

MASTER PLAN FAISALABAD

2021-2041



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OSMANI



FAISALABAD DEVELOPMENT AUTHORITY
GOVERNMENT OF PUNJAB



TRAFFIC & TRANSPORTATION

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

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ABBREVIATIONS

ADP	Annual Development Program
AFCS	Automated Fare Collection System
AIIC	Allama Iqbal Industrial city
BRT	Bus Rapid Transit
CBD	Central Business District
CMP	Chief Metropolitan Planner
CPEC	China Pakistan Economic corridor
DC	Deputy Commissioner
FCCI	Faisalabad Chamber of Commerce and Industry
FDA	Faisalabad Development Authority
FIEDMC	Faisalabad Industrial Estate Development and Management Company
FMP	Faisalabad Master Plan
FPUSP	Faisalabad Peri Urban Structure Plan
FRR	Faisalabad Ring Road
FUTS	Faisalabad Urban Transport System
G.T	Grand Trunk
GOP	Government of Punjab
GTS	General Transport Stand
IPEMC	Inter-Provincial Education Ministries Conference
ISWM	Integrated Solid Waste Management
MC	Municipal Corporation
MC	Municipal Committee
NHA	National Highway Authority
NOC	No Objection Certificate
O&M	Operation and Maintenance
OCL	Osmani & Company Private Ltd.
ROW	Right of Way
PTEPA	Traffic Engineering and Planning Agency

CONVERSION TABLE

1 meter	= 3.28 feet
1 square kilometer	= 247.1 acres
1 hectare	= 2.47 acres
1 acre	= 43560 square feet
1 kanal	= 20 marla

EXECUTIVE SUMMARY

Section 1 of the report discusses in general the location, background, history of transport network development of Faisalabad, international airport, railway network, warehouses and storage facilities, interventions for logistics supply, analysis of existing transport system including following major traffic issues:

- 1) Encroachment on Roads
- 2) Problems with Intersections/Junctions
- 3) Non-motorized Traffic Hazards
- 4) Nuisance of Billboards
- 5) Encroachment along Railway Line
- 6) Lack of Parking in Eight Bazaar Area
- 7) Traffic Congestion
- 8) Absence of Public Transport Policy
- 9) Improper institutional coordination
- 10) Lack of professionally qualified and trained human resources
- 11) Lack of Mass Transit System
- 12) Lack of Implementation of Traffic Safety Rules
- 13) Increase in Accidents

Section 2 discusses the present condition of following major road network of Faisalabad:

- 1) Faisalabad Bypass
- 2) Canal Road
- 3) Lahore-Sheikhupura-Faisalabad Road
- 4) Jaranwala Road
- 5) Satayana Road
- 6) Samundri Road
- 7) Gojra Road
- 8) Jhang Road
- 9) Narwala Road
- 10) Punjpullian Road
- 11) Sargodha Road
- 12) Millat Road
- 13) Sangla Hill Road

Section 3 discusses the analysis of traffic flow at cordon points (entry / exit) and major intersections, details of registered vehicles and motorization. The highest peak hour volume for entry was recorded on Kamalpur Interchange, while the highest peak hour volume for exit was recorded on Samundri Road. As far as major intersections are concerned, the highest peak hour volume was recorded on Jhal Chowk with motorcycles being the largest contributor to the peak hour volume.

Section 4 discusses the parking surveys and analysis of following locations:

- 1) Airport Parking
- 2) Allied Hospital Parking
- 3) Civil Hospital Parking
- 4) Katchery Parking
- 5) Railway Station Parking

It also identifies the parking issues and requirement of parking plazas in the central area of eight bazaar.

Section 5 discusses the existing intra-city public transport system and related issues, inter-city bus services, strategic development in public transport system including proposed routes for Bus Rapid Transit (BRT) system and integrated feeder routes.

Section 6 discusses the traffic management issues including traffic laws, management of public spaces, road safety issues, traffic control, traffic awareness, driver awareness, public management issues, commercial activities and proposal for pedestrian bridges in the city.

Section 7 discusses the transport sector development projects divided into three phases i.e., first phase spread over five years from 2020-2025 is categorized as Short Term Development Projects (STDP), 2nd phase also spread over next five years from 2025-2030 is categorized as Mid Term Development Projects (MTDP), and third phase spread over ten years from 2030-2040 is categorized as Long Term Development Projects (LTDP).

The approximate budget amount for various projects identified under Phase I – STDP is given below:

S. No.	Project Description	Budget Amount (Rs. In million)
1	Roads Rehabilitation	14,609
2	Roads Reconstruction	8,553
3	Proposed New Road Network (Phase I)	32,797
4	Improvement of Major Intersection	1,800
5	Repair of Existing Signals to Make them Operational	1,125
6	Traffic Signs and Pavement Markings	1,225
7	Parking and Parking Plazas near Eight Bazaar Area (290,619 sqft. Floor Area, 5 Nos.)	7,405
8	Pedestrianization of Eight Bazaar Area	139
9	Pedestrian Bridges in CBD Area (Phase 1 - 10 Out of 52)	650
10	Flyover / Underpasses	5,400
Sub-Total Amount Million Rs.		73,703
Consultancy Services for Preliminary Design, Detailed Design, Tender Documents and Construction Supervision of STDPs (5% of Total Cost)		3,685
Total Amount Million Rs.		77,388

The approximate budget amount for various projects identified under Phase II – MTDP is given below:

S No.	Project Description	Budget Amount (Rs. In Million)
1	Proposed New Road Network (Phase II)	14,855
2	Faisalabad Bypass Rehabilitation	7,182
3	Construction of Faisalabad Ring Road Links (Phase 1)	5,352
4	Faisalabad Bypass Link with M3-Industrial Estate (FIEDMC)	597
5	Khurrianwala Bypass	2,805

6	Khurianwala Bus Stand	3,410
7	Interchange on M3 at Satyana Road	2,500
8	Improvement of Existing Links and Associated Junctions of Science City	1,842
9	Airport Link between Risalewala and Jhang Roads	763
10	Pedestrian Bridges in CBD Area (Phase 2 – 15 out of 52)	975
Sub-Total Amount Million Rs.		40,281
Consultancy Services for Preliminary Design, Detailed Design, Tender Documents and Construction Supervision of MTDPs (5% of Total Cost)		2,014
Total Amount Million Rs.		42,295

The approximate budget amount for various projects identified under Phase III – LTDP is given below:

S. No.	Project Description	Budget Amount (Rs. in Million)
1	Proposed New Road Network (Phase III)	38,737
2	Construction of Expressway Connecting M3 and M4	11,218
3	Railway Track from Sangla Hill to Gatti Dry Port (Phase 1)	2,550
4	Railway Track from Gatti Dry Port to Abbaspur (Phase 2)	1,950
5	Railway Track on branch line from Chak Jhumra to Chiniot (Phase 3)	1,950
6	Construction of Faisalabad Ring Road Remaining Links (Phase 2)	5,764
7	General Bus Stand on Millat Road	8,349
8	General Bus Stand on Lahore - Sheikupura - Faisalabad Road	9,273
9	Extension of Existing Truck Stand on Sargodha Road	1,875
10	Truck Stand on Faisalabad Bypass Near Satayana Road	5,540
11	Truck Stand on Sahianwala Road near VAC	1,100
12	Truck Stand on Sahianwala Interchange on M4	1,090
13	Extension of Dry Port at Gatti Railway Station	2,155
14	Construction of BRT Corridors (Red Line + Orange Line)	90,550
15	Pedestrian Bridges in CBD Area (Phase 3 - 27 out of 52)	1,755
16	Feasibility Study for Integrated Bus Operations (IBO)	100
17	Feasibility Study for Circular Connectivity of Thirteen (13) Radial Roads	100
Sub-Total Amount Million Rs.		184,056
Consultancy Services for Preliminary Design, Detailed Design, Tender Documents and Construction Supervision of STDPs (5% of Total Cost)		9,203
Total Amount Million Rs.		193,211

Section 8 identifies the short term, midterm and long term strategic developments in traffic management and public management systems.

1. GENERAL

There are thirty-six districts of Punjab province and Faisalabad is one of them. Faisalabad District came into existence in 1904 as Lyallpur District. The name Lyallpur was given with a view to pay tribute to Sir James Lyall, Lt. Governor of Punjab, for his services rendered in colonization. In 70's the current name of Faisalabad was given after the name of The Late King "Faisal" of King Saudi Arabia.

Faisalabad lies on un-deformed Indian plate rock with a recent sedimentary cover. 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 elevation of 184 meters (604 ft..) above sea level. The city covers an area of approximately 1,230 square kilometers (470 sq. mi), while the district covers more than 16,000 square kilometers (6,200 sq. mi).

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 district of Faisalabad is part of the alluvial plains between the Himalayan foothills and the central core of the Indian Subcontinent. Faisalabad is situated in the center of the Lower Rachna Doab, the area between River Chenab and Ravi which has a mild slope from North-East to South-West with an average of about 0.2 to 0.3 meter per kilo meter. The topography is however marked by valleys, local depression and relatively high ground. The lower Chenab canal is the main source of irrigation water, which meets the requirements of 80% of cultivated land. 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. The location map of Faisalabad is shown in Figure 1-1 and adjoining areas with district boundaries are shown in Figure 1-2.

An efficient transportation system is essential for the movement of people and goods from one place to another. The Faisalabad district is bounded in the North by Sargodha and Hafizabad districts, in East by Nankana Sahib, Sheikhpura, Kasur and Lahore districts, in the South by Okara, Sahiwal and Toba Tek Singh districts and in the West by Jhang district as shown in Figure 1-2. National Highways Network provides inter and intra provincial connectivity to Faisalabad. Faisalabad is well connected with surrounding districts through National Highways Network. 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.

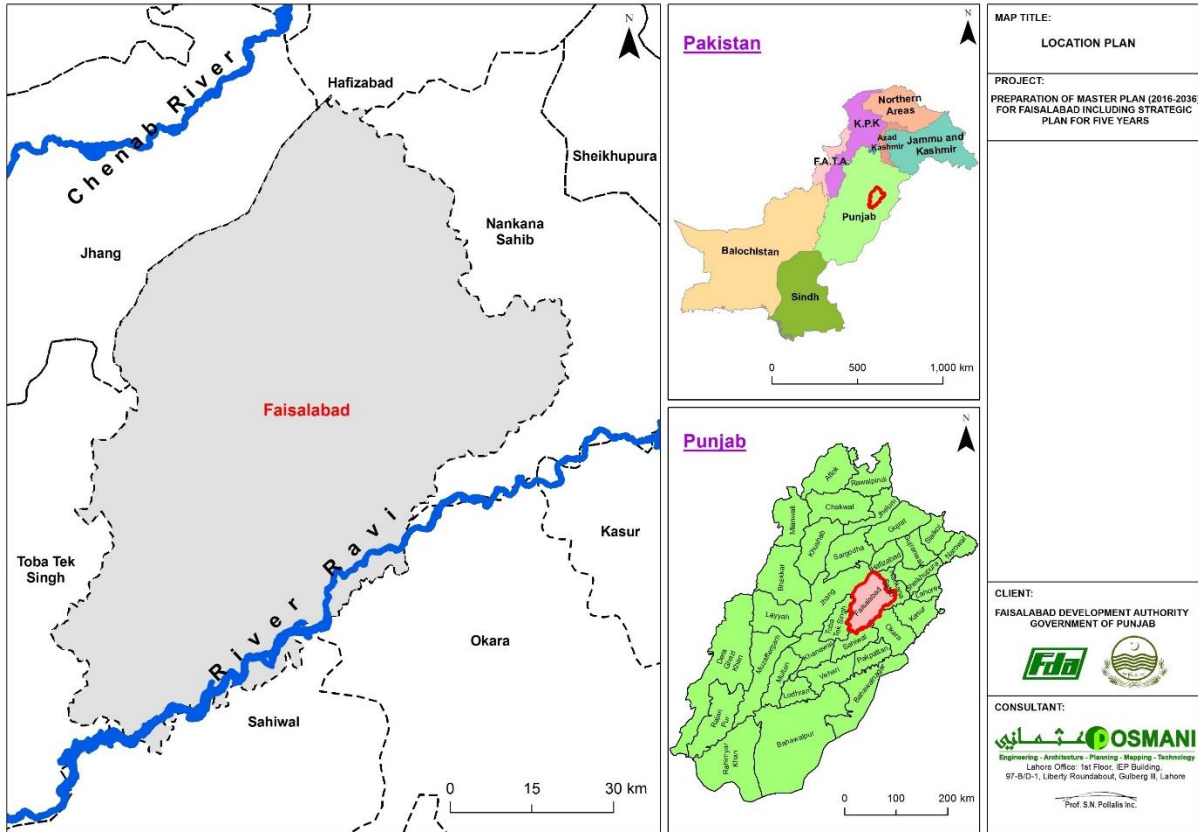


Figure 1-1: Location Map of Faisalabad

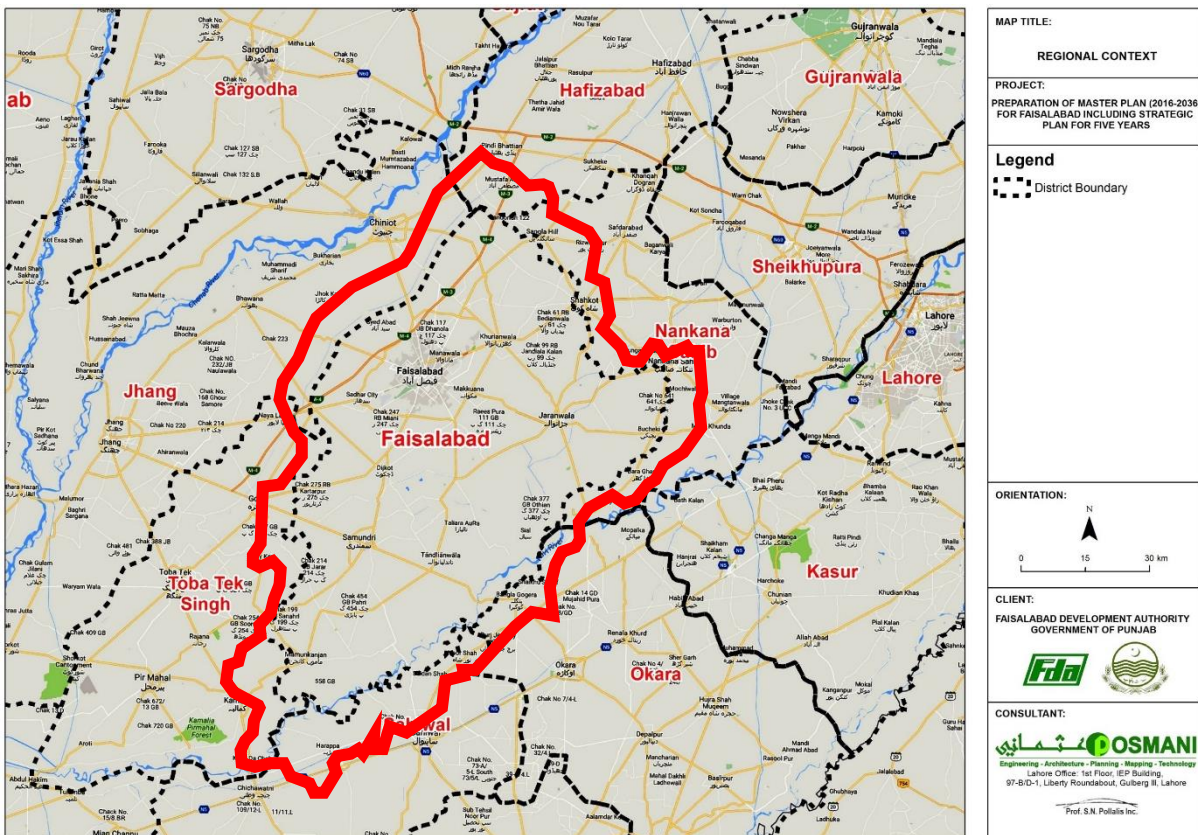


Figure 1-2: Location Map of Faisalabad

1.1 HISTORY OF TRANSPORT NETWORK DEVELOPMENT

Initially Faisalabad was a planned Mandi Town on an area of 110 acres for a population of 20,000 persons. It was laid down on a parcel of land in a radial pattern with eight bazars and corresponding roads radiating from the central Clock Tower (Ghanta Ghar). The eight roads developed into eight separate bazars. The fundamental motive behind the establishment of the city was to serve as center for marketing of agricultural produce of the area. Gradually the city was linked with other parts of the country through railways and roads. The development of Rakh Branch Canal and Railway line on the southern side of the Clock Tower, and administrative buildings like Dy. Commissioner Residence, Town Hall, District Courts, Govt. High School, the Grain market, the District Jail, the Canal offices and Agricultural College (1903) on the western side of the Clock Tower, all development on the north of Railway line set the growth of the city towards north and north west of the railway line. Railway line and Canal become barrier for growth of the city on the north east and south east of the Railway line till 1947.

All the intercity roads converge at Clock Tower and divided the city into about 10 compartments of varying sizes i.e., 5 compartments on North West of Railway line and five compartments on north east and south west of the Railway line. The names of these inter-city roads are:

- 1) Lahore-Sheikhupura-Faisalabad Road
- 2) Jaranwala Road
- 3) Satayana Road
- 4) Samundri Road
- 5) Risalewala Road
- 6) Jhang Road
- 7) Narwala Road
- 8) Panjpullian Road
- 9) Sargodha Road, and
- 10) Faisalabad Sangla Hill Road.

The radial pattern evolved gradually over the time without any planned effort. No effort was made to develop link between intercity roads, at some distance from the center of the town, in the form of a ring road. Had this been done timely the traffic situation of the town would have been in a much better position. A by-pass to Faisalabad had been planned but could not be executed due to shortage of funds. Now a by-pass has been created by connecting the existing roads and partly constructing new roads but the average distance of this by-pass from center of the town is about 13.5 kilometers. This by-pass does not act as ring road for the city traffic thus does not help much in facilitating the traffic within the city. Its total length is about 100 kilometers. There is a need to provide link between inter-city roads in the form of a Ring Road, closer to the city center, if feasible. Alternatively, links can be developed between inter-city roads where feasible with little investment and small modifications in the design of existing roads. The city has been growing in all directions along these inter-city roads as depicted in Figure 1-3 below.

