

MASTER PLAN FAISALABAD 2021-2041



January 2023

OSMANI



FAISALABAD DEVELOPMENT AUTHORITY
GOVERNMENT OF PUNJAB



ASSESSMENT REPORT

FAISALABAD MASTER PLAN (2021-2041)
INCLUDING STRATEGIC PLAN FOR FIVE YEAR

TABLE OF CONTENTS

	<u>Page No.</u>
TABLE OF CONTENTS	i
LIST OF TABLES	iii
LIST OF FIGURES	iv
ABBREVIATIONS	v
1. GENERAL	1-1
1.1 INTRODUCTION.....	1-1
1.2 BACKGROUND.....	1-1
1.3 URBAN PLANNING SYSTEM IN PUNJAB PROVINCE	1-3
1.4 CHALLENGES AND OPPORTUNITIES.....	1-10
2. City CONTEXT	2-11
2.1 CITY CONTEXT.....	2-11
2.2 PHYSICAL SETTING AND ENVIRONMENT CONDITIONS.....	2-11
2.2.1 <i>Physical Setting</i>	2-11
2.2.2 <i>Environmental Constraints</i>	2-11
2.2.3 <i>Current Climate Related Threats and Impacts</i>	2-13
2.2.4 <i>Projected Climate Related Threats and Impacts</i>	2-13
2.3 INSTITUTIONAL ARRANGEMENTS.....	2-14
2.3.1 <i>Organizational Structure of Metropolitan Administration</i>	2-16
2.3.2 <i>Institutional Capacities and Development Constraints</i>	2-18
2.4 PLANNING HISTORY AND EVOLUTION OF URBANIZATION PROCESS IN THE CITY ..2-19	
2.4.1 <i>Faisalabad's Functional Urban Area</i>	2-28
2.4.2 <i>Challenges and Opportunities</i>	2-30
3. POPULATION GROWTH AND DEMOGRAPHIC FACTORS	3-31
3.1 BACKGROUND ON POPULATION TRENDS.....	3-31
3.1.1 <i>Population Growth</i>	3-31
3.1.2 <i>Population Density</i>	3-32
3.2 PRIMARY ECONOMIC DRIVERS.....	3-33
3.3 KEY DEMOGRAPHIC TRENDS.....	3-35
3.3.1 <i>Housing</i>	3-35
3.3.2 <i>Education</i>	3-37
3.3.3 <i>Health</i>	3-37
3.3.4 <i>Poverty</i>	3-40
3.3.5 <i>Employment</i>	3-41
3.4 POPULATION FORECAST	3-41
3.5 CHALLENGES AND OPPORTUNITIES.....	3-43
4. EXISTING LAND-USE AND SETTLEMENT PATTERN	4-44
4.1 URBAN STRUCTURE	4-44
4.2 EXISTING LAND USE	4-46
4.3 SPATIAL DISTRIBUTION OF KEY URBAN ASPECTS	4-46
4.3.1 <i>Movement and Access</i>	4-47
4.3.2 <i>Economic Activity</i>	4-49
4.3.3 <i>Public and Community Facilities</i>	4-50

4.3.4	Public Open Space and Recreation.....	4-52
4.4	CHALLENGES AND OPPORTUNITIES.....	4-53
5.	POTENTIAL PROJECTS.....	5-54
6.	WAY FORWARD.....	6-55

LIST OF TABLES

Table 2-1: Vulnerability Matrix-Punjab.....	2-13
Table 3-1: Historic City Population Trends based on Census.....	3-31
Table 3-2: Population growth in Faisalabad and comparison with the cities	3-31
Table 3-4: Male Female Percentage as per 1998 and 2017 Census	3-33
Table 3-5: Projected Dispensaries in 1986 Structure Plan of Faisalabad	3-38
Table 3-6: Population of Faisalabad City from 1901-2017	3-41
Table 3-7: Population Projection 2017-2036	3-42

LIST OF FIGURES

	Page No.
Figure 1-1: Location of Faisalabad	1-2
Figure 1-2: FDA Boundary	1-3
Figure 1-3: Hierarchy of Land use Planning Powers.....	1-4
Figure 1-4: Hierarchy and Organization of Spatial and Land-use Plans in the Punjab.....	1-7
Figure 2-1: Institutional Arrangement for Urban Governance and Management in Punjab.....	2-15
Figure 2-2: Faisalabad Land-use Plan 1968.....	2-21
Figure 2-3: Land-use Plan 1986.....	2-23
Figure 2-4: Peri-Urban Structure Plan 2015-2035	2-28
Figure 2-5: Functional Urban Area	2-29
Figure 2-6: Faisalabad Regional Connectivity	2-29
Figure 2-7: Spatial Growth of Faisalabad City	2-30
Figure 3-1: Population Density Map of Faisalabad	3-32
Figure 3-2: Room Density in Pakistan	3-36
Figure 3-3: Distribution of School in the District.....	3-39
Figure 3-4: Distribution of Colleges in the District.....	3-39
Figure 3-5: Schools in FDA Limit.....	3-40
Figure 3-6: Hospitals in Faisalabad	3-40
Figure 4-1: Faisalabad's Urban Form.....	4-45
Figure 4-2: City Nodes	4-45
Figure 4-3: Existing Land-use Map.....	4-46
Figure 4-4: Registered Vehicles in Faisalabad	4-48
Figure 4-5: Markets and Bazars of Faisalabad City	4-50
Figure 4-6: Public and Community Facilities	4-51
Figure 4-7: Parks & Open Spaces in City Tehsil.....	4-52

ABBREVIATIONS

BRT	Bus Rapid Transit
CPEC	China Pakistan Economic corridor
DC	Deputy Commissioner
DPDC	District Planning and Design committee
FCCI	Faisalabad Chamber of Commerce and Industry
FDA	Faisalabad Development Authority
FIEDMC	Faisalabad Industrial Estate Development and Management Company
FMP	Faisalabad Master Plan
GDP	Gross Domestic Product
GIS	Geographic Information System
MC	Municipal Corporation
MC	Municipal Committee
MICS	Multiple Indicator Cluster Surveys
NOC	No Objection Certificate
OCL	Osmani & Company Private Ltd.
PHATA	Punjab Housing and Town Planning Agency
UC	Union Council

1. GENERAL

1.1 INTRODUCTION

Faisalabad City has initiated a comprehensive update of its masterplan to evaluate current conditions in the community, develop a vision for the city's future, and outline a systematic set of actions by which to achieve that vision. The first major step in the masterplan process is the establishment of baseline conditions and trends in the city.

The Government of the Punjab intends to develop existing major urban areas of the Province as sustainable, liveable and well managed engines of economic growth. As other urban centres of province, Faisalabad and its surrounding town have also expanded vigorously and hence requires a comprehensive, strategic, regional, and long- term plan for sustainable development. In addition, Faisalabad is the third largest city of Pakistan and renowned textile industry of the country. Being industrial city, it attracts more job seekers, but it is not facilitating the incoming population at its maximum capacity. Therefore, a comprehensive planning mechanism is needed to be defined for the sustainable future growth of Faisalabad.

1.2 BACKGROUND

The deliverable for Faisalabad will be divided into eleven documents:

- I. Inception Report
- II. Report on Vision Statement, Goals and Objectives & Strategies
- III. Profile of Faisalabad Region (including all data collected and analyses in soft format)
- IV. Assessment Report
- V. Consultation Report
- VI. Integrated Strategic Development Plan
- VII. Sectorial Plans including but not limited to:
 - Economic Development Plan
 - GIS based comprehensive Land Use Plan including Peri-Urban Structure Plan in line with the Economic Development Plan
 - Traffic & Transportation Plan including non-motorized transportation
 - Water Supply, Sewerage & Drainage Plan
 - Solid Waste Management Plan
 - Energy Conservation Action Plan
 - Built Heritage & Tourism Plan
 - Parks & Open Space Plan
 - Urban Design Guidelines
- VIII. Implementation Plan
 - Institutional Framework
 - Legal & Regulatory Framework
 - Financing Options & Plan
- IX. Consultation Report
- X. Short Term Strategic Plan
- XI. Final Report on Integrated Strategic Development Plan 2036 for Faisalabad Region.

The purpose of this portion of the Assessment report is to provide a profile and analysis of existing conditions and trends focusing primarily on urban planning and those urban aspects that it directly influences. The Assessment report presents the physical, social, and economic information required to support the preparation of the masterplan. It serves as the foundation

document from which subsequent planning policies and programs will be formulated. The Assessment report is based on data and information available as of June 2017.

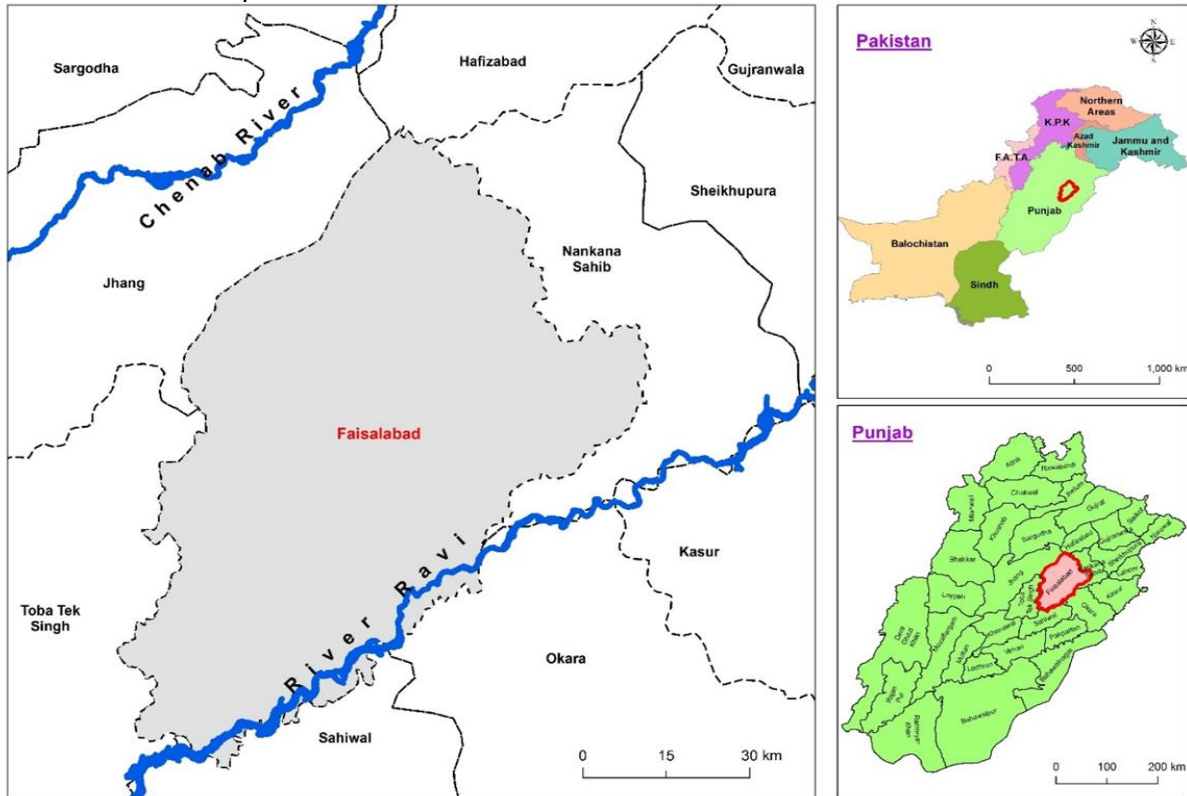


Figure 1-1: Location of Faisalabad

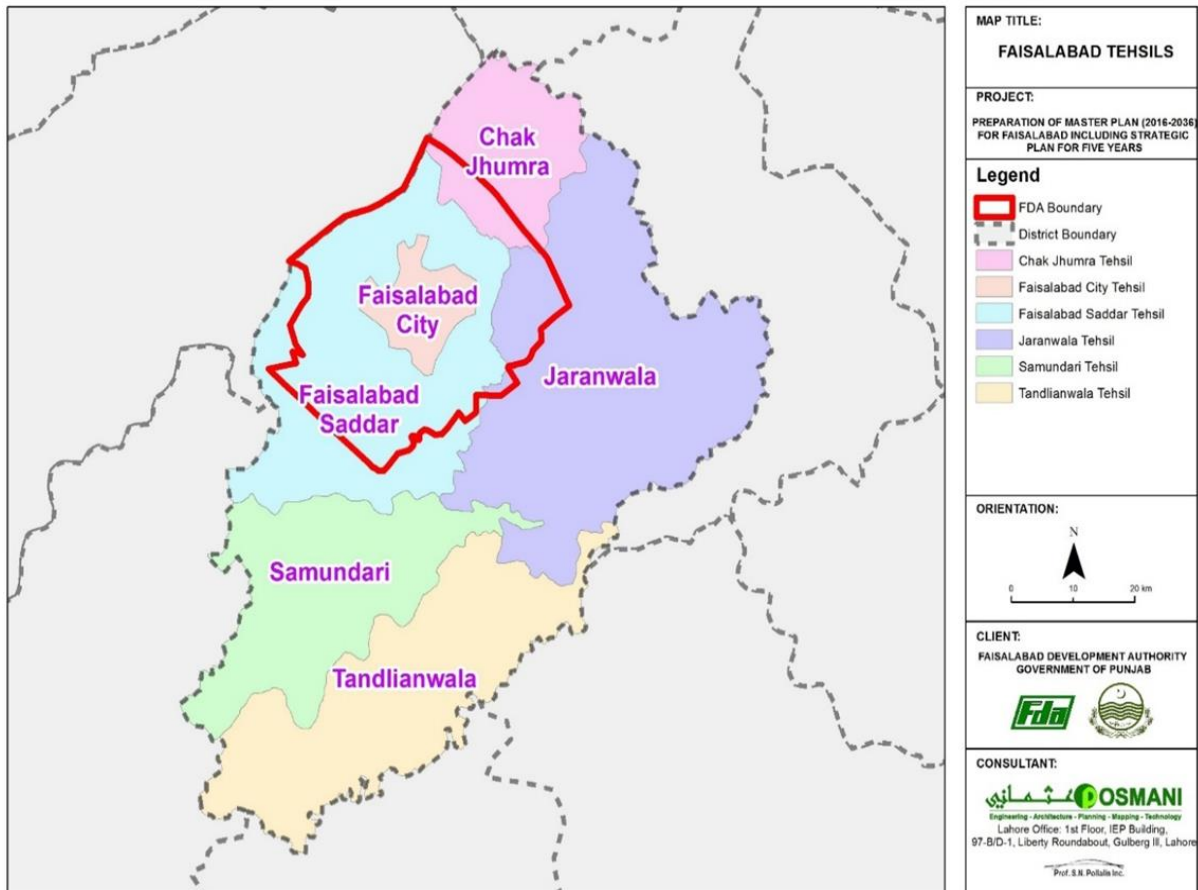


Figure 1-2: FDA Boundary

Source: OCL Consultants

1.3 URBAN PLANNING SYSTEM IN PUNJAB PROVINCE

Urban planning, also known to as land use planning, metropolitan planning, strategic planning, and spatial planning, forms the backbone of the means to manage a city's spaces, places, and future growth. It is the technical process and development tool that focuses on the physical form, economic functions, and social impacts.¹ Cities that develop in an unplanned, uncontrolled manner can be expected to experience an increase in slums and inadequate provision of basic services.²

UN-Habitat recognized that, "proper urban planning is the key to bridging the urban divide and is an essential tool to make cities inclusive, environmentally friendly, economically vibrant, culturally meaningful and safe for all."³ This, however, implies the need to satisfy a number of minimum conditions including, a legal basis for urban planning, a political system, and mechanisms that allow and encourage participatory urban planning processes; as well as the strategic use of urban planning tools for integrating public sector functions, and addressing rapid urbanization and sustainable development. In this context, urban planning is one of the key implementation mechanisms of urban governance, which is the process by which governments (local, regional, and national) and stakeholders collectively decide how

¹ UN-Habitat (2010) Planning Sustainable Cities: UN-Habitat Practices and Perspectives

² UN-Habitat (2008) Urban Planning Best Practices on Creating Harmonious Cities: City Experiences

³ Ibid 2

to plan, finance, and manage urban areas.

Urban planning provides the spatial interpretation for governance decisions on a host of economic and social relationships. Urban planning also has a profound impact on land development, economy, and quality of life within urban areas, while providing the framework for the regulatory control mechanisms, as shown in Figure 2. International experience suggests that spatial and land use planning, with their regulatory and development functions, are an important tool for growth, sustainable development, and improved quality of life.⁴

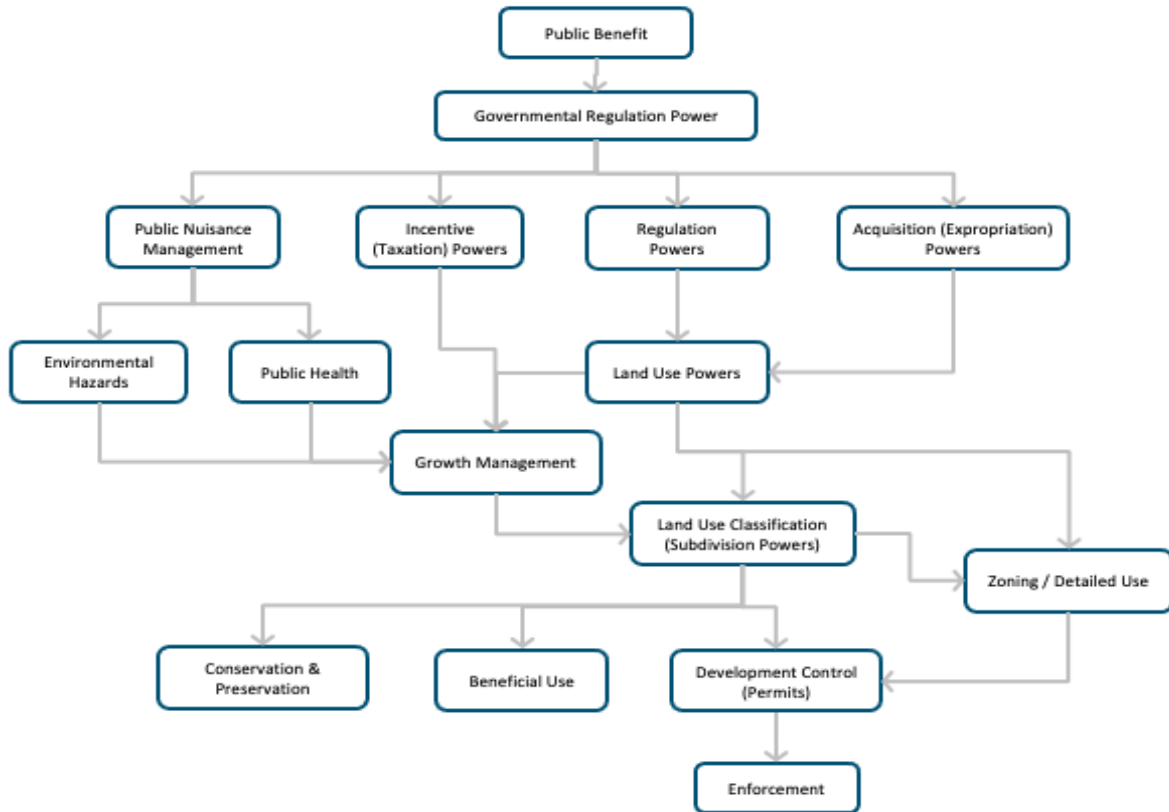


Figure 1-3: Hierarchy of Land use Planning Powers

In general, there is no accepted or explicit urban planning system in Pakistan. The urban management functions of cities are dispersed among municipalities, and several mostly semi-autonomous bodies that function under federal and provincial government departments. Each agency has its own building, land use, and environmental control provisions, and is autonomous in carrying out the development works and maintaining the facilities within their jurisdiction without any coordination. As a result of this fragmentation, institutional control of land-use are extremely difficult and speculative market trends have taken control. Planning is seen as an obstacle rather than a tool for more effective utilization of resources and creation of equity. The key issues facing the system include:

Levels of government and their responsibilities. Since 2011, the government envisioned Pakistani cities as the “engines of economic growth,” and as the prime movers and beneficiaries of “all productive activity,” since the majority of Pakistan will be urban by 2030.⁵

⁴ Yuen, B. and Choi, S. (2012) Making Spatial Change in Pakistan Cities Growth Enhancing. World Bank Policy Paper Series on Pakistan PK 11/12

⁵ Government of Pakistan, Ministry of Planning, Development & Reform, Planning Commission (2011) Framework for Economic Growth (FEG)

Despite this, there is no national urban policy, though Vision 2025 recognizes the crucial role of cities in national development.⁶ Moreover, the fundamental responsibilities for spatial planning and land-use policies are not well defined, and there are no explicit or transparent sets of national land policies and rules or regulations to promote sustainable urban development.

Despite its lack of direct powers regarding land-use planning, the federal government exercises considerable influence over land use. First, it has enacted environmental legislation that influences land-use decision making. Second, it owns large parts of the land, especially through federal government institutions, such as Military Land and Cantonment Boards and Pakistan Railway, and may decommission these lands for private development. Third, it constructs and funds federal roads and other strategic infrastructure. Fourth, it provides fiscal incentives to provincial and local governments for specific projects. Fifth, it pursues agricultural and industrial policies using fiscal and regulatory tools that influence land use. Sixth, it develops and adopts a national building code that applies to all localities in the country.

Federal government institutions, such as Military Land and Cantonment Boards and Pakistan Railway, retain a strong presence. These prepare plans independently of municipal governments, and follow their own laws, rules, and bylaws. They have no requirements for coordination with each other, or with other governmental planning entities.

Constitutionally, the provinces have the authority to regulate land use, but to a large degree, delegate this authority to local governments. Despite this, they retain considerable indirect influence. First, the provincial assemblies determine the delegation of powers to the local governments, and the framework legislation that defines the tools that local governments can use for land-use planning and control. Second, they specify how local governments can finance themselves. Third, judicial review of land-use permits, as well as rules for how local governments must conduct administrative hearings on land-use permits, are frequently determined by the provinces. Fourth, the provinces may own land themselves. Fifth, provinces retain oversight over most staffing matters, including cadre requirements. Sixth, provinces retain indirect influence through provincial agencies, such as Development Authorities (DAs), that provide both planning and development functions, and have a parallel power structure.⁷

The key responsibilities for land use planning, however, are with the local government level, both rural and urban.

