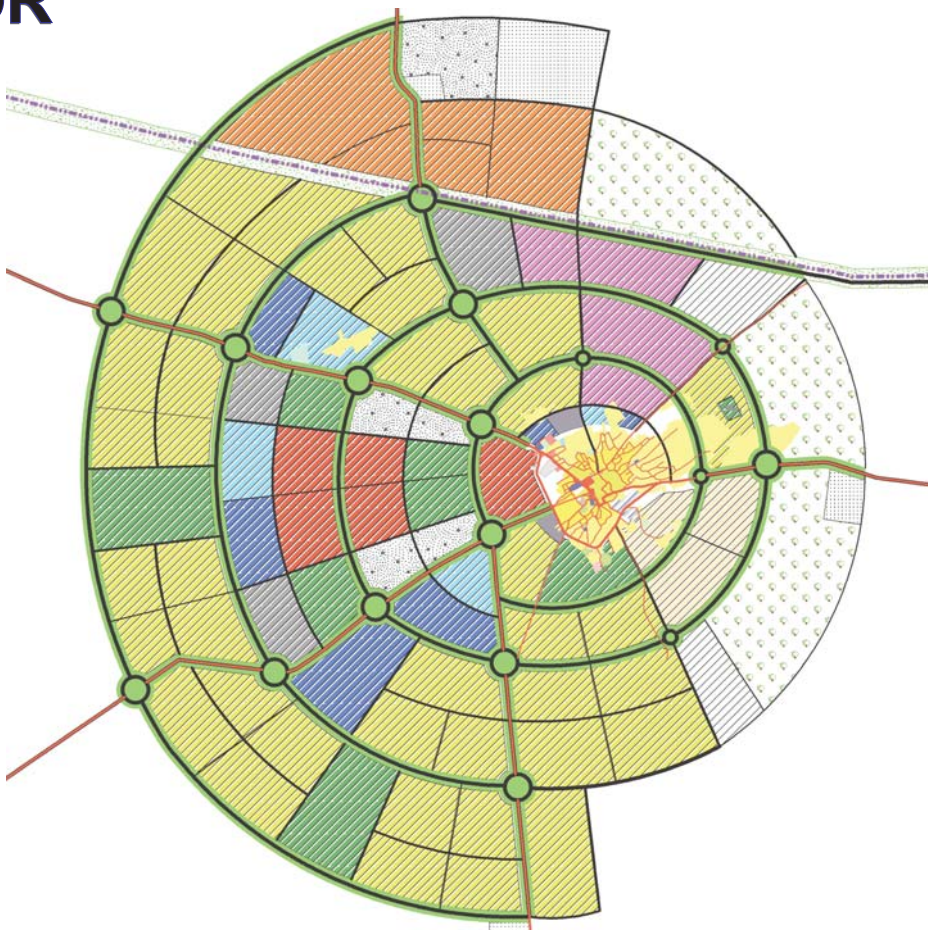
URBAN POLICY & STRATEGIC PLANNING
P & D DEPARTMENT GOVT OF SINDH

tharfoundation

"PREPARATION OF DEVELOPMENT MASTER PLANS OF 14 DISTRICT HEADQUARTER TOWNS OF HYDERABAD, MIRPURKHAS AND SHAHEED BENAZIRABAD DIVISIONS"

"MASTER PLAN FOR ISLAMKOT"



STRATEGIC DEVELOPMENT PLAN REPORT

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EA Consulting Pvt Ltd
(Formerly Engineering Associates)
Engineering, Architecture & Project Management
Head Office: AL-9, 15th Lane, Khayaban-e-Hilal, Phase VII, D.H.A., Karachi-75500.
Tel: UAN: 111-111-584, Fax: (021) 3584-1825

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MMP Pakistan (Pvt) Ltd.

PREPARATION OF DEVELOPMENT MASTER PLAN OF 14 DISTRICT HEADQUARTER TOWNS OF HYDERABAD, MIRPURKHAS AND SHAHEED BENAZIRABAD DIVISIONS:

Strategic Development Plan Report – Islamkot

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ADP	Annual Development Plan
AGR	Annual Growth Rate
BC	Brick Construction
BHU	Basic Health Unit
BOD	Biological Oxygen Demand
CBD	Central Business District
CC	Climate Change
DBM	Digital Base Map
DCs	Deputy Commissioners
DHQ(s)	District Headquarters
DMP	Disaster Management Plan
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DSPC	Development Strategies & Prevalent Conditions
DUP&SP	Directorate of Urban Policy & Strategic Planning, Government of Sindh
ECP	Emergency Contingency Plan
EDP	Economic Development Plan
EMC	Environmental Management Consultants
EPA	Environmental Protection Act
FWO	Frontier Works Organization
GBHS	Government Boys High School
GBHSS	Government Boys Higher Secondary School
GBLSS	Government Boys Lower Secondary School
GBPS	Government Boys Primary School
GER	Gross Enrolment Ratio
GGHS	Government Girls High School
GGHSS	Government Girls Secondary School
GGLSS	Government Girls Lower Secondary School
GGPS	Government Girls Primary School
GIS	Geographic Information System
GOP	Government of Pakistan
GOS	Government of Sindh
GPS	Global Positioning System
HESCO	Hyderabad Electricity Supply Corporation
HH	Household
HQ	Head Quarters
KV	Kilo Volt
LPG	Liquid Petroleum Gas
LULC	Land Use/Land Cover
MC	Municipal Committee
MISC	Multiple Indicator Cluster Survey
MW	Mega Watt
NER	Net Enrolment Ratio
NGO	Non-Governmental Organization
NPDMP	National & Provincial Disaster Management Policy
NRM	National Reference Manual
O&M	Operation & Maintenance
OH	Over Head
P&D	Planning & Development Department
PCU(s)	Passenger Car Units

PDAO	Planning & Development Act Ordinance
PDMA	Provincial Disaster Management Authority
PGS	Population Growth Scenarios
PH	Peak Hour
PHED	Public Health Engineering Department
PMTs	Pole Mounted Transformers
PR	Public Representative
PTCL	Pakistan Telecommunication Corporation Limited
RAP	Resilience & Adaptability Plan
RCC	Reinforced Cement Concrete
SAR	Situation Analysis Report
SB&TPR	Sindh Building & Town Planning Regulation
SBI	Sindh Board of Investment
SDI	Spatial Data Information
SECP	Securities & Exchange Corporation of Pakistan
SED	Socio Economic Data
SES	Socio Economic Survey
SEPA	Sindh Environmental Protection Agency
SME(s)	Small Medium Enterprises
SOP	Standard Operating Procedures
SPPRA	Sindh Public Procurement Regulatory Authority
SS	Sample Survey
SSGC	Sui Southern Gas Company
STP	Sewerage Treatment Plant
SWM	Solid Waste Management
SWOT	Strength Weaknesses Opportunities Threat
TOR	Terms of Reference
TSS	Total Suspended Solids
TVC	Traffic Volume Count
TW	Tube Well
UC	Union Council
UG	Under Ground
UG/l	Concentration of Arsenic (10 micro-gm/litre)
W&SD	Works & Services Department
WAPDA	Water and Power Development Authority
WATSAN	Water & Sanitation
WASH	Water, Sanitation & Hygiene
WB	World Bank
WHO	World Health Organization

DEVELOPMENT MASTER PLAN FOR ISLAMKOT

EXECUTIVE SUMMARY

A. BACKGROUND

Islamkot is Taluka Headquarter town of Tharparkar District of Mirpurkhas Division. According to 1998 census, population of District Tharparkar was 914,291 with 55% male population and 45% female population with household size of 5.6. Presently, the district Tharparkar comprises of seven talukas with 44 UCs. It has 743 kilometers of good quality roads. A Highway connects Tharparkar with other major cities of the province. The Tharparkar District is mostly desert and consist of barren tracts of sand dunes covered with thorny bushes.

Islamkot was a remote and forgotten little town, but now with a huge potential for exploitation of coal reserves and production of electrical power, it is claiming a lime light as the focus of investment and urban growth and a game changer for the development of Sindh and Pakistan. The accelerated economic growth will bring challenges for spatial urban growth, which if not handled timely, may have negative consequences for development and human well-being. The Government of Sindh has therefore initiated Development Master Planning of Islamkot for the next twenty years to provide development guidelines to the local government to ensure the development of the Town in the orderly and planned manner. It has also been decided by the Government of Sindh that the planning of Islamkot will fulfil the objective of the first SDG compliant Taluka.

According to latest census of 2017, population of Islamkot TC is 24,880 with AGR of 4.68% which is almost twice the growth rate observed in the last census of 1998. Impetus to the growth rate naturally came from the planned or committed development initiatives in the area.

The present town can be divided into three major zones: Core Urban Area, Southern Bypass Area and Northern New Expansion Area. Projected population of Islamkot TC is worked out with two assumptions as follows:

PROJECTED POPULATION OF ISLAMKOT						
Source	**AGR**	**Census 2017**	**Projected 2022**	**Projected 2027**	**Projected 2032**	**Projected 2038**
Census 2017	4.68%	24,880	31,273	39,309	49,409	65,011
On the basis SECMC Data	16.81%	24,880	54,096	117,618	194,647	260,846

The Growth rate up to 2027 has been determined at 16.81% after taking care of migration / Employment on new power plants/ Mining and after 10 years, growth rate will may decrease approx. 1% annually. The population projection should be reviewed every 5 years to estimate the growth rate.

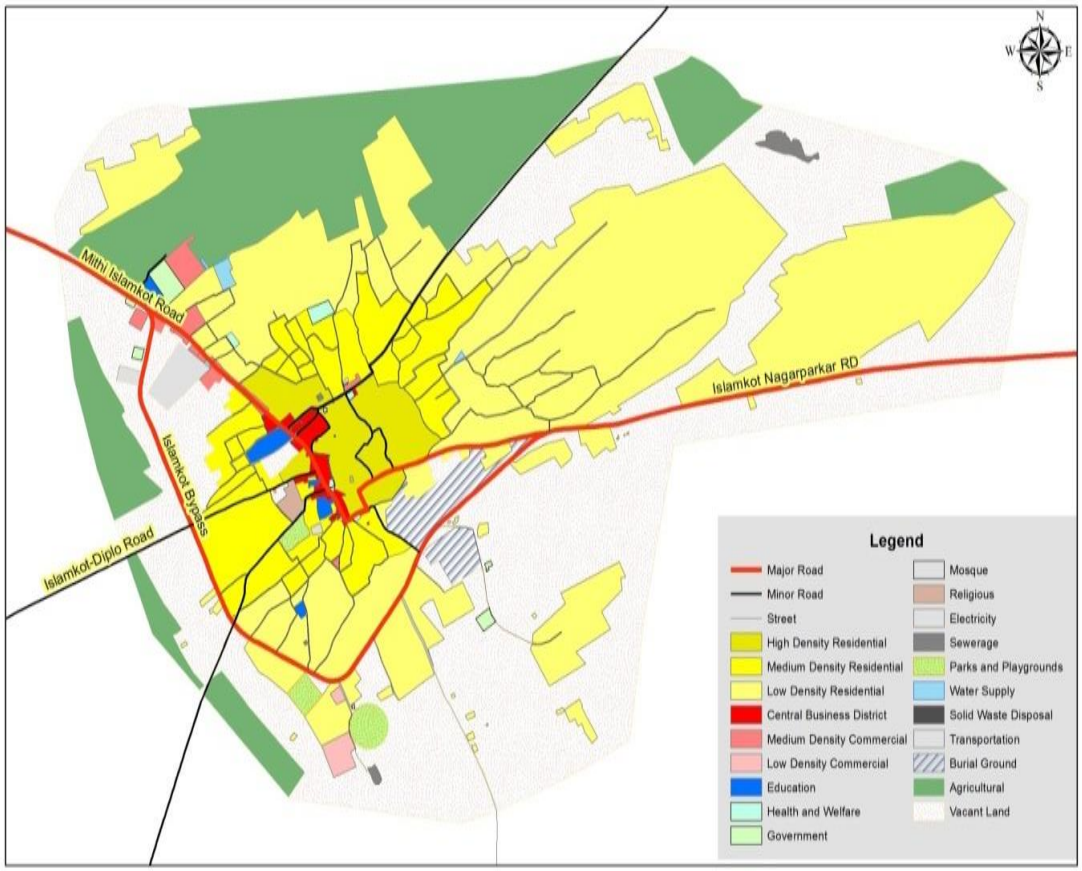
B. VISION 2038

Three vision formulating workshops were carried out with the main stakeholders on September 07, 2018, January 30th 2019 and April 16th, 2.019. Collation of opinions expressed produced the following vision;

The Stakeholders' vision emerging from several interactive conferences and free exchange of ideas indicates that the stakeholders are fully aware of the challenges and opportunities the future holds for Islamkot. They insisted the future town should be fully integrated with the existing town and offer housing, employment, health and utilities of the highest level. Just as a local trader put it 'they say Islamkot will become like Dubai; shall we also be effluent like shaikhs"

Strategies for Future Development

The strategies focus on revitalization of the affordable housing, provision of basic facilities, efficient transportation and communication, energy efficient technology, active service sector, implementation of pro-active governance, develop human resources, facilitate social infrastructure, reinforce the local governance institutions, modernize administration, preservation of heritage, sustainable environment, develop tourism, involve community participation and implementing Public-Private Partnership.



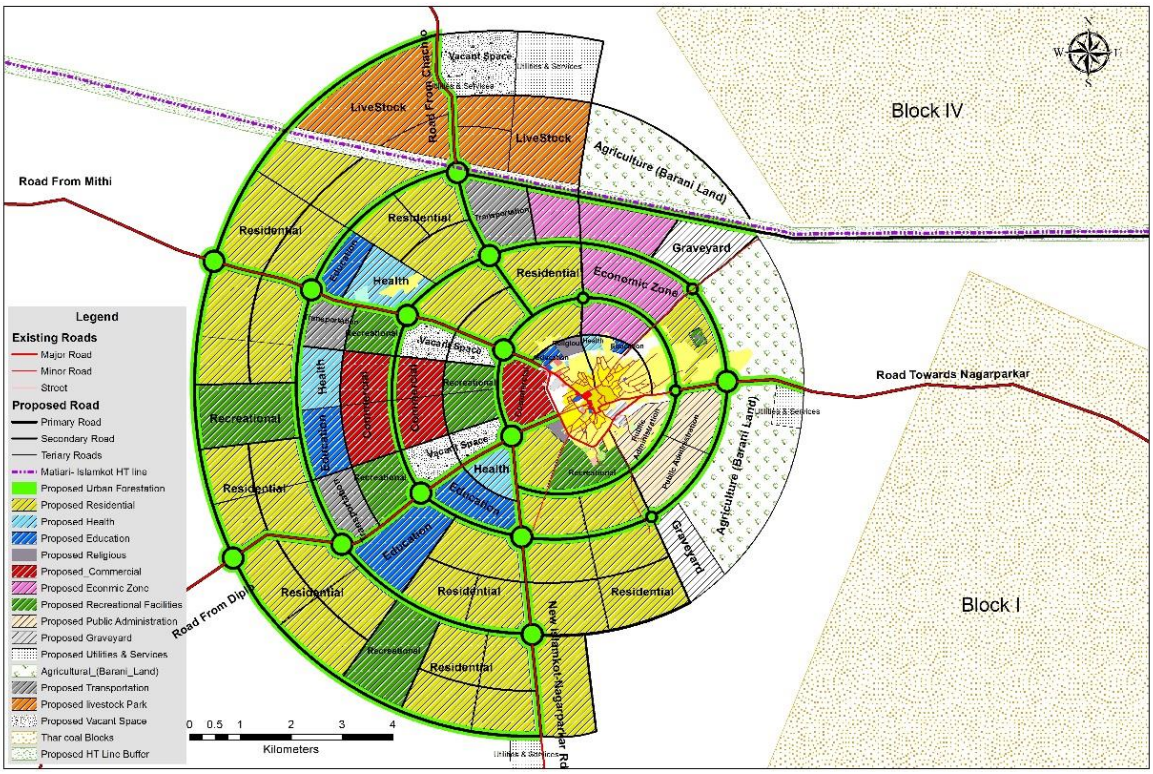
C. EXISTING LAND USE

The built-up area of Islamkot Town comprises of around 1,074 acres as compared to expected urban sprawls over future urban area of 2,218 acres. Islamkot Town is mostly increasing in north-east and south-west direction but not in a planned way. There is main CBD which is called Shahi Bazaar and Lohana Paro Bazaar.

D. MASTER PLAN PROPOSALS

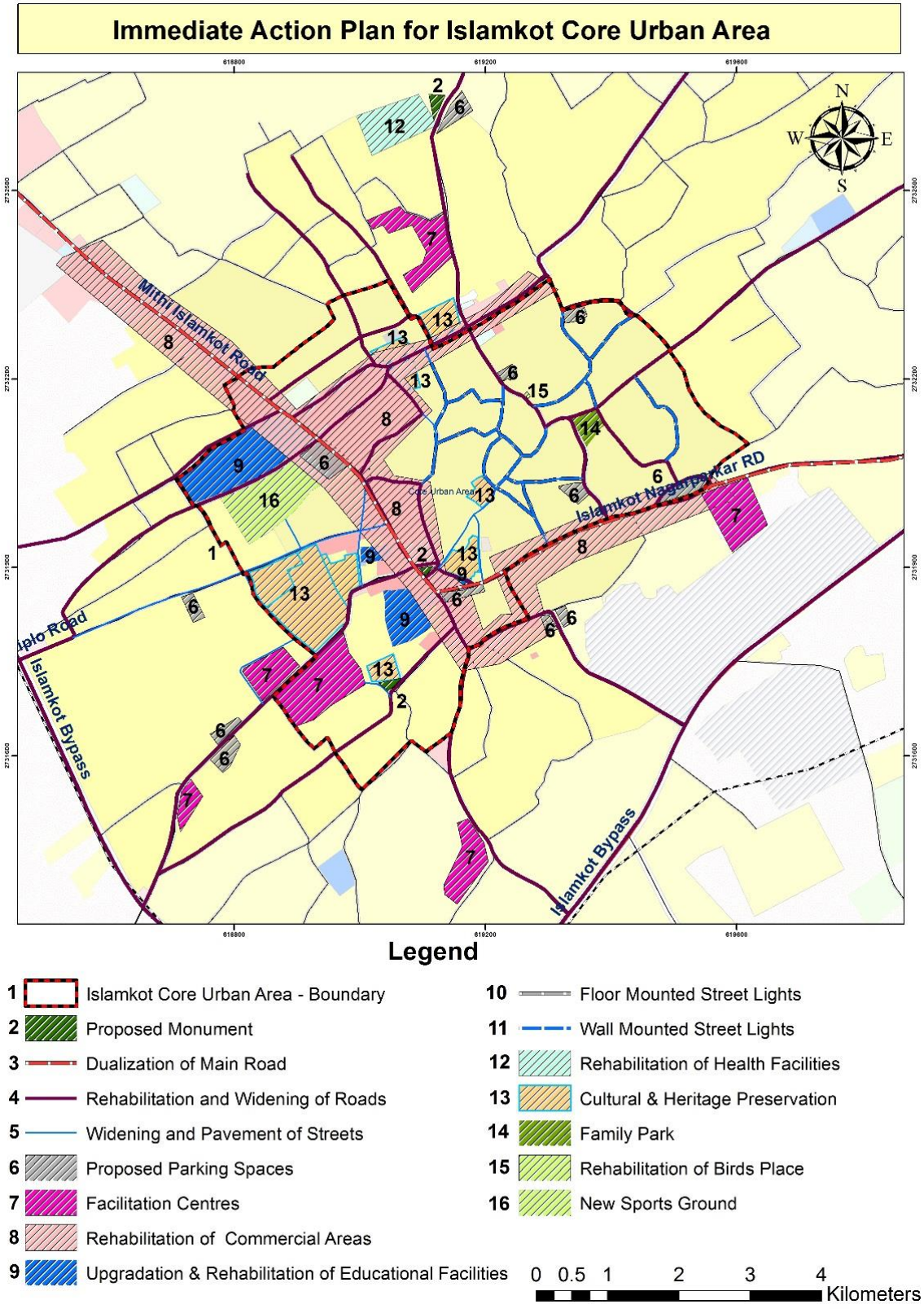
The existing town would be the physical nucleus of future town and the future development will radiate from it in all directions in concentric circles. The regional roads connect Islamkot with other cities, all converging on the town nucleus which are: Road to Mithi, Road to Nagarparkar, Road to Diplo and Road to Chachro. **Interconnections of these radiating roads with the concentric major roads give natural circular pattern.** All major roads of the proposed master plan are converging to core urban area. The concentric circles are indication of phases of development. It will be a flexible plan to develop according to need and requirement of the town. In this way town will grow in a compact manner instead of sprawling hazard.

Proposed Master Plan for Islamkot Town



The area included in the master plan is approx. 30,000 acres, exclusive of the airport area. The hallmark of the plan is that it is compact without being congested. In each phase of development which is represented by a ring will contain all required land uses. Thus the town will remain self-sufficient in housing and amenities at various sequential stages of development.

E. IMMEDIATE ACTION PLAN FOR CORE URBAN AREA



F. SECTOR WISE ANALYSIS AND PROPOSAL

Based on the evaluation of primary and secondary data, the need assessment has been carried out for a projected population on the basis of 21 years growth projections. The need assessment is based on the Baseline Indicators, Stakeholders Views, and Demand Vs Need Analysis, NRM with professional judgment and Consultant's own experience and Standards used in other developing countries.

1. HOUSING

Housing in terms of sustainable/ affordable home with basic infrastructure and facilities is the basic human need. According to 2017 population census results, Islamkot TC had household size of 4.5 persons and a total housing stock of 5,495. The major issues include large number of households below poverty line, inadequate supply of developed land, poor land administration, and housing in dilapidated condition, poor water supply and sanitation facilitation, unchecked growth of squatter settlement and lack of skills to manage urban growth.

By 2038 the number of household have been estimated around 57,966on fixed household size of 4.5 persons out of which additional housing requirement will be 52,437. The distribution of households by income groups is different to assess at this moment however, around fifty presents will be in the low income group. In terms of housing development, the basic infrastructure i.e area major roads, water supply, sewerage and waste disposal, electricity and gas will be the public sector responsibility while the development of housing schemes will be the responsibility of privet sector. All schemes should be self-sufficient and cross subsidize to low income group.

The short term plan includes the increase in proportion of small size plots in housing schemes, establishment of housing funds, incremental housing schemes, and provision of incentives and formulation of green building bye laws. The long term plan focus on the initiation of low cost housing schemes for households below poverty line, development of cost effective approaches, research and development programmes for economic building, deconcentration of major centres shall be encouraged, improve quality of construction, identification and acquisition of land and affordable housing programme for low income group in different phases. The priority projects includes the construction of housing scheme for low income people, urban facade upgradation and improved allied services and facilities. The immediate action plan should focus on the identification of dangerous buildings, urban facade upgradation and improvement of allied services and facilities. The economic development plan involves to facilitate access to housing, Housing Schemes should be bound to provide piped water, sewerage, electricity and gas connection.

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2. SOCIAL AMENITIES

2.1 Education

4,824 children are enrolled in schools with 192 classrooms. Presently there is no shortage of classrooms on the basis of 30 students per classroom. The major issues are low enrolment level with gender disparity, lack of provision of basic facilities, poor condition of schools and colleges and lack of allied facilities.

The future target is to achieve 100% enrolment with 1:1 male female ratio for which the need is 1,373 additional classrooms by the end of plan period in 2038. The educational authorities should plan of gradually increasing the classrooms in existing schools in high density areas and new schools in low density areas. The spatial distribution of schools and other educational institutions should be that our schools, specially girl's schools are within easy walking distance. To achieve SDG-3 in Islamkot, the Education department to work with community and sector partners to: realign and prioritize policy goals and targets, identify and address suggestions for individual and joint planning processes, address suggestions for education coordination and management, address capacity gaps and meaningfully address implications related to finances and human resources. The short term plan includes selection of teachers on merit-based and construction of required educational institutions. The long term focus on improving quality of learning outcomes, improving accountability and establishing a system of educational professional development and enhancing the equity of resource allocation. The priority projects includes the rehabilitation and upgradation of schools, addition of classrooms with allied facilities and basic utilities, improvement in the quality of education, training programme for teachers and provision of vocational and skill training centres. The immediate action plan should focus on the upgradation and rehabilitation of all the four schools in the core urban area

2.2 Health

There is one Civil Hospital having 74 bed, three THQs having 90 beds, 96 Private Hospitals having 129 beds to serve the district population. The other health facilities are two RHCs having 20 beds, 10 TB Clinics, 40 BHUs having bed strength 93 and 307 dispensaries producing total number of 409 beds. A welfare hospital (Indus Hospital) by Thar Foundation is under construction with 200 number of beds and allied facilities. The issues include lack of facilities, training, diagnostic and equipment, difficulty in transferring serious patients from rural to urban area, vacant posts of doctors and shortage of nutrition. The NRM (National Reference Manual) recommends 2 bed per thousand as the medium term target. On this basis 2,890 beds will be required to provide gradually. According to WHO standards, doctor to population ratio is 1:1000 so taking that as a reference point, currently the short fall of doctors comes out to be 1,465. The shortage of medical staff is due to their reluctance to work in the remote areas. The health policy should provide doctors a handsome hard area allowance, free hostel accommodation and like oil companies, allow three weeks work followed by one week holiday.

On the basis of NRM recommendation 5,732 beds will be required to be provided gradually until 2038. According to WHO standards the future requirement of doctors comes out to be 2,885. The short term plan includes the improved access to healthcare facilities, availability of skilled workforce, expansion of immunization coverage, functionality of equipment and availability of quality medicines. The long term plan focus on the improved health hygiene practices, conduct co-ordination meetings with health department and private sector involvement. The priority projects should focus on the extension of THQ Hospital, provision of Mobile Health Unit, provision of a quick response ambulance service with all health facilities, and rehabilitation of RHC and Veterinary Hospital, research and development programmes, provision of diagnostic facilities and pharmacy in the hospitals. The immediate action plan includes the rehabilitation and upgradation of THQ and Veterinary Hospital and employment of doctors.

2.3 Recreational

The area is rich in cultural heritage which should be promoted through tourism. Nagarparkar has a wealth of tourism assets easily accessible but quite neglected. There is only one under-construction Park in the vicinity of Islamkot TC.

The short term plan includes the restoration and maintenance of open spaces, identification and creation of new open spaces, promote tourism through provision of support facilities, rehabilitation and construction of family parks and playground. The long term plan focus on the development and preservation of cultural heritage, improvement of cultural village and museum, protection of historical places, youth development programme, urban forestation and construction of recreational resort. The priority projects includes the rehabilitation and construction of parks, provision of missing facilities and green spaces with facilitation centres and rehabilitation of sports grounds. The immediate action plan includes the preservation of heritage and cultural sites in addition to priority projects. In addition to promote more tourism in Tharparkar following key area must be addressed.

- Tourism directorate
- Accommodation
- Travel Agencies
- Ads
- Tourist Transport

3. ECONOMIC DEVELOPMENT

3.1 Agriculture

District Tharparkar, due to its desert-like lands, gives a dismal picture in agriculture .Some areas of Nagarparkar taluka are fertile and irrigated by tube well water producing crops such as wheat, onion, cotton and other vegetables. Bajra and Guar count as main agriculture product of Tharparkar district which covers almost 90% production of Sindh. The total geographical area of Tharparkar district is 2,017,000 hectares out of this cultivated area is up to 352,000 hectare. The major issues are high price of inputs, lack of agriculture credit facilities and research centers, absence of tube well installation facilities, low price of crop production and poor farm to market road network.

The strategies need to focus on modernizing agriculture, improve food production, agriculture technology development and policy formulation. The priority projects will be centered on Islamkot as the market place for the mining blocks, installation of tube wells, and construction of farm to market roads. The projects for economic development plan includes food processing and storage facilities, Controlled Atmospheric Cold Storage (AEPZ), drip irrigation and E-Beam Irradiation Plant. Arid zone research institute or University would be developed to boost agriculture in Tharparkar District.

3.2 Irrigation

Since the whole district is desert like, there is no regular irrigation system. In district Tharparkar, only 1.6% of total cultivated area is irrigated through canal in Diplo Taluka. However, the monsoon rains play important role in the irrigation of lands. Some of the areas in Nagarparkar and Mithi, where tube well irrigation is common, have green fields.

3.3 Livestock and Fisheries

Livestock is the backbone of Thar's economy. Main by-products include milk, dairy products, hides and meat. District has 2,218,000 Goats, 1,185,000 Sheep and 752,000 cattle. The livestock is served by 08 veterinary hospitals and 151 centers. Some of the livestock products are milk, meat, beef, mutton, poultry and eggs. The issues of livestock include landlessness, subsistence farming, limited facilities, secondary source of income, reduced area for natural grazing and climate change. The annual fish production is about six metric tons. There is need to develop broad-based fisheries policy to modernize the fisheries sector.

The short term plan focus on improving production performance of livestock, provision and enhancement of veterinary services, extension of services in private sector, local publicity and awareness. The long term plan includes the enhancement of livestock breading, production, establishment of model livestock, new cattle and dairy farms, establishment of cattle markets training through schools. The proposed projects for economic development plan includes halal meat park, shrimp aquaculture farms and dairy, cattle and poultry farms.

3.4 Mining

Islamkot has Coal deposits of approximately 175 billion M Tons. Granite rock is found in Nagarparkar region famous as Karoonjhar Mountain. It is estimated that 3.6 million tons granite is available. Lack of communication facilities that and se is resulting in limited quarrying capacity. However, apart from coal, mineral exploitation is a low key affair and sanctity of water needs consolidated programme for the economic exploitation of all minerals.

3.5 Industries

Thar Coal Deposits of 175 billion M Tons are potential source for mining and can be used for electricity generation up to approx. 0.1 Million MW. Heavy Coal and Granite deposits are identified providing a base for large scale industrial development in future.

The strategies for industrial development includes the sufficient market infrastructure, development of Industrial Estate, micro-financing, heritage saving, provision of vocational training and support industrial development. The priority projects should focus on the capacity

utilization of present units, establishing new industrial units and establishment of Small Industrial Estate is required to provide incentives for Cottage Industry and Red Chilies processing and Packing Plants. The immediate action plan involves the provision of infrastructure for the establishment of new industries, enhancement of colonization, modernize the service sector and development of efficient marketing infrastructure. The projects for economic development includes the setting up of Industrial Estate for large manufacturing industries, incentives to private investor and training should be provided to local workers.

3.6 Trading, Imports and Exports

It is envisaged that the coal extracted will not only be used in power plants installed in Tharparkar but also be transported to other parts of country as well to be as exported. For above purpose, efficient transportation of imported goods would be required. It will be important to provide necessary facilities and pre-empt the infrastructure requirement.

The priority projects include the rehabilitation of slaughter house and provision of parking for existing commercial areas. The immediate action need to focus on the rehabilitation of commercial areas, provision of commercial corridors and conversion of bazaars into strip malls. An important step towards economic development will be encouragement of financial services in Islamkot.

3.7 Role Of Welfare Organizations/NGOS And Micro-Finance

Thar Foundation has been set up in collaboration with SECMC and companies involved in Thar coal projects, together with the Government of Sindh. Their vision is to support local Thari youth in developing their skills in various technical and non-technical fields. The strategies need to focus on that the activities of welfare organizations should continue with assistance from provincial government, proper monitoring in the economic and social areas, Small Enterprise Development, vocational training and skill development, establishing handicrafts and cottage industries.

4. BASIC UTILITIES

4.1 Water supply

Water for Islamkot is very scarce and expensive to transmit. There are three water sources i.e.

I. Water from Naukot branch is supplied to Sehri Minor. Water from Sehri Minor is distributed to Mithi & Islamkot through 12” dia meter pipe & chlorinated before supply. The quantity of 10 Million Gallon fresh water is pumped every 10th day from Naukot for both Islamkot & Mithi, 5 Million Gallon for Mithi, 3 Million Gallon for Islamkot & remaining 2 Million Gallon for surrounding villages, located along main supply line.

II. There are six underground water reservoirs in the Islamkot Town, from which water is distributed through three pumping stations. Cumulative capacity of underground reservoirs of canal water is about 0.522 million gallons. There is a huge difference between supply of canal water and storage capacity of existing infrastructure, that’s why town is not having uninterrupted supply of sweet water.

III. Reserves Osmosis Plant: There is one RO Plant present in Islamkot with the capacity of 1.5 MGD, due to lack of funding, efficiency of RO plant is decreased by 0.15 MGD.

Estimated water daily demand at 30gcd by PHED would be approximately 7.83 mgd by 2038. The short term plan need to focus on ensuring access to safe drinking water, promotion of health and hygiene practices, priority given to un-served areas and where there is shortage of sweet water, promote effective rehabilitation and efficiency improvements in existing water supply. The water supply programme to link with regional planning, participation of private sector, usage of PPP mode and focus on the role of Government. The priority projects includes the improvement of water intake works, rehabilitation of existing and installation of new water supply network, repair, maintenance and installation of RO Plants. These projects are also the part of immediate action plan.

4.2 Sewerage and Drainage

Presently, 0.52 mgd sewage is generated against the water supply of 0.75 mgd. The issues include improper operation and maintenance of sewerage facilities, informal settlements, poor condition of sewerage system, no WWTP and untreated sewage disposed of in open depression.

By 2038, 5.48 mgd sewage will be generated against the estimated water supply of 7.83 mgd. The short term plan needs to focus on the provision of improved drainage and sewerage services, need based interventions and sewage should be treated before discharging. The long term plan includes the provision of improved services, priority given to un-served areas, development of overall sanitation plan, all other sanitation related agencies will develop their plan in accordance with the overall plan and proper sewage treatment plants leading up to recycling of treated affluent for landscaping. The priority projects includes the construction and rehabilitation of drains and Sewage Treatment Plant, surface water reused for landscaping and combine system of sewers and drains. The immediate action plan should focus on the combine system of sewers and drains and surface water reused for landscaping.

4.3 Solid Waste Management

The total solid waste load arising in the municipality is approx. 11 tons per day. The major issues are that no proper waste collection system, no separate medical waste management, absence of composting plant and landfill site and negligible involvement of private sector. The future waste generation will be 117 tons per day. The short term plan includes the daily sweeping of streets and roads, daily removal of all garbage, zero direct human contact with waste and all commercial centres should contribute towards waste management cost. The long term plan focus on effective and efficient collection system, the collection and disposing of waste is the responsibility of Islamkot TC and segregation practice for bio-medical waste collection system. The priority projects includes the feasibility study for the setting up of composting plant, primary and secondary collection system and recycling and procurement for land acquisition process for landfill site. The immediate action plan involves the improvement in mechanism of SWM and introduction of 4Rs for better environment.

5. INFRASTRUCTURE

5.1 Energy and Gas Supply

There is no power generation facility in Islamkot TC at present therefor, the supply is through HESCO-WAPDA transmission system. Currently, natural gas is not available in Tharparkar District therefor, the population uses alternate sources. The issues include that there is little awareness about fuel; conservation measures, and scarcity of alternate fuel sources.

The strategies include the upgradation of transmission system, distribution processes and streetlight network. The priority projects should focus on the usage of Arial Bundle Cable wires and installation of solar streetlights. These projects are also part of immediate action plan. The proposals for economic development plan includes coal mining, washing and bracketing plants, solar power projects and Solar Energy Production.

5.2 Transportation

District Tharparkar has 743 kilometers good quality roads which are inadequate for the area and its population. Recently Islamkot Mai Bakhtawar Airport has been inaugurated. There is one local bus stand in the town. The major issues are poor physical condition of road network, encroachments on footpath, illegal parking, open drains, traffic congestion, lack of enforcement of traffic rules and absence of street furniture and traffic signals.

The strategies for short term plan includes improve road designs, declaring private vehicles free zones, reduce traffic growth and prevent encroachments. The priority projects include construction and rehabilitation of roads, dualization of Mithi-Nagarparkar Road, pedestrian friendly streets, monuments at intersections, designated parking spaces, provision of footpath and street furniture.

5.3 Communication

The survey result shows that none of the household use PTCL land line. At present the internet usage is limited to educated families, and it is increasing with time by decline of illiteracy rate. The PTCL office is located at Mithi-Islamkot Road, Islamkot. The development I.T and digital Communications are rapidly shirking the distances in the global business. It is important that the local offices of global companies are round the clock in touch with their corporate leaders and rapid decisions in real time. The ease and speed of communications is very important specially in-case of Islamkot, where mega projects are striving to get a piece of revival of coal reduction. I.T. services will have to keep pace and fourth and fifth generation (4-G and 5-G) IT services should be in place soon. The investment authority with need to facilitate this. The silicon valley type infrastructure should be created with conscious efforts to increase local component in both hardware manure factoring and software development.

6. ENVIRONMENT, DISASTER AND CLIMATE CHANGE

6.1 Environment

For centuries, Tharparkar District of which Islamkot is a part, has been a remote desert area with sprinkle of small chawrah villages. The population is engaged in very basic primary activities with agriculture, when the area received rains and cattle raising as a second economic activity, which also depended on rains for fodder production, remittances from Tharis employed or self-employed abroad (like doctors) are the third main source of income. The environmental quality was pristine as there were pollutant for air and water. However this is all about to change now with mega projects for coal mining and power production, and resultant urban revolution in the area of which Islamkot is destined to be the financial, economical capital. The Coal authority had carried out initial environment estimate and is aware of several risks major among them is the source of sustainable water supply by required quantity of acceptable quality is not found for Industrial, agriculture and human use, the growth of Islamkot will be greatly constrained. All sources of water surface (canal), sub-surface and RO plants should be studied and options should locked.

The Authority is advised to put mitigation and environmental management is place and start execution before the excavation and power production starts.

6.2 Disaster Risk Management

Some of the major issues are low level of risk awareness and knowledge, development not “risk conscious, insufficient DRR capacity and negligible involvement of private sector.

The strategies need to focus on the provision of right timely emergency care, identify and monitor vulnerability and hazard trends, strengthening an integrated hazard preparedness, promoting development planning, provide support to the implementation of DRM policies, strengthening Local Level Risk Reduction capacity and strengthening the resilience of key infrastructure. The priority projects includes the identification and declaration of “disaster affected” area, clear assessments of disaster risks and creation of an integrated multi-hazard damage loss data-base. The long term plan includes the identification of highly vulnerable districts, risk assessments, involvement of local level actors, need to have arrangements that allow the system to switch into emergency mode and need to clarify mutual roles and responsibilities.

G. STRATEGIC DEVELOPMENT PLAN

The strategies focus on revitalization of the affordable housing, provision of basic facilities, efficient transportation and communication, energy efficient technology, active service sector, implementation of pro-active governance, develop human resources, facilitate social infrastructure, reinforce the local governance institutions, modernize administration, preservation of heritage, sustainable environment, involve community participation and implementing Public-Private Partnership.

STRATEGIC DEVELOPMENT PLAN FOR ISLAMKOT TOWN

1. SINDH – AN OVERVIEW

Sindh is the most urbanized province in Pakistan. Due to lack of interest in the planning and development of secondary cities District Headquarters towns, the public funding in development infrastructure had been sporadic resulting in un-informed adhoc decisions. Consequently the secondary cities have not been able to play their role as "Engines of Economic growth" and hinterland has remained poor facing abject poverty due to less economic opportunities and social facilities. The poverty head count ratio in the urban-cum-rural areas is almost double than that in the declared urban areas.

Sindh government took initiative by establishing Directorate of Urban Policy and Strategic planning within the P&D Department initiate and ensure planned growth of Secondary cities through the Preparation of Master Development Plans of District Headquarter Towns in September 2008.

Sindh, Pakistan's second most populated province plays a pivotal role in the national economic and development agenda. The country's largest port city, Karachi, is the financial capital of the country. The Province comprises of 23% of Pakistan's population and 18% of its land area. It has the highest concentration of urban population at 49% as compared to an overall country average of 32.5%, making it the most urbanized province in the country. With 23% of country's population, its contribution to the national GDP is around 33%. Sindh collects 70% of Pakistan's Income Tax and 62% of Sales Tax.

Sindh has 54% of country's textile units, 45% of its sugar mills, 20% of pulp & paper mills and 35% of edible oil processed locally. Sindh accounts for 34% of total industrial capacity in large scale manufacturing and 25% of small scale manufacturing. Moreover the Province produces 70 % of Country's gas, 30% petroleum and 95% of Coal.

Sindh's diversified economy also comprises of a well-developed agricultural base supported by an effective irrigation network on the River Indus. Around 14% wheat, 30% rice, 30% sugar cane, 25% cotton and 30% vegetable crops grown in Pakistan are from Sindh. This provides immense opportunity for setting up export based agri-processing industry in the province.[1]

Despite of its significant contribution in National GDP, Sindh has not received the priority in development funding as it deserves. DUP&SP is the medium through which grass root development / strategy is being formulated by professionals for the betterment of people and create de-centralize economical hubs to counter higher migration rate towards developed urban centres resulting better socioeconomic condition of the people. While going through the available literature so far, several constraints have been identified in this regards, such as:

- Non-existence of city survey and land records, which helps to resolve several issues i.e. Verification of ownership & Land grabbing issues respectively.
- Non-existence of Sustainable planning policy, apparatus, regulatory framework and its implementation;
- Absence of current housing policy based on sustainable and smart growth mechanism;

[1] Retrieved from http://www.sbi.gos.pk/sindh-economy.php

- Lack of coordination between institutions responsible for development of a town or Absence of Institutional Framework.
- Previous Master / Development / Structure Plans of Town Planning Department have hardly been implemented due to poor implementation mechanism;
- Local cultural preferences and settlement patterns undermine the role of urbanization in supporting economic growth;
- In most of the District Headquarters Towns, in-effective Town infrastructure and service delivery is a common cause of failures in water, waste water, SWM, etc.
- Non-existence of spatial and non-spatial database systems;

1.1 Objectives of the Assignment

The objective of the assignment, as mentioned in the TORs is to prepare Development Master Plans of Fourteen (14) District Headquarter Towns of Hyderabad, Mirpurkhas and Shaheed Benazirabad Divisions; for development of spatial planning and zoning system as well as local economic development strategies on the basis on ecological sustainability. The Consultant is tasked to prepare strategies:

- To plan for social infrastructure at affordable standards for education, health, recreation and cultural needs.
- To upgrade the existing physical infrastructure and enhance the supply of potable water and to propose the required capacity of network for water supply, sewerage, drainage, flood waters till year 2038.
- To provide for modern sanitation, solid waste management and disposal.
- To improve existing road networks, extend links, upgrade intersections, bridges and flyovers; and other means of communication and proposed where needed.
- To provide for safe and efficient public transport.
- To plan for effective traffic management, smooth transit and provide for parking facilities, where required in multi-storey car parks.
- To plan for enhancement and revitalization of economic base by expansion of industrial and commercial base, and for rapid expansion of IT and Telecom sectors, tourism, agricultural activity, etc in the means of sustainable and smart concept.
- To propose alternate energy sources as country is facing acute shortage especially in summer season.

1.2 Project Background

Directorate of Urban Policy and Strategic Planning (DUP&SP), Planning and Development Department, Government of Sindh, after due diligence, has awarded the contract for Development of Master Plan of 14 District Headquarter Towns of Hyderabad, Mirpukhas and Shaheed Benazirabad Divisions to M/S EA Consulting Pvt Ltd with their associates.

Keeping in view of the development potential of Thar Coal and investment efforts of Thar Coal Authority, heavy local and international investment is expected in Thar for the coal mining associated industries specially coal based power plants. Simultaneously demand for physical, Social and commercial infrastructure, including local and regional transport network, utility services, housing and commercial and financial services will increase in geographical progression. Islamkot as the only urban center in the vicinity will be the first choice and spatial focus for the required services by the public and private sector. It is important to control urban expansion in a planned manner by preparing a master development plan for the Islamkot town for the next 20 years taking into account the economic revolution bound to happen in Thar in general and Islamkot in particular.

Figure 1-1 Coal Field at Thar

1.3 Islamkot Taluka - SDGs Model Taluka

The Government of Sindh has declared and notified Taluka Islamkot as “SDGs Model Taluka” in Sindh, in line with the agreement with UN's global agenda 2030. SDGs target will be planned and achieved at Islamkot through multi-sectoral methodology using innovative Public Private Partnership mode.

The following six SDGs have been selected as priority areas;

- Goal No.2 Zero Hunger
- Goal No.3 Good Health and well-Being
- Goal No.4 Quality Education
- GoalNo.6 Clean Water and Sanitation
- Goal No.7 Affordable and clean energy
- GoalNo.8 Decent work and economic growth

The development initiatives are appearing so fast that if the immediate action is not taken to control the development and channelize the urban growth through a proper plan, the ground situation will change and un-controlled land uses will appear everywhere. The Government of Sindh has decided to include the Islamkot as 15th Town in the project for 14 Towns already in execution as variation to the contract already under execution.

1.4 Terms of Reference

Detailed TOR for Consultants to prepare Development Master Plan for Islamkot Town are as follows:

1. Review of Past Trends, Development Strategies & Prevalent Conditions
    a. Population Profile and Socio-Economic Indicators
    b. Expansion and Evolution of Urban Form
    c. Housing Conditions
    d. Social Amenities
    e. Basic Utilities
    f. Infrastructure
    g. Environmental Setting & Natural Disaster
    h. Economic Base
2. Assessment of Urban Land Development and Management Practices
3. Preparation of Digital Base Maps
4. SWOT Analysis
5. Carving out a Vision for Future
6. Preparation of a Development Plan
    a. Long Term Plan
    b. Determination of Growth Scenarios
    c. Short Term Action Plan for Priority infrastructure Investment
    d. Preparation of an Immediate Action Plan for the Core Urban Area
    e. Economic Development Plan
    f. Disaster Management Plan
    g. Climate Change, Resilience & Adaptability Plan
    h. Sustainable Development Goals SDGs Implementation plan
7. Implementation Strategy

2. ISLAMKOT REGIONAL SETTING

2.1 History

Islamkot is located deep inside the Thar Desert with the administrative boundary of Tharparkar District. Sindh was ruled by different dynasties, including the Soomras (1024-1351), the Summas (1335-1520), the Arghuns (1520-1650), the Kalhoras (1657/783) and the Talpurs (1783-1843). However, these rulers focused on the central and western parts of Sindh and the areas along the eastern boundaries, comprising of Tharparkar, were neglected. When Britain invaded the subcontinent, General Charles Napier, a commander in the British Army, defeated the Talpur dynasty and conquered Sindh in 1843.

General Charles Napier was appointed as the first Governor General of Sindh. He made Tharparkar a part of Hyderabad. In 1860, this region was named as "Eastern Sindh Frontier" with its headquarters at UmerKot. In 1882, the British government divided the province into different administrative units and assigned to Zamindars (landlords) to collect taxes for the British government. Umerkot was given the status of district under this promulgation. In 1906, the headquarters of this district was shifted from Umerkot to Mirpurkhas. In 1990, this district was split into two districts named "Thar" and "Mirpurkhas". District Tharparkar is one of the most underdeveloped districts of Pakistan and has been ranked, in Human Development Index, as the lowest among all the districts.

2.2 Administrative Setup

Tharparkar region is part of the great Thar Desert, which is spread over parts of India and Pakistan. Most of the Thar Desert lies in the Indian state of Rajhastan and is extended till Haryana and Gujarat.

The Tharparkar District has seven talukas, named: Islamkot, Nagarparkar, Chachro, Mithi, Dahli, Diplo and Kaloi. It has 44 union councils and 166 mouzas.

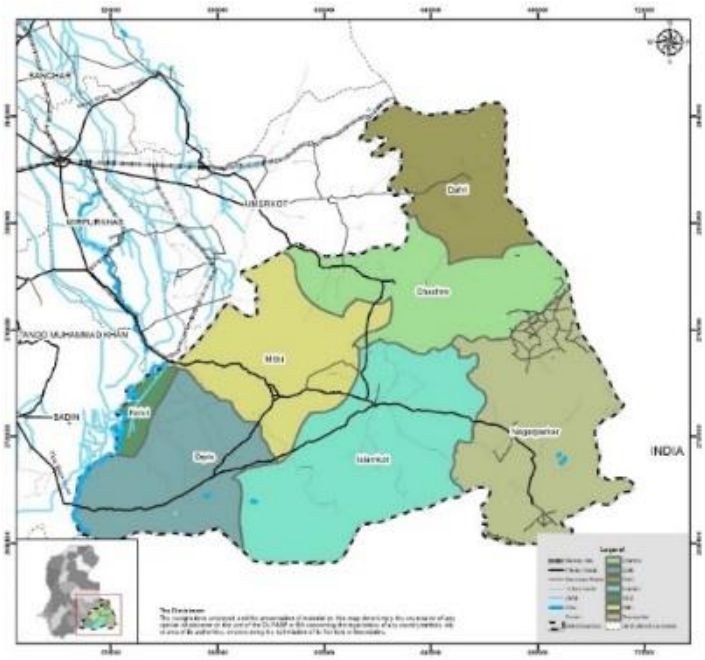


Figure 2-1: Talukas in Tharparkar District

2.3 Demography

According to 1998 census population of District Tharparkar was 914,291 @ 3.13% AGR, with 55% male and 45% female population and household size of 5.6. While according to the latest Population and Housing Census of 2017 Tharparkar has an overall population of 1,649,661 with an AGR of 3.15% and household size of 5.6.

This district shares its boundaries with three different cultures i.e., it touches Sindh on the west, Rajhistan on the East and Gujarat on the south-east. Hence, this district has a unique cultural amalgamation but the Rajhistani culture dominates among all. Thari music seems to be more inspired by the Rajhistani music traditions but with its own rhythm and colors.

Majority of district's residents are Thari speaking but Sindhi and Marwari are also common languages. This district has a substantial population of Hindu community, as the Hindus Muslims constitute 59.4% of the population.

2.4 Topography and Geology

The district is mostly a desert and consists of barren tracts of sand dunes covered with thorny shrubs. Since the district is a desert, sweet water is scarce and is available only in some areas of Nagarparkar and Chachro while, in rest of the areas, people consume brackish water.

The ridges are irregular and roughly parallel, and they often enclosed sheltered valleys, above which they rise to a height of some forty six (46) meters. These valleys are moist enough to admit cultivation and when not cultivated they yield luxuriant crops of rank grass. But the extraordinary salinity of the subsoil and consequent shortage of potable water, renders many tracts quite uninhabitable. In many of the valleys the subsoil water collects and forms large and picturesque salt lakes, which frequently dry up.

2.5 Climate

The district has a tropical desert climate. In the summers, it is extremely hot during the day, but nights are remarkably cooler. April, May and June are the hottest months and December, January and February are the coldest months. The mean maximum and minimum temperature during winter is 28°C and 9°C respectively. There are wide fluctuations in the amount of rainfall from year to year and the yearly average for some areas is as low as 100 mm. Most of the rain falls between July and September, during the south-west monsoon.

2.6 Geographical Location and Area

Islamkot lies in 69^0 3" 35' to 71^0 7" 47' east longitudes and 24^0 9' 35" to 25^0 43' 6" north latitudes. District Tharparkar covered an area of 19,638 square kilometers. This district is bounded by district

Umerkot on the north, districts Badin and Mirpurkhas on the west, Barmer and Jeesairmir Districts of India on the East, Rann of Kutch on the South.

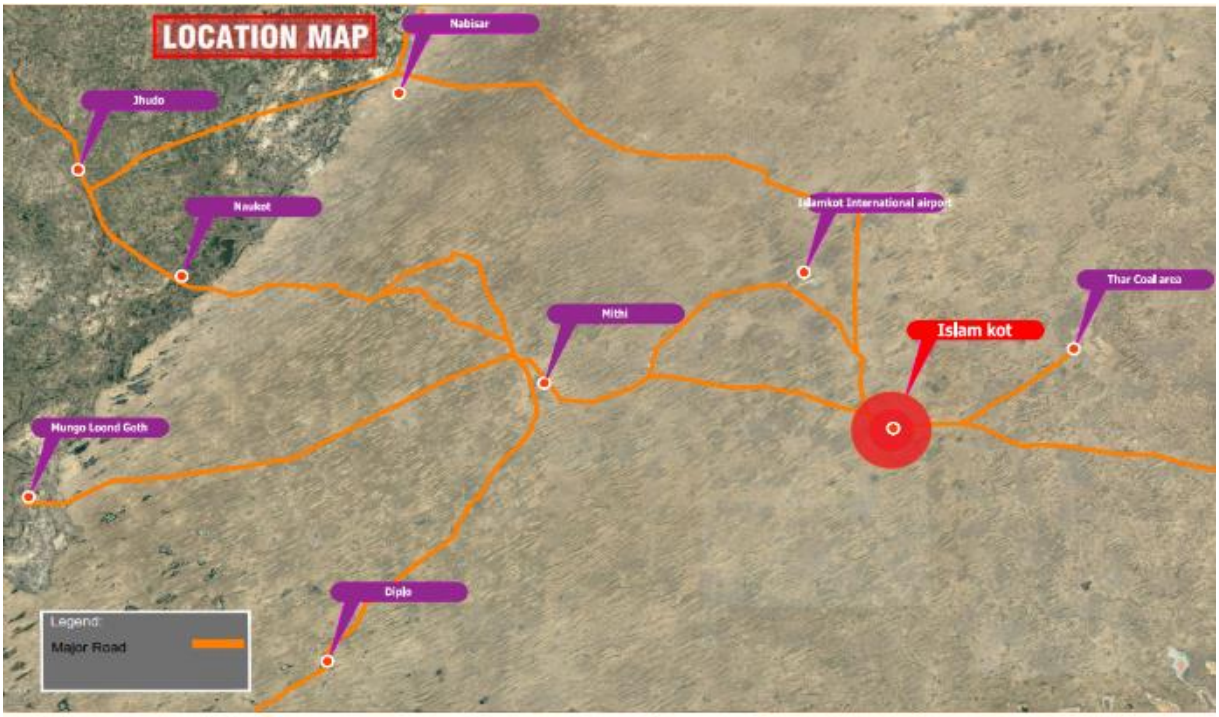


Figure 2-2: Location Map of Islamkot

2.7 Major Linkages

Tharparkar district covers an area of 19,638 sq. km yet it has only 743 km of good quality roads, which are inadequate for the area and its population. A Highway connects Tharparkar with other major cities of the province. Islamkot is linked with district headquarters Mithi and taluka headquarters of Diplo, Nagarparkar, Chachro through metaled roads.

Table 2-1 Islamkot Connectivity

Linkages	Distance
Islamkot - Karachi	317 km
Islamkot - Lahore	864 km
Islamkot - Hyderabad	198 km
Islamkot - Peshawar	1,044 km
Islamkot - Quetta	688 km
Islamkot - Islamabad	1,042 km
Islamkot - Sukkur	359 km
Islamkot - Larkana	373 km
Islamkot - Nawabshah	247 km
Islamkot - Mithi	42 km

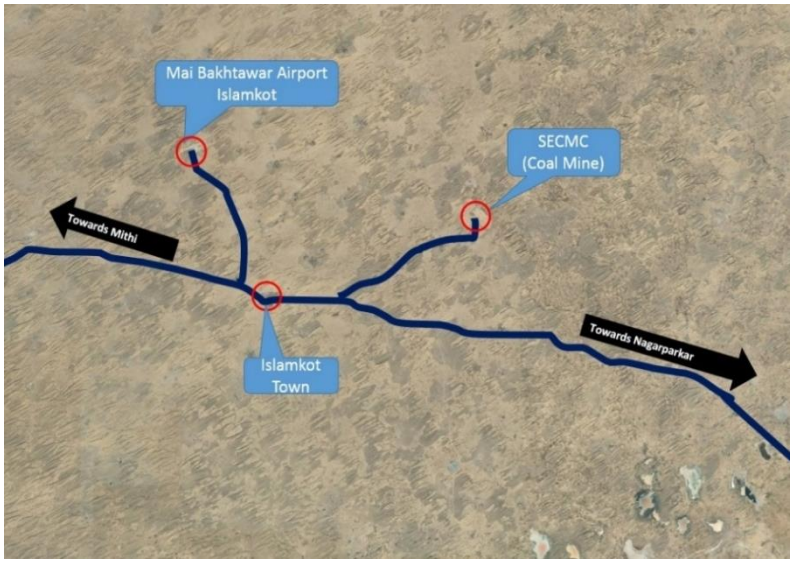


Figure 2-3 Regional Map of Islamkot, Coal Mines and Airport Linkages

2.8 Thar Coal Fields

The presence of coal deposits in the country was known before independence, but its economic value was highlighted during 1980s. This endowed underground deposit is ranked as 134th largest coal reserves in the world. After this finding Pakistan's name has appeared in the list of leading countries of lignite coal deposits. The economic coal deposits of Pakistan are restricted to Palaeocene and Eocene rock sequences. It is one of the world's largest lignite deposits comprising around 175 billion tonnes sufficient to meet country's fuel requirements for centuries.

The coalfields spreading over an area of about 9,000 square kilometers occupies approximately 46% of the area of District Tharparkar and have approximate dimensions of 140 km (north to south) and 65 km (east to west). Thar

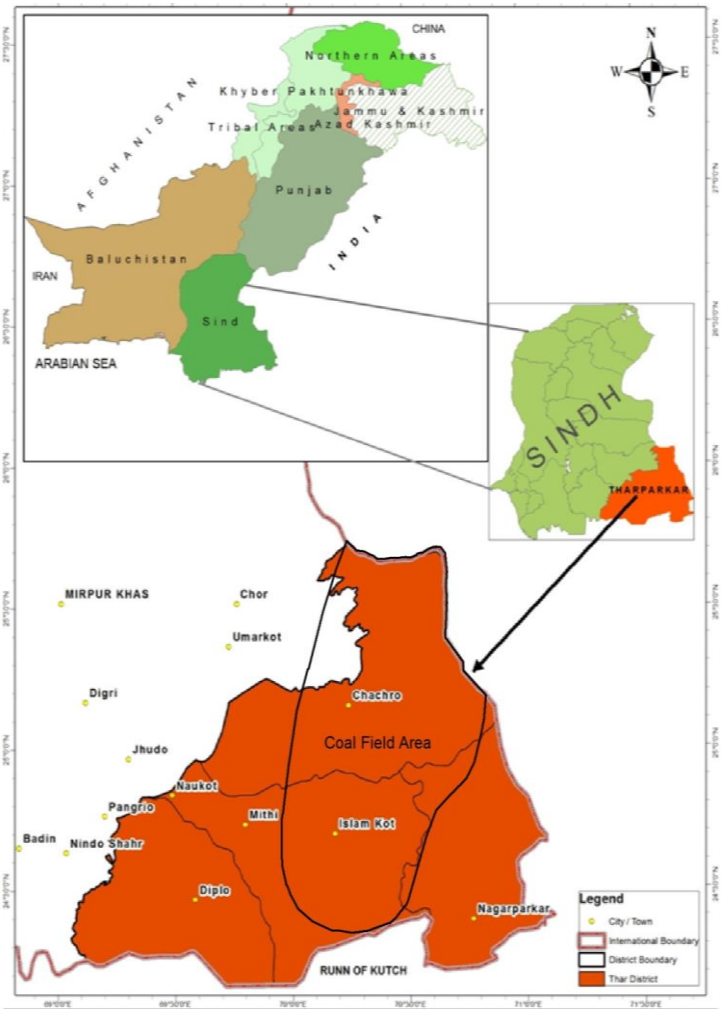


Figure 2-4 Location of Thar Coal Field

coalfield is approximately located between Latitudes (24°15' and 25°45') N and Longitudes (69° 45' and 70° 45') E in the southern part of Sindh Province. It is about 400 kms in the east of provincial capital Karachi.

Government of Sindh, in order to exploit this natural source and optimize it utilization, including power generation, placed a fully-fledged Department – 'Coal and Energy Development'. Earlier in 1983 Government of Sindh has established "Sindh Coal Authority" to explore, exploit, develop, and utilize the vast indigenous coal resources of Sindh.

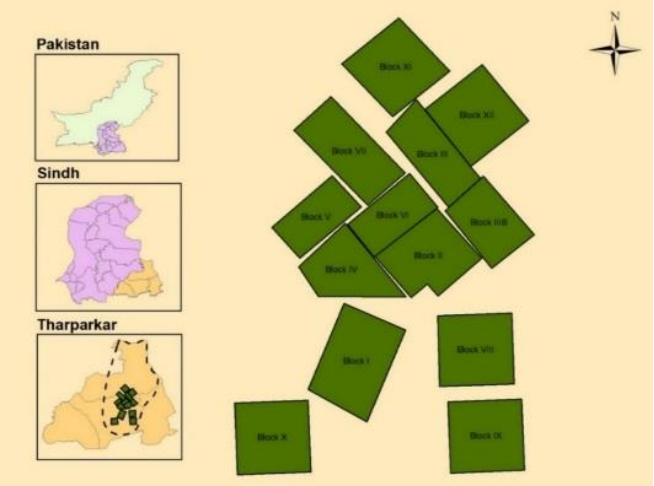


Figure 2-5: *Concession Blocks in Thar Coal Fields*

Thar coal mining operation plan has divided the lignite reserves in thirteen blocks of various sizes, namely; Blocks I, II, IIIA, IIIB, IV, V, VI, VII, VIII, IX, X, XI & XII. To facilitate investors, demarcation of thirteen blocks on the southern side of Thar coal field has been made. Many of the block developers have started mining.