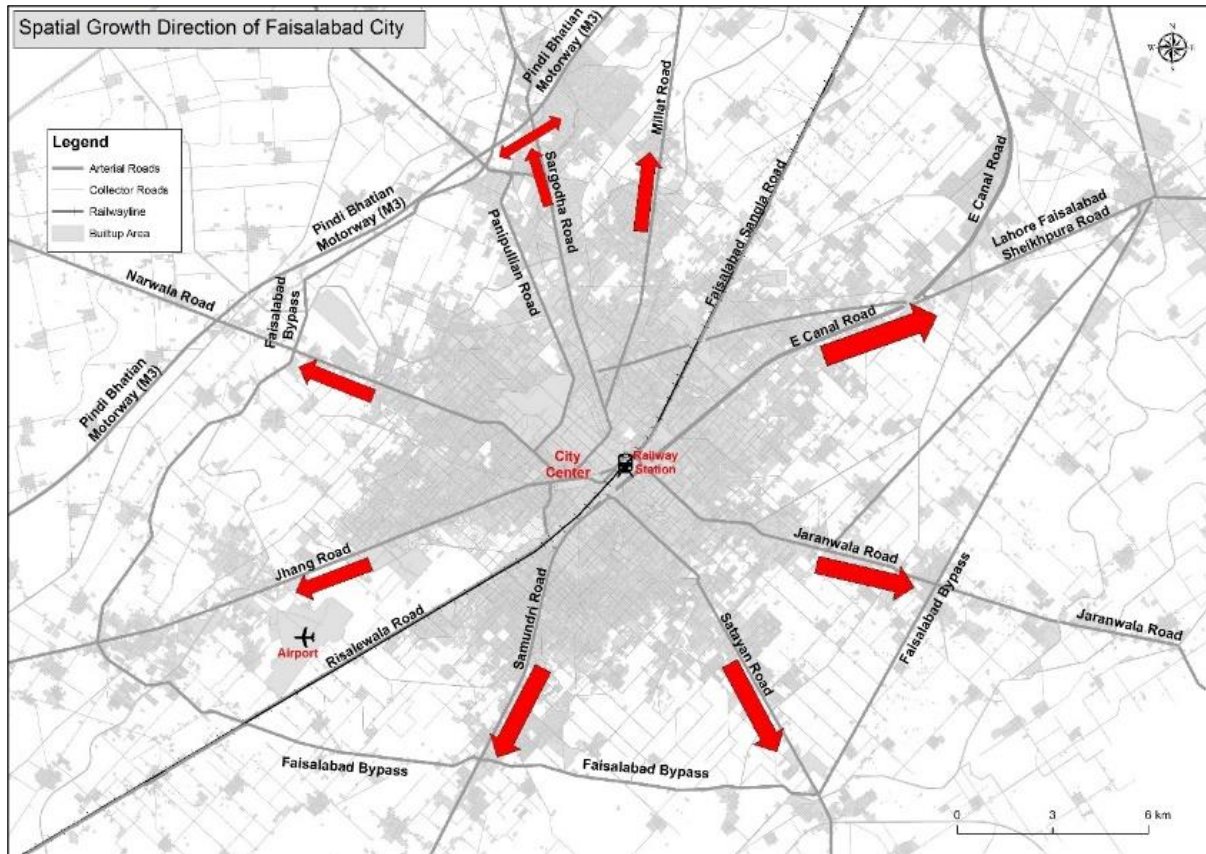


Figure 1-3: Historical Spatial Growth of Faisalabad City 1894-2017

1.2 ANALYSIS OF EXISTING TRANSPORT SYSTEM

1.2.1 Eight Bazar Area

Originally the city was laid out in square form with eight bazars radiating from the Central Clock Tower to act as a focal point for in flow traffic. These radiating roads merged with the road running along the perimeter called Circular Road, which also rings the eight bazars. Commercial activities were located to front each bazar while other activities such as residential, religious, education etc., were sited between these bazars. 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.

The Faisalabad clock tower and its eight bazaars (markets) remain a major trading zone in the city. Each of the eight bazaars has a special name and is known for selling certain goods as follows:

- 1) Katchery Bazaar, named for the court (Katchery) is known for its mobile phone and accessory market.
- 2) Rail Bazaar is a gold and cloth market.
- 3) Bhawana Bazaar supplies electrical and electronic goods.
- 4) Jhang Bazaar supplies fish, meat, vegetables and fruits.

- 5) Aminpur Bazaar supplies stationery and interior décor.
- 6) Karkhana Bazaar is known for herbal medicines.
- 7) Chiniot Bazaar is known for allopathic and homoeopathic medicinal stores, cloth, blankets, sofa cloth, and curtains. It also has poultry feed wholesale shops.
- 8) Montgomery Bazaar (also known as Sutar Mandi) is known for yarn and raw cloth trading.

1.2.1.1 Existing Traffic Issues

1. Encroachment on Roads:

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.

2. Problems with Intersections/Junctions:

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.

3. Non-motorized Traffic Hazards:

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.

4. Nuisance of Billboards:

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.

5. Encroachment along Railway Line:

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

6. Lack of Parking in Eight Bazaar Area:

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.

7. Traffic Congestion: 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.
8. Absence of Public Transport Policy: There is lack of comprehensive Public Transport Policy and Planning.
9. Improper institutional coordination: There is obvious lack of coordination between various civic agencies.
10. Lack of professionally qualified and trained human resources: 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 manpower to handle issues like encroachments, maintenance of roads, etc. 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.
11. Lack of Mass Transit System: 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 labor 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.

12. Lack of Implementation of Traffic Safety Rules:

The traffic in Faisalabad is one of the most chaotic and indiscipline unlike other major urban centers such as Islamabad, Lahore, Karachi, etc. Hardly anybody seems to pay any attention to traffic safety rules and everybody drives in a manner he likes. There is a complete lack of driving courtesy as everybody tries to be ahead of others. No one pays any heed to traffic signs and signals. There is total absence of lane discipline. It is common scene to see overtaking in the face of on-coming vehicles and on turnings.

13. Increase in Accidents:

Accidents are a by-product of too many violations on the roads, poor physical condition of the roads, un-even road surface, poorly designed road intersections, lack of sufficient sight distance at turnings and haphazard flow of mixed (slow and fast) traffic. Everybody disobeys the traffic safety rules with equal impunity. The net result of such situation has been an increase in accidents in the city. The problems resulting from haphazard flow of traffic are not confined to accidents alone. Adverse effects of clogged streets and congested roads on business, health, economy and general wellbeing of the community are well-known.

14. Miscellaneous Traffic Issues:

Increasing demand for transport services and absence of efficient transport facilities have resulted in an overloaded road network in Faisalabad which leads to traffic congestion and several other problems mentioned below:

- a. Capacity of most of the roads in the present system is reduced due to poor quality of riding surface, inadequate pedestrian footpaths, poor lighting conditions and lack of properly designed intersections.
- b. Permanent and temporary encroachment of footpaths and carriageway has reduced the capacity of the road.
- c. Inadequate infrastructure for public transport (lack of bus terminals, bus stops, transfer facilities, etc.).
- d. There is no hierarchy of roads within the Central area of Faisalabad. These are narrow, overcrowded, congested with the expansion of commercial establishment on the roads.
- e. The eight axes going from Faisalabad to other urban centers cross the city in its central area creating interruption in local and through traffic.
- f. The donkey-carts driven by the teenagers who violates traffic rules and regulations are causing a lot of accidents. These create hurdle in vehicular traffic, reduce road capacity and increase traffic congestion.
- g. Tractor Trolley are also a source of traffic hazard, noise pollution, reduce road capacity, add to congestion on the roads and increase accidents.
- h. There is lack of parking space particularly in the central areas. People are forced to park their vehicles along road on circular road. This is a serious problem and the need for more parking areas or parking plazas is obvious.
- i. There is a need for improvement in FUTS. The wagon stands along Kotwali road creating traffic congestion. The location of General Bus Stand is also not suitable.
- j. Movement of pedestrians is unsafe due to lack of walk ways. Where sidewalks exist, these are usually encroached by traders and hawkers. This has resulted in conflict between pedestrian and vehicular traffic. Absence of proper road signs, Zebra crossings enhance the vulnerability of pedestrians to accidents.
- k. Lack of traffic signals at major intersections reduces not only the intersection capacity but also threatened safety of pedestrians.
- l. Wrongly installed FESCO and PTCL poles also cause a lot of traffic obstruction.
- m. Ribbon development of industrial units, mechanical workshops are also source of traffic hazard. Most of the roads are inadequate for bus service. In short, the land use system is not consistent with road network.
- n. Mixed traffic i.e., motorized and non-motorized causes a lot of problems of capacity and safety. Domestic animals like Buffaloes, Cows, goats and sheep, Donkeys and Horses contribute a lot of littering on road and creates hindrance in the flow of traffic on the road.
- o. One-way traffic rules are not obeyed. No courtesy to pedestrians or school children crossing the road is shown.

15. Conclusion of Existing Traffic Conditions:

Faisalabad has an enormous intra-city and inter-city movement of persons through conventional transportation modes. Rapid population growth and increasing vehicle ownership of Faisalabad, due to its industrialized activities and as an economical hub, has made its traffic worse. Conventional transportation modes are strained under heavy demand for intercity and urban transport facilities. With intercity transport links and its geostrategic location, this situation will only get worsened in the absence of a complete overhaul of the transport infrastructure and public transport facilities.

1.2.2 Faisalabad International Airport

Faisalabad International Airport is approximately 15 kilometers (9.3 mi) from the city center and is a major airport for domestic and international travel. The airport includes a cargo facility. As of January 2016, passenger flights are run by the national flag carrier, Pakistan International Airlines, and a number of Middle Eastern carriers. There are seasonal Hajj

operations to Jeddah and Medina. Fly Dubai became the first international carrier to launch operations from the city followed by Qatar Airways, Air Arabia and Gulf Air.

- **Air Transport**

Currently due to poor condition of Main Runway, only limited flights comprising of mainly Hajj and Umrah operate from Faisalabad. According to statistic data, 4065 aircraft. Movements and 461,475 passenger movement is recorded for year 2016-2017 and total cargo handled for the same year is 112 metric tons.

Airport traffic and other data indicate that in the last decade Faisalabad Airport operations were not profitable specially in the year 2013 and 2014, Pakistan Civil Aviation Authority (PCAA) have to bear losses due to low traffic density. Air traffic significantly increased during 2016-2017 resulting in reasonable profit to PCAA and indirectly to Faisalabad due to increase in economic activities, since then the PCAA income increase regularly.

- **Weekly flights up to August 2018**

The details of weekly schedule of Airlines for both domestic and international flights using the Main Runway at FIAP up to August 2018 are given in Table 1-1 below:

Table 1-1: Weekly Flights Operation from FIAP (2012-2017)

S#	Airlines	Domestic Flights	International Flights	Total Flight/Week
1	PIA	12	8	20
2	Fly Dubai	-	28	28
3	Qatar Airways	-	10	10
4	Air Arabia	-	14	14
5	Gulf Air	-	6	6
6	Serene Air	8	-	8
7	Shaheen Air	6	22	28

(Source CAA)

The current details of Airlines at Faisalabad International airport along with its destination are given in Table 1-2 below:

Table 1-2: Weekly Schedule of Different Airlines during August 2018

Airlines	Destinations
Air Arabia	Sharjah
Fly Dubai	Dubai
Gulf Air	Bahrain
PIA	Jeddah, Medina, Karachi
Serene Airlines	Karachi
Qatar Airways	Doha

- **Airport Terminal Facility**

Faisalabad Airport terminal was constructed in the year 1967 and extended in 1986, 1993 and 2000. The terminal building was rehabilitated / renovated in 2008 and finally in 2017 Terminal Building was expanded. Currently Faisalabad International Airport have all required facility to serve its international and domestic users.

- **Airport Current Airside Facility**

The runway is currently being used by A-320 and B-737 and the airside configuration and geometric design of existing runway and other airside facilities are generally sufficient for these Airplanes as well as aircrafts up to ICAO 4D category, i.e., Airbus A-300-600. However, if at some stage it is required to upgrade the facility to ICAO Category 4E then an up gradation of the facility will be required. Summary details of existing facility is provided in Table 1-3 below:

Table 1-3: Summary of Dimensions/Details of the Existing Facilities

S#	Airside Facility	Dimensions
1	Runway	2842 mx 45.66 m (9321.76 ft. x 150 ft.)
2	Overrun Length (each)	144m (472 ft.)
3	Shoulders Width	7.5 m (25 ft.)
4	Turn Pads (a) 03 End (b) 21 End	106mx134m (347ft. x 439ft.) 106mx134m (347ft. x 439ft.) Including shoulders
5	New Apron	91.5mx91.5m (300ft. x 300ft.)
6	Jet Apron (old)	91.5mx91.5m (300ft. x 300ft.)

1.2.3 Faisalabad Railway Network

Faisalabad has single railway line track throughout the district with approx. 60 km length and branch line of 26 km. The Right of Way (R.O.W) of block section is 200' i.e. 100' on either side from Center of the track. Near stations the Right of Way (R.O.W) increases to 500'. No building construction is allowed with the allocated ROW, however, in 1986 Pakistan Railways has leased out land for 99 years for residential purposes in the vicinity of the Railway Station, Faisalabad.

Faisalabad Railway Network is served by following stations along main line:

- Sar Shamir Station
- Abbaspur Station
- Risalewala Station
- Samanabad Station
- Faisalabad Station (Main Station)
- Nishatabad Station
- Ghatti Station
- Chak Jhumra Station
- Sahianwala Station
- Salarwala Station
- Sangla Hill Station

The branch line of railway network in Faisalabad is served by following stations:

- Chak Jhumra Station
- Burj Station
- Chiniot Station

The main railway station was built in the nineteen century by the British Empire. Today the railway network provides connections to Karachi, Lahore, Rawalpindi, Islamabad, Quetta, and Peshawar.

Passenger Trains:

It has daily average passenger ridership of 3500-3600 generating revenue of 23-24 Lacs for long trips which yields to 7 crores yearly revenue. The following passenger trains (13 Nos.) operates through Faisalabad to serve various destinations as shown below in Table 1-4 below:

Table 1-4: Passengers Train Operating through Faisalabad

No	Trains	Route
1	27 UP Shalimar Express	Karachi to Lahore
2	28 DN Shalimar Express	Lahore to Karachi
3	41 UP Karakoram Express	Karachi to Lahore
4	42 DN Karakoram Express	Lahore to Karachi
7	17 UP Millat Express	Karachi to Malakwal
8	18 DN Millat Express	Malakwal to Karachi
9	45 UP Pakistan Express	Karachi to Rawalpindi
10	46 DN Pakistan Express	Rawalpindi to Karachi
11	111 UP Badar Express	Faisalabad to Lahore
12	112 DN Badar Express	Lahore to Faisalabad
13	113 UP Ghori Express	Faisalabad to Lahore
14	114 DNGhoriExpress	Lahore to Faisalabad
15	23 UP Akbar Express	Quetta to Lahore
16	24 DN Akbar Express	Lahore to Quetta
17	43 UP Shah Hussain Express	Karachi to Lahore
18	44 DN Shah Hussain Express	Lahore to Karachi
19	119 UP Faisal Express	Faisalabad to Lahore
20	120 DN Faisal Express	Lahore to Faisalabad
21	173 UP Faisal Express	Multan to Faisalabad
22	174 DN Faisal Express	Faisalabad to Multan
23	47 UP Rehman Baba Express	Karachi to Peshawar
24	48 DN Rehman Baba Express	Peshawar to Karachi
25	35 UP Sir Syed Express	Karachi to Rawalpindi
26	36 DN Sir Syed Express	Rawalpindi to Karachi

Goods Trains:

Cargo Express services are operated by Pakistan Railways which runs from Karachi to Faisalabad via Multan. The station has a special cargo facility operated by the Ministry of Railways (Pakistan) for handling various goods from the city to other regions of the country. An express parcel service runs from Karachi to Lahore via Faisalabad.

Two (2) Goods trains (No. 503 and 504) operates per day but not on regular basis, carrying five (5) special containers and 5 coal containers per month. One container carries 6-ton weight and maximum 35 containers attached with a train. It's not the fix amount of container and it varies day to day. The annual revenue generated through goods transport by rail network is 18.5 Lacs which is not significant.

Dualization of railway track from Lahore to Faisalabad to Khanewal to Risalewala to Sahianwala for goods movement is under consideration.

1.2.4 Warehouses and Storage Facilities

There are existing warehouses on Jhang Road, Vegetable and Fruit Market in Jhang Bazaar and Dry port at Gatti railway station. A Truck Stand along with warehouses and storage has been recently established on Jhang Road having an area measuring 15.3 acres.

It was proposed in the Draft Master Plan Report to develop large areas for warehouses and cold storages with modern technology and computerized record keeping for use of all the businesses on rental basis. The existing dry port at Gatti Railway Station covering an area of 23.1 acres is proposed to be extended to 66.2 acres as the goods traffic would increase manifold with the increase in industrial manufacturing activity in the city in the shape of new industrial estates at M3IC and AIIC. The truck terminals will be planned with warehouses and adequate storage facilities at various locations to meet the space requirements for warehouses and storage.

1.2.5 Interventions for Logistics Supply

Faisalabad has a strong industrial base including textiles, jewelry, home furniture and pharmaceuticals, assisted by the expanding transport network which includes newly-built motorway and highways to Lahore, Multan, Sukkur, Sargodha and Islamabad / Rawalpindi.

There are numerous textile mills, engineering units and chemical and food processing units. Other industries include hosiery, carpets and rugs, nawar and lace, printing and publishing, and pharmaceutical products. There are also several thousand household industries, including some 60,000 power loom factories. The textile industry of Faisalabad constitutes more than 70% of the textile export market of Pakistan, which itself forms 68% of total exports of Pakistan. This makes Faisalabad's share of total exports from Pakistan more than 45%.

Establishment of a dry port at Gatti, a few kilometers away from the main city has greatly boosted economic activities in Faisalabad by facilitating direct imports and exports of goods and cargo via train.

Faisalabad International Airport also includes a cargo facility. According to statistical data, for year 2016-2017 total cargo handled was 112 metric tons.

To support logistics supply of industries via trucks, couple of truck terminals already exist, one on Jhang Road having an area measuring 15.3 acres and the other one at junction of Sargodha Road and Faisalabad Bypass with 16.1 acres. Goods forwarding agencies are also proposed to be accommodated within the truck terminals.

2. FAISALABAD ROAD NETWORK

The roads in Faisalabad may be classified as:

- Primary Roads,
- Secondary Roads and
- Local Roads.

Primary Roads are the most important roads of the city, the major districts and other urban areas as they carry the bulk of the traffic. They include Sheikhpura Road, Sargodha Road, Jaranwala Road, Satayana Road, Samundri Road, Jhang Road, Millat Road, Narwala Road, Jhumra Road, Risalewala Road, Gutwala Road and Circular Road.

Secondary Roads provide access to major areas of the city and carry large traffic volumes. They complement the primary network providing links to destinations inside the district. They include Jail Road, Dijkot Road, Club Road, Katchery Road Civil Line, Stadium Road, University Road, Kashmir Road, Darbar Qaim Sain Road, Passport Office Road, Sir Zafar Ali Road and Susan Road.

Local Roads penetrate localities and are fed by traffic from the primary and secondary networks. They include Jinnah Colony Road, Ghalla Mandi Road, Peoples Colony Pahari Chowk towards Waris Pura Road, Tatha Bridge to Liberty Market Road, Liberty Market to Imtiaz Shaheed Road, Samanabad Road, Narwala Chowk to Latif Chowk Road, Ghulam Muhammadabad to Qasmi Mosque Road and Tota Bazaar Fatima Jinnah Road.