There is no unified, integrated, planning system for any city as a unified whole, since cantonments, Defence Housing Authority land, and areas under DAs are excluded from the scope of the city's master planning, although the Punjab Housing and Town Planning Agency (PHATA) is tasked with establishing a comprehensive system of urban planning at provincial and local government levels. The regulatory landscape is also complicated by a weak institutional structure characterized by a multiplicity of institutions, with each agency responsible for a range of services within its own jurisdiction, based on its own set of rules and regulations. In many cases, these rules and regulations have not been updated to address current needs, and often involve little institutional coordination, weak accountability,

⁶ Government of Pakistan, Ministry of Planning, Development & Reform, Planning Commission (2014) Pakistan 2025: One Nation – One Vision

⁷ Punjab Development of Cities Act, 1976

and the absence of standardized documentation and registry of land rights.⁸

The combined effect of regulatory and institutional inefficiencies is poor management of land, leading to numerous loopholes, disjointed practices, and often non-transparent procedures, delays, high costs, and inaccurate land records.⁹ Overlapping, fragmented and uncoordinated planning functions lead to duplication and wastage of resources, or worse, conflicting decisions across jurisdictional boundaries.¹⁰ The outcome is the absence of a holistic vision for the city, impeding the formulation and implementation of forward-looking, future-oriented master plan for the city.¹¹

The inevitable outcome is that cities end with at least two separate urban land use plans, each followed by a different organization that have overlapping functions and territory.¹² Without an appropriate mechanism for coordination this hampers planning decisions, the direction for urban land management, and effective plan implementation. This type of planning vacuum increases unplanned and haphazard growth, environmental degradation, inter-organizational conflicts in municipal services provision, and exacerbates problems during disaster and crisis management. It also restricts the ability of local government to undertake holistic and integrated planning since many areas are excluded from the scope of a city's master planning.

Spatial and land-use plans. Responsibilities for spatial planning lie with the local government, while the federal and provincial governments define guiding principles for land-use planning and coordinate the efforts of the provinces and districts.

At the national level, non-binding country-wide strategic plans exist. Sectoral plans concern high-potential areas or sectors, such as transport, the electricity grid, the military, or on issues that have relevance beyond individual provinces, such as the China-Pakistan Economic Corridor. These plans designate areas for specific land uses within their thematic fields and are binding for subordinate plans. Typically, federal legislation in these areas provides a framework that is further specified by provincial legislation.

At the provincial level, strategic plans that describe the socio-economic situation and include detailed objectives for the spatial development exist. Though they determine the location of public infrastructure they are not very specific about the intended land use for certain parts of the canton. They do not, however, contain binding land-use regulations. In most cases, these plans are legally binding, and local governments must comply with them. In addition, provincial authorities supplement municipal functions on specific issues, such as education, or disaster risk reduction.¹³

For urban areas, municipal corporations are the central actors in land-use policies, as they required to prepare binding land-use plans and issue building permits for all construction projects located within the building zone of their territory. The prevailing urban planning system, however, is considered weak. Several national reports have recognized this

⁸ Government of Punjab, The Urban Unit (2007) Assessment of Urban Land Development & Management Practices in Five Large Cities of Punjab

⁹ The World Bank (2005) Land Records Management & Information Systems Program (LRMIS-P). Province of Punjab, No. AB1469

¹⁰ Ibid 10

¹¹ City District Government Karachi (2007) Karachi Strategic Development Plan 2020

¹² Ibid 10

¹³ Commonwealth Local Government Forum. The Local government System in Pakistan, 2017. Available online: http://www.clgf.org.uk/default/assets/File/Country_profiles/Pakistan.pdf

challenge. For example, the 2011 Task Force on Urban Development observed that “weak and fragmented city administration has resulted in incoherent, non-professional and non-consultative city planning,” and that “there is no urban planning, only ‘project-based’ development.”¹⁴ Figure 4 summarizes the existing hierarchy of land use plans.

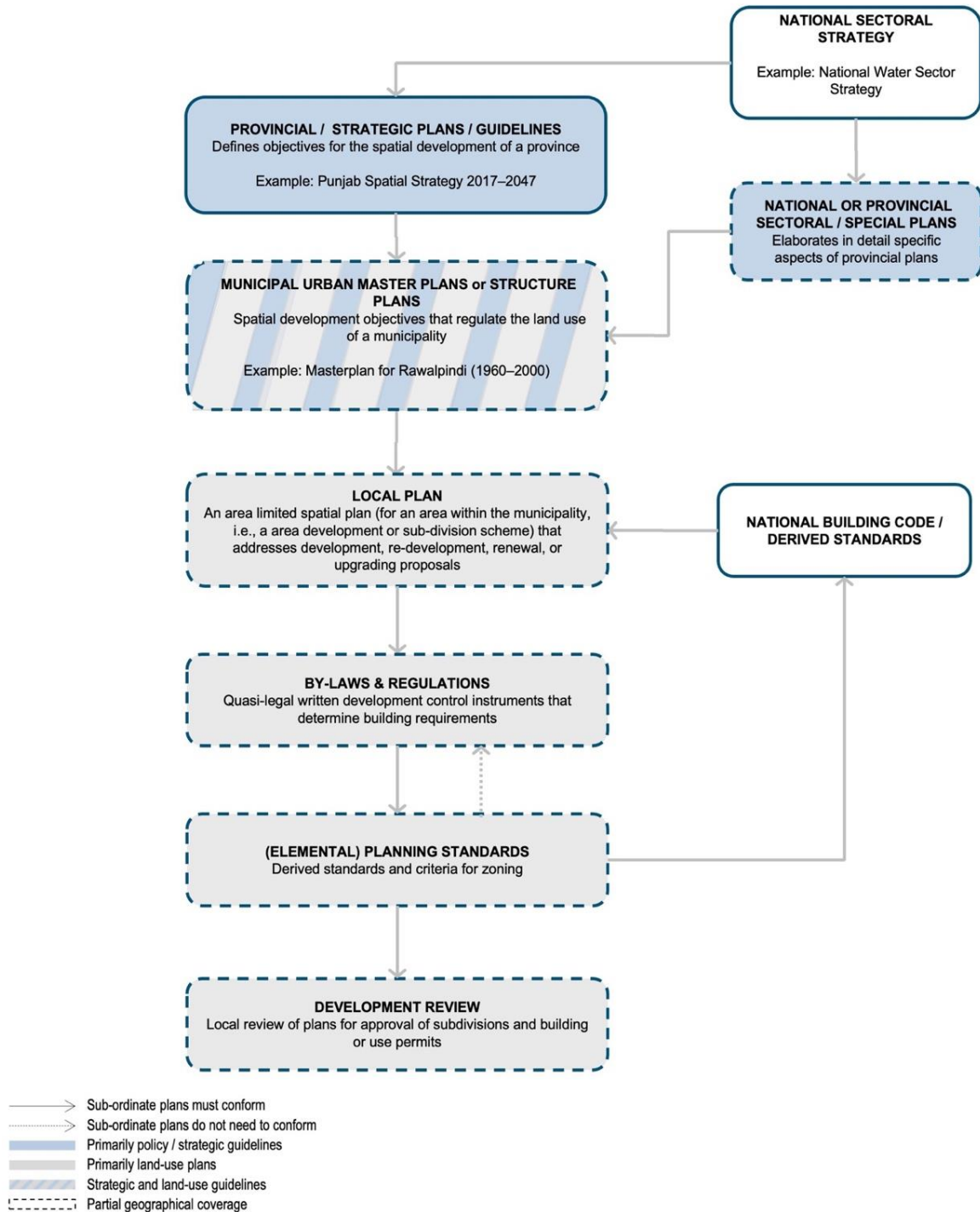


Figure 1-4: Hierarchy and Organization of Spatial and Land-use Plans in the Punjab

Additional weaknesses in the urban planning system include an absence of clear legislative

¹⁴ Government of Pakistan, Planning Commission (2011) Task Force Report on Urban Development

and institutional frameworks; weak planning capacity in terms of skilled personnel, data, and mapping; weak implementation and enforcement of urban plans; lack of long-term strategic planning; as well as outdated and cumbersome urban planning procedures and practices.¹⁵ The cumulative result is that the Punjab's cities are facing many challenges and urban inadequacies, in employment, environment, housing, infrastructure and transport, which erodes their economic potential.¹⁶ Further, congestion related diseconomies and unplanned spatial expansion are limiting the ability of cities to make the most of their urban potential.¹⁷

Coordination mechanisms. Few formal coordination mechanisms between levels of government exist. Most coordination is provided by the formally hierarchical nature of the administrative system, based on mandated responsibilities.

Recent and planned reforms to the system of land-use planning. As of the time of writing, implementation of Punjab Local Government Act (PLGA) (2013) has been halted by the Supreme Court.

Additional challenges facing the planning system. There are several major constraints that have led to urban planning being implemented in its currently limited form:

Lack of capacity (skilled personnel, data, and mapping) for urban planning. The provincial Local Government and Community Development (LG&CD) Department is responsible for implementing the local government system in the Punjab, and for overseeing the financing and staffing of municipal and district administrations. Urban planning and management are considered a function of local governments, though local governments have extremely limited technical capacity to fully meet the challenge.

There is a lack of qualified staff, data, and maps to effectively carry out planning work.¹⁸ In addition, inadequate access to spatial and statistical data can result in limited understanding and partial response to driving forces that shape urban development. One of the key limitations is that little, if any, data is available below the district level, making it almost impossible to analyse or address intra-city disparities and shortcomings. Further, plans for informal settlements are generally not available.¹⁹

Lack of urban plan implementation and enforcement. Urban plans face very long timeframes for plan development and approval. These render most plans obsolete and ineffective as tools of land use development.

Where approved plans exist, plan implementation is a serious challenge. For example, the 1966 Lahore Master Plan highlighted the absence of appropriate legal cover for master plans; and called for rectification. This aspect has not yet been addressed by the province.²⁰ As a result, plans often lack an organized implementation system or an effective monitoring and enforcement process. Without effective legal powers for implementation and enforcement, they have proved to be of limited practical value.²¹ The inevitable result of the absence of legal redress (an integral part of any development plan) is that people disregard the

¹⁵ Ibid 5

¹⁶ Asian Development Bank (2008) Poverty Assessment Update: Pakistan

¹⁷ Ibid 5

¹⁸ Government of Punjab, The Urban Unit (2010) Assessment of Capacity Building Institutions in Urban Sectors of Punjab

¹⁹ Ibid 5

²⁰ Lahore Development Authority (2004) Integrated Master Plan for Lahore 2021

²¹ Ibid 21

development plan and follow their own development whims.

Lack of long-term strategic planning. Until recently, the Punjab Planning Commission prepared 5-year plans that established the broad policy direction; and allocated a budget for them. There are, however, emerging signs of long-term planning at the provincial level, such as the Punjab Spatial Strategy 2017–2047 (PSS).²²

The federal government often takes responsibility for large projects, such as national highways, and develops these through its own agencies, such as the National Highway Authority, with little coordination with local government.

Outdated and cumbersome planning practices. A review of the development master plans of five large cities in Punjab (Faisalabad, Gujranwala, Lahore, Multan, and Rawalpindi) by The Urban Unit found many weaknesses that led to these failing to effectively plan for the needed urban growth and development.²³ The plans were formulated as rigid and heavily reliant on building regulations to control development. They lacked cohesiveness and vision; did not adequately identify the major actions needed to promote economic development, improve housing, mobility, and quality of life; did not fully cover urban and urbanizing areas (e.g., rapidly urbanizing areas on the periphery); did not support metropolitan development objectives, and lacked implementation mechanisms. Further, they were not linked to prioritized action plans, nor to financial strategies needed to realize them.

During the 1980s and 1990s, the British concept of structure plan and local plan system were introduced in some cities, such as Lahore, Peshawar, Faisalabad, and Multan. For a variety of reasons, including the fact that no structure plan was formally approved, this more flexible planning approach, which is closely aligned with governance capacity and fiscal independence, did not gain traction.²⁴ The Outline Development Plan and Master Plan remain the prevailing practice.

Despite theoretical understanding of the extent of land use powers under municipal control, for Punjabi municipalities, the key instruments for land use planning have been development controls: building regulations, such as plot size control, minimum building lines, site coverage, building height control, and floor area ratio. While these controls are widely used in many countries, when used as stand-alone measures, as occurs in Punjabi cities, they are often arbitrary, and do not support efficient city structures, performance of land, and affordability for various socio-economic groups.²⁵ Further, local development controls rely on outdated national standards, such as limited land use zoning provision for commercial activities (e.g., 5% in Islamabad and 2% in Karachi), maximum building height controls (e.g., 1.5 times the width of road right of way plus setback, if any, subject to maximum of 200 feet), and low floor area ratios (FAR) in the range of 1:1.5–1:5 for multi-storey buildings and along major routes.²⁶ This reduces net population densities, increases land prices, and depresses the development of city centres.

²² Government of the Punjab, Planning and Development Department (2017) Punjab Spatial Strategy 2017–2047

²³ Ibid 10

²⁴ Ibid 10

²⁵ Bertaud, A. (2010) Land Markets, Government Interventions and Housing Affordability." Working Paper 18, Wolfensohn Center for Development at Brookings

²⁶ [1] Mehdi, M.R., et al (2004) A functional analysis of Karachi land use plan; [2] Quigley, J.M. and Rosenthal, L.A. (2004) The Effects of Land-use regulation on the Price of Housing: What do We Know? What can we learn?" Berkeley Program on Housing and Urban Policy

At the same time, the mechanisms to enforce planning and building norms and rules are insufficiently defined. Even though the building regulations require regular monitoring and inspection, and provide the power to penalize and compound offences, in practice, the rules are blatantly violated without action against violators.²⁷ The violations range from incompatible land use encroachments to excessive construction, illegal change of use, including commercialization, as well as minor and major environmental issues. For example, procedures for obtaining planning and building approval are unclear, cumbersome, and lengthy. Coupled with the general shortage of relevant staff, the difficulties associated with the approval procedures contribute to frequent and widespread violations. The cumulative consequence is that developers to ignore development plans, and start development outside the development plan boundaries, contributing to uncontrolled growth.

1.4 CHALLENGES AND OPPORTUNITIES

One of the unique aspects that mark the Punjab's approach to urban planning is the lack of consistency. The urban planning system, which is an implicit one, was never designed to function effectively or to empower local government. Multiple legislative changes have yielded little change, as the key issue is the autonomy of the municipalities to act, whether for planning or implementation.

At present, most municipalities lack the capacity to develop urban plans. In addition, they do not utilize any effective development control tools to enforce, coordinate, and promote urban development related agendas due to a lack of trained professional staff, as well as the competing, partial, and administrative mandates. Further, the tendency of the various implementing agencies is to design projects based on localized site concerns, without consideration for systemic linkages and impacts or a more comprehensive impact assessment. As a result, the implications to the surrounding environmental and social systems are not addressed, and most projects are likely under-estimating the required design and monitoring capacity.

Further, the disjointed planning processes are conceptually non-spatial in their approach. The complicated process leading to development of plans, and their implementation ensures that the plans are static, inflexible and non-adaptive. Due to technical and information capacity gaps, they reflect poor local fit and foster urban expansion (i.e., urban sprawl).

Reducing the overlaps between the various "planning" entities, and clearly delineating the boundaries of each entity would significantly improve urban planning processes. Additional opportunities for change are part of improved governance processes. This includes, among others, improved skills and technical capacity, increased transparency of the evidence base, improved data management, and increased enforcement. Changes or reforms to taxation and excise incentives could also improve urban planning and governance capacities.

²⁷ Ibid 10

2. CITY CONTEXT

2.1 CITY CONTEXT

Faisalabad is the third largest city of Pakistan and renowned textile industry of the country. Being industrial city, it attracts more job seekers. Faisalabad city is famous for its textile spinning industry, which is the reason to be known as Manchester of Pakistan. The industrious people of Faisalabad have given the city a unique distinction of becoming the second largest industrial centre of the country.

Furthermore, it is the 3rd most populous urban agglomeration of the Pakistan. Faisalabad is a fortunate planned city since its origin, when the virgin land between the Chenab and Ravi Rivers was brought under plough in the last decade of the 19th Century with the excavation of Lower Chenab Canal. During the Colonisation period a town by the name of Lyallpur, after the name of then Lt. Governor Sir James Lyal, was conceived as a Market Town. The prime objective of the formation of this town was to provide the farmers a place to sell and purchase their products and necessities of life. The town planned over an area of 110 acres was meant to accommodate 20,000 people. The centre of the town was designed like the Union Jack by the British planners and the famous Clock Tower (Ghanta Ghar) was built at the intersection of eight bazars.

2.2 PHYSICAL SETTING AND ENVIRONMENT CONDITIONS

2.2.1 Physical Setting

Faisalabad lies on un-deformed Indian plate rock with a recent sedimentary cover deposits. Faisalabad District locates on the rolling flat plains of northeast Punjab, from 72.6667° to 73.6667° East longitude and latitude from 30.7° to 31.7833° North, with an average elevation of 184 meters (604 ft.) above sea level.¹¹ The city covers an area of approximately 1,230 square kilometres (470 sq. mi), while the district covers more than 16,000 square kilometres (6,200 sq mi). It is bounded by Nankana Sahib, Okara, Sahiwal, Toba Tek Singh and Hafizabad districts in clockwise direction starting from northeast direction. Moreover, Kasur, Sheikhpura and Sargodha are very close to Faisalabad district, which gives a good regional accessibility and connectivity.

There are no natural boundaries between Faisalabad and adjoining districts. The Chenab River flows about 30 km (19 mi) to the North-West while the River Ravi meanders about 40 km (25 mi) South-East of the city. The lower Chenab canal is the main source of irrigation water, which meets the requirements of 80% of cultivated land. The soil of Faisalabad comprises alluvial deposits mixed with loess having calcareous characteristics, making it very fertile.

The city is situated at an elevation of 184 meters above sea level and there is a difference of about 35 feet from one end of the city to another end, a degree or slope totally imperceptible which makes the area, for all practical purposes, almost perfectly flat plain, with trees and other man-made features breaking the line of vision to the horizon on all sides.

Faisalabad is located altitude of 184.4 m. According to Köppen-Geiger classification, the climate of Faisalabad features a semi-arid climate (BWh) with very hot and humid summers and dry cool winters. According to revised classification by Sarfraz et al., 2014, the climate of Faisalabad features steppe hot with dry winter (BShw). The average maximum and minimum temperatures in June are 41 °C and 27.6 °C. In January the average minimum and maximum are 19.4 °C and 4.8 °C. Here the sun's rays do not slant much especially in the summer therefore high temperature prevails during the summer months.

2.2.2 Environmental Constraints

The major sources of noise in Faisalabad are the vehicular traffic, construction activities and

industrial noise. It reaches on its peak during daytime.

Wastewater is generated by the domestic, industrial and commercial sectors in Faisalabad. With the increased human activities, there has been a corresponding rise in the amount of wastewater generation in the city. Therefore, Faisalabad is intended to collect domestic / municipal wastewater/sewage that is drained to the nearby trunk sewers through a developed branch or secondary sewers from which it is finally disposed-off in the Chenab River through Paharang drain or Ravi River through Madhuana drain after treatment. There are two sewerage treatment plants in Faisalabad called Chokera and Jaranwala sewerage treatment plants. However, currently only Chokera wastewater treatment plant is in operation to discharge domestic and industrial wastewater through drains/nullahs of varying lengths. The drains are managed by Irrigation Department. The capacity of this wastewater treatment plant is very limited as compared to the total quantity of wastewater generated by Faisalabad. As a result, major share of wastewater is directly discharging into the rivers through drains without any treatment. In Faisalabad, mostly in peri urban areas, the sewage is disposed-off onto the open lands in the form of ponds, there lies the likelihood of epidemiological outbreaks in the surrounding communities due to the odor arising from them and the germs and microbes breeding in them. There are about 1,644 large, medium and some small industrial units in the district. The industrial wastewater discharges into the receiving bodies after its treatment.

Faisalabad also experienced the same situation. After partition, thousands of people migrated to this city and occupied vacant pockets of state land. This trend deteriorated the whole environment of the city and results in serious problems of housing, transportation, water supply and sewage. The housing environment in the Town is in very deplorable condition and there is a dire need to formulate policies for up-grading the environmental quality.

Large scale migration from rural to urban areas resulted in fast pace of urbanization and growth of city multiplied. Thus, the emergence of unplanned shanty Towns in the city, initially around the major industries and then on other areas especially on state land and land belonging to government organizations such as Railway, Auqaf, Irrigation Department, etc. With the passage of time these settlements became a permanent feature of the city. The socio-economic and physical condition of these Katchi Abadies was very poor. Structures were mostly katcha, very small, dilapidated and deteriorated. No sanitation system existed in these Katchi Abadies. These Katchi Abadies are mostly located in low-lying areas. The life in these Abadies was miserable and human beings were living in highly substandard conditions.

Faisalabad has very few parks, covering an area of 481 acres, both developed and semi developed. The total green area including parks is only 1.92% of total built up urban (Union Council) UC area, with the most prominent being Jinnah Park, Gatwala Park and Forest Research Institution, Kaleem Shaheed Park, D-Ground Park etc.

Due to pressure of business activities the invasion-succession process took place and increased commercial activities invaded residential land use resulting into traffic congestion on streets meant to serve residential areas. Central area is now over-crowded with traffic and it is difficult to find parking space in this area. The uncontrolled physical growth of the city facilitated an irregular road system to some extent in radial form without any ring or loop road to link these diversified roads and as a result of these developments coupled with industrial growth within residential areas the objectives of good circulation system like comfort, convenience, safety, etc., has been compromised. The surrounding settlements are now being served by inadequate and irregular pattern of roads. Which creates problems like traffic congestion, encroachment on roads, intersections/Junctions, encroachment along railway line, and lack of parking in eight bazar area.

Accounting for population, Pakistan has the 2nd worst air pollution in the world, with 67% of its cities experiencing unhealthy levels of air pollution ($> 55.5 \text{ mg/m}^3$) or worse. Faisalabad has ranked the fourth, most polluted city of the world by IQ Air because of the higher

PM2.5 concentration (104.6 annual year average).

The main drivers of these increases are industrial emissions, vehicle emissions due to the high growth rate of vehicles that don't meet environmental standards, increased use of motorized motorcycle rickshaws, deteriorating transport infrastructure, and a general lack of awareness. The burning of garbage is also contributing to air pollution.

2.2.3 Current Climate Related Threats and Impacts

Over the past several decades, climate related threats have already created wide-ranging impacts on Pakistan. In the last 50 years, the annual mean temperature in Pakistan has increased by roughly 0.5°C. The number of heat wave days per year has increased nearly fivefold in the last 30 years. Historically, annual precipitation has shown high variability. This variability has slightly increased in the last 50 years. Sea level along the Karachi coast has risen approximately 10 cm in the last century.²⁸

In 2017, National Disaster Management Authority (NDMA) classified current climate and hazard risk and vulnerabilities at the district level. Based on this assessment, During the Monsoon 2017 (mainly in July & August), many areas of the Country including Faisalabad experienced significant rains resulting into flash flooding, urban flooding, landslides, road blockage, drowning and house collapse incidents. On 28 June 2017 in District Bahawalpur, Faisalabad, Jhang & Khanewal Heavy thunderstorms / rains caused 11 x Deaths.²⁹

Table 2-1: Vulnerability Matrix-Punjab

Vulnerability Matrix-Punjab			
District	Flood	Drought	Multi-hazard
Faisalabad	M	M	L

Source: National Disaster Management Authority (NDMA) 2017

2.2.4 Projected Climate Related Threats and Impacts

By the end of this century, the annual mean temperature in Pakistan is expected to rise by 3°C to 5°C for a central global emissions scenario, though higher global emissions may yield a rise of 4°C to 6°C. Inter-annual variability of rainfall is expected to significantly increase, and Pakistan is expected to experience increased variability of river flows due to increased variability of precipitation and the melting of glaciers. Sea levels are expected to rise by a further 60 cm by 2100; and will most likely affect the low-lying coastal areas south of Karachi, toward Ketu Bander and the Indus River delta.