In the first phase of Block II involves the relocation of villagers from Sahri Dars and Tharyo Halepoto in Islamkot taluka. In order to evacuate the site chosen for open pit mining completely, villagers are being rehabilitated to nearby locations. They should be provided with modern facilities, and given housing and employment opportunities. It is, therefore, necessary to carry out all-encompassing city planning of the 'neem-tree town' with futuristic approach so that the emerging needs for its expansion can be met.

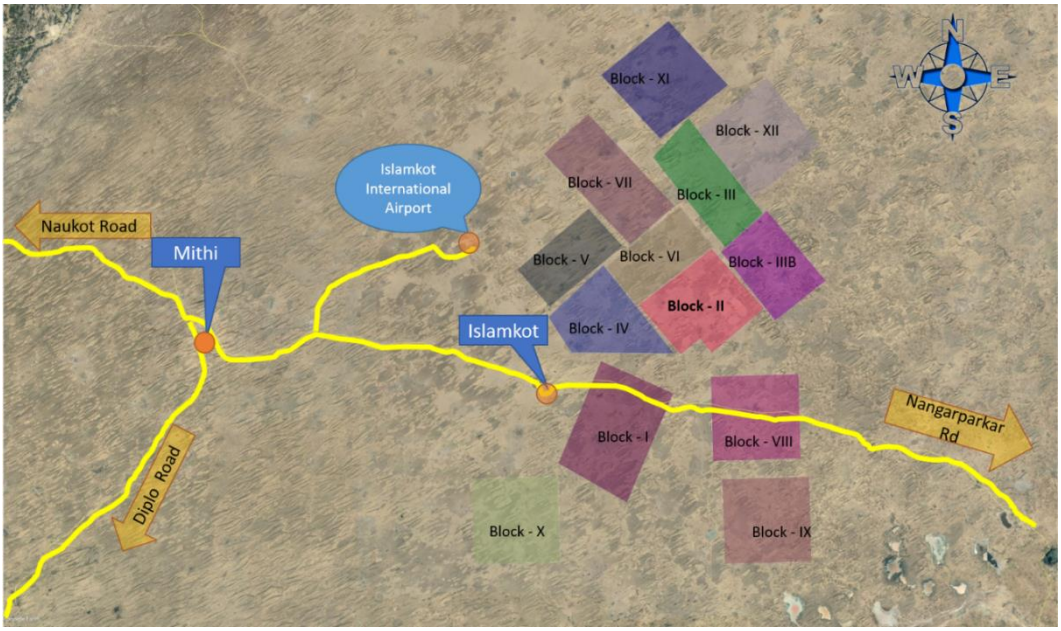


Figure 2-6 Location of 13 Thar Coal Blocks

2.9 Strategic Importance of Islamkot

Islamkot taluka is newly created in district Tharparkar, which is situated at a distance of 42 Kilometers from Mithi. It is situated 24°42'5.51"N Latitude and 70°10'42.17"E longitude. Islamkot is the only major Taluka / Town lying in Coal Fields and is near to the blocks which are under exploration.

Islamkot is the one of the remote towns of the district Tharparkar in Sindh, now a potentially growing town owing to large reserves of coals and establishment of mining blocks, the morphology of the district is changing. The Government of Sindh has pledged to make Islamkot, Thar, a model Taluka by meeting multiple sustainable development goals (SDG) in line with the government's agreement with UN's global agenda 2030.

Islamkot is the only major Taluka / Town lying in Coal Fields and is near to the blocks which are under exploration. Location of Islamkot is of strategic importance due to which need for carrying out comprehensive master planning of Islamkot is required, which will soon be counted among top five urban centres of Sindh alongside Karachi, Hyderabad and Sukkur where international trade will take place. Thousands of technicians and engineers will work on site to help in running the heavy machinery and developing open-pit mining. In the first phase of Block II involves the relocation of villagers from Sahri Dars and Tharyo Halepoto in Islamkot taluka. In order to evacuate the site chosen for open pit mining completely, villagers are being rehabilitated to nearby locations. They would be provided with modern facilities, and given housing and employment opportunities. Thus Importance of Islamkot is of strategic nature. It is, therefore, necessary to carry out all-encompassing city planning of the 'neem-tree town' with futuristic approach so that the emerging needs for its expansion can be met.

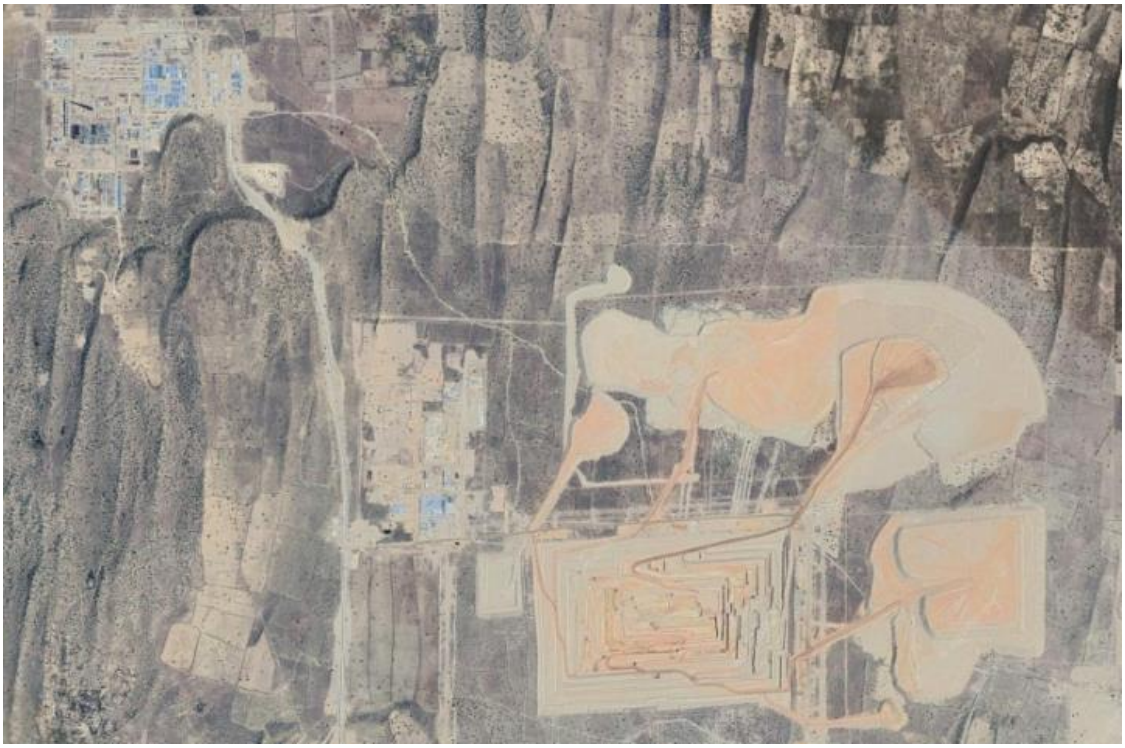


Figure 2-7: Thar Coal Mines and Power Generation Area in Block II

2.10 Islamkot Town

Islamkot taluka has it's headquarter town which is Islamkot city. Islamkot is an important town of the Tharparkar District in Sindh province, Pakistan. It is geographically situated on 24°26" North Latitude and 69°51" East longitude. The overall population is only about 10,427 souls in 1998 out of which 52% were male and remaining 48% are female. Census of 2017 reveals that population of Islamkot town has increased to 24,880 souls.

This town is also termed as the Neem tree town because there are several Neem trees in town. This town has nearly equal Muslim and Hindu population. The Hindu saint "Shri Sant Nenuram" was born here and Nenuram Ashram situated in the town is a revered place for Hindus. Both Hindus and Muslims live in peaceful harmony accounting for the lowest crime rate in the town.

The commercial activity basically involves sale of food/consumers Items and household's goods. The visual observation is that the turnover of customers is not heavy, especially when compared to the overall number of shops. The town is on a major highway pit-stop between Mithi and Nagarparkar, which is an alternative tourist destination, during summer monsoons. Sensing large influx of population in the coming years, most new projects are coming up on Mithi-Islamkot road.

Islamkot town is gradually expanding in all directions; mostly in the north-east and south-west directions, but not in a planned way. The total built up area in 2004 was 2.4 square kilometers, which increased to 6.55 square kilometers in 2018 as per archive past and present satellite imageries. Owing to large reserves of coals and establishment of mining blocks, the morphology of the district is changing. Location of Islamkot is of strategic importance due to which need for carrying out comprehensive master planning of Islamkot is required, which will soon be counted among top five urban centres of Sindh alongside Karachi, Hyderabad and Sukkur where international trade will take place.

2.11 Urban Morphology (Expansion and Evolution of Urban Form)

The historical growth of Town shapes up along the both sides of old Nagarparkar road. Islamkot Town has evolved in its present urban form from a small village, located 42 Kms. at the North-East of the Mithi DHQ town. Islamkot town's present street pattern shows a radial & Organic pattern and also Grid iron urban form /pattern, which is mixture of number of complex straight & semi-circular streets. The Hindu saint "Shri Sant Nenuram" was born here and also Nenuram Ashram is situated in the centre of Islamkot town.

Islamkot town is gradually increasing its town limits in all directions. Mostly in the north-east and south- west directions but not in a planned way. The total built up area in 2004 was 2.4 sq kms, which increased to 6.55 sq kms in 2018 as per archive past & present satellite imageries. Housing in Islamkot city can be divided in three forms of structures i.e. (i) New construction "RCC, Brick houses with ordinary construction patterns, (ii) load bearing structures & iii. Old huts mostly "Chowras/Jhugi's" with thatched roof and the buildings made of mud plaster. There are few old school building structures present in Islamkot town, belonging to the period at the beginning of last century, when the Talpurs brought Thar and Parkar under their dominion. Islamkot museum" Ajaib Ghar" preserved & secured few old objects i.e. old weapons, swords and other traditional objects. The preserved objects are in miserable condition.

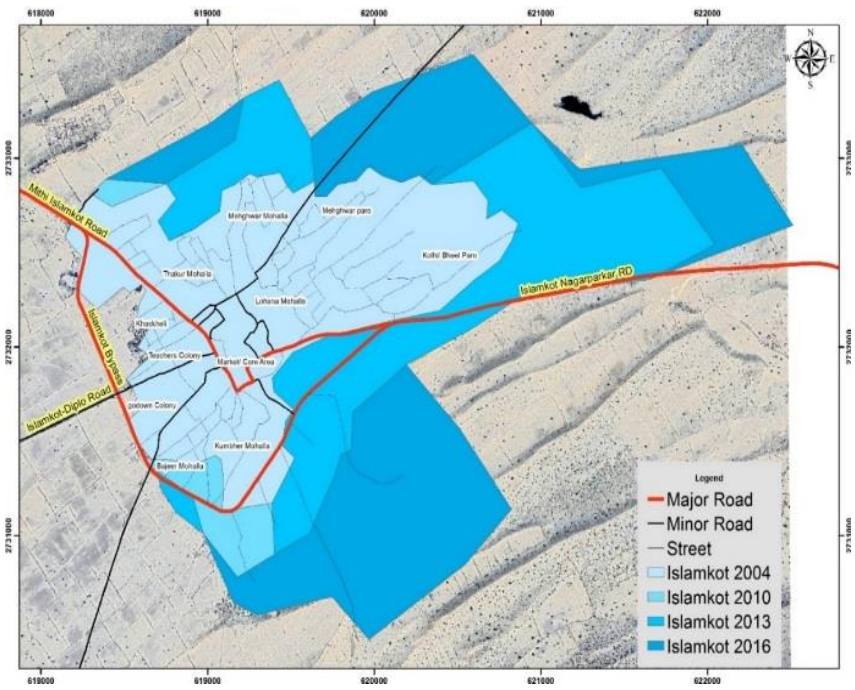


Figure 2-8: Historical Growth of Islamkot

2.12 Town Scape

Most of the development is found along Mithi Road and Nagarparkar Road There are no high rise buildings in the town, mostly town comprises of low density residential areas. The present city can be divided into three major zones:

I. Zone 1 – Core Urban Area (Old Town CBD)
II. Zone 2 – Southern Bypass Area (New Development)
III. Zone 3 – Northern New Expansion Area

Zone 1 – Core Urban Area (Old Town CBD)

There is main CBD, which is called Shaahi Bazaar and Lohana Paro Bazar in the center of town. Old Nagarparkar– Mithi Road comprises all major commercial activities i.e. shops, educational institutes, govt: offices and banks etc. Old Town Area comprises narrow streets and high density housing in low rise buildings occupied by population belonging to various income groups i.e. shopkeepers, traders and job oriented population. Old area is the most congested part of the city with narrow streets 4 to 12 feet width. Shopping is basically for hose-hold consumers good and merchandize seen is the shops include, meat, vegetable cloth and garments. Utensils, electronics banks, cafes and dairy shops. The number of shops apparently in-sufficient to support the large number of shops.

Zone 2 – Southern Bypass Area (New Development)

Recently developed or under development part of Town for commercial activities is along new Bypass Road and is expanding haphazardly. Some major Local Government land uses are present along both sides of Bypass road i.e. Cricket Ground Stadium, Cattle Market, Park, Slaughter House & Animal Prison located here.

Zone 3 – Northern New Expansion Area

Zone 3 comprises new Development that is cropping in form of low income, low rising settlements. This zone contains Security check posts, RO plant, Educational institutes, fuel stations, Thar lodges, NGO Offices and private hospital etc.

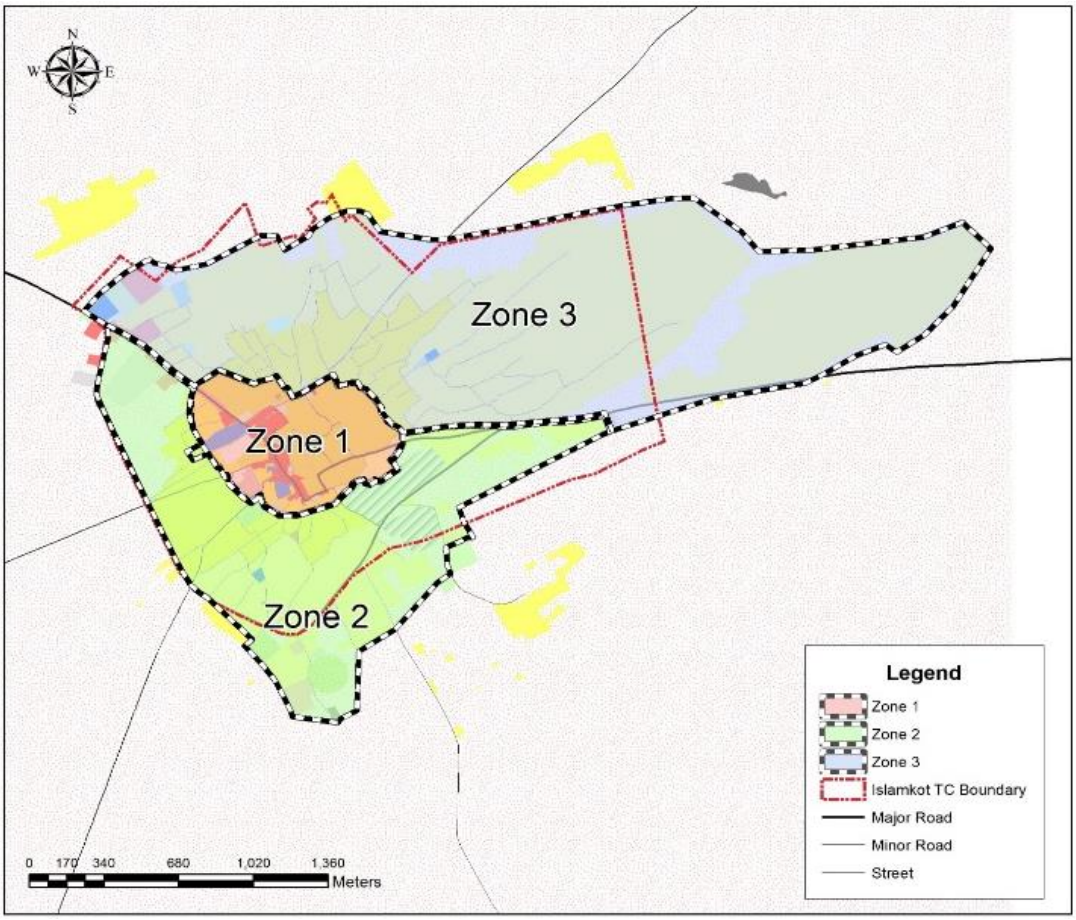


Figure 2-9: Zonal Plan of Islamkot Town

2.13 Land Use and Spatial Analysis

The built-up area of Islamkot town comprises of around 1073.57 acres of land as compare to consultant's proposed urban boundary which is 2218.3 acres. The land use analysis indicates that almost 40.6% of total urban boundary area is in use of residential purpose only, and 15.7% of the total area is agricultural land. Table 3-5: Landuse Calculation and Percentage.

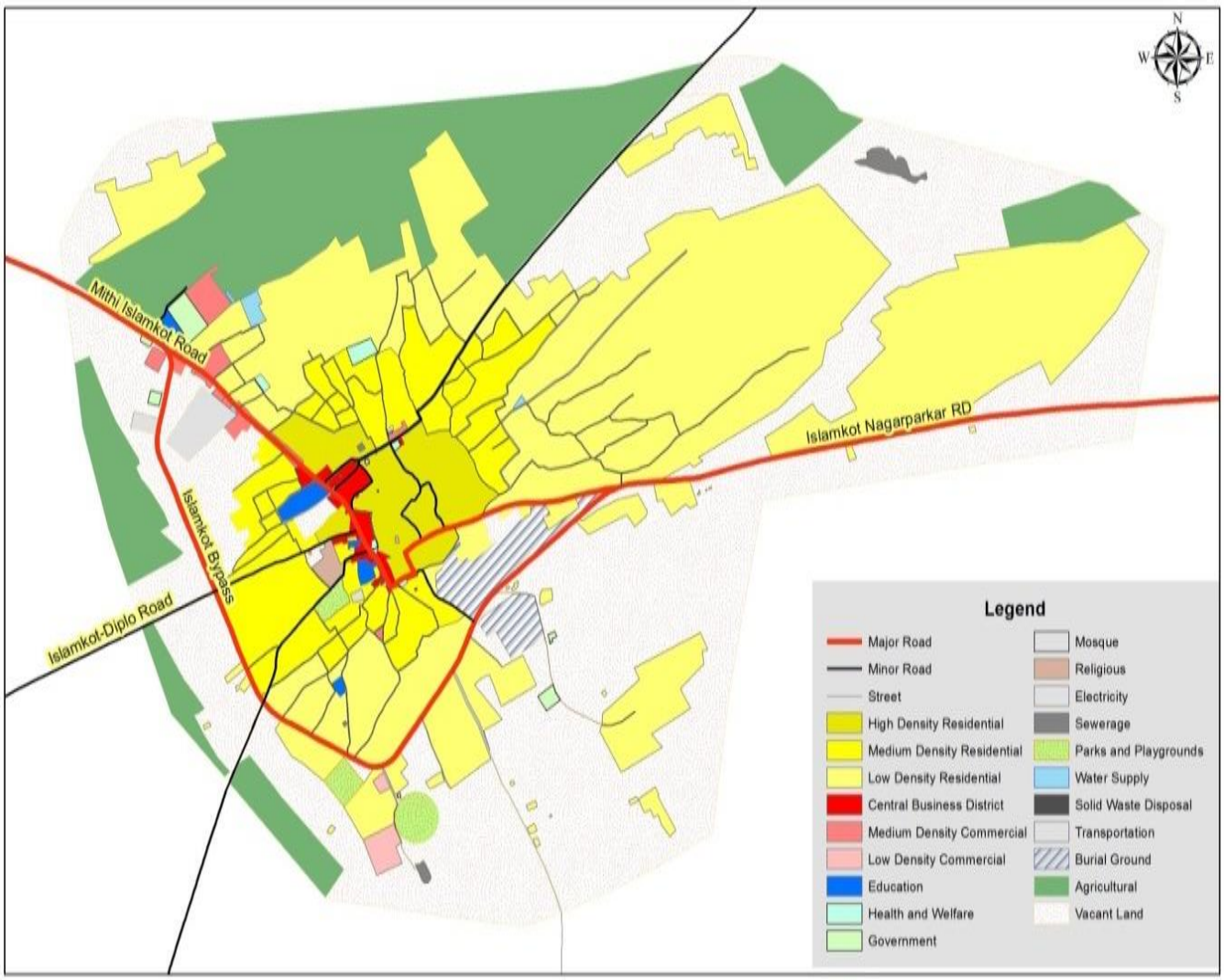


Figure 2-10: Land Use map of Islamkot Town

Table 2-2: Project Area Landuse Classification				
CATEGORIES	**LANDUSE CLASSIFICATION**			**AREA (ACRES)**
URBAN	Residential	Residential	Low Density Residential	689.23
			Medium Density Residential	152.19
			High Density Residential	60.46
			Reserved For Residential Purpose	0.00
			Sub Total	**901.89**
	Commercial	Commercial	Low Density Commercial	5.30
			Medium Density Commercial	14.36
			Central Business District	10.62
			Sub Total	**30.28**
	Parks and Playground	Parks and Playground	Parks and Playgrounds	12.81
	Sub Total			**12.81**
	Amenities	Institutional	Education	8.01
			Government	5.64
			Health And Welfare	2.86
			Press Club	0.08
			Religious	3.48
		Utilities And Town Service Facilities	Electricity	9.33
			Gas	0.00
			Sewerage	4.52
			Communication	0.00
			Water Supply	2.41
			Others	0.06
		Burial Ground	Burial Ground	30.39
		Heritage and Culture	Heritage and Culture	0.00
	Sub Total			**66.78**
	Industrial	Manufacturing	Small-Scale Manufacturing/ Light Industry	0.00
			Large-Scale Manufacturing/ Heavy Industry	0.00
	Sub Total			**0.00**
	Transportation	Transportation	Transportation	62.00
	Sub Total			**62.00**
	Urban Land Use - Total			**1073.75**
NON-URBAN	Agriculture And Forestry		Agricultural	348.06
	Sub Total			**348.06**
	Water Bodies		Canal	0.00
			Pond	0.00
	Sub Total			**0.00**
	Vacant Area			796.49
	Non-Urban Land Use - Total			**796.49**
			TOTAL	**2218.30**

2.14 Population

2.14.1 Past Growth Trends and Present Population

Total population of town was 10,427 souls in 1998 out of which 52.5% were male and remaining 47.5% were female. Population of Islamkot TC had an estimated growth rate of 3.36% per annum as per 1998 census. According to latest census of 2017 population of Islamkot town is 24,880 with AGR of 4.68%.

Table 2-3: Past and Present Population Statistics[2]

Area	Population	
	Census 1998	Census 2017
Islamkot TC	10,427	24,880
Islamkot Taluka	241,548	397,766
Tharparkar District	914,291	1,649,661

2.14.2 Future Population Projections

Islamkot city is going through a massive transformation due to exploration of coal reserves. Many International and local companies are investing not only in the headquarter town but also in the entire district especially Islamkot.

Islamkot is not likely to grow at the annual growth rates observed in the previous census. The population projections will largely depend on the rate of investment in the coal extraction, power production and funding in the downstream industries and services. The progress in mineral development will attract young professionals and workers for whom the jobs will be created in larger numbers. Therefore immigration to Islamkot will be quite high from the surrounding towns as well as the Thari workers working overseas. What will be the growth rate then is a matter of speculations.

Govt has leased 5 blocks for mining and power generation, from which Block-II is already generating power with full potential. And they have 7,700 direct employees. If 5 blocks run successfully as per schedule, they all might need 38,500 manpower for long run.

Assuming 30% employees will settle down with families in urban areas, the resident would increase by 117,618 including indirect employees and the existing residents of Islamkot in 2027 and if the investment by SECMC and other lease holders continue at a steady rate over next twenty years (and beyond), we might see the population ultimately reaching a high mark. However the Consultant suggest that the population projection should be reviewed every 5 years to estimate the growth rate.

[2] Source: District Census 1998 and 2017

The Growth rate up to 2027 has been determined at 16.81% after taking care of migration / employment on new power plants/ mining and after 10 years, growth rate will may decrease annually.

Projected Population Of Islamkot						
Source	**AGR**	**Census 2017**	**Projected 2022**	**Projected 2027**	**Projected 2032**	**Projected 2038**
Census 2017	4.68%	24,880	31,273	39,309	49,409	65,011
On the basis SECMC Data	16.81%	24,880	54,096	117,618	194,647	260,846

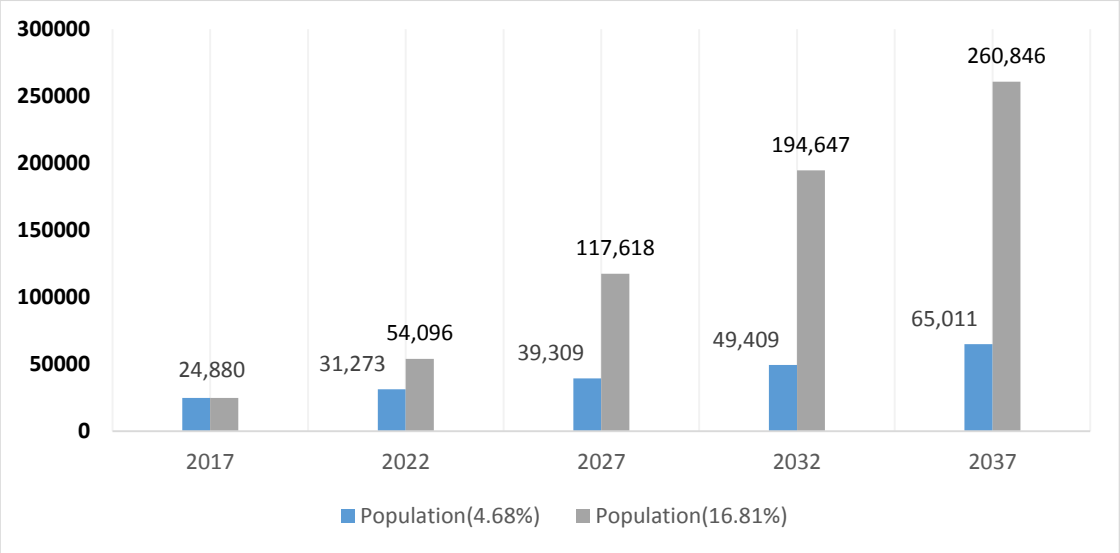


Figure 2-11: Future Projections for Islamkot

3. VISION FOR STRATEGIC DEVELOPMENT PLAN OF ISLAMKOT

3.1 Pre-Workshop Consultations

The preparation of Master Plans for Towns, now increasingly invites Consultations with the stakeholders who would benefit from the plan. The standard "Approach" is not just plan for the people but the people. The TOR for the Development Master Plan also included.

Vision Formulation

The Consultative workshops with the stakeholders, which were jointly identified with the Client and included representatives of district administrations, officials of line departments noted citizens public representatives, local government leaders, journalists, NGO's and members of Civil Society.

The Consultations were interactive and held at three stapes: vision formulation endorsement of baseline data, draft strategies and draft plan.

During the workshop it appeared that information at the local level was very un-organized. Participants were more vocal about their immediate problems and had difficulty in looking for in future and express a vision

3.2 Workshop Program and Participation

Three Vision formulating workshops were carried out with the main stakeholders on September 07, 2018, January 30th 2019 and April 16th, 2019. Collation of opinions expressed produced the following vision

First workshop for Vision Formulation was held in the Islamkot Press Club Hall on September 07, 2018 in coordination with SECMC, in which all the relevant stakeholders were invited. The target group was

local government representatives, members of civil society and NGOs and civil servants working in Islamkot and District Tharparkar.

The workshop was chaired by Mr. Kamlesh Kumar, Town Committee Chairman, including; Mr. Mumtaz Ali, Director DUP&SP, Mr. Zulfiqar Daudpota, ADC-1 Mithi Mr. Tejvir Singh, CSR Engro ,Mr. Masood Jafri, Team Leader EA Consulting, Besides, several high-ranking officials, TMA representative and local traders were present and actively participated.

3.3 Workshop Proceedings

The workshop proceedings started with Welcome Speech by. Mr.Tejvir Singh, and introduced the DUP&SP and Consultant's Team to the stakeholders. He added that in coming years 6 Billion dollars investment is going to be made in Block-II. He then invited the Director of DUP&SP for Introduction.

Mr. Mumtaz Ali, Director, DUP&SP welcomed the participants, shared the objectives of Project and workshop and hoped that it will give the quality inputs for Islamkot Town future vision.

Mr. Masood Jafri, the Consultants Team Leader introduced the EA Consultant and elaborated on the existing conditions, social and physical infrastructure, constraint and potential of the town; specially in the light of huge investment lined up for the development of Thar Coal and establishment of Power Plants and shared some future planning strategies to open the discussion. The following key points shared by the participants:

- Mr. Omparakash, Assistant Engineer Highway Mithi, proposed that new planned residential areas should be considered and katchi abadi should be approved with provision of basic facilities.
- Mr. Jawarlal XEN PHED raised issue regarding shortage of water for future population. He also added that dewatering from Block-II is destroying the ground water table of surrounding areas.
- Mr. Kamlesh Kumar, Chairman town committee asked to maintain and improve the existing town. He also suggested to keep the community informed of town activities and operations while serving our citizenry in an effective and efficient way.
- Mr. Ghanshyam, EX Nazim raised point that there should not be another city. First there is need to improve existing town and to raise living standards of local people. He also added that improve and preserve old downtown as the cultural and civic heart of Islamkot.
- ADC-I suggested that there should be an emphasis on solid waste, drainage and water supply.

Second workshop for Vision Formulation was held at Darbar Hall, DC office Mithi on Thursday 31st January 2019 in coordination with SECMC, in which all the relevant stakeholders were invited. The target group was local government and public representatives, members of civil society and NGOs and civil servants working in Islamkot and District Tharparkar

The workshop was began with the name of Allah, The workshop was chaired by The Deputy Commissioner of Tharparkar.

The Deputy Commissioner of Tharparkar welcomed participants & asked to start the workshop with the introduction of participants, participants include; Mr. Mahesh Malani (MNA), Faqeer Sher Muhammad Bilalani (MPA) Mr. Kamlesh Kumar Town Committee Chairman, Mr. Zulfiqar Kumbher Deputy Director DUP&SP Planning & Development Department Gos, Mr. Nabesh Akhter Deputy Director DUP&SP Planning & Development Department Gos, Mr. Imran Qureshi SSP Tharparkar, Mr. Ali Akbar Rahimoo Civil Society Activist (Executive Director AWARE) Mr. Tejvir Singh Thar Foundation CSR Engro ,Mr. Masood Jafri, Team Leader EA Consulting, Besides, several high-ranking Government servants, TMA representative were present and actively participated.

Details of deliberations and individual activities are given in the report elsewhere. The proceedings and conclusions are described hereunder:

1) The participants generally discussed on the resolution of immediate problems of town namely: supply of clean drinking water, sewerage and drainage, solid waste disposal, traffic congestion and parking, better health and educational facilities, cleanliness, parks and play areas. It is clear that far flung high sounding vision statements, are meaning less for them if the immediate problems are not urgently solved.

2) The participants showed concern regarding high rate of population growth. Urbanization and uncontrolled land use conversion is eating away lots of agricultural land and breaking social fabric of residential communities. Need for land management system has been stressed.

3) The socio- economic uplift of the population has been mentioned by most participants, which include, provision of basic needs, health, education and housing facilities; sustainable utility services, parks and playgrounds; employment and income generation.

4) Peace, safety, security and proper governance are envisioned by the participants as the ultimate goal for the twenty year Islamkot Strategic Development Plan. Whereas the Vision will remain static, the path to reach the vision may be subject to adjustments to account for ground realities.

Third repetitive workshop for Vision Formulation was held at Darbar Hall, DC office Mithi on April 16th, 2019 in coordination with SECMC, in which all the relevant stakeholders were invited. The target group was local government and public representatives, members of civil society and NGOs and civil servants working in Islamkot and District Tharparkar.

3.4 Islamkot's Vision Statement:

The visioning process stems from the Stakeholders' Vision of the town which have been translated into tangible and concrete targets. The discussions in the Workshop that most people want to see:

The Stakeholders' vision emerging from several interactive conferences and free exchange of ideas indicates that the stakeholders are fully aware of the challenges and opportunities the future holds for Islamkot. They insisted the future town should be fully integrated with the existing town and offer housing, employment, health and utilities of the highest level. Just as a local trader put it 'they say Islamkot will become like Dubai; shall we also be effluent like shaikhs"

To address local grassroots level problems to uplift the life of a common man.

3.5 Islamkot's Vision Tree

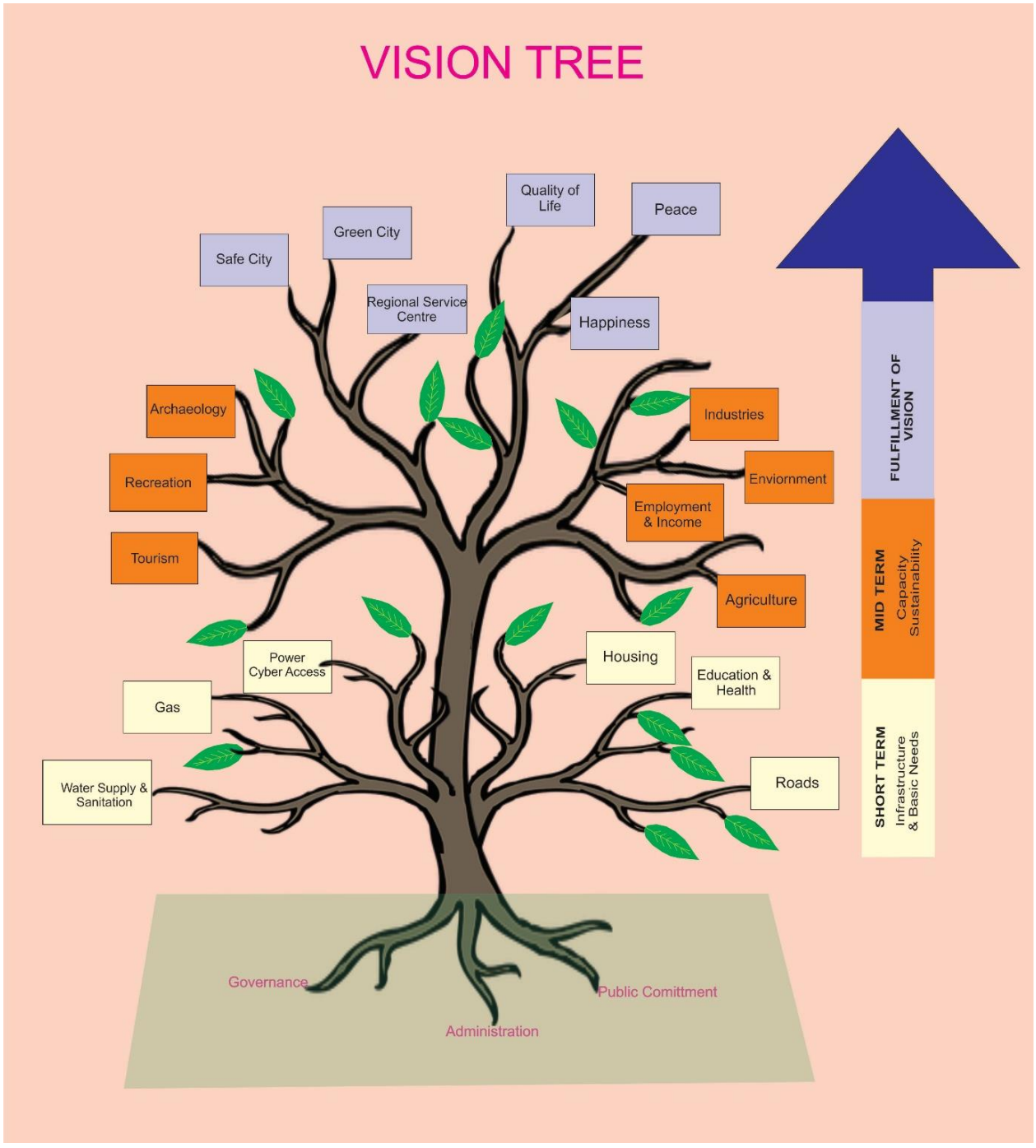


Figure 3-1: Stakeholders Consultation Workshop Vision Tree

4. PROPOSED MASTER PLAN OF ISLAMKOT TOWN

4.1 Spatial Pattern

The study of geography and morphology of the town and environs in the Chapter-2 has led to a natural spatial pattern for the future form of Islamkot Town. The topography shows numerous large and small sand dunes parallel to each other in south-western direction. The dunes have a crest of fertile soil which given little monsoon rain, come alive with natural vegetation having a short life span on average about two weeks. This vegetation turns the whole desert into a "Heaven on Earth" scenario. This vegetation is the life line of the majority of population engaged in cattle and goats breeding. When the nature is kind to Thar and there are good rains, the Tharis engage themselves in cultivation of fodder and crops including wheat, onions, chillies, wild mushrooms, sesame seeds etc. bring in short spell of prosperity. In years when there is no rain, the greenery is elusive, the crop and fodder get dried up and the area becomes drought stricken. The population migrates to the canal irrigated areas of Umerkot, Badin and Mirpurkhas.

Such is the natural setting of the existing Islamkot town. However, with the mining of Thar coal and setting up of thermal power plants, the scenario for the future development of Islamkot will drastically change. As seen in the Middle East in the last half century, energy is the biggest driver of the economy and attracts large investments in the industrial and service sectors, bringing in revolution in the town. Islamkot at present is sitting on the threshold of such revolution and the main objective of this Master Plan is to make it ready for the challenges expected to be encountered in its transition from a small sleeping town to a metropolis of future.

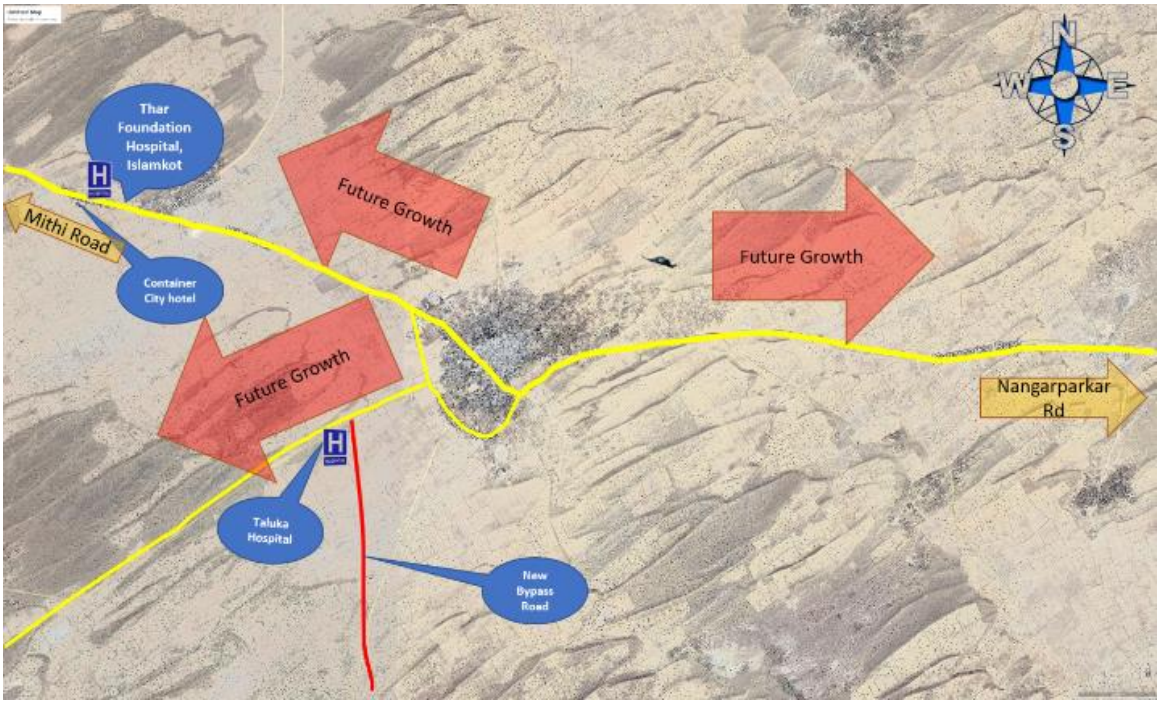
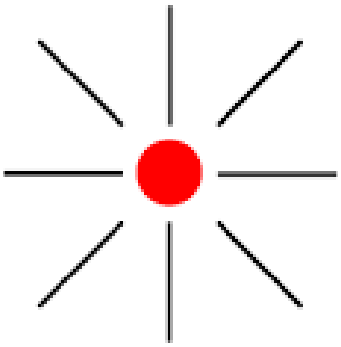


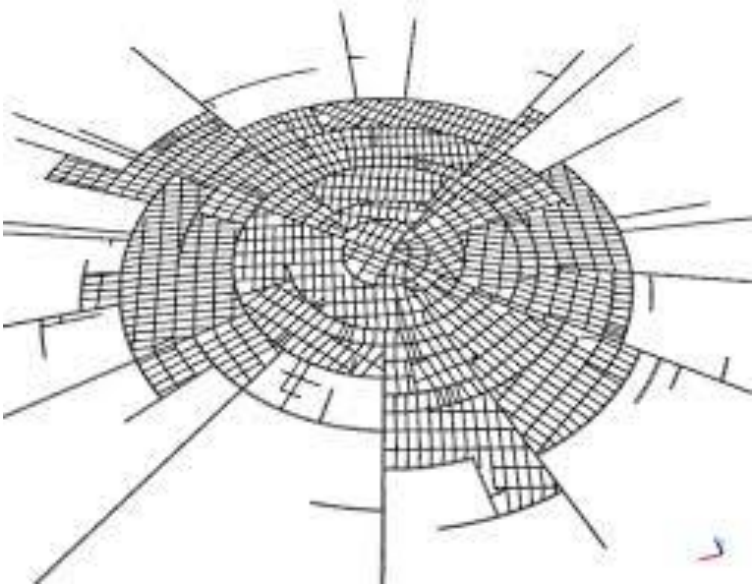
Figure 4-1: Future Growth of Islamkot Town

4.2 Basic Urban Form

The existing town is a small lively and thriving urban centre that fulfils the socio-economic and financial needs of its population and that of surrounding villages. Around half of the population follows Hindu religion therefore, the Hindu religious places occupy prominently large spaces. It is no surprise then that the population demands the scarcity and prominence of the Old Town to be maintained or enhanced in the future plan. During the stakeholder's conference in the town, the town elders insisted that any future urban development detached from the existing town making the existing town a redundant, will not be acceptable to them.

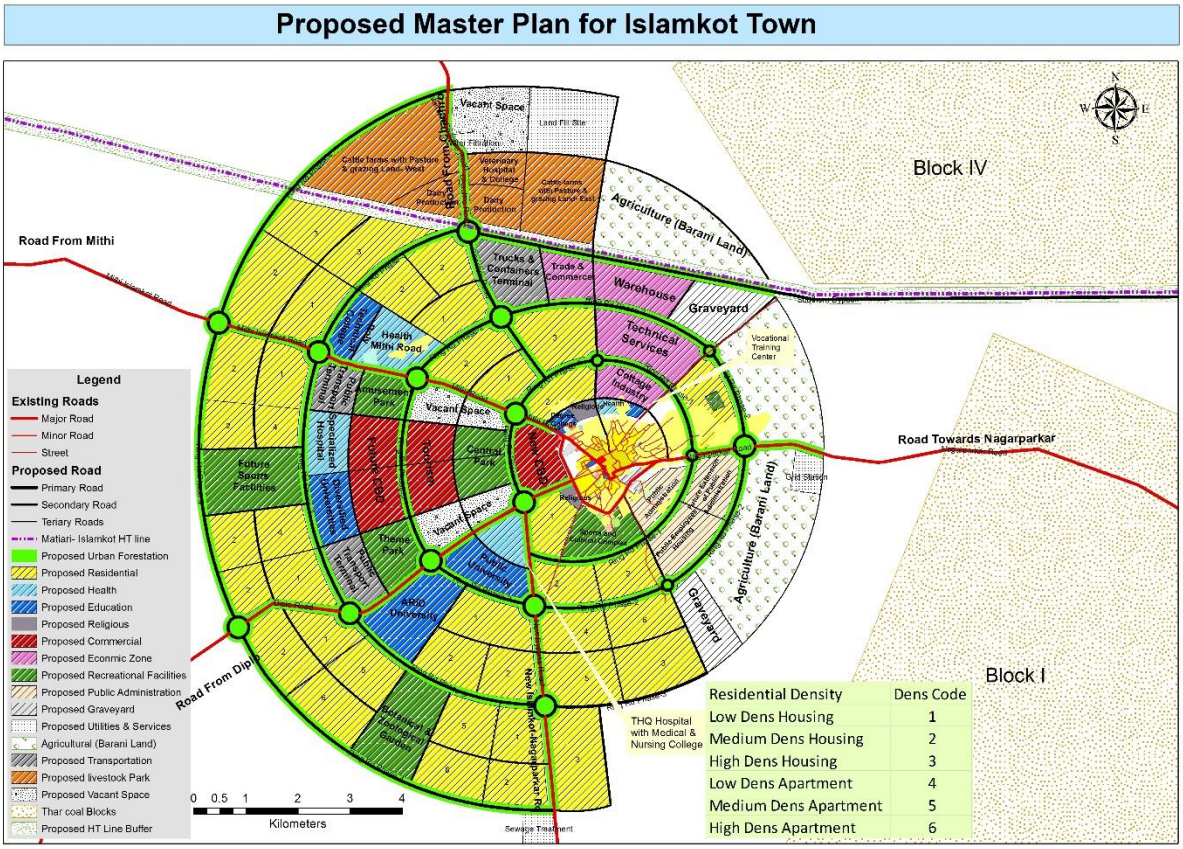


The existing core town would naturally be the physical nucleus of future town, and the future development will radiate from it in all directions in concentric circles. At present four regional roads connect Islamkot with the other cities, all converging on the town nucleus. These are: Road to Mithi, Road to Nagarparkar, Road to Diplo and Road to Chachro. Interconnection of these radiating roads with the ring roads around the town nucleus, gives natural circular pattern, whose beauty is that it keeps the development compact, it allows the town's central (core area) to breathe and expand in any direction.



4.3 Proposed Master Plan

The extent of the area included in the Proposed Islamkot Master Plan is 30,000 acres approx., exclusive of the airport area which is near to the town but not included in the Master Plan. The hallmark of the plan is that it is **compact without being congested**.

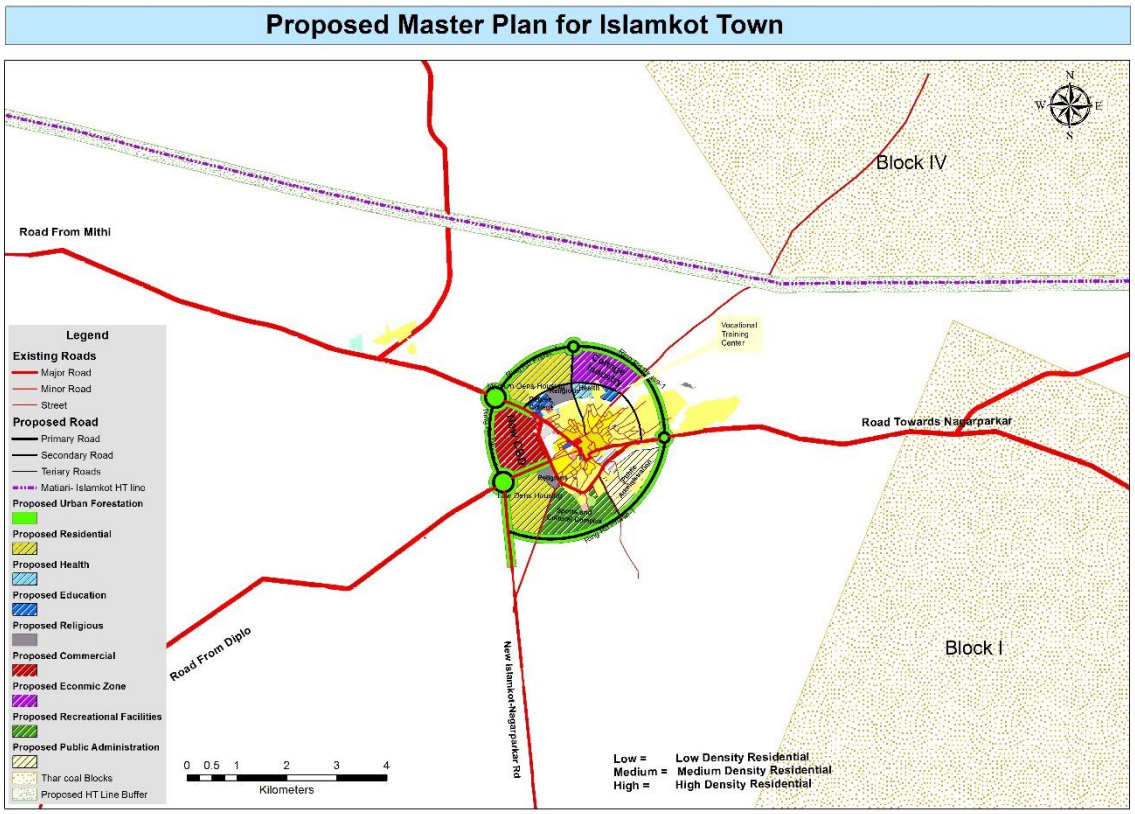


4.3.1 Phasing of Islamkot Master Plan

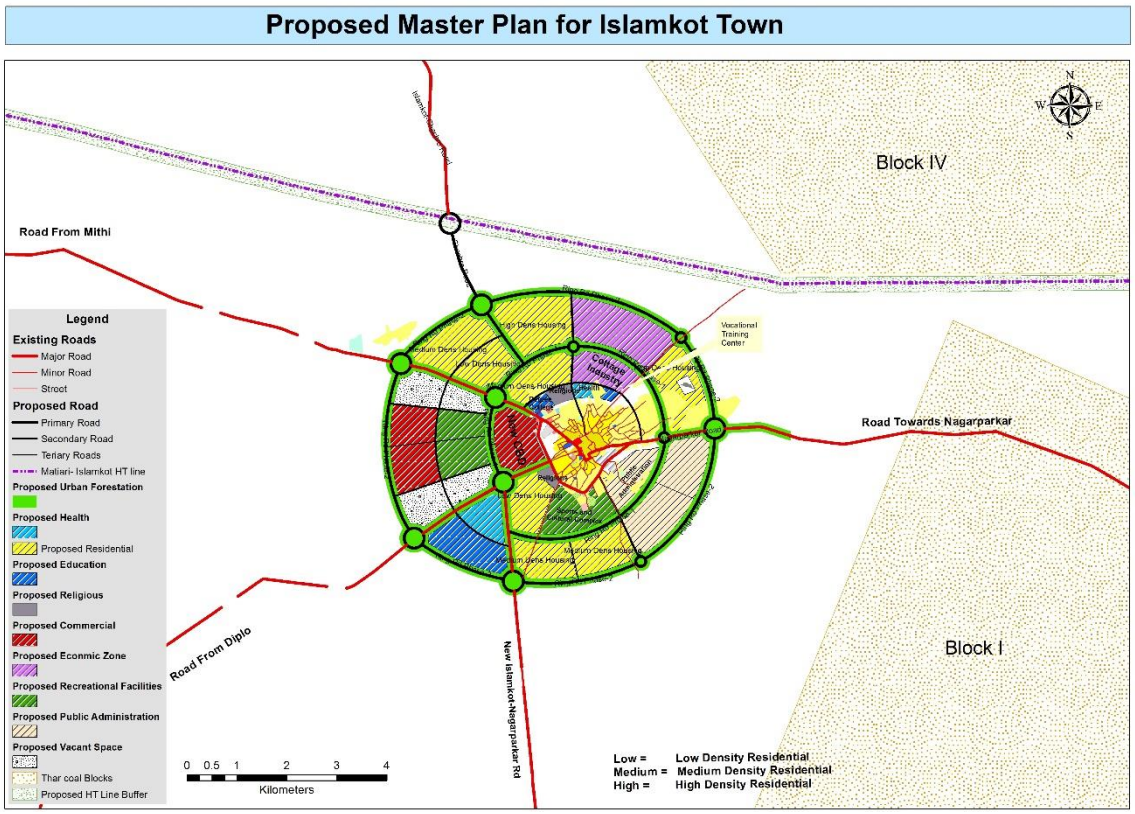
As the future expansion of the Islamkot Town is expected to be enormous, thus the complete Proposed Islamkot Master Plan is catering all the needs of a full-fledged metropolis of the future.

The Master Plan for Islamkot has also been prepared with the consideration of four phases as follows:

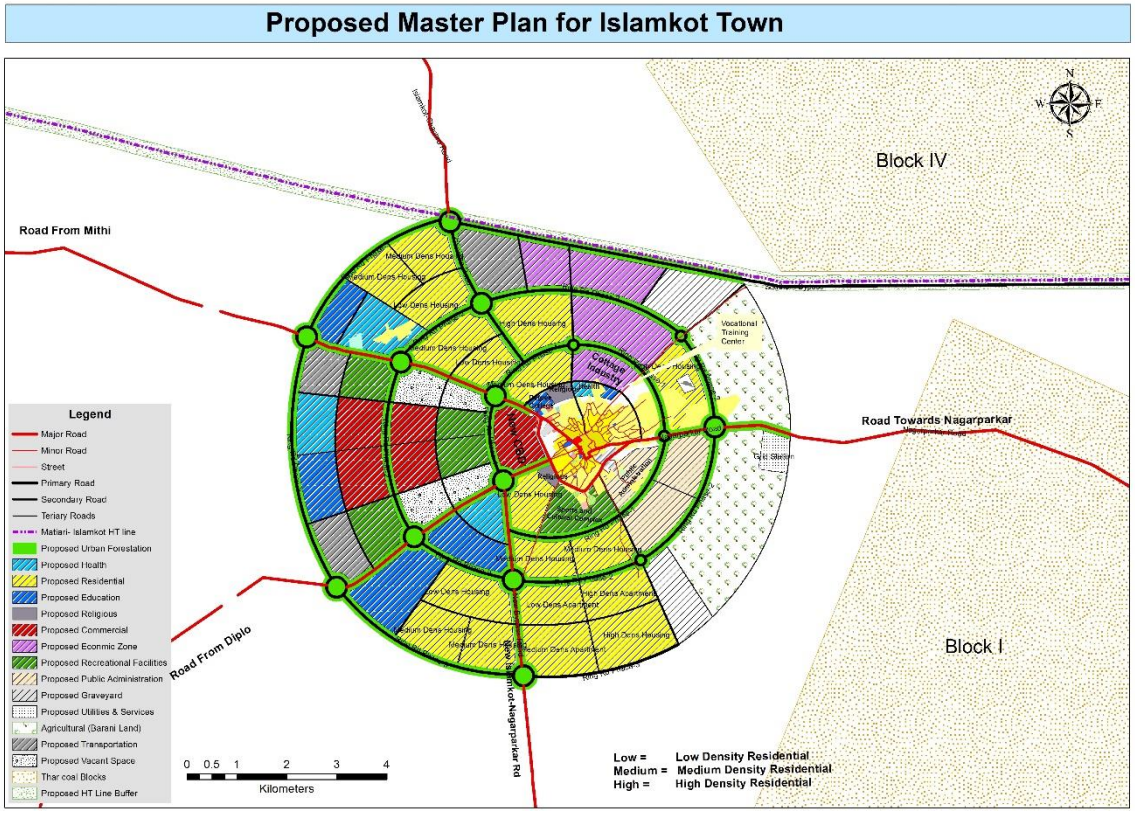
i. Phase-1 (2017-2022)



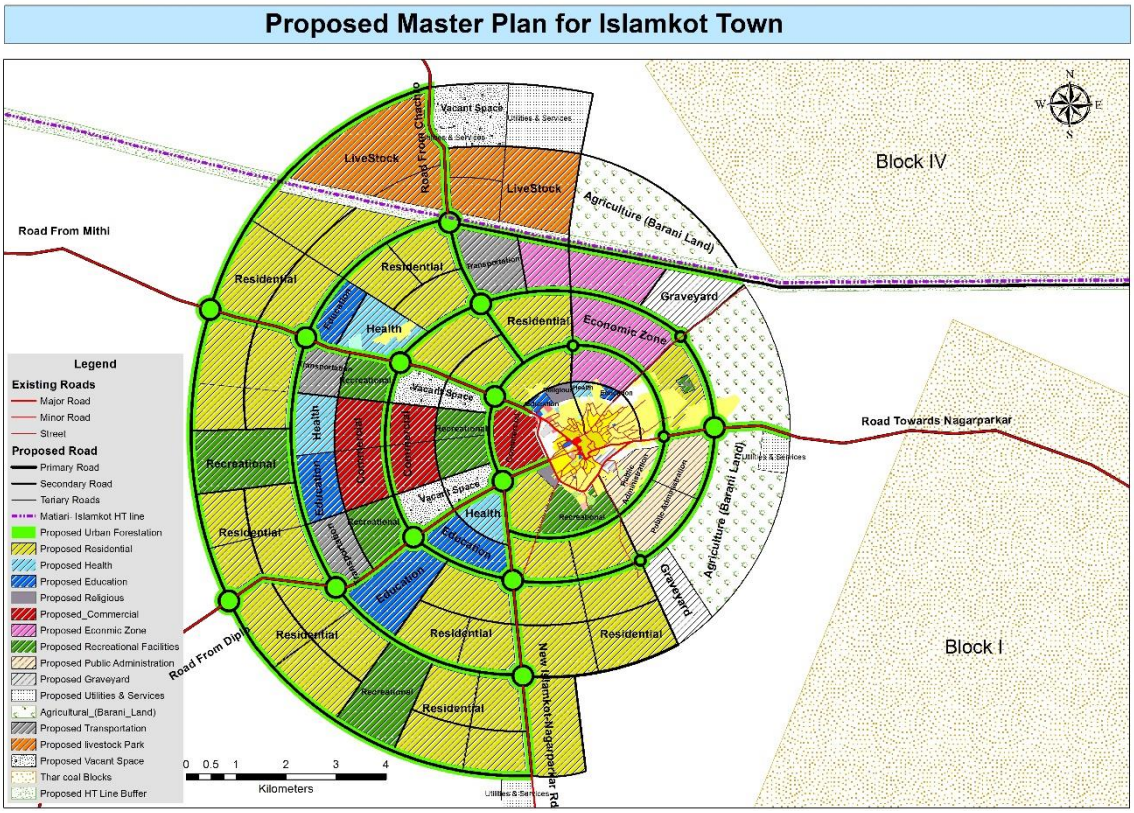
ii. Phase-2 (2022-2027)



iii. Phase-3 (2027-2032)



iv. Phase-4 (2032-2038)



Each phase of development is depicted by a ring, the plan will afford balance development containing all required land uses. On the other hand, the existing primary roads, mostly radiating from the core area; forming different sectors with the proposed rings of the phases. In this way it will not be necessary to develop whole circle at once. It will be very flexible plan to develop onward sector in any direction as per the need and requirement of the town. However in this way town will grow in a compact manner instead of sprawling haphazard.

The airport area is not shown in the Master Plan due to the distance of airport from the Town. However it is very important to control development around the airport and along the airport road. The areas on both sides of the airport road will attract many developers. The land two hundred feet from both edges of the road should be notified for development control where only planting of neem trees should be allowed.

Despite taking different aspects in to consideration, the Consultant suggest that the Master Planning should be reviewed every five years to estimate the land use and area requirement according to the growth rate and economic investment.

4.3.2 **Ring Roads - Concentric Circles**

The ring roads are forming concentric circles, indicating the four phases of the development. These ring roads with radial roads will form different sectors of land use zoning. There will be a ring road at each phase which will serves as a bypass for current phase, and will be the central / principal road for the preceding phase (like existing bypass will be the central road of the first phase), as follow:

i. Ring Road Phase-1 (Bypass Phase-1 & Central Road Phase-2)
ii. Ring Road Phase-2 (Bypass Phase-2 & Central Road Phase-3)
iii. Ring Road Phase-3 (Bypass Phase-3 & Central Road Phase-4)
iv. Ring Road Phase-4 (Bypass Phase-4)

The first phase ring road is in spiral form, starting from the origin of New Bypass Road and ending at a section of it. The second phase ring road is a complete circle in terms of geometry. The third phase ring road is starting from New Bypass Road and connecting exclusive Northern Bypass for Thar Coal Blocks along HT Power Line reservation, while intersecting Chachro Road. The fourth ring road is making half circle, which starts like third ring, while ending at Chachro Road.

Thus, these incomplete rings roads will be helpful in restricting development in east direction i.e. towards Thar Coal Blocks, promoting development in west direction via Mithi and Diplo Roads and providing connectivity between north (Chachro Road) and south (New Bypass Road) without entering in the town.

4.3.3 Radial Roads – Regional Connectivity

All proposed radial roads are existing regional roads, providing transport connectivity with other urban and rural regional areas. Most of these roads are converging to core urban area, or in other words these roads are originating from the existing town. In this way, the existing town will remain focal point of all development along the roads.