The road network of Faisalabad is shown in Figure 2-1

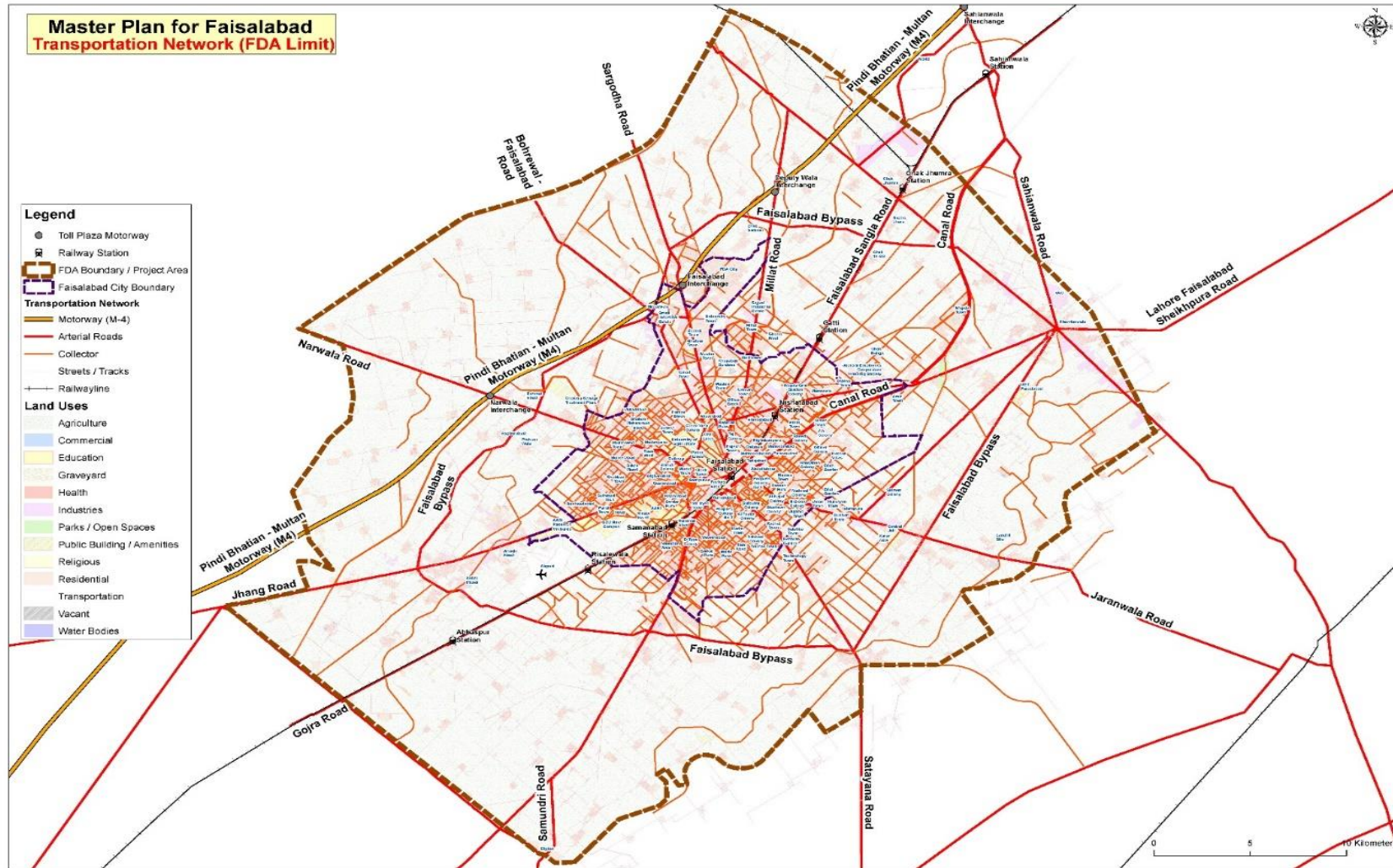


Figure 2-1: Road Network of Faisalabad

2.1 PRESENT CONDITION OF ROAD NETWORK

The difference is visible in old and new part of the City. Heavy traffic, mixed modes of transportation, narrow and encroached right-of-way (ROW) are the main characteristics. This results in traffic jams and accidents. The conditions are comparatively better at the new developments in the peripheral areas of the City.

2.2 MAJOR ROADS & INTERSECTIONS

The major roads in Faisalabad are as follows:

1. Faisalabad Bypass
2. Canal Road
3. Lahore-Sheikhupura-Faisalabad Road
4. Jaranwala Road
5. Satayana Road
6. Samundri Road
7. Gojra Road
8. Jhang Road
9. Narwala Road
10. Punjpullian Road
11. Sargodha Road
12. Millat Road
13. Sangla Hill Road

2.2.1 FAISALABAD BYPASS

The town planning of Faisalabad is peculiar as all roads into Faisalabad coverage on to the Clock Tower (Ghanta Ghar). Resultantly, all traffic crossing Faisalabad has no alternative but to go through the center of the city. This apart from being problematic as wasteful for the inter-city traffic, is a serious threat to life and property of the citizens of Faisalabad. Due to the acute felt need, a By Pass to Faisalabad has been developed in phases having total length of approximately 95 kilometers. Due to paucity of funds to design and construct a bypass as an independent project the Commissioner, Faisalabad in 1992 advised the Highway Department to undertake a survey of the existing Farm to Market roads and District Council roads to see whether a By Pass could be created by connecting these roads and later broadening them to highways specifications. In this way this Bypass has been constructed in segments by connecting the existing roads and constructing links where existing road did not exist. Later on, these roads were broadened to meet the highway specifications.

Faisalabad Bypass is a peripheral road crossing various potential junctions such as Narwala Bypass Chowk, Sidhar Bypass Chowk, Risalewala Chowk, Roshanwala Bypass Chowk, Satayana Bypass Chowk, Makkwana Chowk, Khurrianwala Chowk, etc. creating a comfort zone for commuters to reach their respective destinations. The Faisalabad Bypass is a freeway that bypasses Faisalabad city starting from the Motorway (M-4) and providing approaches to outer areas of the city such as Sahianwala, Jaranwala, Satayana, Samundri, Gojra, Jhang, Narwala, Sargodha, etc.



Figure 2-2: Existing Features of Faisalabad Bypass

2.2.2 Canal Road

FDA has constructed roads along both sides of the Rakh Branch canal from Gatwala to Jhal Khanuana. In view of its location i.e., on the bank of canal and because of one-way traffic on each bank, this road has become beautiful pleasurable drive and a V.I.P. route. The basic character of this road is that of an intercity road and a major inlet to the city. All along the length private housing schemes are coming up with fast pace. The approximate length of the East Canal Road up to FDA limits is 23.7 kilometers out of which 10.8 kilometers is in Municipal Limits. Similarly, West Canal Road up to FDA limits is 23.7 kilometers out of which 9.5 kilometers is in Municipal Limits.

The existing ROW of this segment varies along its length. This section has three lanes in each direction of 11-13 ft. width, with a central median of 82 ft. width.



Figure 2-3: Existing Features of Canal Road

2.2.3 Sheikhupura Road

This arterial road provides direct link with provincial Capital Lahore via Sheikhupura. From Sheikhupura junction it also links with Gujranwala where it merges with National Highway coming from Lahore to capital Islamabad. The approximate length of the road up to FDA limits (Khurrianwala Chowk) is 20.5 kilometers out of which 9.7 kilometers is in urban area.

Out of total length, 86% has 110 ft. R.O.W, 10% length has R.O.W between 90-135 ft. and R.O.W for the remaining 4% is 243 ft.

The condition of the traffic and road is not satisfactory due to ribbon development along the road and heavy commercialized nature of the area.



Figure 2-4: Existing Features of Sheikhupura Road

2.2.4 Jaranwala Road

This road provides an alternate route to Lahore via Jaranwala. The approximate length of the road up to FDA limits is 16 kilometers out of which 4.1 kilometers is in the urban area.

About 81% of the road has 96-123 ft., 6% has 40-65 ft. while 13% has R.O.W of 220 ft. approximately near social security hospital. The road is single carriageway near Railway Bridge with footpath on one side and becomes dual carriageway where 14 ft. wide green belt is also existing.

About 81% of the road has metaled portion having a width between 62-67 ft., 17 % between 29-45 ft. and the remaining 2% of the road has a metaled width of 18 ft. Out of the total road length 20% has footpath, 17% has green belt and 16% has service road. The famous Koh-I-Noor Textile Mills is located on this road.



Figure 2-5: Existing Features of Jaranwala Road

2.2.5 Satayana Road

This road leads to Satayana and Tandlianwala. The approximate length of the road up to FDA limits is 15.1 kilometers out of which 4.2 kilometers is in urban area.

Out of total length, 45% has 72 ft. R.O.W, 6% has 95-100 ft., 20% has 100-120 ft., 24% has 120-163 ft. while 5% of the road length has up to 204 ft. R.O.W. This road is dual carriageway with 2 ft. median starting from Yadgar Hotel to Chungi.

11% of the road has 24 ft. metaled portion, 47% has 32 ft., 23% has 68-74 ft. and 19% of the total road length has 88-111 ft. Only 12% of the road length has footpath, 40% has median and 13% has green belt.



Figure 2-6: Existing Features of Satayana Road

2.2.6 Sammundri Road

This road links with National Highway (N-5) near Chichawatni and provides alternative link for southern major urban centers. Total length of the road up to FDA limits (Dijkot) is 23.8 kilometers out of which 6.9 kilometers is in urban area.

Out of total length, 17% has 83-109 ft. R.O.W, 72% has 129 ft., 8% has 139 ft. and 3% has 169 ft. This road is dual carriageway with 2 ft. median starting from Mosque's basement corner to Dairy farm and then turns in to single carriageway and leads to R.B Canal and Coca Cola Factory.

Approximately, 6% of the road length has metaled portion having width equal to 46 ft., 47% has 64 ft., 5% has 80ft. and 42% of the road length has 90-105 ft. metaled portion. 32% has footpath, 20% has median and 48% has green median of the total length.



Figure 2-7: Existing Features of Sammundari Road

2.2.7 Gojra Road / Risalewala Road

The Gojra road / Risalewala runs almost parallel to the railway line. It is undivided metal road with earthen shoulder on either side but without any proper median and sidewalk. Total length of the road up to FDA limits is 19.8 kilometers out of which 4.2 kilometers is in Municipal Limits.



Figure 2-8: Existing Features of Gojra Road

2.2.8 Jhang Road

This road provides a vital link of the city with major urban centers in the south west such as Jhang, Multan, Hyderabad, Karachi, etc. The approximate length of the road up to FDA limit is 24.7 kilometers out of which 5.8 km is in urban area.

The road is also called VIP road due to presence of Faisalabad International Airport at a distance of approximately 15 km from the center. Out of total length, 12% has R.O.W between 103-114 ft., 24% has 137-158 ft. and 64% has 168 ft. R.O.W. The road is a dual carriageway from AC House to Main Bazar Ayub Colony then it turns into a wide single carriageway road leading from asphalt plant to Ayub Agriculture land. The metaled portion of 14% of the road length is between 72-82 ft., 80% of the road length has metaled portion between 85-88 ft. while 6% of the road length has 92-95ft. metaled portion.

Only 6% of the road length has footpath and 14% of the road length has green belt. Two major research institutes, Ayub Research Institute and Nuclear Institute for Agriculture and Biology are located along this road.



Figure 2-9: Existing Features of Jhang Road

2.2.9 Narwala Road

This road provides an alternative link with Sargodha via Chiniot. It also serves the two major housing colonies and Kaleem Shaheed Recreation Park. The approximate length of the road up to FDA limits is 22.1 kilometers out of which 6.3 kilometers is in urban area.

Narwala Road is one of the primary roads which starts from CBD Area. The right of way varies significantly between 64 and 160 ft. The minimum section width is near Qabrastan gate and the maximum is near Kaleem Shaheed Colony. The road is a dual carriageway from Grace Light Electrician to University Nullah with divider of 1.5 ft. width.

Approx. 10% of road length has R.O. W between 64 to 81 ft., 12% is in between 85-91 ft., 52% has 93-95 ft., 18% has 123-126 ft. while 8% has 154-157 ft. Footpath exists along 12% length of the road while median exists along 24% road length.



Figure 2-10: Existing Features of Narwala Road

2.2.10 Punjpullian Road

Total length of the road is 6.8 kilometers within Municipal Limits. The Punjpullian road is a dual carriageway with a central median along with earthen shoulder on either side.



Figure 2-11: Existing Features of Punjpullian

2.2.11 Sargodha Road

This road provides links with Sargodha and other centers e.g., Mianwali, Kalabagh and Bannu. This road also provide link with Sargodha via Chiniot. The approximate length of the road up to FDA limits is 20.4 kilometers out of which 11.6 kilometers is in urban area.

Out of total length, 60% has R.O.W equal to 100 ft., 32% has 75-85 ft. while remaining 8% has 60 ft. The major portion of the road is dual carriageway. About 60% of the road has metaled portion having width equal to 24 ft., 22% has 38 ft. and the remaining 18% road length has metaled portion between 48-57 ft. Some of the major industries are also located along this road.



Figure 2-12: Existing Features of Sargodha Road

2.2.12 Millat Road

Total length of Millat Road up to FDA limits is 16.3 kilometers out of which 6.7 kilometers is within Municipal Limits. 20% of road is dual carriage way. The R.O.W of 50% road is 57-62 ft., 22% is between 66-71 ft., 13% is about 117 ft. while 15% is 152-177 ft. 47% of road portion has footpath while 15% has green belt.

Two types of R.O.W were noticed on this road. From Sandal School Gate to Saeed Model School, the R.O.W is 50-70 ft. after which it widens up to 150 & 174 ft. in an area near Rehman Clinic. The road is a single carriage way from Sandal School to Saeed Model School. Only 400 m length of the road is dual carriageway near PIA area. Service roads exist near Rehman Clinic Laboratory and Moon Traders.



Figure 2-13: Existing Features of Millat Road

2.2.13 Sangla Hill Road:

Total length of Sangla Hill Road up to FDA limits is 21.7 kilometers out of which 8.2 kilometers is within Municipal Limits. The Sangla Hill road is a dual carriageway with a central median and earthen shoulder on either side.



Figure 2-14: Existing Features of Sangla Hill Road

Following are the major intersections in Faisalabad keeping in view their importance regarding the transportation facilitates/services to the users.

- Abdullahpur Overpass
- GTS Chowk
- Hilal-e-Ahmer Chowk
- Jhal Chowk
- Minerva Cinema Chowk
- Novelty Pull

The pictures of above-mentioned intersections are given below:



Figure 2-15: Abdullah Pur Overpass



Figure 2-16: GTS Chowk



Figure 2-17: Hilal e Ahmer Chowk



Figure 2-18: Jhal Chowk



Figure 2-19: Minerva Cinema Chowk



Figure 2-20: Novelty Pull

3. ROAD TRAFFIC

To know the traffic situation, reconnaissance survey was conducted on all entry/exit (cordon) points, major roads and intersections of the city. Traffic counts were conducted during the peak hours at selected 10 intersections during the month of June 2018.

3.1 NUMBER OF REGISTERED VEHICLES

For assessment of future demand for any utility, it is essential to collect current level and pattern, and the factor that may likely influence the future demand. In order to develop an understanding of situation of traffic density, it is important to know the registered number of motor vehicles in the city. Table 3-1 below gives an overview of registered motor vehicles from year 2003 till year 2015 in Faisalabad.

Table 3-1: Number of Registered Vehicles in Faisalabad

Year Cycle	2003-2012	2004-2013	2005-2014	2006-2015
Vehicle Type				
Cars, Jeeps and Wagons	79,005	80,994	85,714	86,797
Motorcycles and Scooters	61,1682	70,9376	881,098	946,623
Trucks	4,456	4,512	4,593	8,441
Delivery Vans	7,722	7,994	8,399	11,943
Buses	5,456	5,523	5,571	5,653
Taxis	1,928	1,928	1,929	3,245
Rickshaws	18,688	19,424	20,510	21,292
Tractors	28,459	29,317	30,186	30,476
Other	57	47	83	101
TOTAL	757,453	859,115	1,038,083	1,114,571

Reference: Bureau of Statistics, Government of the Punjab, Lahore

The table above shows that the highest number of vehicles were registered between year 2006 and year 2015 while the major contributor for number of registered vehicles were motorcycles & scooters. The table shows an increase of almost 13% each year. Graphical representation of registered vehicles has been shown in Figure 3-1.

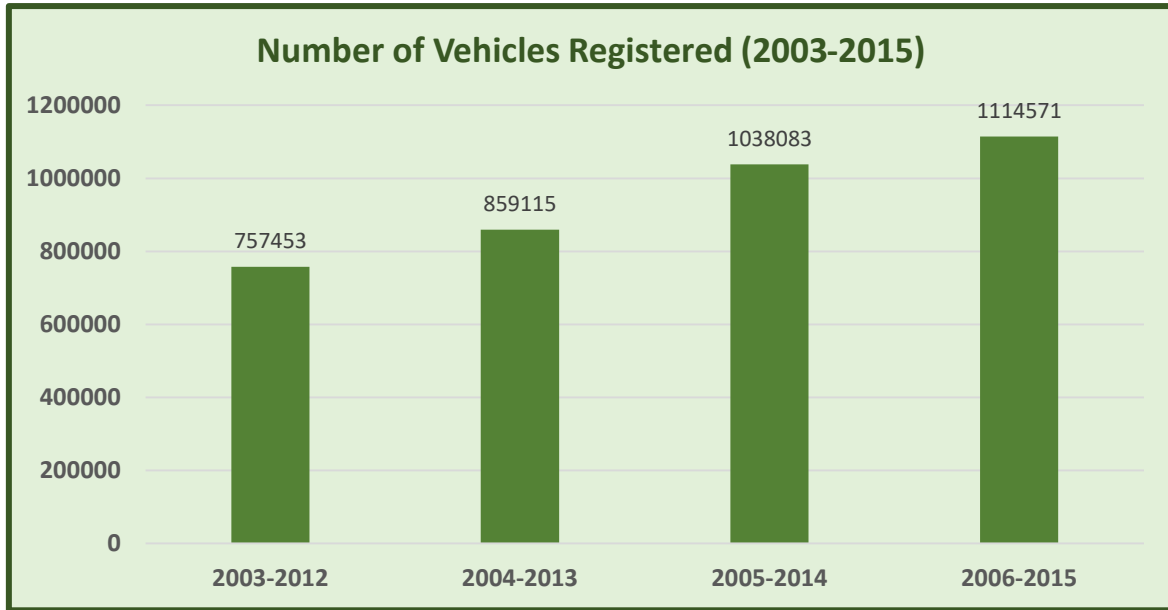


Figure 3-1: Number of Registered Vehicles in Faisalabad

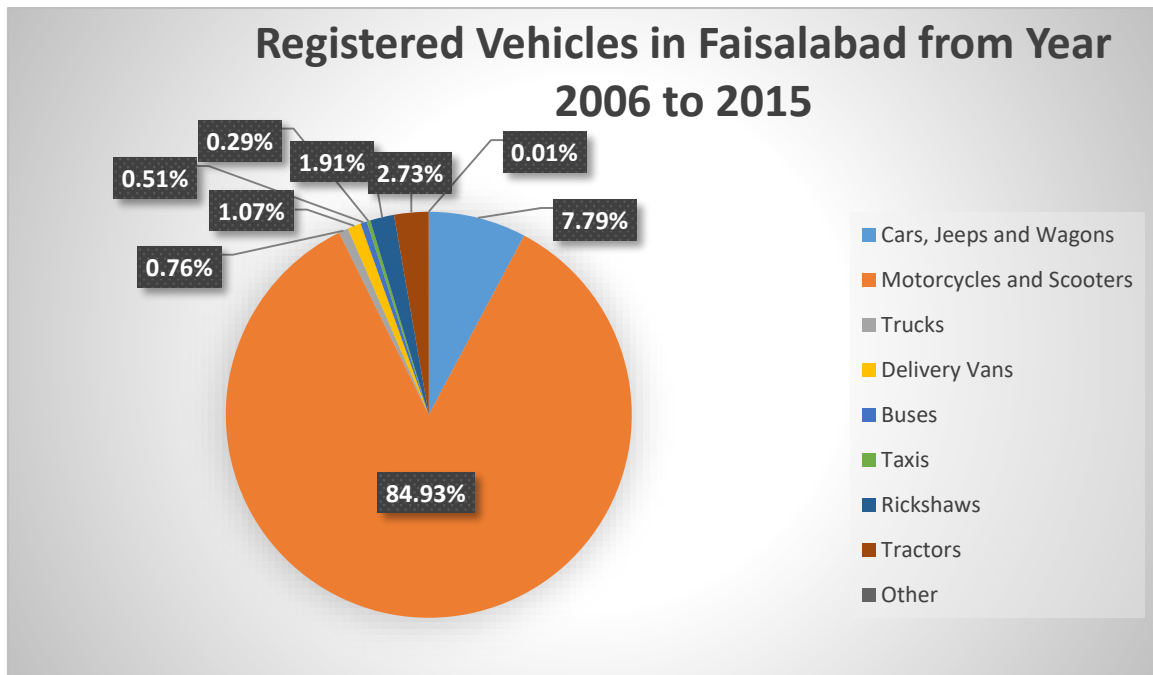


Figure 3-2: Registered Vehicles in Faisalabad from Year 2006 to 2015

3.2 MOTORIZATION

Between year 2006 and 2015, 1.1 million motorized vehicles were registered in Faisalabad District. Faisalabad has witnessed a number of transport problems due to somewhat rapid motorization. In fact, motorization in Faisalabad is acute. The number of registered vehicles in Faisalabad District rapidly increase with a rate of 13% per year. Among vehicle types, Faisalabad citizens nowadays show a strong preference for motorcycles, which increased at much faster rate, during the same period and accounted for 160 units per 1,000 residents in 2015. This rapid growth of motorization is shown in Table 3-1 above which gives us an overview of registered motor vehicles from year 2003 till year 2015 in Faisalabad. Around 1,114,571 vehicles are registered within the Faisalabad district area, to be compared with only 87,000, 425,586 and 361,500 for Chiniot, Jhang and Toba Tek Singh respectively.