In general, it is expected that all climate impacts in the Punjab will be felt more keenly, with a wider range of variability in terms of seasonal and locational impacts in its urban areas that will affect urban quality of life. The main climate change impacts on Faisalabad City are associated higher temperatures, the increasing seasonality of rainfall along with increasing frequency and intensity of extreme weather events and droughts. The resulting challenges to water availability will weigh heavily on the population, affecting not only water availability, but also grazing systems, land productivity, fodder quality and quantity, and the spread of disease.³⁰

²⁸ ADB (2017) Climate Change Profile of Pakistan

²⁹ NDMA (2017) Annual Report

³⁰ P. K. Thornton et al. (2015) Climate Change Impacts on Livestock. CCAFS Working Paper no. 120. Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security

The increasing seasonality of rainfall along with increasing frequency and intensity of extreme weather events and droughts, will impact and impact water supplies, and exacerbate the challenges associated with urban and transport infrastructure development, sanitation, drainage, flooding and water logging. It will also increase risks to community health due to exposure to vector-borne diseases (such as malaria, and cholera). Faisalabad City, which already experiences poor water quality, is likely to face even higher levels water related constraints and health impacts. The presence of open pits and overflowing sewerage lines will increasingly become breeding ground of new and existing disease-causing vectors, leading to increased instances of disease outbreaks.

In addition, housing and urban infrastructure are expected to experience more significant damage, and require higher levels of maintenance, damaging household and business assets. Water for (unplanned) urban agriculture will be increasingly difficult to supply, due to increased demand and reduced availability, potentially affecting food security and livelihoods.

Higher temperatures will significantly impact the ability of the city and its residents to function. Higher temperatures generate increased demand for water. Further, groundwater extraction will be more difficult, not only due to continued deterioration of water quality but also due to increased stressors on aquifer recharge capacities. Decreased availability for water will also impact the country's (and city's) energy supply, affecting both individual households and industrial activity.

Higher temperatures will also exacerbate the already high air pollution levels, creating even higher levels of health risks. In addition, the increased likelihood of heat waves and even stronger urban heat island (UHI) effects will generate increased energy demand, increase the health burden on city residents, and reduce the city's economic viability.³¹

From a climate resilience perspective, the most critical issue in realizing future land uses is the matching between the demand for land, its potential supply (availability and location), and the risk posed to the municipal population by maximizing use of that supply. In this context, three specific and linked issues that affect the supply of land have been identified: water logging, drainage congestion and waste management. Encroachments and filling of canals with domestic and industrial wastes and the related ineffective management of municipal solid and hazardous waste also drives a large percentage of drainage congestion, creating an increasingly grave environmental threat and health hazard that reduces the safety and quality of the water supply while elevating exposure to climate risks.

Further, not all populations will suffer equally. The very young and the aged will experience these impacts more directly. This will require the city to provide additional services to alleviate climate related impacts. Additionally, low-income groups will have a harder time coping with the changes created by climate impacts, due not only to their sub-standard living conditions, but also due to their limited economic capacity. This not only places an additional burden of the municipalities' social service capacities; but may further increase social strain and tensions in the city.

2.3 INSTITUTIONAL ARRANGEMENTS

Local government is organized under a framework provided by the PLGA (2013). The legal framework. PLGA is administered by the provincial LG&CD Department, which is responsible for implementing the local government system in Punjab, and for overseeing financing and staffing of administrative set-ups at the district and municipal levels.

The urban management functions of cities, however, are dispersed among municipalities, and several mostly semi-autonomous bodies that function under federal and provincial

³¹ Urban heat island refers to any area, populated or not, which is consistently hotter than the surrounding area. [Glossary of Meteorology (2009) Urban Heat Island. American Meteorological Society]

government departments. As a result of this fragmentation, institutional control of land use is extremely challenging. Figure 6 illustrates the many levels of the institutional arrangements for urban management in the Punjab. Figure 6 illustrates the distribution of the urban functions across the Punjab's administrative levels.

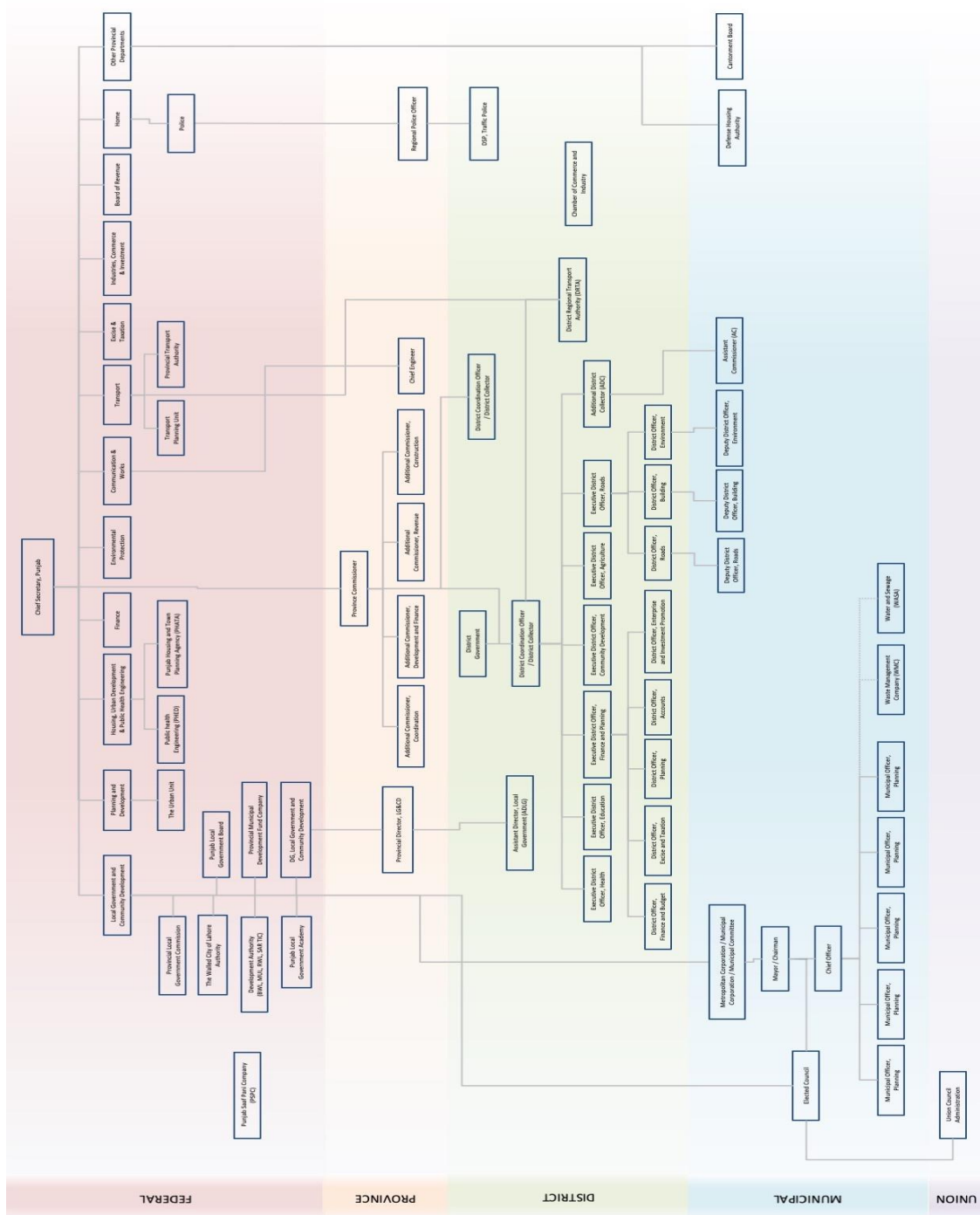


Figure 2-1: Institutional Arrangement for Urban Governance and Management in Punjab

Source: OCL Consultant

For urban planning purposes, the Faisalabad project area has three key urban entities:

- Faisalabad Local Municipal Corporation (MC) was formed under the PLGA. Nazim-e-Faisalabad is the mayor who heads the Faisalabad Municipal Corporation (FMC) which controls the local government of Faisalabad. Faisalabad local government is led by

Faisalabad Municipal Corporation which consists of 157 union councils. Previously, only the provincial headquarters of Lahore enjoyed the status of a metropolitan corporation. The eight other districts added to the list now include Bahawalpur, Dera Ghazi Khan, Faisalabad, Gujranwala, Multan, Rawalpindi, Sahiwal and Sargodha. The minimum population benchmark for a city to be classified as metropolitan or municipality has been set at a quarter million. According to Section 9 (1) of the Local Government Act, an area displaying distinct urban features may either be classified as metropolitan, municipality or a town. Under Section 9 (2) all areas comprising Lahore district and the areas comprising cities of another eight districts will have a metropolitan.

- Faisalabad Development Authority, Faisalabad was constituted under Punjab Development of Cities Act 1976 as a successor body to Lyallpur Improvement Trust (1966). Faisalabad Development Authority (FDA) is a body responsible for undertaking and monitoring planned developments in the city of Faisalabad, in Punjab, Pakistan. The body acts as a regulatory authority for overseeing the construction of houses, commercial developments and residential areas in the city. It has three main wings, Urban Development Wing, Water and Sanitation Agency (WASA), Traffic Engineering Planning Agency (TEPA). The office of Faisalabad Development Authority is situated on the Railway Station square at the intersection of Mall Road and Circular Road. Main Functions of the Authority are as Under:

- ✓ Planning and Development
- ✓ Maintain water supply, sewerage and drainage system
- ✓ Maintain Building Controls and Building Regulations
- ✓ Establish New Agencies

Punjab Town Planning and Housing Agency (PHATA) also exercise planning functions and the provision of housing in the MC. These include land use control and transfer on its developed schemes.

PHATA is a provincial entity, while the FDA are autonomous entity. They have independent and parallel urban governance structures. Each has its own building, land use, and environmental control provisions, and is autonomous in carrying out the development works and maintaining the facilities within their jurisdiction.

There are no requirements for coordination between them, and with the MC. The Director General FDA is also a member of the DPDC. Further, both entities have in-built and explicit conflict of interest positions as they serve as land managers, urban planners, and real estate developers.

2.3.1 Organizational Structure of Metropolitan Administration

Structure of the Metropolitan Corporation. Faisalabad City is managed through a Metropolitan Corporation. The Metropolitan Corporation Faisalabad (MC) was notified in PLGA, though no elections taken place since its formation.

Nazim-e-Faisalabad is the mayor who heads the Faisalabad Municipal Corporation (FMC) which controls the local government of Faisalabad. Faisalabad local government is led by Faisalabad Municipal Corporation which consists of 157 union councils. Previously, only the provincial headquarters of Lahore enjoyed the status of a metropolitan corporation. The eight other districts added to the list now include Bahawalpur, Dera Ghazi Khan, Faisalabad, Gujranwala, Multan, Rawalpindi, Sahiwal and Sargodha. The minimum population benchmark for a city to be classified as metropolitan or municipality has been set at a quarter million. According to Section 9 (1) of the Local Government Act, an area displaying distinct urban features may either be classified as metropolitan, municipality or a town. Under Section 9 (2) all areas comprising Lahore district and the areas comprising cities of another eight districts will have a metropolitan.

Each local government, under Section 18 of the act, will consist of a directly elected head, a head's cabinet comprising specified number of councillors and experts and a council comprising councillors including a convener. The law explains that an expert means a person who has successfully completed 16 years of education from a recognised institution and has an experience of not less than 10 years in public administration, public finance, education, public health or any other area relating to the functions of a local government.

Metropolitan corporations with more than five million population will have a total of 10 members comprising at the most five councillors. The metropolitan corporations having population over 1.1 million and up to five million will have eight members of the head's cabinet with the maximum permissible number of councillors standing at four. The metropolitan corporations or municipal corporations with population over 0.8m and up to 1.1m will have seven members of the head's cabinet with the maximum permissible number of councillors coming to three.

The metropolitan corporations or municipal corporations with population between half a million and 0.8m will have six-member cabinet with a maximum of three councillors. The ratio of experts and councillors will substantially change in metropolitan corporations and municipal corporations with a population between a quarter million and a half million. The total strength will be five with a maximum permissible number of councillors in it as low as two. The total strength will be five with a maximum permissible number of councillors in it as low as two.

Municipal committees having population between 0.125m and 0.250m will have four-member head's cabinet with the maximum permissible number of councillors coming to half of the total strength. In municipal committees with a population of over 75,000 and up to 0.125m, the total strength of the cabinet will be three and will have only one councillor.

The town committees will have a minimum population of 25,000 and up to 75,000. These will have a two-member cabinet and one councillor.

Functions and Responsibilities of the Metropolitan Corporation. The MC administers a range of municipal development functions and urban services. These range from land use management, urban planning, development controls, such as managing encroachments, to managing municipal infrastructure and services in water supply, sewerage and drainage, solid waste management, maintenance of streets and roads, firefighting, and others.

In contrast, the actual powers granted to municipalities to manage and direct its activities are not as substantive, and they have limited autonomy in financial and administrative matters. This curtails their ability to deliver results and develop institutionally. For example, although the MC has the authority under PLGA 2013 to collect tax, fees, charges, or surcharge, it is required to first receive authorization from the local council (House) and then from the provincial government. This authorization is not easily granted given the reluctance of local councillors, as well as provincial decision makers, to levy new or increased charges on voters. Higher levels of government generally prefer to provide annual financial grants or grants for specific purposes, rather than granting greater autonomy to the MC and thus 'giving up' any of their constitutional powers and fiscal controls.

Staffing of the Metropolitan Corporation. The MC has little authority over the deployment of staff in the administration. The province retains control of most staffing matters, including cadre requirements. Appointments for senior grade posts (BPS 14 – BPS 20) are made by the LC&CD. The CO of the MC has power to appoint staff for more junior grade, and local positions within the organization.

The MC cannot create posts or fill vacancies without the consent of the provincial government. A province-wide freeze on recruitments for government institutions for the past three years, combined with the general tendency of the provincial finance department to rein in expenditures, means that it is difficult to exercise much control over the size and shape of MC staffing. As a result, MCs in Punjab struggle with workforce shortages and high number of

vacancies, especially at the senior management level. But even without such a moratorium, it is known that low pay scales, poor working conditions and a general deficiency of resources are significant barriers to attracting and retaining suitable human resources at local government institutions.³²

The MC also has no authority to modify the service rules that govern the terms and conditions of employment. This severely limits the administration's ability to tailor remuneration to attract skilled and expert staff.

Prior to 2016, the municipal administration was allowed to hire daily wage staff for overcoming some of the workforce shortages in operations, but currently the MC can only hire full-time contractual or permanent staff against the sanctioned number of posts, that are prescribed by the government.

Comprehensive job descriptions against most of the sanctioned posts at the MC are missing, making it difficult to understand (and to assign) specific responsibilities and objectives to staff at various levels.

The schedule of sanctioned staff for the MC is not comprehensive when compared to the complex range of functions and responsibilities it has. A lack of specialist staff is evident across all branches of the MC – from the absence of geographic information systems (GIS) and management information systems (MIS) experts in the Planning branch, to the lack of provision for trained financial management and revenue experts in Finance, to the limited number of qualified engineering and technical staff in the Infrastructure and Services branches.

2.3.2 Institutional Capacities and Development Constraints

There are significant gaps in the staffing of local government positions. The holders of these positions are appointed by the provincial office of Local Government and Community Development. As a result, service levels are deteriorating due to insufficient staff. The appointment process is cumbersome in government departments. Further, administration want to keep its expenses low and therefore no further appointment made due to funds shortage for salary.

- Lack of a strategic vision for urban planning in the city, which impacts local planning approvals and enforcement, and insufficient coordination between urban planning entities
- Support staff and processes are insufficient. Record keeping is inconsistent; and is not used to proactively support municipal management. Records and inventories are not updated daily and are not retained properly.
- Coordination between the MC and with its associated entities is challenging. There are several institutions, including MC, FDA, PHATA, and other such as, the Parks and Horticulture Authority (PHA), the district and regional transport authorities, and the Public Health and Highway departments, working on aspects of urban planning in the city. Their responsibilities and mandates overlap, and there is almost no coordination between them, causing conflicts.
- There is a dire need to strengthen the capacities of local governments, providing local authorities not only financial resources, but also, human resources and technical and institutional capacities. The absence of a system for land management hinders the elimination of speculative practices, and its implementation could promote shared understanding between citizens and public administration regarding the financing of infrastructure in cities.

³² Ibid 1

2.4 PLANNING HISTORY AND EVOLUTION OF URBANIZATION PROCESS IN THE CITY

Urbanization is a continuous process, and the spatial growth pattern is its manifestation. The spatial pattern determines how the physical, socio-economic, and environmental characteristics of an urban area changes over time.

Like other big cities of Pakistan, the concept of Master Planning is not new for Faisalabad. Before partitioned originally the Lyallpur was planned as a mandi town and it was designed in the pattern of Union Jack containing 08 bazars in the centre. After independence in 1947, the first Master Plan of Lyallpur was prepared by the Town Planning Department of West Pakistan Government in 1968, but it adorned the shelves of the Department rather than being implemented. Lyallpur was renamed as Faisalabad in September 1977 after the name of late King Faisal of Saudi Arabia.

In order to manage the urban development in the area, Faisalabad Development Authority (FDA) was established in 1976, which took up preparation of a Master Plan, for which a Project Directorate was set up in FDA. After preliminary studies and surveys, the work on the Master Plan, called the Structure Plan was suspended until 1984 because the Planning and Development (P & D) Department of the Punjab Government insisted on hiring consultants. The controversy was finally resolved in January 1985 and services of a Professor from the University of Engineering and Technology, Lahore were acquired as a Consultant and the plan was finalized under his supervision in 1985. That plan has also been collecting dust while Faisalabad continued to grow uncontrolled like a monster.

The former Prime Minister Mohtarma Benazir Bhutto while visiting Faisalabad on 18.11.1993, on the basis of the demand of the public, directed the Commissioner Faisalabad Division Mr. Tasneem M. Noorani to prepare a new and practical Master Plan, so that resources could be diverted and utilized in an effective manner to improve the basic infrastructure of the city and make it liveable and it was prepared in 1994.

In total, following four Master Plans of Faisalabad have been prepared since 1968:

- Master Plan for Greater Lyallpur (1971-1985)
- Structure Plan of Faisalabad (1985-2000)
- Faisalabad Master Plan (1995-2006)
- Faisalabad Peri Urban Structure Plan 2015-2035

Brief of these Master Plans along with the then existing land use plans and proposed Land use plans is given below one by one in chronological order:

MASTER PLAN FOR GREATER LYALLPUR (1971 - 1985): This Master Plan was prepared during 1962-68 by Directorate of Town Planning, Communication and Works Department of West Pakistan Government. Following guided and assisted the Master Plan Committee headed by Mr. Shamsul Haq, in preparation of plan:

- a) Mr. Shafqat Hussain Qureshi, Adviser on Housing and Town Planning
- b) Mr. Anis-ur-Rehman, Director Town Planning
- c) Mrs. Bergeas A. Khalid
- d) Mr. Inayat Mumtaz
- e) Mr. S. A. Rashid

The main objective of this Master plan was to provide a basis for integrated and coordinated programs for the development of city in future by covering the following aspects;

- Public services
- Social Services
- Industries & Industrial Employments
- Commerce
- Housing
- Planning standards for housing, commercial and industrial development

The Master Plan basically proposed a model of an envisioned future situation of Lyallpur, covering all key aspects such as economic condition of the area, social structure of Lyallpur, and geographic location to provide a plan to channelize the future growth. The Master Plan provides basic data about Lyallpur, population, housing, industry, education, health, road network, etc. It covered almost all areas, population, land uses; residential, industrial, commercial, health, education, roads network, water supply, sewerage, etc. However, it lacks traffic surveys and recommendations for traffic improvement, etc. It also lacks recommendations for public transport. The plan provides a broad basis on which city should be developed or allowed to grow. It was in principle a physical plan which had tried to integrate urban elements of Lyallpur.

The objective of this Master plan was partially achieved, because of the excessive delays in plan preparation and approval process and weak institutional set up. The plan preparation was also interrupted due to 1965 War with India. The Master Plan prepared but could not be notified in the official Gazette of Pakistan to give it a legal status. Also, lack of coordination, inadequate financial resources, lack of dissemination of the plan, weak political will, were also some factors for the partial implementation of this Master plan. Political disturbance in the country, in 1971 and 1977 also are factors responsible for non-implementation of the Master Plan.

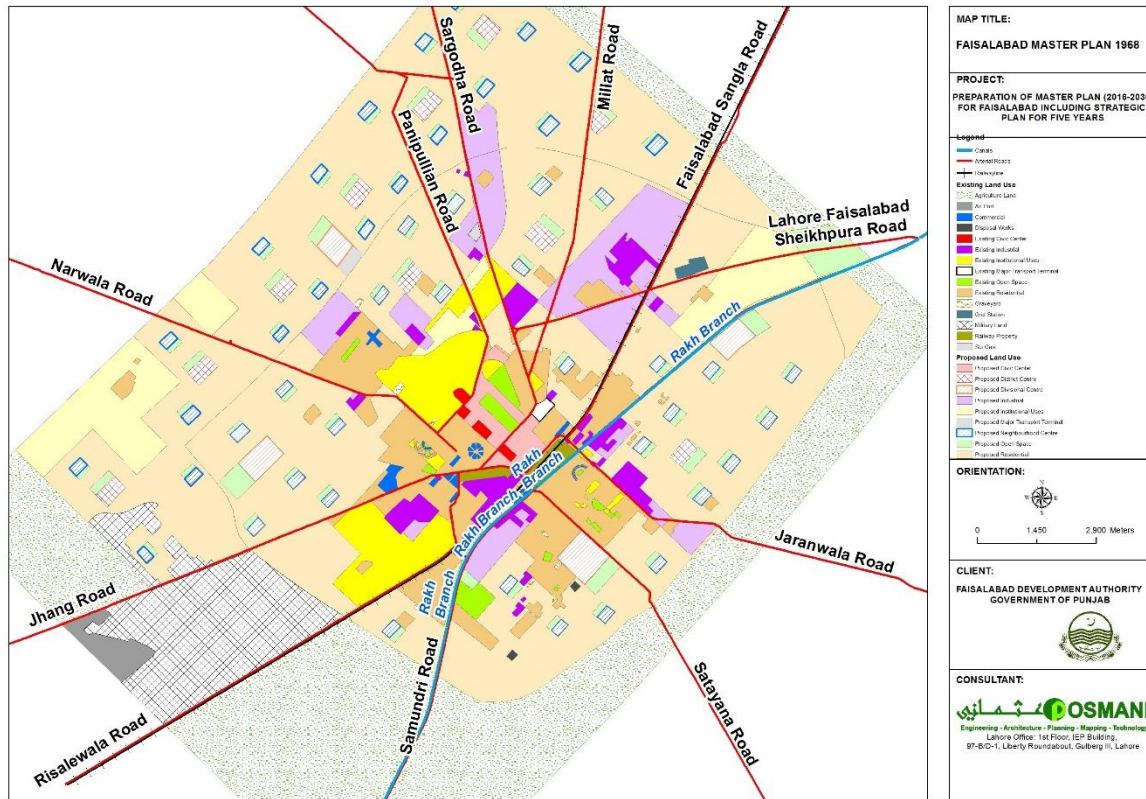


Figure 2-2: Faisalabad Land-use Plan 1968

STRUCTURE PLAN OF FAISALABAD (1985 - 2000): Faisalabad Development Authority (FDA) was established in 1976. After establishment a Project Directorate was created for preparation of Structure Plan after approval of the Punjab Government. No consultant was hired for the preparation of Structure Plan. This directorate started work on Structure Plan but after preliminary studies and surveys work was suspended till the end of 1984, as P&D Department Government of Punjab stressed upon to engage some Experts for the evaluation of proposals, whereas FDA was requesting for the permission of engagement of Consultants. The work on Structure Plan was resumed in January 1985 and all the surveys and studies were updated.