The Chachro and New Bypass Roads are not radiating directly from the existing Islamkot Town. However, these roads are also serving as vital radial regional connections. Thus, the first phase ring road is proposed to start from origin of the New Bypass Road and end to its section in a spiral form. Further, the realignment of Chachro Road is also proposed to connect it to the Phase-1 Ring Road.

As a result, there are five proposed radial roads, which will serve as future regional connections:

i. Mithi Roads
ii. Nagarparkar Road
iii. Chachro Road
iv. Diplo Road
v. New Bypass Road

4.4 Proposed Land Use Zoning

The proposed land use zoning is broadly based on NRM Standards[3]. The NRM has not been revised since decades, thus the Consultant have added new land uses in the prescribed categories, as primary zoning i.e. Level-1. Further, as per the contextual requirement of the local environment of Islamkot Town, secondary zoning i.e. Level-2, is also categorized accordingly, again in consideration to the NRM Standards[4].

The proposed land use zoning in comparison to NRM is as follow:

S.No	NRM STANDARDS		PROPOSED LAND USE CLASSIFICATION	
	Land Use Zoning	Land Uses (%)	Level - 1 Functional Zoning	Land Uses (%)
1	Residential	40-45%	Residential	33.7%
2	Commercial	2-3%	Commercial	3.7%
3	Industrial	2-10%	Economic	10.1%
			Livestock	
4	Institutional	3-5%	Health and Welfare	8.6%
			Educational	
			Religious	
			Public Administration	
5	Community Open Spaces	4-6%	Recreational	6.8%
6	Graveyards	2-3%	Graveyards	2.2%
7	Arterial Circulation & Terminals	15-20%	Transportation	10.6%
			Utilities and Services	
8	Protected Reserved	15-25%	Urban Forestation	24.3%
			Agriculture	
			Vacant	

The total area requirement for full fledge metropolis will be around 30,000 acres, excluding airport area. As shown in the table of proposed land use classification, the percentage of residential is low and institutional is high, in comparison to the NRM standards. Subsequently, the institutional area will also contain residences for health, educational, religious and public administration employees / staff. In this way, institutional area is sharing the residential load as well.

[3] Guidelines for Land Allocation to Zones in the Preliminary Design of a New Town, Table 10.3, page no. 305, National Reference Manual on Planning and Infrastructure Standards

[4] Standard Land Use Classification for Urban Jurisdictions in Pakistan, Appendix 10.1, page no. 398, National Reference Manual on Planning and Infrastructure Standards

Table 3-4-1: Proposed Land Use Classification for Islamkot

S.No	PROPOSED LAND USE CLASSIFICATION FOR ISLAMKOT TOWN						
	Level - 1 Functional Zoning	Level - 2 Functional Zoning	Areas (acres approx.)		Land Uses (%)	Areas (acres approx.)	Land Uses (%)
1	Residential	Low Density Housing	2,186				
		Medium Density Housing	3,503	7,564	25.7%		
		High Density Housing	1,874			9,929	33.7%
		Low Density Apartment	633				
		Medium Density Apartment	898	2,365	8.0%		
		High Density Apartment	834				
2	Commercial	New Central Business District	234	716	2.4%		
		Future Central Business District	482			1,084	3.7%
		Tourism	368	368	1.2%		
3	Economic	Cottage Industries	184				
		Technical Sevices	403	1,083	3.7%		
		Warehouses	306				
		Trade and Commerce	190			2,989	10.1%
4	Livestock	Veterinary Hospital and College	172				
		Dairy Plots / Production	352	1,906	6.5%		
		Cattle Farms with Pasture and Grazing Land	1,382				
5	Health and Welfare	Health and Welfare Center	35				
		THQ Hospital with Medical and Nursing College	136	692	2.3%		
		Hospitals - Mithi Road	293				
		Specialized Hospitals	228				
6	Educational	Vocational Training Centre	19				
		Degree College	32				
		Poly Technical Education	159	1,105	3.8%		
		General University	243			2,541	8.6%
		Diversified Universities	243				
		Arid University	409				
7	Religious	Religious 1	24	64	0.2%		
		Religious 2	40				
8	Public Administration	Public Administration Offices	192				
		Future Extension of Public Admnitration	219	680	2.3%		
		Public Employees Housing	269				
9	Recreational	Sports and Cultural Complex	259	790	2.7%		
		Future Sports Facilities	531				
		Central Park	304			2,005	6.8%
		Amusement Park	175	709	2.4%		
		Theme Park	230				
		Botanical & Zoological Garden	506	506	1.7%		
10	Graveyards	Graveyard 1	306	649	2.2%	649	2.2%
		Graveyard 2	343				
11	Transportation	Major Road Netwrok	1,646				
		Truck and Containers Terminals	312	2,361	8.0%		
		Public Transport Terminals	403				
12	Utilities and Services	Water Filtration	45			3,118	10.6%
		Sewage Treatment	114	757	2.6%		
		Landfill Site	495				
		Grid Station	103				
13	Urban Forestation	Urban Forestation	3,292	3,292	11.2%		
14	Agriculture	Agricultiral Fields - south of Nagarparkar Road	1,138				
		Agricultiral Fields - north of Nagarparkar Road	885	2,970	10.1%		
		Agricultiral Fields - along Power Line	947			7,151	24.3%
15	Vacant	Vacant Area - Mithi Road	230				
		Vacant Area - Diplo Road	265	889	3.0%		
		Vacant Area - Chachro Road	394				
		Total Area for Future Development of Islamkot	29,466	29,466	100.0%	29,466	100.0%

4.4.1 Residential Zone

The important features of the proposed master plan is accommodation of all income groups with diverse options for housing. There are existing vacant land parcels in overall town, specially in the northeast of the core urban area have a considerable potential of infill development for residential use. This will somehow fulfill the partial need of new migrants coming from other areas in search of better living in the first phase.

In first and second phases category of houses will be preferred, like low, medium and high density houses. Moving ahead, in third and fourth phases apartment category will be added, like low, medium and high density apartments.

The following land use division is for New Residential Schemes according to Sindh Building & Town Planning Regulations of Sindh Building Control Authority:

New Residential Scheme [5]		
S.No	**Land Use**	**SBCA Standards**
1	Residential	55% max
2	Commercial	5 max%
3	Parks	5% min
4	Playgrounds	5% min
5	Public Uses	5% min
6	Educational	3% min
7	Roads	22% min

The Level II secondary zoning of residential land use will be as follow:

- **Houses**

Taking the existing trend of housing, it is recommended to concentrate more towards houses, as the cultural context favor low to medium rise housing development. However, it is preferred to follow the standards and give ample spaces to neighborhood facilities as well.

The following guidelines are for houses zone development:

Permitted Uses	Allied Permissible Uses	Prohibited Uses
- Houses - Neighborhood level facilities like small commercial, parks, playgrounds, schools, religious, parking	- Utilities and services - Road accessibility - Pedestrian friendly streetscape - Mixed-used structures	- Apartments - Large health and educational institution - Large commercial activities

[5] Land Allocation for New Residential Schemes as per Sindh Building & Town Planning Regulations, Chapter 20.4.1, page no 124.

Houses - Applicable SBCA Bylaws[6]					
Types	**Densities per acre**	**Plot Sizes sq.yds**	**Foot Print FP %**	**Floor Area Ratio - FAR**	**No. of Floors**
Low Density Houses	50 – 100	1,000 or above	40% - 45%	1:1	G+2 (max)
Medium Density Houses	100 - 200	400 to 999	50% - 55%	1:1 - 1:1.5	G+2 (max)
High Density Houses	200 - 300	120 to 399	65% - 75%	1:1.8 - 1:2	G+2 (max)

- **Apartments**

Since new migrants are expected from other urban areas as well, thus there is a need to fulfill the modern residential need like apartments as well. On the other hand, apartments are more effective in accommodating large number of households in less acres of land due to increased density in comparison to houses.

Here it is not necessary to build a concrete jungle, however with better design and new ideas different type of walkable as well high rise could be made. The main focus should be to provide open and green areas as breathing spaces in between apartment building as per the standards.

The following guidelines are for apartment zone development:

Permitted Uses	Allied Permissible Uses	Prohibited Uses
- Apartments - Designated parking areas - Small commercial - Parks and playgrounds - Prayer areas	- Utilities and services - Road accessibility - Pedestrian friendly streetscape - Mixed-used structures	- Large health and educational institution - Large commercial activities

Apartments - Applicable SBCA Bylaws[7]					
Types	**Densities[8] per acre**	**Apartment Sizes sq.ft**	**Foot Print FP %**	**Floor Area Ratio - FAR**	**No. of Floors**
Low Density Apartments	325	2,500 – 4,000	40%	1:2.75	G+6 (max)
Medium Density Apartments	500	1,500 – 2,500	40%	1:2.75	G+6 (max)
High Density Apartments	650	1,000 - 1,500	40%	1:2.75	G+6 (max)

[6] Houses/Bungalows, Zoning Regulations / Area Standards, as per Sindh Building & Town Planning Regulations, Chapter 25.2, page no 141.

[7] Flat Sites Category, Zoning Regulations /Area Standards, as per Sindh Building & Town Planning Regulations, Chapter 25.4, page no 144.

[8] Residential Density Standards, as per Sindh Building & Town Planning Regulations, Chapter 20.3, page no 123.

4.4.2 Commercial Zone

This zone is mainly mixed use commercial with state of art buildings. The smart development will be preferred from medium to high density and less foot print, in order to utilize the land efficiently with sufficient open and green spaces.

The Level II secondary zoning of commercial land use will be as follow:

- **New CBD**

The area for New CBD has been located along existing Bypass Road as per existing trend of commercial development in westward direction. In the first phase the main functional structures of the CBD will be corporation headquarters, financial centers, companies head offices, media houses, IT / software, specialized production service and retail shopping outlets with dedicate parking and large open spaces.

- **Tourism**

Considering the potential of container city and religious tourism, the area has been reserved for tourism in second phase; which will include convention centre, expo centre, hotels, shopping malls, exhibition ground, etc.

- **Future CBD**

In continuation Future CBD in third phase of development is proposed in further west to fulfill needs of future development. This will integrate a great deal of financial, business, culture, service institutions and lots of supporting facilities; such as business office buildings, large shopping malls, hotels and apartments, etc. These will be developed with perfect and convenient traffic, communications and other infrastructures, favorable economic development, environment friendly places; which are convenient for commercial activities.

The following guidelines are for commercial zone development:

Permitted Uses	Allied Permissible Uses
- Iconic head office buildings - Enormous offices towers - Huge markets, malls, outlets - Large public squares and parks - Dedicated parking lots / spaces	- Pedestrian friendly streetscape - Mixed-used buildings - Medium to High Rise Apartments - Fuelling stations
Applicable SBCA Bylaws[9][10]	**Prohibited Uses**
- Plot Sizes: 1,000 sq.yds. (min) - FP: 40% - 65% - FAR: 1:2.75 – 1:5.5 - Floors: G+6 & G+8 (max)	- Residential housing schemes - Large health and educational institution

[9] Commercial, Zoning Regulations / Area Standards, as per Sindh Building & Town Planning Regulations, Chapter 25.3, page no 143.
[10] Flat Sites Category, Zoning Regulations /Area Standards, as per Sindh Building & Town Planning Regulations, Chapter 25.4, page no 144.

4.4.3 Economic Zone

In view of contextual requirement, the emphasis is given to other economic activities, instead of industrial development. The main criteria is to rely on local economic potentials, which mostly related to cottage industries and technical service.

The Level II secondary zoning of economic land use will be as follow:

- **Cottage Industries**
  The cottage industries will include mainly handicrafts like embroidery, handmade bags, clothes, shawls, home décor items, jewelry, souvenirs etc.

- **Technical Services**
  The technical services will include mechanical workshops and spare parts (auto mobile repairing), building construction materials, home depots, furniture market, housewares, food and beverages, computer hardware etc.

- **Warehouses**
  Large to small scale warehouses will be required. This will comprises of general, bulk, liquid, dry and cold storage as well. These should be well equipped with all the required technology of good storage and management like CCTV surveillance, in and out data entry.

- **Trade and Commerce**
  The transport hub with trade and commerce area is located along Chachro Road to provide in and out trading activities of the region. It will includes fruit and vegetable markets, wholesale markets, slaughter house, storage areas etc.

  The following guidelines are for economic zone development:

Permitted Uses	Allied Permissible Uses
- Cottage Industries - Warehouses - Godowns - Workshops	- Showrooms - Mixed-used buildings - Residences for workers - Fuelling stations
Applicable SBCA Bylaws[11]	**Prohibited Uses**
- Plot Sizes: Above 500 sq.yds. - FP: 70% - FAR: 1:1.5 - Floors: G+1 (max)	- Private Residential housing schemes - Large health and educational institution

[11] Cottage Industries, Workshops, Godowns, Zoning Regulations / Area Standards, as per Sindh Building & Town Planning Regulations, Chapter 25.7, page no 148.

4.4.4 Livestock Zone

Since Islamkot is mainly not an agricultural town, local inhabitants rely on livestock as another source of their income. In this regard livestock zone is placed in north direction after reservation of high tension power line, to promote livestock production.

The Level II secondary zoning of livestock land use will be as follow:

- **Veterinary Hospital and College**
  At present veterinary hospital is in the core town. A new full-fledged veterinary hospital and college is proposed to cater livestock health requirements and produce more vet doctors.

- **Dairy Production**[12]
  Dairy area will be facilitated with mandi / cattle market, artificial insemination center, slaughter house, milk collection unit, chiller storage unit, fodder storage and purchase, bio gas plant etc.

- **Cattle Farms with Pasture and Grazing Lands**
  Cattle area will contain mainly cattle farms that could accommodate cattle, poultry, ostrich, camel etc. with pasture and grazing lands around the farms.

  The following guidelines are for livestock zone development:

Permitted Uses	Allied Permissible Uses	Prohibited Uses
- Cattle farms - Pasture and grazing lands - Dairy production - Veterinary services - Veterinary education and training	- Low rise ancillary structures - Residences of caretakers - Related commercial activities - Fuelling stations - Godowns and cold storage	- Other development than permitted and permissible

4.4.5 Health and Welfare Zone

This zone is specifically for health and welfare related large scale activities. It will be a specialized area with high tech health facilities, social welfare and supporting services; with advance infrastructure. The aim will be to provide all specialized health solution within the town, and to serve the population beyond city borders, like nearby urban and rural localities.

The Level II secondary zoning of health and welfare land use will be as follow:

[12] Dairy Plots, Zoning Regulations / Area Standards, as per Sindh Building & Town Planning Regulations, Chapter 25.8, page no 149.

- **Health and Welfare Center**
  In first phase health and welfare center has been suggested in the north of the existing town. It could include; Rehabilitation Centers, Special children, Edhi Homes (orphanage / old age / women) etc.

- **THQ Hospital with Medical and Nursing College**
  From Diplo Road, the New Bypass is under construction, forming large health zone in second phase; as it will provide major connectivity to Nagarparkar. The health area is marked in regard of under construction THQ Hospital along Diplo Road. In addition plan is also specifically notifying area for medical and nursing colleges as well. Since it will become tertiary level center for health facilities, thus staff residence, hostels, community and allied facilities will also be accommodated here.

- **Health and Welfare Facilities – Mithi Road**
  Due to the presence of Thar Foundation Hospital (Indus Hospital) along Mithi Road, it is marked as Hospital Zone for third phase, to attract investment in health and welfare sector. However, it is widely possible that this area will be utilized for distinct health and welfare facilities at earlier than third phase; like private hospitals, research and welfare centers etc.

- **Specialized Hospitals**
  The zone for specialized hospitals is characterized in the fourth phase. It will comprises of the specialized units like oncology, urology, infertility centers, organ transplantation, and specialized treatment centers.

  The following guidelines are for health and welfare zone development:

Permitted Uses	Allied Permissible Uses
- Large Hospitals - Specialized treatment centers - Medical College - Dental College - Pharmaceutical College - Nursing College - Laboratories and Diagnostic Centers - Blood Banks - Health Research Institutes	- Staff Residences (medical and paramedic) - Separate Hostels for Boys and Girls - Auditoriums, seminar halls, workshop spaces - Community facilities (parks, playgrounds, schools, clinic, neighborhood commercial) - Support facilities (gym, health club, bus stops, taxi stand, banks, fuelling stations)
Applicable SBCA Bylaws[13]	**Prohibited Uses**
- Plot Sizes: 1.0 acre or above - FP: 50% - FAR: 1:1.5 - Floors: G+2 (max)	- Private residential housing schemes - Large commercial activities

[13] Amenity Plots, Zoning Regulations / Area Standards, as per Sindh Building & Town Planning Regulations, Chapter 25.5, page no 145.

4.4.6 Educational Zone

The large scale educational land uses will be development in this zone, focusing towards the global trend of education specially for upcoming generations. The aim is to create a knowledge base hub, to provide quality education in all diversified filed, in order to upgrade the livelihood of the local as well as the regional population.

The Level II secondary zoning of educational land use will be as follow:

- **Vocational Training Center**
  The vocational training center is placed in the first phase, considering the cottage industries in its north. This will provide space for skill development of the local population to accommodate in the current job market.

- **Degree College**
  Since the town is lacking Degree College, it is proposed to provide government degree colleges for boys and girls, separately in first phase of the development. It is suggested to accommodate all the required facilities and service like; libraries, laboratories, playgrounds, washrooms, etc.

- **Poly Technical Education – Mithi Road**
  Although, poly technical education for both male and female, is placed in third phase, but there is an acute need of technical education, for which it is proposed along Mithi Road. Due to its location it will serve the nearby population as well, whenever required. It will include; ploy technical college for boys and girls, women development center (working women hostels, day care centers), certified computer and IT training centers, research centers, etc.

- **General University**
  In the second phase, the public sector general university is proposed. The idea is to first introduce common educational fields like languages, humanities, applied sciences, arts, commerce, social sciences etc., which could be modified further. Afterwards broad-spectrum of new ranges of education will be added according to the demand of the society, in form of wings, departments and blocks.

  In addition to academic buildings; allied facilities like administration, sports grounds, and health clubs will also be accommodated here. Since it will be the primary level university of the town, thus it will also contain large number of students, faculty and staff. This huge influx will also require residences with community facilities.

  The library, data and information centers and scientific research institutes are also recommended in this zone to provide all kind of facilities for research and development in different fields.

- **Diversified Universities**
  As the society is moving towards global dynamics, diversified fields of education will be prerequisite. It could include upcoming need of the job market like; engineering, business, management, finance, media, IT and software, etc.

- **Arid University**
  The specific area for Arid University is recommended in the third phase. The purpose behind is to involve regional level youth in the agriculture research, in order to utilize barani land for agricultural production.

The following guidelines are for educational zone development:

Permitted Uses	Allied Permissible Uses
- Large scale educational areas - General Education Universities - Scientific Research Institutes - Engineering colleges / universities - Business and management schools - Finance and accountancy Institutes - IT and media Institutes - City level libraries, book banks, data and information centers	- Staff Residences (teaching and non-teaching) - Separate Hostels for Boys and Girls - Auditoriums, seminar halls, workshop spaces - Community facilities (parks, playgrounds, clinics, schools, neighborhood commercial) - Support facilities (gym, health club, bus stops, taxi stand, banks, fuelling stations)
Applicable SBCA Bylaws[14]	**Prohibited Uses**
- Plot Sizes: 1.0 acre or above - FP: 50% - FAR: 1:1.5 - Floors: G+2 (max)	- Private residential housing schemes - Large commercial activities

4.4.7 Religious Zone

At present there are two major religious groups residing in the Islamkot Town. In this respect, the proposed master plan accommodates two large land parcels in the first phase. These are not necessarily to be developed soon, as presently there are sufficient religious places. Though placement is made to reserve the centrally attracted and precious land for grand religious monumental buildings and structures, to enhance aesthetic of the town center. Further it is suggested to fulfill the future requirement of different religious groups in sub divisions of other areas.

[14] Ibid

The following guidelines are for religious zone development:

Permitted Uses	Allied Permissible Uses
- Religious buildings like mosques, imam barghahs, mandir, churches, etc. - Religious teaching areas - Religious preaching grounds	- Residences for religious priest - Accommodation for religious scholars, students - Small parks, playgrounds, clinics, commercial - Support facilities (bus stops, taxi stand, banks, fuelling stations)
Applicable SBCA Bylaws[15][16]	**Prohibited Uses**
- Plot Sizes: 1.0 acre or above - FP: 50% - FAR: 1:1.5 - Floors: G+2 (max)	- Private residential housing schemes - Large commercial activities

4.4.8 Public Administration Zone

The public administration zone is marked along Nagarparkar Road due to new Town Committee Complex, which also connects to old TC office via Tameer Bank and Mithi Nagarparkar Road.

The Level II secondary zoning of public administration land use will be as follow:

- **Public Administration Offices**
  The public administration offices will includes District Secretariat, Development Authority, Town Committee Offices, Line Departments, Local Government Offices, Town Planning Department, Judiciary Complex, Circuit House etc.

- **Future Extension of Public Administration**
  As Islamkot is a taluka headquarter, in future with the rising activities more space for different public offices and institutions will be required. With this assumption future extension area for public administration is proposed to be reserved.

- **Public Employees Housing**
  The area for public employee housing is suggested to cater the need of housing for public employees. This will include houses and walkable apartments for all employees, according to their grade levels and status.

[15] Ibid

[16] Religious Buildings, Plots, Zoning Regulations / Area Standards, as per Sindh Building & Town Planning Regulations, Chapter 25.13, page no 156.

The following guidelines are for public administration zone development:

Permitted Uses	Allied Permissible Uses
- District Secretariat, - Development Authority - Town Committee Complex - Line Departments - Local Government Offices - Town Planning Department - Judiciary Complex - Circuit House	- Employees Residences (for all grades) - Auditoriums, seminar halls, workshop spaces - Community facilities (parks, playgrounds, clinics, schools, neighborhood commercial) - Support facilities (gym, health club, bus stops, taxi stand, banks, fuelling stations)
Applicable SBCA Bylaws[17]	**Prohibited Uses**
- Plot Sizes: 1.0 acre or above - FP: 50% - FAR: 1:1.5 - Floors: G+2 (max)	- Private residential housing schemes - Large commercial activities

4.4.9 Recreational Zone

In the proposed master plan, recreational has been given a vital importance in order to create a healthy environment. Several types of recreational activities are suggested in each phase. In initial phases common facilities like sports and parks are recommended. However, in further phases regional level recreational activities have been marked such as amusement and theme parks, botanical and zoological gardens.

The Level II secondary zoning of recreational land use will be as follow:

- **Sports and Cultural Complex**
  There is an under construction sports complex present in the town. In first phase the extension of this complex with football, hockey and other ground, cultural center and gymnasium is proposed.

- **Future Sports Facilities**
  In urban centers of towns, disappearance of incidental open spaces and non-provision of planned open spaces is seen as a major problem. New Recreational open spaces in proposed masterplan areas are planned for future (i.e. reserved, un-utilizable land). Planned open spaces generally associated with outdoor recreation may be sub-categorized into stadiums playfields, designed for active recreation, formal and informal games), while parks, zoos, etc., are meant for relaxation, sight-seeing etc. i.e. passive recreation. For Islamkot consultant has proposed new recreational area specifically for sports and other activities in 4th phase of masterplan between Mithi and Diplo road.

[17] Ibid

- **Central Park**
  A large central park in the heart of the proposed master plan is placed. This will be a general public park, however its sub portions could be reserved for families (ladies and children). Thus it will also contain area for swings, sitting, walking, jogging with allied facilities of washrooms, tuck shops, parking etc.

- **Botanical & Zoological Garden**
  In long run considering Islamkot a regional center there is a need to locate botanical and zoological gardens. These gardens will serve not only a metropolis of future but urban and rural areas of Islamkot region as well.

The following guidelines are for recreational zone development:

Permitted Uses	Allied Permissible Uses	Prohibited Uses
- City scale parks - Large public squares - Sports facilities - Cultural activities - Amusement area - Special theme parks - Regional level gardens like botanical, zoological	- Ancillary structures - Accommodation for caretakers / workers - Related commercial activities - Fuelling stations - Parking - Public washrooms	- Other development than permitted and permissible

4.4.10 Graveyards Zone

The present graveyards have sufficient space available for near future need. However, for long term two large areas for graveyards are designated in the third phase. These graveyards can be further divided according to the requirement of practicing religions in the town. One of these site is along an existing minor road originating from core area, which will be Cottage Industry / Technical Services Road as per proposed road network. Thus this site will be accessible in earlier phases as well, and will remain in the periphery of the town.

The following guidelines are for graveyard zone development:

Permitted Uses	Allied Permissible Uses	Prohibited Uses
- Graveyard area	- Related commercial activities - Accommodation for caretaker - Prayer areas - Landscaping	- Other development than permitted and permissible

4.4.11 Transportation Zone

The transportation area is a combination of radial regional roads and ring roads of different phase, with variety of terminals and intersections where these radials and rings overlaps each other.

The Level II secondary zoning of transportation land use will be as follow:

- **Proposed Road Network**
  The notable change in the existing road layout is proposed in the Chachro Road. The existing Chachro Road is bisecting from Mithi Road towards Airport, the realignment of Chachro Road is proposed to connect it to the Phase-1 Ring Road. The proposed Phase-1 Ring Road is in spiral form, starting from the origin of New Bypass Road and ending at a section of it.

The existing roads are coming from the core urban area and joining the proposed road network. Thus, these roads are considered in connection to the proposed roads and named accordingly:

a. Mithi and Nagarparkar Roads are connecting each other and also via existing Bypass
b. Trade and Commerce Road is connecting RHC and Holi Ground
c. Cottage Industry / Technical Services Road is connecting to Jamia Masjid Khizran
d. Public Administration Road via existing Bypass is connecting to Tameer Bank
e. Sports Complex Road is connecting to Saint Shree Nanuram Ashram
f. Diplo Road is connecting to Govt. Shah Abdul Latif School

All proposed primary, secondary and tertiary roads of the master plan will be dual carriageways with green medians in the center; as per the following:

Primary Roads: All ring roads and radial roads are considered as Primary Roads. These roads will have a right of way of 200 feet (min) with initially a four-lane divided road, service road, median, parking, and cycle/pedestrian track and neem tree plantation on both sides. In addition to the 200 feet ROW, urban forestation of 200 feet on both side are also proposed, to avoid direct / upfront development along primary roads. All primary roads crossings will be initially roundabouts with enough space for grade separated junctions in the future.

Secondary Roads: The secondary roads, act as a collector roads will have a right of way of 150 feet (min) with three lanes, service road, median, footpaths, parking and cycle/pedestrian tracks.

Tertiary Roads: The tertiary roads will have a right of way of 100 feet (min) with at least two lanes, service road, median, footpaths, parking and cycle/pedestrian tracks.

- **Truck and Containers Terminals**
  A separate sub transportation zone is recommended for trucks and containers terminals along realigned Chachro Road. This proposed terminal will help in transporting goods from / into the town, which will benefit and serve the economic zone adjacent to it. Since at present the provision of railway is not seems viable, thus for goods transport this terminal is necessary for trading activities in the region.

This will mainly comprises of the truck parking areas as well as container yards. In addition required residence for the drivers and other staff with small offices, rest areas, washrooms, shops etc.

- **Public Transport Terminals**

  Along Mithi and Diplo Roads public transport terminals are placed in order to provide better and nearby multi intermodal transport connectivity. Since major regional communication of general public is expected from these routes; as most of residential, educational and health related traffic will be generated.

  This will be comprises of the parking for public buses, hiace, wagons, taxis; with allied facilities like ticking booths, sitting / waiting areas, washrooms, shops and required residence for the drivers and other staff.

  The following guidelines are for transport zone development:

Permitted Uses	Allied Permissible Uses
- All types of parking areas - Designated ROW - Green belts - Footpaths - Traffic management devices	- Drivers and staff accommodation - Support offices, rest areas, washrooms, shops etc. - Street furniture like lights, trash bins, benches etc.
Applicable SBCA Bylaws[18]	**Prohibited Uses**
- No direct access to major roads will be allowed except through service road - No structure or part of a structure may project beyond building line	- Any kind of encroachment

4.4.12 Utilities and Services Zone

The utilities and services provision is also made in the master plan. This land provision is mainly for large scale utilities and services.

The Level II secondary zoning of utilities and services land use will be as follow:

- **Water Filtration**

  At present the quality of water which is used by Islamkot population is certainly at might level to get filtered and purified by the authorities for the basic use of it at present population and future consumption of it by 2038 for this we have proposed specific land use areas for the allocation of water filtration use in to near area of the core urban area. At the level of water availability and its

[18] Highway Major Roads, General Standards, as per Sindh Building & Town Planning Regulations, Chapter 21, page no 126.

filtration both are entirely dependent upon the intake and its purification upon the Govt. level for filtration at intake source or at the tap in source to use for town.

- **Sewage Treatment**
  Existing status of the sewage treatment is not present at Islamkot town. We have proposed special area following the land geometry wrt to steep slopes analysis for the land allocation of sewage treatment of the land which will entirely cover the whole future sewage discharge of town and arrangement going to take place for the catering present population need.

- **Landfill Site**
  In extreme north landfill site is also recommended according to wind direction, which is from southwest to northeast of the existing town and as all town will grow according to the final master plan it will surely benefit the whole town along with the access to landfill site at road from Chachro to Islamkot.

- **Grid Station**
  Grid station in Islamkot Town is proposed at south east of town at near end of third zopne of future development of town. Specifically we have proposed separate grid station for Islamkot town as per HESCO they have no issue wrt (with respect to) the interconnection point between two transmission line circuits (Rings), those are serving/connecting two geographic regions. Power Grid Station has transformer depending on the possibly different voltages, so that the voltage levels can be adjusted as needed for the future consumption of the Islamkot town.

  The following guidelines are for utilities and services zone development:

Permitted Uses	Allied Permissible Uses	Prohibited Uses
- Land use for Water Filtration - Land use for Sewage treatment - Land use for land fill site. - Phase wise allocation of land fill stages. - Land use for Grid Station uses.	- Related land and building activities - Accommodation for operators and labor - Specific parking area	- Other development than permitted and permissible land use are not allowed by way form of restrictions.

4.4.13 Urban Forestation Zone

Urban forestation along New Bypass Road is proposed to avoid rapidly increasing of disorganized private development. Instead planned residential areas as per building control rules and regulations which are proposed on both sides of New Bypass Road after urban forestation reserved areas.

In order to protect the New Bypass Road from uncontrolled development, urban forestation of two hundred feet from both edges of the road should be planted with all restricted rules to follow by the TC to apply on its forbidding the zone laws by its regulations.

In addition to the 200 feet ROW, urban forestation of 200 feet on both side are also proposed, to avoid direct / upfront development along primary roads. All primary roads crossings will be initially roundabouts with enough space for grade separated junctions in the future.

The following guidelines are for urban forestation zone development:

Permitted Uses	Allied Permissible Uses	Prohibited Uses
- Land use for only green plant base forestation. - Phase wise allocation of land space need base stages.	- Related land use to only be used under green space for non-development of building use. - Accommodation for labor and security persons. - Specific parking area for any accident and unplanned incident.	- Other development than permitted and permissible land use are not allowed by way form of restrictions.

4.4.14 **Agricultural Zone**

In the extreme eastern side Barani Land will be used to lock the development towards all Thar coal blocks. Approximately we have proposed three different areas for agricultural development for overall economic enhancement and accordingly limiting population growth towards the coal mining blocks. To this point we have positioned two main proposed agricultural area towards north upper side of Nagarparkar road and above of HT line.

Three proposed agricultural land are at; Upper North of Nagarparkar Road, Lower South of Nagarparkar Road and Upper Side of North East of Power HT Line.

The following guidelines are for agriculture zone development:

Permitted Uses	Allied Permissible Uses	Prohibited Uses
- Land use for proposed agricultural coming up necessities. - Phase wise allocation of land space on need base stages.	- Related land activities of each allocated sites with respect to its rules and regulations. - Accommodation for operators and labor in associations with TC.	- Other development than permitted and permissible land use are not allowed by way form of restrictions for the use of proposed agricultural land.

4.4.15 Vacant Zone

Control on vacant land is extremely important. Leap-frog development leads to uneconomical length of services and should be avoided unless the vacant land is un-utilizable owing to terrain or reserved for central commercial expansion. With respect to the vacant land area position according to the existing town is exist at west south of the town for even growth of town sudden future needs of town can be accommodated in this area and the 2nd vacant land portion is proposed to the north top area in 3rd phase wise development of Islamkot town in coming near future can utilize imminent necessities.

The following guidelines are for vacant zone development:

Permitted Uses	Allied Permissible Uses	Prohibited Uses
- Land use for proposed imminent necessities - Phase wise allocation of land space on need base stages.	- Related land and Building activities of both allocated sites. - Accommodation for operators and labor in associations with TC.	- Other development than permitted and permissible land use are not allowed by way form of restrictions for the use of vacant land.

4.5 Immediate Action Plan for Core Urban Area

The Old Town from where the Town was born, is a dusty small desert town, given a peculiarity of having groves of Neem Trees giving it a popular name of “Neem Town”. The Town revered by its residents due to several religious monuments and pilgrimage sites of Hindu religion. The Town has great scope of religious tourism but unfortunately it has not been properly utilized.

The revitalization and rehabilitation of core town is a separate task under the same project. A separate package has been proposed for seeking government’s approval. It is important that the development of core town should be taken up as a whole package and not as separate schemes on piece meal basis.

Most of the amenities and public facilities are already available in the core town. New facilities required for the additional population should be preferably be located in newly planned area. The core town should be notified as control area where new construction should be approved by SBCA.

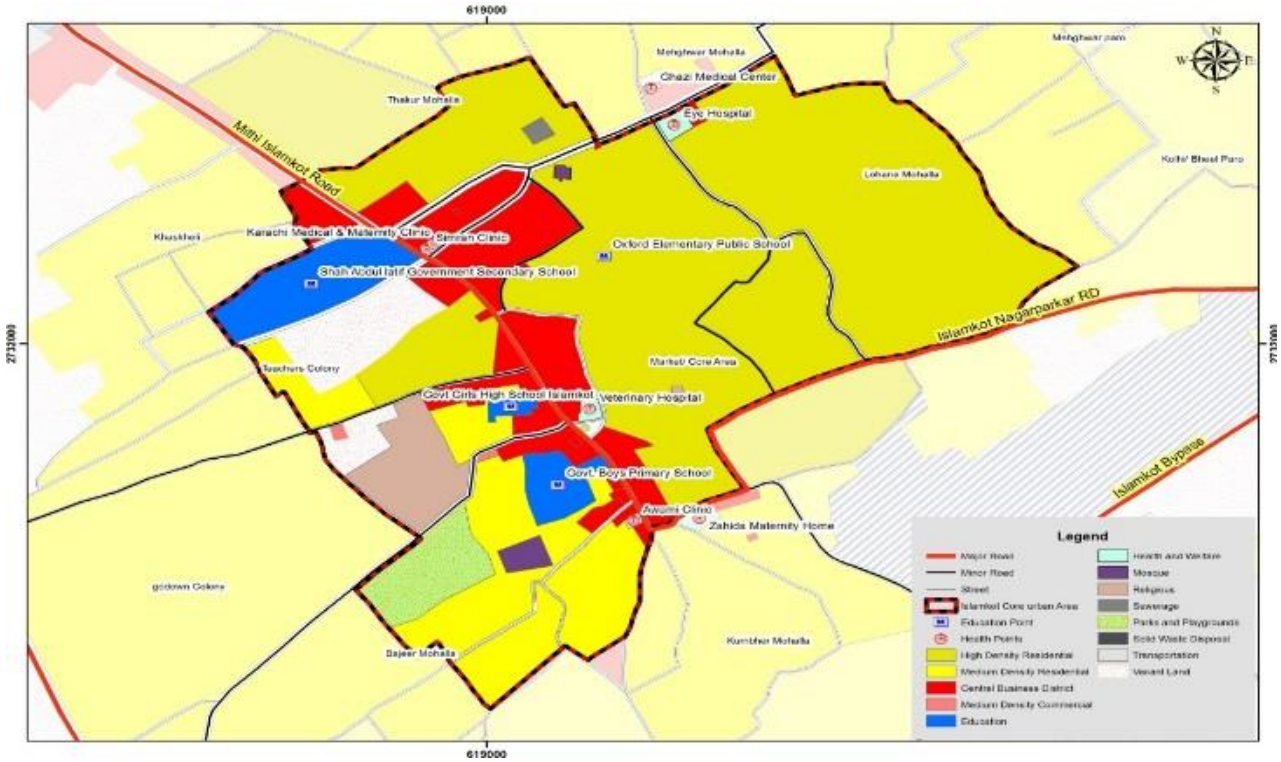


Figure 4-2: Core Urban Area of Islamkot

4.5.1 Goals and Objectives for Core Urban Area

Goals and objectives of the Immediate Action Plan (IAP) is to analyze current housing, water supply and sewerage system, collection of solid waste, horticulture, plantation and creation of urban open spaces along with provision of social infrastructure at affordable standards for education, health, recreation and cultural needs.

Islamkot now being the hub and main taluka for resettlement needs immediate attention to revitalize and upgrade its existing infrastructure. Population of Islamkot is growing at a fast pace due to coal exploration and new opportunities are arising in the region.

4.5.2 Concept of Urban Development and Revitalization of Core Urban Area

Core urban area is a region consisting of old central area of Islamkot which includes the Central Business District (CBD) of the town and densely populated residential area. This area is the main economic, social and recreational hub of the town.

Urban revitalization program has proven to be successful in most of the cities of the world. However, its degree of success is higher when efforts are made to achieve sustainable development. Such programs have largely impacted many urban landscapes and affected the history and demographics of many cities around the world. As a result of its successes urban revitalization program is now known as the attempt to reverse decline in cities by improving physical structures through new urbanization models and more importantly enhancing the economy of those cities.

4.5.3 Immediate Action Plan Proposal for Core Urban Area

The plan proposal in connection to existing situation of core urban area is roam around heritage and culture, commercial activities and traffic congestion. Thus, the overall proposal is as:

To preserve heritage and cultural aesthetic with new commercial corridors and transit facilities and in a clean and green environment.

Immediate Action Plan for Urban Development and Revitalization of Core Urban Area is as follow:

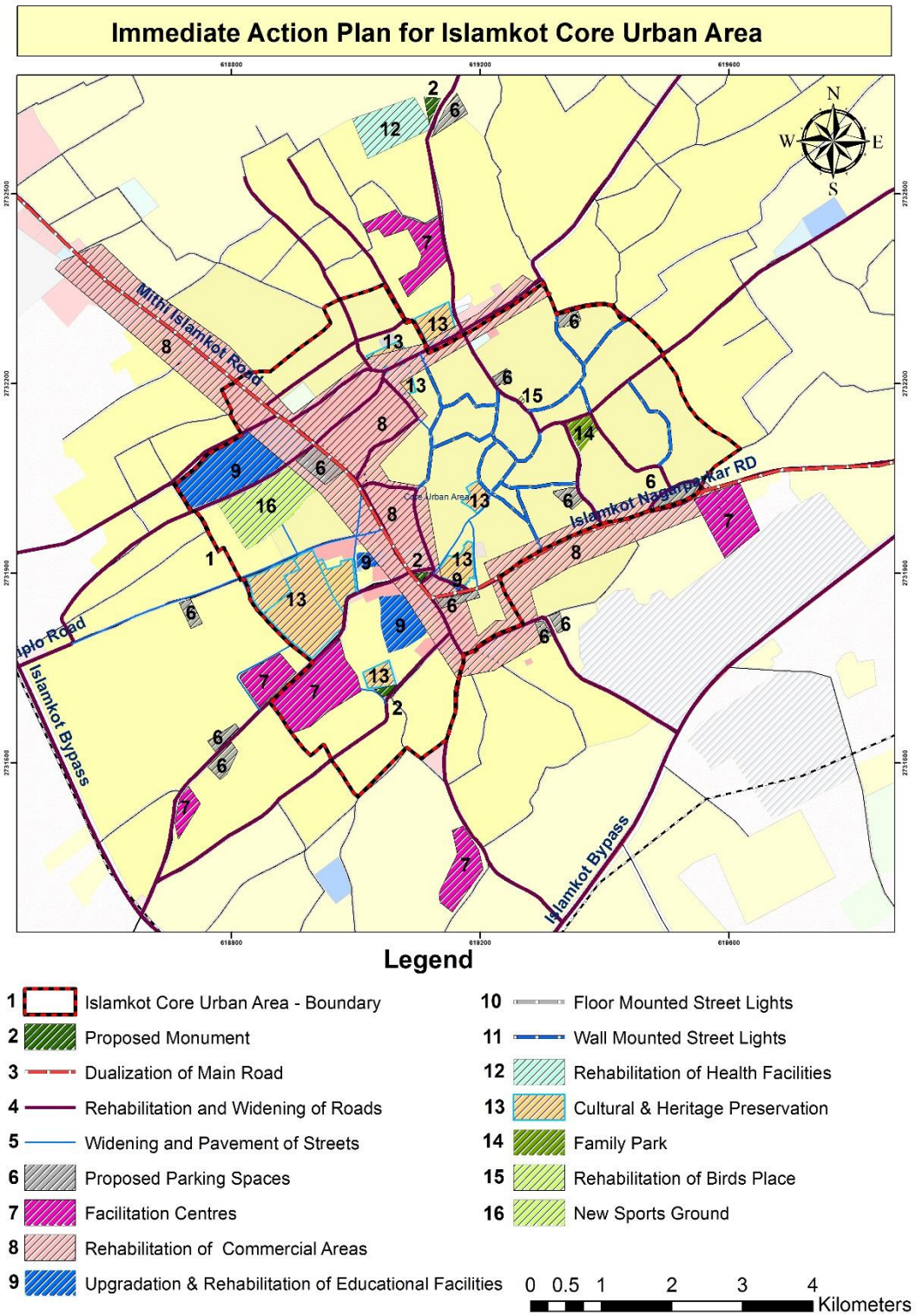


Figure 4-3: Immediate Action Plan for Core Urban Area of Islamkot

SECTOR WISE PROPOSED STRATEGIES

5. HOUSING

5.1 Existing Situation

Adequate housing is fundamental to improve living standards among poor and low-income households because it is one of the major components of the social infrastructure, the lack of which begins to offset the positive effects of economic development. Without adequate shelter, families are condemned to poverty, poor health, low educational attainment, vulnerable to natural disasters and the chaos of civil conflict.

As per 2017 census population results, IslamKot TC had household size of 4.5 persons and a total housing stock of 5,495. Most of them were categorized as Pacca houses which include Pacca (Brick construction) and RCC houses.

Table 5-1: Housing Statistics

S. No.	Project Area	Population	Household Size	No. of HH
1.	**Islamkot Taluka**	244,662	4.9	50,012
2.	**Islamkot TC**	24,880	4.5	5,495
Source: 2017 Census Report of Tharparkar/Islamkot				

For housing conditions, socioeconomic survey of Islamkot was conducted. General housing condition of the surveyed houses was quite satisfactory. Sample survey of the town reveals that approx. 29% of the houses were constructed in between 01 to 10 years with an average of 5 to 6 members in each household. With this average number of family members, 39% of the houses have only two rooms, As far as the utility services in the houses are concerned, basic services needs improvement as the sample survey reveals that only 26% of the houses have drained toilet (flush system) in their houses while 74% of the houses have un-drained or dry toilets which requires manual cleaning. 94% of the houses have piped supply (House Connection) while 1% of the houses use ground water by manual hand pumps. Conditions of drains are also alarming: 94% of the drains are open and need to be covered.

There are no well-planned housing colonies in Islamkot which is dire need to cope up with the future expansion of core urban area. The type of houses in Islamkot can be divided in three forms of structures present in town i.e. new construction of RCC structure, brick construction with load bearing structures, indigenous style thatched roof huts with mud plaster round walls called “Chowras”.

New Construction

Chowras

5.2 SWOT Analysis and Need Assessment

HOUSING			
Strength	**Weakness**	**Opportunity**	**Threats**
1. 37% houses of Islamkot are pacca and 42% semi pacca houses 2. 91% family owned houses in Islamkot as per socio-economic survey 3. 74% of the houses have drained (flush system)	1. 14% of the urban town population lives in katcha houses where quality of life is low and utility services are limited. 2. The informal housing sector lacks provision of utility services like gas supply, clean water and drainage facilities.	1. Demand for new planned & low income public housing projects. 2. Opportunity for local micro financing for housing. 3. Installation of basic utility services through new projects. 4. induction of new population due to Thar Coal Project will increase housing demand	1. Homelessness. 2. Development of informal housing in empty/vacant spaces available within town. 3. Increase to urban sprawl. 4. Land speculation leads to inflation. 5. Relocation of higher income groups to other towns. 6. Land grabbing

5.3 Issues and problems

The following are the major issues in the housing sector:

- The households below poverty line have remained neglected, in all housing policies.
- Inadequate supply of developed land and its skyrocketing prices are making housing ownership beyond the affordability limits of the majority of population.
- Poor land administration with complex legal and regulatory systems.
- Existing Housing and associated infrastructure is in dilapidated condition requiring improvement / replacement
- Unchecked growth of squatter settlements: Katchi Abadis encroachment on state and vacant land is a direct outcome of the housing shortage.
- IslamKot lacks required skills to effectively manage the urban growth, provide basic utility services and maintain the infrastructure, especially in low income areas.

On basis of projected Population for year 2038 the increase in population is 235,966 with estimated additional housing requirement of 52,437.

Table 5-2: Need Assessment

Projected Housing Need 2038 (Islamkot TC)			
Housing	**Population**	**Household Size**	**No. of HH**
Present 2017	24,880	4.5	5,495
Future 2038	260,846	4.5	57,966
Additional (2017-2038)	235,966	4.5	52,437

5.4 Policy Guidelines

Housing sector is divided in various sub sectors. Policy guidelines for all sub sectors are given below:

- **Priority Identification of Land for Housing**
  As an immediate measure, the provincial, metropolitan and local authorities under the devolution plan shall identify parcels of state and other lands for housing development in the urban and rural settlements in their respective jurisdictions. The land availability shall be enlarged through various innovative measures like land banking on continuous basis to cater for at least 5 to 10 years development plan needs.

- **Land Information System**
  Development of a comprehensive land information system using modern technology

- **Land Registration and Tenure System**
  The informal and customary tenure systems shall be rationalized into a formal and registered social contract. The Government, at all levels, shall simultaneously incorporate such contracts into its maintained registration system so that the need of the state and preference of house owners and communities are met.

- **Housing Finance**
  Financial Institutions shall be encouraged to give mortgage loans for housing purposes at market rates. Housing finance institutions shall be encouraged to promote savings and provide micro loans for low income group through community organization, NGOs and CBOs.

- **Katchi Abadis, Squatter Settlements & Slums**
  Regulation and Controls
  - The process of regularization and up-gradation of the pre-1985 katchi abadis shall continue as per current policy. However, katchi abadis, which are hazardous by virtue of being close to railways tracks or located under high tension power lines, or are on or close to the riverbeds, or on lands needed for operational /security purposes, need to be relocated at appropriate places by LOAs.
  - Formation of new kachi abadis shall not be allowed and shall be discouraged by exercising strict development controls in all urban areas.

  Formation of Resettlement Plans
  - Resettlement plans shall be prepared by the concerned Land Owning Agencies (LOAs) in consultation with affected communities for shifting of katchi abadis dwellers who fall within hazardous or security/operational zones. These plans shall primarily be on a self-financing basis.
  - The internal infrastructure and services shall be provided on incremental basis depending on the needs and priorities of the residents to make them affordable and cost effective. Trunk infrastructure and services shall be provided by public sector organizations and the cost shall be met from Government exchequer.

- **New Housing Development**
  Industrialization attracts rural population and is the major source of urbanization. Timely steps are required to provide housing and related infrastructure.
  - Facilitate access to housing, commercial, amenities and recreational areas.
  - Improve distribution system of electricity.
  - Extend water supply and sanitation services.
  - Introduce Tariff System for utilities through Water Metering (first for water usage above marginal consumption then in long run for all users).
  - By using modern techniques, recycle treated effluent and grey water and reuse it for irrigation of landscape and recreational areas.
  - Pursue the expansion and continuous up gradation of communication and digital networks.
  - All new Housing Schemes should be bound to provide piped water, sewerage and gas connection in coordination with municipal/town committees and concerned agencies.

5.5 Strategic Development Plan

The aim of this Strategic development Plan is to facilitate all for the provision of housing; especially to poor and deprived population in the town. In this regard following strategies need to be focused

- Provision of trunk infrastructure shall be the responsibility of utility agencies
- The Provincial Government and development agencies shall ensure that any approvals for implementation are only given after assessment of both technical and environment adequacy of the infrastructure planned in the area.
- Public and private housing development schemes, within planned areas, shall only be undertaken/ approved when the availability of trunk infrastructure is ensured for such development.
- Fully serviced plots become unaffordable for poor as the cost of services raises the initial cost of the plot. (i) Water + (ii) transportation + (iii) sanitation + (iv) electricity+ (v) natural gas is the most common sequence of service needs of the urban poor. By using appropriate technologies, modes of construction and eliminating contractor at the lane cluster level infrastructure, the cost can be greatly reduced.
- To limit the cost of property land at a specific limit so that it may come under the affordable limits of people.

5.5.1 Long Term Plan

- In the long term perspective, the problems of katchi abadis shall be dealt with through Initiation of low cost housing schemes and provision of cross subsidy to the poor through auction of commercial plots;
- Development of indigenous and cost effective approaches particularly for low income group and mass production.
- Support research and development programs for economic building material and modern construction technologies.

- De-concentration of metropolitan and major centers shall be encouraged.
- Invest in human capital to improve the quality of construction; and put in place legal and regulatory framework to facilitate the development of housing both in urban and rural areas.
- Identification and acquisition of land for providing the housing gap in Islamkot TC, until 2038.
- An affordable housing program for low income group in different phases up to 2038, through one window operation (including technical guidance, easy loan provisions, legal procedures)

5.5.2 Short Term Plan

- Increase in proportion of small size plots (Plot size will be depend on land value) could be made for low income groups in all new housing schemes.
- Low-income Housing Funds would be established to provide sufficient and affordable credit for housing to meet the needs of shelter less poor. Example is Grameen Bank which is a microfinance organization and community development bank founded in Bangladesh. It makes small loans to the impoverished without requiring collateral
- Incremental housing schemes on the lines of Orangi, Qasba, Khuda Ki Basti etc. should be initiated based on lessons of experience.
- Provision of incentives through tax rationalization, reduction in property tax and registration.
- Formulation of Green Building Byelaws for future housing to address water conservation, low energy consumption, waste recycling etc.

5.6 Priority Projects

5.6.1 Development of Site and Services for Low Income Group

- **Project Justification**

Due to high levels of poverty, houses in Tharparkar are not built too effectively to face weather. There is a diurnal variation of temperature. Thus, housing must be looked into, to prevent illnesses caused by extreme weather. The solution is to reconstruct the existing houses and to construct the new ones for a significant number of households which have low income. These households are unable to acquire their own houses so resolve their housing problem resulting rising the number of slums areas and encroachment.

The living condition in such areas is poor, they face so many problems and mostly don't have utility services. To resolve the problems occurred due to this situation, the public sector in Islamkot should launch strategy for urbanization. **According to Socio Economic Survey results,** the status of ownership of houses is like 91% family owned, 5% rent free/Govt employers and 4% on rent. Therefore on priority basis, the provision of developed site for residential purpose is proposed to accommodate at least 500 families in short term plan.

Table 5-3: Present Housing Gap[19]

Description	Results
Present Population census 2017	24,880
9% Population of Islamkot	2,239
Households required @ 4.5	498

In long term plan up to 2038, provision for additional 52,437 household will be provided for upcoming generation for next twenty years.

Priority Project Name	Long Term	Proposed Area (acre)	Preliminary Cost in Millions	Justification
Development of Site and Services for Low Income Group	Long Term	50 acre	500.00	• 500 Number of units up to 250 sq. yds. For this proposed site development we have assumed 10 million per acre with inter link allied facilities and infrastructure.

The purpose of this project is to:

- Provide affordable shelters to the poor people
- This process improve the living standard of the town

The development of site will be as per the minimum standards to reduce the cost of the project.

- **Project Benefits**

Part of the capital expenditure is expected to be recovered through Sale of commercial plots and buildings. The project is expected to generate direct income. The project will directly give

[19] Socio Economic Survey Results

benefit to the low income people. Improve in living conditions are associated with the improvement of social and long term economic benefit.

- **Implementing Authority**
  Government of Sindh, Tharparkar Town Committee, SBCA etc.

Estimated Cost: 500 Million Approx. (Long Term)

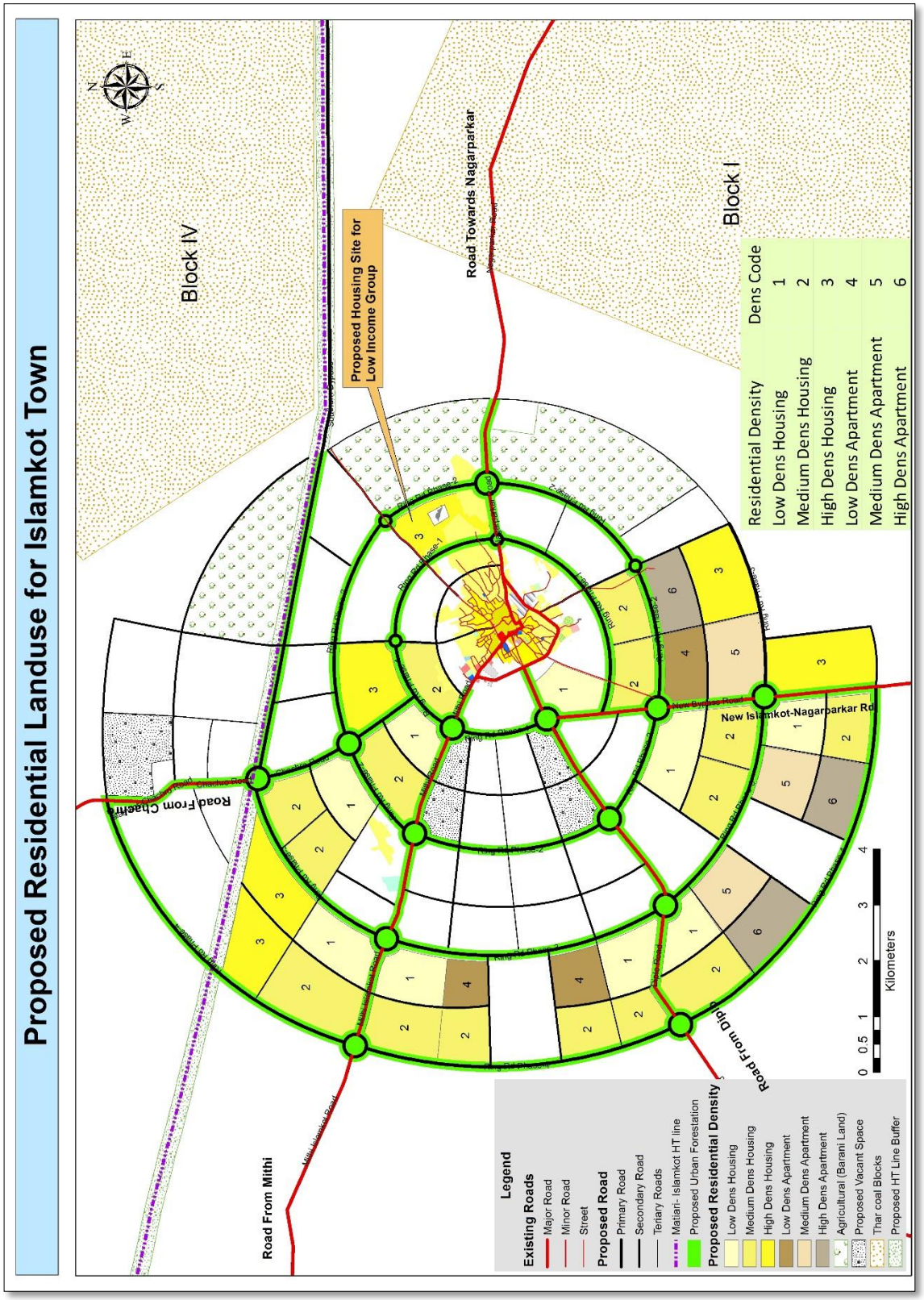


Figure 5-1: low income housing for Islamkot

5.7 Immediate Action Plan for Core Urban Area

5.7.1 Improvement of Allied Services and Facilities

The housing programs/ packages should be implemented in all over core urban area of Islamkot with the improvement of allied services and facilities as follows:

- Provision of tap water supply for each house, through piped water supply in all lanes for house to house connections.
- Provision of underground sewerage and drainage system, in which all lateral drains are to be covered with moveable slabs and all channels to be casted in-situ instead of block masonry. While the main sewers to be laid on major roads.
- Provision of Electricity supply through Arial Bundle Cable (ABC) system to avoid theft and line losses.
- Provision of solar streetlights in the core urban area of Islamkot along all streets.
- Installation of domestic meters for water supply & electricity to avoid wastage and enforce conservation.
- Median of all major roads should be developed as green median.
- Pavement of streets (through concrete slabs, cc pavers or brick pavement)

After implementation of the housing improvement package, it is suggested to regularize land tenure in core area.

6. SOCIAL AMENITIES

6.1 Education

6.1.1 Existing Situation

Due to rising poverty levels in Sindh there is a high dropout rate in the middle schools. Children, both boys and girls, are often engaged in economic activity. The education sector in Sindh is hampered by the lack of organization and planning. There are numerous public sector facilities available such as technical and vocational centres, primary school buildings, teacher-training centres, and programmes. However they are not utilized to their full potential and they are inadequately funded. Instead, a parallel system of education, fed by the welfare sector and donor-led projects, has been functioning, creating income disparity and varying degrees of quality20. Present status of Education in district of Tharparkar is summarized in the table below:

Table: 6-1: District Education Enrolment

Schools Level	Male Schools	Female Schools	Co-Education	Total Schools	Total Enrolment Boys	Total Enrolment Girls	Total Enrolment
Primary	360	365	2,454	3,179	76,213	43,178	119,391
Middle	17	11	181	207	9,414	4,718	14,132
Elementary	0	0	4	4	355	149	504
Secondary	5	3	32	40	9,293	4,205	13,498
High School	0	0	7	7	6,253	1,101	7,354
Total	**382**	**379**	**2,678**	**3,437**	**101,528**	**53,351**	**154879**
Sindh Education Profile 2016-2017							

Table: 6-2 Total No. of Classrooms & Teachers District Tharparkar

Schools Level	Total No of Class Rooms	Male-Teachers	Female Teachers	Total No of Teachers
Primary	5,343	3,847	491	4,388
Middle		524	40	564
Elementary		15	0	15
Secondary		466	111	577
Higher Secondary		135	2	137
Total	**5,343**	**4,987**	**644**	**5,631**
Sindh Education Profile 2016-2017				

There is overall poor condition of schools and college buildings due to lack of repair and maintenance of buildings, lack of playgrounds, libraries, electricity, labs, toilets etc. Results of the consultant's sample survey is shown in below table, the literacy ratio is 73%. There is difference in the literacy

[20] Sindh Strategy for Sustainable Development

ratios by sex. 38% of males are literate against 27% females, out of which 8% females have education up to primary level. But overall 32% educated population passed primary, 17% middle, 13% High school, and 7% intermediate, 4% graduates and 1% post graduates.

Identification of major issues of education sector in Islamkot TC:

- Low enrolment level with gender disparity
- Lack of provision of basic facilities i.e. washrooms, electricity, drinking water etc.
- Poor condition of schools and colleges due to lack of repair and maintenance of buildings
- In addition to classrooms, the rehabilitation of existing educational buildings with all basic and allied facilities are also required. Lack of allied facilities includes furniture, playground, laboratories, libraries etc.
- Schools are usually located at distance from housing areas and may be provided with transport.

6.1.2 SWOT Analysis

Education & Literacy			
Strengths	**Weakness**	**Opportunities**	**Threats**
1. Urban literacy rate is higher than rural. 2. High demand rate for private schooling. 3. 15 % of urban population is SSC (matriculation) level educated. 4. The school buildings are also used as shelter and evacuation centres in emergency.	1. Illiteracy in rural areas at district level. 2. Very low educational profile. 3. Education provision in Tharparkar, is the lowest in Sindh. 4. Female education in the rural areas is much lower than male education and close to nil. 5. Absenteeism of staff.	1. More people will move to urban areas for education. 2. More educational institutions are required. 3. More Public Private Partnership for education sector. 4. In schools, children must be taught common preventive measures for living a healthy life.	1. The children of peasants and farmers will not get education. 2. Relocation of educated class to other major towns of province. 3. The trend is barrier to establish higher education institutions in private sector.

6.1.3 Present Need Assessment

District Tharparkar (Includes Primary to High Secondary Education Institutions)

Present number of Boys and Girls students in Schools at Tharparkar is 154,879. Students are studying in 3,437 different level of schools like: primary, middle, elementary, secondary and high schools. Available number of teachers & class rooms for primary, middle and higher secondary are 5,631 & 5,343 respectively.

Mostly building structures of primary, middle and secondary schools in Tharparkar are old and need repair. As per NRM (National Reference Manual) and NEP (National Education Policy) standards, acceptable density is 30 students per class room for primary, middle and secondary level. Total

enrolment and available number of class rooms shows that there is at present no shortage of teachers & class rooms.