Motorcycles make up for almost 85% of all registered vehicles, while cars represent about 7.8% of registered vehicles in Faisalabad. Due to such rapid rate of motorization, the number of motorized vehicles per 1,000 residents substantially increased to 185 vehicles in 2015.

Two-wheeler patronage may shift. to public transport usage with the provision of attractive public transport services and the imposition of stricter policies to two wheelers such as a local ban on riding two wheelers within Central Business Districts (CBDs), as China did this in late 1990s. On the other hand, a shift. From two wheelers to private cars may happen only when a significant income increase occurs, which is highly unlikely.

3.3 TRAFFIC ON CORDON POINTS

The traffic count surveys were conducted on major entry/exit (cordon) points of Faisalabad during the peak hours. Following were the points on which the survey was conducted;

1. Chak Jhumra
2. Khurrianwala
3. Makuana
4. Millat Road Interchange
5. Narwala Bypass
6. Risalewala
7. Sadhar Bypass
8. Samundri Road
9. Kamalpur Interchange
10. Satayana Bypass
11. Wapda Town

The locations of these points on the map are shown in Figure 3-3.

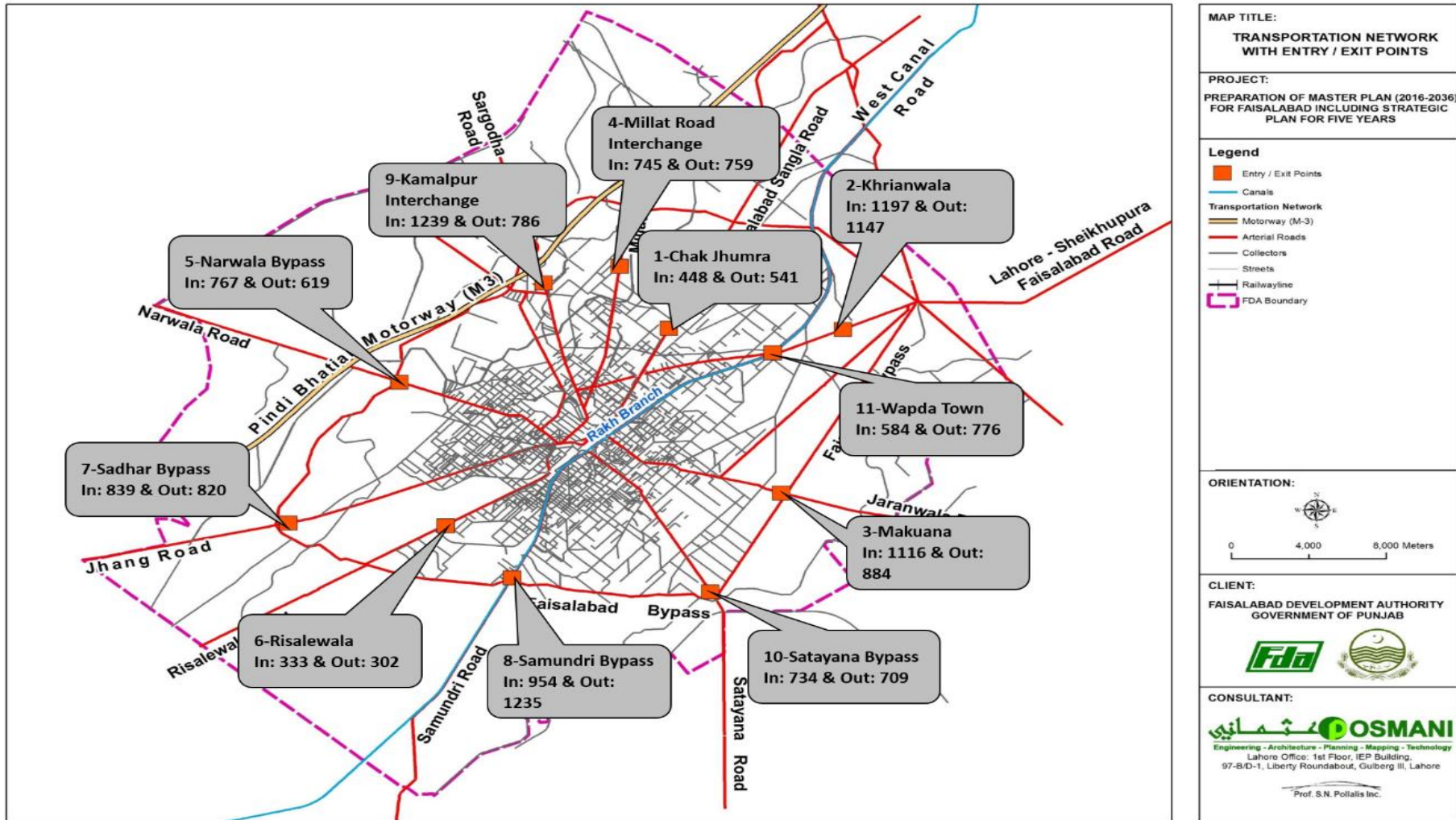


Figure 3-3: Traffic on Cordon Points of Faisalabad

Traffic count presents just number of vehicles, but not their impact and contribution in the traffic volume. For example, a car is not comparable with bus from the area and impact on road and traffic movement. Therefore, using passenger car equivalent factors given in the National Reference Manual on Planning and Infrastructure Standards of Pakistan, the vehicle count has been converted to Passenger Car Units (PCUs).

The classification of the traffic into different vehicle types and their PCU Factors are shown in Table 3-2 below:

Table 3-2: PCU Factors for Different Vehicles

Vehicle Type	PCU Factor
Car/Jeep/Taxi/Pick Up	1
Rickshaw	0.8
Motorcycle	0.5
Large Bus	3
Bicycle	0.3
Mazda/Coaster	1.5
Wagon/Hiace/Mini Bus	1.5
Pick Up/Ambulance/Delivery Van	1
2-Axle	3
3-Axle, 3+Axle Truck	3
Tractor/Trolleys	3
Animal Driven Cart	4
Other Mechanized Vehicle	4.5

The Peak Hour volume and Peak Hour Passenger Car Units for the Cordon Points are shown in Table 3-3.

Table 3-3: Peak Hour Traffic Volume and Peak Hour PCUs on Cordon Points

Cordon Points	ENTRY		EXIT	
	Peak Hour Volume	Peak Hour PCUs	Peak Hour Volume	Peak Hour PCUs
CHAK JHUMRA	448	543	541	453
KHURRIANWALA	1197	1391	1147	1999
MAKUANA	1116	972	884	964
MILLAT ROAD INTERCHANGE	745	736	759	958
NARWALA BYPASS	767	619	619	601
RESALEWALA	333	261	302	342
SADHAR BYPASS	839	1160	820	858
SAMUNDRI ROAD	954	980	1235	1152
KAMALPUR INTERCHANGE	1239	1151	786	792
SATAYANA ROAD	734	788	709	677
WAPDA TOWN	584	461	776	641

Cordon Points	ENTRY		EXIT	
	Peak Hour Volume	Peak Hour PCUs	Peak Hour Volume	Peak Hour PCUs
TOTAL	8954	9062	8577	9437

The data from Table 3-3 above shows that the highest peak hour volume for entry was recorded on Kamalpur Interchange, while the highest peak hour volume for exit was recorded on Samundri Road.

Table 3-4 which shows trip purpose on cordon points in Faisalabad.

Table 3-4: Trip Purpose on Cordon Points Faisalabad

Point Name	Direction	No. of Vehicles	Trip Purpose						
			Work	Business	Education	Home	Shopping	Social	Other
CHAK JHUMRA	ENTRY	435	228	76	25	55	40	7	4
	EXIT	533	226	177	42	50	38	-	-
KHURRIANWALA	ENTRY	1211	699	110	71	35	65	61	170
	EXIT	1141	579	134	17	179	50	95	87
MAKUANA	ENTRY	1103	554	323	46	75	33	43	29
	EXIT	841	395	259	32	64	46	32	13
MILLAT ROAD INTERCHANGE	ENTRY	733	396	120	50	68	25	29	45
	EXIT	735	388	115	32	144	14	19	23
NARWALA BYPASS	ENTRY	788	438	190	13	75	39	33	
	EXIT	610	263	167	11	135	1	27	6
RISALEWALA	ENTRY	364	193	112	11	35	3	6	4
	EXIT	302	158	103	2	11	1	27	-
SADHAR BYPASS	ENTRY	830	415	177	36	28	35	42	97
	EXIT	800	409	224	53	27	40	15	32
SAMUNDARI ROAD	ENTRY	948	476	190	25	49	24	47	137
	EXIT	1268	891	109	87	61	76	36	8
KAMALPUR INTERCHANGE	ENTRY	1226	591	498	20	59	16	25	17
	EXIT	804	385	86	71	111	73	64	14
SATAYANA ROAD	ENTRY	801	521	64	21	72	65	55	3
	EXIT	700	382	135	15	54	44	29	41
WAPDA TOWN	ENTRY	534	259	125	50	52	15	30	3
	EXIT	764	248	334	13	142	2	17	8

The entry and exit traffic at each cordon point have been shown in figures below.

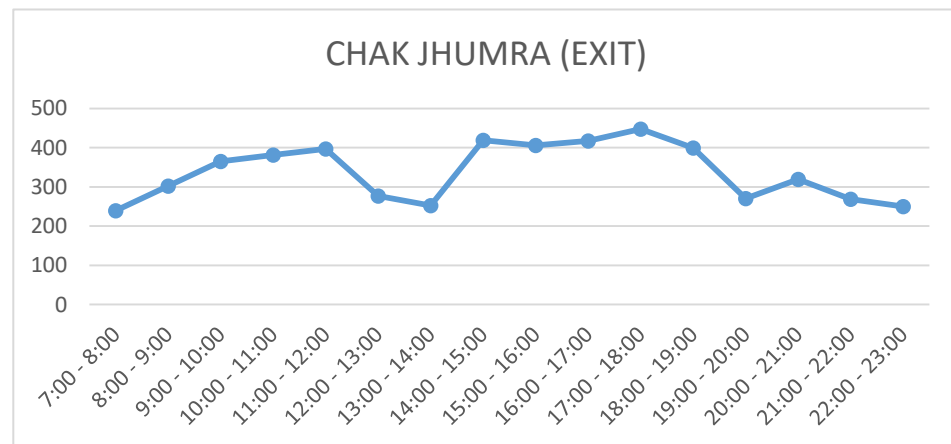
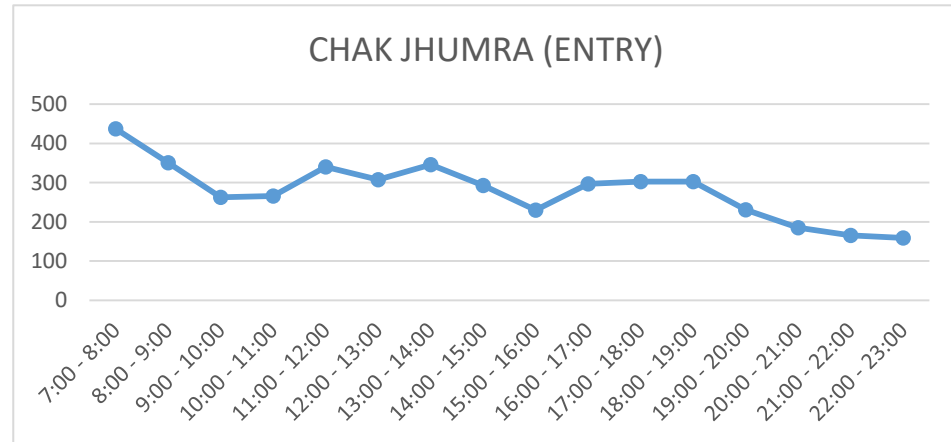
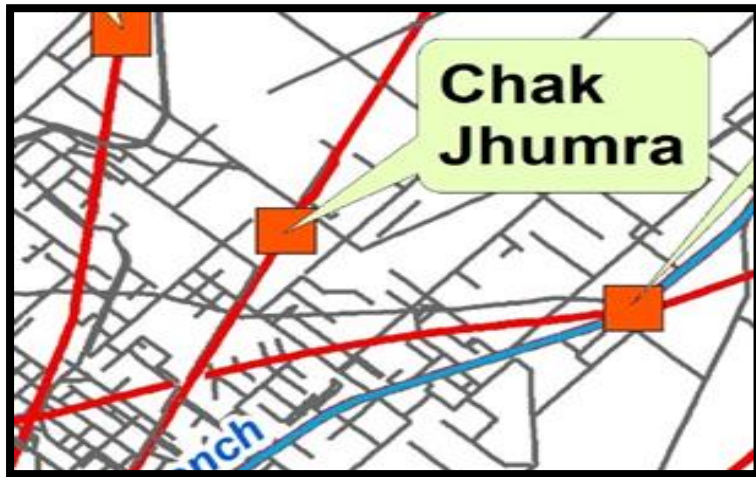


Figure 3-4: Entry and Exit Traffic at Chak Jhumra

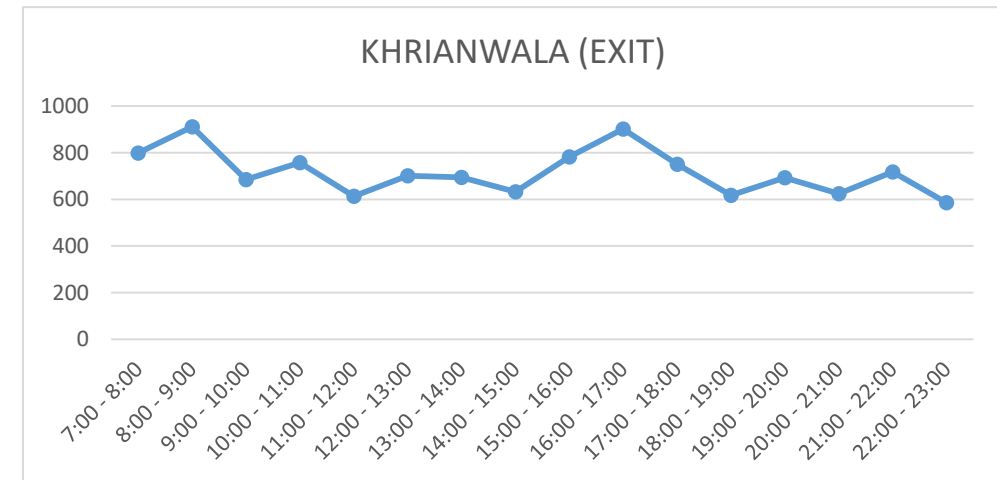
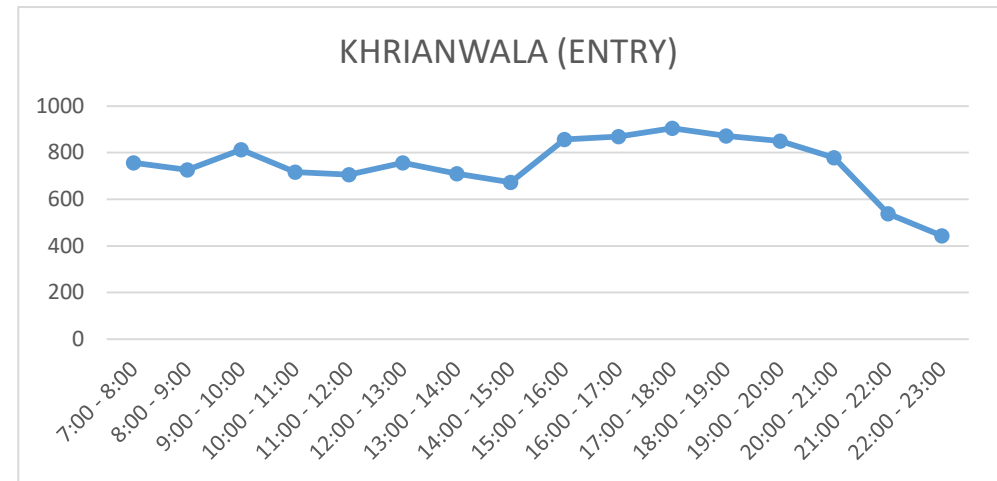
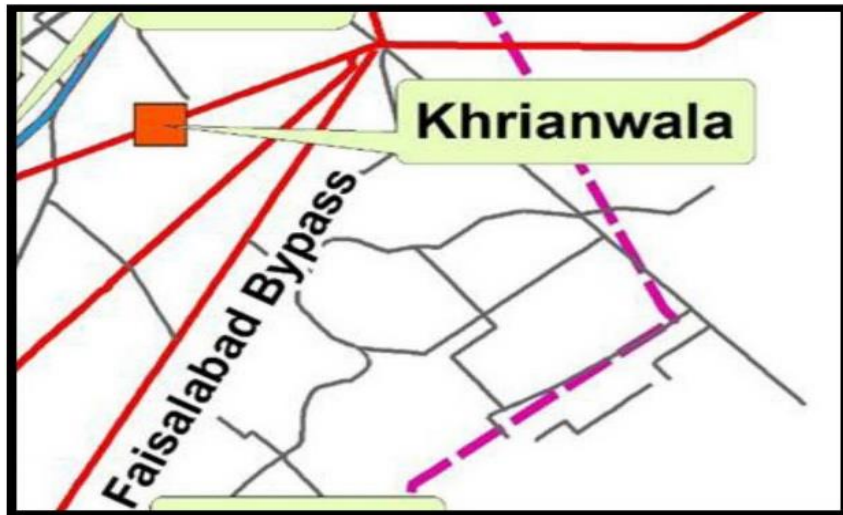