Plan was completed in 1986, after hiring of services of Professor A. Sattar Sikander, Dean Faculty of Architecture and Town Planning, University of Engineering and Technology, Lahore, as an Expert. The Plan was finalized under his supervision and guidance by Mr. S. M. Shafiq, Director Environmental Control, and his team comprising of:

- Mr. Haq Nawaz Anwar, Deputy Director (EC),
- Mr. Muhammad Siddique, Assistant Director (EC)
- Mr. Sajjad Ahmed (Former Deputy Director (EC),

Meetings were held with all the Central & Provincial Departments, their proposals, future programs and policies were incorporated in the Plan. The Plan was presented before the Structure Plan Committee on 28-04-1986. The Plan was presented before the Commissioner Faisalabad on 02-07-1986. The Plan and proposals were also presented before the Mayor and Deputy Mayor of Faisalabad Municipal Corporation on 6-8-1986.

The Structure Plan remained in field for fifteen years till 2000, mainly the civic agencies in Faisalabad tried to implement the Structure Plan. However, the plan could not be implemented due to poor coordination among departments / stakeholders of Faisalabad. Even the proposals of the Master Plan which fall in the domain of FDA could not be

implemented due to lack of capacity, weak institutional and legal framework.

In fact, the document contains mostly broad guidelines regarding planning and development of Faisalabad. Very few specific and concrete proposals for planning and development of Faisalabad are available in the document. This plan was initiated in 1978-79 and was completed in 1986, almost it took eight years to complete. It took longer period to prepare the Master Plan, the implementation remained unaccomplished thus diminishing the effectiveness of proposals.

In the Structure Plan the land uses of Faisalabad has been categorized as residential 37.20% and agriculture & vacant land as 18.04%. The proposed areas of various uses for future were also worked out but the logic behind the projection of land use area has not been clear. Even the plan does not mention the basis for the estimation of future proposed area, whereas no focus was shown on industrial promotion, rather than shown decreasing trend of industrial growth from existing 6.53% to the proposed 5.01%.

The spatial strategy was based on current trends of land uses and development through infill development in the existing built-up areas. Linear development was allowed along the major corridors and development of secondary and tertiary centers beyond the inner metropolitan was proposed. In order to reduce the traffic in center two ring roads were proposed, where an external ring road was recommended all around the city. Thus, the overall emphasis of the plan was planning and development of expanded area and only shifting of a few non-conforming uses. The master plan is more descriptive and contains mostly qualitative statements and guidelines.

FDA could not get the Structure plan approved from the secretary, HPPD. Consequently, the plan could not be enforced properly. Therefore, an attempt to adopt the new style of planning instead of the old master plan approach had failed in practice in case Faisalabad. The main reasons behind the failure in the implementation of this plan were; the long duration of plan preparation process, which caused the continuation of the haphazard and uncontrolled growth. Secondly, its enforcement was weak due to its unclear approval procedure. Thirdly, the former Municipal Corporation did not implement the proposals in their jurisdiction. Also, the plan was not reviewed periodically due to lack of resources.

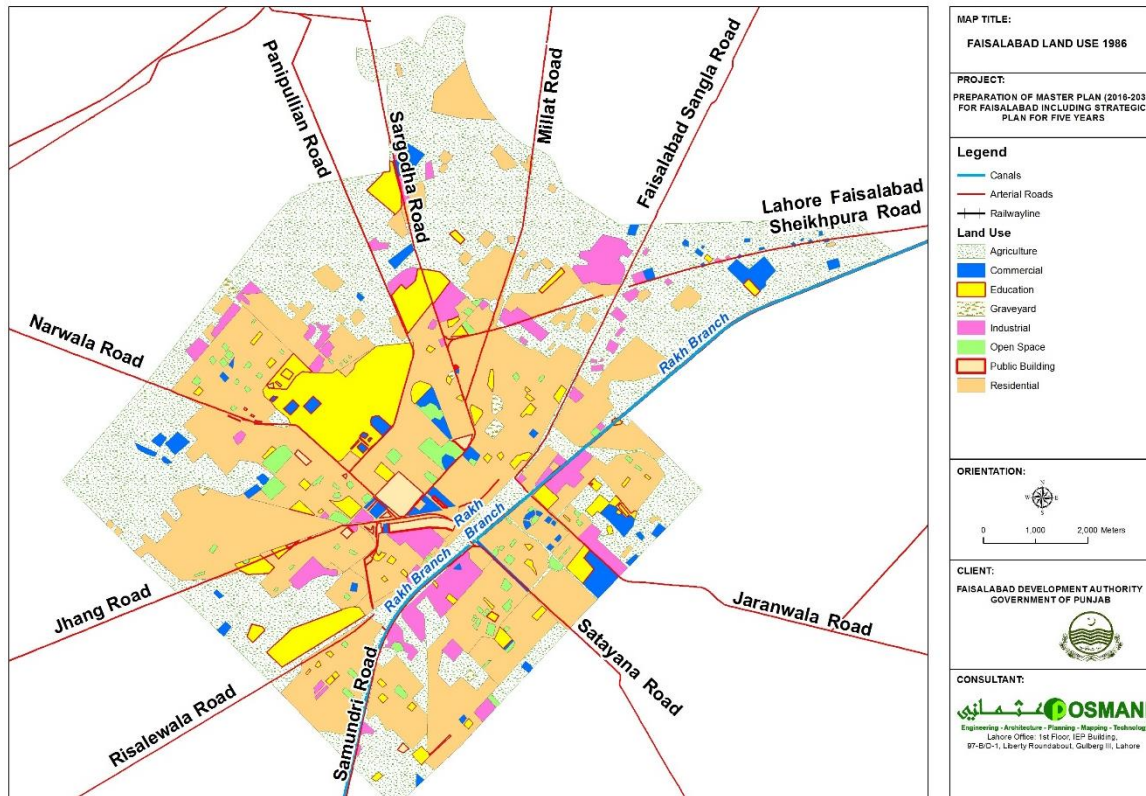


Figure 2-3: Land-use Plan 1986

FAISALABAD MASTER PLAN (1995 - 2006): On the first visit of the Prime Minister Mohtarma Benazir Bhutto on 18th November 1993 to Faisalabad, the public made unanimous demand to her to do something for the improvement of the city. She directed the then Chief Commissioner Faisalabad Mr. Tasneem M. Noorani to prepare a comprehensive plan for the uplifting of the city.

The Chief Commissioner using his influence on all the allied departments invited proposal for doable development projects. Based on these proposed projects a plan was prepared of the projects which can be undertaken within a reasonable timeframe to meet the needs of the city for at least next 25 years. The plan was much in line with the proposals of Structure Plan 1986. The plan covered four different sectors of development i.e., roads, social sector, environment improvement and water supply and sanitation. Majority of the proposed projects in the plan were completed successfully.

- No funds were available to hire consultants for the task therefore, no consultant was hired for preparation of the Master Plan.
- Plan prepared through co-ordination and mobilization of local talent.
- People from all walks of life were consulted formally and informally and encouraged to give their suggestions.
- Experts available in the local development agencies were assigned the task of working upon sectors of their specialization.
- Full scale meetings were held with public representatives (MNA/MPA), journalists, respected members of the community and the general public before finalizing the plan.
- The plan does not claim to be couched in professional jargon nor does it follow the pattern of a plan prepared by consultants.
- It is claimed that the plan reflects the wishes of the public and the requirements on the

ground.

- Following officers assisted in the preparation of the plan:
 - ✓ Mian Muhammad Amin Managing Director, WASA, Faisalabad
 - ✓ Hassan Iqbal Director LG &RD., Faisalabad
 - ✓ Abdul Haleem Chaudhry Deputy Managing Director, WASA, Faisalabad
 - ✓ Liaqat Ali Randhawa Director, Environment Control, FDA, Faisalabad
 - ✓ Ataullah Khan Director Town Planning, Faisalabad
 - ✓ Chaudhry Shahbaz Khan Assistant to Commissioner (Dev), Faisalabad
- Project base recommendations, no land use plan, no Zoning plan, etc.
- Lacks field data about Population, Housing, Industry and Commerce, Transport, Education, Health, open spaces, etc. as no primary or secondary data was collected.
- Planning and development departments were requested by the Commissioner's office Faisalabad to forward their priority projects.
- Four sectors that is Roads and Transport, Environment Improvement Plan, Social Sector and Water and Sanitation were included in the plan.
- Projects which require urgent implementation were also identified and this was termed as Short-Term Plan.
- A rough cost estimate for all proposals was also made.
- The plan was prepared for the next 25 years.
- In the road sector, following inter-city roads were recommended to be improved in two stages (1995 - 2003 and 2003 - 2006)

Faisalabad Peri-Urban Structure Plan (2015 - 2035) was prepared by 'The Urban Unit, Punjab' in the year 2014 under the 'Punjab Cities Governance Improvement Project (PCGIP)' and it was funded by The World Bank. It is a detailed GIS based study and following tools were used to execute this project:

- Spatial Decision Support System SDSS
- Land Use Suitability Analysis
- Image Analysis
- Land Cover Classification

The scope of the study was the identification of City Boundary and preparation of peri-urban structure plan for Faisalabad city. Furthermore, it was intended to propose road network of Peri-Urban area, as well as division of Peri-Urban area into blocks and zones. Moreover, allocation of land uses to blocks and broad development strategies to achieve the development targets in next 20 years were also included. However, the specific objectives of the study were as follow;

- To suggest measures for the preservation of productive agriculture land and precious environmental resources in the peri urban area
- To suggest pertinent mix of land uses in the Peri Urban area
- To identify incompatible land uses such as industries and suggest measures to mitigate the impacts on peri urban development
- To recommend an efficient circulation network in the peri urban area

The land use profile of existing peri urban area is mainly distinguished by farmlands and relatively smaller rural settlements. Also, a little intrusion of the city's built-up area into the peri-urban area of Faisalabad, mainly along the major roads connecting the other large and medium settlements specifically Faisalabad-Sheikhupura-Lahore road, Faisalabad-Jaranwala Road, and Faisalabad-Jhang Road. However, the followings are the main features of peri-urban area of Faisalabad;

- Cultivated agricultural lands
- Scattered built-up Areas
- Industrial clusters along main roads
- Brick kiln sites
- Railway bisects
- Irrigation network
- Road network

Along Sargodha and Chiniot road there is least urban development beyond Motorway M-4. It seems as Motorway has become psychological barrier for urban development beyond the Motorway.

Critical Evaluation of the Peri-Urban Structure Plan has revealed following discrepancies and inconsistencies in the plan:

Proposed Land Use Zone: Chak Jhumra Town which is Tehsil Headquarter of Jhumra Tehsil and is an emerging town in the suburbs of Faisalabad city along Railway line & Road has not been shown in the Land Use Zoning Plan. Rather it has been proposed as cropland. A 220 ft wide road has been proposed through this crop land connecting canal road with the proposed light industries along Motorway but the area along this road has been shown as cropland. How pressure of development in this area would be controlled is not clear specifically after development of a 220 ft wide road? This area falls immediate to the urban built-up area and is surrounded by the existing development of Faisalabad city and Chak Jhumra Town. There is a lot of development pressure on this land how that pressure would be averted.

Proposed growth of the city has been shown towards north and north-west along Motorway in linear form over about 35 kilometers, against the current growth trends of the city. Town Park has been proposed in the rural periphery, far away from the existing built-up area of the town, while there is a need to provide green areas/parks immediate to the existing built-up area to give relief to the inhabitants of the city. The proposed park in the form of a green belt along proposed high density residential development is far away from the city across Motorway which is not desirable from planning point of view.

A large area throughout the length of the Motorway M-4 has been Zoned in a linear form for different urban and regional uses like High-density, Medium density and low density residential areas, Mixed Use Business Commercial, Business and Technology Park, Hotel and Tourism, Expo and Exhibition Center, Warehousing and Freight Zone, etc. have been proposed as if Motorway would function as Mall of Faisalabad city. Another large area i.e., more than 50,000 acres across Motorway on the north side of the town has been earmarked for "Post 2033 Development". Existing expansion of the town is almost in all directions, pace of urbanization vary on all directions of the city, it is comparatively higher on eastern side than on the western side, but the Peri-urban plan proposed all the major activities along Motorway without regard to the prevailing development trends. This would not bring the desired results. It seems an attempt has been made to shift the core of the city and transform it into linear form by just zoning land into different urban land uses stretching over about 35 kilometers, which seems contrary to the existing growth pattern of the town. The 350 ft wide proposed road has been shown in the proposed road plan, but it has not been shown in the Land Use

Zoning plan.

Urbanization in Faisalabad: Expansion of Peri Urban area shown more than required without considering the pace of conversion of rural areas/settlements into urban areas, i.e., rate of urbanization. Rate of urbanization from 1980 to 2010 was 315 acres/year. It was 105 acres per year during 1980-92. It was about 600 acres/year during 2005-2010 (Bhalli, M. N. 2012). Peri-urban area has been proposed in the Structure Plan as 6000 acres/year which is beyond imagination. How they have recommended this is beyond comprehension. Earmarking of huge area across Motorway M-4 as peri-urban area is without any relation with rate of urbanization and without assessing the direction of growth of the city. More than 80,000 acres have been proposed including the urban land use activities beyond Motorway which would be more than sufficient for next 150 years while they have proposed this area upto 2035 for 20 years.

Proposed Zoning along motorway M-4: In peri-urban structure plan most of the development has been proposed along Motorway M-4 which is not advisable from planning point of view. Motorway is not a commercial corridor rather it is an Economic Corridor as is clear from its name China-Pakistan Economic Corridor (CPEC). Special Economic Zones, industrial cities can be developed along the Economic Corridor at selected locations not all along the corridor in a linear form. Thus, the residential, commercial and recreational development along the Motorway M-4 is not advisable. In fact, Motorway M-4 is a national link and national importance land-use i.e., Special Economic Zone (SEZs) can be earmarked at selected locations not all along the Motorway in linear form. This is also against the prevailing practice of the CPEC Authority.

Existing growth trends: Existing development trends or expansion trends have not been considered while earmarking land for peri-urban expansion of Faisalabad City. They have only focused on Motorway M-4 and all the residential, commercial and recreational development has been proposed along the Motorway ignoring the growth trends of Faisalabad city, which is towards north east and south east in addition to the north along Sargodha Road. More development is taking place along the arterial roads, like Lahore-Sheikhupura-Faisalabad Road, Jaranwala Road, Chak Jhumra Road, Canal Road, etc.

Division of city into six towns: This administrative division of Faisalabad City into six towns is not valid now i.e., Jinnah Town, Lyallpur Town, Chak Jhumra Town, Jaranwala Town, Madina Town and Iqbal Town.

Proposed Crop Land Surrounded by the Built-up Area: A large area measuring about 12500 acres has been proposed as Cropland just immediate to the built-up area along Railway line to Sangla Hill. This is not comprehensible, how this area would be kept cropland when the city is growing in this direction and there is pressure of development in this direction. This would be like going against the tide. How this area would be controlled and kept agriculture when there is pressure of housing and development in this direction.

Proposed Road of 350 ft. Right-of-Way Parallel to Motorway M-4: Proposed road of about 40-kilometer length and 350 ft wide parallel to Motorway M-4 across the Motorway in the peri-urban area, at about 1 kilometer from M-4, from Sahianwala to beyond Airport interchange is not desirable from planning point of view rather it would be wastage of funds. Motorway M-4 is already catering the fast moving national and intercity traffic development of another road with so much width seems overprovision and surplus. This proposed road starts from Sahianwala interchange but ends abruptly in the rural area beyond Airport interchange on the Motorway M-4.

3 Roads with 150 ft. Wide Right-of-Way Parallel to Motorway M-4: Three roads of 150 ft width have been proposed parallel to Motorway M-4 without assessing their feasibility of construction. Already there is built-up area on north and south of the Motorway M-4 it would be difficult to achieve through road along M-4 on both sides. The third road parallel to

Motorway seems to be proposed without assessing the traffic requirements of the area.

Road Density along Motorway M-4: Due to four proposed roads along the Motorway M-4 the road density in this area has become higher as compared to the rest of the town.

Ring road Project: Ring Road which is an important proposed link facilitating the traffic in Faisalabad city has not been shown in the Proposed Roads plan. It has been shown in the proposed Land Use Zoning Plan and in that plan the Ring Road has been shown passing through the Gatwala Park dividing the park into two parts.

Site of New Airport: The present Faisalabad Airport is old Airport which has been developed over the time since 1942. First domestic flight was operated in 1958. In 1998 Hajj flights were started directing to Jeddah. A lot of investment has been made in extension of terminal building and construction of Cargo Terminal. Most probably new site has been proposed keeping in view FIEDMC industrial area. As per our consultation with Civil Aviation Authority there is no plan of development of a new Airport in the near future. However, may be in next 30-40 years air traffic increase demands a new airport then the proposed site may be considered for the new Airport. But then this area may be reserved for the Airport and development in this area be controlled. A helipad in this area may also be developed near Sahianwala Town.

Disjointed Road Network Proposals An integrated Road Network should have been proposed which is lacking in the Peri-urban Structure Plan. 350 feet wide road has been proposed parallel to M-4 but it is not connected to the existing road network rather it ends in the open peri-urban area.

Canal Road: Canal Road beyond Abdullahpur towards Samundri has been proposed on both sides of Canal does not match the ground reality. There already exist six lane road on the southern side of the canal which is catering the traffic requirements and would also cater the future requirements of the area. This road on eastern side of the canal is enough and development of another road on the western side of the canal is not advisable. It would be wastage of funds and would disturb the environment on western side of the Canal. Green area, parks developed on the western side of the canal would be disturbed.

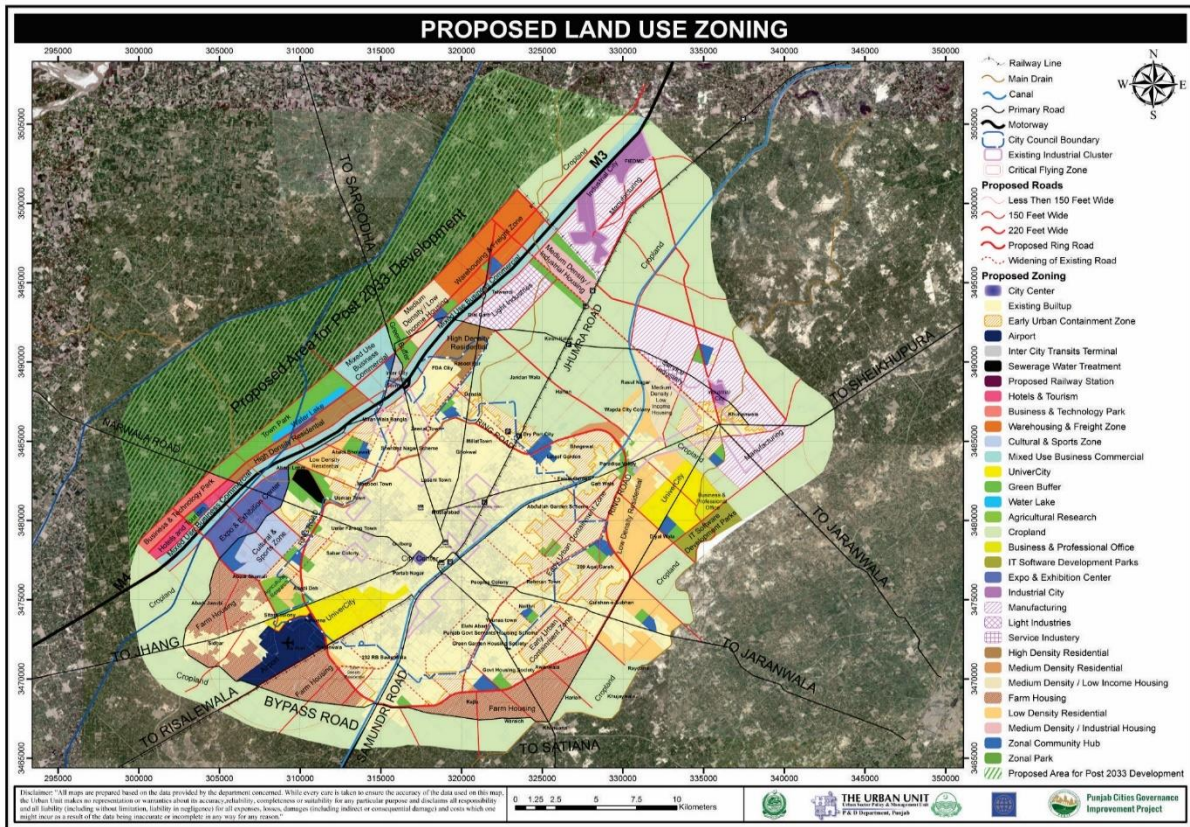


Figure 2-4: Peri-Urban Structure Plan 2015-2035

2.4.1 Faisalabad’s Functional Urban Area

Administrative boundaries, at any level, are not always adequate confines for a cohesive urban area or a local economy, and often reflect political boundaries rather than its functional aspects.

The functional urban area (FUA) consists of a city and its commuting zone. A commuting zone contains the less densely populated travel-to-work areas around a city. These are areas where at least 15% of employed residents are working in the city, and whose labour market is highly integrated and dependant on the core city.

Identifying and planning the FUA in a cohesive manner is a key consideration for achieving economic competitiveness and successful urban development, not only in a specific city, but also in its immediate surroundings since the commuting pattern inevitably generates substantial influences on the economy, housing, and the environment that often occur beyond a city’s traditional administrative boundary.

Figure identifies the FUA for Faisalabad City. The city and the FUA are part of a contiguous urban agglomeration that includes Khurrianwala and chak Jhumra, encompassing an area of almost 20Km and 21 km. Faisalabad has a strong multiplier effect on its economy that has contributed towards its development because of industrial area.