Table 6-3: Need Assessment in District Tharparkar (Primary to High Secondary)		
S. No.	**Description**	**Results**
1.	Total Enrolments	**154,879**
2.	Total Number of available Class Rooms	**5,343**
3.	Student Per Class Room @ NRM Standard (Primary to Secondary)	**30**
4.	Class Rooms Required for present need	**5,162**
5.	Additional numbers of Class rooms	**180**
6.	No of Teachers	**5,631**
7.	Teacher Student Ratio	**27**
8.	Additional numbers of Teachers	**468**

Islamkot TC (Includes Primary to High Secondary Education Institutions)

Present number of Boys and Girls students in Schools at Islamkot TC is 4,824. Students are studying in 38 different level of schools like: primary, Middle and Higher secondary schools. Available number of class rooms for Primary, Middle and Higher Secondary are 192.

Table 6-4: Present Need Assessment of Islamkot TC		
S. No	**Education Type**	**School**
1.	Enrolment	4,824
2.	Class Room	192
3.	Student Capacity Per Room	25
4.	Student Per Class Room @ NRM Standard (Primary to Secondary)	30
5.	Class Rooms Required for present need	160
6.	Additional numbers of Class rooms	32
Source: RSU (Reform Support Unit RSU Education & Literacy Department GoS. 2018)		

For Short term plan, there is no need of extra class rooms at different levels while the buildings need immediate repairing as well as prop provision of missing facilities.

6.1.4 Future Need Assessment Islamkot TC

The long term plan target is to achieve 100% enrolment with 1:1 male female ratio by 2038; therefore 1,373 additional classrooms will be required to accommodate upcoming generation for next twenty years. This need could be fulfilled either by addition in existing buildings or more new schools and colleges will be needed to be constructed in future to serve projected population of 260,846.

Table 6-5 : Future Requirement of Classrooms in Islamkot TC

S. No.	Description	Results
In Schools of Islamkot (Primary to Higher secondary)		
1	Expected total enrolment by 2038 @ 100% enrolment	**46,952**
2	Total classrooms requirement till 2038	**1,565**
3	Present Supply (2017)	**192**
4	Additional classrooms requirement till 2038	**1,373**

6.1.5 Future Need Assessment Tharparkar District

As per NRM (National Reference Manual) and NEP (National Education Policy) standards, students per class room occupancy ratio are 30 students per class room for primary, middle and secondary level. Total enrolment and available number of class rooms shows that there is in present no shortage of class rooms.

The long term plan target is to achieve 100% enrolment with 1:1 male female ratio by 2038; therefore 4,892 additional classrooms will be required to accommodate upcoming generation for next twenty years. This need could be fulfilled either by addition in existing buildings or more new schools and colleges will be needed to be constructed in future to serve projected population of 3,070,400.

Table 6-6: Future Requirement of Classrooms in Tharparkar District

S. No.	Description	Results
Primary to Higher secondary		
1	Expected total enrolment by 2038 @ 100% enrolment	307,040
2	Total classrooms requirement till 2038	10,235
3	Present Supply (2017)	5,343
4	Additional classrooms requirement till 2038	4,892

6.1.6 Policy Guidelines[21]

- impart Basic Education (free),
- Provide Vocational & applied education centers within rural, peri-urban and industrial areas;
- Introduce farmer field trainings in rural schools to ensure that the next generation of farmers is already tuned to market intelligence and opportunities.
- Maintenance of existing depilated schools and buildings should be given top priority.
- IslamKot is a flood prone district. The schools selected to act as shelter should be given top priority in repairs and utilities.
- For girl's literacy and women education, informal system of homeschool may be encouraged.

6.1.7 Strategic Development Plan

Strategic Development Plan should aim to strengthen existing schools system to bring socio-economic and sustainable development in the region. The focus of this plan should be centered chiefly on improving education standard at primary and secondary levels and providing extra curriculum opportunities to address the needs of youth in rural and remote areas. This will increased the literacy ratio, living standard, employment opportunities of the future population.

I. Long Term Plan

- Improving the quality of learning outcomes through strengthening the teaching/learning process,
- Improved accountability, and establishing a competency-based constructivist system of educational professional development.
- Enhancing the equity of resource allocation and improving the fiscal sustainability and effectiveness of educational expenditure, thereby fostering transparency and accountability in the use of public resources.

II. Short Term Plan

- improving the quality of teachers through merit-based selection and recruitment;
- Construct required schools and higher education institutions .Take stock of operational and staffed schools and eliminate ghost schools.

6.1.8 Priority Projects

Construction/ Rehabilitation of Schools and Allied Infrastructure

- **Project Justification**

  Education should be the one of major goal of any urban strategy. The sitution of education sector in Tharparkar District is not at the preferred level. Importance must be placed on girls schools because it was badly disregarded. at present there is no need of extra school units at

[21] Sindh Vision 2030

the district level but focus must be on the improvement of the infrastructure and provide the basic facilities like water, electricity, toilet, playgrounds etc.

At the present there there is no shortage of the school but by the year 2037 need will increase up to 6,012 number of class rooms at the district level.

- **Project Benefit**

  This relate to the basic right of the people and comes under the compulsory social services, By increasing the litracy ratio the living standad of the population will improve with in the district.

- **Implementing Authority**

  Department of the Education – Provincial Government.
  Estimate Cost: 87.12 million approx.

Project Name	Short Term	Proposed Area in Acre	Total Cost (million/- PKR)	Justification
Vocational and skill training centers in alliance with contemporary demand	Short Term	02 acre	87.12	02 acre = 87,120 sft, at the rate of 5000/- PKR per sft construction cost with all infrastructure cost.

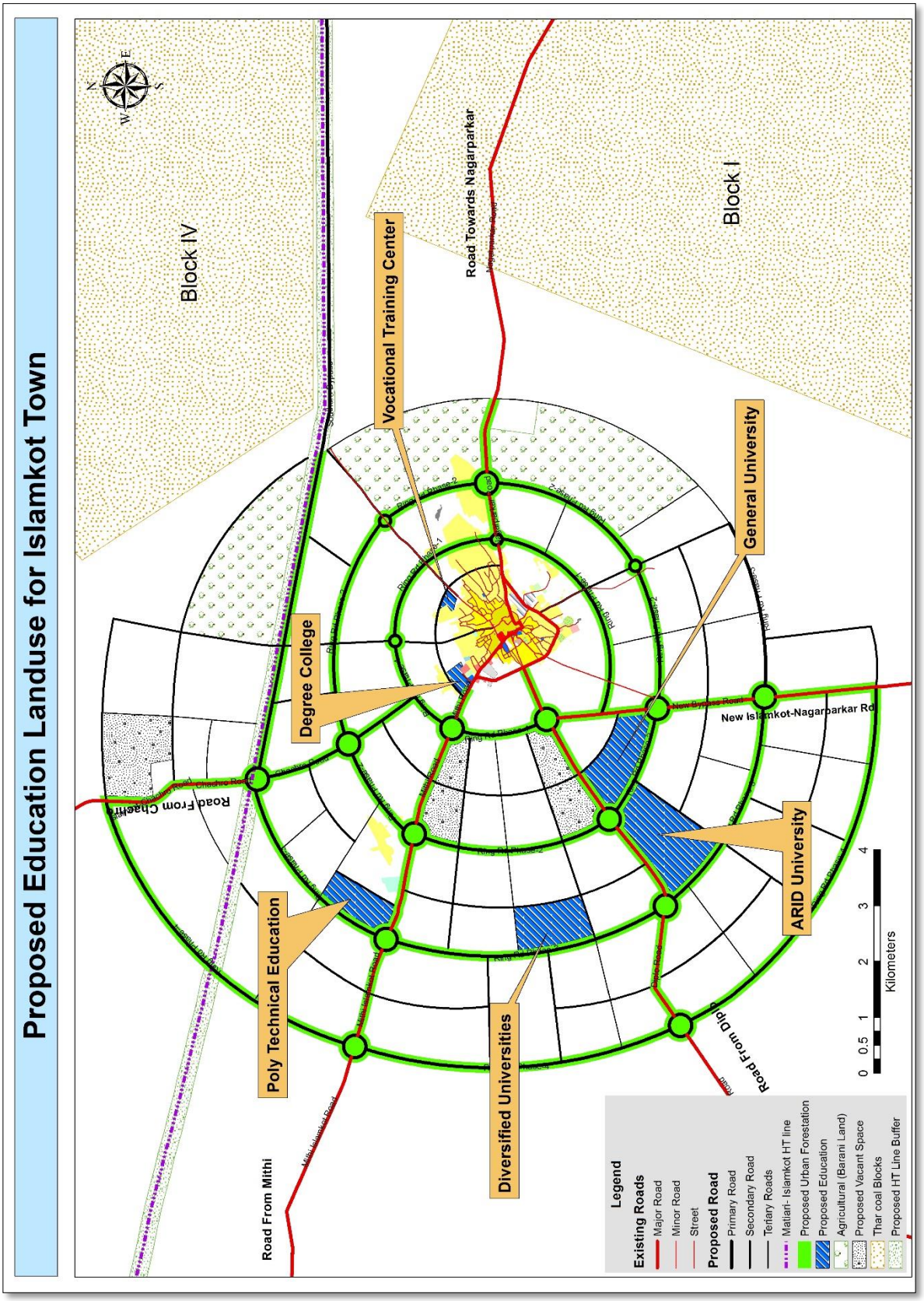


Figure 6-1: Future Proposed Educational Landuse for Islamkot

6.1.9 Immediate Action Plan for Core Urban Area

- **Rehabilitation and Up gradation of Schools**

All four schools marked in core urban area should be rehabilitate with the structural stability, building repair work, access to utilities, provision of facilities, replacement of old furniture, presence of teaching and non-teaching staff etc. Other than rehabilitation mainly up gradation of these institutes are far more required as follow:

- Govt. Shah Abdul Latif Higher Secondary School to Govt. Shah Abdul Latif College
- Govt. Boys Primary School to Govt. Boys High School
- Govt. Girls High School to Govt. Girls College

The up gradation could be made through addition of new building in same compound or addition of number of floors for new class rooms and allied facilities.

ISLAMKOT - CORE TOWN AREA			REHABILITATION OF EDUCATION FACILITIES						
S.No	Education Facility Name	Area (acre)	Rehabilitation Required Area wise or job wise cost (PKR)						
			Street / Road / Parking	Utility Facilities				School Building Repair/ Renovation	Security
				Electricity	Water Supply	Sewerage	PTCL		
1	Govt. Shah Abdul Latif Secondary School	1.73	1.80	2.06	2.69	2.69	0.45	0.90	0.45
2	Govt. Boys Primary School	0.66	1.58	1.82	2.37	2.37	0.40	0.79	0.40
3	Govt. Girls High School	0.15	0.82	0.94	1.22	1.22	0.20	0.41	0.20
4	Govt. School	0.14	0.85	0.98	1.27	1.27	0.21	0.42	0.21
Total		2.67	5.04	5.80	7.56	7.56	1.26	2.52	1.26
Total PKR Rs. Million			**31.00**						

At present only four educational facilities are there in Islamkot town core urban area, as far for up-gradation and rehabilitation we are only proposing associating facilities with all allied services related to basic utilities, access road and building renovation. To some extent as the population grown beyond the urban core area assumed boundary the short term and long term educational projects are already proposed in priority projects sector wise for future population of town.

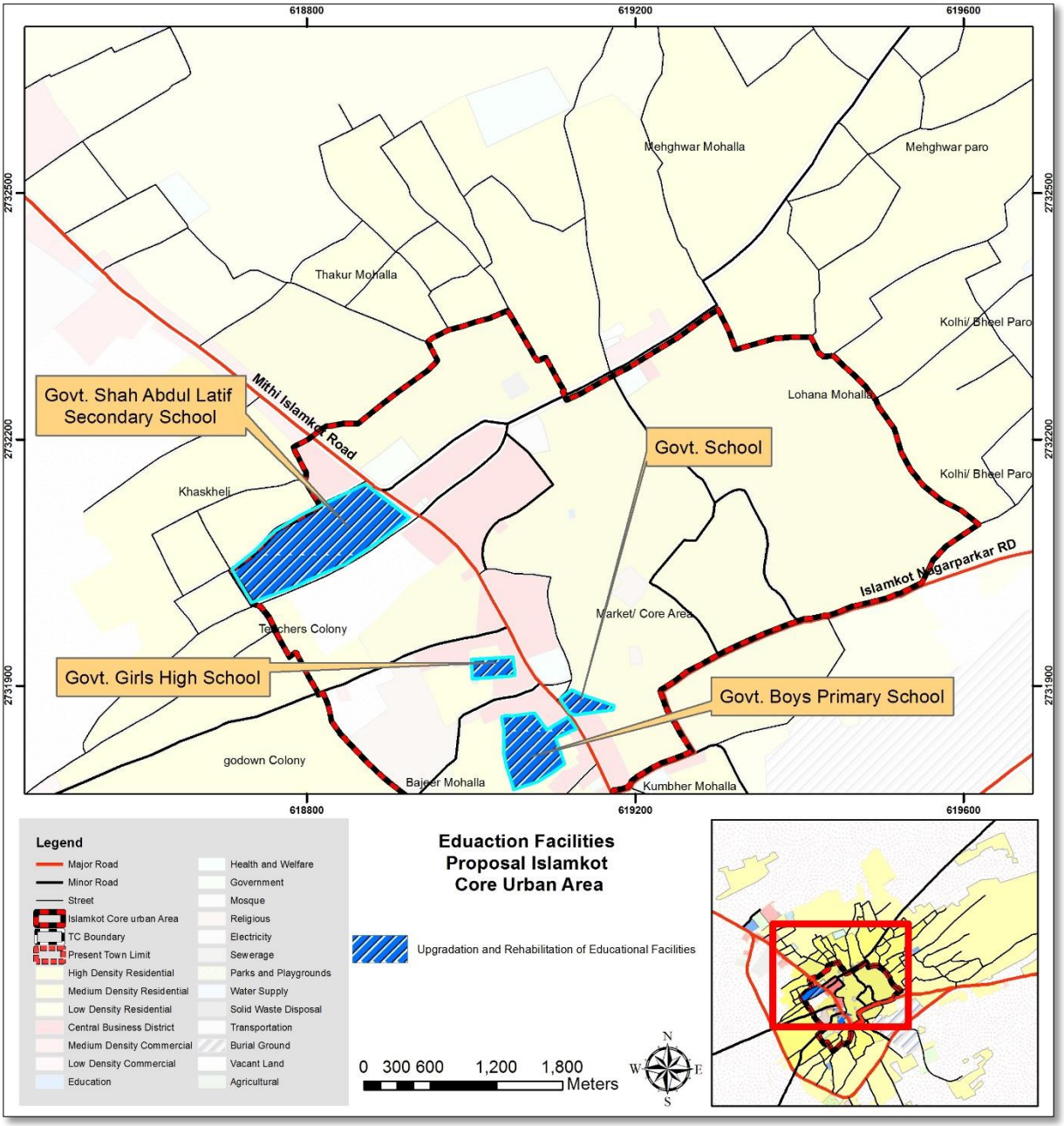


Figure 6-2: Education and Health Facilities of Islamkot Core Urban Area (Map)

6.2 Health

6.2.1 Existing Situation

In Sindh maternal health facilities and proper reproductive care is not available at the required scale. Low levels of maternal health and nutrition coupled with high fertility rates lead to high mortality and morbidity among mothers and children, particularly in the rural areas. The lack of such healthcare endangers the life of the mother and the child. In Sindh the fertility rates average at 6.0 births by women by the age 45-49 and more than 4,000 mothers die every year due to pregnancy related issues. Consequently, poor women's health in Sindh is as much a medical as social problem. Underlying factors here are the lack of awareness of and attention to, women's health needs; women's lower education and social status, early marriages and social constraints on women and girls, including the practice of seclusion.

Currently, tertiary level health facilities of Taluka hospital THQ and BHUs are serving the regional population of Sindh at Tharparkar district. There is one civil hospital having 74 bed, 3 Taluka HQ Hospitals at District having 90 beds and 96 private Hospitals having 129 beds to serve the district. The other health facilities spread over entire district are 2 RHC having 20 beds, 10 TB Clinics, 40 BHUs having bed strength 93 and 307 dispensaries.

Table 6-7: Government and Private Departmental with Bed capacity in district Tharparkar

Type	No. of Facilities	Beds
Civil	1	74
Taluka	3	90
BHUs	40	93
RHCs	2	20
Private	96	129
Dispensaries	307	3
Total	**449**	**409**

Source: Health Profile of Sindh, 2017

The following are the major issues in the health sector:

- Shortage of Health facilities such as wards, labs and OT
- Shortage of diagnostic and other Health equipment
- Difficulty of transferring serious cases from rural areas to hospitals
- Large number of Vacant posts of doctors and medical staffs in health institutions of the district.
- Lack of training and housing facilities for LHW and paramedical staff
- Shortage of Nutrition (mother and child nutrition specially pregnant + lactating mothers
- Proper functioning of mobile health units specially in remote areas of Thar

6.2.2 SWOT Analysis

Health			
Strength	**Weakness**	**Opportunity**	**Threats**
1. Accessibility to basic health facilities. 2. Presence of primary and secondary health facilities	1. Limited health facilities in urban area. 2. Teenage marriage & pregnancies are a common scenario. 3. Less availability of doctors 4. Shortage of skilled birth attendants. 5. Scattered population: Transportation of emergency patients to the nearest medical facility is very complicated	1. More investment is required through PPP in health sector. 2. Extra allowances for doctors and other paramedical staff. 3. It must be made compulsory for all fresh medical graduates to work in Tharparkar for upto six months, 4. New Taluka Hospital and Thar Foundation Hospital is under construction.	1. Less emergency response to health incidents. 2. Death rate may increase. 3. Difficult to control eradication of epidemics diseases. 4. Increase in infant mortality rate. 5. Remoteness and unavailability of ambulance service

6.2.3 Need Assessment

Present Assessment at District Level (Population, Bed Ratio, Doctors Ratio) 2017

- Currently there is one civil hospital in Tharparkar District. There are74 beds in it. . The NRM (National Reference Manual) recommends 2 bed per thousand as the medium term target. On this basis approximately 2,890 beds will be required to be provided gradually at district level half of there in Islamkot
- Currently 185 doctor posts are filled. Therefore the shortage of doctors is quite serious.
- According to NRM (National Reference Manual) there should be 1 doctor per BHU and 3 doctors per RHC. According to WHO (World Health Organization) standards doctor to population ratio is 1:1000 so taking that as a reference point currently there are 1465 doctors required for the present population at District level

Table 6-8: Present Analysis of Population to bed ratio and Doctor Ratio at TC Level

Present Population	**Available Beds**	**Present Need**	**Required Beds**	**Available Doctors**	**Present Need**	**Required Doctors**
24,880	20	50	30	18	25	07

There are currently 20 beds in RHC Islamkot. The present bed ratio is one bed for every 1,244 population of Islamkot. This ratio is inclusive for private hospitals and medical centers. As per NRM medium term target of 2 beds per 1000 population for Pakistan. Currently there is need of 30 additional beds for Islamkot TC's Population. 75% of sanctioned posts of doctors are filled. At present, Islamkot has 24 sanctioned doctors out of which 18 are the actual appointments and remaining are vacant (including both male and female doctors).

Table 6-9: Present Analysis of population to bed ratio and Doctor Ratio at District Level

Present Population	Available Beds	Present Need	Required Beds	Available Doctors	Present Need	Required Doctors
1,649,661	409	3,299	2,890	185	1650	1465

Future Need Assessment District level (Population, Bed Ratio, Doctor Ratio) 2038

The consultant considered it appropriate to consider the catchment population of the district to work out the present need assessment and future (2038) requirements. The NRM (National Reference Manual) recommends 2 bed per thousand as the medium term target. On this basis approximately 5,732 beds will be required to be provided gradually until 2038. According to WHO (World Health Organization) standards doctor to population ratio is 1:1000 so taking that as a reference point the future requirement of doctors comes out to be 2,885 doctors for the future population of District Tharparkar.

Table 6-10: Future Analysis of population to bed ratio and Doctor Ratio at District Level

Future Population	Available no beds	Future Need	Required no of beds	Available no of Doctors	Future Need	Required no of Doctors
3,070,400	**409**	**6,141**	**5,732**	**185**	**3,070**	**2,885**

The NRM (National Reference Manual) recommends 2 bed per thousand as the medium term target. On this basis approximately 502 beds will be required to be provided gradually until 2038 at TC level. According to WHO (World Health Organization) standards doctor to population ratio is 1:1000 so taking that as a reference point the future requirement of doctors comes out to be 243 doctors for the future population of Islamkot TC.

Table 6-11: Future Analysis of population to bed ratio and Doctor Ratio at TC level

Future Population	Available no beds	Future Need	Required no of beds	Available no of Doctors	Future Need	Required no of Doctors
260,846	**20**	**522**	**502**	**18**	**261**	**243**

6.2.4 Policy Guidelines[22]

- SDG Goal No.2; Good Health and well-Being being implemented
- Regulate protection from disease and the quality of healthcare across the province. In this context the Health Department will regularly survey and analyze healthcare statistics, particularly on women, children and the elderly
- Enhance and improve existing emergency care facilities and trauma centers, including ambulatory services and paramedic forces.
- Assess the impact of past campaigns to arrest malnutrition, improve maternal and child healthcare and on preventing extraneous causes of fatalities caused by road accidents, poor sanitation, etc.

6.2.5 Strategic Development Plan

- **Long Term**
  - Improve health hygiene practices though awareness raising workshops, seminars, and mother and teacher meetings etc. about sanitation, hygiene and communicative diseases.
  - Conduct coordination meetings with government health department regarding remote areas where vaccination is not taking place.
  - Private sector should be seen as a partner in healthcare delivery and should be engaged/regulated through appropriate mechanisms

- **Short Term**
  - Improve access to healthcare facilities as due to long journeys to hospitals many patient die on the way.
  - We can further improve the access through an "Edhi' type ambulance network financed by local charity, in connection with local government bodies and healthcare facilities
  - Ensure availability of adequate and skilled workforce to fulfill population health needs,
  - Expansion of immunization coverage
  - Improving functionality of equipment and availability of quality medicines.

6.2.6 Priority Projects

Diseases and Immediate Mobile Medication of Health Issues at Islamkot:

- **Project Justification**

  Health is the fundamental need of every society or town. Up gradation of RHC to the level of THQ at Islamkot project is approved at ADP projects allocation for the stability of health issues at DHQ level. At present RHC extension program is Currently THQ hospital of Tharparkar is facing lot of problems due to unavailability of Laboratorial facilities. Shortage of electricity, surgical instruments, and lack of machineries are the major issues. Lake of female doctors and

[22] Sindh Vision 2030

female staff. Immediate action should be taken place for treating issues at mobile health centers for islamkot with proper medication.

In Tharparker, where 87% of the population is living in poverty, Thar Foundation will help Government of Sindh proliferate a best practice in localization and implementation of Agenda 2030, in high priority SDGs, with the technical support from SDGs Support Unit Sindh. Currently, Thar Foundation is contributing towards the areas of education, healthcare, human resource development, livelihood, infrastructure, drinking water, women empowerment, culture & heritage, youth development and disaster management. Thar Foundation has been contributing towards immunization and basic health care needs of Thari people. As of now, 100% Hepatitis B and C vaccination has been completed in Block-II & Gorano. More than 100 patients have undergone free surgery for Cataract and Marvi Mother & Child Clinic currently runs free OPD and medicines service for 7 days a week. The initiative represents a successful and effective public-private partnership model, with a leading role of the private sector in accelerating progress towards Agenda 2030 and attainment of SDGs (http://sindhsdgs.gov.pk).

- **Project Benefit**

  The project will direct provide the benefit to the poor people of the Tharparkar District. The health condition of the district improved.

- **Implementing Authority**

  District & Provincial Health Department GoS.

- **Estimated Cost: 250.00 million.**

Project Name	Short Term	Proposed Units	Preliminary Cost in Million	Justification
Provision of Mobile Health Units for Islamkot and surrounding settlements/villages	Short Term	05 No.s	250.00	05 No.s MCH Units for immediate access to villagers and Islamkot population.

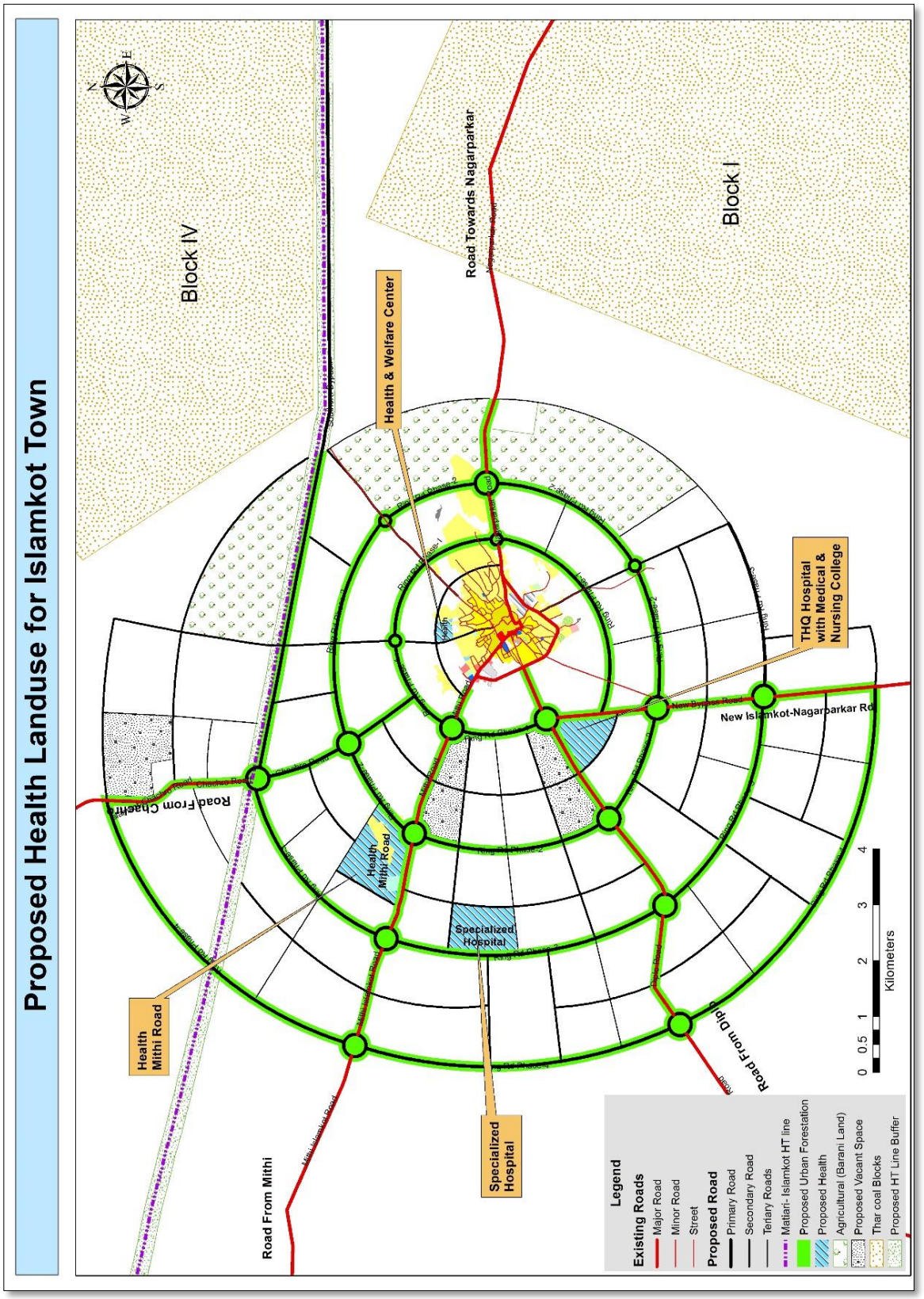


Figure 6-3: Heath Proposal of Islamkot (Map)

6.2.7 Immediate Action Plan for Core Urban Area

➢ **Rehabilitation and Up gradation of RHC**

As the town THQ Hospital is under construction at Diplo Road and RHC is in urban limits of Islamkot, thus it is suggested to rehabilitate with the up gradation of RHC into Maternal and Child Healthcare Center. It should include; NCU, laboratory, blood bank, additional beds, pharmacy, ambulance service, 24/7 service with specialized doctors and paramedic staff.

REHABILITATION OF RHC CENTER (BUILDING)						
S.No	Area / Locality / Address	Area (acre)	Rehabilitation Required Area wise or job wise cost (PKR)			
			Street / Road / Parking	Provision of Utilities	Public Facilities	Security
1	Up gradation of RHC (Rehabilitation of Building)	1.68	2.59	1.68	3.24	0.65
Total		**1.68**	2.59	1.68	3.24	0.65
Total PKR Rs. Million			**8.17**			

Currently there is need of additional 30 beds to cater Islamkot TC's Population. The above mention rehabilitation cost includes allied facilities associated with RHC and provision of bed for present population to accommodate present population.

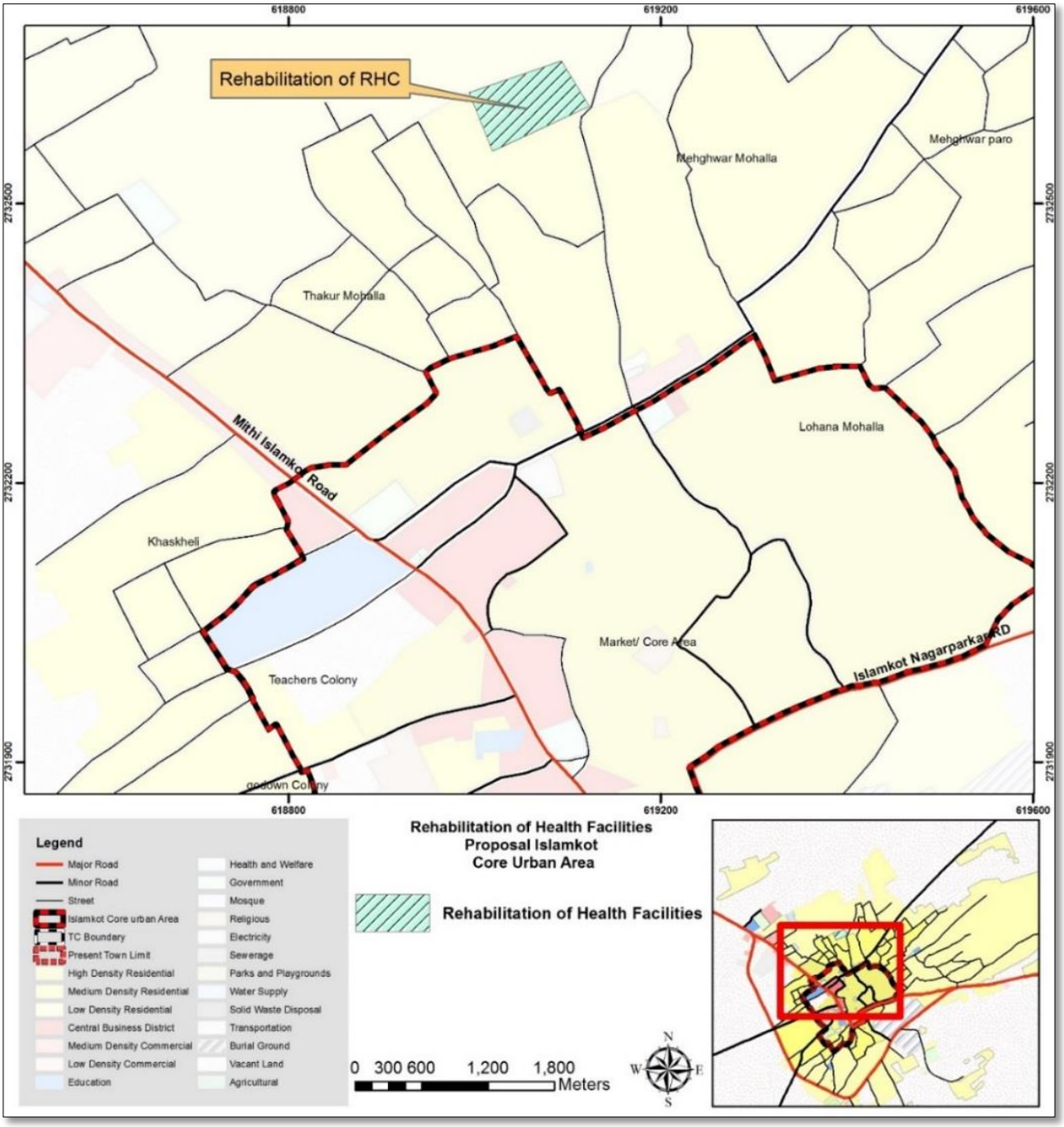


Figure 6-4 : Rehabilitation Health Facilities of Islamkot Town

6.3 Recreational, Heritage and Culture, Tourism, Religious

6.3.1 Existing Situation

One of Thar's valued heritage sites is the Jain Temple of Pari Nagar, which is a potential goldmine for tourism, as it would attract visitors and pilgrims from all over the world; especially India.

Nagarparkar, is a town in at the foot of the Karoonjhar Mountains in Tharparkar District that is famous as home of the Nagarparkar Temples - a pilgrimage site for Hindus and Jains, located at a distance of 129 km from Mithi.This area can be developed to attract the tourists. Income from tourism promotes local economy. The major is for tourist accomodation and other facilities to attract tourists and make them comfortable. Historic and famous places in Tharparkar:

- Karoonjhar Hills
- Well of Marvi (Umar Marvi lok dastan)
- Bhodesar Mosque
- Ghadi Bhitt
- Naukot fort
- Jain temple of Gori
- Kasbo

6.3.2 SWOT Analysis

Strength	Weakness	Opportunity	Threats
Sports & Recreation			
1. Local environment of town supports green urbanism.	1. Shortage of water facility to maintain green spaces, green belts and trees plantation. 2. Unavailability of sports infrastructure.	1. Good health of local communities. 2. Air pollution reduction. 3. Healthy environment. 4. Protection of natural habitat. 5. Tourism is a major employment generator	1. Lack of sports and youth activities may encourage unhealthy activities in youth. 2. Lack of sports and active recreation, the youth is bound to engage in digital games
Culture & Tourism			
1. An average of 2,000 tourists visit Tharparkar on a daily basis during the months from June to September.	1. Less commercializati on from tourism point of view. 2. Less heritage preservation.	1. Tourist attraction. 2. Revenue generation through tourism. 3. Promotion of rich heritage to increase	1. Fewer allied facilities to promote tourism. 2. Demise of cultural values and norms.

Strength	Weakness	Opportunity	Threats
2. Several ancient sites with potential for tourism development. 3. One of Thar's valued religious heritage sites is the Jain Temple of Pari Nagar, which is a potential goldmine for tourism. 4. Ancient mosque in Bhodesar 5. An old Hindu Temple, Sardharo also a sanctuary for Peacocks. 6. Marvi's well as centre of a folk love. 7. Thari music & Handcrafts are popular and also supports in income generation for the local people.	3. Poor Management for organizing cultural events. 4. Lack of infrastructure to accommodate visitors into such events.	historical importance of the town. 4. It is important to ensure safety and up keep of heritage sites. 5. The Nagarparkar area may be declared as national park to save it from total damage	3. Tourism is a blessing but could become a threat if very large number tourists arrive. 4. Public facilities and lack of toilets and garbage bins could spoil the pristine environment

6.3.3 Need Assessment

- Islamkot has dearth of formal recreational spaces in terms of parks, public gardens, sports complex, and family parks. Further there is a need for the organization of sports. Events at all community level provincial level to keep the youth busy with healthy activities. The area is very rich in cultural heritage including folk and sufi music, which needs to be explored and promoted for tourism.
- Islamkot area including Nagarparker has a wealth of Tourism assets easily accessible but quite neglected. A tourism organization, in public or private sector needs to be established to organized package Tours and market them in the domestic and international markets. Essential communication, transport and accommodation need will need to be created to market tourism resources.
- The Local bodies and TC authorities have to plan for additional requirement of infrastructure, roads/bridges, bus/truck terminal, street lighting, parks, mosques markets, commercial centre etc. within regulatory framework of building and environmental regulations.
- There is only one under Construction Park designated as recreational places in the vicinity of Islamkot TC adjacent to Islamkot bypass road.

6.3.4 Policy Guidelines[23]

- A tourism organization, in public or private sector needs to be established to organized package Tours and market them in the domestic and international markets. Essential communication, transport and accommodation need will need to be created to market tourism resources.Federally-managed lands and waters afford critically needed opportunities for outdoor recreation,
- Managed outdoor recreation can be consistent and compatible with conservation of natural resources including fish and wildlife and preservation of heritage resources,
- Clean air and clean water and other environmental objectives are vital components of quality outdoor recreation experiences; and providing quality recreation opportunities
- Islamkot needs infrastructure and programs for sports activities, sport competition, gymnasium and family parks, and children play area and gardens.

6.3.5 Strategic Development Plan

The aim of this strategic Development Plan is to provide Recreational Infrastructure of International Standards at District, Protect and conserve the cultural heritage, promote language, art and culture of District and dissemination of information through media. Some of the Strategies are mentioned below;

6.3.6 Long Term Plan

- Development and preservation of cultural heritage
- Development and Improvement of Cultural Village and Museum in the District may promote tourism.
- Protection of historical places and cultural heritage
- The Karoonjhar area may be declared as National Park
- Youth development programme for sports and recreation
- Urban Forestation
- Construction of Recreational resort
- Establishment of new open spaces as well as establishment of indoor and outdoor game facilities.

6.3.7 Short Term Plan

- Existing open spaces in core urban area should be restored and maintained. New open spaces should be identified and created.
- The old houses marked for demolition by Town Committee due to danger may be purchased by TC or Local CBO. They may purchase these old houses which have out lived its age and these houses can be converted into small parks & eating places.
- Promote tourism through provision of support facilities
- Rehabilitation and construction of family parks and playground near residential areas

[23] NOPRA 2005

- Establishment of synthetic grounds, playing turf (for hockey, football) and indoor gym facility.

6.3.8 Priority Projects

Construction/ Rehabilitation of Recreational Facilities

- **Project Justification**

  There is only one playground available for sports opposite to Saint Shree Nanuram Ashram in core urban area which has no facilities. The previously existed park was converted into TC shops, located in core urban area of Islamkot. There is also lack of family parks and open spaces resulting in a high level of air pollution and poor environment. A bird feeding place with some structure has also been observed, which could be regenerated with open green space. The following are the recreational proposals with respect to the priority bases sets to improve present cricket ground and rehabilitation of park.

- **Project Benefit**
  It will provide better environment and contribute in the enhancement of the youth physical and mental health of the town.
- **Implementing Authority**
  Islamkot Town Committee

Estimate Cost: 430.00 Million Approx.

S.No	Project Name	Short Term	Proposed Area in Acres	Total Cost (million/- PKR)	Justification
Recreational Areas					
1.	Rehabilitation of Cricket sports ground	Short Term	7.00	274	12 acre = 522,720 sft, at the rate of 1800/- PKR per sft construction cost with all infrastructure cost.
2.	Rehabilitation of Municipality Park	Short Term	4.00	156	04 acre = 174,240 sft, at the rate of 1800/- PKR per sft construction cost with all infrastructure cost.

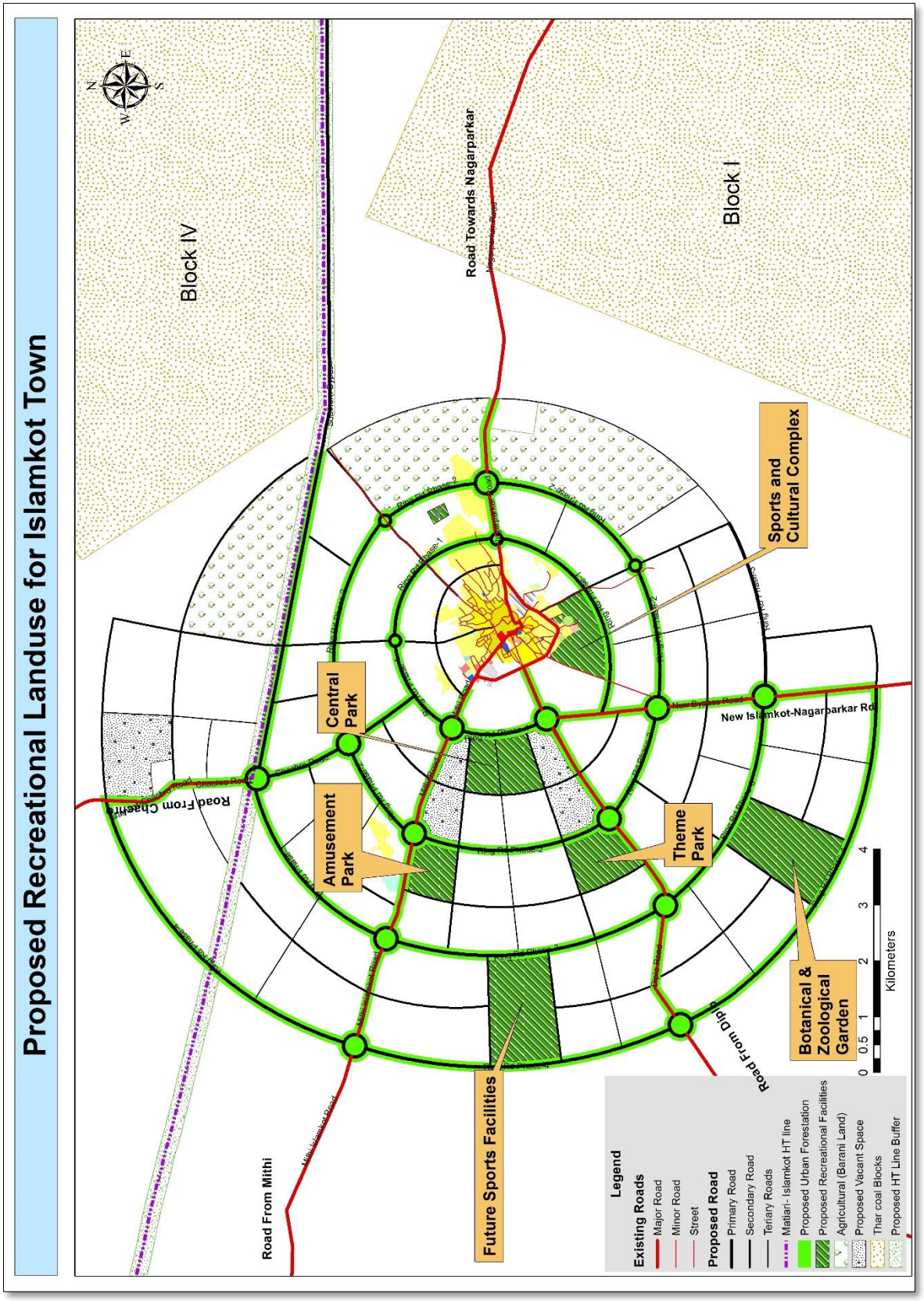


Figure 6-5: Priority Project for repair & Rehabilitation of Recreational Areas of Islamkot Town

6.3.9 Immediate Action Plan for Core Urban Area

- **Recreational**

a) Provision of Green Open Spaces

Most of the available waste corners, left over of plot cuttings, vacant land of odd shape will be utilized for green open spaces in order to provide fresh breathing air to the inhabitant and enhance the aesthetic of dense area. This will also accommodate the birds feeding place to give break from noise pollution due to traffic. The tentative spaces has been identified for these green open areas, depends on the actual availability and dimensions suitable as per use.

Green Open Spaces

b) Revival of Family Parks

Existing park is encroached upon condition (converted into shops), therefore it is responsibility of Town Committee that they preserve and maintain the park on immediate basis. In further continuation, the dangerous building marked for demolition by Town Committee due to structural condition could be purchased by TC or CBO, to convert into family parks. Another option is to create shared open parks; which will be utilized by schools in morning time while by neighborhood residents in the evening.

c) Rehabilitation of Sports Ground

Some vacant land available opposite Saint Shree Nanuram Ashram for sports ground. Thus it is highly recommended to design and construct the sports facilities on this designated site, while boundary wall on immediate basis. This ground could be developed as a multipurpose sports ground for football, cricket and basketball court.

Multipurpose Sports Ground

d) Facilitation Centers

Since in present time even, core urban area of Islamkot attract many visitors on daily as well as occasional basis, thus this influx will increase tremendously with the development of Islamkot town. In this regard, the facilitation centers are proposed with mixed use development comprises of sitting or rest spaces with open play areas in green landscape and served with public toilets, small moveable cabin shops like tuck shops, souvenir shops, cafes / restaurants and parking spaces. These facilitation centers will provide a stopover for occasional visitors specifically and eventually for all. As a result this will confine the outsiders in designated areas and local residents of core urban area would not be disturbed.

Small Cabin Shops

Tharparkar Handicraft

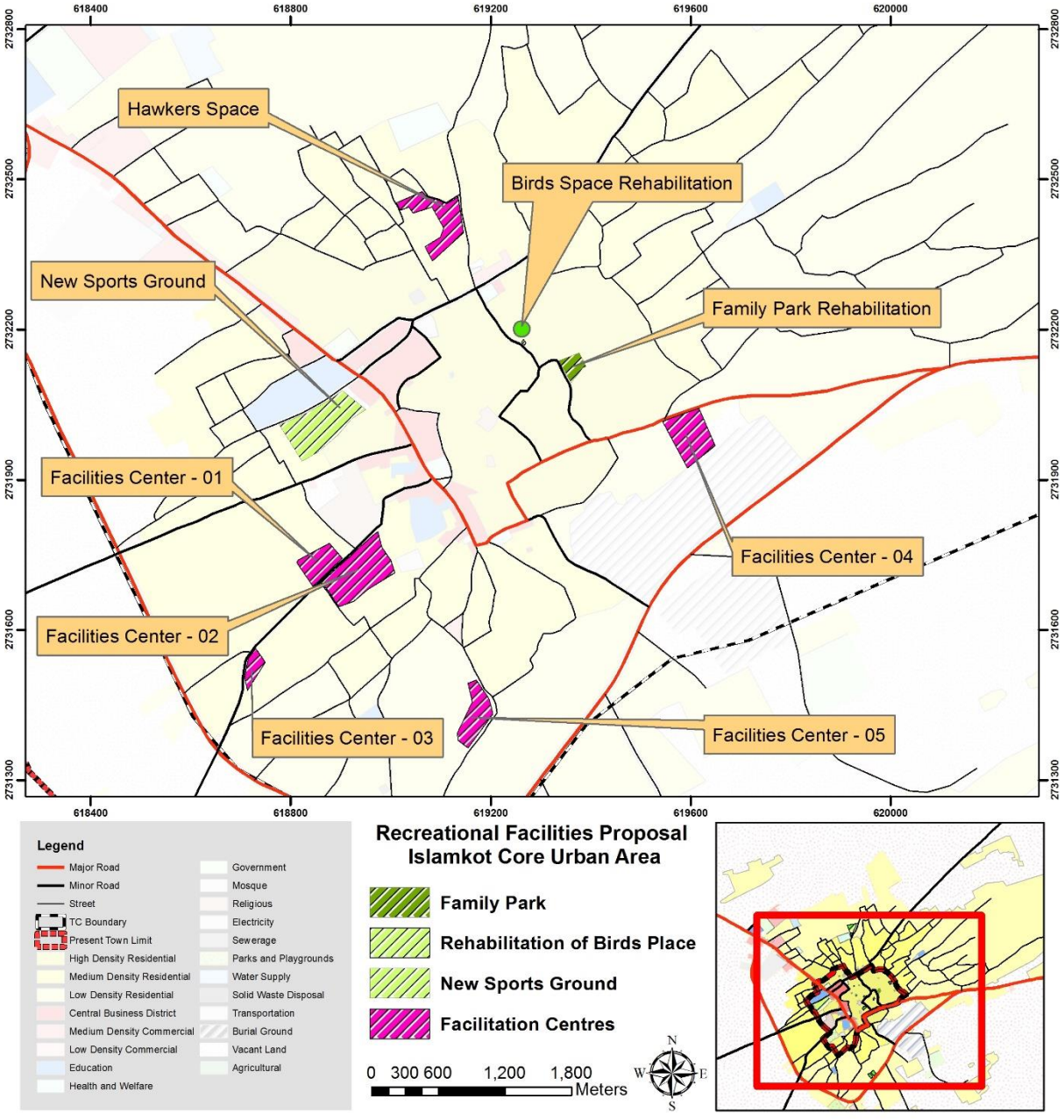


Figure 6-6: Recreational Facilities Proposal of Islamkot Core Urban Area

PREPARATION OF DEVELOPMENT MASTER PLAN FOR ISLAMKOT - CORE TOWN AREA RECREATIONAL FACILITIES PRESERVATION &							
S.No	Recreational Preservation	Area / Locality	Area	Area	Rehabilitation Required Area wise or job wise cost (PKR)		
					Unit	Rate	Total Amount.
2	Birds Place	2.69	0.01	435.6	sft	1,200.00	522,720.00
3	New Sports Ground - Near		2.68	116741	sft	1,200.00	140,088,960.00
							140,611,680.00
						Total PKR Rs. Million	**140.61**

Note

- Rehabilitation of lanes, streets and connecting minor and major roads.
- Utility Infrastructure rehabilitation includes basic services of Water supply & Electricity supply
- Public facilities includes rehabilitation and provisioning of public toilets, proper seating arrangements.
- As per the law and order situation security concerns makes the overall impact to uplift the society life w.r.t to secured environment.

6.4 Cultural, Heritage and Religious

a) Preservation of Heritage Sites

It is highly recommended to conserve and preserve the heritage of temples, which are much dominated heritage. The preservation should be done with the considerations of ritual festivals; to accommodate commercial activities, parking issues and traffic congestion around these heritage sites.

In order to improve the aesthetic of heritage sites, the provision of landscaping around the historical buildings should be carried out to improve the environment and to develop the urban core urban area in a sustainable manner. Thus, the extensions should be made in boundaries of heritage sites, up to available land adjacent to these sits, which will act as buffer area and could also serve for allied facilities.

b) Preservation of Cultural Sites

Along heritage preservation, cultural aspects could not be ignored. It is suggested to preserve the cultural sites of Holi Ground and Thar Museum. In addition to preservation of old historic belongings, some innovative cultural programs could also be initiated to promote Thari music, Rajhistani culture etc.

c) Repair & Rehabilitation of Religious Sites

In addition, the rehabilitation of all existing temples and two main mosques are suggested. Since, Jamia Masjid Khizran is most famous and centrally located, required proper rehabilitation with all utilities.

d) Rehabilitation of Mosques

The rehabilitation of two main mosques are suggested. Since, Jamia Masjid Khizran is most famous and centrally located, required proper rehabilitation with all utilities.

PRESERVATION OF CULTURAL & HERITAGE SITES & REHABILITATION						
S.No	Heritage / Cultural	Area	Area	Rehabilitation Required		
				Unit	Rate	Total
1	Holi Ground	0.64	27,901.18	sft	1,800.00	50,222,127
2	Jamia Masjid Khizran	0.39	17,048.08	sft	1,800.00	30,686,539
3	Mosque	0.38	16,693.59	sft	1,800.00	30,048,455
4	Thar Museum	0.36	15,774.82	sft	1,800.00	28,394,673
						139,351,794
					Total PKR Rs. (Million)	**139.35**

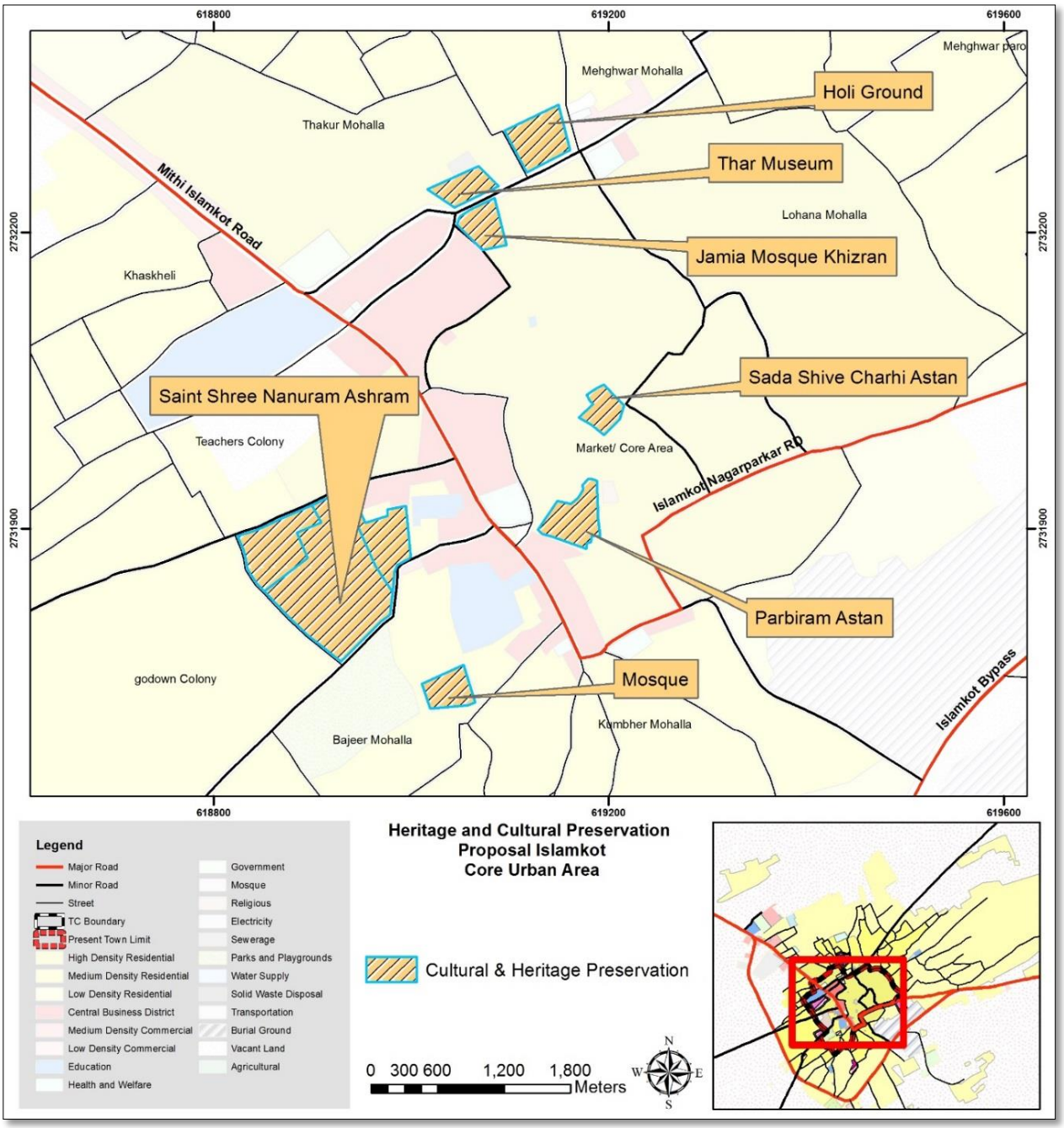


Figure 6-7: Cultural and Heritage Preservation Proposal of Islamkot

7. BASIC UTILITIES

7.1 Water Supply

7.1.1 Existing Situation:

There are two water supply sources in Islamkot:

I. Water from Naukot branch is supplied to Sehri Minor. Water from Sehri Minor is distributed to Mithi & Islamkot through 12" dia meter pipe & chlorinated before supply. The quantity of 10 Million Gallon fresh water is pumped every 10th day from Naukot for both Islamkot & Mithi, 5 Million Gallon for Mithi, 3 Million Gallon for Islamkot & remaining 2 Million Gallon for surrounding villages, located along main supply line. There are six underground water reservoirs in the Islamkot Town, from which water is distributed through three pumping stations. Cumulative capacity of underground reservoirs of canal water is about 0.522 million gallons. The detail of underground water reservoirs present in Islamkot is given below;

Table 7-1: Underground Water Reservoirs Capacity in Million Gallons with Quantity

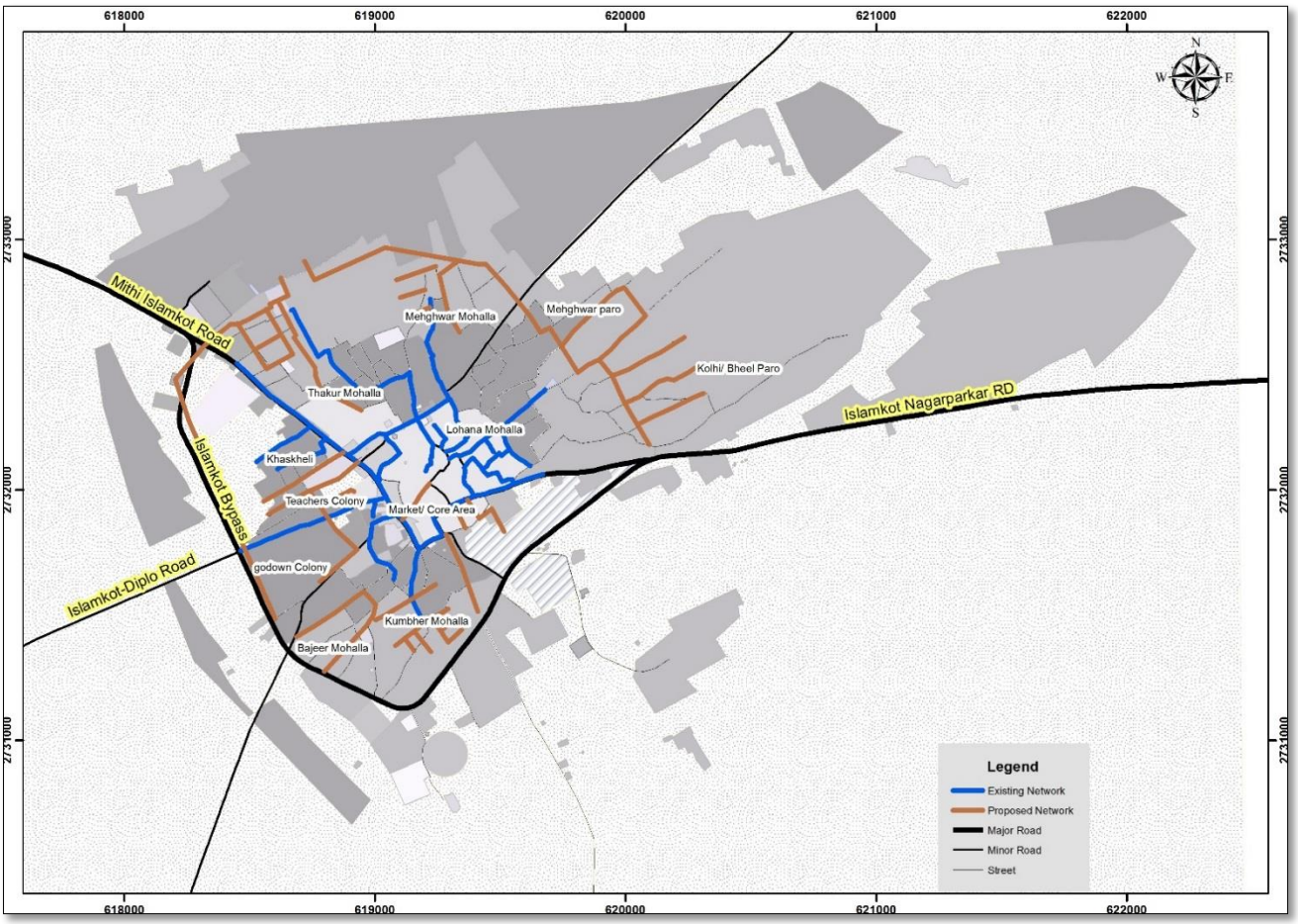
S.No.	Underground Water Reservoirs Capacity in MGD	Quantity	Total Capacity in Million Gallons
1	0.3	1	0.522
2	0.036	2	
3	0.050	3	

There is a huge difference between supply of canal water and storage capacity of existing infrastructure, that's why town is not having uninterrupted supply of sweet water.

II. Reserves Osmosis Plant: There is one RO Plant present in Islamkot with the capacity of 1.5 MGD, due to lack of funding, efficiency of RO plant is decreased by 0.15 MGD.

Sindh Coal Authority RO Plant Islamkot

Figure 7-1: Existing water supply network Islamkot



(a) Sustainable / Water Arrangements for Thar Coal Fields – Tharparkar

God Almighty has blessed Pakistan within abundant reservoirs of coal, about 175 Billion metric tons in the desert of Thar. It is indeed a great challenge for the Government to harness and utilize this source to generate electricity etc. and hence create innumerable employment opportunities (Goal No. 6). To assist this project by supplying cleaner and useable water, it is proposed to utilize water from RD-362 of LBOD (Spinal Drain) and carrying it up to Nabisar having a length of about 26 Km and later on after treatment from Nabisar to Vajhiar having a total length of about 80 Km which will facilitate the working of the coal-fired Power Plants. The Schemes are scheduled to be completed by 2019. The Capacity of RO plant is 24 MGD treated water[24].