Figure 3-5: Entry and Exit Traffic at Khurianwala

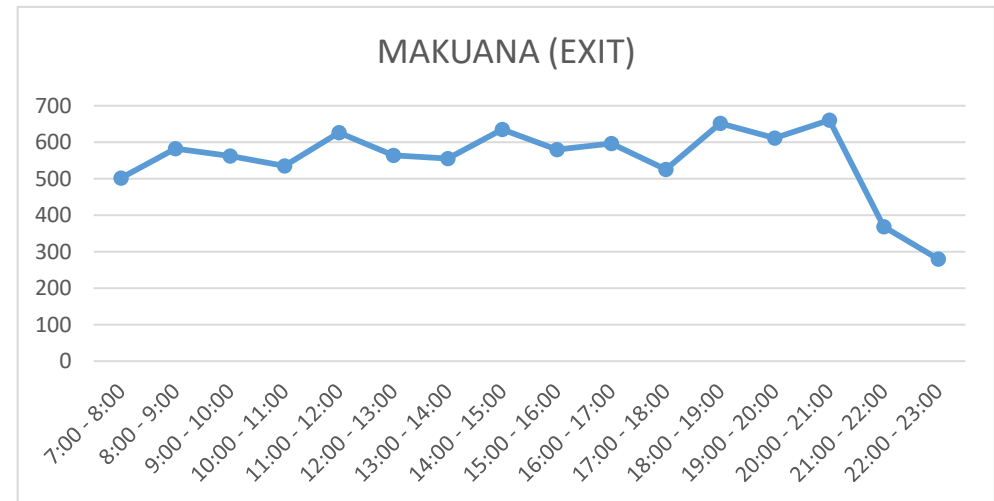
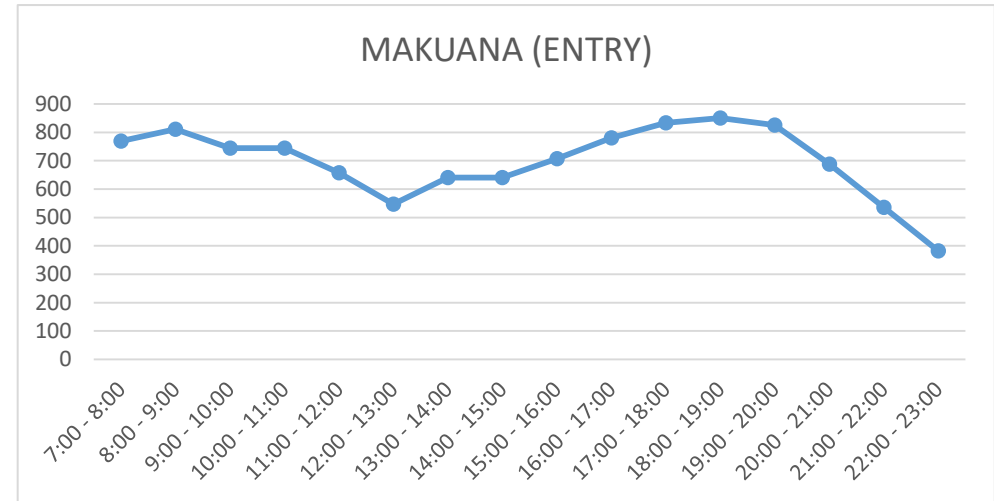
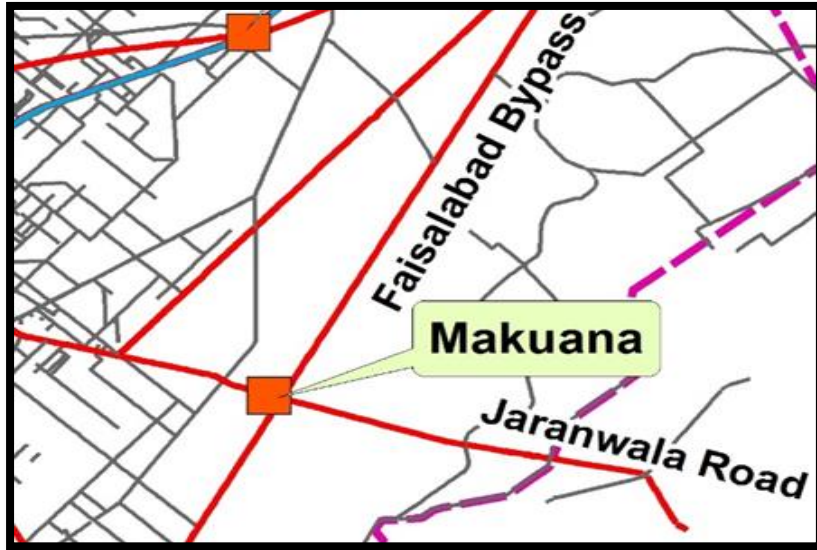


Figure 3-6: Entry and Exit Traffic at Makuana

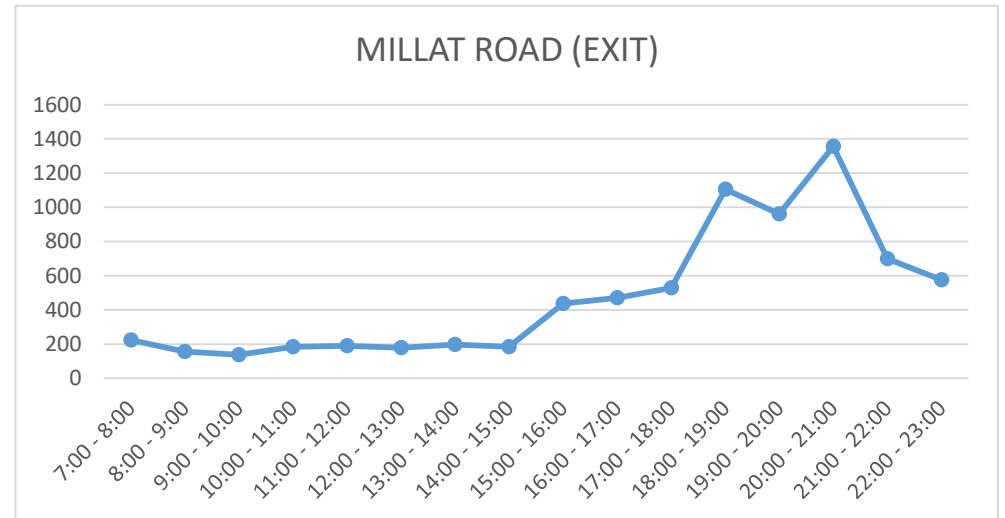
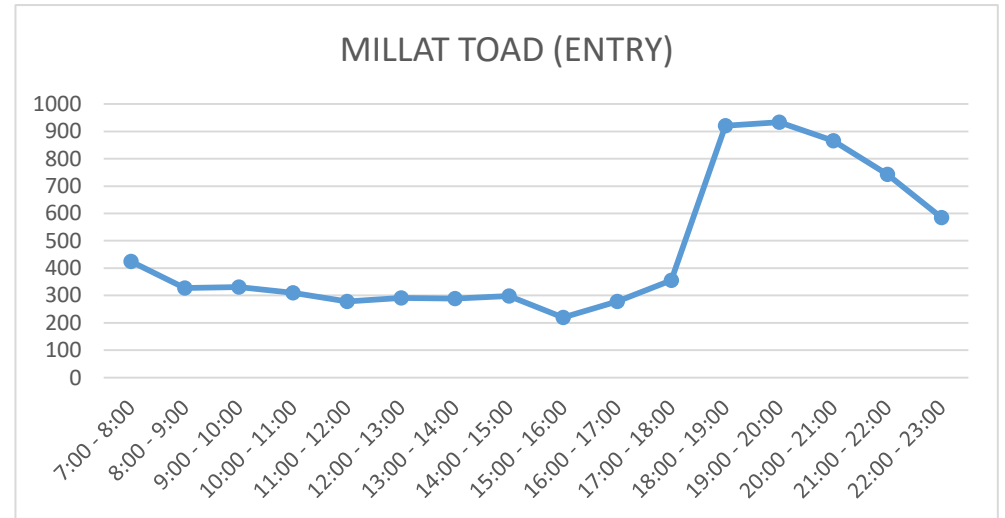
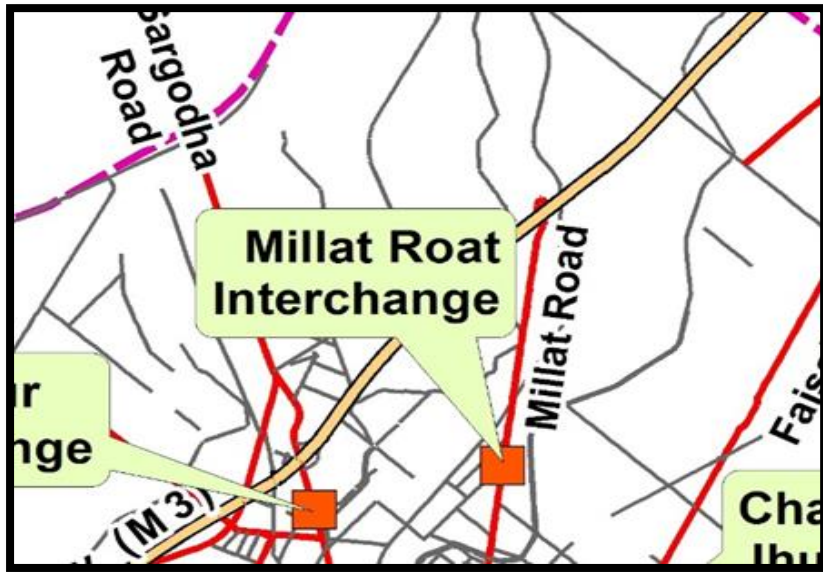


Figure 3-7: Entry and Exit Traffic at Millat Road

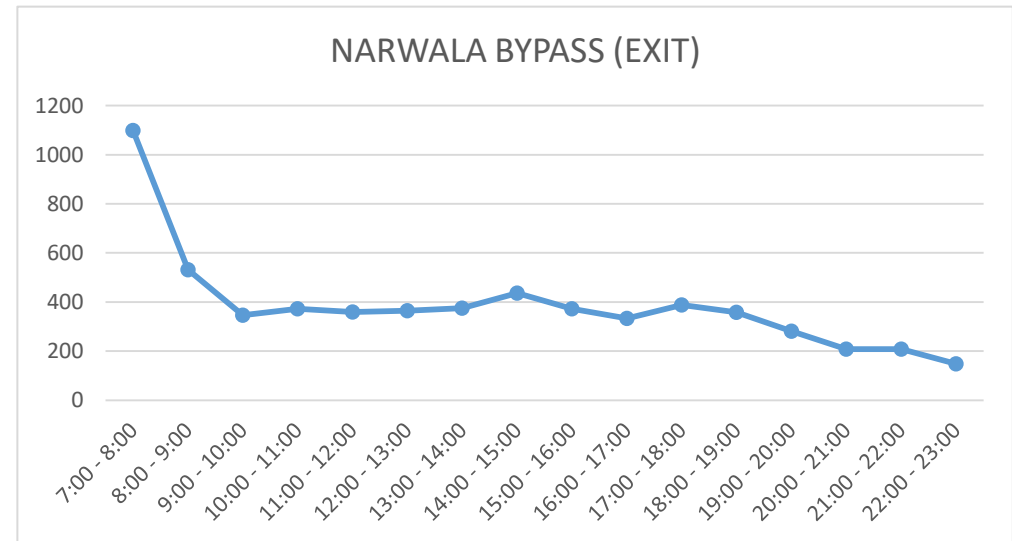
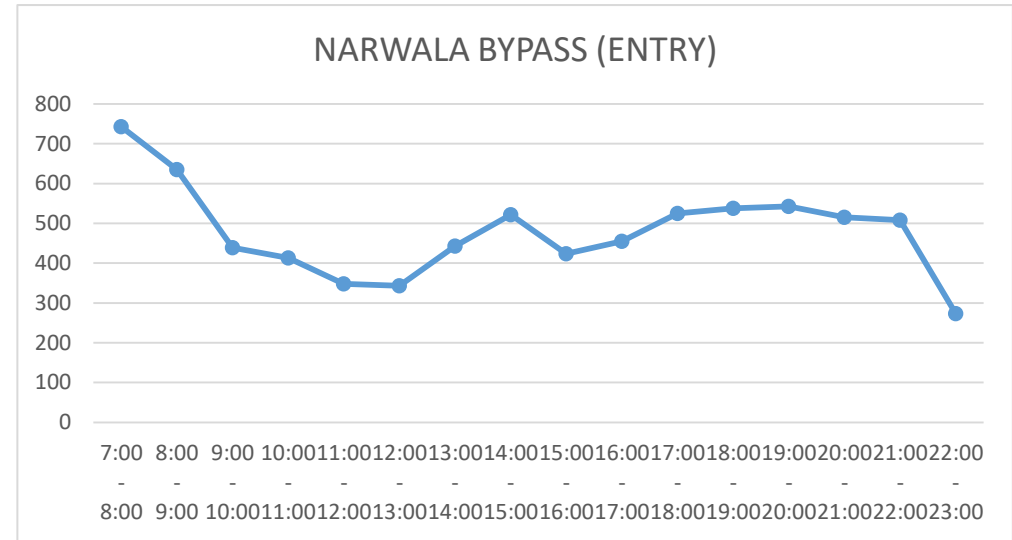
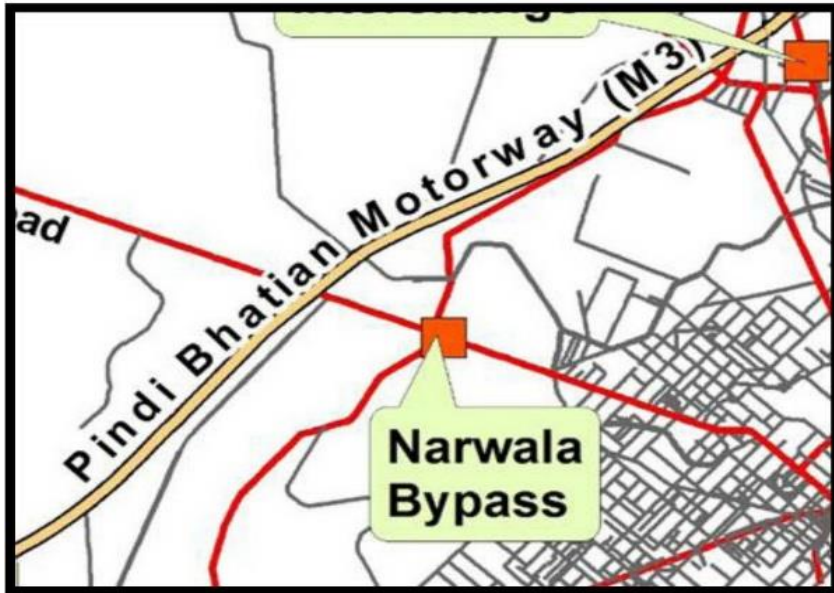


Figure 3-8: Entry and Exit Traffic at Narwala Bypass

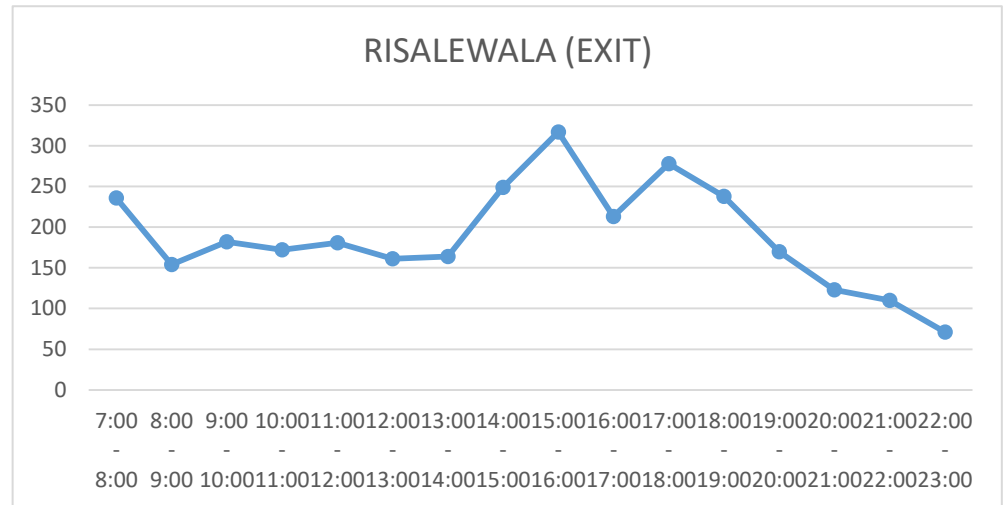
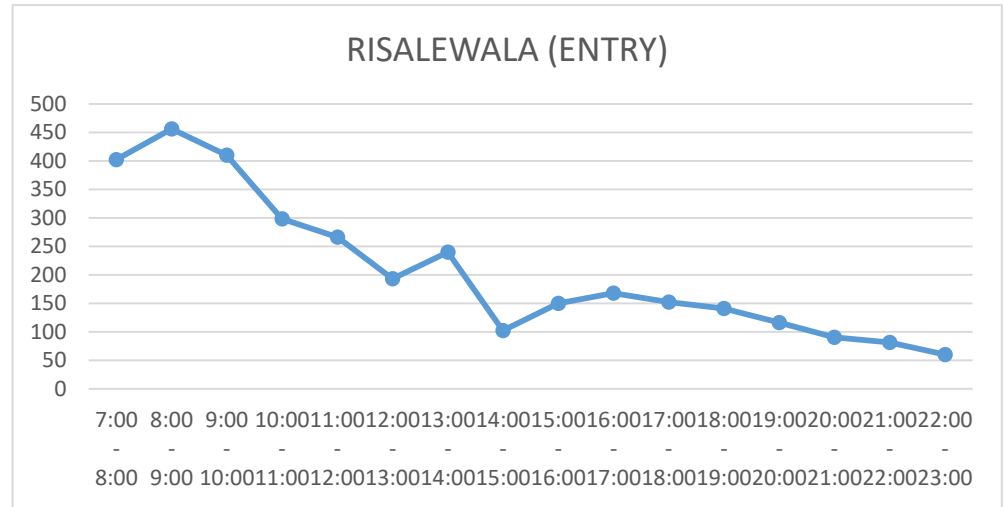
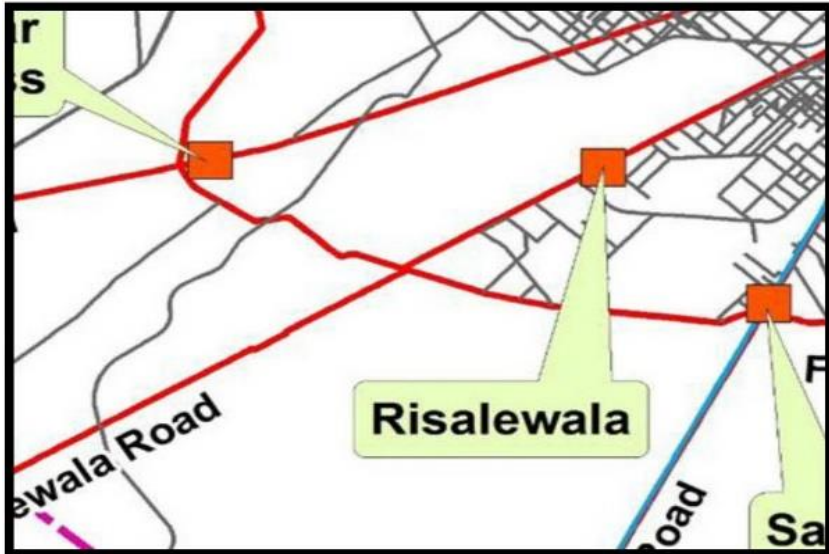