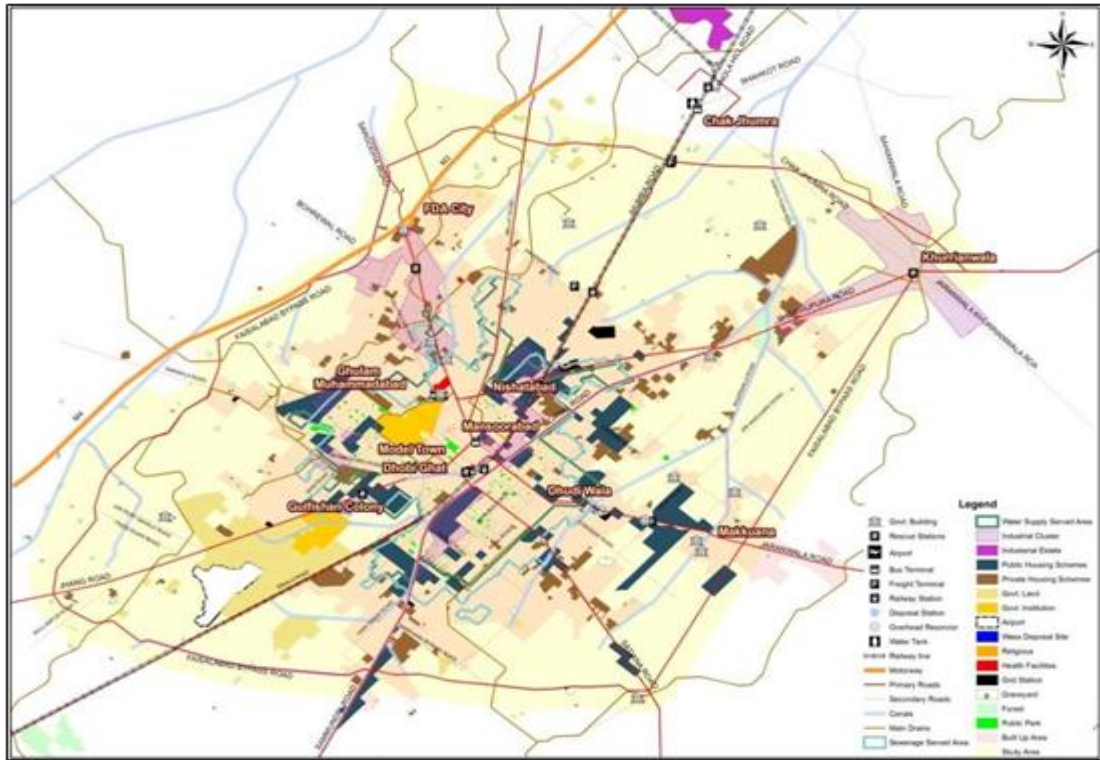


Figure 2-5: Functional Urban Area

This urban agglomeration is also part of a developing urban corridor that also includes Chak Jhumra, Jaranwala, Tandlianwala, Samundri, Chiniot, Sargodha, Jhang, Gojra, Okara, Hafizabad, Sahiwal, Toba Tek Singh, Pir Mahal, Sangla Hill, Bhawana and Lalian. The dependence of connectivity on the physical distance between districts and tehsils is a direct consequence of trade-off mechanisms between costs of establishing and sustaining links, processing rates between linkages.

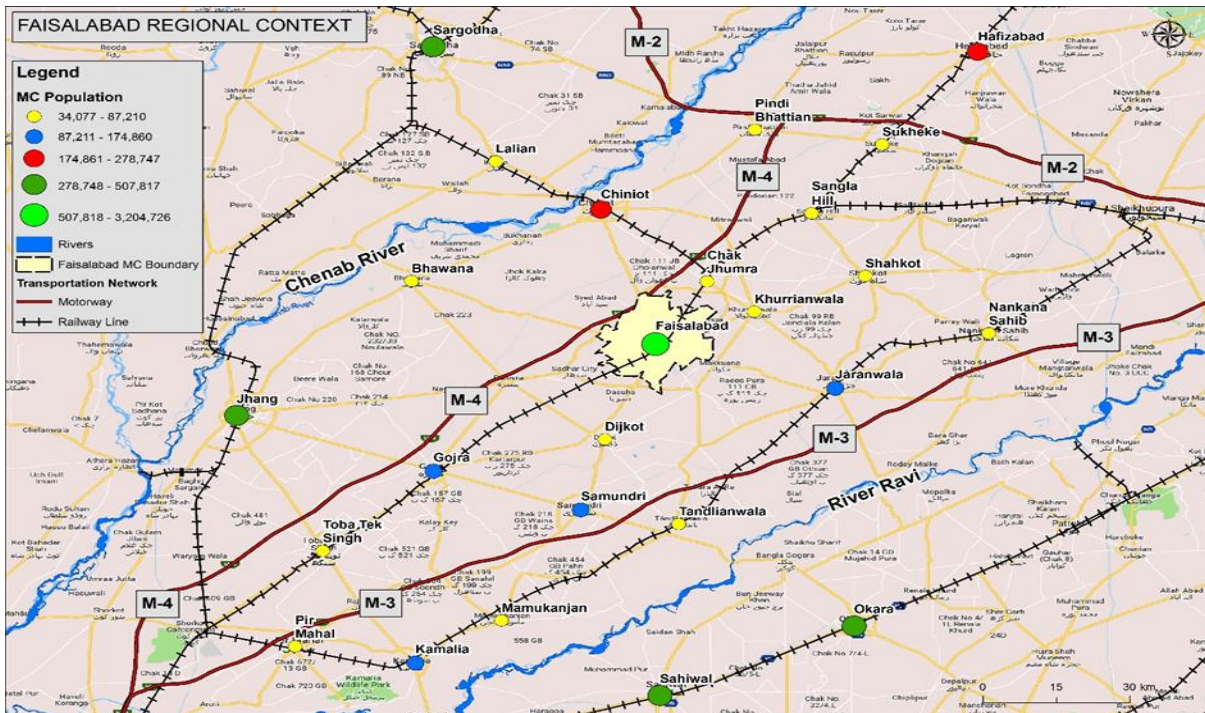


Figure 2-6: Faisalabad Regional Connectivity

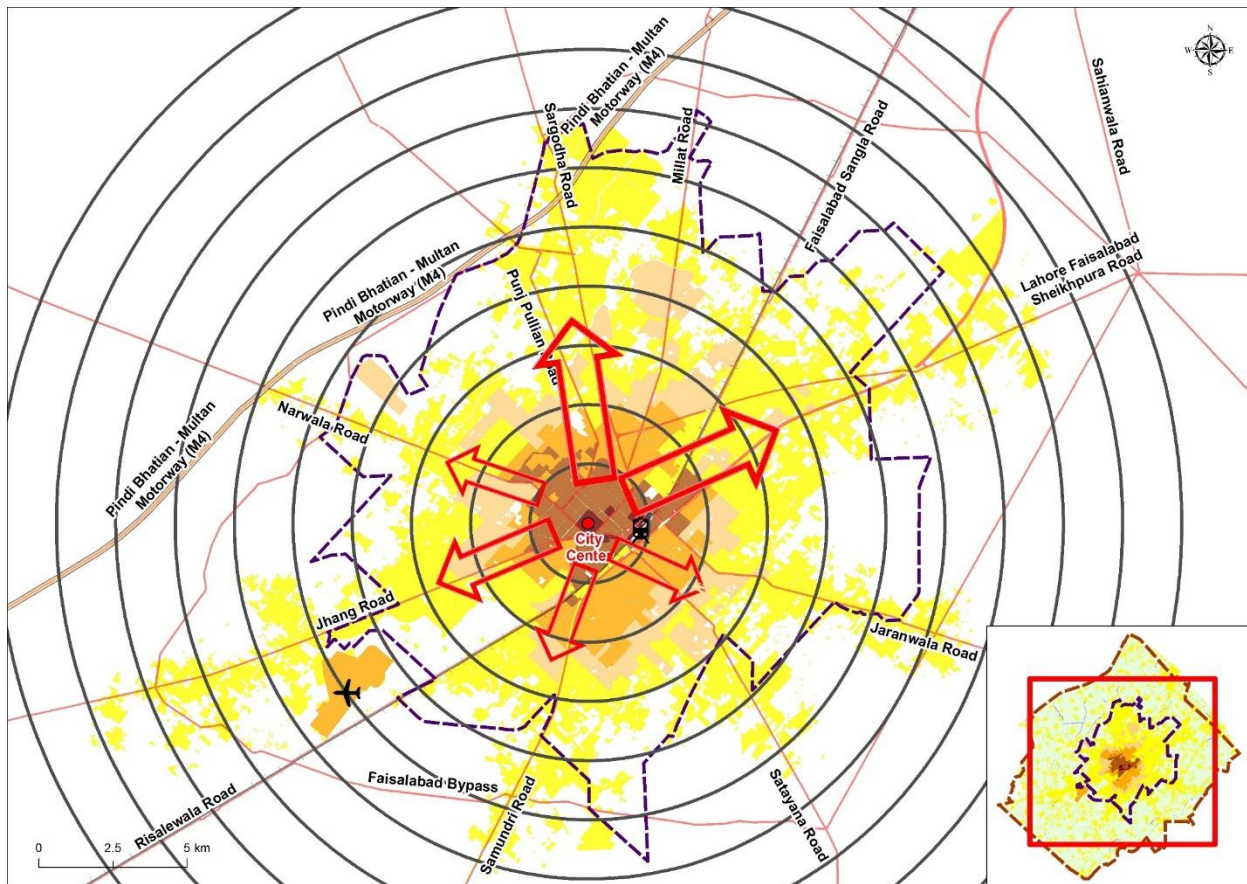


Figure 2-7: Spatial Growth of Faisalabad City

2.4.2 Challenges and Opportunities

The combination of overlapping mandates and planning functions between MC, FDA, and PHATA. Additionally, insufficient FDA staff is creating difficulties for both management and implementation of functions, especially development controls.

Further, the absence of an approved urban masterplan, recognized by all key stakeholders, is driving haphazard growth, which is seemingly aligned with the road network. This is encouraging expansion to the urban periphery. When combined with the significant decrease in urban density, the provision of urban services is becoming more difficult to manage, and less financially viable. This in turn drives the MC and FDA to increase approvals of development in “greenfield” areas, which further increases the MCs operating costs, creating a negative feedback loop.

Both the FUA and the projected development trend to 2036 indicate that the city’s core urban functions and key areas are towards the north, essentially strengthening the ongoing urban agglomeration processes. As a result, for urban planning purposes, the urban triangle of Faisalabad City, Chak Jhumra and Khurrianwala ought to be planned as a single contiguous unit, to ensure cohesive development planning and congruency of the distribution and provision of key urban services.

3. POPULATION GROWTH AND DEMOGRAPHIC FACTORS

This section briefly sets out some of the key factors involved in population change in Faisalabad City and identifies potential growth scenarios to be considered in assessing future population. Population projections are a necessary pre-requisite for establishing the potential future demand for urban services.

3.1 BACKGROUND ON POPULATION TRENDS

Pakistan has not conducted a regular population census since 1981, as indicated by gaps between the census years (1951, 1961, 1972, 1981, 1998 and 2017). For the most recent census (2017), only partial and provisional data has been made publicly available.

The gaps between the most recent census years (1981, 1998 and 2017) mean that for the equivalent of two generations the census counts are considered inconsistent, and assumptions based on past trends are likely to have significant margins of error. Further complicating the population assessment are changing definitions of urban areas across different census periods. Thus, to estimate the current city population, the Consultant compared population numbers using several sources: the census data etc.

The historic population trends in Faisalabad City are summarized in the Table 3.1.

Table 3-1: Historic City Population Trends based on Census

Census	City	1981	1998	2017
		1,181,562	2,140,346	3,238,841

Source: Census data, Government of Pakistan.

3.1.1 Population Growth

The population of Faisalabad was 9,171 in 1901, reached to 2,152,401 in 1951, which jumped to 3,561,909 in 1981 and then to 5,429,547 in 1998. This indicates an overall increase of 150% in 47 years, from 1951 to 1998, showing an average increase of 3.2% per annum. From 1901 to 1951, population of Faisalabad increased at a rate of 11.53 percent, whereas from 1951-81 the population increased at a declining rate of 1.69 percent and then, from 1981-98, it increased at a rate of 2.51 percent per annum, whereas according to the current census of 2017 the growth rate of the population is 1.97 percent per annum. Faisalabad is a city of textile and industry and a possible reason of this increase in population is the cause and effects of rapid industrialization and urbanization.

Table 3-2: Population growth in Faisalabad and comparison with other cities

City	Population			Percentage Increase		
	1941	1951	1961	1941-51	1951-61	1941-61
Karachi	435,887	1,064,557	1,912,508	144.2	79.7	338.8
Lahore	671,659	849,333	1,296,477	226.5	52.6	93.0
Dacca	239,728	335,928	556,512	40.1	65.7	132.2
Hyderabad	134,693	241,801	434,537	79.5	79.7	222.6
Faisalabad	69,930	179,127	425,248	156.2	137.4	508.1
Chittagong	224,732	289,981	364,205	29.0	25.6	62.2
Multan	142,768	190,122	358,201	33.2	88.4	150.9
Rawalpindi	185,042	236,877	340,176	28.0	43.6	83.8
Gujranwala	84,545	120,852	196,154	42.9	62.3	132.0

Peshawar	173,420	151,434	218,691	12.7	44.4	26.1
Sialkot	138,708	167,506	164,346	20.8	1.9	18.5

Source: Master Plan for Greater Lyallpur 1968

It is evident from the table above that Faisalabad achieved the highest rate of growth from amongst the listed towns during 1941-61. Its population turns out to be nearly six times greater than it was in 1941. Consequently, Faisalabad is the 3rd largest town of Pakistan whereas it was just a local agriculture market.

The main cause of its growth has been the large-scale migration from other areas. Since the establishment of the city, the movement of people into Faisalabad has been much higher than the average rate of migration from rural to urban areas of Pakistan. During 1951-61 the rate of increase of population of Faisalabad was more than twice the rate of national urban growth and about six times the national overall increase of population. For every child born in Faisalabad during 1951-61, 5 persons came into the city from other areas of the country. At the rate of the overall increase of population of Pakistan only 42,278 persons would have been added to the city's population whereas the total increase was 246,104 persons meaning that 193,826 persons migrated into the city, a number higher than the total population of the city in 1951.

3.1.2 Population Density

Urban density represents the number of people living in a particular urban area and is an important aspect to analyze the function of cities. Higher densities reflect lesser commuting to avail urban facilities and thus are known as more sustainable cities.

Density function also helps in devising future zoning options and policy making and shows an overall picture of how population will be distributed (and/or planned to be distributed) on different chunks of land to enhance efficiency, mobility and liability. The density of Faisalabad district according to previous census comes out to be 608 persons per sq.km in 1981 to 927 in 1998. However, for the year 2017 it is calculated as 1344.5 persons per sq. km shown in the following figure13.

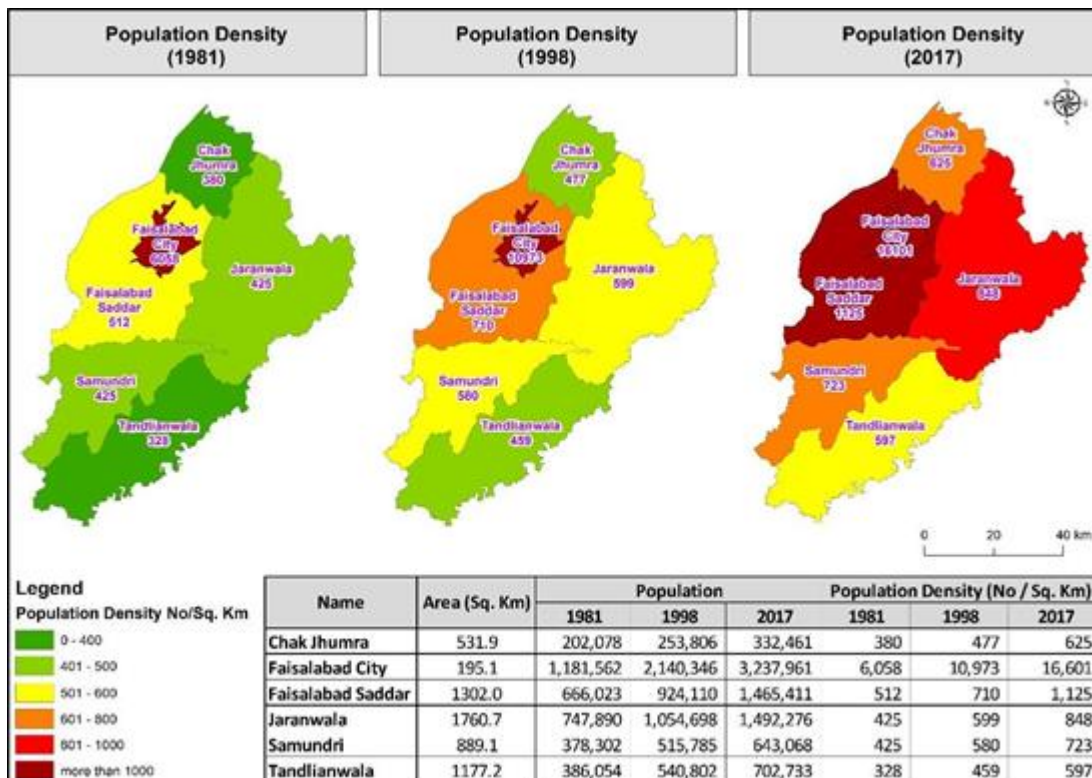


Figure 3-1: Population Density Map of Faisalabad

Source: DCRF 1981 and 1998³³, 6th Population Census 2017³⁴

Table 3-3: Male Female Percentage as per 1998 and 2017 Census

Gender	1998 Census		2017 Census	
	Population	Percentage	Population	Percentage
Male	3582239	49%	4034515	51.239%
Female	3728452	51%	3838854	48.754%
Trans Gender	-	-	541	0.007%

Urban population density is commonly understood to be achieving the correct balance between land expansion and population densification to make most efficient use of land and infrastructure investments. Poorly managed density leads to overcrowding. While the perception and tolerance for density or overcrowding is informed in part by cultural factors, from a management perspective, overcrowding is the result of inadequate management and provision of urban infrastructure and services. The distribution of population density, however, is better suited to understanding the internal structure of urban areas and measurable urban development outcomes.

In 2017, the city's average density within its municipal boundary was 16,601 sq. /km, however, if only the built-up area is accounted, the average population density is around 67 persons/acre. The ostensibly high average population density in the built-up area is, however, misleading for several reasons.

There is an increasing trend in average population density, as seen in the increased growth of the urban extent and the trajectory over the past decade.

3.2 PRIMARY ECONOMIC DRIVERS

Faisalabad contributes over 20% toward Pakistan's annual GDP; therefore, it is often referred to as the "Manchester of Pakistan". Faisalabad's average annual GDP is \$20.55 billion (USD), of which 21% comes from agriculture. The surrounding countryside, irrigated by the lower Chenab River, produces agricultural commodities such as cotton, rice, sugarcane, wheat, fruit and vegetables. The city has carved a niche as an industrial centre with its highways, railways, and railway repair yards, processing mills, and engineering works. It is a producer of industrial goods and textile manufacturing including cotton and silk textiles, super phosphates, hosiery, dyes, industrial chemicals, clothing, pulp and paper, printing, agricultural equipment, ghee (clarified butter), and beverages.

The Faisalabad Chamber of Commerce and Industry monitors industrial activity in the city and reports their findings to the Federation of Pakistan Chamber of Commerce and Industry and provincial government.

Faisalabad is recognized as the center of the textile industry in Pakistan, contributing to half of Pakistan's total textile shipments. At the end of June 2012, textile mills employed 20% of the nation's workforce, and generated 1.3 trillion rupees (\$13.8 billion) in textile products, most of which were exported to the US and Europe. While Punjab's economy is driven primarily by agriculture, the textile industry along with leather products and light engineering

³³ District Census Report 1998

³⁴ 6th Population Census 2017

goods play an important role, with more than 48,000 industrial units spread across Punjab. In an effort to boost bilateral trade, Romania and Turkey have honorary-consulates in Faisalabad which enable trade links with the city.

The government has established a Trading Corporation for purchase and export of coarse as well as fine cloth. The cotton market has assumed the posture of an international market. Faisalabad, Chak Jhumra, Jaranwala, Samundri, Tandlianwala and Mamonkanjan are the important food grain markets and trading centres in the district. Important items of trade in these centres are wheat, rice, cotton, Gur, gram, maize and chilies (source: DCR Faisalabad 1998).

The Faisalabad clock tower and its eight bazaars (markets) remain a major trading zone in the city. Faisalabad has received substantial funding from the government of Punjab and the city district government to improve infrastructure and roads to rural areas. In an effort to deal with the energy crisis, the FCCI has been working with private companies to develop renewable energy resources such as solar energy and the construction of dams within the district. CAE, a German-based renewable energy company, has disclosed plans to establish the first solar panel manufacturing facility in Faisalabad, second of its kind in Asia, with intentions of investing upwards of €100 million (Rs 12.9 billion) for its development.

Faisalabad contributes over 20% toward Pakistan's annual GDP. Faisalabad's average annual GDP is \$20.55 billion (USD) of which 21% comes from agriculture. The historical background rank ties hub of cotton, sugarcane and wheat production territory.

Now although this territory has been transformed from agricultural economy to industrialization, but still the major fraction of population of this district practice farming; no doubt on account of rapid mechanization of industry have polluted underground water and rendered the soil barren and unproductive.

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The city's commercial activities are concentrated 8 bazars surrounding Ghanta ghar. And the other important commercial centres are D ground, Gatwala Commercial hub, Awan Bazar.

As with every urban centre in Pakistan the informal sector likely accounts for a significant portion of the economic activity, although by its very nature statistics do not usually capture this activity as information is difficult to come by. A casual survey of street level activity is indicative of the amount and importance of the informal sector in which, by Punjab average, approximately 70% of the population are actively engaged and probably 100% participate.

Anecdotally, it is evident that the informal economic sector dominates central city streets, is utilized by close to 100% of the population of the old city, and is considered an essential part of residents' daily lives. At the same time, it contributes to several urban infrastructure and service issues, including congested roads and malfunctioning drains, though receives little or no consideration from the urban development perspective.

Information on the income and the specific areas of activity of individuals employed in the informal sector is difficult to come by. It is also important to acknowledge that the development of the informal sector is a manifestation of other phenomena, including the lack of formal employment, training, education, and credit, among other factors. Policies addressing these factors have been shown to be much more effective in turning informal economic activity into formal enterprises, as opposed to coercion or imposing prohibitions.

3.3 KEY DEMOGRAPHIC TRENDS

The following sections summarize the key demographic trends in the city.

3.3.1 Housing

Tracking residential construction growth rates is an important indicator in understanding one of the driving forces behind population change. If there is not housing for people to move into, it will be harder for the population to increase. Additional indicators of importance for assessment of living standard and household well-being are ownership and the condition of housing.

More than half of Pakistan's urban population is already living in eight urban agglomerations - Karachi, Lahore, Faisalabad, Rawalpindi, Multan, Hyderabad, Gujranwala and Peshawar.

