe, Inclusive, and Accessible Public Parks

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بلدية اربد الكبرى
Greater Irbid Municipality

General Information

PROJECT TITLE	Developing Safe, Inclusive, and Accessible Public Parks
PARTNERS	Greater Irbid Municipality (GIM)
TIME FRAME	4 Years
LOCATION	Al Afrah neighbourhood, Al Sarih, Irbid, Jordan
ESTIMATED BUDGET	Total Cost for 2 public parks: 196,500 JD / 277,500 US Dollars*
SDGs ALIGNMENT	
TARGET BENEFICIARY GROUP	Direct Beneficiaries: The total population of Al Afrah neighborhood, including the host community and refuges (around 14,000 residents currently). Indirect Beneficiaries: Residents and visitors from nearby areas that can benefit from the parks.
CONTACT PERSON	Aya Hammad ayah.hammadmohd@un.org

Public Parks Development

PROBLEM IDENTIFICATION

There are currently no parks or recreational facilities in the Al Afrah neighbourhood, nor in the nearby neighbourhoods. This has resulted in children playing in the streets. As the neighbourhood continues to grow, public spaces have never been so vital in maintaining the social cohesion and enhancing the quality of human interactions through the physical and socioeconomic connectivity of communities.

PROJECT OBJECTIVE

The project aims to create two public parks on land owned by public entities, in Al Afrah neighbourhood in Irbid, which currently lacks any kind of public space. The project aims to serve the local community with recreational facilities in different areas, that will be inclusive and accessible to the whole community. This project will build on UN-Habitat's global and extensive experience on participatorily developing public spaces to address community needs. The areas of the two proposed sites are 1) 1275 m² and 2) 500 m², as shown in the map.

BENEFICIARIES

Direct Beneficiaries: The total population of the Al Afrah neighborhood, including the host community and refuges (around 14,000 residents currently).
Indirect Beneficiaries: Residents and visitors from nearby areas that can benefit from the parks.

PROJECT IMPACT

The project will assist in creating a public space network and will increase the city's vital green, public space areas. The project will serve residents with recreational activities, green space, and spaces for social cohesion between refugees and host community as well as marketplaces. On a wider scale, there are socio-ecological benefits for the city in increasing its socially active and green areas. This project is aligned with the Greater Irbid Municipality's Strategic Plan for 2019-2023 and supports the achievement of the 2030 Sustainable Development Agenda, specifically SDGs 3, 9, 10, 11, and 13.

PROJECT PARTNER

- **Greater Irbid Municipality (GIM):** Owner; GIM will be responsible for the maintenance and sustainability of the project.
- **Donor/financier:** A funding entity(s) is needed to implement the project on ground.