(b) Current Water Quality, Water Supply & Demand

i. Current Water Quality

1. Groundwater: As per analysis of **groundwater quality**, it is observed that the groundwater is not fit for human consumption as the high TDS level, Total Hardness, Fluoride, Chloride, Antimony, Cadmium, Lead, Mercury and Nickel levels are higher than the SSDWQ limits. Also the water is highly bacteriologically contaminated. For Islamkot, it is recommended

[24] Preparation of Water Master Plan for Thar Coalfield including Hydrogeological, Water Supply and Waste Water Management Studies

that surface water resources to be utilized to cater the current demand of this town, as the quality of surface water is sweet. RO plants solutions are not sustainable due to its high cost of production. It may be noted that per capita demand of Islamkot is taken as 30 gpcd from surface water and the remaining demand will be met by brackish water which will be treated by RO process for future needs.

2. Surface water & RO plant: As per surface water quality analysis of supplied water quality for drinking purposes, it is observed that the water is not fit for human consumption it is bacteriologically contaminated with total coliforms, fecal coliform and E-Coli. This is due to the fact that the tanks of water storage are not cleaned and contained bacterial / fungus growth. However, it is recommended that treatment plant would be constructed at Islamkot to make it drinkable.

ii. Water Supply

For Islamkot, it is recommended that surface water resources be utilized to cater for the future demand of this town because RO plants solutions are not sustainable due to its high cost of production. It may be noted that, currently per capita supply of Islamkot is taken as 45 lpcd (10gpcd) as this is the quantity of sweet water they will get; the remaining demand is met by Tube wells, dug wells & boring brackish water. The major sources of supply is discussed in above existing situation section.

iii. Water Demand

On the basis of NRM (National Reference Manual), the daily water consumption to be over 30 gallons per capita per day or 136 liters / capita / day. On this basis, the present water demand is likely to be about 0.75 million gallons per day after fulfilling the present gap. It is expected that in next 20 years, water supply will rise to 30 gallon per capita per day from 10 gallon per capita per day. Therefore, after fulfilling the present need the additional water demand for Islamkot town will be as 1.70 MGD to 7.08 MGD accordingly.

The overall water demand will be reduced by reuse of treated effluent at least for horticulture and by other by water conservation measures

Table 7-2: Present Water Supply & Gap 2017

Source	Present Water Supply in MGD	Present Water Need @ 30 Gallon /Day	Present Water supply Gap
Census 2017	0.30	0.75	0.45
Note: *At present only 10 MGD water is supplied to Islamkot and Mithi city on every 10th day.*			
Source*: Census 2017 and Consultant's Projection*			

Below table show results according to most suitable scenarios by 2038.

Table 7-3: Present Water Supply, Need & Future Demand (2038)

Source	Present Water Need @ 30 Gallon /Day	Projected Population 2038	Water Demand up to 20 years (MGD)	Additional Water Demand up-to 2038 (MGD)
Census 2017	0.75	65,011	1.95	1.70
SECMC Data	0.75	260,846	7.83	7.08

Source: *Census 2017 and Consultant's Projection*

7.1.2 SWOT Analysis and Need Assessment

Water Supply & Distribution			
Strength	**Weakness**	**Opportunity**	**Threats**
1. 94% houses have piped water supply inside their houses and the remaining population is using hand pumps. 2. Availability of intake from canal via Naukot.	1. Well water is the source of water 2. Absence of systematic water supply system and treatment plant. 3. Poor administrative setup for water supply management and distribution. 4. RO plants water has less minerals 5. Weak institutional arrangements with overlapping of roles and responsibilities	1. Adequate water resources available for water supply system development. 2. Extension of existing irrigation system will boost agricultural productivity. 3. PPP in service delivery.	1. Negative externalities on human and plant health 2. Depletion of water quality due to "draw down" 3. High demand of water after population inflation due to Thar coal project

7.1.3 Sindh Drinking Water Policy 2017[25]

Principles:

- Population should be using an improved drinking water source which is accessible i.e. located on premises, available when needed and safe that is free of faecal and priority chemical contamination.
- Access to safely managed drinking water is a fundamental right of every citizen and that it is the responsibility of the Government to ensure its provision to all citizens.
- Water allocation for drinking purposes shall be given priority over other uses.

[25] Sindh Water and Sanitation Policy 2017

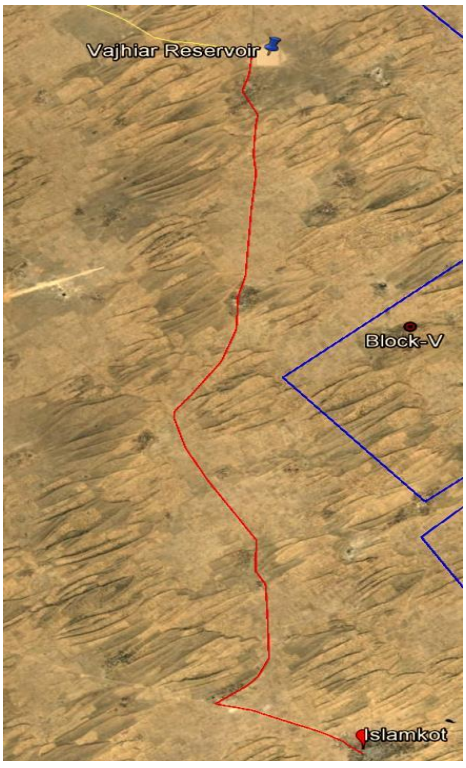
- In order to ensure equitable access, special attention shall be given to removing the existing disparities in coverage of safe drinking and for addressing the needs of the poor and the vulnerable.
- A supportive policy framework shall be developed that encourages alternate options through private provision, public-private partnerships, the role of NGOs and community organizations.
- Low cost technologies in water and sanitation, that are easy and cost-effective to maintain shall be developed and used.

Objectives:

- Develop criteria for installation of new drinking water supply schemes and ensure that all new schemes are safely managed, rationalized and constructed through need based criteria so that all areas and communities are served.
- Develop standardized service delivery models for both urban and rural drinking water supply schemes to improve efficiency, cost-effectiveness, improve monitoring and sustainability.
- Develop mechanisms for reuse, recycle and recharge of wastewater for other municipal and productive uses.
- Ensure that all drinking water supply systems are designed and constructed in line with the national drinking water quality standards and all municipal discharges comply with National Environment Quality Standards (NEQS).
- Install water treatment plants at existing drinking water supply schemes where required and incorporate water treatment facilities in all new drinking water supply schemes.
- Ensure development of water safety plans for all drinking water supply systems.
- Institute adaptation measures and disaster risk reduction and mitigation strategies to minimize the impact of climatic events on drinking water supply systems.

7.1.4 Strategic Development Plan

- **Long Term Plan**
  - To meet the future water demand i.e. 7.08 MGD for Islamkot town, it is recommended that Vajihar Reservoirs would be used. Which is 28 km away from Islamkot. (Reservoirs of raw water and treated water are constructed at the Nabisar City, which is getting water from Left Bank Outfall Drain by means of an open channel and supplying water to Vajhiar Reservoir via pipeline of 1m diameter, which is approximately 28 km away from Islamkot Town, using mainly Chachro Road[26] Storage Capacity of Vajihar reservoir is approx. 300 million Gallon, whereas Nabisar RO Plant has a capacity to produce 24 MGD of treated water)
  - To link water supply and sanitation programs with environment, housing, sanitation and city and regional planning policies and programs.



[26] Preparation of Water Master Plan for Thar Coalfield including Hydrogeological, Water Supply and Waste Water Management Studies

- TC will adopt a demand led approach in providing access to safe water and sanitation to ensure that scarce resources are properly utilized and ownership and sustainability of schemes is ensured over the long-term.
- Develop a framework that allows the participation of the private sector, and encourages public-private partnerships, and the role of NGOs in the sector.
- Focus on the role of the Government, as both a service provider and regulator, to ensure that water quality and sanitation standards are properly articulated, maintained and enforced.

- **Short Term Plan**
  - To ensure access to safe drinking water, and the promotion of health and hygiene practices.
  - Priority for water supply and sanitation will be accorded to un-served, under-served areas, and disadvantaged areas. In water security zones, additional surface water should be arranged specially the hot summer season.
  - Priority for water supply will be given to brackish water zones, coastal zones and those areas where there is shortage of sweet water in the underground aquifers. Those areas will be especially targeted where women have to walk more than 0.5 kilometers to acquire access to safe drinking water.
  - Promote effective rehabilitation and efficiency improvements in existing water supply and sanitation systems, through justifiable investments, significant reductions in non-revenue water, increased water-metering, user-charges and other initiatives.
  - Water for the town should be drawn from irrigation channels (surface water). Subsurface water (groundwater), where available, would be used during canal closure periods.
  - The design and layout of water supply pipes, storage tanks etc. should ensure that there is no contamination by overflowing sewerage systems, for example by maintaining a minimum distance between the two systems.

7.1.5 Priority projects

i. Improvement of Water Intake Works with filtration

- **Project Justification:**
  Currently untreated water is supplied from Naukot Sehri minor, which need to be filtered and its storage capacity would also be enhanced. It has now storage capacity of 10 million gallon for Islamkot and Mithi. So there is need to improve storage capacity by 20 Million gallon at Naukot. As Naukot is surface water, hence to improve its quality there is a need of water filtration plant with storage capacity of 02 MG, which would be installed at Islamkot. For longer run it is proposed that a separate line from **Vajihar** reservoir specifically for Islamkot town would be provided, which is 28 Km from Islamkot.
- **Project Benefit**
  After the implementation of the project proper treated water supply with storage and supply is considered for Islamkot town without un-interruption of supply.

- **Implementing Authority**

Government of Sindh, Public Health Dept. and Islamkot TC
Estimate Cost: 700 million (More Feasibility Study required for the cost assumption of project).

ii. **Rehabilitation of Existing Water Supply Network and Provision of Water Storage Reservoir at Islamkot**

- **Project Justification**
  There is a huge difference between supply of canal water and storage capacity of existing infrastructure, that's why town is not having uninterrupted supply of sweet water. Cumulative capacity of underground reservoirs of canal water is about 0.522 million gallons. For this storage reservoirs are also proposed for storage in town with connection of existing pipe lines. Again some distribution lines have been proposed to proper flow and supply of water is also necessary to be provided to meet with requirements of population in new developed colonies in Islamkot. It is also recommended to boost the pumping machinery power for proper supply of water. For this storage reservoirs are also proposed for storage in town with connection of existing pipe lines. Again some distribution lines have been proposed to proper flow and supply of water is also necessary to be provided to meet with requirements of population in new developed colonies in Islamkot. It is also recommended to boost the pumping machinery power for proper supply of water.

- **Project Benefit**
  After the implementation of the project Islamkot TC have safe drinking water.

- **Implementing Authority**
  Government of Sindh, Islamkot TC
  Estimate Cost: 1100.00 million approx.

PROPOSED PRIORITY PROJECTS						
S. No.	**Project Name**	**Estimated Cost In Millions**	**ADP**	**Non ADP**	**Status**	
					Short Term	**Long Term**
Water Supply						
1.	Improvement of Water Intake Works with filtration 1. Enhancement of water Storage capacity at Naukot (10 MG) 2. Water Filtration Plant (0.5 MG)	700.00	-	Non ADP	(Phase Wise)	-
2.	Rehabilitation of existing Water Supply Network and provision of water storage (reservoir) in Islamkot town.	1100.00	-	Non ADP	(Phase Wise)	-

7.1.6 Immediate Action Plan for Core Urban Area

- **Rehabilitation of Water Supply**
  Rehabilitation of existing water supply network is suggested to avoid leakage, blockage and water losses. Since the water quality is not good. Water filtration plant is also recommended to be installed at earliest.

- **Repair and Maintenance of RO plant**
  Repair & maintenance of RO plant is suggested to avoid shortage of sweet water. Actual capacity of RO plant is about 1.5 MGD, whereas due to lack of funding & maintenance, efficiency of RO plant is decreased by 15 MGD to 0.15 MGD".

PROPOSED WATER SUPPLY SYSTEM NETWORK & RO PLANT REHABILITATION				
S.No	**Name**	**Area (acre)**	**Per acre cost (PKR) million**	**Cost (PKR)**
Total Core Urban Area : 92.47 acre				
1	**Water Supply System:** *(Water supply system renovation includes supply pipe networks, pumping machinery and equipment's for more efficient and effective supply of water).*	**92.47**	**0.75 million Per acre**	**70.0**
			Total Cost (PKR). Million	**70.00**

Note:
- Water supply system renovation includes supply pipe networks, pumping machinery and equipment's for more efficient and effective supply of water.

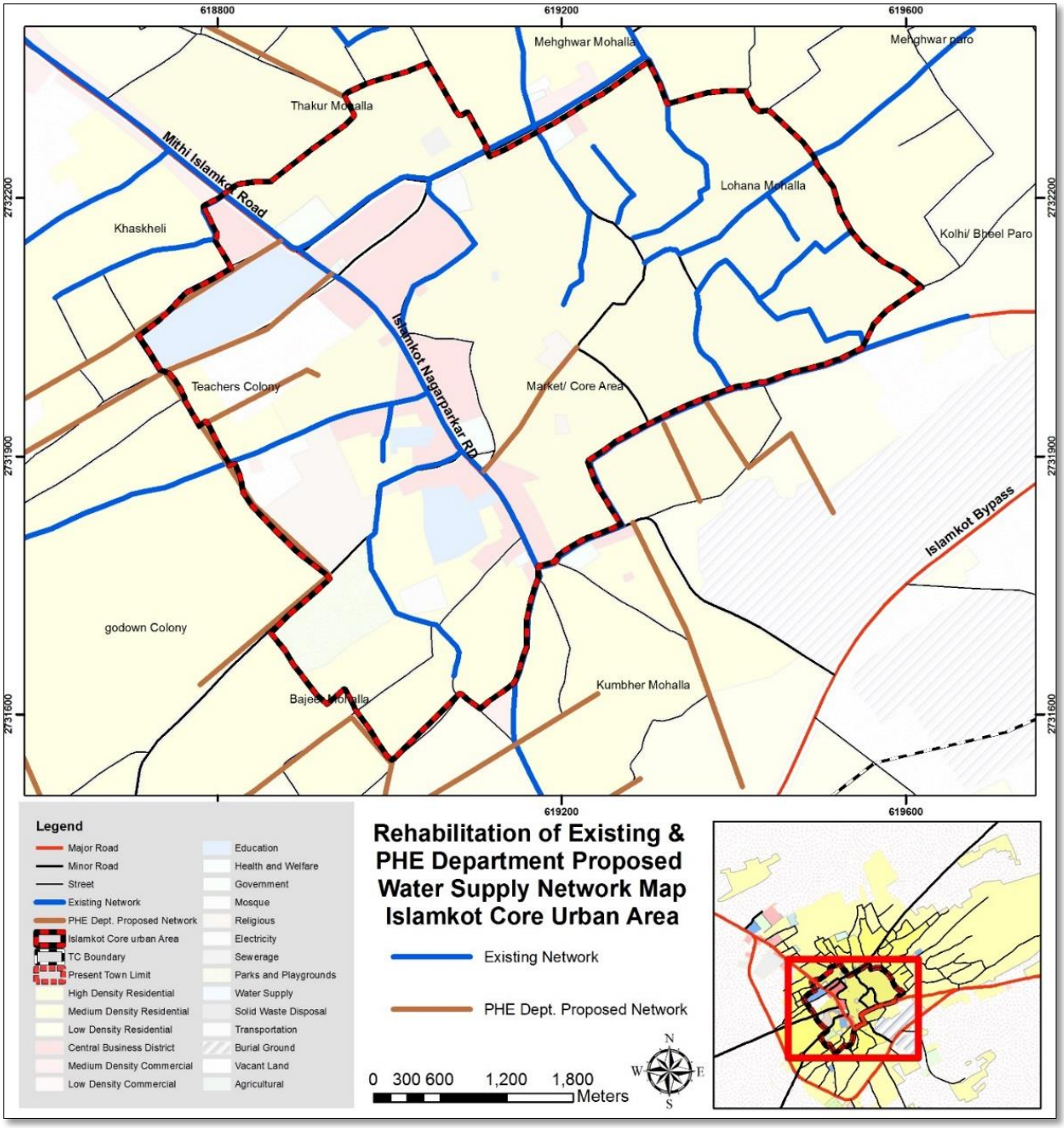


Figure 7-2: Rehabilitation of Existing water supply network of core urban area of Islamkot

7.2 Sewerage and Drainage

Sewerage and Drainage is Islamkot's biggest problem and from administration to common citizens every one considers, the waste water and storm water drainage a matter of highest priority. The lack of drainage not only causes extreme inconvenience to residents after every rain, but the standing water in low lying areas of town causes damage to the infrastructure, which is already in poor condition.

A detailed study of Islamkot drainage has not been done. Therefor it is required to conduct detailed study for drainage schemes of Islamkot.

7.2.1 Existing Drainage Facilities

In Islamkot Sewage is mainly disposed of in roadside drains, and untreated sewage collects in ponds / swamps. The drainage system and structures are in poor condition with open smelly drains and sewers. Drains are in poor condition almost in all the town need to be repairng and new drains constructed. The drainage system is available, consists mainly of open drains while some are covered with concrete tiles. Near Thar Museum, sewage well with lifting machine, screening chamber, generator support is present to serve core urban area. However, open road side drains carry raw sewage which is collected in ponds and swamps located outside the inner core area of Islamkot. These drains are in poor condition and usually overflow in the rainy season. This system causes bad odor, ill-health and spread of contagious diseases for the residents. So there is need for rehabilitation of exsting network and contruction of unserved area of Town. Data Provided by PHED is given as below:

Table 7-4: Existing Drainage Facilities

Present Sewage generation	**0.24 MGD.**
Pumping Stations	02 Nos.
Lengths of Drains	A. Type – 28000 ft.
	B. Type – 28000ft.
Sewers	None
Sewage Treatment Plant	None
Disposal	Beyond Sand dunes
Coverage	< 50%

For Islamkot, wastewater is either spread into streets or collected in depressions, creating nuisance value and developing places for mosquito breeding. However, a new drainage scheme is presently under construction to relieve this situation. Details on the infrastructure are shown below:

No.	Item	Location	Details
1	Surface drains	Islamkot	Type A – (28000 rft) Type B – (23500 rft) Type C – (4500 rft)
		Islamkot P.S 2Nos.	01 no. screening chamber 01 no. collecting tank, 30 ft. dia. 02 no. pump sets 8" dia. rising main – Open surface drain, including brick pavement
2	Effluent Discharge	Islamkot	Existing depressions & Oxidation ditches / Beyond Sand Dunes

There are only 02 disposal points in the area; one is in South West direction and the other one is in North East direction. There are 80 sanitary workers and 40 sweepers in Islamkot TC.

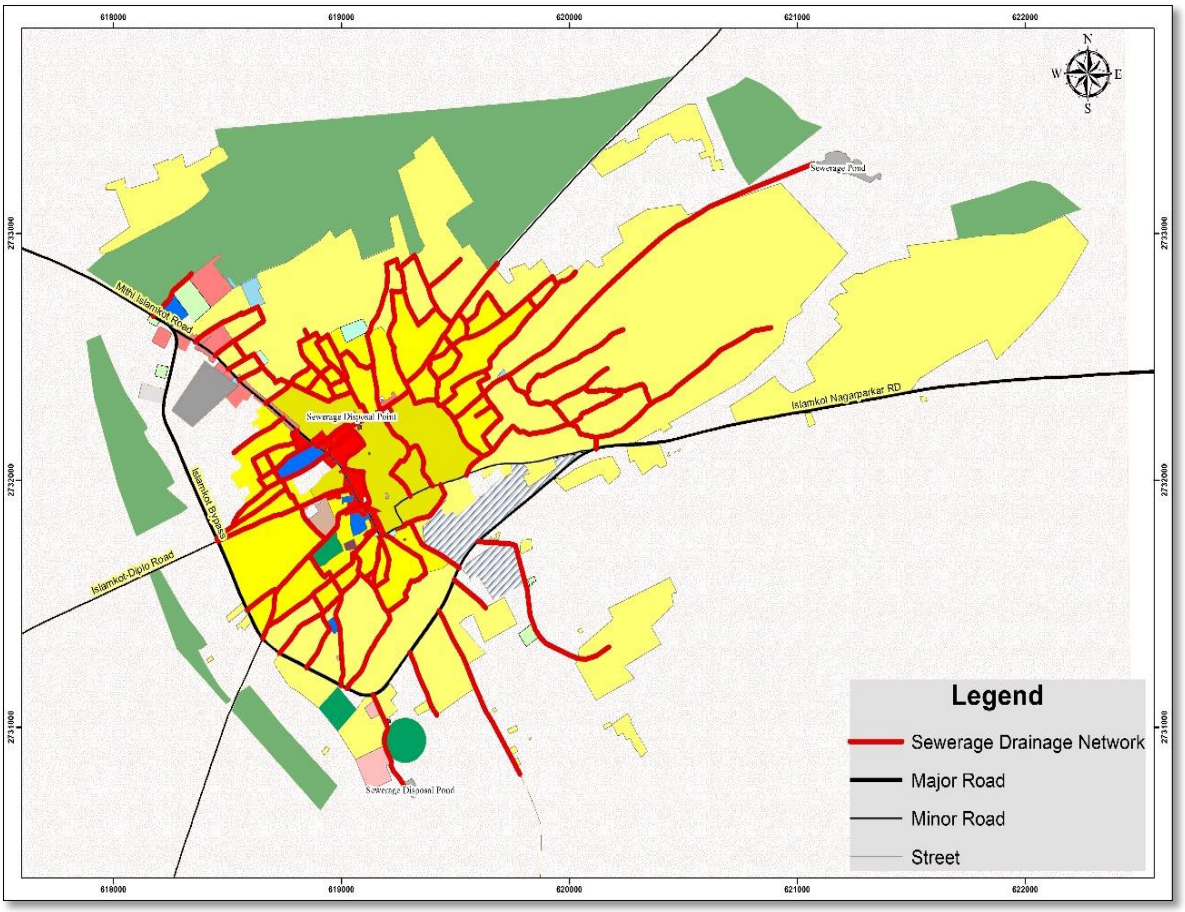


Figure 7-3: Existing Sewerage & Drainage of Islamkot

- **Issues and Problems**

  - Improper operation and maintenance of sewerage facilities.
  - Inefficient record of operation and maintenance works including machinery and equipment available for cleaning drains / sewers – in the same manner, little information in written form is available on the performance of pumping and treatment facilities such as flow rates, operation hours, water qualities, facility failures and repairs and so forth.
  - The many informal settlements are located in poorly drained low lying land can be subject to flooding, resulting in ponds of stagnant water in their midst and providing breading grounds for mosquitoes and water borne diseases. There is no standby pumping equipment at disposal stations.
  - The drainage system and structures are in poor condition with open smelly drains and sewers.
  - There is no sewerage treatment and untreated sewerage collects in ponds / swamps or directly discharge in open depression. The residents were dissatisfied with current sewerage system.
  - No waste water treatment plant, thus raw sewerage is being discharged into depression areas of surrounding.

7.2.2 SWOT Analysis and Need Assessment

Sewage Collection & Disposal			
Strength	**Weakness**	**Opportunity**	**Threats**
1. The existing sewerage system facilitates the urban area of the city. 2. Sufficient land for disposal sites is available.	1. Poor maintenance condition; garbage enters into sewers, which requires de-silting. 2. Open sewers & drains 3. Untreated sewage collects in open ponds/swamps. 4. Outdated and disconnected network. 5. No treatment before disposal 6. Mixing of solid waste disposal into Sewerage.	1. Improvement of general hygiene/ public health by cleaning sewerage system 2. Development of well-designed trunk sewerage network with less number of disposal station. 3. Planning for well-connected gravity based open drainage system covering pounds 4. Job opportunities for skilled staff for proper maintenance 5. PPP in service delivery & Revenue Generation 6. Reclamation of land (that accommodates water of flood/rain) for public land uses. 7. Establishment of re-cycling plant	1. Public health 2. Storm water flooding/ over flow of sewers 3. Environmental degradation 4. Funding & policies.

7.2.3 Need Assessment

Table 7-5: Estimated Wastewater generation for the period 2038				
Source	**Census 2017**	**Current Waste generation (mgd)**	**Projected Population 2038**	**Sewerage Flows @ 70 % Water supply (MGD)**
Census 2017	24,880	0.52	65,011	1.37
On the basis SECMC Data	24,880	0.52	260,846	5.48

Estimated wastewater generation for the period to 2038 is shown below:

7.2.4 Sindh Sanitation Policy 2017[27]

Targets:

Its key targets are:

- Eradicate Open Defecation from Sindh Province by 2025, while 70% villages of 13 high priority districts achieve the status of open defecation free by 2020.
- 100% households in Sindh have access to and use sanitary latrines by 2025, while 70% of rural households in high priority districts will achieve this by 2020.
- Strengthen and implement liquid waste management with sewer lanes and Covered/improved drains with 85% coverage of urban areas and 60% coverage in rural areas.
- Create and develop wastewater treatment mechanisms to cover 75% of urban areas and 40% in rural areas by 2025.
- More than 90% of rural households and 100% of urban households wash hands with soap at critical times by 2025.

Principles:

- The Policy aligns itself with the goals and targets of the SDGs for sanitation, which require sanitation services to be safely managed, have a private improved facility where faecal wastes are safely disposed on site or transported and treated off-site; plus a hand washing facility with soap and water.
- Safely managed sanitation services is a fundamental right for all persons in Sindh province, and should be ensured through enhanced access to marginalized and low resource areas with equitable distribution of resources. Recognition of inequities and rights based programming will be given key emphasis during the planning, execution and monitoring of sanitation programmes.

[27] Water and Sanitation policy for Sindh

- The policy seeks to prioritize the areas that pose the greatest risk to human health namely hygiene awareness and excreta disposal, and then address the environmental health risks that are posed by poor drainage and solid waste disposal.
- Increase access to high quality nutrition-sensitive services, including access to water, sanitation facilities, and hygiene.
- The policy shall promote the community led approaches to strengthen the demand for safely managed improved sanitary conditions that emerges from local communities. The multi stakeholder partnerships and collaborations comprising of citizens, governments, civil society, non-governmental organizations (NGOs), donors, academia, media, etc. be encouraged to maximize the synergies in designing and implementation of interventions.
- Affordable (in terms of designs as well as availability of water) and cost effective technical solutions with necessary modifications and adaptations in technical standards to be consistent with cultural sensitivities of specific communities will be identified and marketed.
- The component sharing model as envisaged in the National Sanitation Policy will be Institutionalized gradually in which the community is responsible to construct lane and Neighborhood level sewers (internal development) on self-help basis and the government focuses on trunks, disposal and treatment unit (external development).
- The role of women shall be an integral component of behavioral change communication strategies and project planning, implementing and monitoring through capacity development and social mobilization of relevant stakeholders.

7.2.5 Strategic Development Plan

The aim of Strategic Development plan is Provision of adequate Sewerage and Drainage facilities to the THQ Town through equitable, efficient and sustainable sanitation services. Lanes may continue using concrete drains and to discharge into sewers through screening chamber. Some of the objectives include:

- **Long Term Plan**
  - Improving standards of public health through provision of improved services supported up by legal, regulatory and binding framework.
  - Priority for sanitation will be accorded to un-served, under-served areas, and disadvantaged areas.
  - An overall sanitation plan will be developed for all urban settlements by city District governments and the Town Committee in coordination with all other agencies involved in sanitation.
  - The plan will focus mainly on the details of the trunk sewers, treatment and disposals and re-use options. All other sanitation related agencies (cantonments boards, railways, etc.) will develop their plans in accordance with the overall plan

- **Short Term Plan**
  - To raise living standards of community by providing improved drainage and Sewerage services.
  - Special focus on need based interventions in sanitation sector
  - Wherever existing sewerage systems discharge untreated sewerage in storm water drains or irrigation canals it should be treated before discharging, and may be used for agricultural purposes or converted into lakes and ponds as part of recreational areas.

7.2.6 Priority Projects

a) <u>Construction/ Rehabilitation of Sewerage and Drains</u>

- **Project Justification**

  In Islamkot Sewage is mainly disposed of in roadside drains, and untreated sewage collects in ponds / swamps. The drainage system and structures are in poor condition with open smelly drains and sewers. Drains are in poor condition almost in all the town need to be repairng and new drains constructed. The drainage system is available, consists mainly of open drains while some are covered with concrete tiles. Near Thar Museum, sewage well with lifting machine, screening chamber, generator support is present to serve core urban area. However, open road side drains carry raw sewage which is collected in ponds and swamps located outside the inner core area of Islamkot. These drains are in poor condition and usually overflow in the rainy season. This system causes bad odor, ill-health and spread of contagious diseases for the residents. So there is need for rehabilitation of exsting network and contruction of unserved area of Town.

- **Project Benefit**

  After the implementation of the project of surface drainage network with easy disposed.

- **Implementing Authority**

  Government of Sindh, Islamkot TC

  Estimate Cost: 100 million approx.

b) <u>Combine System of Sewers and Drains</u>

As per the existing condition combine system will remain in core urban area, although preferred to be separate in long run. Lane drainage channels in core urban areas should be covered and main sewers should be laid on all roads more than 8” wide. Drainage channels in core urban areas should be in the form of underground drainage pipes, however at least covered drains should be used to maximized road and street space.

c) <u>Construction of Sewage Treatment Plant</u>

At the present, wastewater of Islamkot town directly disposed without any treatment, Wastewater is not treated, since treatment plants are non-existent due to the shortage of technical staff and funding. Final disposal of effluent is mostly to depression, which is near to Town, this may lead to widespread diseases.

d) Surface Water Reuse for Landscaping

In core urban area gully traps should be developed in all four sides of the streets / roads and they may be connected to covered drain system, but it is recommended to divert the surface run off directly for landscaping.

- **Project Benefit**
  After the implementation of the plan wastewater will be used for landscaping or maybe for other use.

- **Implementing Authority**
  Government of Sindh, Islamkot TC.

Estimate Cost: 350 million approx.

S. No.	Project Name	Estimated Cost In Millions	ADP	Non ADP	Status	
					Short Term	Long Term
Sewage & Drainage						
1.	Construction / rehabilitation of primary and secondary drains.	100.00	-	Non ADP	**Short Term**	-
2.	Establishment of Sewage Treatment Plant.	100.00	-	Non ADP	**Short Term**	-
3.	Combine System of Sewers and Drains with Surface Water Reuse for Landscaping.	150.00	-	Non ADP	-	**Long Term**

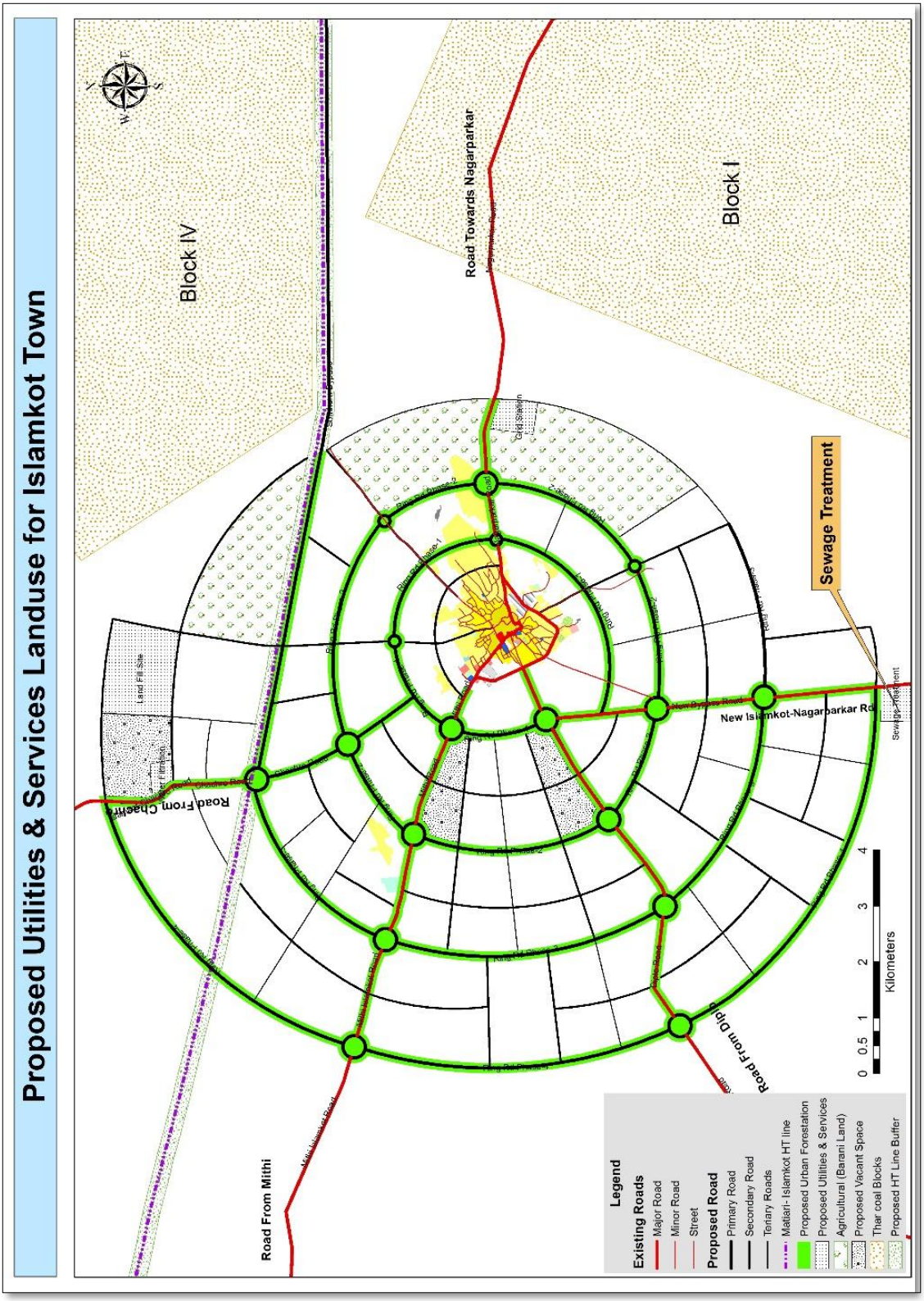


Figure 7-4: Proposed Landuses for Utilities for Islamkot

7.2.7 Immediate Action Plan for Core Urban Area

The following are the sewerage and drainage proposals for immediate action plan:

- **Combine System of Sewers and Drains**

As per the existing condition combine system will remain in core urban area, although preferred to be separate in long run. Lane drainage channels in core urban areas should be covered and main sewers should be laid on all roads more than 8" wide. Drainage channels in core urban areas should be in the form of underground drainage pipes, however at least covered drains should be used to maximized road and street space.

Covered Drains

- **Surface Water Reuse for Landscaping**

In core urban area gully traps should be developed in all four sides of the streets / roads and they may be connected to covered drain system, but it is recommended to divert the surface run off directly for landscaping.

Reuse of Surface Water

ISLAMKOT - CORE TOWN AREA		REHABILITATION OF SEWERAGE SYSTEM, STORM WATER DRAINAGE		
S.No	**Name**	**Area (acre)**	**Per acre cost (PKR) million**	**Cost (PKR)**
1	Sewerage System	**92.47**	**6.58**	**609.00**
2	Storm Water Drain System			
			Total Cost (PKR). Million	**609.00**

Note:
* Rehab of Sewerage system includes all urban core area network system with all related machinery and equipment.
* Rehab of Storm water drain system includes all the core town area storm drain system through all steeps slopes and peak areas with all linking equipment and machinery.

7.3 Solid Waste Management

7.3.1 Existing Situation

The collection mechanism that exists in Islamkot is a traditional primary collection system. Collection and transfer/ transport of garbage to outside limits of town is by means of hand trolleys and tractor trolleys which are inadequate in numbers for handling of MSW by the sanitary / waste collection staff. The status of employees and requirement at Town for sanitation and solid waste management is given in the following table:

Table 7-6: Employment status for SWM at Islamkot TC.

Employment status for SWM at Islamkot TC.	Nos.
Total number of Sanctioned Employees	123
Actual Number of Employees	123
Total Regular Staff	39
Total Number of Sweepers / Cleaning Staff	19
Required Number of Sweepers / Cleaning Staff	70

The details of vehicle, machinery and equipment for solid waste management of Islamkot are listed in the following table. The following items are required by the Town Committee for solid waste management:

Table 7-7: Vehicle / Machinery / Equipment Required

Equipment Required	**Quantity**
1. Refuse van (4x4)	01 in No.
2. Tractor	01 in No.
3. Fire fighting Vehicle (small)	01 in No.
4. Cleaning machine	01 in No.

There is a practice in Islamkot that at community level garbage generated from household (source) is deposited outside the house in community bins or thrown in the designated spots in the streets which is collected by the sweepers on frequent basis. There are number of designated and undesignated garbage collection points (katchra kundis) present in Islamkot that are unnamed and being served by the Town Committee.

a) Collection and Transportation

The Town Committee has two tractors with trolleys and four numbers of Ching chi rickshaws for collection and disposal of solid waste. A rickshaw refuse van in combination with two trolleys towed by tractors with trolleys collects all the waste from collection points (community bins / katchra kundis) and finally disposed it off on a disposal site near Indus Hospital at Diplo Road.

b) Disposal

One dumping / disposal site is identified at Diplo Road near Taluka Hospital.

7.3.2 Waste Generation

The waste generation rate estimated from the studies conducted earlier suggests to be around 0.4 – 0.45 kg per capita per day[28]. However it is recommended to undertake the field study for the determination of waste generation and characterization for Islamkot in order to plan and design the solid waste management system. Considering waste generation rate for design purpose as 0.45 kg per capita per day with the current (2017) population of the Town committee of Islamkot as 24,880 the total solid waste load arising in the town is approx. 11 tons per day. Future waste generation will be 117 tons per day.

7.3.3 Need Assessment/Issues and Problems

- **Collection System**: street sweeping and collection are by far the most expensive activities in TMA's waste-management system
- **Medical Waste Management:** At present all biomedical waste is mixed with ordinary Town waste, which is a dangerous practice. TC has already initiated some work on biomedical-waste management
- **Central Composting Plant:** In order to handle a large quantity of waste it is essential that there is a set up of large-scale central composting plant.
- **Landfill Site:** Since TC does not have a proper landfill, it urgently needs to find and develop proper site.
- **Community and Private Sector Involvement in SWM:** The active involvement of local communities and the private sector is essential for an effective waste-management system.
- **Public Awareness and Education**

[28] SCIP-03 Program Management, Project Preparation and Implementation Support for Planning & Development Department, Solid Waste Management Studies of Towns of Central Cluster of Province of Sindh, 2013, Brisbane City Enterprises Pty Ltd, & MMP

7.3.4 SWOT Analysis and Need Assessment

Strength	Weakness	Opportunity	Threats
Solid Waste, Toxic & Hazardous Waste Management			
1. Town Committee is responsible for solid waste collection. 2. System in place with improving efficiency, there is a slightly improvement in garbage collection and allocation of landfill site to dispose of toxic waste 3. Recycling by scavengers	1. Poor financial and operational management system. 2. There is no system to identify toxic wastes produced by various activities. 3. Communities' particularly low income groups are not aware with disposal procedures. 4. 63% households does not have provision of infrastructure for sanitation purpose.	1. SWM recycling will help to generate revenue. 2. Establishing of a primary collection system would add more revenue resources. 3. Opportunity for recycling and reuse of solid waste for power generation purpose 4. PPP in service delivery	1. Threats to plants and animal life 2. Air pollution & water pollution 3. Clogged drains & sewers

7.3.5 Policy Guidelines[29]

Implement integrated solid waste management with 100% coverage in urban areas and 60% in rural areas of Sindh by 2025.

Principle

- Develop integrated solid waste management system.
- Conduct a study on wastewater and solid waste to develop town level profiles (including Infrastructure, equipment and staffing)
- Conduct waste characterization studies.
- Smooth and efficient Solid waste collection and disposal by providing door to door collection services.
- Ensure Effective solid waste management by developing a list of staffing, hardware and equipment for solid waste management.
- Efficient Solid waste disposal and recycling by establishing transfer stations to reduce disposal time.
- Recycle solid waste by systematic separation.
- Sanitary landfill options identify for towns where it is feasible.
- Formalize contracts with companies for waste to energy options. At least each mega/intermediate city has a WTE (Waste to energy options) in place.
- Provide each town with a centralized and functional high risk hospital waste disposal facility.

[29] Solid Waste Management Policy for Sindh
Sindh Water and Sanitation Policy 2017

- Update status of all slaughterhouses (recognized and unrecognized) in each district and prioritize those for rehabilitation, solid waste and wastewater management.
- Provide refresher training on slaughterhouse safety and hygiene practice guidelines to 100% slaughterhouse staff in recognized slaughterhouses in safe handling and disposal of carcass, entrails, hides, and wastewater.
- Efficient and effective management of Industrial solid waste by determining the current status of industrial solid waste production and disposal and development of strategies and actions for efficient and effective management of industrial solid waste.

7.3.6 Strategic Development Plan

The aim of this strategic development plan is to improve the quality of life of the people of THQ Town and the physical environment and also provide guidelines for the management of solid waste in the town.

- **Long Term:**
  - The collection and disposing of solid waste is the responsibility of the Islamkot TC. The mechanism for solid waste management is not available in Islamkot so therefore a detailed feasibility is proposed to develop an efficient solid waste management in Islamkot town.
  - The collection system needs to be made more effective and efficient.
  - Town Committee has already initiated some work on biomedical-waste management. It should immediately start segregation practice for biomedical waste collection system.

- **Short Term:**
  - Perform daily sweeping of streets and roads in urban areas using appropriate tools and equipment.
  - Daily removal of all garbage / waste from primary-secondary collection / transfer points, and cleaning is to be carried out where necessary.
  - Where possible, zero direct human contact with waste from primary collection to disposal, and covering of waste during transportation.
  - Shops, restaurants, healthcare centers etc. to contribute towards waste management costs.

7.3.7 Priority Project

Feasibility Study For Solid Waste Management Mechanism and Mechanism For Primary And Secondary Collection And Recycling With Landfill Site.

- **Project Justification**

  The collection of the solid waste is the responsibility of Islamkot TC. TC have been contributing to keep clean the city by providing the basic services includes solid waste management. As street sweeping and collection are by far the most expensive activities in TMA's waste-management system, the collection system needs to be made more effective and efficient. A detailed feasibility study is proposed to develop the efficient solid waste

management mechanism. The Town Committee has two tractors with trolleys and four numbers of Ching chi rickshaws for collection and disposal of solid waste. A rickshaw refuse van in combination with two trolleys towed by tractors with trolleys collects all the waste from collection points (community bins / katchra kundis) and finally dispose of at landfill site. Despite these efforts garbage collection is not managed properly and on street garbage is evident in the core urban area. SWM in Islamkot can be easily achieved by implementing. Upgrading in Mechanism from Primary Collection to Final Disposal and Introduction of 4Rs.

- **Project Benefit**
  The project will identify the feasible solution to improve hygienic conditions of the town. A positive impact over the whole population.

- **Implementing Authority**

  Government of Sindh, Islamkot TC

Estimate Cost: 100 million approx.

S. No.	Project Name	Estimated Cost In Millions	ADP	Non ADP	Status	
					Short Term	Long Term
Solid Waste Management						
1.	Feasibility study for construction of Central Composting Plant and primary and secondary collection process and recycling.	50.00	-	Non ADP	**Short Term**	-
2.	Procurement for land acquisition process for Landfill Site.	50.00	-		**Short Term**	-

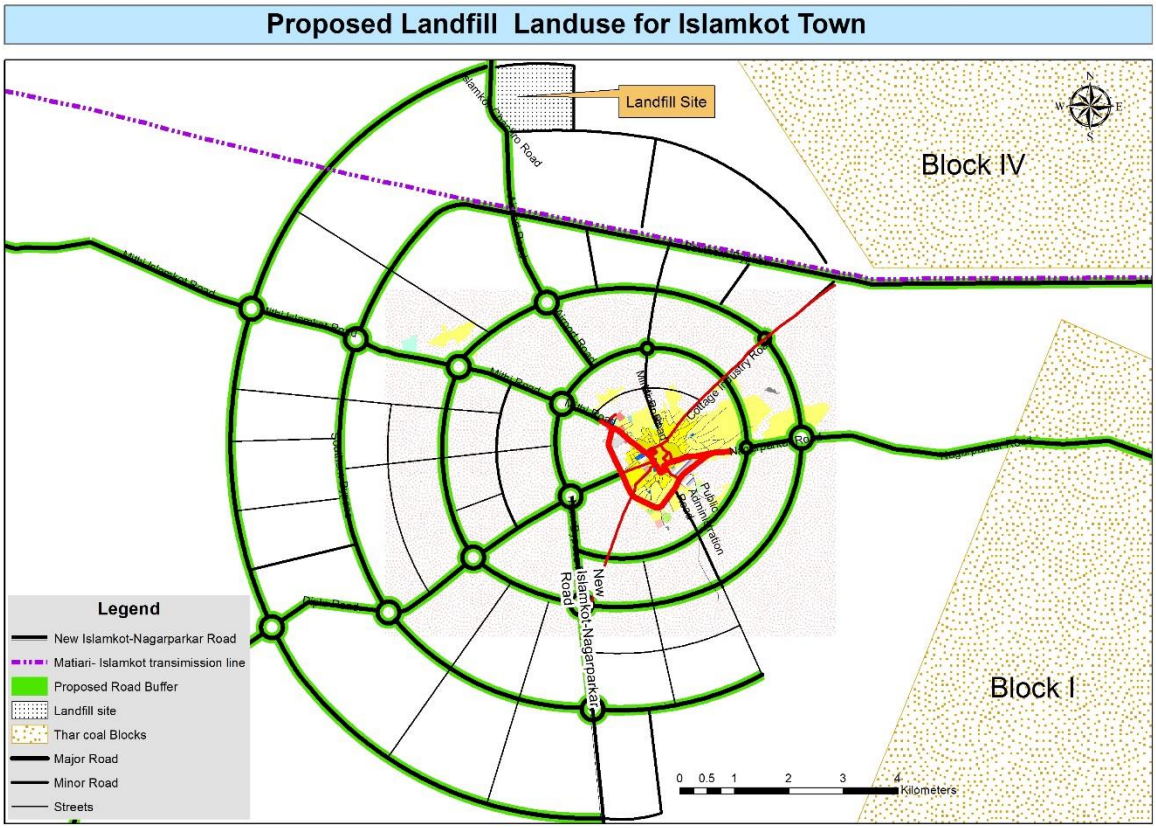


Figure 7-5 Proposed Landfill Landuse for Islamkot Town

7.3.8 Immediate Action Plan for Core Urban Area

Heaps of solid waste is evident in the core urban area. It is proposed that primary level collection i.e. door to door collection system should be launched immediately by TC. Secondary level collection from dumping area to the main landfill/ dumping site should also be encouraged. Waste generated by the market of the core urban area should be picked on daily basis. Street sweeping should be done on daily basis and this should be ensured by TC Islamkot. In this regards TC will charged the amount from residents and shopkeepers as well on monthly basis. However, it is highly proposed to introduce recycling of reusable items and segregation of solid waste into paper, plastic and glass from household level. These could be achieved from awareness campaingn and installation of segregated bins at mohallah level.

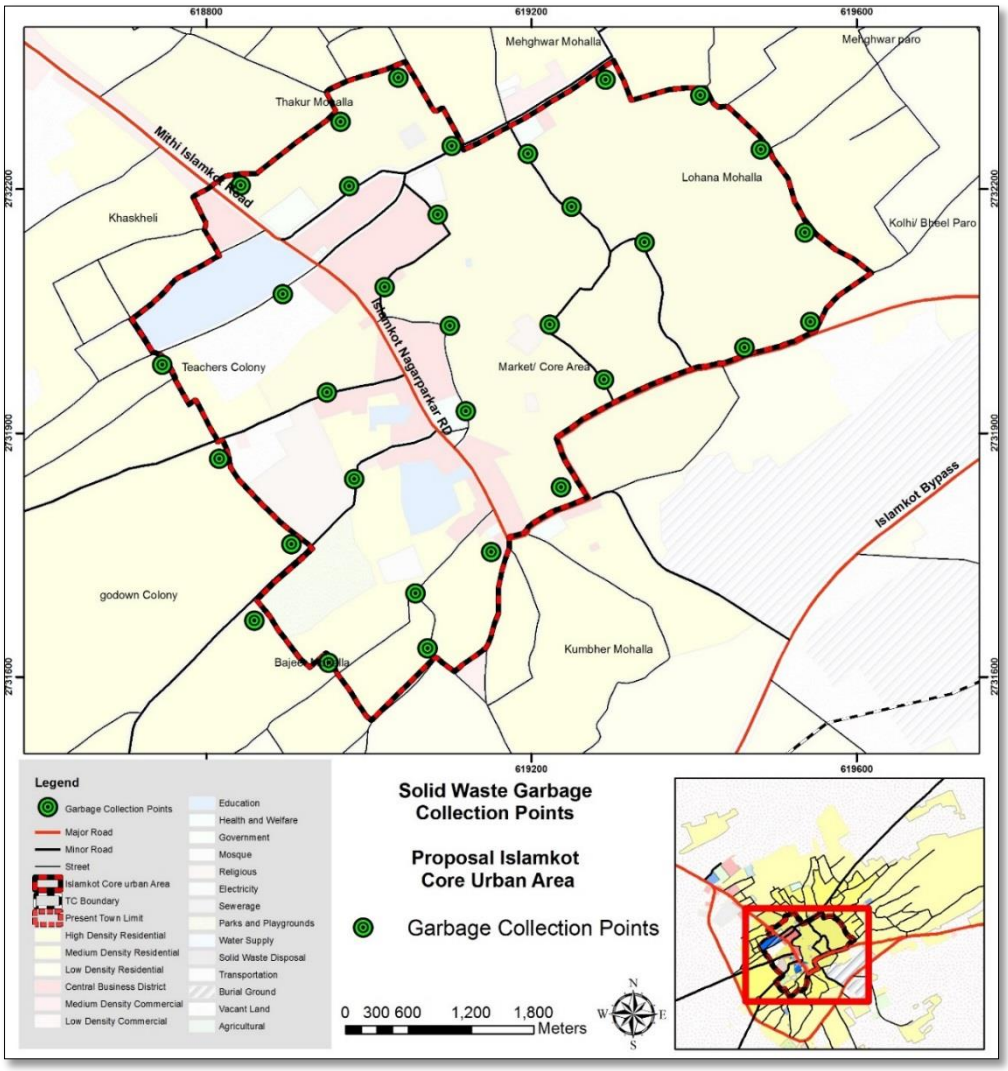


Figure 7-6: Solid Waste Garbage Collection Points Map

PREPARATION OF DEVELOPMENT MASTER PLAN FOR ISLAMKOT TOWN				
ISLAMKOT CORE TOWN AREA		REHABILITATION AND PROPOSED STREET LIGHTS		
S.No	**Site Name**	**Containers (No.s)**	**Cost (each)**	**Cost (PKR)**
1	Placing of Garbage Container at different sites/locations in core town area	32	520,000.00	16,640,000.00
			Total PKR Rs. Million	16.64

Note:
1. Each site located for garbage container must be strictly followed by TC to collect and manage solid waste from this site for proper management of the core area.
2. Containers must be fully get maintained by TC office.
3. Sindh solid waste management department/authority should kept control on each project for the uplifting of town as per master plans.

8. INFRASTRUCTURE

8.1 Transportation

8.1.1 Existing Situation

Tharparkar district covers an area of 19,638 sq. kilometres yet it has only 743 kilometres of good quality roads, which are inadequate for the area and its population.

A Highway connects Tharparkar with other major cities of the province.

The district headquarters Mithi is linked with its Taluka headquarters of Diplo, Nagarparkar, Chachro, Dahli & Islamkot through metaled roads.

Recently Islamkot Mai Bakhtawar Airport has been inaugurated. The airport is 23 km to the north of city with only 35 minutes' drive through newly constructed road. There is one local Bus stand in Islamkot town. It provides public transport like bus, truck, van and car services to public. Several type of routes are covered by them, such as Islamkot to Mithi, Nagarparkar, Mirpurkhas, Hyderabad and Karachi. It is located at Islamkot bypass opposite of Makkah lubricants. There are also numbers of illegal bus, Jeep, and car stands for public transport.

Local Network

The historical growth of Town shapes up along the both sides of old Nagarparkar road. Islamkot Town has evolved in its present urban form from a small village, located at the North-East of the Mithi DHQ town. Islamkot town's present street pattern shows a radial & Organic pattern & also Grid iron urban form /pattern, which is mixture of number of complex straight & semi-circular streets, gradually evolved on traces of its urban form.

8.1.2 Issues and Problems/Need Assessment

- The physical condition of existing road network of Islamkot shows that, road geometry varies from road to road in a way that road rights of ways or cross sections do not follow the needs with respect to the traffic volumes. Roads are without any lane distribution or lane markings. The road width varies at different sections of same road.
- The overall situation indicates poor pavement conditions, encroachments on foot paths and road sides, haphazard & illegal parking, open drains, etc. Most roads need rehabilitation as well as traffic management measures for smooth flow of traffic
- In the Central Areas (CBD) problems are mostly related to extreme congestion, even pedestrians movement during peak timings of commercial activities is difficult. Congestion is basically due to haphazard vehicles parking in peak traffic hours, narrow road widths due to road side encroachments, frequent and unchecked on-street parking; un- authorized 4x4 Jeep & Car Stands, poor physical and geometric condition of roads, open drainage system and lack of enforcement of traffic rules.

- Unavailability of Traffic signals and street furniture

8.1.3 SWOT Analysis and Need Assessment

Strength	Weakness	Opportunity	Threats
1. Mixed land uses (residential, commercial, industrial, administration) 2. Good national / regional connectivity through road networks 3. Road space available for street furniture installation in most locations 4. Bus stops are available for intra region trips.	1. Unplanned street network 2. Substandard public transport network 3. Ribbon type commercial development in residential neighbourhoods. 4. Poor traffic management. 5. High transport fares 6. Non-aesthetic streetscape 7. Haphazard road side parking 8. Poor administration and management control 9. Encroachments along road side. 10. On street parking	1. Promotes compact development. 2. Activity centres (support local business) 3. Proper management can promote public transport services & street furniture installation. 4. After removal of encroachments adequate space available for traffic signs, lane markings and foot paths 5. If properly administrated and space utilized, could promote smooth flow of traffic on nearby corridors. 6. A new transport terminal for goods transport will facilitate timely supply of industrial goods. 7. Charged parking facility	1. Reduced flow of traffic (low speed) 2. Security threats 3. Economic losses due to transporters strikes 4. Inconvenience due to traffic congestion

8.1.4 Policy Guidelines

- Develop and implement modern traffic fines system for public transport and private vehicles by incorporating traffic cameras to detect violations and online system for payment of fines.
- Develop and implement modern route permit renewal and issuance system for public transport services.
- Declare freight transport as an industry.
- Periodically update and implement the pavement and geometric design standards in coordination with experts of the field.
- Involvement of private sector in transportation infrastructure and services projects.[20]
- Establishment of Mass Transit System.[30]

[30] ADP 2017-18 Transport Punjab

- Efficient operations and effective regulation of transport services.[21]
- Infrastructure development and up-gradation.[21]
- Integration of public transport services and networks.[21]
- Modernize goods transport and freight facilities.[21]
- Decrease in private vehicles, especially during peak hours and in CBD areas.[31]

8.1.5 Strategic Development

The aim of strategic development plan is envisions providing equal and equitable sustainable transport system to all groups of society on affordable basis with minimal impacts on environment, also Provision of Citizen-centric, Sustainable and Growth Oriented Modern Transport system and rehabilitation of existing roads.

- **Long Term Plan**
  - Create Traffic Engineering Bureaus (TEBs) at divisional level to perform functions as specified in Karachi Division (Traffic Engineering) Act 1985.
  - Develop and implement modern route permit renewal and issuance system for public transport services.
  - Satisfy mobility needs via integration of existing and planned routes, services and Infrastructure.
  - Enhance institutional efficiency to improve service delivery.

- **Short Term Plan**
  - Improve road design to make safer roads.
  - Environmental Impact Assessment (EIA) should be mandatory for all transportation projects.
  - Declaring private vehicle free zones, especially in peak hours, in CBD areas to reduce noise and air pollutions.
  - Reduce traffic growth and congestion by achieving a mode shift.
  - Prevent encroachments on footpaths through litigation.
  - Environmental Impact Assessment (EIA) should be mandatory for all transportation projects.

8.1.6 Priority Projects:

Construction/ Rehabilitation Roads

- **Project Justification**

The communication linkages of Islamkot with other parts of regions are imperative for overall economic progress of the region. To reinforce the backward and forward linkages between agricultural production, industry, and services to strengthen the local and regional economy. A Highway connects

[31] Sustainable Urban Transport Policy-Sindh 2016

Tharparkar with other major cities of the province. The district headquarters Islamkot is linked with other taluka headquarters of Diplo, Nagarparkar, and Chachro through metaled roads. Drainage issues on road side are evident due to which roads are worsening day by day. Absence of street furniture is another issue due to which traffic incidents takes place.

There is unplanned street network, absence of public transport and lack of bus stand in core urban area. The main Mithi and Nagarparkar Roads are paved and even smaller streets are also paved with some reasonable spaces available for improvement. However, the overall situation indicates narrow street width, poor pavement conditions, encroachments on footpaths and road sides, haphazard and illegal parking, open drains, etc.

The physical condition of road network shows that, road geometry varies from road to road, where ROW (4 to 12 feet) and cross sections don't follow the needs of the traffic volumes. Roads are without any lane distribution or lane markings and there is no street furniture available in the core urban area of Islamkot. Most roads need rehabilitation as well as traffic management measures for smooth flow of traffic. Lack of parking spaces and traffic congestion is another main issue of the core urban area of Islamkot. Parking seems to be unorganized, which create some problem but spaces are available for providing organized parking.

- **Project Benefit**

  By implementation of the project tourism sector could be enhanced.

- **Implementing Authority**

  Government of Sindh, Islamkot TC, Works and Services Department

Estimate Cost: 500 million approx (Depending upon length of roads).

S. No.	Project Name	Estimated Cost In Millions	ADP	Non ADP	Status	
					Short Term	Long Term
Roads and Communication Network						
# 1	Beautification & Rehabilitation of Major Urban Roads.	200.00	-	Non ADP	**Short Term**	-
# 2	• Dualisation of Mithi-Nagarparkar Road • Rehabilitation of Existing Roads • Pedestrian Friendly Streets • Monuments at Intersections / Junctions • Designated Parking Spaces • Provision of Footpaths and Street Furniture	300.00	-	Non ADP	**Short Term**	-

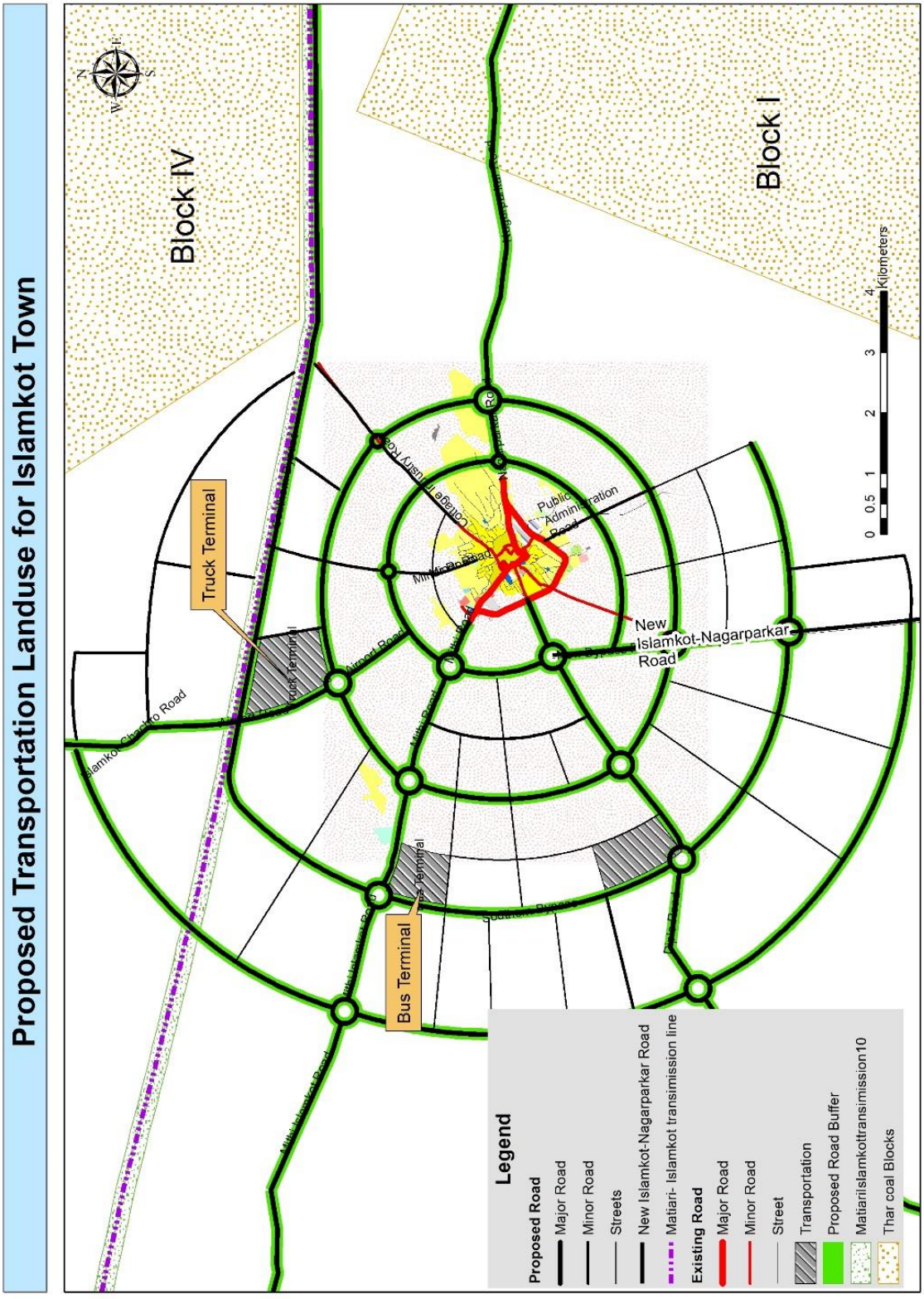


Figure 8-1: Proposed Transportation Landuses for Islamkot for Islamkot

8.1.7 Immediate Action Plan:

The following are the transportation proposals for immediate action plan:

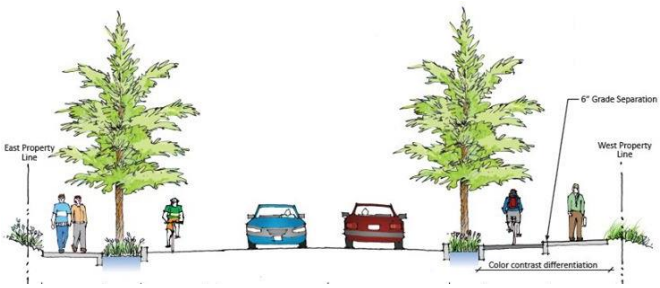
Dualization of Mithi-Nagarparkar Road

Dualization of Mithi-Nagarparkar Road with increase in existing ROW and addition of services corridor. The improvement in road pavements with green medians, road markings, signals, pedestrian crossings, will be developed. The suggested ROW of Mithi-Nagarparkar Road is 80 feet minimum.