Figure 3-9: Entry and Exit Traffic at Risalewala Bypass

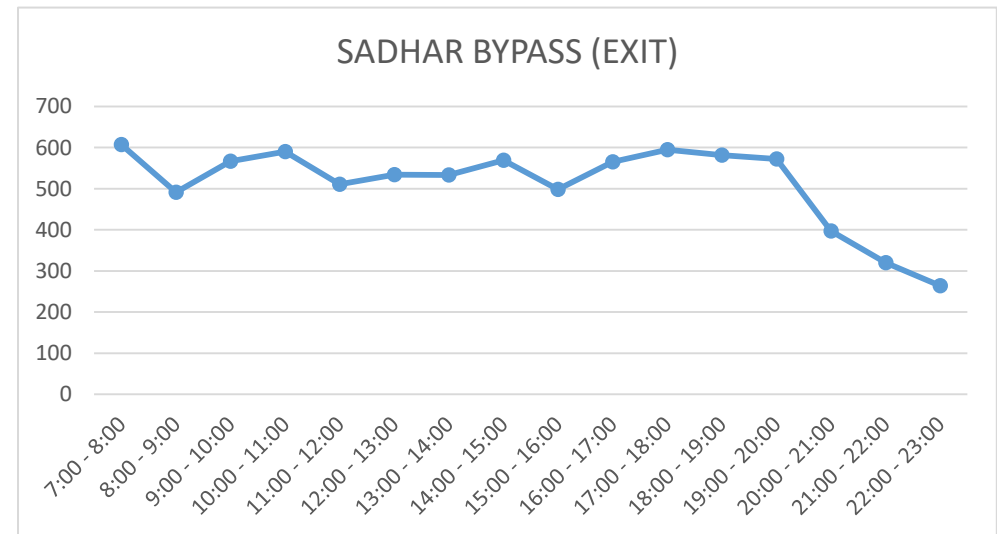
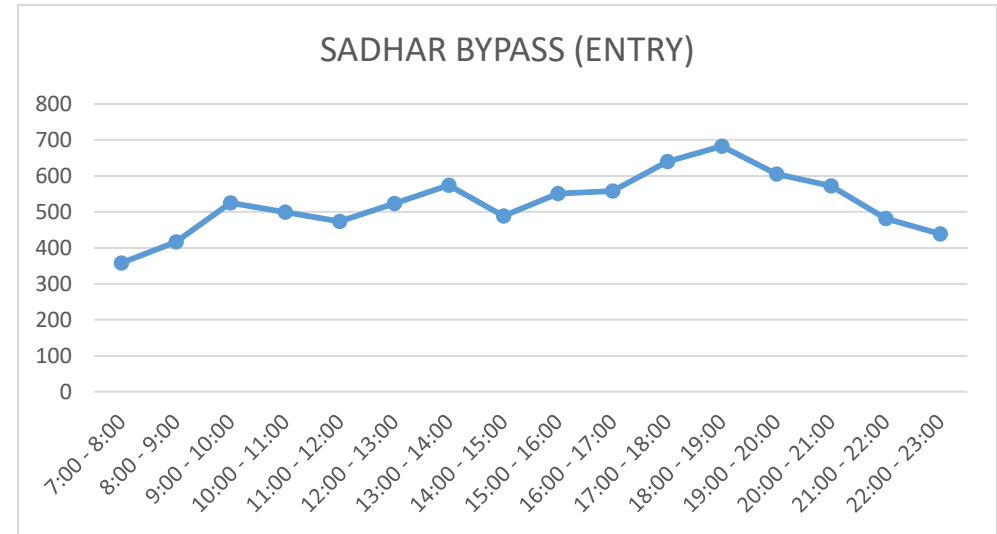
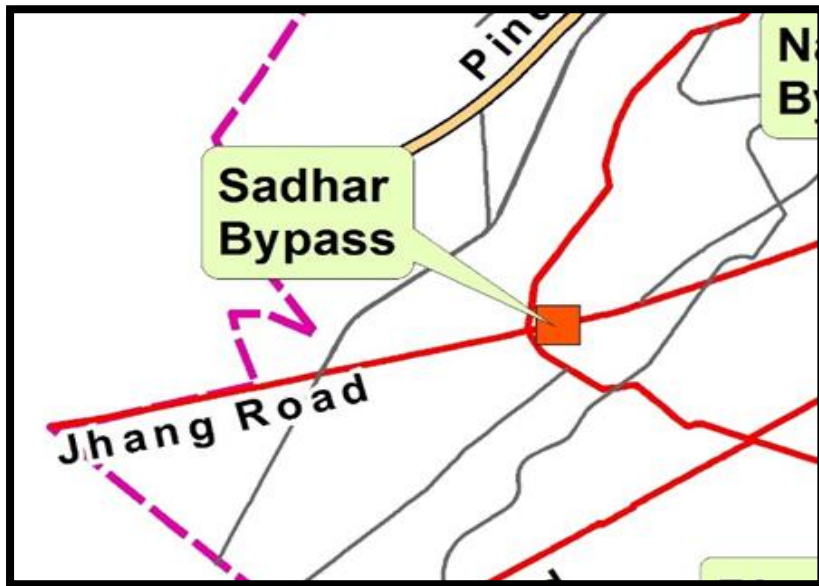


Figure 3-10: Entry and Exit Traffic at Sadhar Bypass

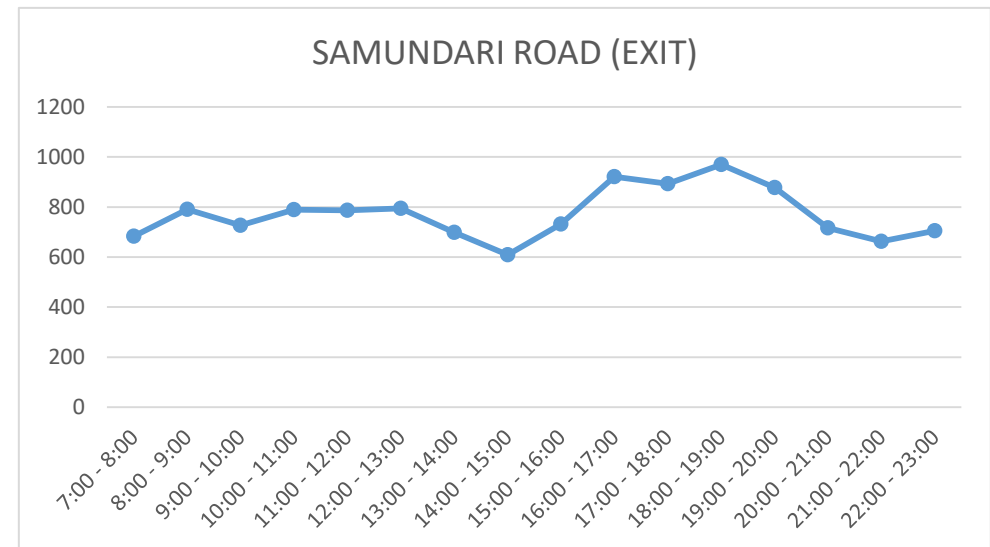
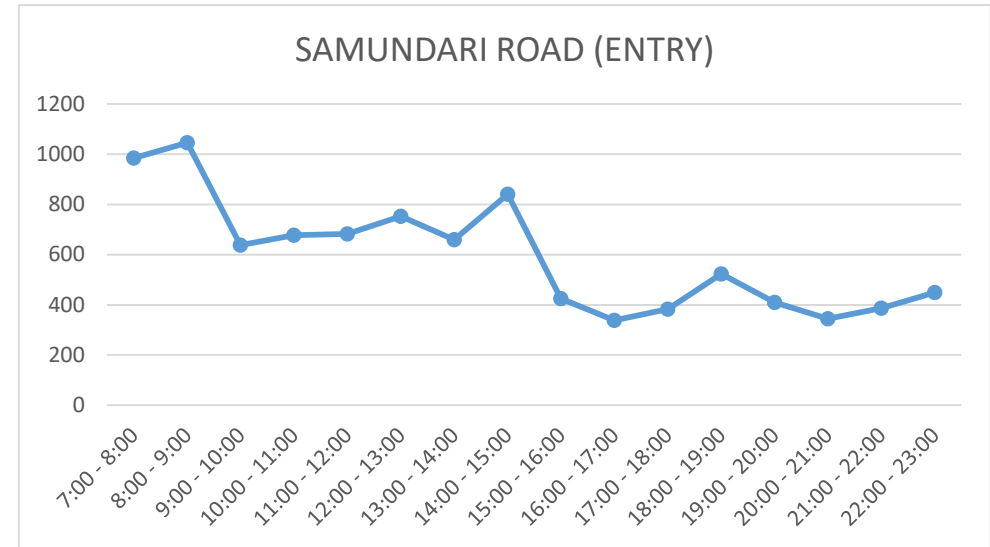
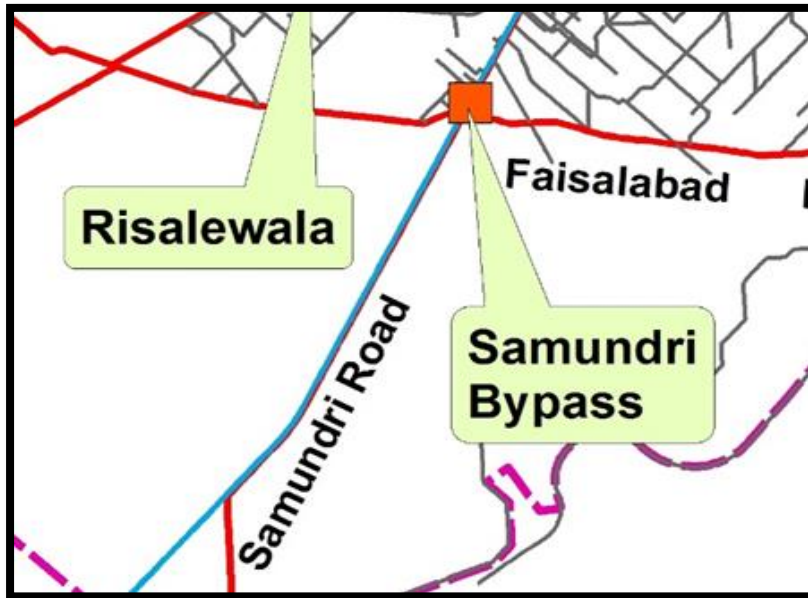


Figure 3-11: Entry and Exit Traffic at Samundari Road

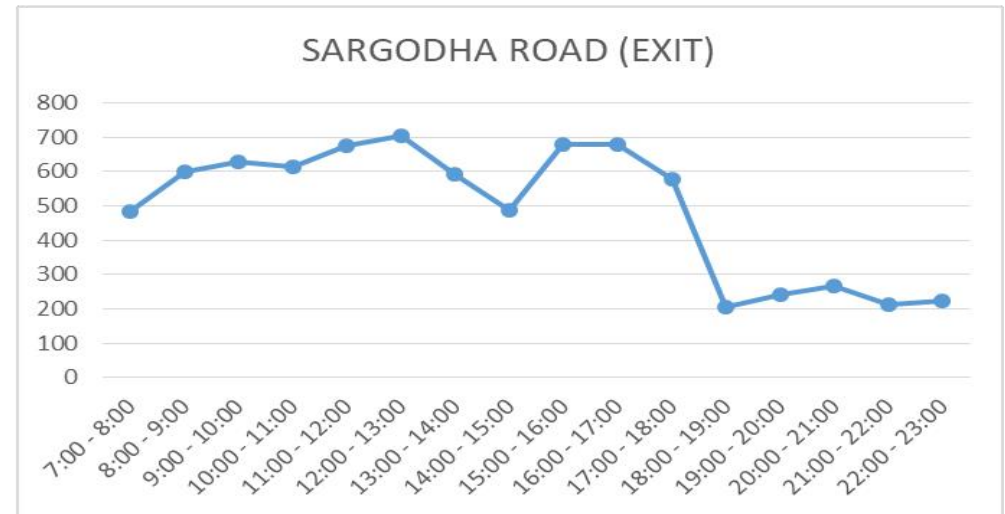
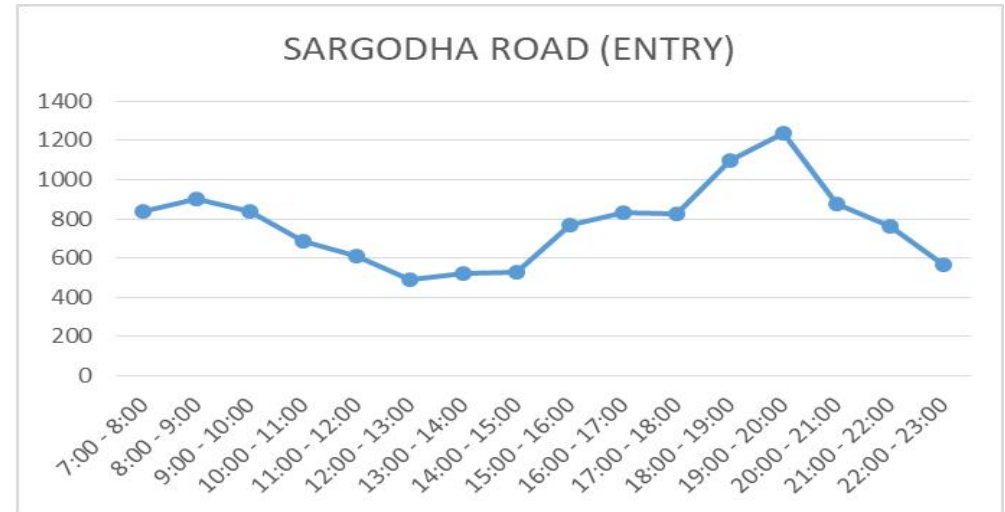
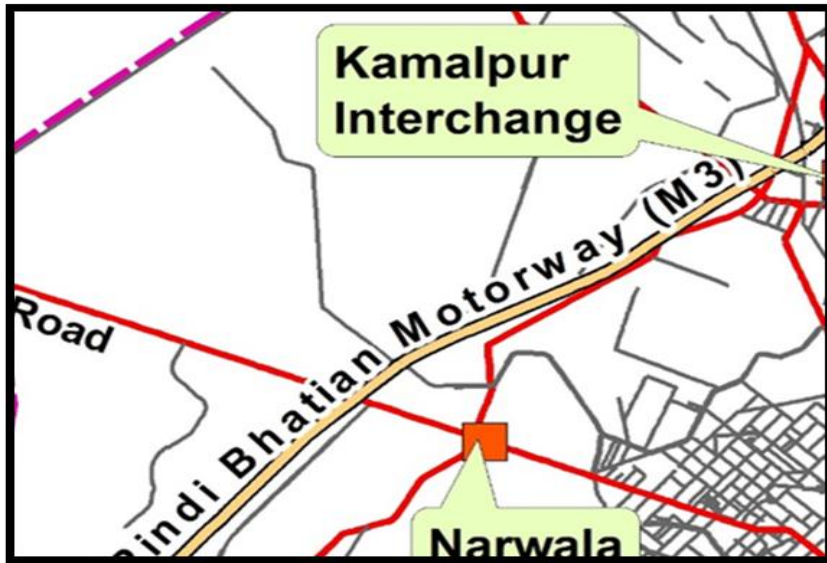


Figure 3-12: Entry and Exit Traffic at Sargodha Road

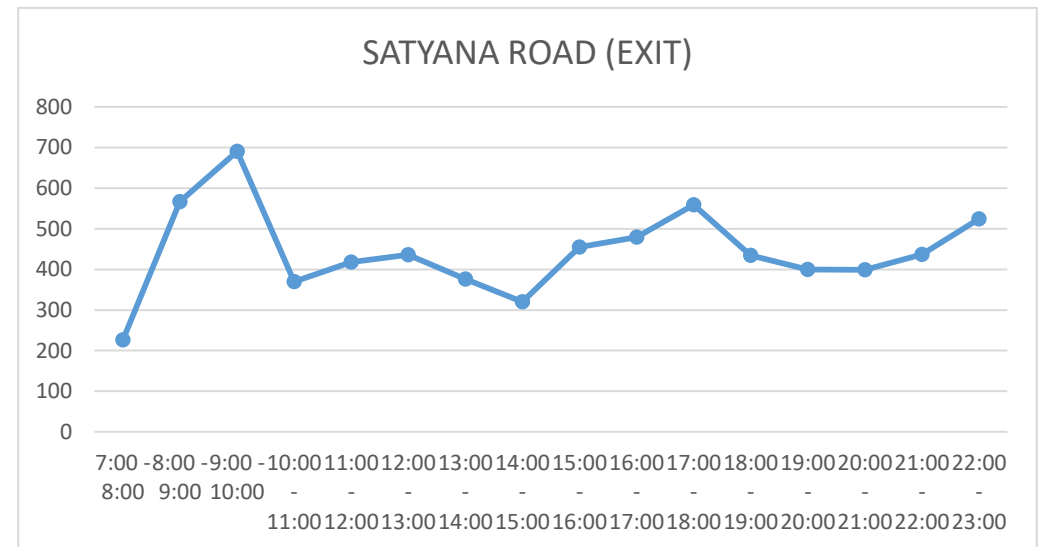
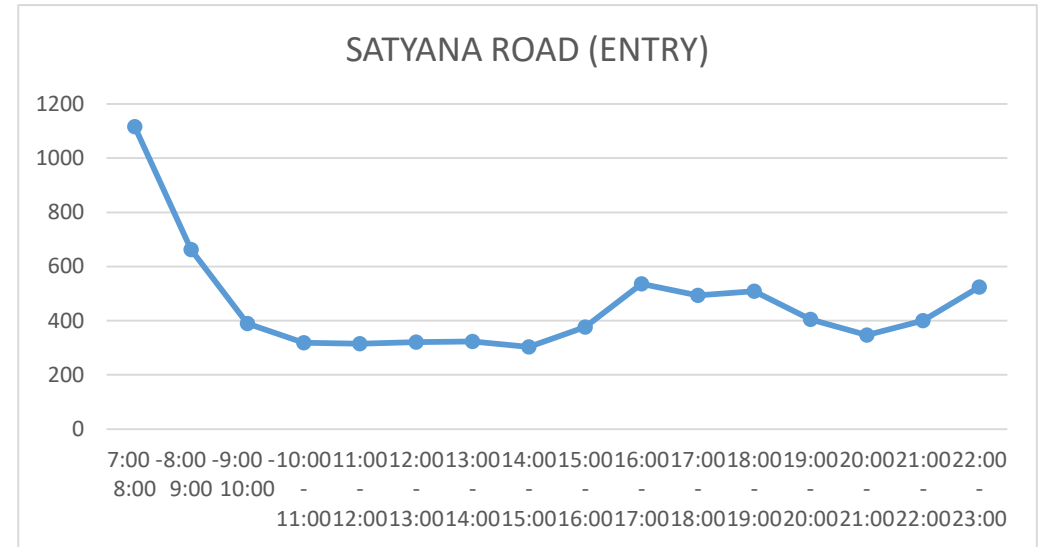
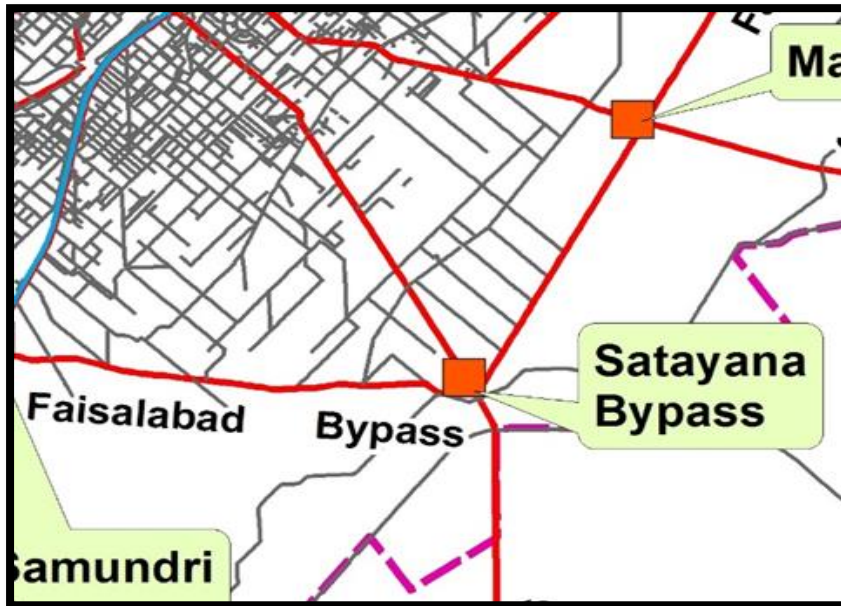