PROJECT LIFE CYCLE

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

PROJECT FINANCIALS

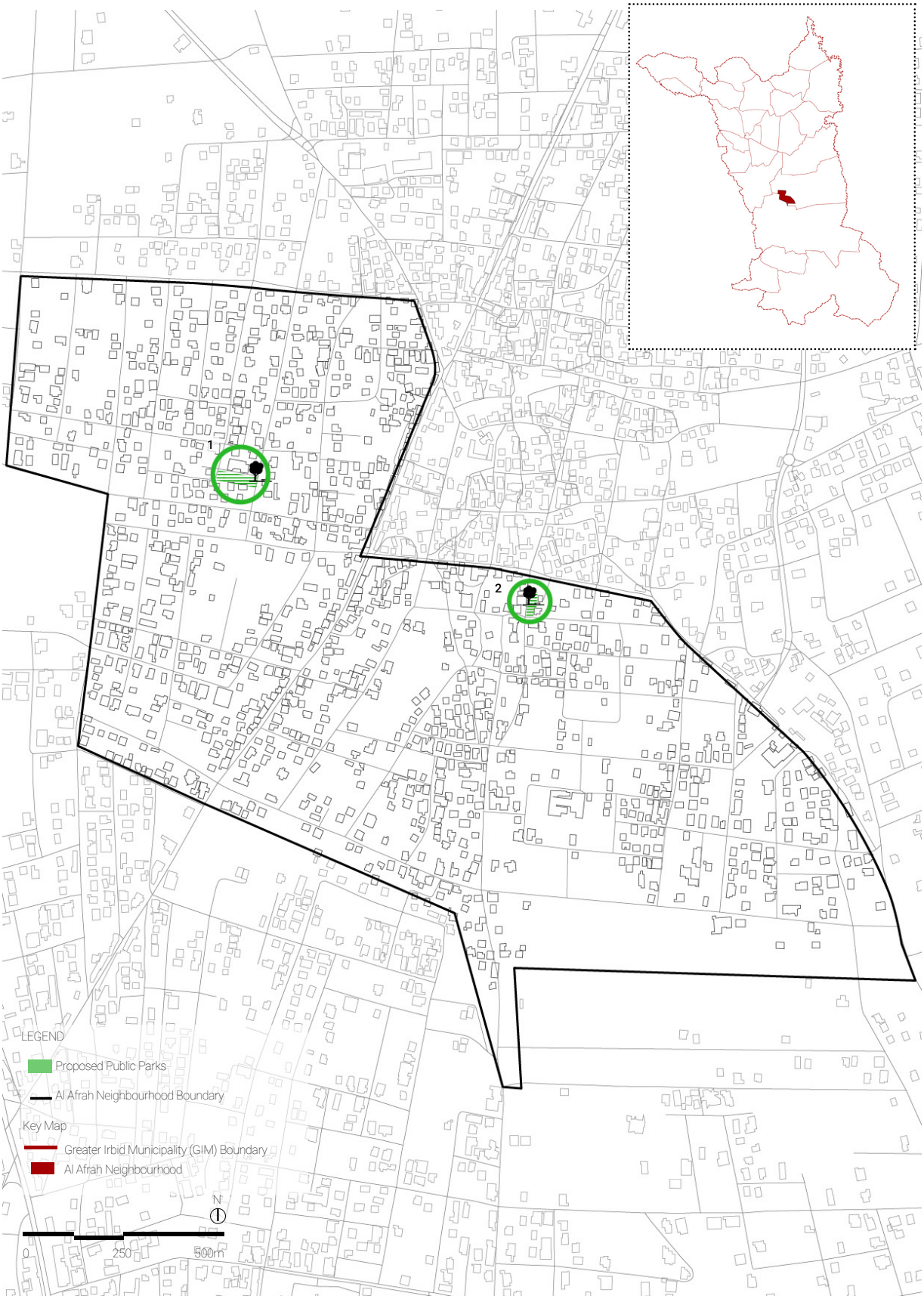
Total Cost Per Meter: 131 JD/m² = 185 US Dollars/m² *
Toal Area of 2 public parks: 1500 m²
Total Cost for 2 public parks: 196,500 JD / 277,500 US Dollars*

*(these are preliminary estimates)

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

- External fund is needed

Investment needs: Survey work, Concept Development, Detailed Design Development, Construction, and Regular Maintenance.


1
2
LEGEND
Proposed Public Parks
Al Afrah Neighbourhood Boundary
Key Map
Greater Irbid Municipality (GIM) Boundary
Al Afrah Neighbourhood
N
0
250
500m

Inspiration: Safe, Inclusive, and Accessible Public Parks

Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life in Al Afrah Neighbourhood of Irbid

Investment Card: Upgrading the Sewerage Network

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Greater Irbid Municipality

General Information

PROJECT TITLE	Upgrading the Sewerage Network
PARTNERS	Greater Irbid Municipality (GIM)
TIME FRAME	2 Years
LOCATION	Al Afrah neighbourhood, Al Sarih, Irbid, Jordan
ESTIMATED BUDGET	4,654,750 JD 6,516,650 US Dollars
SDGs ALIGNMENT	
TARGET BENEFICIARY GROUP	**Direct Beneficiaries:** The total population of the Al Afrah neighborhood, including the host community and refuges (around 14,000 residents currently).
CONTACT PERSON	Aya Hammad ayah.hammadmohd@un.org