Dualization of Major Roads

Rehabilitation of Existing Roads

The main parameter for rehabilitation of existing roads is to draw a property line, which require very practical approach in such a way that no massive destruction will happen. In this regard community participation will be highly needed to take them on board and to make awareness that this realignment is for the betterment of their area. The existing ROW of roads should be increased or at least restored by removing encroachments specially along the commercial corridors. These roads will be served with proper pavement, surface drainage, streetlights, benches, dustbins and trees. Along rehabilitation of marked roads; water, sewerage, drainage, electricity, gas works should also be align to avoid repeated digging of same road several times separately for each work.



Rehabilitation of Existing Roads

Pedestrian Friendly Streets

Pedestrian Friendly Streets

It is proposed that walkability and pedestrian movement will be encouraged in core urban area by restoring footpaths on both sides of the roads in the city center. All existing encroachments on the

footpaths should be removed to allow walkability in the city center. Additionally some streets needs to be pedestrianized due to narrow ROW (4 to 12 feet). Ideally all streets should be accessible for emergency vehicles like fire brigade and ambulance. Thus it is suggested to make maximum provision to widen the streets for emergency vehicles in case of incidents only, while the essence of pedestrian Friendly Street should remained there. The widening of street should include realignment of property line with community support and design will have covered drains (with removable lids) and wall mounted streetlights.

ISLAMKOT - CORE TOWN AREA						REHABILITATION OF ROADS		
S.No	Area / Locality / Address Major Roads	LENGTH (km)	LENGTH (m)	Width (feet)	Width (m)	Area (sq.m)	Per sq.m cost (PKR)	Total Cost (PKR)
1	Rehabilitation of Major Roads	1.00	580	40.00	12.20	7,073.17	4,140	29,282,926.83
Minor Road								
1	Rehabilitation of Minor Roads	2	1807	20	6.10	11,018.29	4,023	44,326,591.46
Streets								
1	Rehabilitation of Streets	2	2000	20	6.10	12,195.12	2,403	29,300,000.00
Grand Total PKR Rs. Million								102.91

Monuments at Intersections / Junctions

Some new monuments and land marks should be placed in the chowks of core urban area to ease traffic movement by adding beautification through hard and soft landscape.

ISLAMKOT - CORE TOWN AREA		EXISTING MONUMENTS SITE REHABILITATION				
S.No	Area / Locality / Address	Area	Area	Unit	Rate.	(PKR)
	Major Roads	(sy)	(sft)			million
1	Near Police Check Post	80	720	sft	1,800.00	1,296,000.00
2	Near Holi Ground On RHC Road	50	450	sft	1,800.00	810,000.00
						2,106,000.00
					Total PKR Rs. Million	2.11

Designated Parking Spaces

In order to resolve parking issue few parking sites are proposed to avoid on street and curb side parking. All parking areas are placed along existing main roads and proposed commercial corridors. These general parking spaces will charge reasonable amount for revenue generation and will avoid unorganized parking to reduce the traffic congestion in core area.

Provision of Footpaths and Street Furniture

Provision of street furniture in the core urban area also needs immediate attention. Street lights, benches, paved footpaths, traffic signals, zebra crossings, signage, dustbins, bus stops with shades and tree plantation should be installed on immediate basis.


Footpaths with Street Furniture

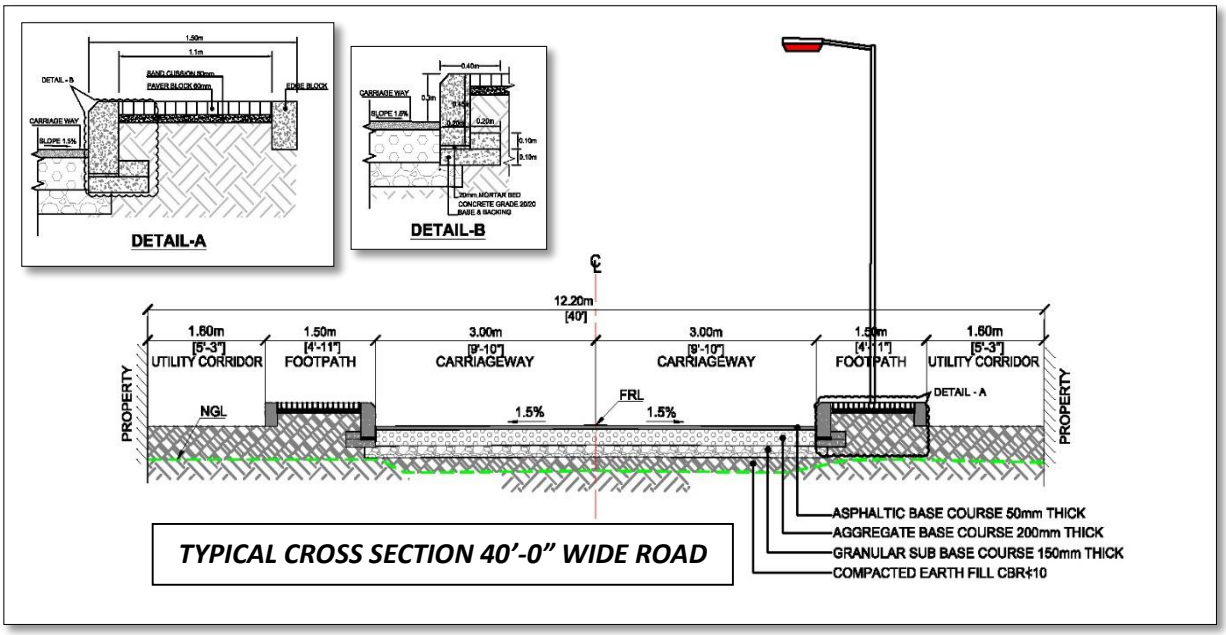
PREPARATION OF DEVELOPMENT MASTER PLAN FOR ISLAMKOT TOWN						
ISLAMKOT - CORE TOWN AREA		PROPOSED PARKING AREAS				
S.No	Area / Locality / Major Roads	Area (acre)	Area (sft)	Unit	Rate.	Total Amount
1	Shah Abdul Latif Parking Area Islamkot	**0.55**	23,958.00	sft	1,000.00	23,958,000.00
2	Main Old Town Committee Road Commercial Area Parking	**0.79**	34,412.40	sft	1,000.00	34,412,400.00
						58,370,400.00
					Total PKR Rs. Million	**58.37**

Note:

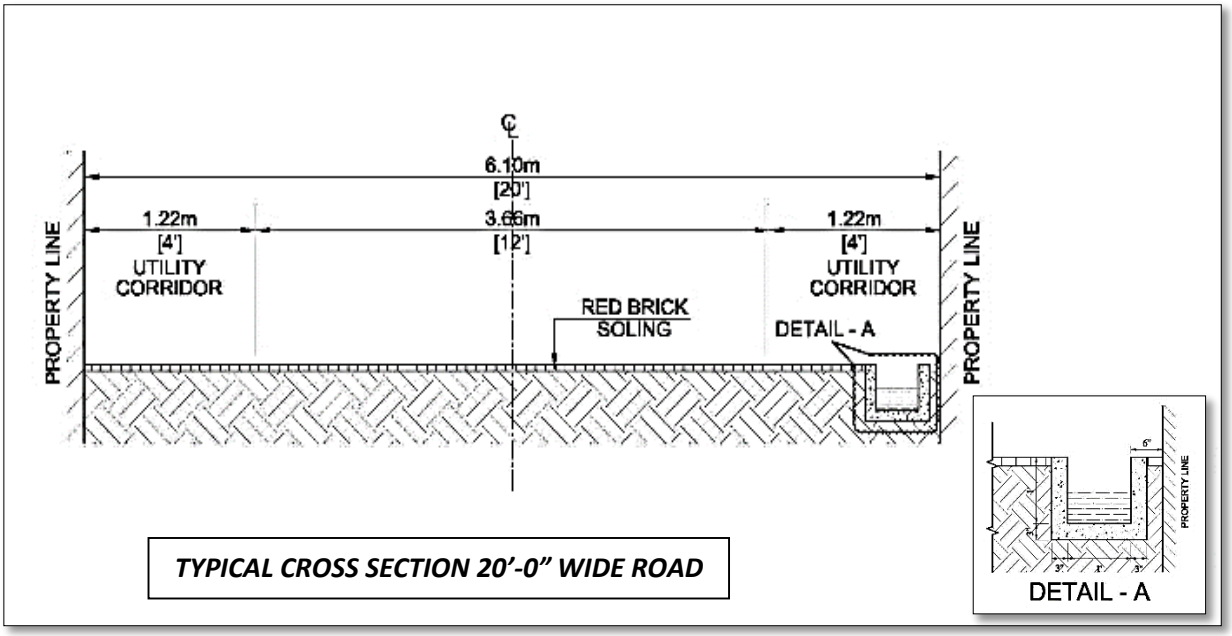
1. Parking Facility construction work includes at designated areas;

***** Earth work at site.

* Surface of pavers for last layer.
* Kerb stone cover at the edge for vehicle stoping at boundary wall.
* Water Supply, Sewerage and Self Surface Drain at Sites.
* Trees and Landscaping with plantation as per site requirement.
* Storm Water Drainage system.
* Public parking facility users need base toilet facilities.
* Seating facility with one stop shop.
* Vehicle movement signs on road and boards.



TYPICAL CROSS SECTION 40'-0" WIDE ROAD



TYPICAL CROSS SECTION 20'-0" WIDE ROAD

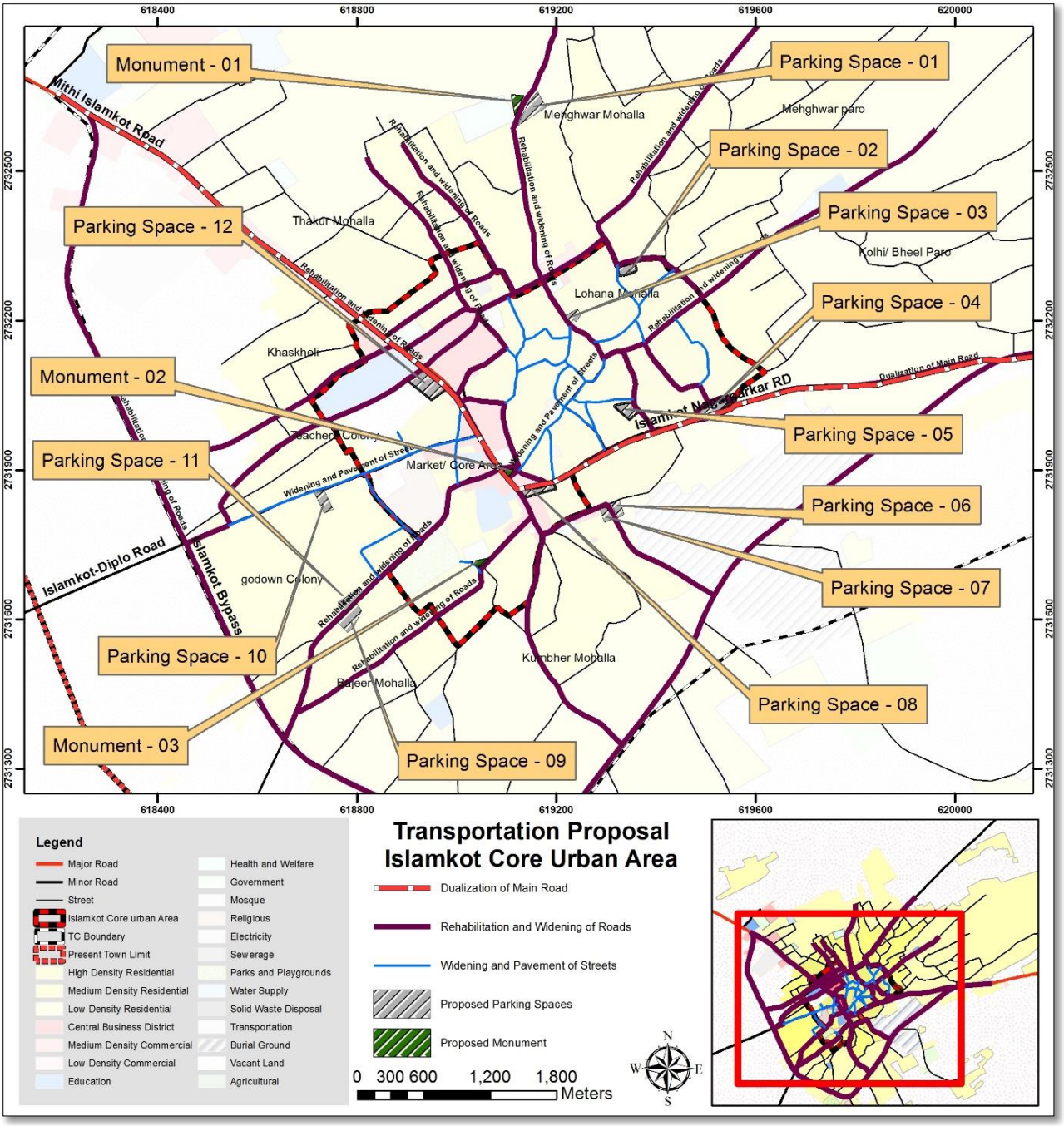


Figure 8-2: T transportation Map of Islamkot Coe Urban Area

8.2 Energy

8.2.1 Existing Situation

There is no power generation facility in Islamkot (TC) vicinity at present. The power supply is through HESCO-WAPDA transmission system.

- **Thar Coal Project Block 2 Islamkot Sindh**

  A Coal Fired Power Plant is under construction about 25KM form Islamkot. The Sindh Engro Coal Mining Company Limited (SECMCL) executes the project which will be completed in three phases. The first phase of the Project is underway, in which, two 330 MW coal fired thermal power station plants will be established with majority share of Engro Powergen and is expected to be completed by end of 2018. In the second phase the mine will be further expanded to 7.6 MTPA and additional 2 x 330 MW will be added. Subsequently in phase three the mine will be taken to its potential of 33 MTPA capable of generating 3,960 MW.

  Pakistan is a coal-rich country, with most of these reserves are situated in the area of Thar in the Province of Sindh. The Federal Government and Provincial Governments are continuously trying to promote and develop the indigenous coal for power generation.

- **Availability of Electric Power**

  Results of primary data reveals that 79% of the households have availability of electric power, whereas 21% of the households do not have electric power supply from HESCO. Some households are far from the supply feeder and other do not afford the heavy bills of electricity. These are katchi abadis/shanties, therefore they mostly use kerosene oil lantern during the night, and carry out daily works manually. That the consumers are now planning to have solar power as an additional source of electricity.

- **Current Power Supply/Demand**

  The Power Supply to Islamkot (TC) is through Hyderabad Electric Supply Company (HESCO) WAPDA via two 66 KV Grid station feeding TC by 11 KV feeders.

Electric power network exist in the most area of city, but the production is going through a national energy crisis and power supply has become erratic. Islamkot (TC) is categorized as domestic, commercial, agriculture and other services. In the current national energy crisis electricity is facing shortage. Greater emphasis should be laid on alternative energy like solar, wind and biogas. Solar energy should be immediately applied for street lighting and tube wells.

The extending access to electricity and other forms of energy is fundamental to improving people's lives and communities. It aims for efficiencies in energy use and the promotion of renewable sources to sustainably manage resources for development.

8.2.2 Issues and Problems:

- Advocacy efforts have not been made to promote efficient fuel use; consequently, there is little public awareness about fuel conservation measures,
- Alternative fuel sources are scarce and expensive. Liquid Petroleum Gas (LPG) and kerosene are available but costly, putting them out of the reach of the rural poor
- Maintenance of power plants: Poor management plays a big role in electricity crises. Pakistan has installed capacity which is more than its demand, but at same time only 60 % of this installed capacity is used because of some power plants are off-grid and some of them are not operating efficiently due to the lake of maintenance.
- Circular Debt: Circular debt is seriously affected Power sector as well as created financial problems. Power generation companies when failed to clear their dues to fuel suppliers, caused this debt. This happened when Distribution companies (DISCOs) cannot collect revenues efficiently because of electricity theft, transmission/distribution losses and below cost power tariff. As a result, most of the thermal power plants were forced to operate at a very low capacity factor and hence low generation of electricity cause increase in shortfall.

8.2.3 SWOT Analysis and Need Assessment

Power Supply & Distribution			
Strength	**Weakness**	**Opportunity**	**Threats**
1. Almost whole urban area gets coverage of electricity. 2. Good recovery outcomes 3. Thar Coal has great potential for electricity generation.	1. Load shedding & Line losses 2. Poor maintenance of electricity supply infrastructure. 3. Outdated network in old town areas.	1. By increasing the capacity of grid station will minimize electricity shortage & maximize production 2. Opportunities available for alternative energy production through solar energy and wind power.	1. Power theft. 2. Political will and policies at work 3. Land acquisition, Licensing and legal issues.

8.2.4 Strategic Development Plan

Strategies for Electricity includes:

- **Upgrade Transmission and Distribution Process:**

  Transmission and distribution losses are directly connected to Leakage Current Losses, Dielectric Losses, open circuit Losses and theft of electricity. Islamkot is facing 18 to 24% transmission and distribution losses. The tariff is increased due to increase of transmission/distribution losses. HESCO power sector is transmitting and distributing electricity with overhead line. Lack of proper maintenance, replacement of old transmission lines, and grid stations also causes T&D losses.

- **Upgrade Streetlight Network**

  In IslamKot (TC) there are street lights in almost all main areas and markets, the poles are made of steel as well as concrete. It is also realized that there are no street lights in small slum area and narrow lines, which require immediate attention of distribution company .The maintenance is required in order to keep lights working. In some locations conventional street lights have been replaced with LED bulbs, it is recommended the street lights to be switched with power supply by means of solar panel and a storage battery. This can save energy and light can be lit even during the load shedding hours.

8.2.5 Economic Development Plan

Sindh with its proven reserves of oil & gas, coal, Gharo - Dhabeji wind corridor, and round the year sunshine is tipped as the Regional Power House of the future. Only Thar with 175 Billion tons of coal reserves offers 200,000 MW of electricity for 300 years. Wind corridor of Sindh is 60 km wide from Gharo till Keti Bandar with a potential of 50,000 MW.The annual radiation of 3000hrs in Sindh has an endless potential for solar energy. The suggested proposals include: Coal Mining, Washing, Bracketing Plants & Solar Energy production

8.2.6 Priority Projects:

There is no power generation facility in the town at present. The power supply is through HESCO-WAPDA transmission system. There are streetlights in almost all main areas and markets, the poles are made of steel as well as concrete. In almost all locations conventional street lights have been replaced with LED bulbs, power supply by means of solar panel and a storage battery.

The following are the electricity and streetlight proposals for immediate action plan:

- **Arial Bundle Cable wires**
  Although in long run Islamkot will have provision of electricity all over the town. However, in present circumstances it is suggested that Arial Bundle Cable wires should be used to avoid short circuits and thefts issues. This will also increase the aesthetics and beauty of the core urban area.

- **Solar Streetlights**
  It is proposed to installed streetlight in all over core urban area. It is suggested to use streetlights with LED panel and solar power battery support. This can save energy and light can be lit even during the load shedding hours, but need regular maintenance. Considering Narrow Street and road width, it is recommended to use wall mounted poles in narrow streets, while floor mounted poles on other roads.

- **Project Benefit**
  Better life style with the provision of power generation and internal town urban electrification for the population.

- **Implementing Authority:** Provincial Government of Sindh, HESCO & Engro Power

S. No.	Project Name	Estimated Cost In Millions	ADP	Non ADP	Status	
					Short Term	Long Term
Power generation and Road electrification						
# 1	Power generation Unit and provision of; • Arial Bundle Cable wires, • Solar Streetlights.	500.00	-	Non ADP	**Short Term**	-

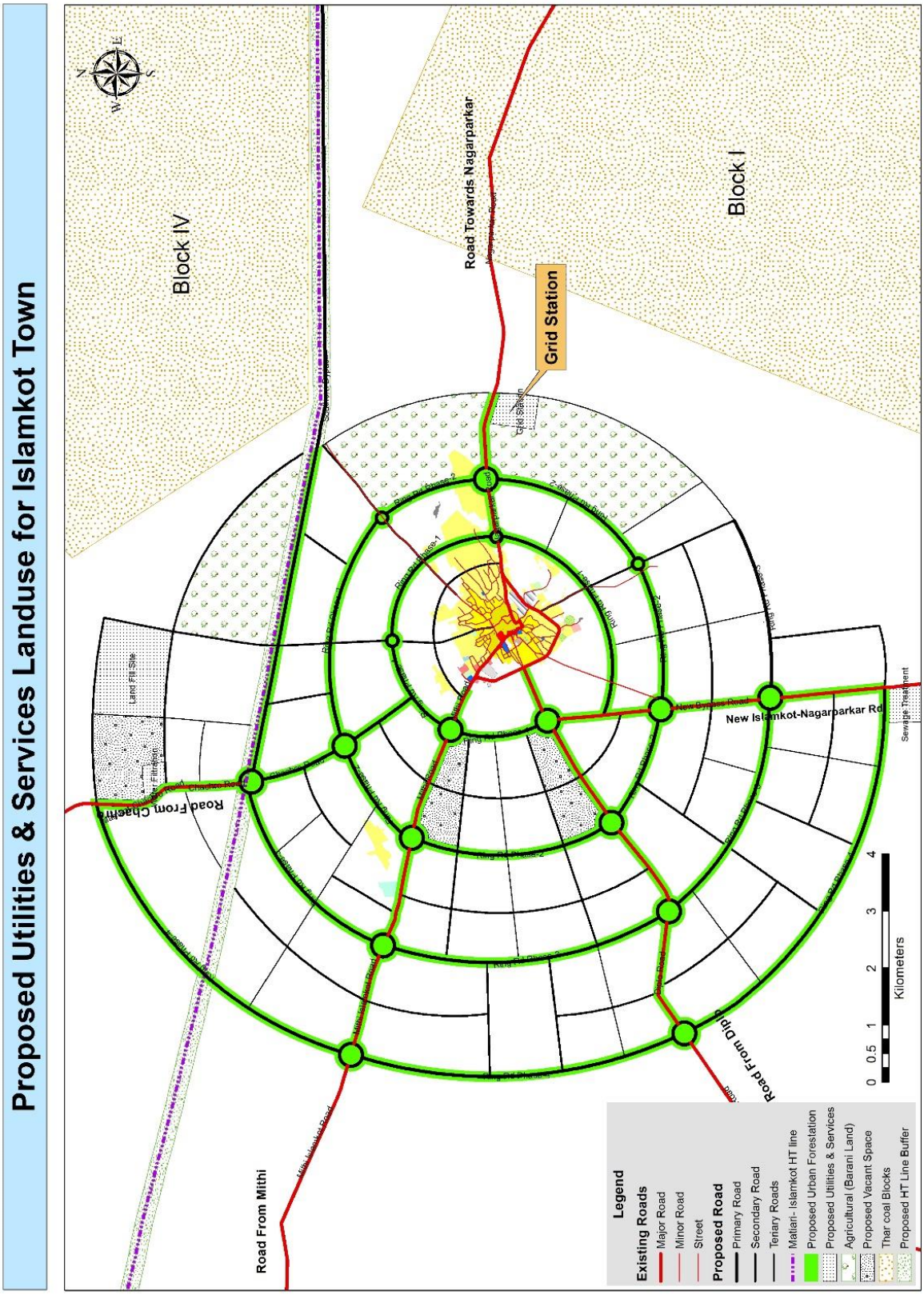
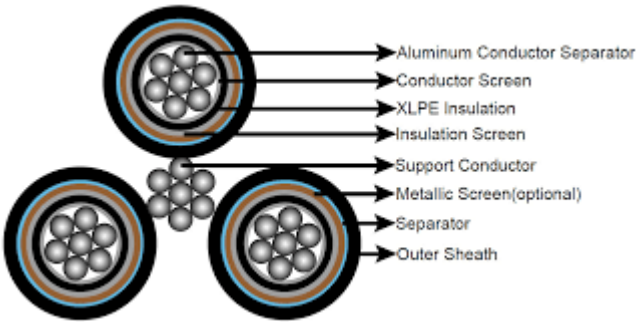


Figure 8-3: Proposed Landuse for Grid Station Islamkot

8.2.7 Immediate Action Plan

The following are the electricity and streetlight proposals for immediate action plan:

- **Arial Bundle Cable wires**
  Although in long run Islamkot will have provision of electricity all over the town. However, in present circumstances it is suggested that Arial Bundle Cable wires should be used to avoid short circuits and thefts issues. This will also increase the aesthetics and beauty of the core urban area.



Arial Bundle Cable Wires

- **Solar Streetlights**
  It is proposed to installed streetlight in all over core urban area. It is suggested to use streetlights with LED panel and solar power battery support. This can save energy and light can be lit even during the load shedding hours, but need regular maintenance. Considering narrow street and road width, it is recommended to use wall mounted poles in narrow streets, while floor mounted poles on other roads.

Solar Streetlights with LED Panel

PROPOSED WALL MOUNTED STREET LIGHTS				
S.No	**Name**	**length (km)**	**length (feet)**	**Cost (PKR)**
1	Proposed Total Length of Street (km) for wall mounted streets lights.	20.00	65,617	164,042,000.00
Total Cost (PKR). Million				**164,042,000.00**
				164.04

- Wall mounted street lights approximately should be placed on distance of 15 to 20 feet apart.
- Each wall mounted street light cost (Rs. 5000/-).
- As per total length of Streets for this proposal 3,280 No.s of street lights/wall mounted streets should be placed in core town area.
- Operation and maintenance is the 1st priority to ensure after installation of all equipment's and machinery and kept under strict control of TC office for proper usage of facilities.

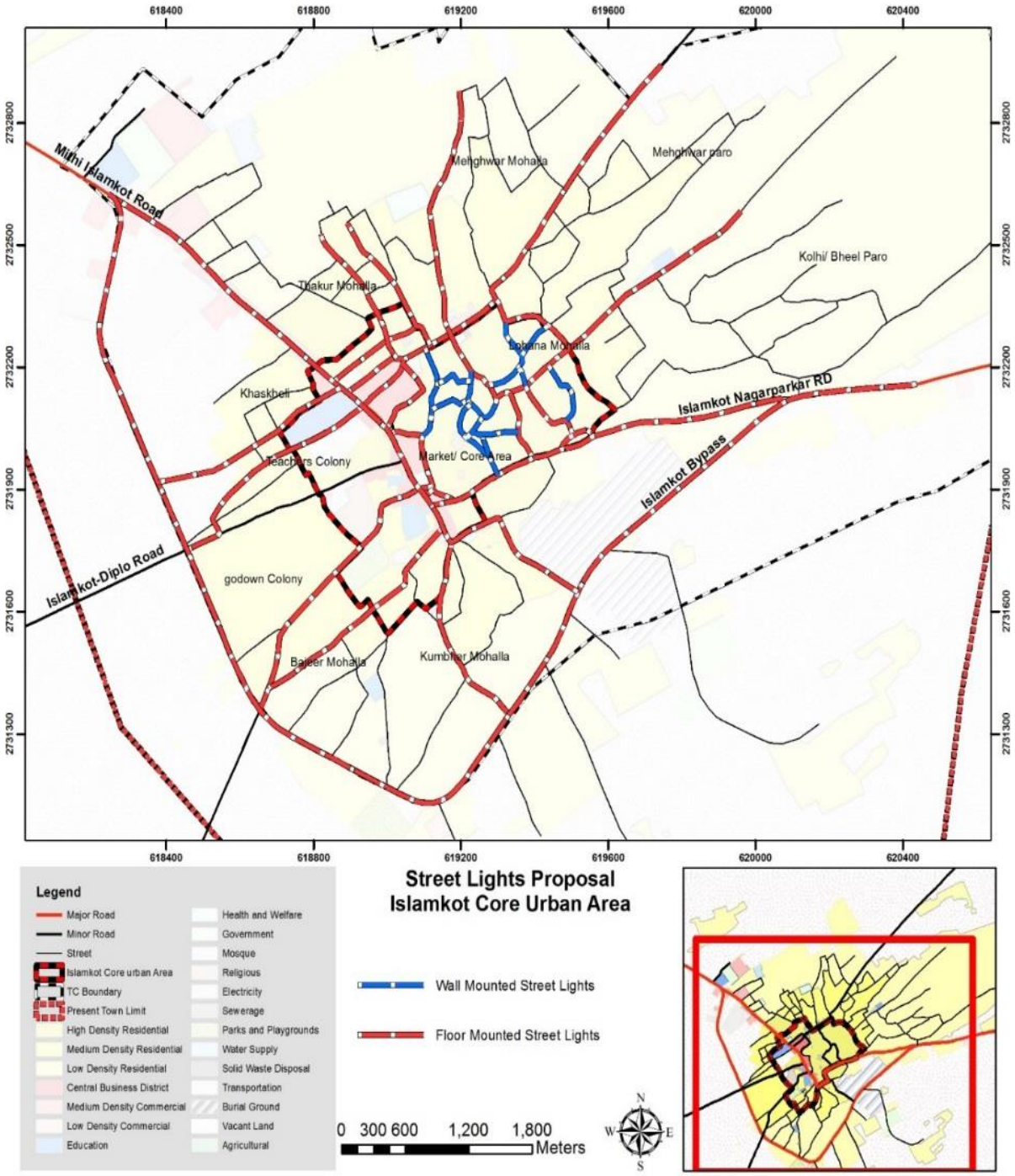


Figure 8-4: Proposed Street Lights Proposal Map for Islamkot

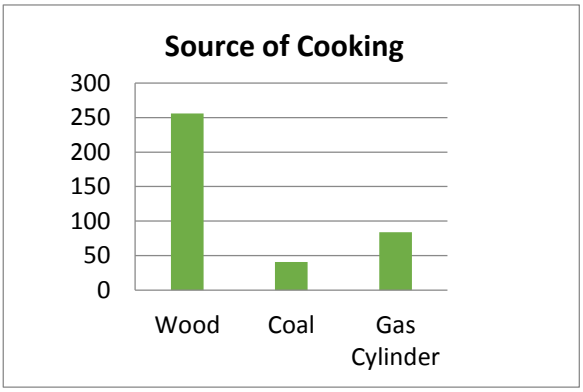
8.3 GAS SUPPLY

8.3.1 Existing Situation:

Currently, Natural gas is not available in Tharparkar district. As given in the Table below, 85% houses are using wood as alternate source for cooking, 14% coal and 28% cylinder gas supplied by distributors from Karachi and Hyderabad.

Table 8-1: Source of cooking

S. No.	Source of Cooking	No of Respondents	Percentage
1	Wood	256	85%
2	Coal	41	14%
3	Gas Cylinder	84	28%
Source: Consultant's Survey, July 2018			



8.4 Communication

The epicenter of growth in mobile phone services in Islamkot is gradually covering semi-urban and rural areas localities. Remote areas have started showing growth, led by the expansion in cellular networks, increasing awareness of the usage of voice and data connections and availability of mobile handsets at affordable prices.

A significant rural population uses phones to remain connected with their outstation relatives and friends, who have gone there for education and in search of livelihood.

However, the usage of internet in Islamkot is slightly different from that in the urban cities. Most of them use internet to enjoy audio and video songs and to watch movies.

Information and communications technology expert say that mobile phone internet usage was increasing as all new SIMs being issued to the subscribers were 3G/4G enabled.

- **Mode of Communication**
  The survey result shows that none of households use PTCL land line. PTCL charges are more and complain rectification is slow. People prefer other service providers in the area. Use of mobile

- **Internet/ Wi-Fi Access**
  Mobile phones and televisions rank as two of the most commonly owned consumer electronic items in Pakistan. The difference in mobile phone ownership between urban and rural areas

is not significant (94.7% compared to 83% respectively). However, the difference in percentage of households that have an internet connection is notable, with 17.4% of urban homes having access to internet compared to 1.3% of rural homes.

The second most commonly owned electronic consumer item on the list was the television, found in 60.2% of households nationwide.

At present the internet usage is limited to educated families, and it is increasing with time decline of illiteracy rate.

The PTCL office is located at Mithi-Islamkot Road, Islamkot.

8.4.1 SWOT Analysis and Need Assessment

Information & Communication Technology			
Strength	**Weakness**	**Opportunity**	**Threats**
1. Strong networks available for advanced technologies, e.g. internet & cellular networks.	1. Less information sharing regarding any kind of disaster forecasting etc. 2. Just 03% population have PTCL landline & internet facility available to them.	1. Media can play important role in economic development and prosperity. 2. Marketing campaign support of development initiative.	1. Negative cultural and ethical exposure to young minds (youth), if not regulated properly.

Importance of Communication Infrastructure in Agriculture Sector:

Swift transportation facilities, farmer friendly marketing arrangements and, above all, a well-maintained Communication network are the basic requirements for an efficient and profitable agricultural and Industry sector. The District government needs to improve market and support service infrastructure including farm-to market Roads. This sector will need increased and sustained investments in communication infrastructure in rural areas.

ECONOMIC DEVELOPMENT PLAN

9. ECONOMIC DEVELOPMENT PLAN

Economy of an area or town plays an important role for its sustainability and further growth. Economy can make a town a vibrant town or a rather stagnant, boring and dead one. Islamkot and Tharparkar in general are rich in traditional handicrafts .Available in this district are also silver/Gold ornaments very beautiful handmade carpets of the export quality at very affordable prices sold at Karachi and foreign countries, in this district there is no marketing setup and patronage from government has been provided. It warrants all special attention of government to promote the sector.

This district is also very rich in mineral resources like china clay, granite, coal and salt. Tharparkar coal field spread over 9100 sq. kms nears Islamkot is one the largest lignite (coal) deposit in the world which constitutes about 80% of the coal deposits of country. Coal deposit is enough to meet fuel requirements of the country for centuries as opined by experts. This will attract the population, which will increase in migration in Tharparkar especially in Islamkot, which is very near to Thar Coal field.

Granite rock foundations found in Nagarparkar region of Tharparkar which is generally famous as Karoonjhar Mountains. It is estimated that 3.6 million tons granite is available at 35 pockets spreads over 125 sq. kms. It is beautiful and costly stone of brownish colour. But due to lack of communication facilities it is taken in limited quantity. Also salt mines are available in this district.

Policy Guidelines for Overall Economic Development

- Creating a better quality of life for the citizens of the district by encouraging private sector to invest in the district.
- Improving infrastructure and key services necessary for economic uplift.
- Providing un-interrupted power supply.
- Special attention of government to promote the sector (Handicraft and ornaments).

Recommendation

- Economic activities in the Tharparkar will increase due to Thar Coal mining operation. Hence it is suggested that a technical services industry may be setup. The object is to support and fulfil the regular needs of Thar Coal industry.
- Incentives to private investors for establishment of workshops, cold storage, grantite/stone processing etc. will be provided by Sindh Investment Board and Sindh Small Industries Corporation have vital role to play.
- Prefeasibility studies for different industries should be prepared to attract the private investors.
- Public-private partnership (PPP) mode would be the suitable way to develop these industries.
- Training should be provided to local workers in mining techniques and women working force to establish cottage industry.

The increase in industrial growth will obviously contribute towards better economy of the districts with increase in per capita income, reduction in unemplyment rate and poverty allleviation.

Strategic Plan for Overall Economic Development

- Modernize and revitalize the service sector.
- Develop Human resources through capacity building for employment opportunities.
- Facilitate social support and gender equality.
- Reinforce the local governance institutions.
- Modernize local / district / divisional administration.
- Involve community participation.
- Exploring and implementing PPP (Public Private Partnership) in all sectors.

9.1 Agriculture

9.1.1 Existing Situation

District Tharparkar, due to its desert-like lands, gives a dismal picture in agriculture. Some areas of Nagarparkar taluka are fertile as these are fed with tube well water and various crops such as wheat, onion, cotton and other vegetables are grown in this area. Except for the two mouzas of Mithi and seven mouzas of Diplo, which are irrigated by runn-shakh, rest of the 157 mouzas are in the arid zone where cultivation depends on rains. Drought is a common phenomenon which occurs very often when there are no rains. Bajra and Guar count as main agriculture product of Tharparkar district which covers almost 90% production of Sindh.

9.1.2 Irrigation Network

Since the whole district is desert like, there is no regular irrigation system. In district Tharparkar, only 1.6% of total cultivated area is irrigated through canal in Diplo Taluka. However, the monsoon rains play important role in the irrigation of lands. In case of receiving heavy rainfall in monsoon, the desert gets sparse vegetation. Some of the areas in Nagarparkar and Mithi, where tube well irrigation is common, have green fields in. But the overall irrigation structure is poor with no canals or rivers.

Figure 9-1: Seasonal Cultivation in Tharparkar District

Majority of the mouzas are arid and depend on the rainfall. Out of the 163 rural mouzas; 158 (97%) mouzas are arid and 64 (39%) are irrigated through tube wells. There is no canal/river irrigation in this district. The main canal that contributes to the irrigation of Diplo taluka is Ran Distributary of Naukot branch of Nara Canal.

The rainfall season spans over June to September which is monsoon season and its intensity varies from 50-300 mm. Crops are immediately cultivated right after the rainfall. It is interesting to know

that previous 3 decades show that famine occurs every 13 years as it occurred in 1987, 2000, and 2013 and now in 2018.

In the year 2012-13, 34,930 hectares was irrigated out of 167,718 hectares; whereas in 2013-14, 33,474 hectares was irrigated out of 176,469 hectares which shows that almost 2% area becomes un-irrigated by means of non- supply / short supply of irrigated water which could be one of cause of low economic conditions of people of Tharparkar. The table below gives information regarding irrigation in the district.

Table 9-1 : Area and Production of Bajra

Province	AREA (In Hectares)			PRODUCTION (In M.Tons)		
	2014-15	2015-16	2016-17	2014-15	2015-16	2016-17
Sindh	44,867	45,044	45,122	23,056	23,198	23,245
Tharparkar District	40,739	41,005	41,150	20,537	21,036	20,744
Source: Development Statistics of Sindh, 2018						

Table 9-2: Area Sown by Mode of Irrigation (Area Hectors)

Years	Total Area Sown	Un-Irrigated	Irrigated			
			Total	Canal	Well	Tube well
2011-12	167,609	122,581	45,028	39,025	--	6,003
2012-13	167,718	132,788	34,930	28,917	--	6,013
2013-14	176,469	142,995	33,474	27,471	--	6,003
2015-16	154,836	120,000	34,833	28,812		6,021
2016-17	154,111	119,276	34,835	28,812		6,023
Source: Development Statistics of Sindh, 2018						

9.1.3 Land Utilization

The total geographical area of district Tharparkar is 2,017,000 hectares out of which cultivated area is up to 352,000 hectare which is 17%. Out of cultivable land in 2016-17, actually cultivated land was to 155,000 hectares leaving 198,000 hectares as fallow:

Table 9-3: Comparison of Land Utilization

Sr. No.	Type of Cultivated area	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
1	Cultivated area	352,000	352,000	352,000	352,000	353,000	352,000
2	Current Fallow	184,000	184,000	217,000	198,000	198,000	198,000
3	Net area sown	167,000	168,000	135,000	153,000	155,000	155,000
4	Cultivated Waste	85,000	70,000	70,000	71,000	71,000	71,000
5	Not available for cultivated	1,514,000	1,526,000	1,526,000	1,525,000	1,524,000	1,525,000
Source: Development Statistics of Sindh 2018							

9.1.4 **Issues:**

The issues regarding to agriculture is causing the degradation in production of crops,

- Lack of agriculture credit facilities.
- Lack of Agriculture research centers.
- Absence of Tube well installation facilities
- Low price of crop production
- Lack of improved seed
- Unavailability of Farm to market roads

9.1.5 **SWOT Analysis and Need Assessment**

IRRIGATION			
Strength	**Weakness**	**Opportunity**	**Threats**
1. Thar has a fertile desert.	1. No direct access to canals 2. Mainly dependent upon seasonal rain / Monsoon	1. Support agricultural activities 2. Opportunities for enhancement of agriculture through tube well and drip irrigation.	1. Drought

9.1.6 **Strategic Development Plan**

- Modernize and revitalize agriculture.
- Establishment arid zone university or research center
- Improved food production to reduce hunger including emergencies and disasters that require agricultural support.
- Agricultural technology development, dissemination and adoption.
- Cross-cutting issues-policy formulation and review, agricultural statistics.
- Use of modern techniques for cultivation by choosing healthy seeds and fertilizers for increasing yield per acre.

9.1.7 **Priority Projects**

<u>Establishment of Fruit and Vegetable Market at Islamkot</u>

- **Project Justification**

At present there is no or any market available for Fruit and vegetable, the shops of vegetables and fruits are located on the main roads, due to this the traffic congestion accurse. This market shall provide an easy access and the commercial area of Islamkot shall not face congestions another related problems. The prime issue regarding the wholesale market is relocation in expanding towns like wise in Islamkot. Traditionally, they tend to be close to the CBD where

they cause traffic congestion, sewage disposal problems and smell nuisances. As towns expand, the relocation of wholesale markets to the fringes becomes imperative. In order for this major operation to be successful, it is necessary to provide good level of access and infrastructure in the reception area. Close linkages with bus and truck stands must be ensured. Out of total trade and commerce area for development master of Islamkot consultant has suggested 10 acre for fruit and vegetable market within this zone of Trade and Commerce of total 252 acre. This planned market shall provide an easy access and the existing Commercial area shall not face traffic congestion and other related problems. Fruit and vegetable market area is considered to be part of trade and commerce zone for future up-gradation of Islamkot town with respect to its use in future and giving ease to the present user of existing market.

- **Project Benefits**

  Establishment of Fruit and Vegetable Market at Islamkot will help to strengthen the existing revenue generation system of municipality, employment generation, and easy access to fruit and vegetable market.

- **Implementing Authority**

  Islamkot Town Committee and Private Investors.

Estimated Cost: 566.28 Million approx. (Short Term).

Project Name	Sector	Short Term	Proposed Area (acre) & Lengths (m)	Preliminary Cost in (million)	Justification
Establishment Of Fruit And Vegetable Market At Islamkot	Economic Development (Trade & Commerce)	Short Term	10 acre	566.28	10 acre = 4,35,600 sft , at the rate of 3,000/- PKR per sft construction cost with all infrastructure cost

In order to improve the crop production, improvement and intervention from government departments following steps can also be taken on priority basis:

- Enhancing Agriculture credit facilities
- Construction of farm to market roads

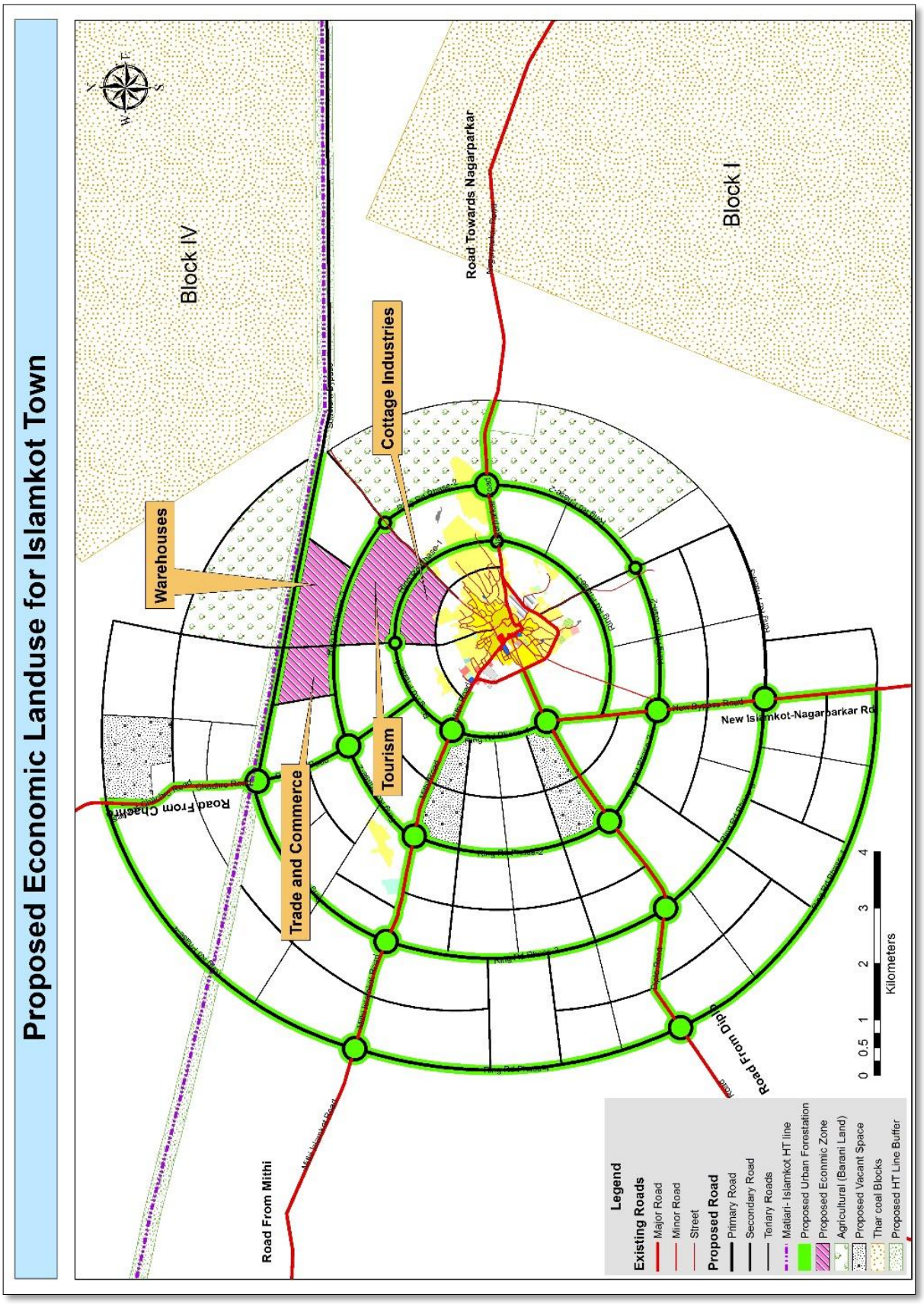


Figure 9-2: Proposed Landuses for Economic development for Islamkot

9.2 Livestock

9.2.1 Existing Situation

Livestock is one of the major sub-sector of agriculture and the back bone of Thar's economy. Its main by-products including hides and skins have substantial potential as semi-finished products. A substantial growth in Livestock products such as milk, meat, beef, mutton, poultry and eggs have been noticed since many years for the people of district Thaparkar. This district is producing animal based food (meat & meat products) in surplus to its requirements. There is legible production of fisheries in the region. Except some in the Nagarprkar and potential to utilize reject water lakes for fish farming. There is good number and large variety of livestock in the district. The statement showing the number of livestock in the district is as under.

Table 9-4: Livestock Population District to Tehsil Level

S. No.	Livestock by Category	Total Livestock Population of District	Total Livestock Population of Islamkot Taluka	Livestock Slaughtered (Numbers) in District
1	Cattle	752,000	143,445	--
2	Buffalos	46,000	7,866	3,390
3	sheep	1,185,000	304,716	7,991
4	Goats	2,218,000	440,361	12,345
5	Camels	135,000	24,558	
6	Asses	247,000	43,780	
7	Mules	2,000	147	
Source: Development Statistics of Sindh 2017 and Livestock Department Tharparkar, 2017				

9.2.2 Veterinary Service

The veterinary services in district Tharparkar are deficient because District Tharparkar is richly populated area having animal's population of large and small animals. For this population of Animals, the services are not sufficient and not serving the all population of animals.

Table 9-5: Veterinary Services

Sr. No.	Items	Numbers
1	Veterinary Hospital	8
2	Veterinary Centres	151
a	Vaccinated	2,153,047
b	Treated	493,539
c	Castrated	1,418

9.2.3 Issues

- Limited knowledge and facilities due to lack of extension service
- Reduced areas for natural grazing and feed production in the face of increasing urbanization and food security requirements
- Landlessness and small holding prevents the farmer to raise livestock on commercial basis mainly subsistence farming
- Almost for every farmer, livestock farming is a secondary activity so treated as secondary source.
- Climate change and environment degradation

9.2.4 SWOT Analysis

Livestock & Fisheries

Strength	Weakness	Opportunity	Threats
1. There are 143,445 cattle, 7,866 buffaloes, 304,716 sheep, 440,361 goats, 24,858 camels in teluka Islamkot according livestock department data 2. The district is rich in livestock sector. There are 3,656,933 cattle heads according to the census of 1995-96 which is the largest in Sindh. 3. The livelihood of Tharis depends on livestock.	1. Large scale breading has not developed 2. Lack of facilities to industrialize livestock based products. 3. Many diseases spread from animals to humans as a result of people living close to animals.	1. Cooperative dairy farming has sufficient scope 2. Large pasture land and labour force available for livestock growth 3. Livestock based products can enhance economic activities if produced through appropriate industries. 4. There is a possibility for increasing number of livestock and dairy farms to meet the requirement of meat and milk through private participation.	1. Theft and security issues 2. Losses due to Drought

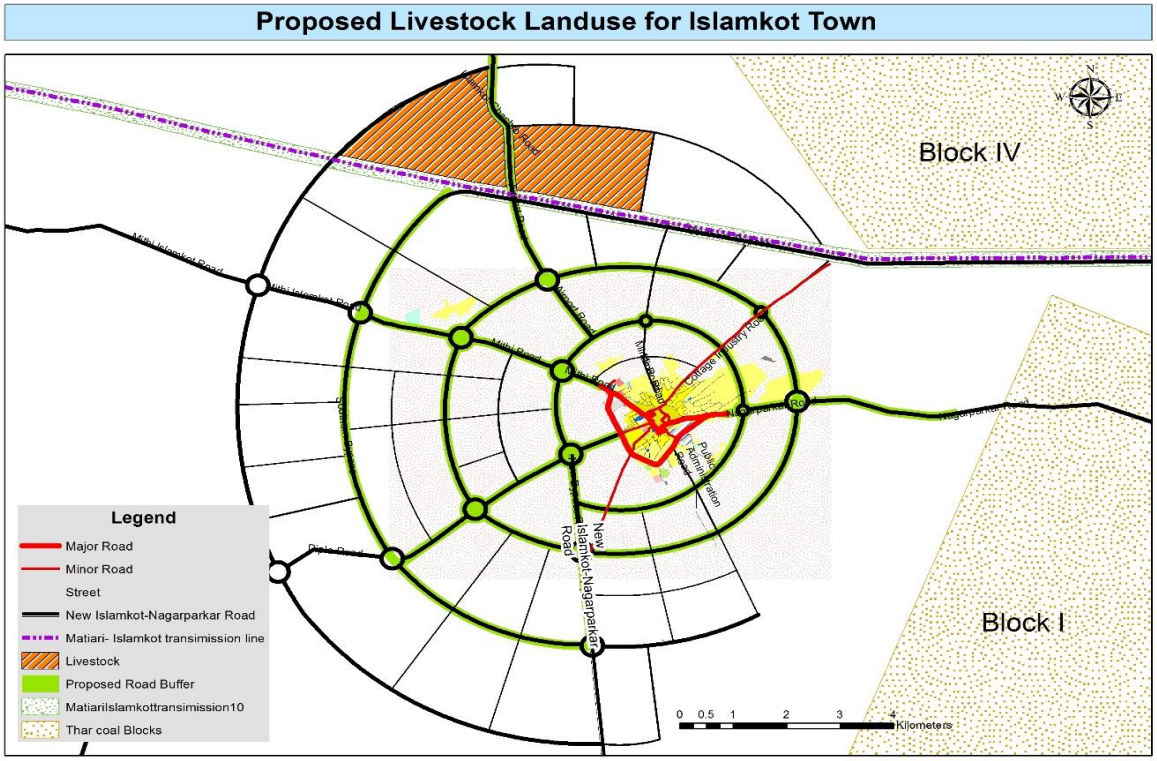


Figure 9-3: Livestock of Islamkot Town

9.2.5 Strategic Development Plan

Water is scare in Tharparkar District, if the water problem is solved, there is a huge potential for livestock in the region.

- **Long Term Plan**
  The proposed Long Term Plans include:
  - Enhancement of Livestock Production and Productivity through strategic deworming and vaccination.
  - Establishment of model livestock farms linked with improved supply chain and value addition.
  - Establishing new cattle & dairy farms that lead to increase in number of cattles and quantity of milk.

- **Short Term Plan**
  The proposed Long Term Plans include:
  - Improving the production performance of livestock in District through manipulation of different minerals and feed supplements.
  - Provision and Enhancement of Veterinary Services.
  - Need for extension services in private sector
  - Local publicity and awareness

- **Rehabilitation of Veterinary Hospital**

  In addition rehabilitation of veterinary hospital is also proposed, while larger facility of veterinary services could be accommodated outside the core area within livestock zone.

9.3 Mining

In Mining sector Tharparkar District is rich in Coal and Granite stones which has provided a solid base for its economic development. Thar Coal Deposits of 175 billion M Tons are potential source for mining.

Granite rock foundations found in Nagarparkar region of Tharparkar which is generally famous as Karoonjhar Mountain. It is estimated that 3.6 million tons granite is available at 35 pockets spreads over 125 sq: kms. It is beautiful and costly stone of brownish colour. But due to lack of communication facilities it is taken out in limited quantity.

9.3.1 Issues

Specific measures are needed for developing & exploring Coal mines and developing & increase productivity of granites/marble for commercial use and export.
Lack of Communication facilities that is resulting in limited quarrying capacity.

9.3.2 SWOT Analysis

Strength	Weakness	Weakness	Threats
Mining			
1. Thar coal mining area 2. Plenty availability of Labour force 3. Export opportunities	1. Poor infrastructure facilities 2. un-skilled labour force 3. environment degradations	1. Job opportunity for local population. 2. Increase in Income generation / GDP/ Revenue generation through 3. More international trade 4. Future financial hub of Pakistan	1. Less efficient local markets. 2. Rapid Influx of migration 3. Land grabbing 4. Isolated economy. 5. Water contamination. 6. Investment protection, law & order.

9.3.3 Economic development Plan

Availability of coals for use in power generation will lead to Increase in electricity generation for industrial use. That will result in Increase in revenues and tax collection. Proposed plan include following components.

- Developing & Exploring Coal mines.
- Developing & increase productivity of granites/marble and developing allied facilities

9.4 Industries

9.4.1 Existing Situation

- **Coal Mining and Energy Projects**

  Thar Coal Deposits of 175 billion M Tons are potential source for mining and can be used for electricity generation up to approx. 0.1 Million MW.

Table 9-6: List of Coal Energy Projects

Block	Investment Firm	Total Coal Potential of Block (Bn Tons)	Power Projects Initiated / Planned MW	Expected COD
Block-I	SSRL (China-Pak)	3.657	2X660	Not yet implemented
Block-II	SECMC	1.584	Phase-I: 2X330 Phase-II: 2X330 Phase-III: 4X660	2018 2019 2021
Block-III	Asia Power UK	2.007	2X660	2019-20
Block-IV	Harbin Electric China	2.572	2X660	2019-20
Block-V	UCG Project	1.394	2X50 Phase-I: 8-10 MW	
Block-VI	Oracle Oilfields	1.423	2X330	2019-20
	Total	**12.637**	**6040 MW**	

Source: Thar Coal Presentation, Thar Coal & Energy Board, Government of Sindh.

Currently the work in Block-II is in full swing and phase-1 of SECMC will be completed and start producing 660 MW electricity. As predicted by the Coal Energy Board if projects in other blocks are also completed total electricity production can reach to 6040 MW by end of 2020.

9.4.2 Other Industries

Presently there is no heavy industry except Thar coal power plant in process of establishment although district is rich from mineral resources. Heavy Coal and Granite deposits are identified providing a base for industries in future. Therefore, there is great scope for certain manufacturing industries like Ceramic, Bone crushing, Marble, gowar-gum, Storage & warehouses, Crush Pant, Bricks/Blocks. Coal Tar Refinery, soda ash caster industry and glass industry. Similarly processing and polishing of granite & marbles.

9.4.3 Strategic Development Plan

- Sufficient market infrastructure to ensure optimal value addition
- Development of Industrial Estates / Apparel Park / Special Economic Zone in District
- Customized lending and micro financing to small industries
- Heritage saving through empowerment of artisans for development of handicrafts

- Provision of vocational training and employable skills to the unemployed youth of the district
- Support industrial development.

9.4.4 Recommendations

- Provision of infrastructure for establishment of new industries.
- Enhancement of colonization in SIEs through provision of missing facilities
- Modernize and revitalize the service sector.
- Development of efficient marketing infrastructure.

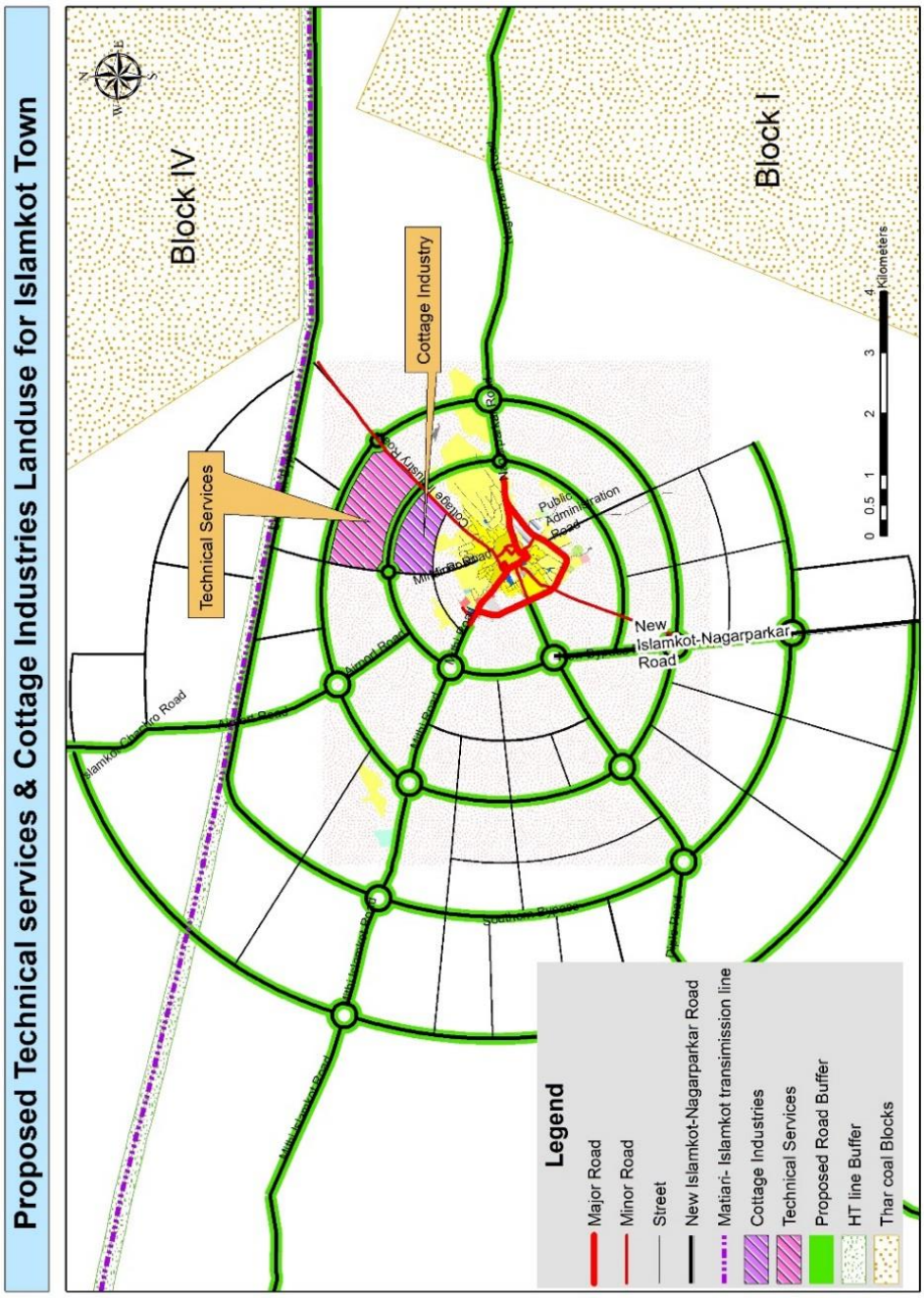


Figure 9-4: Proposed Landuse for Services / Cottage industries of Islamkot Town

9.5 Trade and Commerce

9.5.1 Existing Situation

It is envisaged that the coal extracted will not only be used in power plants installed in Tharparkar but also be transported to other parts of country as well as export purpose e.g. the Lucky Power Plant planned at Port Qasim will be based on Coal extracted from Thar Coal Field.