To foster sustainable economic growth and reduce poverty, the Punjab's main urban centres need to accommodate additional urban growth which requires sound planning, well-functioning urban land and housing markets, and capacity of the local institutions to enforce laws and regulate the sector.

In Faisalabad, one of the physical features, namely overcrowding requires special attention especially in central areas of the city. Secondly, the housing environment in the Town is in very deplorable condition and there is a dire need to formulate policies for up-grading the environmental quality. Due to large scale migration from various parts of India at the time of independence urbanization and its related issues emerged in Pakistan. These urban issues were further aggravated due to two wars with India 1965 and 1971. Afghan refugees further worsened the urbanization problem. Due to rapid process of urbanization in Pakistan it is estimated that the urban population would reach 50% of the total population in Pakistan. With the rapid increase in urban population the gap between housing demand and supply would further widen unless a planned effort is made towards its solution.

Faisalabad also experienced the same situation. After partition, thousands of people migrated to this city and occupied vacant pockets of state land. This trend deteriorated the whole environment of the city and results in serious problems of housing, transportation, water supply and sewage. There is a need to replace the houses which have lived their life. Moreover, supply of houses be increased to meet the demand so that no further shortage occurs, in future.

The growth of Faisalabad's population has also led to greater demand for housing units including land for housing, however, accurate information is difficult to get since the 2017 census has not been made fully available, and official documents, such as the Punjab Development Statistics, are still using 1998 census data. No specific housing statistics were obtained for Faisalabad City, but the assumption is that conditions are similar to those sampled to Pakistan Social and Living Standards Measurement (PSLM) 2014-15 (provincial level data only available). In overall Pakistan the number of households that own dwelling units declined to 84 percent in 2014-15 as compared to 86 percent in 2012-13. The percentage is higher in rural areas, 90 percent as compared to 74 percent in urban areas. Provincial comparison reveals that percentage of household that own dwelling units is highest in Baluchistan with 88 percent in 2014-15 as compared to 91 percent in 2012-13 followed by KP which remains stable at 87 percent, Punjab with to 85 percent in 2014-15 as compared to 87 percent in 2012-13, while Sindh with 81 percent in 2014-15 as compared to 82 percent in 2012-13 have the lowest percentage of household who live in own dwelling units.³⁵ In Punjab Province, 84% of people own their homes, and 11% are rented. In urban areas the predominant roofing material (60%) is reinforced cement concrete or reinforced brick concrete, and the predominant wall material is burnt bricks/blocks (93%).

³⁵ Pakistan Social and Living Standard Measurements Survey (PSLM) 2014-15

There exists a range of obstructions to efficient urban land and housing market performance. These include excessive public land ownership, inadequate infrastructure services, weak property rights, counterproductive urban planning policies and regulations, costly subdivision and construction regulations, limited financing for property development and acquisition, rent controls, and distortive taxation mechanisms (WB 2006) in (Urban Development Sector Plan 2014-2018 Government of Punjab, 2014).

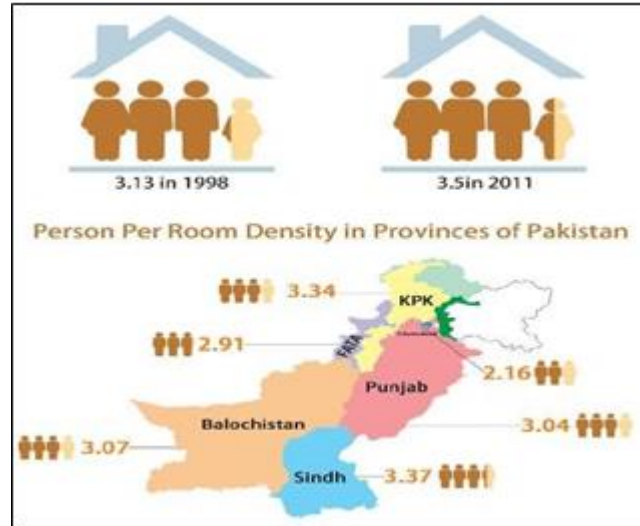


Figure 3-2: Room Density in Pakistan

Source: Urban Development Sector Plan 2014-2018 Government of Punjab, 2014

As per 1998 Population Census there were 292182 housing units in Faisalabad City Tehsil. Out of this 242286 (82.9%) were pacca housing units. The total population of Faisalabad City Tehsil was 2140346 persons (1998) with average household size of 7.3 persons. Thus, there were 292182 housing units against the 293198 households in Faisalabad City Tehsil. There was a backlog of 1016 housing units in the Faisalabad City Tehsil (Basic Population and Housing Data by Union Councils 1998). Gas was being used as cooking fuel in 60.78 housing units while wood was being used as cooking fuel in 30.59% housing units.

The majority (58%) of new housing schemes constructed were oriented towards middle- and higher income groups. These housing schemes have an average plot size of 10 marlas, which makes them unaffordable for lower income groups. They are more commonly used as a speculative investment and have no effect on the actual housing shortage for the lower income groups.

An estimated 60% of urban households in Pakistan cannot afford housing at market prices. However, there are no mechanisms in place to ensure that targeted low-income housing schemes benefit their target groups.

Public land ownership in Punjabi cities is very high. Since partition, government agencies have been granted large parcels of land, in large cities, where local development authorities are seen as the principal vehicle for residential development, large tracts of land have been transferred to these authorities.³⁶ Research on the land market in Lahore and Karachi indicates that high rates of public land ownership stifle formal urban land market operations

³⁶ Most of the land for housing purposes is developed by Pakistan Housing Authority, PHATA, Defense Housing Authorities, Cantonment Boards, city development authorities and trusts. The different authorities provide land with infrastructure, such as electricity, water and gas, while housing is constructed by the buyers or land recipients (Ellis, P. et al (2006) Urban Land and Housing Markets in the Punjab, Pakistan. World Bank report 69596)

and encourages the development of *katchi abadis*.³⁷

3.3.2 Education

The government's policy is to provide two primary schools for every 6,000 people, each on one acre, and two high schools for every 25,000 people. The assumptions for school provision are gendered, i.e., one for males and one for females. Land requirements for high schools are five acres for schools oriented towards males, and four acres for schools oriented towards females. Two post-secondary education facilities, such as colleges and technical institutes, are provided per 100,000 people. Colleges have a land requirement of 10 acres for schools oriented towards males, and seven acres for schools oriented towards females, while technical institutes require seven acres.

Faisalabad district covers an area of 5856 square kilometers with a population density of 1344.5 persons per square kilometers while the current population of the district is 7.8 million and annual growth rate for 2017 is 1.97 percent. District Faisalabad consists of six tehsils, that is, Tehsil ChakJhumra, Tehsil Samundari, Tehsil Tandlianwala, Tehsil Jaranwala, Tehsil City Faisalabad and Tehsil Faisalabad Saddar, eight towns and twenty-two constituencies. The district has a literacy rate of 60.2 percent. Out of the total population of district Faisalabad, 1.87 million (53 percent) are between 5-16 years of age; 48 percent of which are girls. It is concerning to note that 42 percent out of 1.87 million children of 5-16 years age are out of school, where 11,375 more boys are out of school compared to girls. A huge population of children being out of school calls for an immediate action given that Article 25-A of Pakistan's constitution holds provincial government responsible to ensure provision of free and compulsory education to all children of 5-16 years of age.

There are 160 higher education institutions in Faisalabad District, which includes colleges for boys and girls, medical colleges and universities both public and private. The list of the higher education institutions is given below, it also includes different campuses of national and provincial universities. Faisalabad city has a number of worlds known research and educational institutions namely University of Agriculture (UAF), Nuclear Institute for Agriculture and Biology (NIAB), National Institute for Genetic Engineering and Biotechnology, Ayub Agricultural Research Institute (AARI), Punjab Forestry Research Institute (PFRI), The University of Faisalabad, National University of Textile Engineering etc.

Furthermore, there are number of public and private institutions at all levels which are serving the purpose of educational dissemination. There are three polytechnic institutions located in Faisalabad, and the average number of students enrolled every year in these institutions is 3,556. There are also eight vocational institutes which enrol 694 students every year. In all, about 7,220 skilled technicians/ artisans/workers are trained every year. Further a number of public and private schools are also actively engaged in the educational enhancement for all ages.³⁸

3.3.3 Health

The Government is the largest provider of health services in the country and in Punjab District. The public sector health delivery system is composed of four tiers: (i) outreach and community-based activities, which focus on immunization, sanitation, malaria control, maternal and child health and family planning; (ii) Primary care facilities, including Basic Health Units (BHUs), Municipal Health Centres (MHC) and Rural Health centres (RHCs) mainly for preventive and outpatient care; (iii) Secondary health care facilities, such as Tehsil Headquarters Hospital (THQH) and District Headquarters Hospital (DHQH) for inpatient and

³⁷ Dowall, D. E. (1991) The Karachi Development Authority: Failing to Get the Prices Right. Land Economics 67 (4): 462-471

³⁸ Faisalabad Peri-Urban Structure Plan 2015

outpatient care; and (iv) Specialized tertiary care hospitals located in the major cities.

When the Structure Plan of Faisalabad was being prepared there were 881 Government and Private Dispensaries, including Private Clinics of Allopathic systems of medicine, Homeopathic system of medicine and Unani. If the concept of establishments of Poly Clinic is not adopted, then the following number of such dispensaries will be required in 1990, 1995 and 2000 for Faisalabad.

Table 3-4: Projected Dispensaries in 1986 Structure Plan of Faisalabad

SN	Year	No. of Dispensaries Required
1	1990	1128
2	1995	1347
3	2000	1604

Source: Structure Plan of Faisalabad 1986 – 2000

There are ten government hospitals in the city: PINUM Cancer Hospital, Allied Hospital, District Head Quarter (DHQ), Faisalabad Institute of Cardiology, Govt. General Hospital Ghulam Muhammadabad, Govt. General Hospital Samnabad, TB Hospital, Social Security Hospital, Children Hospital, and Govt. General Hospital 224 RB. Near each there are also private health facilities.

The government's policy is to provide one BHU for up to 25,000 people, though the acceptable minimum is one BHU in every UC. MHCs and RHCs have 10-20 inpatient beds and serve a catchment population of up to 100,000 people. THQHs serve a population of 0.5–1 million people, and the majority have 40–60 beds. DHQHs serve a population of 1–3 million people. The covered area standard for these facilities is 210 m² (2,263 ft²) on 5,016 m² (10 kanals) of land, 716 m² (7,710 ft²) on 12,040 m² (24 kanals) of land, 3,251 m² (35,000 ft²) on 0.05 km² (100 kanals) of land, and 210 m² (3,437 ft²) on 0.1 km² (200 kanals) of land, respectively.³⁹

³⁹ Punjab Developed Social Service Programme (PDSSP) (2008) Minimum Service Delivery Standards for Primary and Secondary Health Care in Punjab

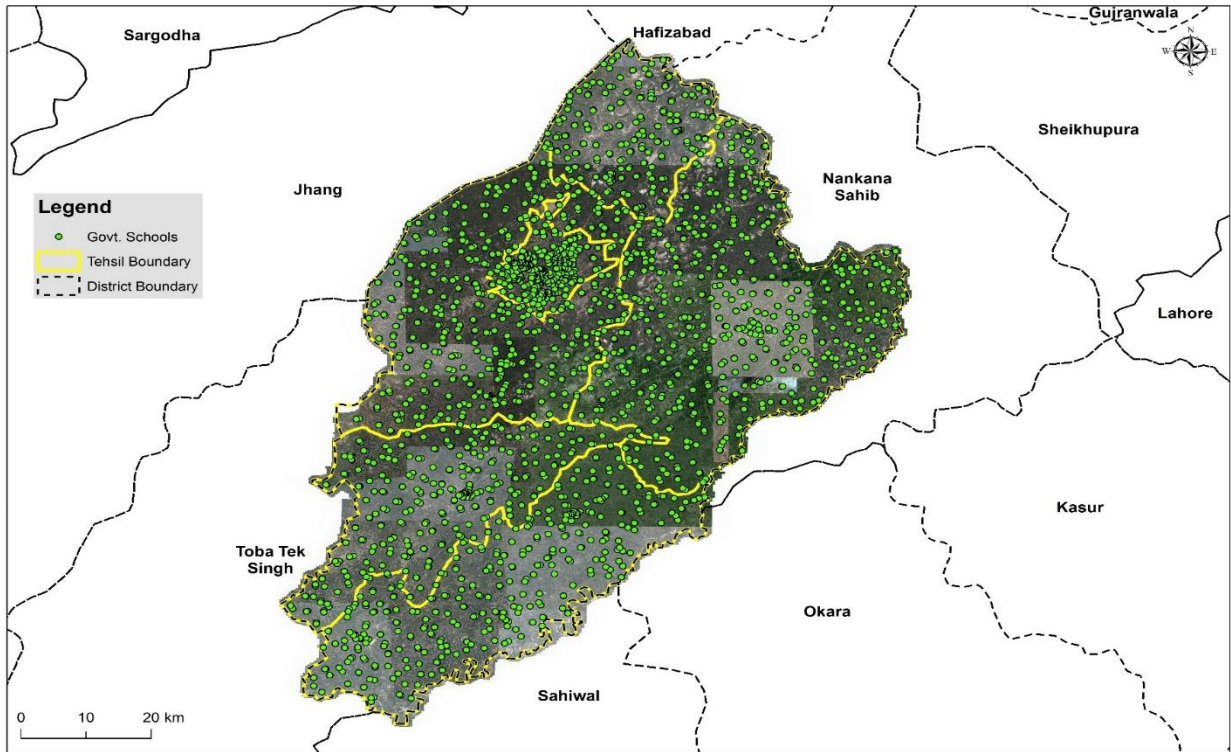


Figure 3-3: Distribution of School in the District

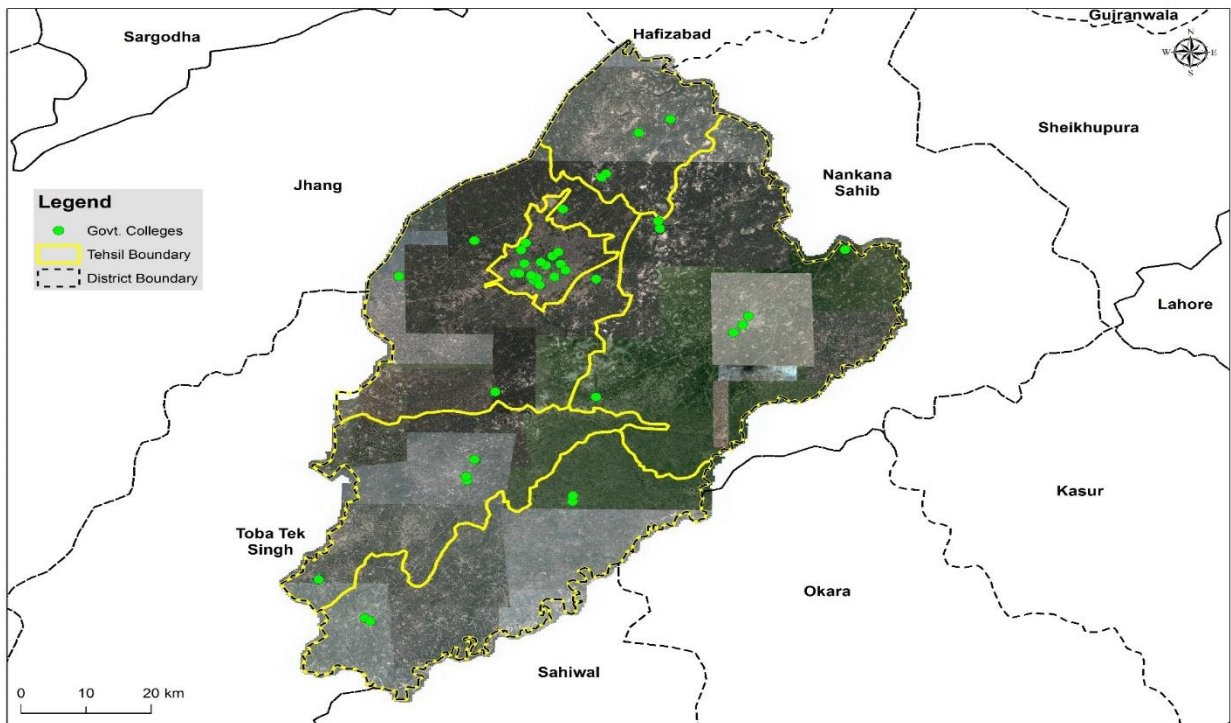


Figure 3-4: Distribution of Colleges in the District

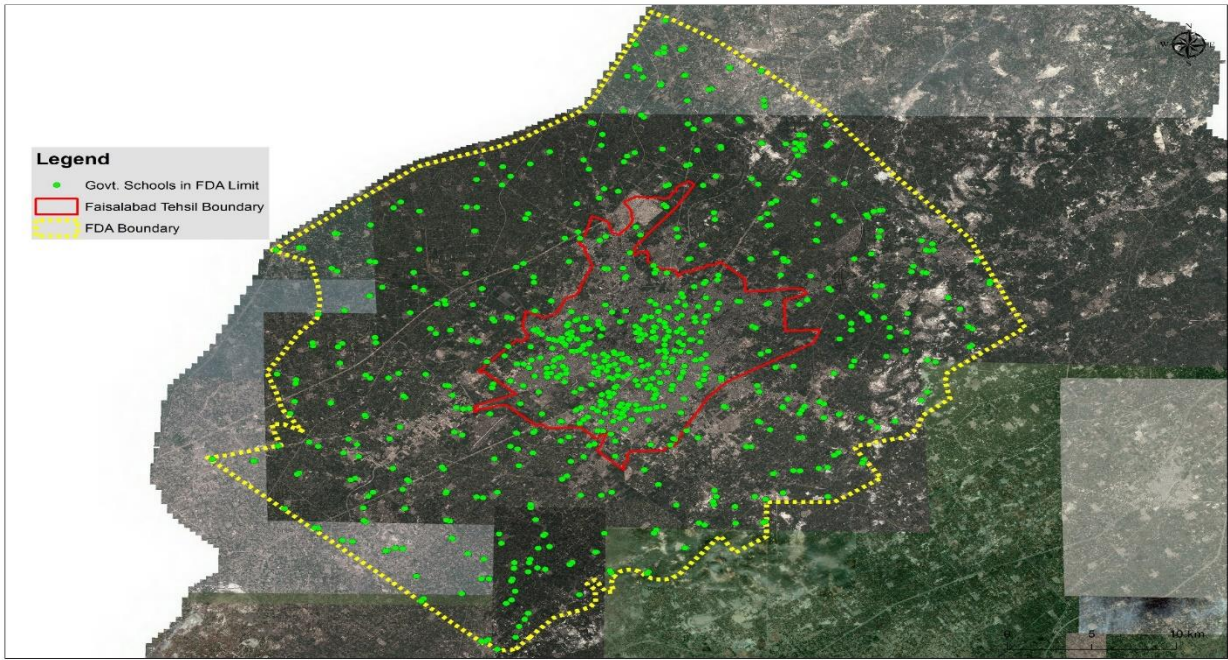


Figure 3-5: Schools in FDA Limit

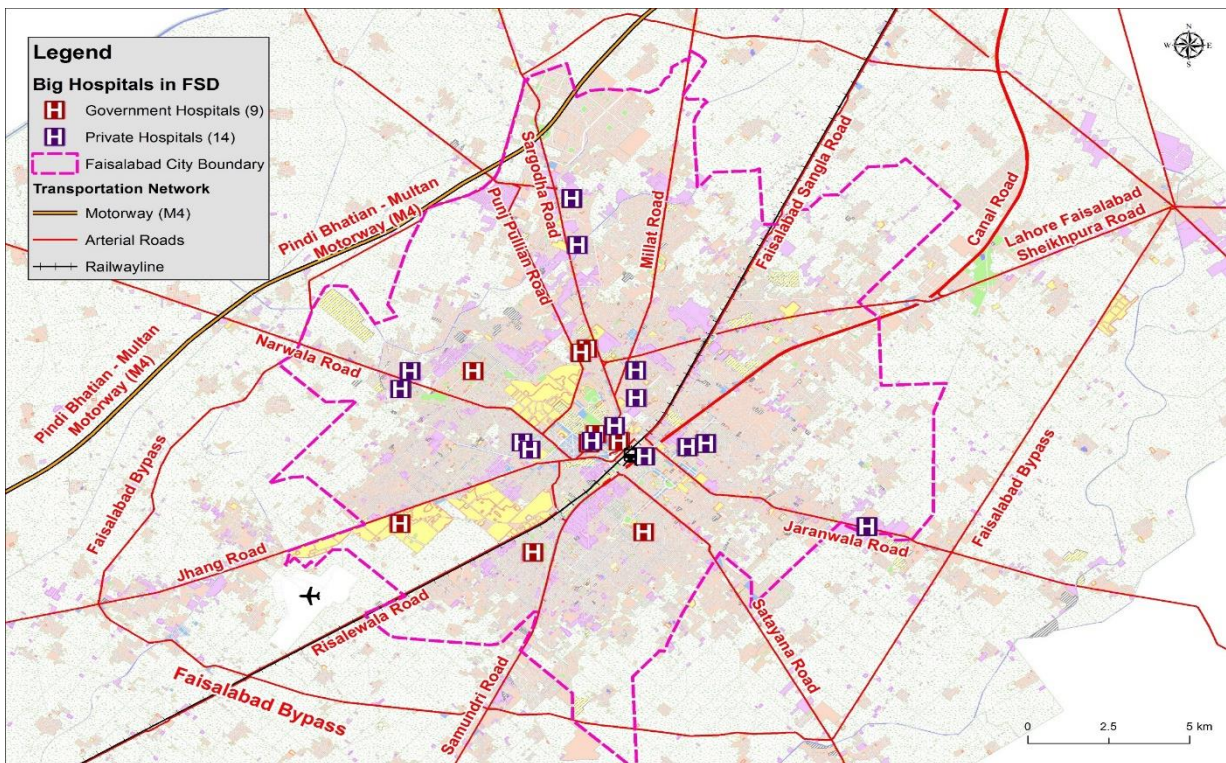


Figure 3-6: Hospitals in Faisalabad

3.3.4 Poverty

Deprivation occurs when people do not have the same access to services and consumer items compared to the majority of others in society. Most deprivation measures look at a 'basket' of aspects that would affect a person's overall ability to participate in society at the same level as most other people. This approach is considered a more accurate measure than consumption-based poverty measures.

The EFA National Plan of Action (2001-15) was prepared and endorsed by the first Poverty

Reduction Strategy Paper (PRSP I 2003-06) but could not be implemented due to lack of financial support, both indigenous and external. Similarly, 15-year provincial and district EFA plan were also prepared.

Due to the unavailability of detailed 2017 census data, city level analysis of the distribution of poverty and dependency ratios, or any of the key deprivation measures could not be assessed. These gaps will impact understanding of the spatial issues related to housing, demand for services, and potential for economic development, and thus impact the city's ability to improve social conditions within its boundaries.