Upgrading the Sewerage Network

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 2022. The sufficiency of the existing water and sewerage networks were analysed, whereby high load means low network sufficiency. Accordingly, the assessment identified critical high-load areas that need immediate action and upgrading to accommodate the existing and future capacity of the neighbourhood as a proactive measure. The Yarmouk Water Company, who is incharge of the water and sewrage networks in Irbid highlighted that through a JICA funded project, the water networks in the neighbourhood will be upgraded. To make efficient use of resources, it is suggested that the sewerage network in the same areas be upgraded as well as a proactive measure

PROJECT OBJECTIVE

The project aims to improve the efficiency of the existing sewerage network in the identified areas within the Al Afrah neighbourhood. This will improve access to adequate sewerage services to the current and forecasted population of Al Afrah neighbourhood.

BENEFICIARIES

Direct beneficiaries include the current and forecasted residents of Al Afrah, including the host community and refugees; around 14,000 residents currently.

PROJECT IMPACT

Upgrading the sewerage network will enhance the efficiency of the sewerage network in the neighbourhood by replacing pipes with larger diameter ones which are able to better cope with the current and future load. This project 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.
- **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

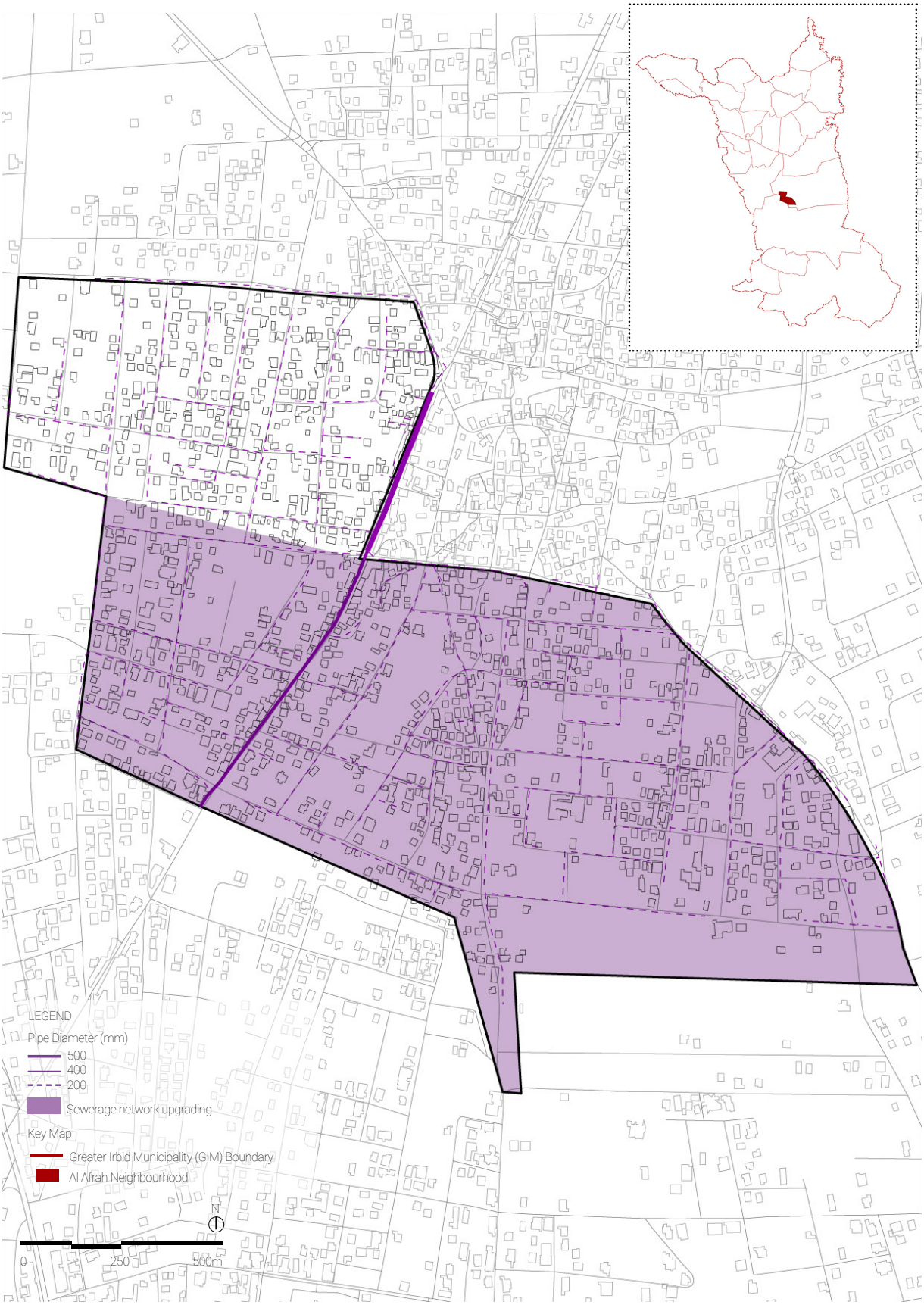
Total cost and sum for the sewerage network upgrades:

- Total Cost Per Meter: 250 JD/m= 350 USD/m*
- Total Pipe Length: around 18,619 meters
- Total Cost for the replacement of all pipes in the identified areas to 300 mm pipes: 4,654,750 JD/ 6,516,650 US Dollars*

*(these are preliminary estimates)

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

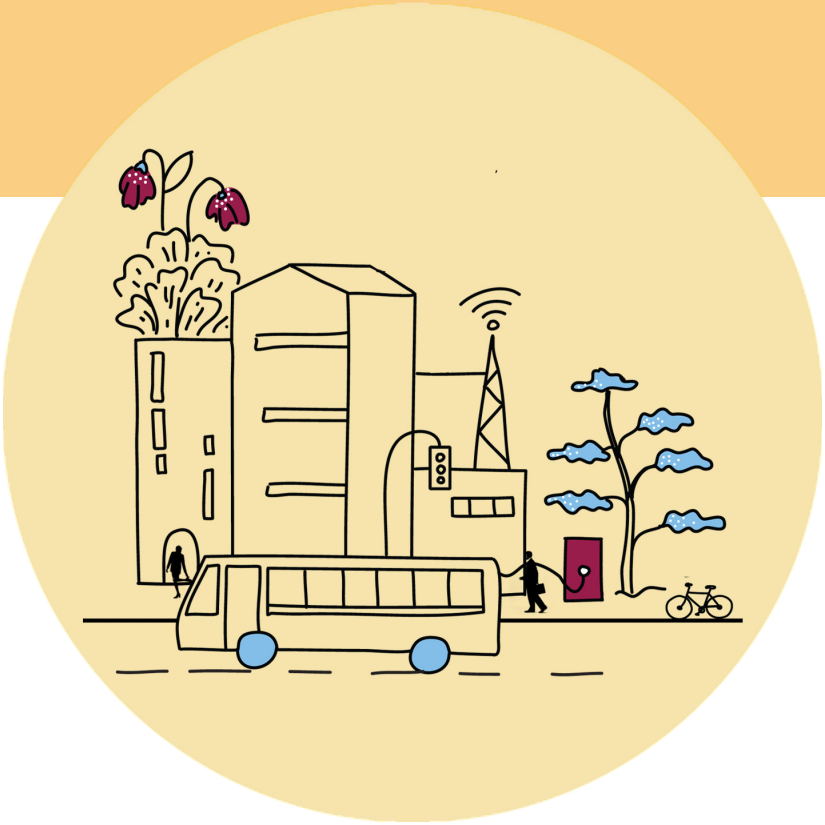
Investment needs: Detailed studies, Construction, Regular maintenance