Figure 3-13: Entry and Exit Traffic at Satayana Road

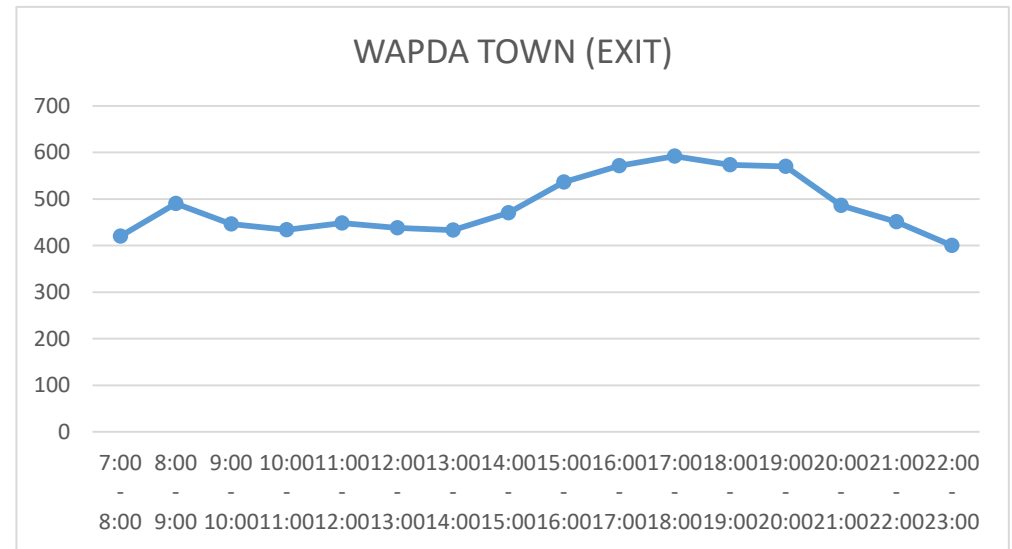
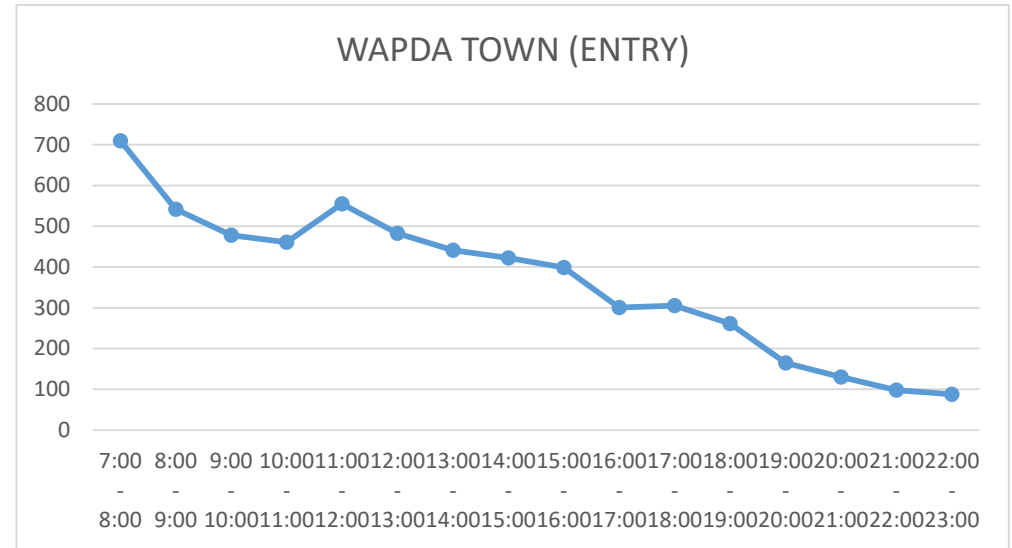
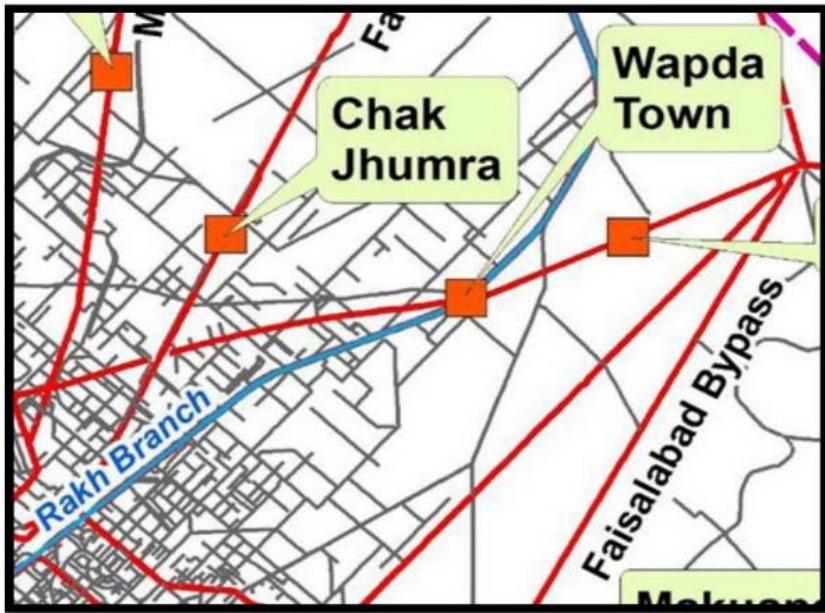


Figure 3-14: Entry and Exit Traffic at Wapda Town

3.4 TRAFFIC ANALYSIS AND FORECASTING OF MAJOR ROADS

After assessing the existing traffic on major roads at cordon points as discussed in preceding section 3.2, the traffic analysis and forecasting was carried out. The growth rate of 4.95% used for traffic analysis is given in Table 8-3, Page 22 Traffic Factors for Pakistan II, National Transport Research Council Report 138.

3.4.1 Capacity Analysis

Capacity is defined in terms of the maximum flow rate that can be accommodated by a given traffic facility under prevailing conditions. In other words, the capacity of a facility is the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or a uniform section of a lane or a road way during a given time period under prevailing road way, traffic and control condition.

Vehicle capacity is the maximum number of vehicles that can conveniently pass a given point during a specified period under prevailing road way, traffic and control conditions. This assumes that there is no influence from downstream traffic operation, such as backing of traffic into the analysis point. Following are the main factors which affect the capacity of a roadway.

- Lane widths
- Number of lanes
- The type of facility and its development environment
- Shoulder widths and lateral clearances
- Design speed

3.4.2 Quality and Level of Service (LOS)

“Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service (LOS) is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience”.

Six LOS are defined for each type of facility that has analysis procedure available. Each level is designated by letters from A to F, with LOS A representing the best operating conditions and LOS F the worst.

The LOS is the key factor for the estimation of road capacity for the proposed design facility. Table 3-5 below gives the summary of LOS in Years 2020 and 2040 for major roads in Faisalabad.

Table 3-5: LOS of Major Roads

Road Name	LOS	
	Year 2020	Year 2040
Sangla Hill Road (Chak Jhumra)	A	B
Sheikhupura Road (Khurrianwala)	B	F
Jaranwala Road (Makuana)	A	D
Millat Road (Millat Road Interchange)	A	C
Narwala Road (Narwala Bypass)	A	B
Risalewala Road (Risalewala)	A	A
Jhang Road (Sadhar Bypass)	A	D
Samundri Road (Samundri Bypass)	C	F
Sargodha Road (Kamalpur Interchange)	A	D
Satayana Road (Satayana Bypass)	A	C
Canal Road (Wapda Town)	A	A

Usually, the minimum acceptable LOS in urban environment is C or D to ensure an acceptable operating service for the facility users. All the major roads in Faisalabad are operating under fair traffic conditions with respect to capacity in Year 2020. LOS for projected traffic volume for Year 2040 will significantly reduce to “F” on Sheikhpura Road and Samundri Road. To improve the LOS, additional lane(s) will be required in both directions for these two roads. However, to accommodate the present and future traffic demand of major roads in Faisalabad, further detailed traffic studies are required prior to upgrading the existing road network.

3.5 TRAFFIC ON MAJOR INTERSECTIONS

The traffic count surveys were conducted on major intersections of Faisalabad. Following were the intersections on which the survey was conducted;

Abdullahpur Overpass

1. GTS Chowk
2. Hilal-e-Ahmer Chowk
3. Jhal Chowk
4. Minerva Cinema Chowk
5. Novelty Pull

The locations of these intersections on the map of Faisalabad with their peak hour traffic volumes are shown in Figure 3-15.

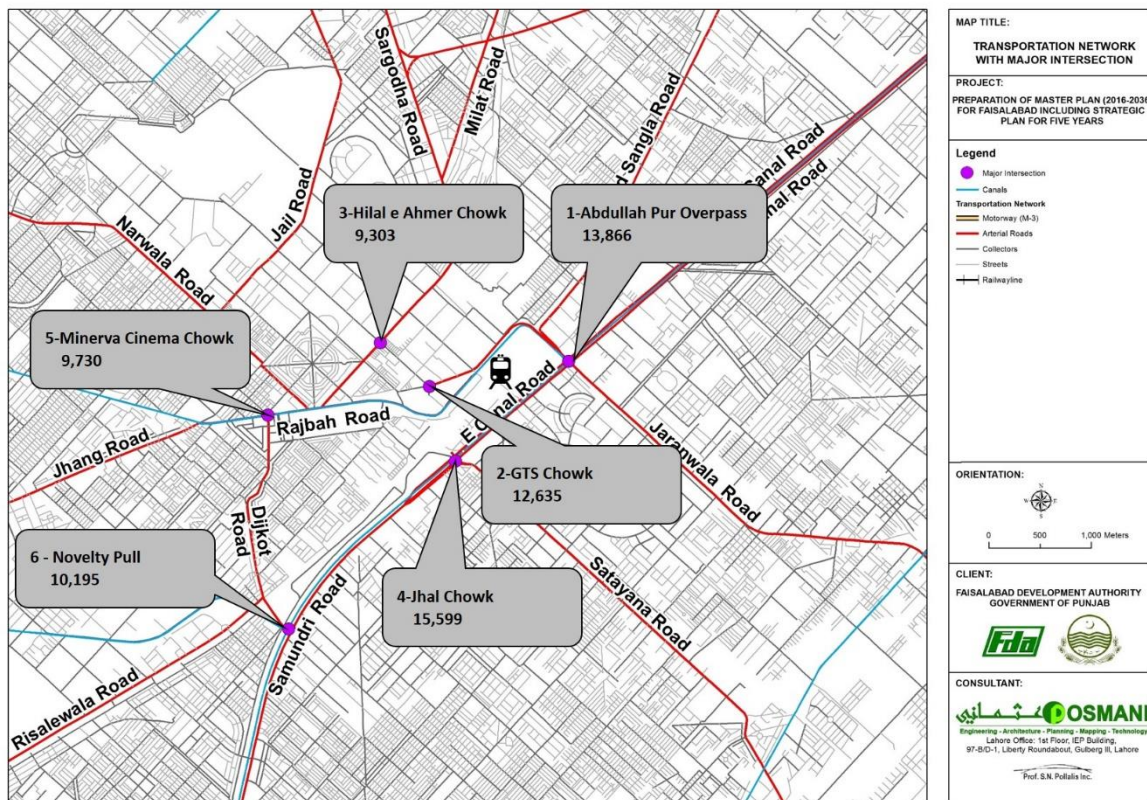


Figure 3-15: Traffic on Major Intersections of Faisalabad

The peak hour traffic volumes at each intersection were acquired from the traffic surveys which were conducted for a duration of 16 hours. The percentage of vehicles according to vehicle types are shown in Figure 3-16 while the peak hour traffic volumes are listed in Table 3-6 below.

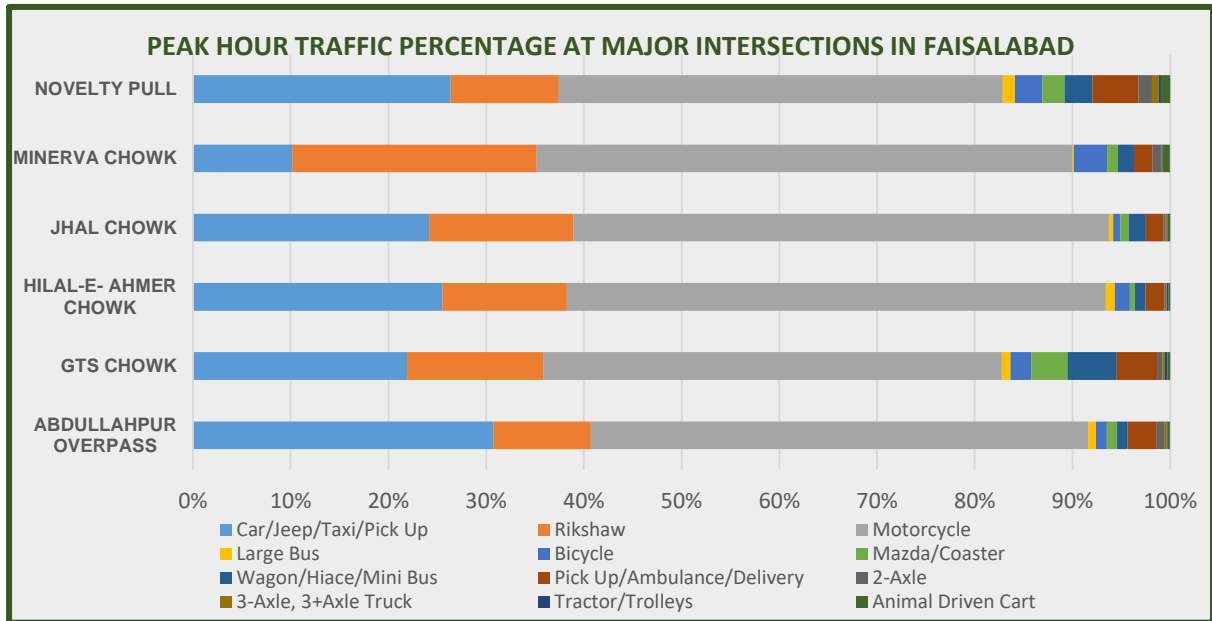


Figure 3-16: Peak Hour Traffic Percentage at Major Intersections Faisalabad

Table 3-6: Peak Hour Traffic Volume at Major Intersections Faisalabad

Intersection	Abdullahpur Overpass	GTS Chowk	Hilal-e - Ahmer Chowk	Jhal Chowk	Minerva Chowk	Novelty Pull
Car/Jeep/Taxi/Pick Up	4265	2767	2374	3769	986	2688
Rikshaw	1382	1761	1184	2305	2437	1128
Motorcycle	7055	5930	5134	8549	5334	4632
Large Bus	109	114	83	66	14	126
Bicycle	158	266	143	113	330	289
Mazda/Coaster	141	468	51	135	110	229
Wagon/Hiace/Mini Bus	153	641	100	277	159	291
Pick Up/Ambulance/Delivery	413	521	179	277	186	480
2-Axle	104	65	20	39	80	142
3-Axle, 3+Axle Truck	36	27	6	15	8	68
Tractor/Trolleys	15	41	11	10	9	24
Animal Driven Cart	34	35	19	44	75	97
Other Mechanized Vehicle	3	1	1	2	1	0
TOTAL	13,866	12,635	9,303	15,599	9,730	10,195

The data from Table 3-6 above depicts that the highest peak hour volume was recorded on Jhal Chowk with motorcycles being the largest contributor to the peak hour volume.

For properly expressing the data for traffic volume, each car category is converted into its relative PCU Factor (shown in Table) to find out the total passenger car units for that particular vehicle type. The PCUs for each vehicle type on each intersection are shown in Table 3-7 & Figure 3-17.