3.3.5 Employment

Employment characteristics are important for development the city master plan to identify the types, quantities and locations of land uses that should be planned for, along with the nature of the supporting infrastructure. Employment may also be an indicator of potential environmental assets or constraints to be considered. The other most recent sources are the Punjab Development Statistics 2016 and the 2014-15 Multiple Indicator Cluster Survey (MICS), which provide district levels data.

As with every urban centre in Pakistan, the city's informal sector likely accounts for a majority of economic activity, although by its very nature statistics do not capture this activity. A casual survey of street level activity is indicative of the amount and importance of the informal sector in which, by Punjab average, approximately 70% of the population are actively engaged. The informal economic sector dominates central city streets, is utilized by close to 100% of the population, and is considered an essential part of residents' daily lives. At the same time, it contributes to several urban infrastructure and service challenges, including congested roads and malfunctioning drains, though receives little or no consideration from the urban development perspective.

Due to the unavailability of detailed 2017 census data, the number of working age people, the distribution of income generating activities, the distribution of poverty and unemployment, and the distance people travel to their employment locations could not be assessed. These gaps will impact understanding of the spatial issues related to economic development, and thus impact the city's ability to improve economic conditions within its boundaries.

3.4 POPULATION FORECAST

This section briefly sets out some of the key factors involved in population change in Faisalabad City and identifies potential growth to be considered in assessing future population. The population growth projections and forecast are fundamental assumptions for long-range planning with significant implications for impacts budget decisions related to capital facilities and infrastructure. As such, they are a necessary pre-requisite for establishing the potential future demand for municipal services.

Table 3-5: Population of Faisalabad City from 1901-2017

Year	Population	Increase Over Last Census Figure	Percentage Growth over Last Census Figure	Growth Rate Percent Per Annum
1901	9,171	-	-	-
1911	19,008	9,337	101.8	7.6
1921	23,136	4,128	21.7	2.0

1931	42,922	19,786	85.52	6.4
1941	69,930	27,008	62.92	5.0
1951	179,000	109,070	155.7	9.9
1961	425,240	246,240	147.62	8.9
1972	823,344	398,104	93.61	6.2
1981	1,232,000	408,656	49.63	4.6
1998	1,977,246	745,246	60.49	2.8
2017	3,203,846	1,226,600	62.04	2.6

Source: Government of Pakistan Census Reports

The gross population density (total population / total zone area) is 17198 Persons per Sq. km. The population is mostly concentrated around the old city area in a concentric fashion, with the exception of linear developments along major arterial roads in the study area.

The total Population of Faisalabad City is 3,210,158 (2017). Population Census 2017 indicates that during the last 19 years 1998-17 the population has been increasing with the growth rate of 2.49%. It is expected that this growth rate would continue for the next ten years i.e. 2027 and after that it may decrease to 2.2% with development of new growth centres. Keeping in view these growth rates the population has been projected for the next 20 years up to 2040. As per the projected population in 2027 the population would be 4,105,266 people and in 2040 it would be 5,447,574 people, addition of 2.237 million people in the population of 2017.

Table 3-6: Population Projection 2017-2036

Sr. No.	Year	Projected Population	Male	Female
1.	2017	3,210,158	1,651,684	1,558,106
2.	2018	3,290,091	1,692,752	1,597,339
3.	2019	3,372,014	1,734,901	1,637,113
4.	2020	3,455,977	1,778,100	1,677,877
5.	2021	3,542,031	1,822,375	1,719,656
6.	2022	3,630,228	1,867,752	1,762,476
7.	2023	3,720,621	1,914,259	1,806,362
8.	2024	3,813,264	1,961,924	1,851,340
9.	2025	3,908,214	2,010,776	1,897,438
10.	2026	4,005,528	2,060,844	1,944,484
11.	2027	4,105,266	2,112,159	1,993,107
12.	2028	4,195,582	2,158,627	2,036,955
13.	2029	4,287,885	2,260,117	2,081,768
14.	2030	4,382,219	2,254,652	2,127,567

15.	2031	4,478,628	2,304,254	2,174,374
16.	2032	4,577,158	2,354,948	2,222,210
17.	2033	4,677,856	2,406,757	2,271,099
18.	2034	4,780,769	2,459,706	2,321,063
19.	2035	4,885,946	2,513,819	2,372,127
20.	2036	4,993,437	2,569,123	2,424,314

Source: OCL working based on 'Faisalabad Municipal Corporation Area' Population 2017

These projections are based on the current urban boundary, which is subject to change. Further, once the upcoming Master Plan is implemented, it is likely that the recommendations will alter settlement patterns in and around the city.

3.5 CHALLENGES AND OPPORTUNITIES

Faisalabad's growth rate is slowing. At the same time, the city faces a strong decreasing trend in average population density. This is partially a function of population demographics, but also a result of urban dysfunction, which is reducing the attractiveness of the city as an economic centre, despite its geographic position and urban amenities.

The high levels of air pollution and water pollution indicate that city residents are facing significant negative cost externalities due to environmental conditions and commuting costs. These increase as the city expands; and are another possible driver for reduced economic productivity.

The city's population growth potential presents an opportunity for a strategic realignment of the urban development trends that will better position the city for improved quality of life and economic attractiveness.

4. EXISTING LAND-USE AND SETTLEMENT PATTERN

4.1 URBAN STRUCTURE

Every city provides an array of service, residential, and industrial functions. Urban structure describes the physical elements and relationships that shape a built environment and help to give that place a coherent identity. This type of diagrammatic model attempts to explain the organizational trends of people and services in cities. City form is only influenced, not dictated, by the urban structure.

Most applications of the concept refer to five components:⁴⁰

- Edges – barriers to movement and views, or sudden changes in character, that close one area from another
- Paths – routes of travel (sometimes differentiated by mode). Paths are often considered the predominant elements in people’s mental perception of the city, with the other elements arranged and related to them
- Landmarks – distinctive structures or landscape features
- Nodes - The strategic spots in a city which are intensive concentrations of activity
- Districts – extended areas with consistent visual, functional, or social character or common characteristics

The most important features of Faisalabad’s urban form are the beginnings of a polycentric form (Figure below). The city has two nodes, a central node in the old city consist of eight bazars (Ghanta ghar) second one in towards Jhang road. The major concentrations of commercial and services are in these two nodes and in other parts between them. The city’s paths are determined by arterial roads, which are mostly peripheral to the nodes.

⁴⁰ Lynch, K. (1960) The Image of the City

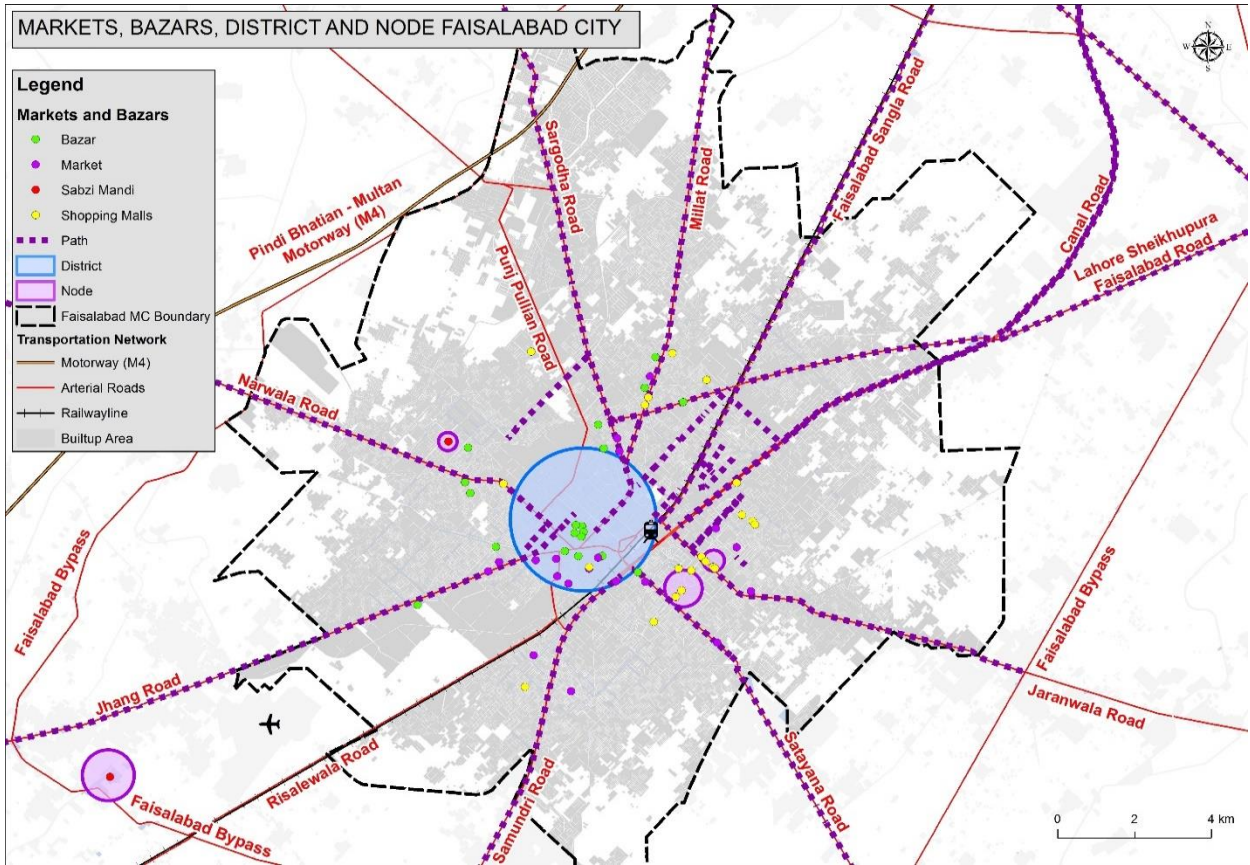


Figure 4-1: Faisalabad's Urban Form

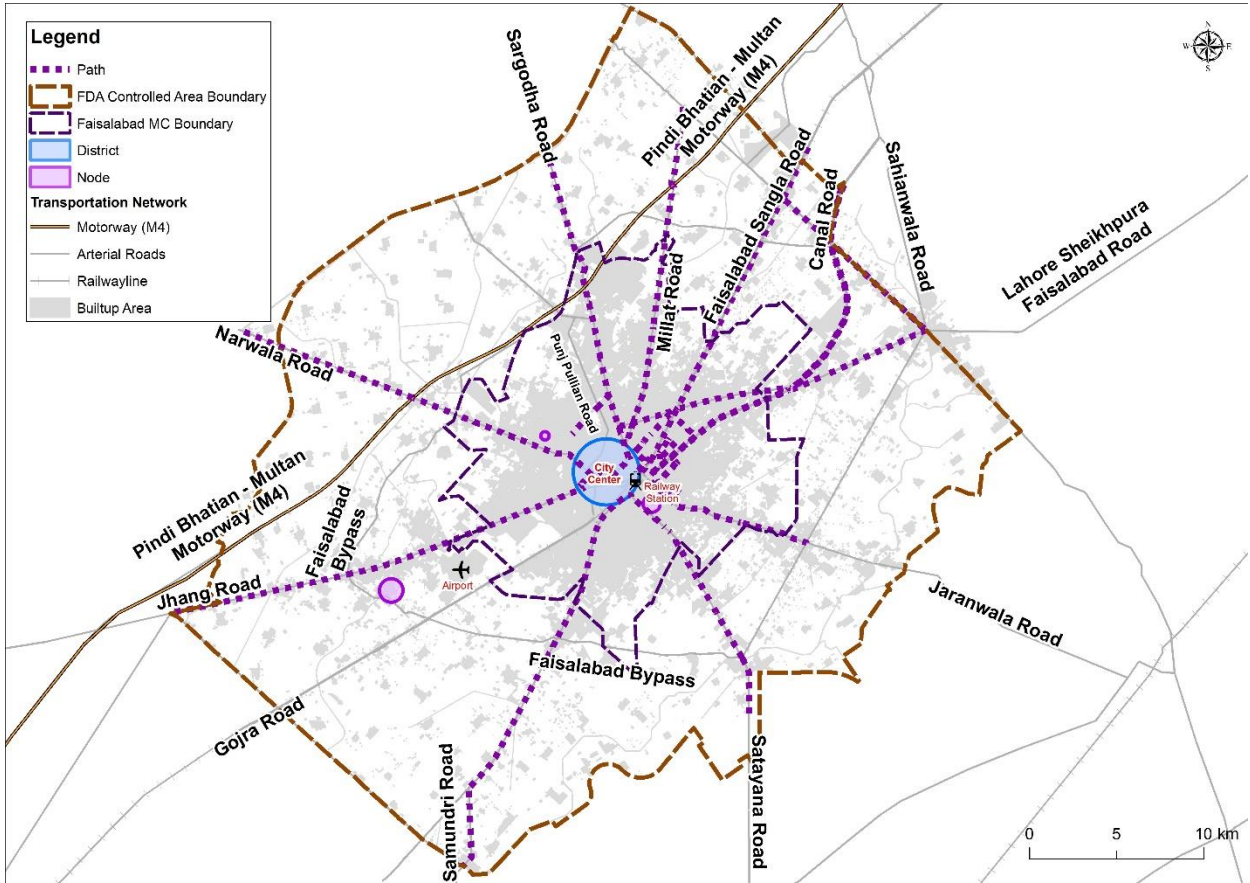


Figure 4-2: City Nodes

4.2 EXISTING LAND USE

Land use is a basic description of a city's physical development. The current land use classification employs updated land use definitions that reflect the type, location, and intensity of observable activities that take place on the city's land area. Updated, parcel-based data on land use allows for citywide comparison between past, present, and future use of the city's land resources.

The land use map (Figures A28 and A29) is an assessment of existing land uses throughout the city, current through 2017. Each property is assigned a land use code using a classification hierarchy that reflects accepted urban planning standards.

It should be noted that the land use map is still a work in progress and needs significant on-ground validation as well as input from local stakeholders.

4.3 SPATIAL DISTRIBUTION OF KEY URBAN ASPECTS

This section addresses the urban service-related network and its impact on the city's spatial distribution and urban structure. Movement and access across transportation networks within the city; distribution of economic activity within the city; access to open green space which is a key indicator for quality of life within cities; access to civic institutions and community services, including religious facilities, as well as access to health and education (which were addressed earlier). The section is not an analysis of these service networks from a technical sector viewpoint, nor does it assess its operations in terms of quality, financials, and efficiency.

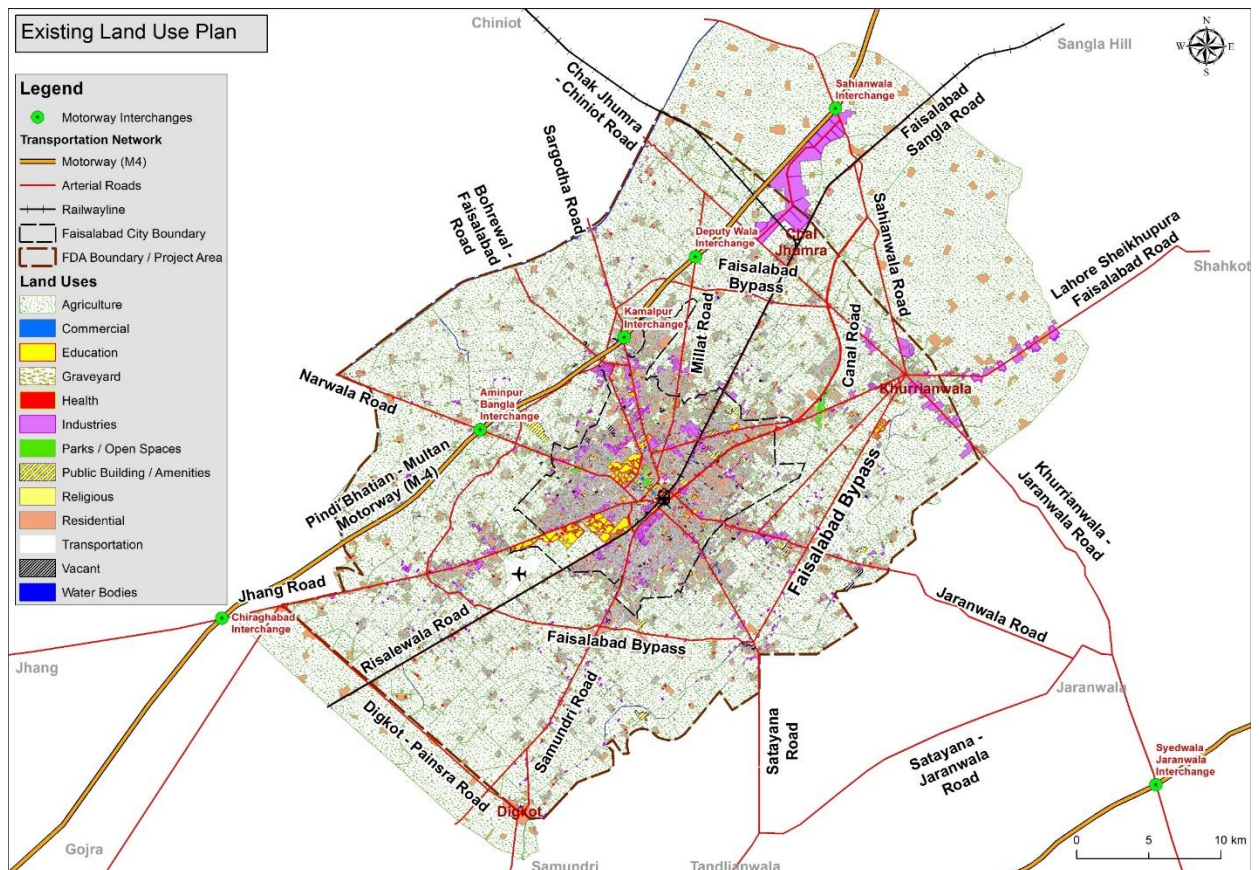


Figure 4-3: Existing Land-use Map

4.3.1 Movement and Access

An efficient transportation system is essential for the movement of people and goods from one place to another. The transport system is a vital component of the city's social, economic, and physical structure. Its primary purpose is to support the movement of people and goods within the city, create a walkable and accessible environment for all users, and to connect the city to the broader region.⁴¹ Secondly, it influences patterns of growth, development, and economic activity by providing access to adjacent land uses. As such it cannot be understood in isolation; its development, and its problems can only be managed within the city's social, economic, and regional context that generates its underlying demand.

Faisalabad is well connected with surrounding districts through National Highways Network. National Highways Network provides inter and intra provincial connectivity to Faisalabad. The Motorway M-3 in north east connects the Lahore District with Faisalabad, there is another dual carriageway link exist between Lahore and Faisalabad known as Lahore Sheikhpura Grand Trunk Road (G. T. Road). In south the Motorway M4 connects Faisalabad to Multan. Whereas the district roads provide connectivity within the district and surrounding villages and towns.

In general, urban transport is considered a chaotic mass of individually owned small vehicles (wagons, *qingis*, rickshaws, etc.) that compete for road space. Due to rapid motorization the past two decades saw an increase in traffic volumes. In most cities, the arterial roads are heavily congested, resulting in increased travel delays and reduced bus travel speeds. This also implies a less competitive public transport network where commercial and trading activities are concentrated.

In Faisalabad Due to pressure of business activities the invasion-succession process took place and increased commercial activities invaded residential land use resulting into traffic congestion on streets meant to serve residential areas. Central area is now over-crowded with traffic and it is difficult to find parking space in this area.

The city's urban transport system has three networks: pedestrian, vehicular, public transport (transit). Each of these has a different set of physical requirements based on different urban service objectives.

⁴¹ Access has both physical and non-physical dimensions. At a physical level this relates to convenience and at a non-physical level this relates primarily affordability

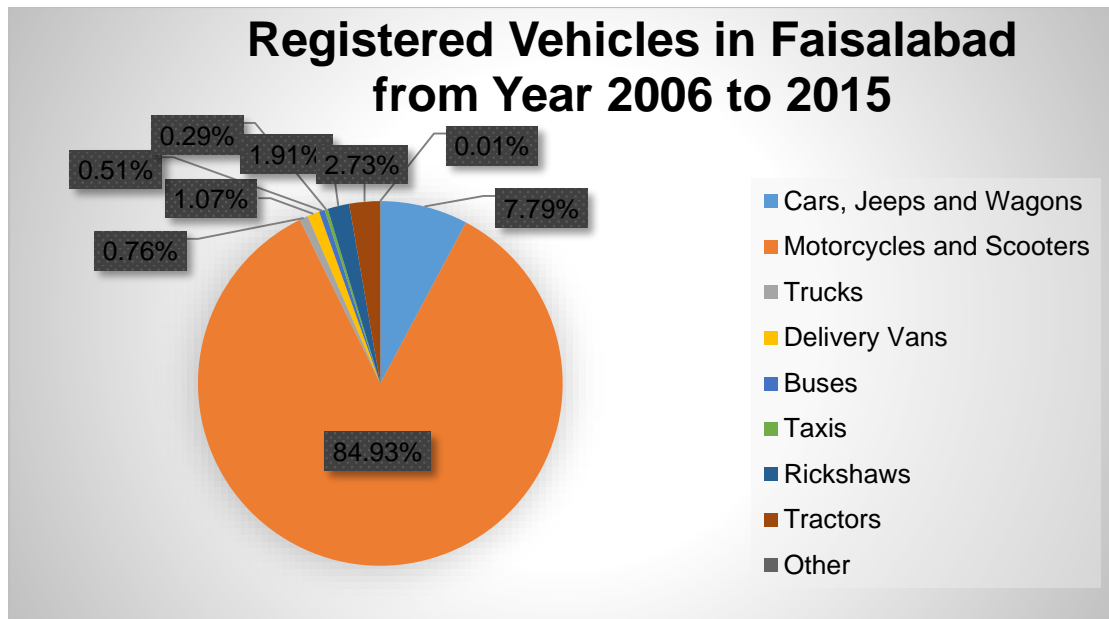


Figure 4-4: Registered Vehicles in Faisalabad

The pedestrian (non-motorized) network is an *ad hoc* one. Streets are currently designed to only cater for cars; while pedestrians are accommodated in the leftover space along narrow sidewalks or along separate footpaths, while bicycles have a decreasing share of the transport options in use.

The encroachments on roads has been hampering the smooth flow of traffic. It was observed that in some areas, shopkeepers displayed their goods like refrigerators, television sets, bicycles and other heavy articles on footpaths or even on roads which further aggravated the situation.

There are four major types of intersections/junctions in Faisalabad city: grade separation, intersections with traffic signals, roundabouts and priority / uncontrolled junctions. Each type has pros and cons in terms of traffic management. Intersections with traffic signals can cope with heavy flows with small turning movements. In Faisalabad, traffic signals are provided only on major intersections, and in central areas of the city, and less or no traffic signals exist on smaller urban areas which makes the intersections difficult to cross, hence resulting in more accidents. Traffic police is assigned only at major intersections to ensure smooth traffic flows whereas smaller urban areas are not managed properly by traffic authorities. An area-wide traffic control system by means of synchronizing traffic signals and central signal control and management within a certain urban area does not exist yet.