LEGEND
Pipe Diameter (mm)
500
400
200
Sewerage network upgrading
Key Map
Greater Irbid Municipality (GIM) Boundary
Al Afrah Neighbourhood
N
0
250
500m

Urban Planning & Infrastructure in Migration Contexts-Jordan

Unleashing the Potential for a Better Quality of Life in Al Afrah Neighbourhood of Irbid

Investment Card:
Upgrading the Road and Sidewalk Network in the Identified Areas at Neighbourhood Level



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Greater Irbid Municipality

General Information

PROJECT TITLE	Upgrading the Road and Sidewalk Network in the Identified Areas at Neighbourhood Level
PARTNERS	Greater Irbid Municipality (GIM)
TIME FRAME	2 Years
LOCATION	Al Afrah neighbourhood, Al Sarih, Irbid, Jordan
ESTIMATED BUDGET	6,926,138 JD 9,788,941 US Dollars
SDGs ALIGNMENT	
TARGET BENEFICIARY GROUP	**Direct Beneficiaries:** The total population of the Al Afrah neighborhood, including the host community and refuges (around 14,000 residents currently). As well as visitors of the neighbourhood.
CONTACT PERSON	Aya Hammad ayah.hammadmohd@un.org

Upgrading the Road and Sidewalk Network in the Identified Areas at Neighbourhood Level

PROBLEM IDENTIFICATION

The field investigation of the Al Afrah neighbourhood evaluated the existing road and sidewalk infrastructure conditions, and identified areas in need of rehabilitation. During consultations, the residents validated these results and further emphasized that the existing sidewalk and road networks are deteriorated, and unsafe, affecting their mobility and their accessibility to basic services. Most roads within the neighbourhood are in need of rehabilitation and most of them lack sidewalks which affects pedestrian safety and general walkability of the neighbourhood. Since there is already a JICA funded project to upgrade the water network in the area, To make efficient use of resources, it is suggested to upgrade the road and sidewalk network at the same time and in coordination with the water and sewerage network upgrades.

PROJECT OBJECTIVE

The project aims to improve the road and sidewalk infrastructure within Al Afrah neighbourhood and the continuation of these roads to neighbouring areas, improving the connectivity and walkability of the neighbourhood. Total road lengths are approximately 18,619 m

BENEFICIARIES

Direct Beneficiaries: The total population of the Al Afrah neighborhood, including the host community and refuges (around 14,000 residents currently). As well as visitors of the neighbourhood.

PROJECT IMPACT

The project will enhance connectivity, promote walkability and increase pedestrian safety while commuting for all residents and visitors. This project is aligned with the Greater Irbid Municipality's Strategic Plan for 2019-2023 and supports the achievement of the 2030 Sustainable Development Agenda, specifically SDGs 3, 9, and 11.

PROJECT PARTNER

- **Greater Irbid Municipality (GIM):** Owner; GIM will be responsible for the maintenance and sustainability of the project.
- **Donor/financier:** A funding entity(s) is needed to implement the project on ground.