Bazaar Area

In Islamkot the main commercial areas are Shahi Bazaar and Lohana Paro Bazaar in the core town. The Mithi Road comprises of all major activities i.e. shops, educational institutes, government offices, banks etc. Tameer Bank Chowk in the core urban area is the most busy and congested junction / intersection, which offers mostly religious and commercial activities.

In the commercial area, due to unplanned growth of business sector, even pedestrians movement during peak timings is difficult. Congestion is basically due to haphazard vehicles parking in peak hours, narrow road widths, road side encroachments, on-street parking; un-authorized 4x4 Jeep and car stands, poor physical and geometric condition of roads, open drainage system and lack of enforcement of traffic rules.

The area for New CBD (financial district) has been located near Thar Lodges as per existing trend of commercial development in westward direction. In continuation Future CBD is also proposed in further west to fulfill needs of future development, which will integrate a great deal of financial, business, culture and service institutions, and lots of supporting facilities, such as business office buildings, shops, hotels and apartments, etc., with perfect and convenient traffic, communications and other infrastructures, favorable economic development environment and places which are convenient for commercial activities. Among other things, corporation headquarters, financial centers and specialized production service are three functional structures of the CBD.

9.5.2 SWOT Analysis and Need Assessment

Trade & Commerce			
Strength	**Weakness**	**Weakness**	**Threats**
1. Large number of local skilled artisans available. 2. Progressive entrepreneurship available. 3. Strong financial services.	1. The failure of PPP trouble for locals and government. 2. Un-planned local business activities. 3. Lack of infrastructure 4. Dependent on regional market products due to lack of local production 5. Unplanned growth of business sector along inner city streets 6. Gave birth to encroachments.	1. More opportunities for public private partnership. 2. Support to local economy. 3. Home grown handicrafts can be promoted through proper exposure to export market. 4. Large number of business interest groups. 5. Bazaar market & Industry needs to be guided and assisted with incentives.	1. Security measures required. 2. Inflation.

9.5.3 Need Assessment

- For above purpose, efficient transportation of imported goods i.e. plants and equipment for power plant and construction material i.e. cement and steel from other areas / districts would be required.
- The coal exploitation and power general will lead to the establishment of several industries. This will lead to a chain economic activities including import of raw materials and export of finished goods to other regions and other countries.
- It will be important to pre-empt the infrastructure requirement and provide necessary facilities in a timely manner.

9.5.4 Strategic Development Plan

- Establish strategic storage through construction of cold storage / Godowns for agro products.
- Establishment of Cottage and technical services to the Northern Side of Town to boost local product like handicrafts and Dairy products
- Establishment of Whole sale Market Near Chachcharo Road
- Encourage Local Private Investors by giving them subsidies.
- Market and logistics should also be added to enhance trade and commerce.
- Livestock and dairy sector needs to encourage and facilitated.
- Rehabilitation of Slaughter House
- Provision of parking for existing commercial areas

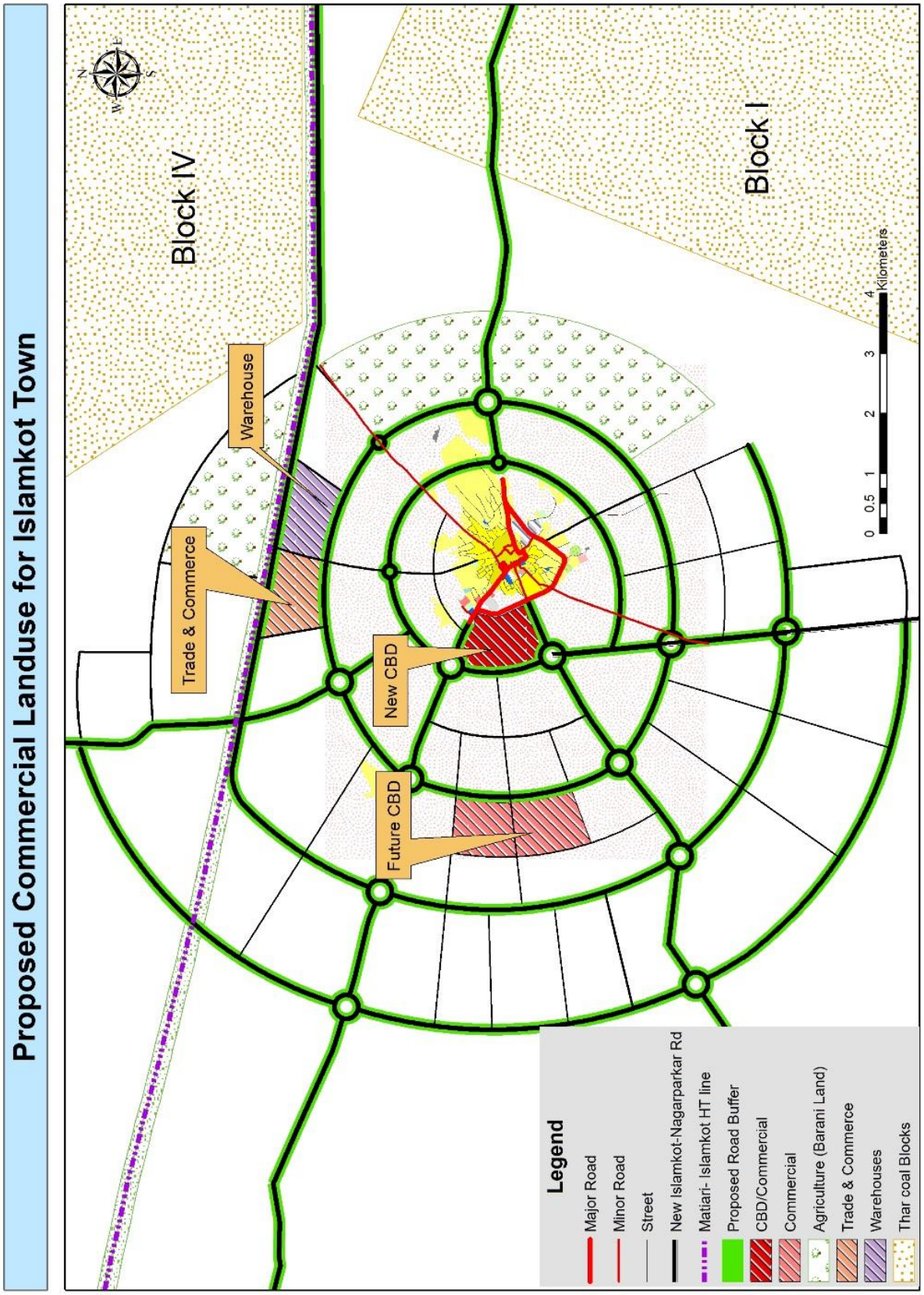


Figure 9-5: Proposed Landuse for Trade and Commerce Islamkot Town

9.5.5 Immediate Action Plan for Core Urban Area

The following are the commercial proposals for immediate action plan:

9.5.6 Rehabilitation of Commercial Area

The existing commercial corridors should be restricted with retail shopping to avoid wholesale activities in core area, as wholesale markets generate more heavy traffic due to goods loading and unloading in bulk. Likewise old residential area it also required to define property line, façade up gradation and provision of services. The parking areas will be marked out with charged parking system to generate revenue; in order to provide organized parking and to make TC self-reliant for maintenance. All shopkeepers will be intimated to limit commercial activities in their premises and avoid encroachment of pedestrian space, parking and streets / roads. In addition, TC will provide all required services for which shopkeepers will pay accordingly.

PREPARATION OF DEVELOPMENT MASTER PLAN FOR ISLAMKOT TOWN						
		PROPOSED PARKING AREAS				
S.No	Area / Locality / Address Major Roads	Area (acre)	Area (sft)	Unit	Rate.	Total Amount
1	Shah Abdul Latif Parking Area Islamkot	**0.55**	23,958.00	sft	1,000.00	23,958,000.00
2	Main Old Town Committee Road Commercial Area Parking	**0.79**	34,412.40	sft	1,000.00	34,412,400.00
						58,370,400.00
					Total PKR Rs. Million	**58.37**

Note:

1. Parking Facility construction work includes at designated areas;

***** Earth work at site.
* Surface of pavers for last layer.
* Kerb stone cover at the edge for vehicle stoping at boundary wall.
* Water Supply, Sewerage and Self Surface Drain at Sites.
* Trees and Landscaping with plantation as per site requirement.
* Storm Water Drainage system.
* Public parking facility users need base toilet facilities.
* Seating facility with one stop shop.
* Vehicle movement signs on road and boards.

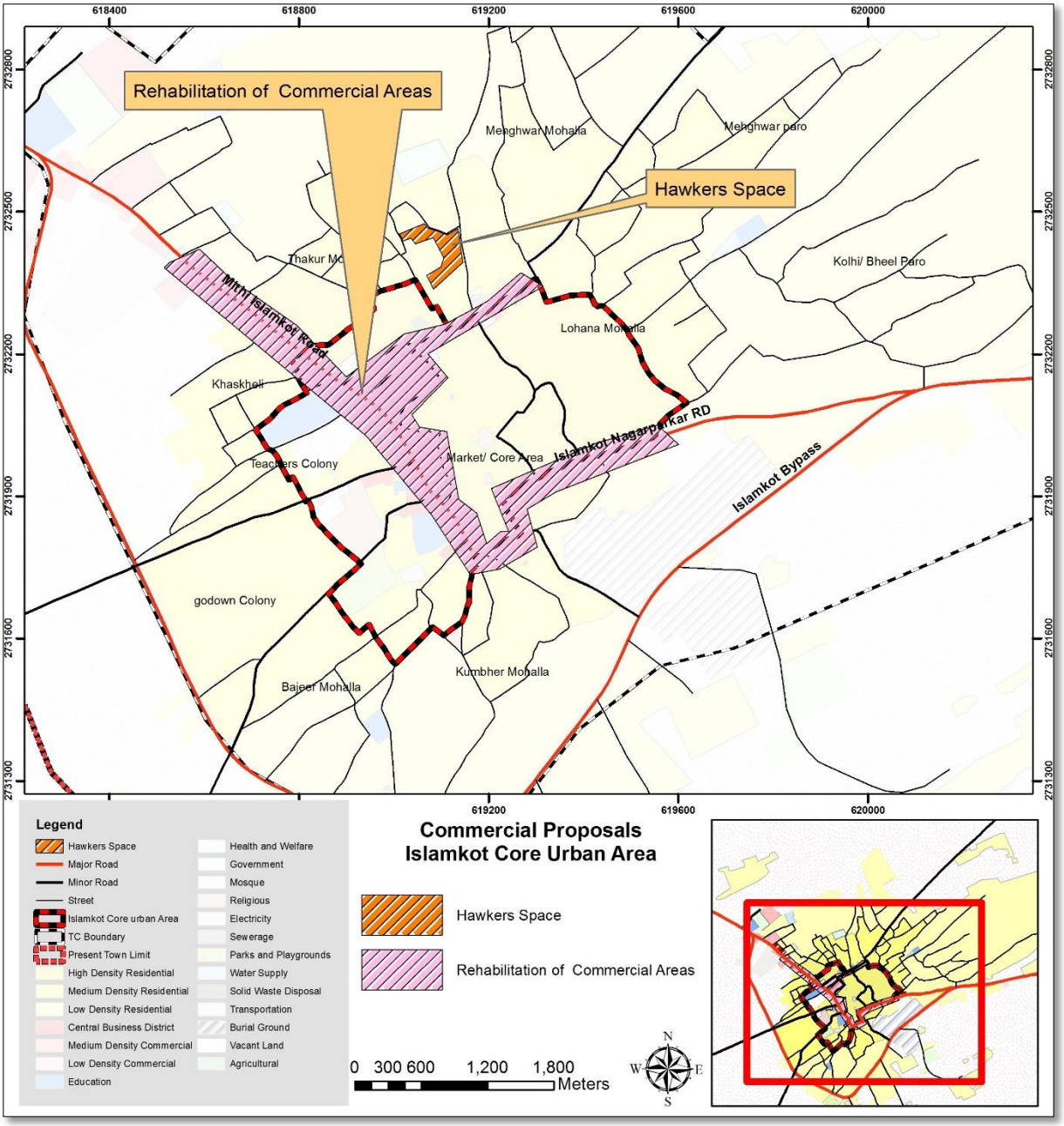


Figure 9-6: Rehabilitation Proposal for Commercial Core Urban Area of Islamkot Town

10. ROLE OF WELFARE ORGANIZATIONS/NGOS AND MICRO-FINANCE

10.1 Welfare & Non-Government Organization (NGOs)

10.1.1 Existing Situation

Welfare organizations and NGOs in Tharparkar play an important role in economic and social assistance to the poor section of population. Thar Foundation` has been setup in collaboration with SECM and companies engaged in Thar coal projects, together with the Government of Sindh, for the betterment of the people of Tharparkar through graduated and sustainable interventions in the fields of education, healthcare, livelihood, infrastructure, social preservation and disaster management. Many schools and health units are established near Islamkot Town for people serving in coal mining and coal projects.

Moreover, the vision SECM and Thar Foundation is to support local Thari youth in developing their skills in various technical and non-technical fields. The Company has also initiated similar training programs in masonry, electrical, HVAC, mechanical and plumbing courses with leading organizations such as Hunar Foundation and Amantech. Training to selected drivers are provided to attend heavy vehicles driving training course at National Logistics Cell, Dina and after qualifying entry requirements they will be offered employment at SECMC's Thar Coal Block II.

10.1.2 Strategic Development Plan

Activities of Welfare organizations and NGOs should continue with assistance from provincial government and mining companies.

Proper monitoring by regulatory body in the economic and social areas which would ultimately improve the standard of living of the people.

Issues for the development of towns have been tackled by linking with "Urban Income Enhancement Program" which emphasizes in establishment of "Urban Economic Cluster" focusing on:

- Small Enterprise Development,
- Vocational training & skill development and
- Encouraging Women Force for establishing handicrafts and cottage industry

ENVIRONMENTAL SETTING, DISASTER AND CLIMATE CHANGE

11. ENVIRONMENTAL SETTING, DISASTER AND CLIMATE CHANGE

11.1 Environment

11.1.1 Existing Situation

According to the Seismic zoning map of Pakistan (2015), District Tharparkar can be divided into 4 zones. Northern region of Tharparkar lies in Zone 2A, middle region lies in zone 2B, lower region lies in zone 3 and Southern most region lies in zone 4. The 26th January, 2001 earthquake of magnitude 7.9 jolted the entire Tharparkar district resulting in several injuries and numerous homes were completely destroyed and damaged.

The average annual rainfall of the area is 225mm. This amount of rainfall is generally received during a few days between July and August each year. The sand dunes with sand accumulations of up to 50 to 90 meters are studded with depressions. Flooding does not occur as the sand absorbs the normal precipitation. In case of cloud burst however there is excessive rainfall in a short period of time. There is flooding under the circumstances as was the case in July and August 2011. At each such event the sharecroppers do not get adequate return from the agricultural fields.

The southern part of district is a flat land and part of Rann of Kutch. It consists of a number of salt lakes almost at the sea level with heavy salt deposits. Generally, concentration of such salt lakes usually exceeds the sea water concentration and the water is not fit for human consumption. These are found mostly in the southern belt of the district.

City Drainage System:

The drainage system of Islamkot city is a network of shallow open channels running along the main roads and narrow streets of neighborhoods, receiving sewage water from houses and transferring it to the wastewater collection station.

Sewage water sent to wastewater collection station is passed through strainers to separate solid wastes such as wood, plastic bags and scraps etc. The wastewater is then stored in large underground tanks and pumped to a designated pond outside the city through pipeline. Here the waste water of Islamkot city collected and left to dry through evaporation.

11.1.2 Water Supply

There are two water supply sources in Islamkot:

Water from Naukot branch is supplied to Sehri Minor. Water from Sehri Minor is distributed to Mithi & Islamkot through 12" dia meter pipe & chlorinated before supply. The quantity of 10 Million Gallon fresh water is pumped every 10th day from Naukot for both Islamkot & Mithi, 5 Million Gallon for Mithi, 3 Million Gallon for Islamkot & remaining 2 Million Gallon for surrounding villages, located along main supply line. There are six underground water reservoirs in the Islamkot Town, from which water

is distributed through three pumping stations. Cumulative capacity of underground reservoirs of canal water is about 0.522 million gallons.
There is a huge difference between supply of canal water and storage capacity of existing infrastructure, that's why town is not having uninterrupted supply of sweet water.

III. Reserves Osmosis Plant: There is one RO Plant present in Islamkot with the capacity of 1.5 MGD, due to lack of funding, efficiency of RO plant is decreased by 0.15 MGD.

i. Current Water Quality

1. Groundwater: As per analysis of **groundwater quality**, it is observed that the groundwater is not fit for human consumption as the high TDS level, Total Hardness, Fluoride, Chloride, Antimony, Cadmium, Lead, Mercury and Nickel levels are higher than the SSDWQ limits. Also the water is highly bacteriologically contaminated. For Islamkot, it is recommended that surface water resources to be utilized to cater for the future demand of this town, as the quality of surface water is sweet and good. RO plants solutions are not sustainable due to its high cost of production. It may be noted that per capita demand of Islamkot is taken as 30 gpcd from surface water and the remaining demand will be met by brackish water which will be treated by RO process for future needs.

2. Surface water & RO plant: As per surface water quality analysis of supplied water quality for drinking purposes, it is observed that the water is not fit for human consumption it is bacteriologically contaminated with total coliforms, fecal coliform and E-Coli. This is due to the fact that the tanks of water storage are not cleaned and contained bacterial / fungus growth. However, with the addition of chlorine, to the supplied water, it can be consumed for drinking.

Food Security Situation

Due to the desert and rain-fed lands, the production of food and cash crops is negligible in this district. Wheat and Food availability not only depends on the obtainability of wheat but also depends on other cereals like maize etc. As far as cereal food is concerned, this district is extremely deficit in production for its food requirements. In addition to cereals, animal based food (meat, milk, milk products) availability is also important for total food availability, which is surplus in the district. Drought due to little monsoon rain, lack of measures to ensure the food security, lack of fodder and disease among the livestock resulted in loss of large number of animals. Combining both the crop based and animal based food production, district Tharparkar is extremely deficit in food production[29]. Trade and economic activities of this district ensure the availability of food through imports from neighboring districts.

11.1.3 Issues and Problems

i. **Water supply**: Water required by the projects may reduce availability to other users depending on it source. Possible sources include water from external sources or water arising from dewatering of the open pit. The affected users may include humans, livestock and ecology.

ii. **Wastewater Discharge:** Wastewater will be generated during the process which will be discharged after treatment to water bodies.

iii. **Groundwater drawdown:** The cone of groundwater drawdown created by mine dewatering associated with the current Project is predicted to extend approximately 15 to 20 km from the center of the site. This groundwater drawdown zone may be increased by future development of the other exploration blocks to an extent that the cumulative impacts associated with reduced groundwater availability may become nationally or internationally significant by extending to Rann of Kutch

iv. **Industrial waste:** There will be some industrial type solid wastes (hazardous and inert) associated with the power station. Inert material can be disposed of in any authorized landfill site or possibly back into the pit, however in absence of Hazardous waste designated area, its disposal may be challenging.

v. **Air emission:** The projects will generate gaseous and particulate emissions, in particular sulfur dioxide, nitrogen oxides, PM10, PM2.5 and carbon dioxide. The volume and quality of emissions are controlled by the choice of power generation technology. In addition, there are abatement controls that can be used on the stack to capture emissions prior to release to the environment.

vi. **Dust:** High levels of dust are a naturally occurring phenomenon in the vicinity of the Project; however to prevent contamination of the atmosphere with coal dust, water spray system will be located at strategic locations. Conveyer belts will be in enclosed galleries.

11.1.4 Policy Guidelines[32]

- Enhancing role of local governments in sustainable management of natural resources
- Conservation of biological diversity, protection and sustainable use of indigenous flora and fauna
- Sustainable Management in Reserved, Protected, Flora and Fauna
- Promotion of indigenous species
- Increase the efficiency of surface drainage.

11.1.5 SWOT Analysis and Need Assessment

Strengths	Weaknesses	Opportunities	Threats
ENVIRONMENT			
Land			
1. Tharparkar desert is not barren and dry, its flora and fauna flourish during the monsoon season,	1. Unplanned land uses 2. Illegal & Temporary (30 years) lease issues	1. If treated through appropriate urban land management principals & standards, can be transmitted	1. Land shortage for new development. 2. Slum formation

[32] National Forest Policy 2010

Strengths	Weaknesses	Opportunities	Threats
transforming its sand dunes to rolling green hills. 2. Rural rich fertile agriculture land that produces quality crops.	3. Poor administration by agencies monitoring urban growth of the city.	into mixed land uses and strong activity centres. 2. May increase productivity cultivated at full strength. 3. Availability of plenty land for future development	3. Contamination of land in un-irrigated areas. 4. Land grabbing
Fresh Water Bodies			
1. Seasonal dams	1. Use of hard water, results in various diseases like T.B & skin disease etc.	1. Temporary water bodies can be used for fish farming.	1. Contaminated water is a serious threat for human health. 2. Standing water gives birth to diseases.
Urban Area & Areas Suitable for Urban Development			
1. Plenty of government Land is available for future development within the town boundary.	1. Uncontrolled land sale prices 2. Unplanned growth inside town.	1. Mixed land uses may create activity centres. 2. High density will overcome housing shortages 3. Revenue generation	1. Land grabbing 2. Slums 3. Unplanned growth 4. Private sector may increase the cost of services.
Risk & Hazard Prone Areas			
1. Risk & Hazard Prone Areas can be used for disposal of industrial toxic wastes & garbage disposal. 2. Risk & Hazard Prone Areas can be used as a landfill site.	1. Urban areas exposed to flood due to low lying from the adjoining road. 2. Lack appropriate measures for flood water control. 3. District Tharparkar is vulnerable to droughts and abnormal rains	1. Agriculture land near flood prone areas can be used for cultivating the crops that need more water 2. Temporary fish breeding ponds could be created to boost fisheries sector.	1. Human safety 2. Livestock safety 3. Cultivated land

11.2 Strategic Development Plan

- **Long Term Plan**
  - Ensuring environmental sustainability

- Restoration and maintenance to preserve ecological cycles, functions and services of environment
- Rehabilitate degraded ecosystems and create environmental awareness
- Develop and implement policies that integrate the objectives of conservation and development to reduce pressure and protect environmental values and conserve biodiversity
- Achieving sustainable development, while overcoming environmental challenges such as land degradation, watersheds and deforestation, waste management and pollution control, and climate change

- **Short Term Plan**
  - Alleviate poverty through creation of forest based income generating opportunities
  - Fostering public-private partnerships
  - Drainage can be improved on many sites and is the first thing to consider once a waterlogging problem has been identified. Options might vary from shallow surface drains (ie. Spoon- and 'W'-drains) to more intensive drainage using wide-spaced furrows, to the intensive drainage form of raised beds
  - Need of Permits to discharge waste and pollutants into the environment;
  - The requirement for Environment Impact Assessments to be binding on all parties including government;

11.2.1 **Priority Projects**

Due to coal exploration in Thar Coal field area which is near Islamkot, environmental issues are yet another critical issue which will arise in few years. Keeping an eye and fore seeing the magnitude of exploration, currently number of trees and vegetation is negligible in the area. The following is the proposal for better environment on immediate bases:

- **Tree Plantation**

Considering the dry and hot environment, it is suggested to enhance tree plantation with urban forest. Thus local trees like Neem (Azadirachta Indica) and Ber (Ziziphus Vulgaris) would be preferred to add beauty in the core urban area and better environment.

11.2.2 **Project Benefit**

Environmental upgradation with respect to and for the living population for better lifestyle.

11.2.3 **Implementing Authority**

Government of Sindh, Islamkot TC, Environmental Department.

Estimate Cost: 200 million approx.

Sr. No.	Project Name	Estimated Cost In Millions	ADP	Non ADP	Status	
					Short Term	Long Term
Environmental Up-gradation						

# 1	Beautification and urban environmental up-gradation with respect to the tree plantation and green spaces.	200.00	-	Non ADP	**Short Term**	-

11.2.4 Immediate Action Plan

The following is the proposal for better environment in core urban area:

- **Tree Plantation**
  Considering the dry and hot environment, it is suggested to enhance tree plantation with urban forest. Thus local trees like Neem (Azadirachta Indica) and Ber (Ziziphus Vulgaris) would be preferred to add beauty in the core urban area and better environment.

11.2.5 Economic Development Plan

Land use and Environment Control:

- Master Plan of the Town with land use procedures,
- Balanced urban growth by using zoning byelaws of concerned jurisdiction.
- Exercise control over the environmental hazards
- Rehabilitate urban area with new settlement and regularizing Katchi Abadis

11.3 Disaster Risk Management

11.3.1 Existing Situation

Islamkot is one of the main city of Tharparkar District and THQ Town of Islamkot Taluka. Thar Coal fields are located near the town. The most frequent and damaging disasters are the drought.

a) Floods / Rains.

District Tharparkar is adjacent to district Badin, which is highly prone to the flooding in the Left Bank Outfall Drainage (LBOD). According to PDMA Sindh, district Tharparkar has one vulnerable point with respect to LBOD and that is Spinal Drain. Dhoro Puran is also a vulnerable point of the district which can cause flooding.

District Tharparkar was severely hit by rains/floods in 2011. The district falls under the category of very low risk district, as categorized by PDMA Sindh.33 But in 2011 rains/floods, the extent of damage was severe as assessments showed that all the 2,284 villages/settlements of 44 union councils were affected. A population of 907,179 (67% of the total population) persons was affected and there were 28 casualties and 9 injuries. In total, 178,356 houses were damaged. Geographically (all talukas and their UCs) the whole district was inundated (since the major part of the district is desert area so the affected area was only 51,782 acres) and 89 percent of the sown area was affected due to these rains/floods.

b) earthquakes

District Tharparkar is one of the oldest districts of Sindh. In 2001, the district along with the bordering district of Badin was hit by an earthquake. Due to this earthquake, 12 people lost their lives and 115 persons were injured. Besides, 1,989 houses were destroyed and 43,643 houses were partially damaged. The public infrastructural loss was counted up to 1,406 buildings. The financial value of the overall loss was 2.4 billion rupees.[34] A decade after the earthquake, the district was again hit by heavy rains in 2011.

c) droughts

District Tharparkar is prone to disasters like droughts, flash floods, desert storms and earthquakes. Storms are frequent but the intensity of droughts is much more in damaging the socio-economic fabric of the district.

Tharparkar district faces a severe drought after every thirteen year as the last three decades have reported this pattern. The famine like drought occurred in 1987, 2000 and in 2013. Between these periods, several occurrences of drought have been reported too but these three droughts are considered to be the worse.
The failure of monsoon rains, since Nov-2013, resulted in severe shortage of food, fodder and water.

The destruction of food markets infrastructure, e.g. road, transport networks, go downs, shops market place had affected the business places, local markets (mandi). In result, the operational capacity of these markets (transporters, processors, wholesalers and retailers) had direct impacts on economy, prices and availability of food products ultimately resulting food shortage. The said situation caused socio-economic disability of food supply chain in district during and after flood season. Severe floods can not only cause destruction to heath care infrastructure but also affect health indicators of the affected population

d) seismicity

[33] Flood 2010, Disaster Management Apparatus in Sindh, PDMA Sindh
[34] Sindh Rehabilitation Department. (2012). *Sindh Provicial Monsoon/Floods Contingency Plan.* Karachi: PDMA Sindh

According to the Seismic zoning map of Pakistan (2015), District Tharparkar can be divided into 4 zones. Northern region of Tharparkar lies in Zone 2A, middle region lies in zone 2B, lower region lies in zone 3 and Southern most region lies in zone 4. DHQ Mithi lies in Zone 2B which corresponds to 0.16 to 0.24g PGA.

11.3.2 Issues and Problems

- Low levels of risk awareness and knowledge.
- Development not "risk conscious" and DRR not yet effectively integrated.
- Insufficient DRR capacity at all levels of society.
- The involvement of the private sector in DRR is as of yet negligible.
- **FOOD SECURITY :** The destruction of food markets infrastructure, e.g. road, transport networks, go downs, shops market place had affected the business places, local markets (mandi). In result, the operational capacity of these markets (transporters, processors, wholesalers and retailers) had direct impacts on economy, prices and availability of food products ultimately resulting food shortage.
- **Health:** Severe floods can not only cause destruction to heath care infrastructure but also affect health indicators of the affected population.
- **EDUCATION:** DUE **TO** the floods/rains of 2011, 269 school facilities were damaged, out of which 57 were fully destroyed and 212 were partially damaged. Also, heavy rains affected the school going children. Due to the damages to the schools, houses and roads; education of 21,520 students was affected (Girls: 9,254, Boys: 12,266). Teachers numbering 717 were also affected.
- **LIVESTOCK**: Beside loss to natural resources, crops, agricultural lands and human life and activities, livestock's life is always endangered by droughts. Thus, alternate arrangements for emergency response facilities like nutritious fodder, vaccines and livestock sanctuaries must be established to prevent the migration or demise of livestock during droughts
- As weak and diseased livestock migrate with their owners to barrage areas, a trend of collapse in livestock prices has also noticed, with a healthy goat that sold at full price, once weakened by drought, normally worth only 35% of its original price.

11.3.3 SWOT Analysis and Need Assessment

Drainage & Flood Control			
STRENGTH	**WEAKNESS**	**OPPORTUNITY**	**THREAT**
1. Most of the town is served by combined drain and sewer system.	1. Open drain on street. 2. Improper channelization of drains 3. Over flow of storm water drains 4. Lack of interest among stakeholders	1. The city's old drainage system needs revival through cleaning. 2. Flood protection embankments should be enhanced up to greater extent to provide	1. Medium level flood disaster threat to local communities. 2. Open and overflowing drains have impact upon human health and

	involvement in disaster relief activities. 5. Poor administrative control for operating existing drainage system of the town. 6. Depression areas causing permanent ponding. Reliance on sewer for flood/storm water	maximum protection to surrounding villages 3. Complete removal or treatment of land where temporary ponds have been formed in main town area.	give birth to epidemic diseases.

11.3.4 Policy Guidelines[35]

- Provide training and awareness courses to district, municipal and local authority personals dealing with management of hazard prone areas
- Develop public awareness materials (e.g. posters, brochures, booklets, videos).
- Update media about its role in disaster risk management process and how awareness through media can be broadcasted to local community
- Arrange and conduct need assessments of damages / losses.
- Ensure application of proper mechanism for evacuation and relocation of affected community to safer places.
- Establish Relief Camps with necessary arrangements.
- Initiate relief and rescue activities in their respective areas with the help of all stakeholders which also include provision of shelter, food, medicines etc. to the affected communities as well as to IDPs who are settled in makeshift Relief camps
- Arrange coordination meetings with health units.
- Mobilize entire health network functioning in the district for situation analysis and need assessments.
- Arrange mobile teams / Mobile Medicine Units for pre-medication of affected communities in all near and remote areas.
- Delegate responsibilities for regular inspection and maintenance of irrigation channels and drains.
- Coordinate and communicate with DDMA.
- Identify and strengthen the vulnerable points in the banks of all canals and drains running through the district.
- DRM plans and initiatives need to be based upon assessments that identify the nature and degree of vulnerability or risk (including the identification of particularly vulnerable groups), that allow prioritizing problems or geographical areas on a rational basis and that inform the design of appropriate and technically sound DRM interventions.
- DRM initiatives need to build upon existing community organizations and relevant coping mechanisms to be sustainable.
- Clearly defined division of roles and responsibilities between different layers of government.

[35] National Disaster Risk Reduction Policy 2013

11.3.5 Strategic Development Plan

The aim of the policy is to advocate an approach to disaster management that focuses on reducing risks – the probability of losing one's life or health, assets and livelihoods.
Some of the objectives in this aspect includes

- Provision of the right to timely emergency care by providing quality emergency service as per international standards.
- Creating an integrated District and provincial level capacity to identify and monitor vulnerability and hazard trends including potential climate change impact.
- Strengthening an integrated disaster preparedness and response capacity from the local to the national level.
- Promoting development planning that considers and addresses disaster risks alongside environmental and climate change concerns.
- Strengthening capacity at national and provincial levels to facilitate and provide support to the implementation of DRM policies, plans and programs across sectors and in high-risk areas
- Strengthening Local Level Risk Reduction capacity focusing upon communities, and supportive linkages with Union Councils, tehsils and districts.
- Strengthening the structural and non-structural resilience of key infrastructure and lifelines in Pakistan.
- Develop coordination mechanism with PMD for ascertaining flood discharge.
- Develop mechanism for regulation of water discharge into canals, distributaries and drains before onset of monsoon season.
- Develop monitoring mechanism for inspection of embankments, weak parts of drains, IPs (inspection parts) and NIPs (Non-Inspection Parts) of all irrigation channels.
- Provide necessary medical facilities at relief camps.
- Close coordination and communication with DDMA.
- Depending on the calamity, the D.H.O will declare emergency at all medical points/health facilities.
- Detail of medical/paramedical staff at all points requiring medical health cover during any disaster.

a) Long Term Plan

- There is a need to have clear arrangements that allow the system to switch into emergency mode and mobilize necessary resources in a timely and effective manner.
- There is need to clarify mutual roles and responsibilities (horizontal and vertical) and coordination arrangements in an updated, multi-hazard national response plan that is based upon current legislation.
- The DSM, PPHI shall also be responsible for providing medical cover to the IDPs in the catchment area of BHUs assigned to them particularly, and will perform their due role in supplementing the overall medical cover provided by the District Health Department.
- National risk assessment would identify highly vulnerable districts and be complemented by higher resolution work at local level to diagnose the underlying causes of risk, explore concrete risk reduction options and inform development planning and prioritization exercises and/ or disaster preparedness planning.

- DRR needs to address and involve local level actors in high-risk communities to be effective and produce sustainable results.
- There is need to clarify mutual roles and responsibilities (horizontal and vertical) and coordination arrangements in an updated, multi-hazard national response plan that is based upon current legislation.

b) Short term Plan

- There is a need to set criteria for the identification and declaration of "disaster affected" areas. Disaster declarations may temporarily restrict individual rights (such as property rights or mobility).
- DRM strategies and initiatives need to be based upon clear assessments of disaster risks i.e. a quantitative and qualitative understanding of the underlying causes and vulnerabilities, geographical distribution of vulnerability and hazards , the probability of hazard occurrence and predicted losses.
- Vigilance of drains round the clock.

c) Recommendation

- Ensure smooth flow of water, plugging up of breaches, if any, in the shortest possible time.
- Prompt dewatering of stagnant water from affected and low lying areas of the district.
- The Executive Engineers, HESCO Division shall ensure uninterrupted supply of electricity particularly to municipal services such as pumping stations for draining out rain water from the low lying and slum areas. Shall make arrangements for immediate removal/repair of fallen live wires to avoid any untoward incident of electrocution
- Arrange and provide adequate stock of medicines and medical supplies including Anti-Snake Venoms (ASVs) and Anti-Rabbi Venoms (ARVs), blood plasma, Saline Water, and other medical fluids for victims.
- Arrange medical teams for providing medical cover to the IDPs settled in any relief camp.
- Fumigate the affected areas and areas at risks of spread of any of epidemic disease.
- Ensure that all ambulances are in working order and road worthy conditions.
- Ensure vacant possession of all schools buildings at the time of emergency for setting up relief camps.
- Ensure sanitation and cleanliness as well as clean drinking water facilities wherever possible at all school buildings declared as relief camps through by binding down their concerned Headmasters.
- The creation of an integrated multi-hazard damage loss data-base is therefore a prerequisite for systematic vulnerability and risk monitoring.

11.4 Public Safety

Concerned authorities have not come up with any plan for terrorist's activities / attack to reduce potential threats, incident management, crisis management, business / life continuity and recovery phases.

11.4.1 Possible Terrorist Intensity Places of Islamkot Town

Consultants identified some possible terrorist Intensity places of Islamkot Town on the basis of Crowd and most visiting places by the residents of Islamkot Town, the places are classified according to the given Below table.

Table 11-1: Possible Terrorist Intensity Places of Islamkot Town

S. No	Landuse	Terrorist Threat
1	Education	Secondary Schools/College/ University
2	Health	BHU/Hospitals/Medical Collages
3	Commercial	CBD/Mandi/Shopping Mall
4	Religious	Eid Gah / Shrines/Minority Religious Places/Imam Barghas
5	Government Offices	District Court/DCO Office/SSP Office/District Jail/Police Head Quarter/LEA
6	Recreational	Tourism Places
7	Transportation	Bus Stop/Railway Station/Airport

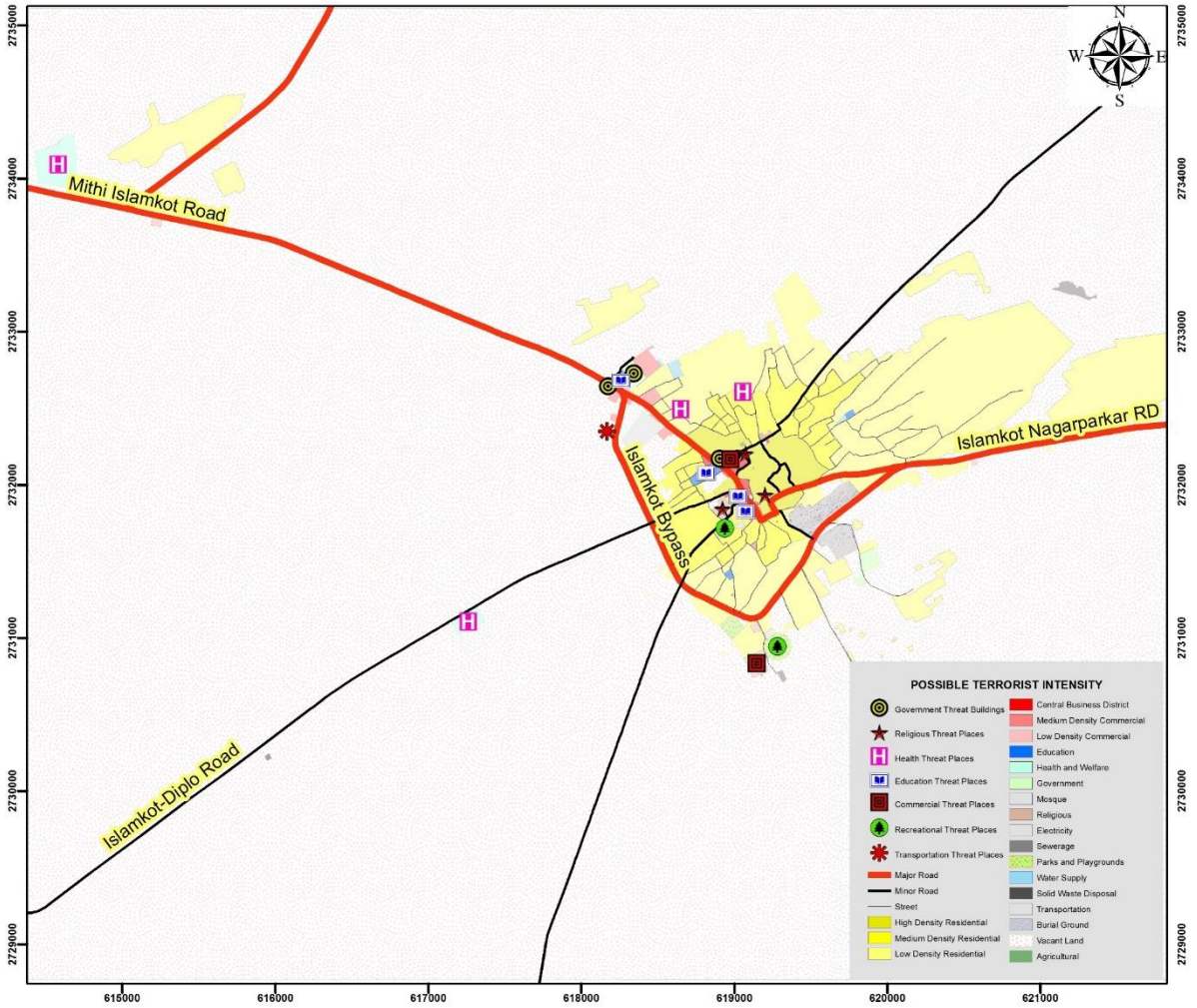


Figure 11-1: Crowded Places of Islamkot Town

11.4.2 Proposed Strategy to Counter Potential Threat Measures

Proposed Strategy for Protecting Crowded places from Terrorism is based on strong, trusted partnerships between all levels of government and those responsible for crowded places. It aims to make crowded places as resilient as possible to terrorist attacks while preserving our use and enjoyment of these places. A nationally consistent approach will help achieve this objective in an effective and efficient manner.

The Strategy involves four core elements which provide a structure for building a consistent national approach to protecting crowded places that can be applied flexibly.

- **Building Stronger Partnerships**
- **Enabling Better Information Sharing and Guidance**
- **Implementing Effective Protection Security**
- **Increasing Resilience**

I. Building Stronger Partnerships

Protecting crowded places from terrorism is not just a job for governments, it is a responsibility shared by the private sector and the community. The success of this Strategy rests on sustainable and strong partnerships between all governments and owners and operators of crowded places, including businesses and local governments.

Trusted relationships between governments and owners and operators of crowded places are fundamental to the effective implementation of this Strategy. The Crowded Places Partnership sets out a range of mechanisms to support this engagement, but none of these replace the ability for all police and intelligence agencies to engage directly with owners and operators when required.

II. Enabling Better Information Sharing and Guidance

Protecting crowded places from terrorism in an evolving threat environment requires trusted and routine information sharing and guidance between all governments, industry sectors, business, and communities.

It is a key responsibility of government to ensure those who own and operate crowded places have access to high quality threat information.

The flow of information between governments and those responsible for crowded places is not one-way. Owners and operators should be willing to share information, advice, and lessons they have learned with governments and their peers. Building a strong and inclusive security culture is a responsibility shared by all.

III. Implementing Effective Protection Security

Implementing protective security measures can be a complex process which, if done incorrectly, can be costly and ineffective. Owners and operators have a responsibility to undertake a risk assessment and/or vulnerability analysis of their crowded place, implement the appropriate mitigations, monitor them for effectiveness (including through audits), and review them at appropriate junctures.

- **Guidance**

  Before owners and operators make decisions about protective security measures they must first understand how attractive their location may be for a terrorist to attack. Crowded places encompass a significant range of different locations, venues and businesses. They differ substantially in size and have different levels of risk to manage.

- **Layered Security**

  The goal of layered security is to reduce the likelihood of a successful terrorist attack on a crowded place by building multiple layers of redundancy into a site's security architecture.

  Layered security describes the practice of securing a site by applying multiple layers of complementary protective security measures.

  The following represents some examples of protective security measures that can be used within each layer. Some security measure can strengthen multiple layers. For example, the effective use of security officers can help to delay, detect, deter, respond to, and recover from an attack.

Deterring a potential terrorist attack can involve the presence of obvious physical and electronic target hardening measures, including:

- Fencing indicating demarcation;
- Perimeter security lighting;
- Warning signs and notices;
- High visibility security patrols;
- CCTV cameras;
- Perimeter vehicle security barriers.

Detecting a potential terrorist attack can occur through visual detection and alert systems, including:

- CCTV cameras;
- Electronic intruder detection systems;
- Reporting of suspicious behaviour by security officers, staff, or members of the public;
- Vehicle screening and searching;
- Canine explosive trace detection;
- Screening—x-ray machines, metal detectors, explosive trace detection, and bag inspections.

Delaying a potential terrorist attack can occur through physical counter-measures and other approaches including:

- Security fences;
- Environmental barriers including water features, natural topography, and vegetation;
- Vehicle security barriers and measures to slow the speed of vehicles;
- Pedestrian and vehicle access control points;
- Trained staff interventions;
- Rapid security officer response.

Responding to a potential terrorist attack requires a timely and coordinated security response throughout a crowded place's area of control. Important elements of response include:

- Security staff who can respond quickly and possess the requisite training, competence and equipment to deal with or limit the impact of threats to the location;
- Reliable emergency communication systems throughout the location;
- Comprehensive security plans that are understood by all staff and security personnel, regularly exercised, and compatible with local emergency services plans.

Cost and Proportionality

Security measures can be resource intensive, costly and, if not correctly managed and communicated, can alienate staff and the public and significantly disrupt the day-to-day operations of a crowded place. This is why expert specialist advice is essential and why careful consideration and planning is required before implementing any protective security measures. The following principles should underpin all decision-making:

- It is not possible to protect everything, so owners and operators must **prioritise** the highest risk areas of a crowded place;
- All protective security measures should be **proportionate** to the level and type of threat;
- Security is more **cost effective** when incorporated into the design phase of a crowded place.

Reputation

The success of governments and businesses rests on building and maintaining a good professional reputation. Reputation is prone to serious and permanent damage if owners and operators of crowded places give a less than robust, responsible professional priority to protecting people against attack. Being security minded and better prepared could not only deter an attack, it reassures customers and staff that those responsible for crowded places are taking security issues seriously.

Recovery

Recovery from a terrorist attack is the process of rebuilding, restoring and rehabilitating affected individuals, communities, and physical assets. This process usually begins once an incident has been resolved, continues until disruptions have been rectified, demands on services have returned to normal levels, and the needs of those affected have been met.

IV. Increasing Resilience

Even the most the most robust and thorough protective security plan may not stop a terrorist attack on a crowded place from occurring or succeeding. But what well-considered and tested protective security does is reduce both the likelihood of a terrorist attack occurring and the consequences of such an attack.

Resilient crowded places can do more to prevent a terrorist attack, can reduce the damage caused by an attack, and can recover more quickly after an attack has occurred. Building a strong security culture is central to developing resilience to terrorism and other types of criminal activity.

Other elements of building an effective security culture can include:

- Ensuring that security is a permanent feature of executive decision making and agendas;
- Requiring senior management to demonstrate personal commitment to and compliance with security values and standards;
- Understanding commercial, reputational and legal risk that could result from inadequate protective security measures being in place to prevent or mitigate a terrorist attack;
- Providing staff with clear, succinct and jargon-free guidance about security standards and procedures;
- Promoting good security practice to both staff and visitors by making use of internal communication systems, posters, message boards and newsletters;
- Adopting effective and lawful staff screening processes during recruitment;
- Providing staff training in security practices;
- Exercising all staff in security scenarios;
- Self-initiated security penetration and breach testing;
- Sharing information with staff about security breaches;

Encouraging and rewarding staff for identifying and reporting security vulnerabilities and incidents

11.5 Climate Change Emergency Contingency Plan

11.5.1 District Level Plan

Tharparkar district is prone to floods caused by heavy rainfall.

11.5.2 Broad `Contours of the Plan

- Early warning of approaching weather system will be provided by Pakistan Meteorological Department (PMD) and communicated to the District Disaster Management Authority (DDMA). DDMA is expected to translate weather forecast and flood warnings into usable early warning for vulnerable communities and ensure its timely dissemination to all concerned.
- Threatened population will be evacuated by DDMA.
- DDMA would be responsible for provision of search and rescue, medical and emergency responses.
- Camps will be established at pre-selected sites by DDMA.
- DDMA would be responsible for effective and transparent relief distribution including relief provided by Provincial Disaster Management Authority (PDMA), National Disaster Management Authority (NDMA) and other Humanitarian Agencies.
- All stakeholders would take necessary actions to facilitate early recovery and rehabilitation of affected population.
- In case the district falls short of meeting the humanitarian needs, PDMA will assist by making available the required stocks. In case when disaster exceeds capacities of the provincial government, NDMA will be requested to make available the additional stocks from national reserves, prepositioned across the country.
- When required, Armed Forces may be requested for assistance by PDMA Sindh at any stage, particularly for rescue, evacuation and emergency relief phases. Thus, the DDMA will have to submit the request to PDMA for assistance of armed forces in aid of civil administration.
- Special requirements of Aviation / Naval support by any agency will be coordinated by PDMA.
- Resources of Government Departments and Agencies such as, Pakistan Red Crescent Society and domestic philanthropy may be requisitioned, if the intensity of the situation so entails for an effective response.

11.5.3 Early Warning

a) Pakistan Meteorological Department

- Pakistan Meteorological Department (PMD) has a broad mandate of supporting agro-based economic activities, air and maritime traffic safety, disaster mitigation efforts and disseminating weather forecast to numerous end users. PMD will ensure the following during monsoon season:

- Inform public on the weather forecast and issue warning in case of potential threat like Rainfall.
- Collect rain data on a regular basis, consolidate and share it with all concerned.
- Disseminate flood information to the NDMA/PDMA on a daily basis during flood season.
- Share weather forecasts and early warning information with NDMA, F/G/S PDMAs, and the media on a regular basis in the monsoon period.
- Coordinate with FFC, WAPDA, PCIW, FFD, and SUPARCO in the Monsoon period to generate flood warning where wanted.

Flood Forecasting Division (FFD)

FFD is an affiliated organization of PMD. It disseminates flood early warning and river flow updates to relevant National, Provincial and District Governments and National Response Agencies, especially in the context of Monsoon Season.

Pakistan Space and Upper Atmosphere Research Commission (SUPARCO)

- SUPARCO deploys its satellite imagery capacities for disaster impact mitigation and for early warning of disaster occurrence and trends monitoring. SUPARCO will play the following role during monsoon season:
- Provide remote sensing and satellite maps before and during disasters in order to show their impact.
- Provide remote sensing and satellite maps for hazard risk zones to enable relevant agencies to take measures for minimizing damage to population and property.
- Assist post-disaster damage assessment.

District Disaster Management Authority (DDMA) Response

- DDMAs shall activate District Emergency Operation Centers (DEOCs)
- In the event of a disaster, organize emergency response through the District Emergency Operation Center (DEOC)
- Setup early warning mechanisms and dissemination of proper information to public, prepare district level response, plans and guidelines, establish stockpiles of relief and rescue material; provide information to PDMA on different aspects of Disaster Management.
- Inform/update PDMA regarding the overall situation.
- Organize evacuation on priority basis.
- Conduct initial and subsequent assessment of disaster affected areas and determine the extent of loss and damage.
- Collect information on damage status and promptly plan for the resources requirement for relief operation and share it with the PDMA.
- Provide food, drinking water, medical supplies and NFIs to the affected population
- Preferably, set up tent cities / relief camps on open land and provide relief to the affected in camps.

- Coordinate with PDMAs to deploy resources for emergency response.
- Mobilize community volunteer groups and civil defense for emergency operations.
- Forward timely situation reports (SITREP) on daily basis to PDMA for its timely dissemination to concerned quarters.
- Ensure registration of all relocated population in the camps and overall affected population on gender-segregated basis.
- Prioritize vulnerable segments of society in their relief operations.
- Facilitate early return of relocated population and help in restoring their livelihoods.

b) Health Department

Pre-Disaster

- Provide specific information required regarding precautions for epidemics
- Establish a health mobile team in district & town headquarter hospital
- Setup an Information Center to collect and share information amongst relevant stakeholders.
- Collaboration with relevant organizations/partner NGOs.
- Stocking of life saving drugs and vaccines.

During Disaster

- Providing emergency treatment to the affected
- Provision of First-aid & water testing kits, chloramines and anti-snake venom serum & other emergency support
- Deployment of mobile medical teams & health staff
- Collaboration with all relevant stakeholders

Post Disaster

- Establishment of medical camps, vaccination, ensuring safe food & water in camps
- Conduct impact assessment on health, intervene to stop outbreak of diseases
- Rehabilitation of health infrastructure

c) Education Department

Pre-Disaster

- Providing the necessary information, training to teachers & students regarding disasters with tips to save their families & themselves during disaster.
- In collaboration with Civil Defense and Boy Scouts / Girl Guides Association and gear up the volunteer's force.
- Educate students about Healthcare Precautions

During Disaster

- Mobilize the human resources for intervention during disaster
- Arrangement for evacuees to setup relief & temporary shelter camps
- Deployment of volunteers for camp management & emergency support

Post-Disaster

- Assessment of damages & needs of affected educational institutes
- Rehabilitation of affected educational institutes
- Continuing education of children at camps and helping them to recover from shock by providing toys etc.

d) Agriculture Department

Pre-Disaster

- Assessment of high risk prone areas and estimation of possible damage
- Create community Seed Bank at UC level
- Regular surveillance of Irrigation water supplies
- Close coordination with Meteorological Department & other stakeholders for weather information.
- Testing, functioning and pre-positioning the available machinery.

During Disaster

- Immediate mass awareness and update of situation
- Arrangements for relief & temporary shelter camps
- Vigilance for protection of agriculture crops.
- Immediate activation of machinery and equipment.

Post-Disaster

- Assessment of damages & needs of affected crop area and submit to DDMA
- Assistance in repair & rehabilitation of Irrigation Systems.
- Timely compensation to affected farmers
- Mass awareness campaigns regarding epidemics & diseases to crops
- Inform the affected population regarding the land use and crop management on damaged/devastated areas.

e) Livestock and Fisheries Department

Pre-Disaster

- Estimation of possible damage
- Mass awareness regarding precautions
- Close coordination with agriculture, irrigation, meteorological department and other stakeholders.
- Vaccination of livestock.
- Stocking of fodder and vaccines.

During Disaster

- Update local communities of ongoing situation.
- Provide livestock vaccination
- Arrangements for relief and transportation of livestock.
- Provision of fodder for livestock in affected area.

Post-Disaster

- Assessment and submission of damages and need of affected livestock to DDMA
- Timely compensation to affected livestock owners
- Mass awareness campaign regarding epidemics & diseases to livestock

f) Planning and Development Department

Pre-Disaster

- Gathering statistical data regarding possible damages and recovery needs from all relevant departments
- Plan and identify potential resources
- Facilitation to other department in planning

Post-Disaster

- Gathering statistical data regarding actual damaged and recovery needs from all relevant departments
- Plan and Identify potential resources
- Facilitate other departments in planning and execution of rehabilitation in cost effective manner
- Coordinate with all line departments

g) Revenue Department

Pre-Disaster

- Assessment of high risk prone areas and estimation of possible damage and needs for recovery.
- Arrangement of financial resources.
- Identification of high grounds for establishment of tent cities.

During Disaster

- Establish relief distribution centers/camps and accept relief donation/relief support
- Timely release of funds to DDMA.

Post-Disaster

- Assessment of damages to industrial/business, crops and livestock and settlement of applicable taxes accordingly.
- Support DDMA in conduct of authentic damage assessment and compensation need.

h) Police Department

Pre-Disaster

- Information dissemination through "15 helpline service" to local residents
- Deploying and giving security cover to government agencies, which are working/preparing for the monsoon season in areas where law and order is not good.

During Disaster

- Providing easy access and security to rescue and relief teams.
- Maintain law and order and divert traffic on alternative safe routes as and when necessary.
- Maintaining law and order and provide security to relief stockpiles and camps.

Post-Disaster

- Ensure security to workers of NGOs/INGOs
- Provide security in unsafe areas
- Facilitating institutions/NGOs/INGOs, which focus on rehabilitation activities.

i) Civil Defense Department

Pre-Disaster

- Information sharing regarding technical and personnel expertise with DDMA.
- Conduct training for volunteers in first aid & other activities
- Effectively train & mobilize volunteers and initiate mass awareness regarding necessary first aid rescue activities

During Disaster

- Deployment of volunteers at the disposal of DDMA for Rescue, Evacuation and initiated basic first aid.
- Communicate to DEOC any additional resources required for performing rescue and evacuation activities
- Taking precautionary measures to stop fire incidents in camps and perform firefighting in emergency.
- Management of relief camps where required.

Post-Disaster

- Identify gaps and make plan to overcome weaknesses
- Assisting District Administration and other Line Departments in Rehabilitation works

11.5.4 Civil Society and Private Sector Response[36]

The response of civil society organizations and the private sector to floods should be rapid and extensive. Local NGOs, will work extensively with the Government to provide emergency relief support

[36] Government of Sindh Rehabilitation Department Provincial Disaster Management Authority, 2012. Sindh Provincial Monsoon/Floods Contingency Plan, Karachi: Government of Sindh

provisions which include ration packs, water purification kits and tablets, shelter items (including tents, blankets and mosquito nets), sanitation kits and hygiene supplies, doctors and medical supplies, mobile and basic health care units especially for women and children. A particular focus will be placed on healthcare services to avoid the spread of water- borne infections and other disease and to provide basic health care services. Media on their part will cover the event extensively and play a significant role in raising awareness and mobilizing local and international resources for the disaster. Individuals and organizations from the private sector, both from Pakistan and the global community will contribute significantly to the flood relief effort alongside the government and donor community.

a) Scouts

Pre-Disaster

- Nominate the scouts, which can be trained to handle flood emergencies
- Training will be imparted in the scouts regarding boat handling and first response to the affected during the emergency.

During Disaster

- Trained scouts will be deployed/placed at the disposal of Deputy Commissioner
- The scouts will perform the duties as per training and will report to respective Deputy Commissioner

Post-Disaster

- The trained scouts would continue to impart the training in other scouts and volunteers in the district.

Standard Operating Procedures (SOPs)

- The Deputy Commissioner shall keep close liaison with all departments like Local Government, Health, Agriculture, Civil Defense, Irrigation, Works & Services, Education & Literacy, Police & other Law Enforcement Agencies. Meetings in this regard are to be held on regular basis with concerned departments and minutes are to be shared with DDMA.
- If there is likelihood of heavy rains, flood emergency would be declared in the District and all government functionaries and NGO's would be kept on high alert.
- Control rooms would be established at District and Taluka level in the offices of the Deputy Commissioner, Assistant Commissioner, Qanoongo (Revenue) and all other line departments during the emergency. These control rooms shall function round the clock.
- The Deputy Commissioner shall ensure activation of Central District Control Room and already established control rooms at each Qanoongo (Revenue) Offices round the clock, under the supervision of Assistant Commissioner concerned. They shall also ensure preparedness at proposed relief camps and ensure immediate evacuation of people residing in low-lying areas to safer place / relief camps, if required. He/She shall also make immediate arrangements for the availability of sufficient quantity of relief material like food, blankets, tents, plastic sheets etc.
- The Deputy Commissioner shall constitute Supervisory Committee for relief works at district level.

- The Deputy Commissioner must further ensure that special attention is given to disabled people, women and children and extra ordinary measures are taken for such purpose.
- The Deputy Commissioner shall nominate the Assistant Commissioner as focal person to coordinate with the Taluka and Town level local council for drainage of accumulated rainwater.
- The Assistant Commissioner shall be focal person in Taluka for the entire operations of rescue and relief. He/She must ensure the respective arrangements for tractor trolleys and labor in coordination with Civil Defence, Boy Scouts Association and Police Department if needed and mobilize the village staff in the pre-and-post emergency work. He/She shall also ensure proper distribution of relief material among the actual needy persons.
- The Executive Engineer Irrigation Department shall ensure availability of bulldozers, excavators and earthmoving machines in sufficient quantity and in proper working condition in case of emergency.
- The Director Agriculture shall arrange for protection of standing crops from damages and diseases that may be caused from the stagnant rainwater in the fields. He/She shall manage required machinery from mechanical wing and must have the inventory of such machinery and equipment.
- The Deputy District Officer Livestock and his/her staff shall ensure safety of livestock from flood diseases and losses and Veterinary Officer shall ensure regular and timely vaccination of cattle in the district. They shall make all necessary arrangements for fodder for the livestock to be shifted from marooned areas.
- The Deputy Controller, Civil Defense should ensure the enrolment of volunteers as early as possible in order to avoid any chaotic situation during emergency. He/She will continuously remain updated of weather forecast reports and with meteorological departments and will arrange for warnings in emergency through sirens, loudspeakers and media at Taluka and town level. He/She shall ensure presence of the volunteers and scouts for rain relief and rescue activities in case of any emergency.
- The Deputy Director Food shall ensure availability of sufficient stock of wheat and other grains and shall coordinate with Deputy Commissioner for supply of food grains from local food grain dealers in case of need. He/She will also ensure that no stocks of government wheat, placed at depots, are damaged due to water accumulation, fire or rioting.
- The Divisional Engineer Telephone should ensure full function ability of telephones all over the district and provide assistance to all departments on demand at the time of need.
- Continuous supply of gas and proper safety of gas lines in the district must be ensured. Immediate repair work should be performed in case of any damage to the gas lines.
- The Deputy Commissioner shall ensure mobilization of the NGO's and business community in the rescue and relief activities in case of emergency and shall depute volunteers on different emergency tasks.
- The Regional Director Information shall keep close liaison with all control rooms of the district to provide correct and exact information to media regarding emergency. He/She shall also arrange briefings about the latest situation in case of emergency.
- The Red Crescent Society and other welfare associations and NGO's of the district shall provide food packets and other required material to the affected persons in relief camps in case of emergency.