There is a lot of problems associated with mix of fast moving and slow-moving traffic in eight bazaars area. Slow moving vehicles affect the environment outlook in the city. Drivers of such vehicles are totally ignorant of traffic rules, signs and signals. They are not disciplined and a cause of hazard on the road. The donkey-carts usually loaded with materials beyond the size of the cart are hazard to the life of the people on the road. Due to these donkey-carts, driving of fast-moving vehicles is difficult and not safe. Donkey-carts in busy commercial areas like Circular Road, Satayana Road, D-Grounds, Millat Road, Narwala Road, Railway Road and Dijkot Road create problems for smooth flow of traffic.

Another reason of the traffic mess in the city is huge publicity boards displayed by the national and multinational companies. The signboards are creating hurdles as it seems that these have been erected without having proper NOC from the competent authority.

Encroachments in the Right-of-way of Railway line also create accident hazard and threat to life and property.

The residents within the Circular road and shopkeepers in the eight bazars do not have parking facilities. The residential buildings which are a century old do not have parking space. The residents of this area park their vehicles on the road outside their homes and shopkeepers park their vehicles outside their shops throughout the business hours. Thus, leaving no or little space for customers parking.

The motorized vehicular network aims to provide access to the city's commercial and industrial areas. On most streets, no provision is made for other modes of transport and the socialising function of streets is ignored. The absence of public space along roads is also a significant factor behind physical encroachment by shopkeepers and vendors in the road right-of-way. An additional stressor on road service levels is the increasing presence of ad hoc parking with the right-of-way.

There is traffic congestion on most of the roads radiating from the circular road. The general pattern of traffic beyond the circular road is mostly radial in nature and the traffic volume decrease with the distance from circular road.

Due to lack of any Mass Transit System, the Buses and Wagons are over-loaded particularly in peak hours and passengers are normally ill-treated. The movement of people from one part of the city to the other parts has been very difficult, particularly, the movement of people in the morning time from home to job place, home to educational institution, etc. Similarly, in the evening peak hours there is problems for the commuters. The movement of labour from within city and from other urban and rural settlements in the surrounding areas of the city, people face problem due to lack of mass transit system in the city.

4.3.2 Economic Activity

The spatial pattern of economic activities is an important determinant of urban development. The locations of firms and enterprises influence where workers will live, where consumers will buy products and where other firms are located. The locations of firms also impact transportation flows since they are important attractors and producers of both personal and freight traffic.⁴²

Economic activity in city is occurring mostly within the municipal boundary. Due to greater urbanization in Faisalabad, a lesser proportion of labour force are engaged with agriculture sector. The estimated shares of labour force affiliated with agriculture sector are: Faisalabad district (28%), FDA area (19%) and Faisalabad city area (4.5%) only. It is distributed throughout the city, and more heavily concentrated around the old city around ghanta ghar and D ground is the main commercial area of the city. Its streets are narrow, and irregular. The area is not suitable for vehicular traffic, except for motorcycles.

The major markets are located in the centre near Ghanta ghar including Katchery bazaar, Chiniot bazaar, Aminpur bazaar, Bhawana Bazaar, Jhang Bazaar, Montgomery bazaar, Karkhana bazaar and Rail bazaar. In some of these markets, the traders have banned vehicular traffic during business hours.

⁴² Yanga, J.H. and Ettemab, D. (2012) Modelling the Emergence of Spatial Patterns of Economic Activity. Journal of Artificial Societies and Social Simulation 15(4): 6

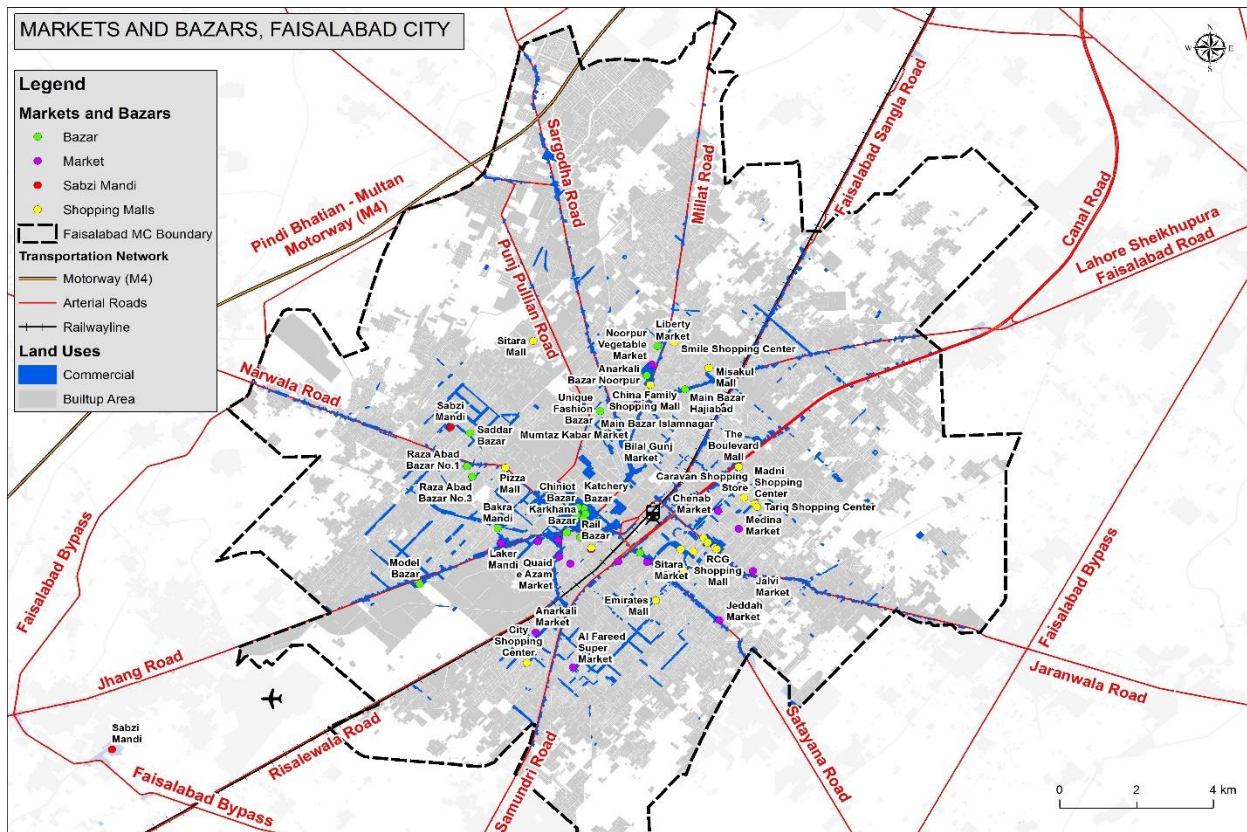


Figure 4-5: Markets and Bazars of Faisalabad City

As highlighted earlier, Textile, Engineering, Construction, Automobile, Pharmaceutical, Packaging, FMCG (Fast-moving-consumer-goods), Food processing, Chemicals, Warehouse, Transportation, Banking, Insurance, Telecommunication, Training and development, Logistics, Education, Public services are the major industries that are expected to play critical role in the development of Faisalabad. In the wake of this development there are expectations of changing distribution of occupation in the area. To reap the true benefit from CPEC and SEZs Faisalabad will require more Professionals, Managers, and Technicians, besides, Craft and related trader workers, Plant and machine operators, and assemblers, and Elementary occupations. Increase industrialization is expected to enlarge the labor force share in industry and services from existing 82% to around 90% by 2030.

4.3.3 Public and Community Facilities

Public and community facilities include a wide range of structures, including those owned by the government, as well as quasi-governmental entities and non-profits. The overarching goal of all community facilities is to support and enhance the quality of life of city residents; and set the stage for continued economic growth and desired community development. This section looks to create a baseline for the appropriate location, and delivery of public services in a manner that best supports the existing and proposed land uses. The coordinated provision of these facilities and services, and their availability is essential to a high quality of life and the health, safety, and welfare of the community. It is also an essential part of promoting and sustaining a strong local and regional economy.

The public and community facilities covered in this section include institutional and civic facilities, health facilities, educational facilities, and public safety facilities.

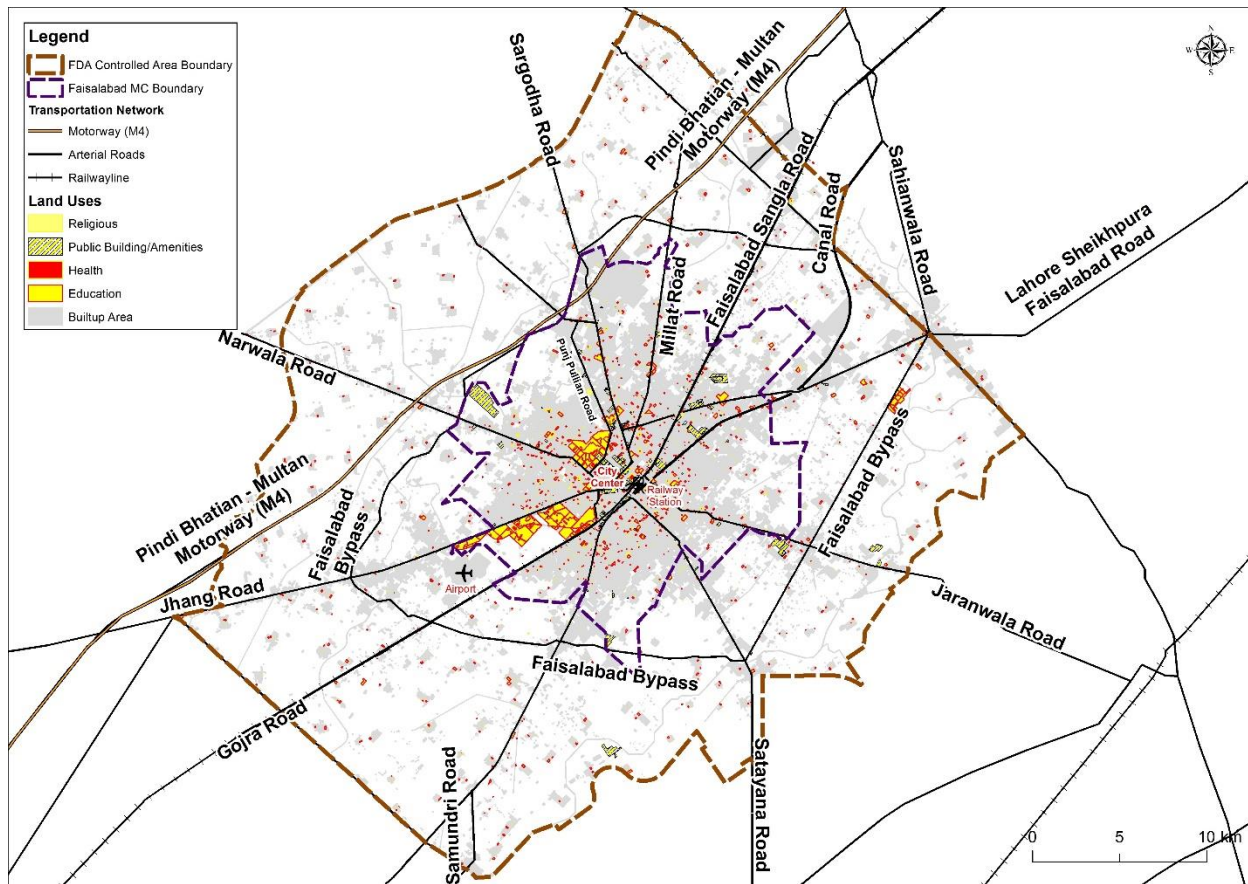


Figure 4-6: Public and Community Facilities

Civic institutions and facilities. Most government and civic institutions and their facilities are located towards mall road. These facilities house the administrative functions of the Division, the District, as well as the district courts. Emergency services, which are a distinct aspect of civic institutions, include police and fire stations, ambulance stations. These are mostly located in urban areas and priority locations. There is an obvious lack of coordination between various civic agencies.

Although Faisalabad is the second largest city of Punjab, its institutions are lacking professionally qualified and trained human resources in various departments to perform due to which major traffic and transport-related issues are being faced by the city. Faisalabad Traffic Engineering and Planning Agency (TEPA) does not have a single resource in Faisalabad to perform its intended function. Similarly, Faisalabad Development Authority (FDA) and Faisalabad Municipal Corporation (FMC) also lack the manpower to handle issues like encroachments, maintenance of roads, etc. The traffic Police department is also unable to handle traffic-related issues, non-functional signals, non-motorized traffic, illegal parking, lack of adherence to traffic safety rules etc. due to limited resources.

The Structure Plan remained in field for fifteen years till 2000, mainly the civic agencies in Faisalabad tried to implement the Structure Plan. However, the plan could not be implemented due to poor coordination among departments / stakeholders of Faisalabad. Even the proposals of the Master Plan which fall in the domain of FDA could not be implemented due to lack of capacity, weak institutional and legal framework.

Religious facilities are distributed throughout the city, and the entire population is within a 5-minute walk (500 m) of one.

City planners today have the daunting task of managing ever expanding cities with burgeoning populations that put heavy demands on infrastructure. Stakeholders are impatient

as basic civic facilities rarely meet expectations.

4.3.4 Public Open Space and Recreation

Open space and parks are an important quality-of-life factor contributing to the liveability of the city. A high-quality system of parks and recreation resources provides a multitude of community benefits: protecting the environment, preserving wildlife habitat, strengthening local economies, attracting new businesses, contributing to the local tax base, increasing property values, promoting healthy lifestyles, cooling down the environment.

Faisalabad has very few parks, covering an area of 481 acres, both developed and semi developed. The total green area including parks is only 1.92% of total built up urban (Union Council) UC area, with the most prominent being Jinnah Park, Gatwala Park and Forest Research Institution, Kaleem Shaheed Park, D-Ground Park etc.⁴³

The total area of open spaces and parks in Faisalabad city mainly is about 683 acres out of which 540 acres are under the jurisdiction of Faisalabad PHA, while the remaining 143 acres of parks and open spaces are developed by both public and private. The green belts covering an area of 60 acres are also maintained by Faisalabad PHA.

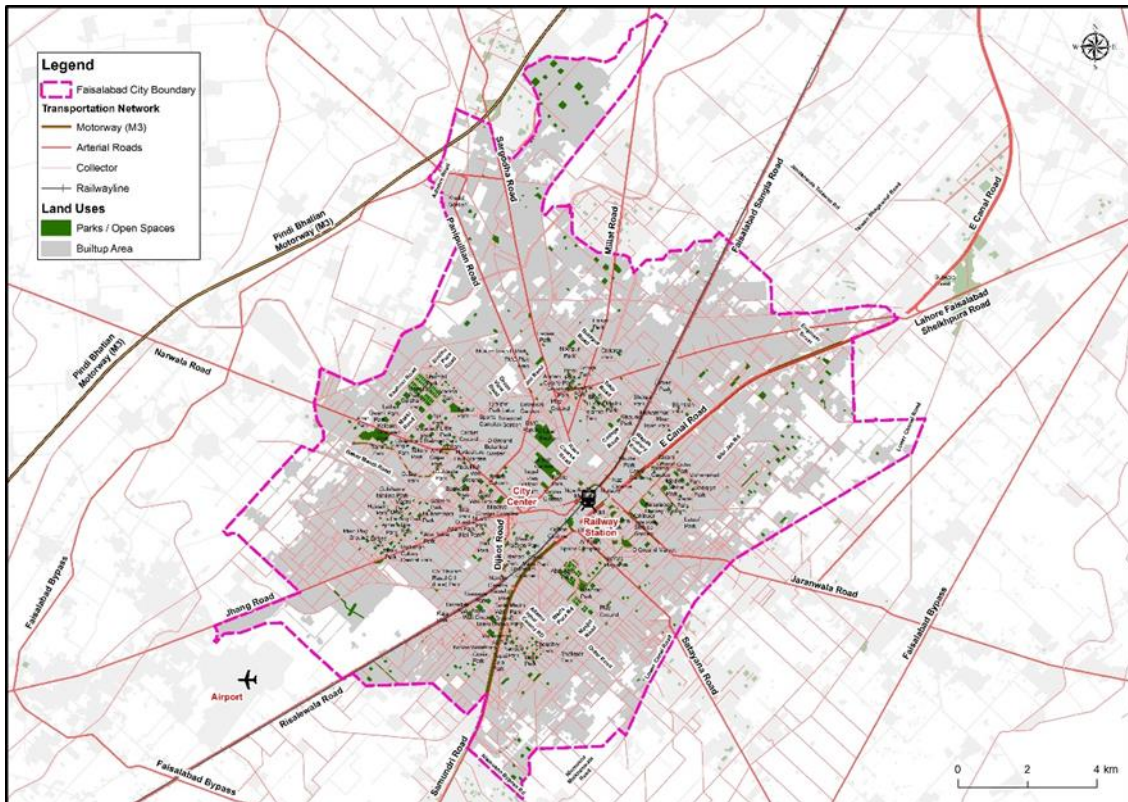


Figure 4-7: Parks & Open Spaces in City Tehsil

The total built-up area of Faisalabad city is 218.6 Sq. km, in which 95.8 Sq. km area is unserved for parks and open Spaces. This shows that approximate 44% of area have no parks.

Faisalabadi's people have less leisure time to relax, recreate, and socialize. This is especially true for the demographics focused between school children to middle age who have time-consuming responsibilities, such as school, work, and raising families.

Additional open spaces in the city includes cemeteries, domestic gardens, and vacant open

⁴³ Faisalabad Peri-Urban Structure Plan (2015-2035)

lands. Linear tree plantations along roads, railway lines, and water channels also serve as important green corridors. The city also has a peri-urban layer of natural landscape that includes crops, water channels, forests, and tree plantations.

The individual and combined amount of existing open space is well below the Pakistani standard for new urban development (7% of total scheme area), which is equivalent to 43.62 km² (10,778 acres) of open space in the city, and below the World Health Organization's (WHO) recommended minimum of 9 m² of open space per person: equivalent to 10.2 km² (2,541.15 acres) of open space in the city.⁴⁴ The distribution of green areas, and areas for recreation is uneven, and well below expectations.

4.4 CHALLENGES AND OPPORTUNITIES

Economic Activity. Current trends imply that the city's jobs-housing balance is slowly growing. Continued urban expansion, and decreasing density continue, will ensure low levels of economic growth. Due to the unavailability of city-level 2017 census data, a more detailed assessment of trends could not be undertaken, which is likely to limit the potential remedies in the second phase of this project.

Movement and Access. The major challenge faced by the overall traffic system is the mix type of motorized and non-motorized traffic on all roads, resulting in severe traffic congestion. There are bottle necks at multiple locations of the arterial and collector roads of the city, which are magnified by encroachment of vendors and pedestrians on the local streets.

Much of this congestion could be alleviated through a comprehensive and well thought traffic management program, including modal separation. However, before investment in new physical infrastructure is made, all efforts should be to first maximize the use and efficiency of the existing infrastructure through improved management.

Water pollution and Air pollution from the exhaust emissions of the large number of vehicles and industrial area is also a key concern. The other major challenge is the condition of roads and streets. This poses a significant safety hazard, mainly for the *qingis* and rickshaws.

Public Open Space and Recreational Facilities. The city has insufficient recreational facilities like parks, open spaces, playgrounds, and other social and physical infrastructure, at both the community level, and city level for recreation purposes. This gap has significant implications for community health, provision of shade, climate resilience, as well as urban aesthetics. The city's decreasing population density may enable consolidation of available undeveloped or vacant lots to provide additional open space.

⁴⁴ [1] Punjab Private Housing Schemes and Land Subdivision Rules 2010, clause 10(2)(a) states that the requirement for open space in new urban development is 7% of total area; [2] Elmqvist, T., et al., ed. (2013) Urbanization, biodiversity and ecosystem services: Challenges and opportunities. Dordrecht: Springer; and UN-Habitat (2013) State of the world's cities, 2012/2013: prosperity of cities

5. POTENTIAL PROJECTS

Faisalabad City includes a mix of opportunities and challenges for a set of strategic potential projects that could change the city's trajectory. At this point in time, prior to focused consultation with municipal stakeholders, the proposed project concepts are preliminary ones that need to be further vetted. This vetting will be undertaken as part of the Master Plan development phase.

Among the potential project concepts identified to date are:

- Significant improvements to the city centre, and realignment of circulation towards pedestrians and light vehicles (motorcycles, quingis, etc.) as opposed to motor vehicles to better to create "ladders of opportunity" for commercial activities, with more jobs at different skill and wage levels that will be important for long-term success.
- Development of satellite town, secondary and neighbourhood market centres to both alleviate pressures on the city centre, but also support increased diversification of local retail and commercial opportunities.
- Improvements to quality-of-life amenities, including quantity and variety of education and health facilities, parks and open spaces, pedestrian and other non-motorized access routes, and increased availability of public gathering spaces.
- Reassessment and realignment of housing development approaches, to not only close existing supply gaps, but to use the residential sector as a leverage for significant urban improvement by creating more opportunities for medium-density development.

6. WAY FORWARD

This rapid Baseline Situation Assessment provided a descriptive profile of Faisalabad City's existing conditions, serving as a background to understanding the challenges the city faces across a range of socio-economic, environmental, land use, infrastructure, and institutional conditions, as a first step towards developing its Master Plan. This enables development of recommendations for municipal assets for the benefit of the people who live in that city.

Master plan is a dynamic long-term planning document that provides a conceptual layout to guide future growth and development. Master planning is about making the connection between buildings, social settings, and their surrounding environments. A master plan includes analysis, recommendations, and proposals for a site's population, economy, housing, transportation, community facilities, and land use. Adopting such a master planning approach will give the MC and FDA better decision-making capacities, and the ability to prioritise where and what type of investment is needed with the aim of 'levelling up.'

The Master Plan will establish an overall strategy for the pattern and scale of development in Faisalabad City, identify appropriate strategic locations for new development and/or investments based upon an understanding and appreciation of the existing conditions in the city, as reflected in the Baseline Situation Assessment. Lastly, the plan will outline the strategic infrastructure that needs to be provided to support sustainable growth in the city.

The proposed principles of for the spatial planning process, include:

- Strategic and statutory. The Master Plan will be a detailed plan, for controlling, directing and promoting sound and rational development and redevelopment of an urban area with a view to achieving maximum economic, social and aesthetic benefits. And includes strategic plan for five years.
- Ambitious and distinctive. The Master Plan will focus on a set of distinctive contributions for different localities within the city, and the relationships between them.
- Long-term and evolutionary, but action orientated. The long-time horizon of the proposed plan will enable time for genuinely transformative change across a range of urban aspects. Supported by a series of clear, concrete steps to be taken in the short and medium terms, they will demonstrate the achievability of the overall vision and create regular milestones against which progress can be measured.
- Evidence-based and open source. The Master Plan will be evidence-based to serve as a reassuring reference point for all. This shared knowledge base, represented by this Baseline Situation Assessment, is built from agreed datasets, forecasts, and assumptions to support better decision-making and more aligned investment priorities.