PROJECT LIFE CYCLE

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

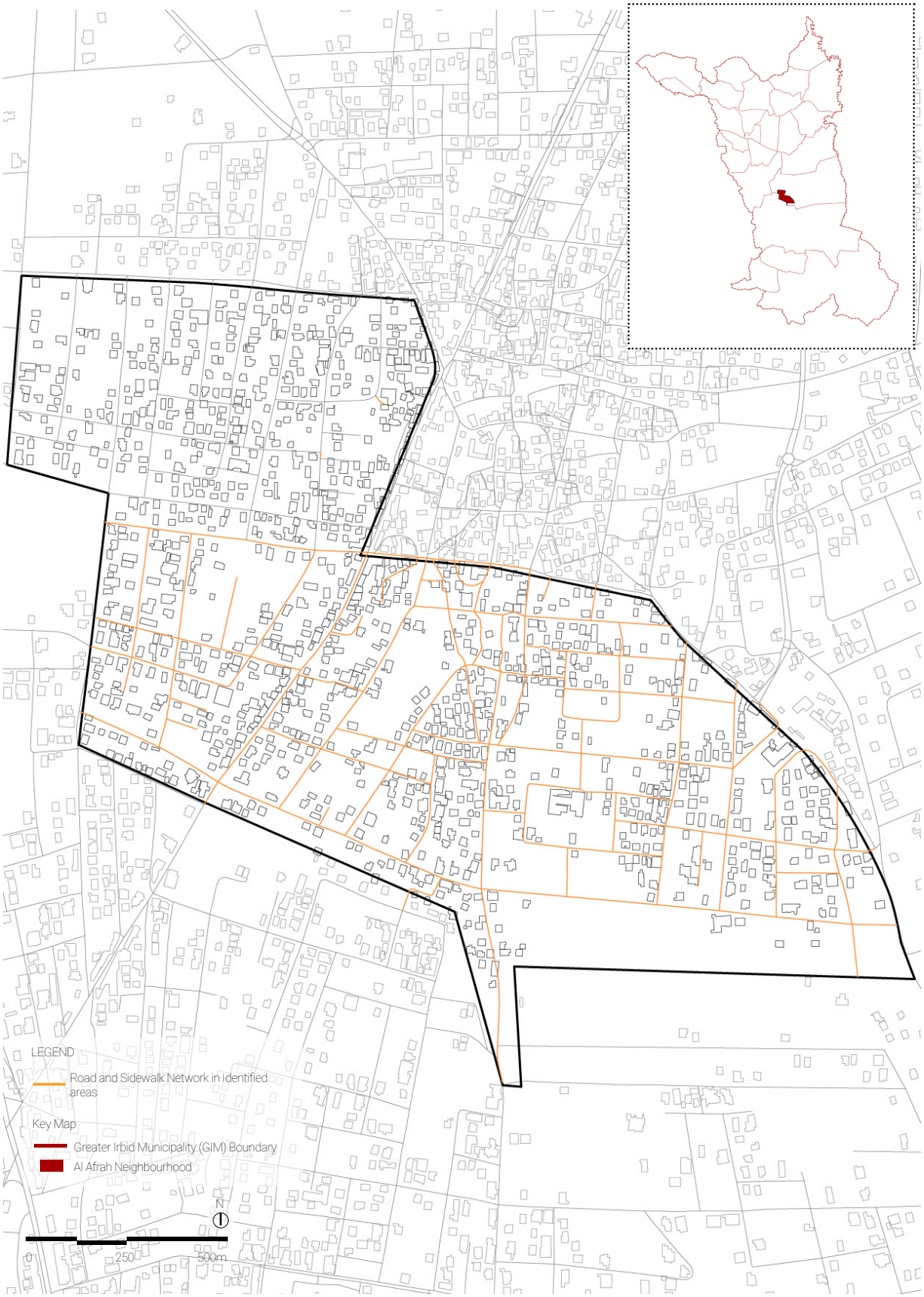
PROJECT FINANCIALS

Total Cost Per Meter: 37.5 JD/ m^2 = 53 US Dollars/m^2 *
Total Road Area: 184,697 m^2
Total Cost: 6,926,138 JD / 9,788,941 US Dollars*

*(these are preliminary estimates)

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


LEGEND
Road and Sidewalk Network in identified areas
Key Map
Greater Irbid Municipality (GIM) Boundary
Al Afrah Neighbourhood
N
0
250
500m

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For more information, you can download the Irbid Spatial Profile here:

Irbid