- Proper arrangement for lifting of trees fallen due to heavy rain and gusty winds from the main roads shall be made by the Executive Engineer Provincial Highways department.
- The in charge Utility Store Corporation shall ensure the availability of sufficient stock of edible items in case of need.

The Revenue Department shall also conduct the survey of any loss of life, houses, cattle, standing crops and other infrastructure after the disaster. In the event of the highest degree of emergency, Pakistan Army may be requested to help the district administration in rescue and relief operations.

12. List of Priority projects of Islamkot 2018-38

S.No	Project Name	Sector	Status		Proposed Area (acre) & Length (m)	Preliminary Cost (million/-) PKR	Justification
			Short Term	Long Term			
1	Establishment Of Fruit And Vegetable Market At Islamkot	Economic Development (Trade & Commerce)	ST	-	10 acre	566.28	10 acre = 4, 35,600 sft, at the rate of 3,000/- PKR per sft construction cost with all infrastructure cost.
2	Development of Housing Site and Services for Low Income Group	Housing	-	LT	50 acre	500.00	500 Number of units up to 250 sq. yds. For this proposed site development we have assumed 10 million per acre with internal allied facilities and infrastructure.
3	Vocational and skill training centers in alliance with contemporary demand	Social Development	ST	-	02 acre	87.12	02 acre = 87,120 sft, at the rate of 5000/- PKR per sft construction cost with all infrastructure cost.
4	Provision of Mobile Health Units for Islamkot and surrounding settlements /villages	Health	ST	-	05 No.s	250.00	05 No.s MCH Units for immediate access to villagers and Islamkot population.
5	Rehabilitation of Cricket sports ground	Sports / Recreation	ST	-	07 acre	274.00	12 acre = 522,720 sft, at the rate of 1800/- PKR per sft construction cost with all infrastructure cost.
6	Rehabilitation of Park		ST	-	04 acre	156.00	04 acre = 174,240 sft, at the rate of 1800/- PKR per sft construction cost with all infrastructure cost.
7	Construction / rehabilitation of primary and secondary drains.	Sewerage & Drainage	ST	-	1100 acre	100.00	For total coverage out of core urban area for installation and rehabilitation of services.
8	Establishment of Sewage Treatment Plant.		ST	-	02 acre	100.00	Treatment facility for sewage under TC control and Operation with maintenance.
9	Combine System of Sewers and Drains with Surface Water Reuse for Landscaping.		-	LT	1100 acre	150.00	For total coverage out of core urban area for installation and rehabilitation of services.
10	Improvement of Water Intake Works with filtration 1.Enhancement of water Storage capacity at Naukot (10 MG) 2.Water Filtration Plant (1 MG)	Water Supply	-	ST Phase Wise	-	320.00	For catering present town daily supply of water to meet the demand of population.

11	Rehabilitation of existing Water Supply Network and provision of water storage (reservoir) in Islamkot town.		-	LT Phase Wise	1100 acre	1100.00	Rehabilitation of existing water supply network in town with addition of storage services.
13	Feasibility study for construction of Central Composting Plant and primary and secondary collection process and recycling.	Solid Waste Management	ST	-	02 acre	50.00	Study should be completed first for feasibility wise development.
14	Procurement for land acquisition process for Landfill Site.		ST	-	05 acre	50.00	Land area should be in kept for TC to get and started land utilizing for solid waste processing
15	Beautification & Rehabilitation of Major Urban Roads with all allied roads services.	Road Network	ST	-	58 km	500.00	Rehabilitation of major and minor roads with respect for improvement of communication with in town.
16	Beautification and urban environmental upgradation with respect to the tree plantation and green spaces.	Environment	ST	-	05 acre	200.00	urban environmental upgradation with respect to the tree plantation and green spaces
17	Provision of; - Arial Bundle Cable wires - Solar Streetlights	Electricity	ST	-	58 km	500.00	Provision of power cable for the town area street cabling.

13. ISLAMKOT TALUKA - SDGS MODEL TALUKA

The Government of Sindh has declared and notified Taluka Islamkot as "SDGs Model Taluka" in Sindh, in line with the agreement with UN's global agenda 2030. SDGs target will be planned and achieved at Islamkot through multi-sectoral methodology using innovative Public Private Partnership mode.

The following SDGs have been selected as priority areas;

a. Goal No.2 Zero Hunger
b. Goal No.3 Good Health and well-Being
c. Goal No.4 Quality Education
d. Goal No.6 Clean Water and Sanitation
e. Goal No.7 Affordable and clean energy
f. Goal No.8 Decent work and economic growth

Later, the DUP&SP decided to add Goal No 11 as the seventh SDG for managing and monitoring the Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.

The development initiatives are appearing so fast that if the immediate action is not taken to control the development and channelize the urban growth through a proper plan, the ground situation will change and un-controlled land uses will appear everywhere.

Our Strategic Development Plan or Final Master Plan for Islamkot makes a contribution towards implementation of the SDGs as described in the following paragraphs:

Disclaimer: Baseline data was used in this report has been taken from available sources by prioritizing the local data, subject to availability.

Development Master Plan for Islamkot

SDP Islamkot Compliance with SDG Targets & Indicators / Required Strategy to Support SDG

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
Goal 2: End hunger, achieve food security, and improved nutrition and promote sustainable agriculture					
I.	Target 2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	2.1.2**:** Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)	• Baseline survey yet to be determined / N/A At provincial level in Sindh, FAO is computing data for this indicator based on Food Security Analysis (FSA) Survey	• Strategic Food Storage Godowns • Discourage less dietary post season preserved food • Provision of subsidize fodder for livestock traders	• Creating a better quality of life for the citizens of the district by encouraging private sector to invest in the district. • Improving infrastructure and key services necessary for economic uplift. • Providing un-interrupted power supply. • Special attention of government to promote the sector (Handicraft and ornaments). • Modernize and revitalize agriculture.
II.	Target 2.2: By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent	2.2.1 Prevalence of stunting (height for age <-2 standard deviation from the median of WHO Child Growth Standards among children under 5 years of age 2.2.2 Prevalence of malnutrition (weight for height	Baseline survey yet to be determined / N/A Overall rate in Sindh: 45.5%[37]	• Discourage Child-age Marriages	

[37] National Nutrition Survey (2018)

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
	girls, pregnant and lactating women and older persons.	>+2 or <-2 standard deviation from the median of the WHO Child Growth Standards among children under 5 years of age, by type (wasting and overweight)	Baseline survey yet to be determined / N/A Overall rate of wasting in Sindh: 23.3%[38]		• Establishment arid zone university or research center Improved food production to reduce hunger including emergencies and disasters that require agricultural support. • Agricultural technology development, dissemination and adoption.
Goal 3: Ensure healthy lives and promote well-being for all at all ages					
III.	Target 3.1: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.	3.1.1 Maternal mortality ratio	Present maternal mortality ratio is 5.37[39]	• Provision of Mother & Child Healthcare centre with modern equipment	**Sindh Vision 2030 (Health Policy)[40]** • Regulate protection from disease and the quality of

[38] Ibid
[39] National Baseline Survey
[40] Sindh Vision 2030

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
IV.	Target 3.2: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.	3.2.1 Under-five mortality rate 3.2.2 Neonatal mortality rate	under 5 Child mortality 4.14[41] Neonatal mortality rate @ 4.12[42]	• Provision of Neonatal (NICU) in RHC • Network of efficient ambulance service to secondary / tertiary Health care units. • Provision of Mother & Child Healthcare centre with modern equipment	healthcare across the province. In this context the Health Department will regularly survey and analyze healthcare statistics, particularly on women, children and the elderly • Enhance and improve existing emergency care facilities and trauma centers, including ambulatory services and paramedic forces.
V.	Target 3.4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease	Non-Communicable Diseases @ 0.38 [43]	Provision of NCU, laboratory, blood bank, additional beds, pharmacy, ambulance service, 24/7 service with specialized doctors and paramedic staff at THQ Hospital	

[41] National Baseline Survey
[42] National Baseline Survey
[43] National Baseline Survey

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
VI.	Target 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents	3.6.1 Death rate due to road traffic injuries	Current Death rate due to road traffic injuries is 1.0[44]	• Provision of road Improvement projects to reduce traffic accidents.	• Assess the impact of past campaigns to arrest malnutrition, improve maternal and child healthcare and on preventing extraneous causes of fatalities caused by road accidents, poor sanitation, etc.
VII.	Target 3.8: Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.	i. Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population) ii. Number of people covered by health insurance	Neonatal mortality rate @ 4.12[45] **At Town Level Population Served by[46]** • Per bed 1,244	Provision of Mother & Child Healthcare centre with modern equipment • Stocking of life saving drugs and vaccines.	

[44] National Baseline Survey
[45] National Baseline Survey
[46] Islamkot Town Base Line

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
		or a public health system per 1,000 population	• Per doctor 1,382 • [47]Standard for population served is • Per Bed 500 • Per Doctor 1,000	• Provision of Additional Beds, Doctors & Paramedic Staff	
VIII.	Target 3.c: Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States.	3.c.1 Health worker density and distribution	**Population Served by** • Per bed 1,244 • Per doctor 1,382	• extension of THQ Hospital • Provision of Mobile Health Unit & ambulance service with all health facilities. • Rehabilitation of RHC centre & provision of diagnostic facilities and pharmacy in the hospitals. • Provision of Additional 7 doctors.	

[47] National Reference Manual

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all					
IX.	Target 4.1: By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.	4.1.1 Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary	a & b Primary School 32% [48] c. Middle 17% [49]	• The long term plan target is to achieve 100% enrolment with 1:1 male female ratio by 2038; therefore 1,373 additional classrooms will be required to accommodate upcoming generation for next twenty years. This	**Policy Guidelines[50]** • impart Basic Education (free), • Provide Vocational & applied education centers within rural, peri-urban and industrial areas;

[48] Consultant Socio economic survey 2017
[49] Consultant Socio economic survey 2017
[50] Sindh Vision 2030

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
				need could be fulfilled either by addition in existing buildings or more new schools and colleges will be needed to be constructed in future to serve projected population of 260,846 at TC level. The master plan has worked out the numbers of class rooms (and teachers) to get 100% enrolment by 2038.	• Introduce farmer field trainings in rural schools to ensure that the next generation of farmers is already tuned to market intelligence and opportunities. • Maintenance of existing depilated schools and buildings should be given top priority. • Islamkot is a flood prone district. The schools selected to act as shelter should be given top priority in repairs and utilities. • For girl's literacy and women education, informal system of
X.	Target 4.3: By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	0.076% (M:0.084 F:0.065) ratio of total enrolment of grade ECE-12 (Age Group 4-16 years) [51]	• Skill development institutions for male and female to meet the requirement of Coal and Power sector propped.	
XI.	Target 4.5: By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons	4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data	Actual ratio of female to male aged from 5 years to 14 years is 0.81.	• All calculations have been done on gender equality (1:1) upto school level • Education deficit to make special effort with awareness programmes to achieve soft targets.	

[51] Pakistan Education Statistics 2017-18

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
	with disabilities, indigenous peoples and children in vulnerable situations.	become available) for all education indicators on this list that can be disaggregated		Class room Teacher	homeschool may be encouraged.
XII.	Target 4.a: Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all	4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic hand washing facilities (as per the WASH indicator definitions)	**Available Facilities in School Buildings** a. Primary 42%, Middle 63%, Secondary 83% & Higher Secondary 95%[52] b. 5% of total private Schools & 1% of total public schools c. Primary 20%, Middle 5%, Secondary 48% & Higher Secondary 27%[53] d. Nil e. Primary 55%, Middle 71%, Secondary 91% & Higher Secondary 97%[54]	• Various proposals proposed to enhance the capacity of existing educational infrastructure. • Provision of well-equipped computer labs with internet facility within school buildings.	

[52] Pakistan Education Statistics 2017-18
[53] SEMIS
[54] Pakistan Education Statistics 2017-18

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
			f. Male: 62% & Female: 68%[55] • Toilets Facility = 93% • Parks & playgrounds facility = 5% • Library Facility = 5% • Laboratory facility = 13%		
XIII.	Target 4.c: By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States	4.c.1Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country.	Public sector data only[56] (a) Pre-Primary No data (b) Primary Male: 97% Female: 96% (c) Lower Secondary Education Male: 96% Female:97% (d) Secondary Education Male: 98% Female: 99%	• Provision capacity building programs to enhance their academic and non-academics capacities • Provision of vocational centre & provision of teachers training institute	

[55] Pakistan Education Statistics 2017-18
[56] Pakistan Education Statistics 2017-18

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
			(e) H. Secondary Education Male: 99% Female: 99%		
Goal 6: Ensure availability and sustainable management of water and sanitation for all					
XIV.	Target 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water	6.1.1 Proportion of population using safely managed drinking water services	Data reveals that, Present supply of sweet water i.e. 0.30 mgd is sufficient for only 41% of total population @ 30 gallons per capita per day.	• Increase the present supply of filtered water from 41% (2018- 2023) to 100% • "The Master plan proposes different proposals to improve water supply network, Improvement of water intake, Procurement for additional land for water works, Rehabilitation of existing Water Supply Network, construction & rehabilitation of reservoirs & Installation of new Water Supply Network upto plan period.	**Sindh Drinking Water Policy 2017[57]** • Population should be using an improved drinking water source which is accessible i.e. located on premises, available when needed and safe that is free of faecal and priority chemical contamination. • Access to safely managed drinking water is a fundamental right of every citizen and that it is the responsibility of the Government to ensure its provision to all citizens.

[57] Sindh Water and Sanitation Policy 2017

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
XV.	Target 6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	6.2.1 Proportion of population (a)using safely managed sanitation services, (b) including a hand-washing facility with soap and water	a) Socio economic survey results reveal that, 97% of total sample size is facilitated with drainage services i.e. Municipal system (Nali System) & manual cleaning (Septic Tank)[59]	• "The Master plan proposes different proposals for Construction / rehabilitation of primary and secondary drains, Construction of Sewage Treatment Plant, Combine System of Sewers and Drains with Surface Water Reuse for Landscaping	• Water allocation for drinking purposes shall be given priority over other uses. • In order to ensure equitable access, special attention shall be given to removing the existing disparities in coverage of safe drinking and for addressing the needs of the poor and the vulnerable. **Sindh Drinking Water Policy 2017[58]** • The Policy aligns itself with the goals and targets of the SDGs for sanitation, which require sanitation services to be safely managed, have a private improved facility where faecal wastes are safely disposed on site or

[59] Consultants Primary survey results 2017
[58] Sindh Water and Sanitation Policy 2017

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
XVI.	Target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1 Proportion of wastewater safely treated	Currently 0% waste water is treated in Islamkot	• Establishment of Sewage Treatment Plant.	transported and treated off-site; plus a hand washing facility with soap and water. • Safely managed sanitation services is a fundamental right for all persons in Sindh province, and should be ensured through enhanced access to marginalized and low resource areas with equitable distribution of resources. Recognition of inequities and rights based programming will be given key emphasis during the planning, execution and monitoring of sanitation programmes. • The policy shall promote the community led approaches to strengthen the demand for safely managed improved sanitary conditions that emerges from local communities. The multi stakeholder

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
					partnerships and collaborations comprising of citizens, governments, civil society, non-governmental organizations (NGOs), donors, academia, media, etc. be encouraged to maximize the synergies in designing and implementation of interventions. • The component sharing model as envisaged in the National Sanitation Policy will be • Institutionalized gradually in which the community is responsible to construct lane and • Neighborhood level sewers (internal development) on self-help basis and the government focuses on trunks, disposal and treatment unit (external development).

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all					
XVII.	Target 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity 7.1.2 Proportion of population with primary reliance on clean fuels and technology	• 91% of sample size is facilitated with electricity • 28% of the total sample size is using gas cylinders for cooking purpose • 14% of household use solar power as alternative energy	• Upgrade Transmission and Distribution Process: • Upgrading the existing 66 KV to 132 KV	
Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all					
XVIII.	Target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized	8.3.1 Proportion of informal employment in non-agriculture employment, by sex	Clerk 1%,Doctor 1%, Labor 24%, Business 23%, Private Employee 16%,Teacher 7% Technician 4%,	• Skill development programs & training centers with new technologies; • Provision of subsidized loans for small entrepreneurs	

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
	enterprises, including through access to financial services		Shopkeeper 7% Blacksmith4%[60]		
XIX.	Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	8.5.2 Unemployment rate, by sex, age and persons with disabilities	Total=5.79%, Male=3.92%, Female= 1.86%[61]		
XX.	Target 8.6: By 2020, substantially reduce the proportion of youth not in employment, education or training	8.6.1: Proportion of Youth (aged 15-24 years) not in education, employment and training	➢ Proportion of youth • Total Youth (17.81%) • Total Male Youth (20.71%) • Total Female Youth (14.29%) ➢ Proportion of youth not in employment	Provision of various educational zones in master plan to accommodate youth in educational activities. Provision of various Commercial & industrial zones are proposed in SDP Islamkot to engage youth in employment.	

[60] Consultants sample survey results 2017
[61] Economic Survey of Pakistan, Ministry of Finance Source (Labor Force Survey, Pakistan Bureau of Statistics 2017-18) Pakistan's Implementation of the 2030 Agenda for Sustainable Development

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
			• Unemployed (18.18%) ➢ Proportion of youth in employment • Employed (1.93%)[62]		
	Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable				
	11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing	[63]14% of the urban town population lives in katcha houses	**Proposed Strategies** - Increase in proportion of small size plots (Plot size will be depend on land value) could be made for low income groups in all new housing schemes. • Low-income Housing Funds would be established to provide sufficient and affordable credit for housing to meet the needs of shelter less poor.	**Sindh Katchi Abadis, Squatter Settlements & Slums Policy** - Regulation and Controls - The process of regularization and up-gradation of the pre-1985 katchi abadis shall continue as per current policy. However, katchi abadis, which are hazardous by virtue of being close to railways tracks or located under high tension power lines, or are on or close to the riverbeds, or on lands needed for operational /security

[62] Consultants sample survey results 2017
[63] Sample Socio-economic Survey

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
					purposes, need to be relocated at appropriate places by LOAs. - Formation of new katchi abadis shall not be allowed and shall be discouraged by exercising strict development controls in all urban areas. - Formation of Resettlement Plans - Resettlement plans shall be prepared by the concerned Land Owning Agencies (LOAs) in consultation with affected communities for shifting of katchi abadis dwellers who fall within hazardous or security/operational zones. These plans shall primarily be on a self-financing basis. - The internal infrastructure and services shall be provided on incremental basis depending on the needs and priorities of the residents to make them affordable and cost effective. Trunk infrastructure and services shall be provided by public sector organizations and

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
					the cost shall be met from Government exchequer
	11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)	No data for this indicator is currently available and its methodology is still under development[64]	• Development and preservation of cultural heritage • Development and Improvement of Cultural Village and Museum in the District may promote tourism. • Protection of historical places and cultural heritage • The Karoonjhar area may be declared as National Park	
	11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross	11.5.1 Number of deaths, missing persons and persons affected by disaster per 100,000 population	Sindh Data [65] **No of deaths** (1988-2013) = 241	• The DSM, PPHI shall also be responsible for providing medical cover to the IDPs in the catchment area of BHUs assigned to them particularly, and will	**National Disaster Risk Reduction Policy 2013** • Provide training and awareness courses to district, municipal and local authority personals dealing

[64] https://unstats.un.org/sdgs/metadata/?Text=&Goal=11&Target=
[65] PDMA (2017)

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
	domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations		**No of People effected** (1988-2013) =24,096,173 Deaths per 100,000 population = 0.2491 Affected people per 100,000 population = 241	perform their due role in supplementing the overall medical cover provided by the District Health Department. • National risk assessment would identify highly vulnerable districts and be complemented by higher resolution work at local level to diagnose the underlying causes of risk, explore concrete risk reduction options and inform development planning and prioritization exercises and/ or disaster preparedness planning. • Arrange medical teams for providing medical cover to the IDPs settled in any relief camp. • Fumigate the affected areas and areas at risks of spread of any of epidemic disease.	with management of hazard prone areas • Develop public awareness materials (e.g. posters, brochures, booklets, videos). • Update media about its role in disaster risk management process and how awareness through media can be broadcasted to local community • Arrange and conduct need assessments of damages / losses. • Ensure application of proper mechanism for evacuation and relocation of affected community to safer places. • Establish Relief Camps with necessary arrangements. • Initiate relief and rescue activities in their respective areas with the help of all stakeholders which also include provision of shelter, food, medicines etc. to the

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
				• Ensure that all ambulances are in working order and road worthy conditions. • Ensure vacant possession of all schools buildings at the time of emergency for setting up relief camps. • Ensure sanitation and cleanliness as well as clean drinking water facilities wherever possible at all school buildings declared as relief camps through by binding down their concerned Headmasters. • The creation of an integrated multi-hazard damage loss data-base is therefore a prerequisite for systematic vulnerability and risk monitoring	affected communities as well as to IDPs who are settled in makeshift Relief camps • Arrange coordination meetings with health units
	11.6 By 2030, reduce the adverse per capita	11.6.1 Proportion of urban solid waste regularly collected and	[66]Present Total solid waste generation in	**SDP Strategies**	**Solid Waste Management Policy for Sindh[67]**

[66] Town Committee Islamkot
[67] Solid Waste Management Policy for Sindh ,Sindh Water and Sanitation Policy 2017

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
	environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	with adequate final discharge out of total urban solid waste generated, by cities	Islamkot is 11 tons. Regular collection by municipal is about 70-85%	- The collection and disposing of solid waste is the responsibility of the Islamkot TC. The mechanism for solid waste management is not available in Islamkot so therefore a detailed feasibility is proposed to develop an efficient solid waste management in Islamkot town. - The collection system needs to be made more effective and efficient. - Town Committee has already initiated some work on biomedical-waste management. It should immediately start segregation practice for biomedical waste collection system.	Implement integrated solid waste management with 100% coverage in urban areas and 60% in rural areas of Sindh by 2025

S. No	SDG Target	Indicators	Baseline Survey	SDP Islamkot Compliance with SDG Targets & Indicators / Proposed Strategy to Support SDG	Policies
	11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	11.7.1 Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities	Only 1% park area is available in Islamkot Town	• Existing open spaces in core urban area should be restored and maintained. New open spaces should be identified and created. • The old houses marked for demolition by Town Committee due to danger may be purchased by TC or Local CBO. They may purchase these old houses which have out lived its age and these houses can be converted into small parks & eating places. • Promote tourism through provision of support facilities • Rehabilitation and construction of family parks and playground near residential areas • Establishment of synthetic grounds, playing turf (for hockey, football) and indoor gym facility.	

14. IMPLEMENTATION AND MONITORING

14.1 Indicators

14.1.1 Quantitative Indicators

OECD (2002) defines an indicator as a ''quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor.'' Quantitative indicators are numerical representations of complex phenomenon. Quantitative indicators can be useful in determining the level of achievement at all stages of a resilience project and can even be used to measure the strength of resilience characteristics, though this is better attained by using qualitative indicators[68].

14.1.2 Qualitative Indicators

Qualitative indicators evaluate the quality of a plan using subjective data (relying on people instead of instruments). Many qualitative indicators use a 1-5 scoring system, however, this is not the only way; Sovacool (2012) points out that indicators could ''rely on a simple scoring technique of 'positive,' 'negative,' or 'neutral,' as in a given metric can worsen, improve, or stay the same over time.''

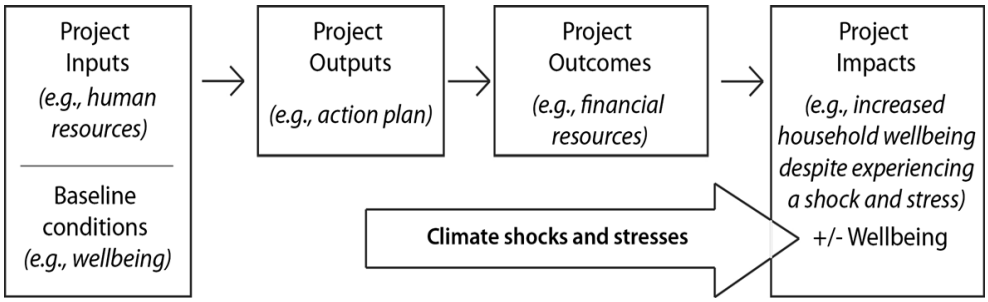


Figure 14-1: Four phases of a resilience initiative, and the timing of baseline and post-shock measurements of wellbeing (Brown, et al., 2018)

These qualitative values can be used to create baselines and/or to indicate that a particular resilience impact/outcome has been achieved. The challenge with a qualitative indicator that uses a scale from 1-5 is that the scale should be created based on criteria that is fair and well informed.

14.1.3 Process Indicators

There are many processes that underlie resilience planning and action, and process indicators outline the extent to which these processes have been undertaken. Moser and Boykoff (2013) write that given the challenges (e.g., attribution) in adaptation and resilience measurement, ''tracking and evaluating the adaptation process with all of its individual components (e.g., assessment, planning, stakeholder

[68] Brown, C., Shaker, R. R. & Das, R., 2018. A review of approaches for monitoring and evaluation of urban climate resilience initiatives. Environment, Development and Sustainability, 20(1), pp. 23-40

engagement, decision-making, implementation, institutionalization, monitoring, and social learning)—becomes at least as important as the questions of success in outcomes''.

An example of a process indicator is the level of participatory involvement in resilience decision making. If one's definition of resilience encompasses participatory involvement, then the extent to which this has been applied can be used as a process indicator. This can be assessed qualitatively (on a scale of 1-5) or quantitatively (number of stakeholder types represented).

14.1.4 Impact Indicators

Determining the impact of resilience initiatives is a bit difficult, as these impacts are often difficult to interpret or understand and can often not be measured until after a disaster, or at least until the slower onset effects of climate change have started to occur (e.g. sea level rise). One approach could be to assess the process and outcome indicators and inferring from the results that climate change resilience has been reasonably ensured.

Wellbeing and financial losses after a disaster are the two most important climate resilience indicators that can help to assess the success of climate change resilience initiatives. By evaluating these indicators, evaluators can gain an insight to the effect of climate change resilience initiatives on the community. By assessing these two indicators, a city can determine whether it has the adaptive capacity to remain resilient in the face of shocks and stresses resulting from climate change.

14.1.5 Identified Indicators[69]

a) Collection of Data to Perform Vulnerability Assessments to Floods

- Number of exposure and socio-economic datasets on current exposure to floods at district level.
- Geographic coverage of all datasets (% of all exposed areas).
- Number of reports detailing data collection and summarizing information.
- Number of policy and technical documents based on datasets and modeling scenarios.

b) Building Technical Capacity to Generate Vulnerability Assessments to Floods

- Number of technical staff trained to acquire competence in computer modelling techniques and able to perform Vulnerability Analysis (VA).
- Average staff performance on end-of-training comprehension tests.
- Proportion of ministries using datasets to generate vulnerability analysis or proportion of sectors covered by analysis at district level.
- Number of policy and technical documents incorporating results from VA's.
- Proportion of government investment/program documents using results from VA's as a priority-setting or screening tool.

[69] McCarthy, N., Winters, P., Linares, A. M. & Essam, T., 2012. Indicators to Assess the Effectiveness of Climate Change Projects, Washington DC: The Inter-American Development Bank

c) Institutional Framework and Mechanisms to Support Adaptation and Adaptive Capacity

- Number of laws and regulations created or amended to clarify land and carbon property rights.
- Existence of a dispute resolution mechanism.
- Number of materials (presentations, briefs, papers) developed for legal literacy programs.
- Number of people participating in legal literacy programs.
- Number of individuals and community groups participating in Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+) financed projects.
- Average number of days and money spent in REDD+ project preparation.
- Total value of REDD+ projects and value per participant.
- Percentage reduction in production variability from forest-based activities and/or farm production at the forest margins.
- Number of early warning and health hazards dissemination outlets, by type of outlet (e.g. radio, newspaper, and website), geographic coverage, and level of disaggregation of system information (e.g. district-specific).
- Percentage languages used in dissemination materials of total number of languages spoken in district.
- Number of extension materials containing climate change-relevant materials.
- Percentage change in government budget allocations towards climate change information dissemination.
- Percentage reduction in property damage.
- Percentage reduction in mortality and in disease prevalence for diseases related to weather patterns (e.g. malaria, dengue).

d) Investment in Projects that Directly Support Adaptation and Improve Adaptive Capacity

- Percentage increase in the number of seed varieties developed, documented and made available in the market.
- Documentation of seed varieties and their characteristics.
- Documentation of procedures and partnerships created to transfer seeds either directly to farmers or to market traders.
- Percentage increase in number of seed varieties available in rural markets.
- Number of climate resistant seed varieties available in the market and percentage increase in use of climate resilient seed varieties.
- Percentage crop yield improvement in years of climate extremes.
- Percentage greater performance in average crop yields.
- Percentage decrease in proportion of rural and urban populations malnourished.
- Number of energy facilities built or retrofitted to withstand greater range of climate shocks.
- Percentage of total capacity built or retrofitted by type of facility and by “threat” level identified in vulnerability analysis.

- Percentage decrease in monetary damages to energy facilities due to climate extremes (adjusted for degree, or extent, of climate shock).
- Percentage decrease in customers losing access to energy due to climate shock-induced power failures.

14.2 Responsibility of Plan Implementation

Table 14-1: Authorities Responsible for Implementation

S#	Department	Designation
1	**Administration**	Deputy Commissioner
		Assistant Deputy Commissioner-I
		Assistant Deputy Commissioner-II
2	**Irrigation**	District Irrigation Officer
3	**Agriculture**	District Agriculture Officer
4	**Health**	District Health Officer
5	**Education**	District Education Officer
6	**Social Welfare**	District Officer
7	**Livestock**	District Officer

14.3 Monitoring and Evaluation[70]

There are three ways to monitor and evaluate climate change adaptation and resilience:

- Measuring against project objectives
- Measuring against baselines
- Measuring against emerging understanding of good adaptation measures

14.3.1 Measuring against Baselines

Baseline comparisons can be used to monitor and evaluate the effectiveness of climate resilience initiatives. During this process, an initial measurement is taken (e.g., number of civic organization per 10,000 people). This measurement is then taken at different stages of the project to measure the effectiveness of strategies used to improve that particular indicator. This approach could be applied to resilience characteristics (e.g. flexibility). In order to do this, a more qualitative assessment (subjective scoring from 1 to 5) could be employed to create a baseline value.

14.3.2 Measuring against Definitions

Relatively straightforward definitions exist for climate adaptation, but in the context of resilience – with its emphasis on system level interaction and inherent qualities – this approach can prove to be much more difficult. How you define resilience is a key determinant in how the monitoring and evaluation approach will be adopted. For example, if resilience is defined as a decrease in post-disaster

[70] Brown, C., Shaker, R. R. & Das, R., 2018. A review of approaches for monitoring and evaluation of urban climate resilience initiatives. Environment, Development and Sustainability, 20(1), pp. 23-40

recovery time, specific indicators will be evaluated which would not be useful when concerned with the resilience characteristics with cities.

14.3.3 Measuring against Project Objectives

As mentioned above, the objectives of a resilience program differ depending on the way resilience is defined and also at which phase of the project the assessment is being made. Alexander et al. (2016) define process as the ‘‘inputs, throughput and outputs of the decision-making process,’’ outcomes as ‘‘the implementation of the outputs from the decision-making process’’ and impact as ‘‘the resulting effect of the decision-making process and outcome’’. Similarly, Spearman and McGray (2011) use the following sequence: inputs, initiatives, outputs, outcomes, and impacts. Monitoring and evaluation can take place at each of these temporal locations (i.e., process, outcome, impact). Many people also advocate that monitoring and evaluation be carried out throughout the duration of the project rather than just at the beginning and the end of the project.

14.3.4 Key Principles of Monitoring, Evaluation and Reporting System[71]

- **Use of Mixed Methods**
  The monitoring and reporting system combines quantitative and qualitative methods to collect and analyze data, and generate knowledge and lessons in implementing the plan.

- **Ownership**
  District focal points for each sector (mentioned in the table above) are responsible for collecting, aggregating and submitting their reports annually to the District Administrative Unit.

- **Stakeholder Engagement**
  Empowering stakeholders and ensuring their active contribution to the monitoring and reporting process is a key feature of the monitoring and evaluation system. The monitoring and reporting system is rooted in the desire to maintain a programmatic approach in the implementation of the investment plans through projects and programs. It aims to engage the stakeholder groups, including government institutions at national, sub-national and local levels, as well as civil society, local communities and the private sector, in discussing progress with the implementation of the monitoring plan. The monitoring and reporting process will also be used to share lessons learned and discuss the challenges encountered with a view to identify feasible solutions.

- **Learning by Doing**
  Monitoring and reporting is an iterative learning process. It is expected that the quality of monitoring will improve over time as the authorities gain experience.

[71] Williams, A., 2016. Options for Results Monitoring and Evaluation for Resilience-Building Operations, Washington DC: World Bank Group

15. URBAN LAND MANAGEMENT

15.1 Introduction

Urban areas throughout the developing world are experiencing a problem in the supply of adequate and affordable serviced land to meet the housing needs of their rapidly expanding urban populations. As a result, low income groups who are mostly denied access to land due to shortfall in supply are forced to either seek for residential land through illegal means or to crowd into existing low income settlements, creating slum conditions. In Sindh, the shortfall in land supply arises not from the lack of virgin land but partly from the lack of resources, capacity to service the lands and land ownership by landlords and make them ripe for development and also partly from the use of ineffective and inappropriate land and landuse policies and practices.

"Land management" is defined as an activity on the ground, using appropriate technologies in the respective land use systems. It is known by different names in different parts of the world; basically all are land management tools. In Pakistan land management is not being practiced till yet because of non-absence of policies / framework. Strong land owner opposition to forcible land acquisition, combined with extremely limited fiscal capacity has left the urban local bodies (ULBs) with very few options to develop well-planned and serviced urban land. Land pooling and reconstitution (LPR) is a tool that addresses both these issues by allowing the land owners to share the gain in the land value post provision of infrastructure and services. In lieu, the land owners pay betterment charges and contribute a part of their land to fund the infrastructure and services.

15.2 Goals

As most of towns in Sindh strive to become centers of global production, trade and development, they are increasingly concerned with improving their attractiveness for foreign direct investment and employment generation. For example, towns must have efficient spatial structures, adequate infrastructure and urban services, affordable housing and healthy environments. Effective urban land management is required to promote urban regeneration and development of new industrial and commercial districts, investments to upgrade and expand critical infrastructure systems, programs to enhance and protect the environment, and initiatives to upgrade social overhead capital (housing, education, healthcare).

15.3 Objectives

To implement these initiatives for Islamkot, there is a need to develop urban land management strategies to provide land for industrial and commercial development, to facilitate the formation of public-private partnerships, and to finance the provision of infrastructure and social overhead capital investments. Unfortunately, in many cities around the world such strategies do not exist and foreign investment is either stifled or, if it does take place, causes significant adverse side effects.

Cities and towns are crucial to the economic well-being of Sindh. For this, it is imperative that its cities and towns are transformed and pressures of new growth are dealt with so that they are more liveable,

efficient, and environmentally sustainable. Only then will the rapid pace of economic growth that Sindh is undergoing be sustained and the targets of environmental sustainability achieved. To manage the transformation of Sindh's cities and towns and effectively manage new growth requires effective urban planning protocols, processes, and institutions underpinned by effective legislation. To effectively manage the new growth implies that the agricultural land at the periphery of the cities and towns or smaller settlements that are not yet "urban" is transformed to be made suitable for urban or non-agricultural uses. This essentially means that the irregular landholdings and plots will have to be given regular shapes; they must be ordered; each plot must be given access; infrastructure services such as water supply and drainage must be provided; land must be appropriated for providing roads, parks, social amenities, and low-income housing, development controls must be prescribed to result in a good quality-built form and levy development or betterment charges to offset the cost of developing the physical and social infrastructure. But most importantly, all of this must happen in a timely and such manner that it is acceptable to the "landowners" to avoid conflict in the growth management process.

15.4 Urban Land Management in Islamkot

Due to absence of provincial policy / framework for utilizing Urban Land especially in District headquarter towns, planners / development authorities have not carefully assessed the land use and transportation impacts of foreign investment. Due to non-existence / less effectiveness of Development authority mechanism, schemes / projects in private sector faces low exposure due to non-availability of basic facilities and monitoring mechanism by approval authority. As a result traffic congestion and infrastructure problems with the water supply and sewerage treatment are mounting.

Getting access to land for factories and commercial facilities is problematic, particularly in agricultural rich fertile land. Decades of inefficient allocation of land for industrial uses have literally blighted / discourage agricultural activities in the region. Unfortunately, a lack of clarity over land rights, corruption and bureaucratic inertia are impeding redevelopment. To compound matters, land use plans in many transition economy towns have not been planner to reflect the new land use requirements necessary to support post-industrial development.

To effectively exploit the benefits of inward investment flows and to ensure that social and environmental goals are met, the public sector needs to take the lead in planning and formulating urban land management strategies to promote sustainable urban economic development.

15.5 Land Pooling and Reconstitution

Simply put, in LPR, a number of small holdings are pooled together, a part of land is taken from each plot for provision of infrastructure and public facilities and the rest returned to the original land owners. It is basically a land management tool and is used all over the world under different names with slight modifications in their working.

15.5.1 Land Management Techniques

The strategies available for access to urban land could be through Guided land development for large areas; Land pooling and reconstitution; Land reconstitution / redevelopment; Acquisition for public purpose under the Land Acquisition Act, 1894; Joint Sector Model of land assembly and development; Transferable Development Rights (for built up areas); Saleable FAR and mixed use concept (for regeneration of inner city); Land Pooling and Redistribution Scheme.

A. Land Acquisition Act, 1984

In Pakistan, the Land Acquisition Act, 1894 gives the right for Government authorities to acquire parcels of land for the implementation of development projects. The origin of the practice of land acquisition by public entities in Subcontinent goes back to 1824, when the British Government of India instituted regulations to facilitate urban land public acquisition from private owners. In fact, the obligation for owners to give up their land had to find a legitimate justification. The initial reason advanced to acquiring the land against their will was the need for constructing public buildings in Bengal provinces. These regulations enabled the British government to take possession of the land for the construction of roads and canals. From 1850 on, the scope of these laws was extended to other provinces in order to facilitate the operation of further infrastructure projects such as railways.

The Land Acquisition Act was edited in 1894. It harmonized and consolidated previous regulations into one single act, applicable within the whole British India. After Pakistan's independence in 1947, the Pakistan Government started using this act as a tool to purchase land at a lower price than that on the regular market, as it was meant to be used in the public interest. Several amendments have been made on this act, but its procedures have not changed.

B. Land readjustment / pooling

Land readjustment / pooling Land re-adjustment is a process whereby a public authority assembles numerous small parcels of raw land without paying compensation to the owners. The authority then sub-divides such assembled lands for urban use returning most of the building sites to the original owners in proportion to the value of their land contribution and permitting them the right of alienating such sites. The authority retains a portion of the assembled lands, applying them partly to provide civic amenities such as roads, parks and gardens or schools, and the remainder land for public sale to recover the cost of development. Thus, land re-adjustment acts as tool to achieve unified control over large areas of land and as an instrument of financing public service installations in the process of planned urban growth.

C. Guided Urban Development

The concept of Guided Urban Development (GUD) emerged in response to ad hoc, uncontrolled urban development with no regard to infrastructure services. It also aims to secure a limited availability of urban land for economically weaker sections. GUD has been practicing in India and developing world. The objectives of the scheme are as follows:

- Ensure provision of serviced plots for low income families at affordable prices (approximately 75% of total plots to be reserved for EWS / LIG); and
- Provide incentives to the land owner / private developer to participate in the provision of low income shelter by guaranteeing fair return on investments (profit of 20-30%).

15.6 City Survey

City survey is very important to manage land records for city. City survey will help to resolve present hassle in property transactions besides impeding planning & development. It will also help to resolve several issues i.e. Verification of ownership & Land grabbing issues respectively. Therefore it is suggested to conduct city survey & deal as separate project for Tharparkar

15.7 SWOT Analysis and Need Assessment

Strength	Weakness	Weakness	Threats
GOVERNANCE			
Planning Actors			
1. Politicians 2. Existence of Local government 3. Public Health Engineering Department	1. Lack of co-ordination among departments. 2. Weak technical support of government departments. 3. Weak financial base of departments. 4. Absence of development authority. 5. Shortage of technical staff, town planners, urban designer and policy makers at SMC, Regional Office of SBCA) 6. Overlapping of administrative functions 7. Need based ad-hoc planning system (day-to-day basis)	1. Strengthen the institutions, responsible for planning and execution 2. Immediate preparation of overall urban development strategy 3. Detailed land use zoning plan 4. Sectoral development plans 5. Detailed subject plans to regulate with density development. 6. Enhancing the role of local government on sustainable basis.	1. Inaccurate funding in development projects. 2. Wastage of local resources 3. Infrastructure development of poor quality, non-standard infrastructure. 4. Failure to provide technical support on issues required innovation. 5. May give birth to unwilling political interference and hidden interests based on nepotism and discrimination.
Coordination of Public Agencies / Department			
1. Town Committee / Taluka Municipal Administration 2. Politicians in charge 3. Participation of Sindh Building Control Authority (SBCA)	1. Weak co-ordination mechanism. 2. Lack of information sharing between line departments.	1. Preparation of local co-ordination standard procedures through policy frameworks. 2. Organizing events to make strong coordination between different departments.	1. Week coordination may give birth to poor governance. 2. Political interference
Local Council			
1. Availability of Town Committee.	1. Not actively pursuing the stated objectives.	1. With awareness and training of councilors the local	1. Confusion and chaos in the local development

Strength	Weakness	Weakness	Threats
		councils can be more effective. 2. Workshops and meetings can enhance the coordination as well as clear the vision about development perspectives.	affairs at present until local bodies are established.
Financial Resources			
1. Institution and system are in place. 2. Regular provincial grants available for development project. 3. Programme based medium-term donors funding.	1. The council does not affectively generate funds. 2. Less efforts offer by local councils for revenue generation through available local resources. 3. High dependency on provincial grant. 4. Lacking capacity in collection and financial management. 5. Very low capacity for capital investment in development projects.	1. Self-sustainable financial system needs to be effectively introduced. 2. Development of self-reliance and suitable financial model. 3. Resource generation through PPP. 4. Exploitation of local potentials for resource generation. 5. To curb mismanagement and corruption.	1. Poor maintenance of infrastructure relating utility services. 2. Political pressure and financial leakages. 3. Lacking M&E and implementation of strict accountability measures during audits.

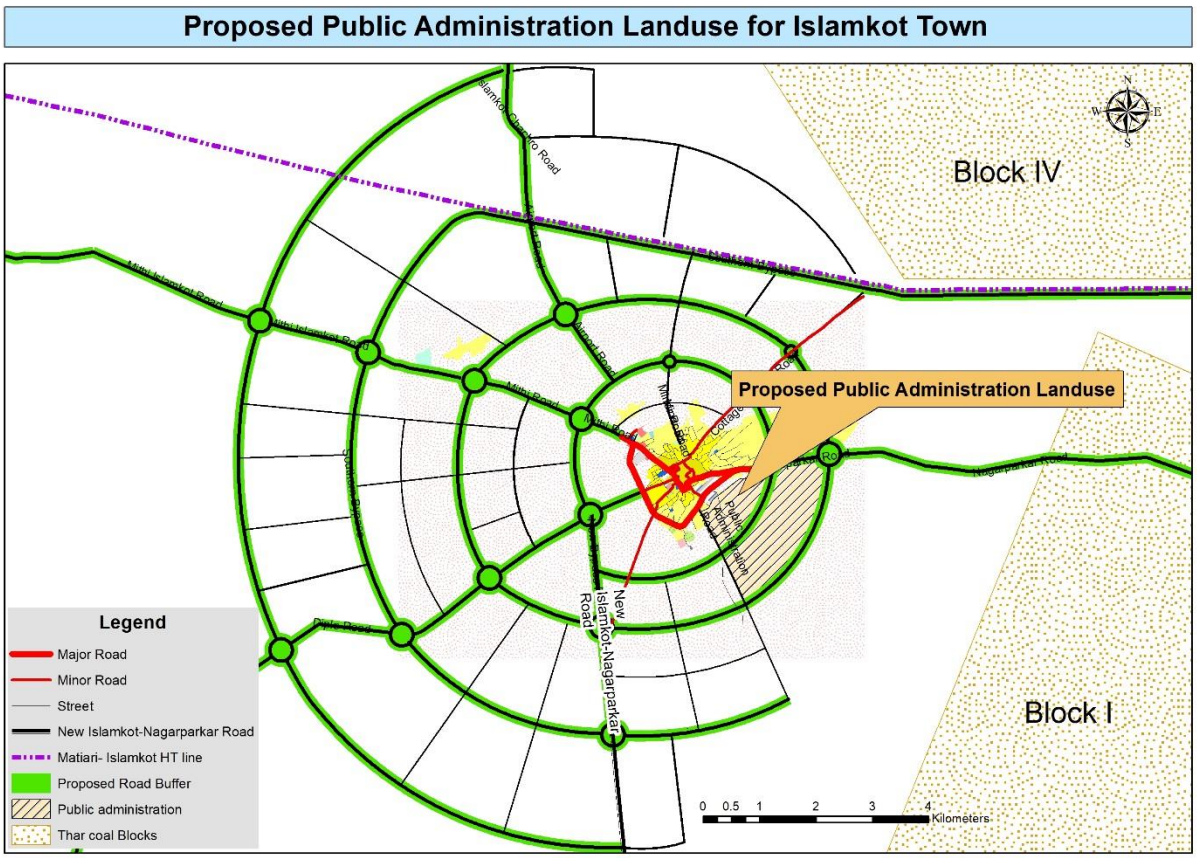


Figure 15-1: Future Administrative Proposal of Islamkot

16. IMPLEMENTATION STRATEGY

This part of the report aims to provide an implementation framework for various development proposals recommended in 'Strategic Development Plan' to drive future growth of Islamkot THQ town up to 2038, under the present governance framework of Government of Sindh.

16.1 Process of Implementation

The implementation of development plan is basically the process of prioritizing, phasing, coordinating, budgeting, scheduling, monitoring and making adjustments. There are number of management systems and charting procedures available to help a city manager to control this process. Issues that must be addressed in this regard are:

- Determine priorities within and among the sub plans
- Determine the phasing or sequence of activities within among the sub plans.
- Address timeframes and budget availability
- Creating master schedule of activities with a progressive cost table so that the program can be appropriately expanded or contracted to meet implementation contingencies and budget fluctuations.
- Assign the various activities to be undertaken by qualified managers.
- Establish a timely monitoring and report system to keep the city officials and the public informed of progress and activities.

16.2 Implementation Agency

The office of the Deputy Commissioner and in case of Local Bodies/Local Government, the Chairman of town will be the key implementation agency to execute Strategic Development Plan Islamkot 2038. However there is need to develop the capacity of town committee.

The Government of Sindh would take responsibility of implementing various development proposals by utilizing its maximum resources and by engaging various public offices of government of Sindh, established in Islamkot. The concerned agency must ensure that the overall process must go after following themes of implementation process.

a) ***The overreaching theme of the implementation of Strategic Development Plan Islamkot is:***
   - Consultation with stakeholders during implementation at all levels.
   - Decentralize decision making to the greatest extent possible.
   - Promote transparency and accountability of decision making and implementation enforcement.
   - Rationalize impacts where necessary;
   - Ensure compensation to affected communities
   - Enhance the quality of infrastructure provisions, promote utility services opportunities, and focus facilitating poor segments of society.

b) ***The principals that implementation process will follow:***

- The overall implementation process to be carried out in coordination with Town Planning and Urban Development Standards (Frameworks) in which redevelopment will be phased to prioritization;
- The implementation process will be based on updated planning codes and regulations;
- Special consideration will be paid to implement planning standards relating to disaster (Drought) preparedness in all development proposals/projects;
- Facilitate communities, government machinery, and other organizations of community to participate in overall implementation process;
- Educate stakeholders for technical assistance;
- Be comprehensive, coherent, and coordinate to avoid errors through continuous monitoring and evaluation
- Arrange supple of financial resources

16.3 Legal Frameworks

Local governance agencies dealing with any development proposal must ensure that all development related activities and their approval consent should be carried out in accordance with urban planning statutory frameworks of government of Pakistan operational at all government level levels. This includes all legal frameworks substantiated through the relevant articles of constitution of Pakistan and the primary act (LAA 1984) governing land acquisition and compensation.

a) ***National Level Policy Frameworks***

The constitution of the Islamic Republic of Pakistan passed on the 10th April 1973 and as modified thereafter, is the supreme law of Pakistan Government. This constitution provides legal cover to all laws and acts, particularly those embedded in chapter-3 pertaining with land acquisition, development and compensation.

b) State level Statutory Frameworks pertaining to planning and development Control

On 14th Feb 2011, the government of Sindh notified the extension of the jurisdiction of Karachi Building Control Authority to the whole of Sindh. The five Regions of Sindh Building Control Authority notified by the Government of Sindh are: **Karachi, Hyderabad, Mirpurkhas, Sukkur & Larkana,** having the Head Quarter **Karachi. Thus, any development activity within juridical boundary of these districts must be carried out in accordance with the primary planning instrument ' *Sindh Town Planning and Building Control Regulation'*.**

c) Local Planning Instruments

There is variety of regulations dealing with services offences and penalties (Fines) in case of violation have been constituted in Schedule-VI (Section 139) 'Offences under the Act' Part-1 of Local Government Act-2013 (Third Amendment 2016) of Sindh Government.

In this regulation, various well defined public activity management and control regulations dealing with Public Health Safety, Land use Planning, Development Control, Encroachments, preparedness of safety measures from Natural & manmade disaster, quality of Drinking water, Solid Waste & Waste Water generating though multiple activities, Preservation of Heritage Sites, Open Space management and associated penalties, in case of violation, have been defined in detail.

d) Other relevant planning and design standard instruments

There are varieties of other documents that support assessment of development proposals prior to implementation. e.g. 'National Reference Manual' - Ministry of Housing and works, Environment and Public Affair Division, etc.

If regularization requirements of any of development proposal is beyond the capacity of regularity frameworks mentioned above, the concerned agency dealing with development/implementation process in Islamkot may develop their own regulatory frameworks/ building codec's to regularize the status of development with consent of local/provincial government authorities, if necessary.

16.4 Institutional Enhancement

While implementing the Strategic Development Plan "SDP', the respective Provincial and District Government may seek technical assistance from all the line department i.e. DUP&SP, Local Development Authority, Town Committee, secretariat of Commissioner and Deputy Commissioner.

The *'Urban Management Unit*' will mainly consist of urban planners supported by other technical staff; architects, project managers, engineers, finance officers and any other technical staff expert in their relevant fields.

The *'Urban Management Unit'* shall supervise and coordinate respective urban developers involved in development activities, conduct monitory audits, preparer evaluation and impact reports and will report to the head of respective governance agency.

Development authorities will be responsible for implementing new approved town planning and building codes with the assistance of office of head of respective governance agency. The office of district coordinator will be responsible for the overall coordination and monitoring and will provide support for development/redevelopment activity from federal to district level.

The Urban Management Unit would also facilitate the office of district coordinator/ deputy commission for all development/ implementation related (a) needs identification (b) revision of annual plans (c) coordination (d) financial management and (e) monitoring of all development activities assigned to developers or government departments.

17. IMPLEMENTATION SCHEDULE

Strategy:	***Programs/ Policies***
Balanced Urban Growth	Land Use Zoning Decongestion specially in the Core Urban area Development of low density low income housing Development Control Amendment in Zoning Bye laws Provision of utility services for Core Urban Areas Peri-Urban Land use control Vertical growth options Air Port Road Regeneration Zoning master plan for Airport Road Regeneration Circular Road Completion of New Bypass Road from Diplo Road to connect Nagarparkar
Responsibilities to Plan: Detailed Urban Design Strategy Development Assessment Impact of property Assessment Environmental Impact Study (EIA,IEE)	Implementation Responsibilities: Public Sector/ Private developers
Concerned Agencies: P & D Department Government of Sindh/ District Government/ Line Departments of local Government /Private Developers	Time of Implementation: Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy:	***Programs/ Policies***
Future Transport Sector Development & Improvement	Traffic Management Program Parking restrictions / Charged parking system Control traffic movement specially cargo Qingqis and Pick-ups

	Manage unidirectional traffic flow. Enforcement of traffic rules Improved road infrastructure and street furniture Implementation of traffic bylaws <u>Congestion Reduction in Core Urban /CBD Area</u> Designated stands for qingqi / rickshaws / taxis Specified spaces for charged parking system Alternate route for loading and unloading vehicles Unidirectional traffic flow pattern Removal of encroachments from major distributors Development of infrastructure for pedestrian movement in old precinct.
Responsibilities to Plan Enforcement of road space improvement byelaws Traffic corridors detailed study Encroachment Removal & Relocation Study On Street & Off Street Parking Feasibility Study Beautification plan	Implementation Responsibilities International Development and Fund Supporting Agencies/Public Sector/ Private developers
Concerned Agencies Provincial Works & Services Department Government of Sindh./ District Highways Department/ Local Government/District Government/ Private Developers Line Departments of local Government.	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)
Strategy: **Water Supply System Improvement**	***Programs/ Policies*** In the long term, piped water supply system for 100% population by 2038 Installation of localize network in the planned housing schemes first and gradually cover the whole population in five year plans.

	Reuse of treated effluent Implementation of Tariff System for utilities through Water Metering (first for water usage above marginal consumption then in long run for all users).
Responsibilities to Plan Need Assessment/Demand & Supply Study Separate Master Plan for water supply and infrastructure development plan	Implementation Responsibilities Public Sector/ Private developers
Concerned Agencies Provincial / Local Government/ Public Health Engineering Department	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy: **Drainage & Sewerage System Improvement**	**Programs/ Policies** Improvement and reconstruction of existing Combined system of sewerage and drainage (Phase-wise approach of replacing open drains with covered sewers of PE pipes). Provision of wastewater treatment plant.
Responsibilities to Plan Need Assessment/Demand & Supply Study New Master Plan for Drainage & Sewerage services improvement.	Implementation Responsibilities Public sector / Private developers
Concerned Agencies Provincial / Local Government/ Public Health Engineering Department Town Committee (TC)	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy: **Solid Waste Disposal System Improvement**	**Programs/ Policies** Immediate designation of walled Landfill Site with special attention for hospital waste disposal. Collection and disposal of solid waste through specialized waste management companies.
Responsibilities to Plan Disposal Generation Assessment Study New Master Plan for Solid Waste Disposal System improvement.	Implementation Responsibilities Public / Private Sector
Concerned Agencies Provincial / Local Government/ Public Health Engineering Department Town Committee (TC)/ Sindh Solid Waste Management Company SSWMB	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy: **Improving Efficiency of Town Committee's (TC)**	***Programs/ Policies*** Acquire the required additional sanitary workers as per requirement. Make Town Committee self sufficient Strengthening Town Committee's Financial Capacity In long term introduce 4R Solid Waste Management System (reduce-reuse-recycle-reject)
Responsibilities to Plan Town Committee's Progress Assessment Study	Implementation Responsibilities Public / Private Sector
Concerned Agencies Provincial / Local Government/ Public Health Engineering Department Town Committee (TC)	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy:	Programs/ Policies

Improving Fire Fighting Capacity	Establishment of main and sub-stations to accommodate appropriate number of fire vehicles. Establish sub-stations at different locations to ensure short response time for the whole city. Increase service efficiency through number of vehicles, dedicated staff and financial mechanism. To ensure readiness of all vehicles with ample stocks of POL and spares.
Responsibilities to Plan Assessment on Town Committee's firefighting potential	Implementation Responsibilities Public Sector
Concerned Agencies Islamkot Town Committee.	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy: **Energy (Gas, Electric Power, Energy Generation through Alternate Resources)**	***Programs/ Policies*** Development of alternative energy resources such as wind, solar and bio-gas etc. To Improve existing infrastructure of WAPDA New power generation from Thar Coal Solar street lights project Energy generation through solar panel system for residential and commercial purpose. Installation of Sui Gas Network for entire THQ Town.
Responsibilities to Plan Demand and Assessment of various energy resources. Feasibility study for solar Park Rehabilitation of solarized street lights.	Implementation Responsibilities Public/ Public Private Partnerships
Concerned Agencies SSGC-Sui Southern Gas Company WAPDA Developers	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy:	***Programs/ Policies***
Improve access to healthcare facilities & minimize the long journeys to access basic medical facilities	Check and balance to accomplished existing health care projects. Addition of required beds to achieve the target of 2 beds per 1000 district population Hiring of doctors and paramedical staff to cater future population. Installation of incinerators.
Responsibilities to Plan Health reforms	Implementation Responsibilities Public Sector and Welfare Agencies
Concerned Agencies State Government/District Health Department. Provincial and District Health Department	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy:	Programs/ Policies
Education Sector Strategy	Provision of additional classrooms at different levels for present need Repairing of school existing buildings with furniture Training of teaching staff New schools and colleges for estimated population of 2038.
Responsibilities to Plan Education Infrastructure Improvement Mater Plan	Implementation Responsibilities Public Sector
Concerned Agencies Provincial Government/District and Taluka Education Department.	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy: **Improving Recreation Sector**	Programs/ Policies Repairing of existing recreational facilities and completion of under construction work. Introduce financial mechanism i.e. facility use charges, to generate revenue to make them self-sustaining. Special arrangement for security, parking and alternate route during religious and cultural activities in the city. Provision of touristic and entertainment facilities for all. Provision of facilities for visitors near temples like Saint Shree Ashram Encourage Private Investment in recreational sector Provide city scale Zoo and Amusement Water Park facilities for future
Responsibilities to Plan Provisions of New Recreation sites	**Implementation Responsibilities** Public Sector
Concerned Agencies Provincial Government / Culture, Tourism & Antiquities Department/ Government of Sindh/ District / Taluka / Local Government / TC	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy: **Disaster Risk Management**	**Programs/ Policies** Engage all stakeholders of entire district in overall disaster rehabilitation process. Recognize the commitment of stakeholders and the need for collaboration across all levels of government, community, industry, commerce, and government owned corporations, private and volunteer organizations and local communities within all aspects of disaster management. Aligned job responsibilities of key stakeholders with job descriptions mentioned in principal guidelines proposed in Pakistan National Disaster Risk Management Act 2010, National Disaster Risk Management Guidelines and Disaster Risk Management Plan, Sindh.

	Ensure establishment of straight relationships, trust, teamwork, consultative decision-making and shared responsibilities among stakeholders. Develop disaster risk assessment system through statistical information, risk maps, emerging hazards information and their affects. Adopt measures of sustainability of local communities by utilizing local resources available to avoid post disaster cataclysms (dearth, theft, spread of epidemic diseases, etc). Promote economic sustainability after disasters.
Responsibilities to Plan Identification of Disaster Prone Areas and Early warning and shelter homes Development of Community Training and Drill Organization Manual and SOP. Development Local stakeholders Roles and Responsibility SOP.	Implementation Responsibilities Public Sector and National /International Welfare agencies
Concerned Agencies NDMA/PDMA/ P & D department Gos/ SUPARCO/ Provincial Irrigation Department Gos/ Line departments of local government/District Disaster Management Authority.	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy: **Economic Development Plan**	**Programs/ Policies** Rehabilitation of Infrastructure in existing Small Industrial Estate (roads, street lights, parking for loading/unloading goods vehicles, etc.) Increase strategic storage through construction of cold storage / Godowns for agro products to cater drought situation. Provide good incentives near peripheries for shifting / re-location of whole sale markets from the inner city to reduce congestion. Encourage Local Private Investors by giving them subsidies.

	Consider changing trends of crop production through periodically revise Economic Policy Framework (feasible studies for economic potentials) Ensure measures for security / risk recovery plan for economic zone. Market and logistics should also be added to enhance trade and commerce. Livestock and dairy sector needs to encourage and facilitated. Centralize wholesale markets to create connectivity with regional markets. Drought measures
Responsibilities to Plan Feasible studies for economic potentials	Implementation Responsibilities Public /private developers
Concerned Agencies Provincial Government/District Government/Local Government/ Chamber of Commerce and Industries/Market Committee	Time of Implementation Short Term (1 year to 5 Years) Long Term (5 Years to 20 Years)

Strategy: **Conducting City Survey**	**Programs/ Policies** • City survey is important to manage land records for city. • To resolve present hassle in property transactions besides impeding planning & development. • It will also help to resolve several issues i.e. Verification of ownership & Land grabbing issues respectively.
Responsibilities to Plan • Conducting city survey shall help to manage ownership land record • Landuse classification	**Implementation Responsibilities** Public sector / Private developers
Concerned Agencies Board of Revenue & Deputy Commissionaire office	**Time of Implementation** Short Term (1 year to 2 Years)