Table 3-7: Peak Hour PCUs at Major Intersections, Faisalabad

Intersection	Abdullah pur Overpass	GTS Chowk	Hilal E Ahmer Chowk	Jhal Chowk	Minerva Chowk	Novelty Pull
Car/Jeep/Taxi/Pick Up	4265	2767	2374	3769	986	2688
Rickshaw	1105	1409	947	1844	1950	902
Motorcycle	3528	2965	2567	4275	2667	2316
Large Bus	326	343	250	197	43	379
Bicycle	47	80	43	34	99	87
Mazda/Coaster	212	701	76	203	165	344
Wagon/Hiace/Mini Bus	229	961	150	415	238	436
Pick Up/Ambulance/Delivery	413	521	179	277	186	480
2-Axle	311	195	59	116	239	426
3-Axle, 3+Axle Truck	108	81	17	45	25	204
Tractor/Trolleys	44	122	32	31	26	71
Animal Driven Cart	136	138	74	174	301	389
Other Mechanized Vehicle	12	5	5	7	6	1
Total	10,735	10,287	6,772	11,386	6,931	8,723

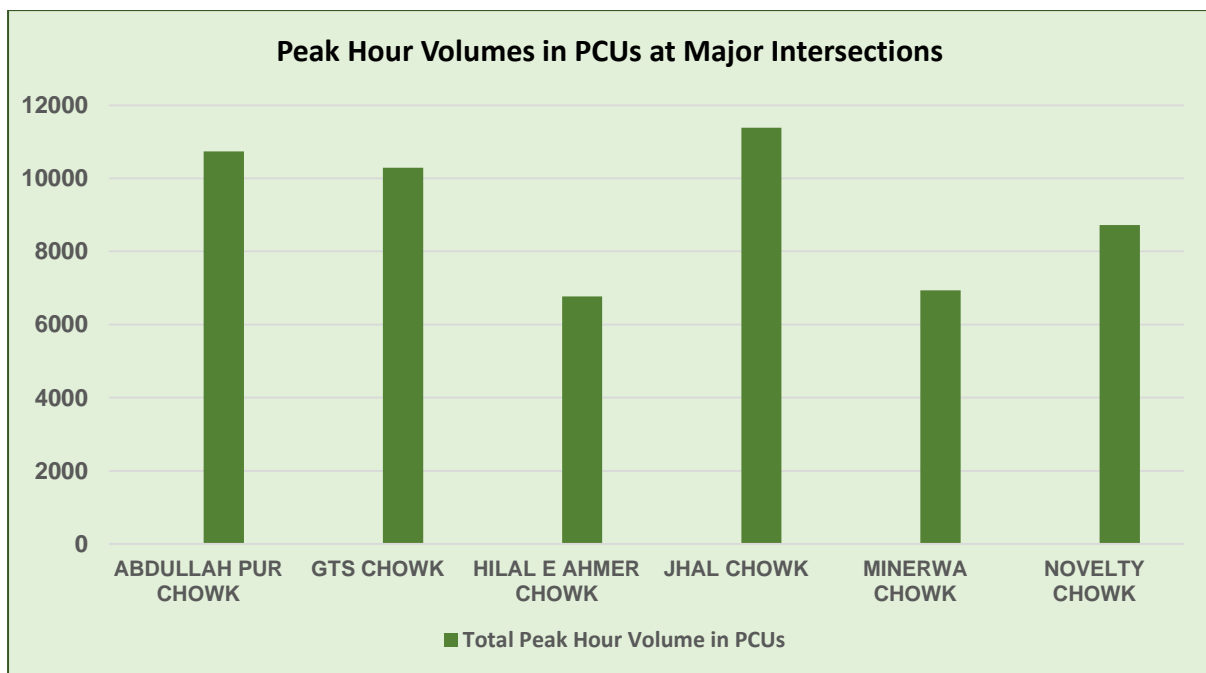


Figure 3-17: Peak Hour PCUs at Major Intersections

3.5.1 Analysis of Critical Intersections

The analysis of critical major intersections has been done and each one of the intersections is discussed as follows:

- GTS CHOWK

The existing geometry of GTS Chowk is a four-legged roundabout as shown in Figure 3-18.

Existing Scenario:

This intersection has Intersection Capacity Utilization (ICU) LOS as H which shows congestion and major delay at the intersection as shown in Figure 3-18.

Proposed Scenario:

In order to improve LOS and reduce the delays and congestion, following are the recommended proposals:

- Remodeling of roundabout may be proposed. The Geometric Design of roundabout needs to be revised and modified according to the standards available for roundabout design.
- A major share of traffic at GTS Chowk is due to Bus Terminal that can be shifted to reduce traffic on GTS Chowk to improve LOS. Alternatively the bus terminal entry and exit may be re-planned to reduce traffic congestion.
- In the long run, a grade separation (Underpass/Flyover) along Railway Road & Church Road will improve the ICU LOS from H to B as shown in Figure 3-19. Detailed Traffic Analysis is recommended to be performed when it is desired to construct the grade separation.

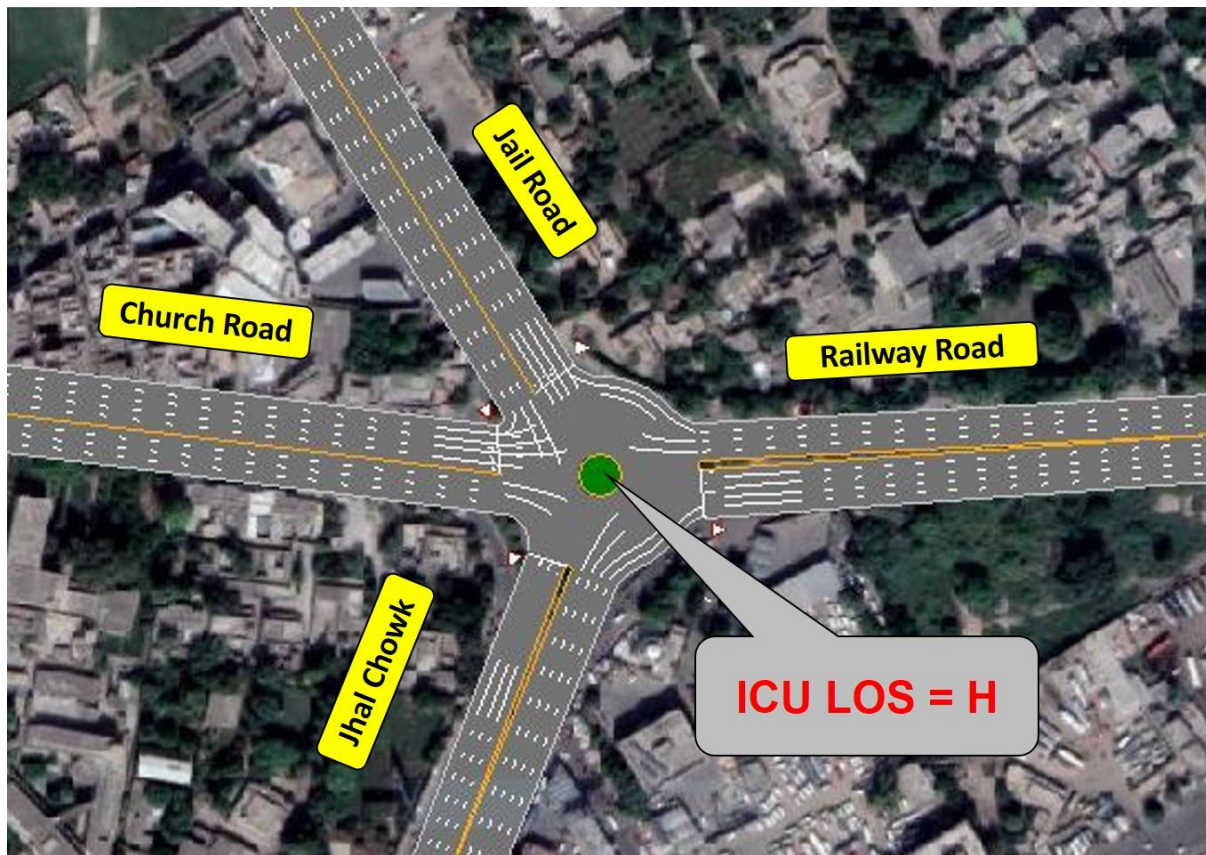


Figure 3-18: Existing Scenario of GTS Chowk

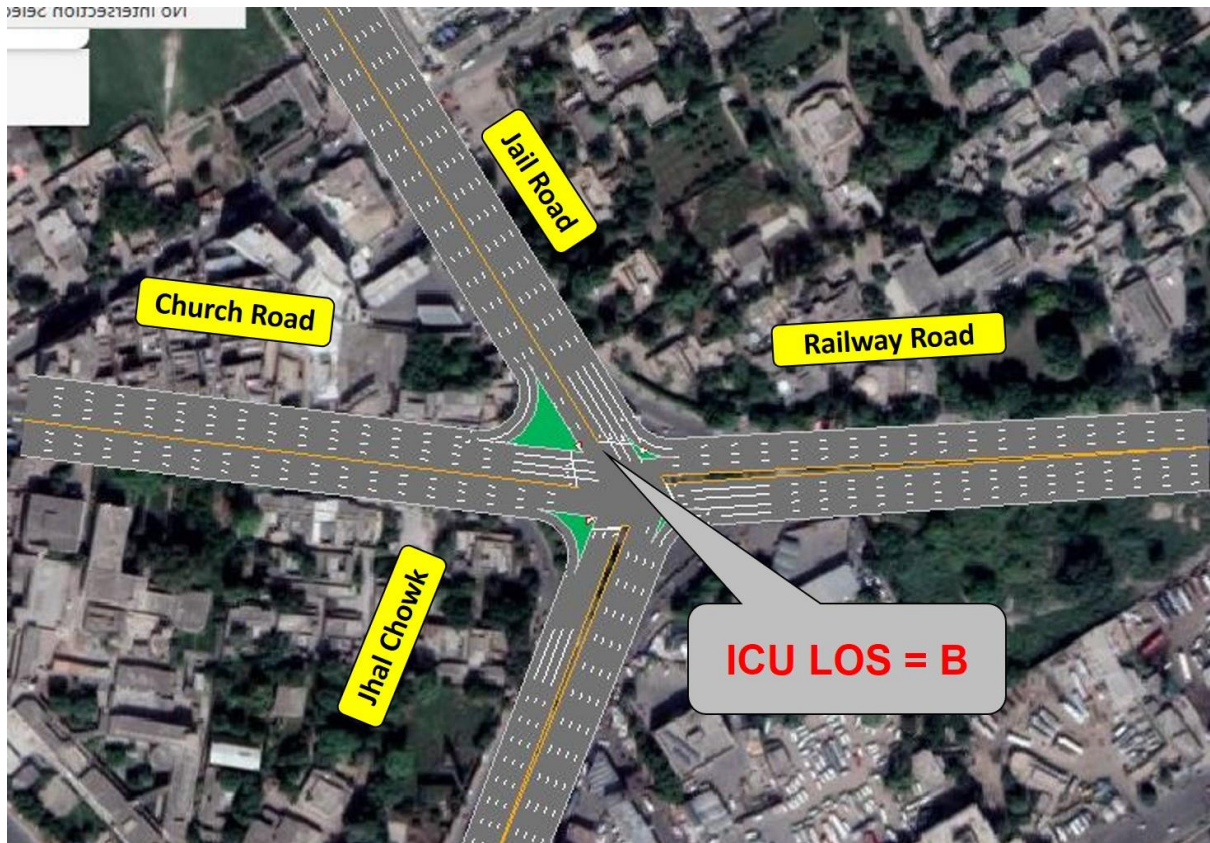


Figure 3-19: Proposed Scenario of GTS Chowk

• HILAL E AHMER CHOWK

The existing geometry of Hilal-e-Ahmer Chowk is a four-legged roundabout as shown in Figure 3-20.

Existing Scenario:

This intersection has Intersection Capacity Utilization (ICU) LOS as H which shows congestion and major delay at the intersection as shown in Figure 3-20. It has been observed that major traffic is along GTS Chowk and Katchery Leg.

Proposed Scenario:

In order to improve LOS and reduce the delays and congestion, following are the recommended proposals:

- Remodeling of roundabout may be proposed. The Geometric Design of roundabout may be revised and modified according to the standards available for roundabout design.
- Proper Left Turn Channelization may find to be essential along with geometric design of roundabout including ICD and circulatory lanes width within permissible limits defined in the standards for roundabout design.
- In long term, following are the two recommended proposals:
 - Proposal-1: Grade separation (Underpass/Flyover) may be proposed along GTS Chowk & Katchery leg that will improve the ICU LOS from H to A as shown in Figure 3-21.
 - Proposal-2: Grade separation (Underpass/Flyover) may be proposed along Gumti & Chenab Chowk that will improve the ICU LOS from H to B as shown in Figure 3-22.

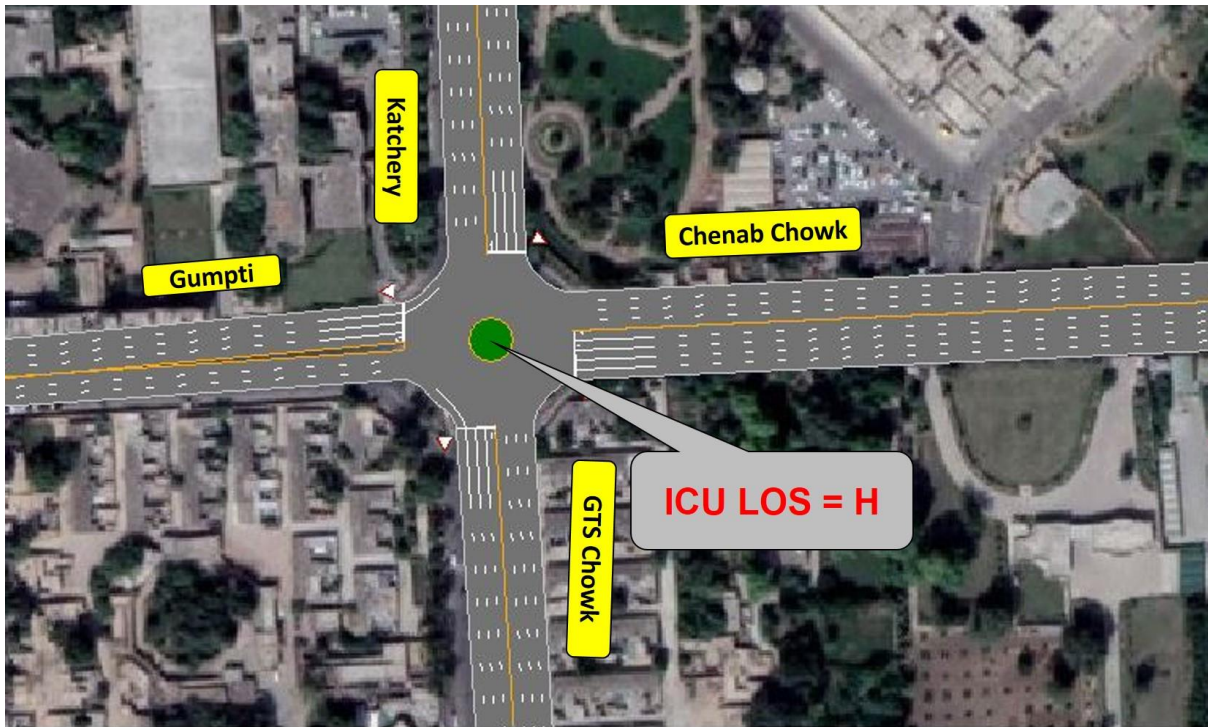


Figure 3-20: Existing Scenario of Hilal e Ahmar Chowk

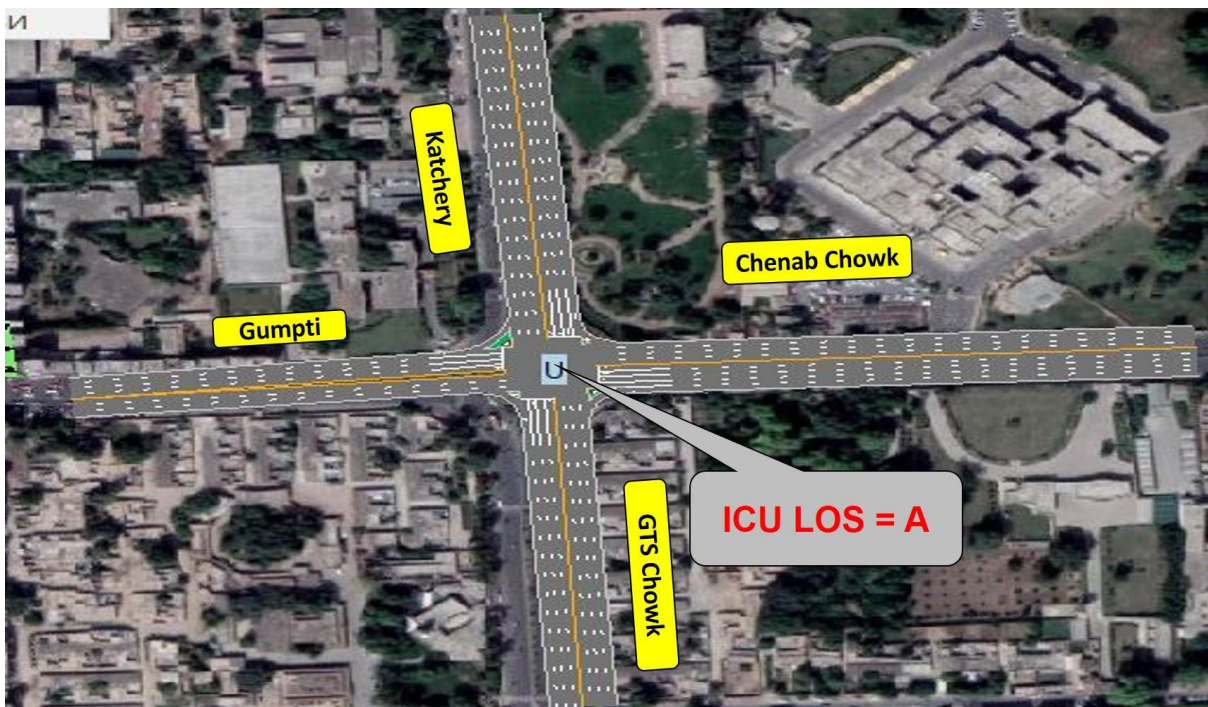


Figure 3-21: Proposal-1 of Hilal e Ahmar Chowk



Figure 3-22: Poposal-2 of Hilal e Ahmar Chowk

- MINERVA CINEMA CHOWK

The existing geometry of Minerva Chowk is an un-signalized intersection along with unprotected U-turns for right turning movement as shown in Figure 3-23.

Existing Scenario:

This intersection has Intersection Capacity Utilization (ICU) LOS as H which shows congestion and major delay at the intersection as shown in Figure 3-23.

It has been observed that Un-protected U-turns are causing the weaving phenomena due to less distance from the links of intersections.

Proposed Scenario:

In order to improve LOS, possible solutions are described below:

- The movement from Jhang Bazar and Imam Bargah to Lal Mill Road is in conflict so it may be possible to ensure the one-way movement in Jhang Bazar.
- Left. Turn Channelization may be ensured for traffic coming from Imam Bargah to Lal Mill Road.
- Protected U-Turns at optimum distances to avoid weaving may be helpful to ease the traffic coming from Dijkot towards Lal Mill Road for taking U-turn. Same is the scenario for traffic coming from Imam Bargah side to take U-turn for Dijkot or GCU University Chowk.
- Minerva Cinema Chowk may be converted to a controlled signalized intersection along with possible geometric design changes will improve the LOS of intersection as shown in Figure 3-24.



Figure 3-23: Existing Intersection of Minerva Cinema Chowk



Figure 3-24: Proposed Scenario of Minerva Cinema Chowk

- NOVELTY PULL

The existing geometry of Novelty Pull is an un-signalized T-intersection along with unprotected U-turns for right turning movement coming from Jhal Chowk.

Existing Scenario:

As far as current situation of this intersection is concerned, it has been observed that Un-protected U-turns will not be fulfilling the need by causing the disruption in through and turning traffic.

Proposed Scenario:

In order to improve LOS, possible solution is described as below:

- Geometric Design may be revised in order to improve the LOS by providing protected U-Turn for turning movement coming from Jhal Chowk towards Novelty as the distance is insufficient to cope with weaving phenomena.

Table 3-8 below summarizes the existing and proposed scenarios of major critical intersections:

Table 3-8: Existing and Proposed Scenario of Major Intersections

Existing Scenario		Possible Proposals	
Intersection Type	ICU LOS	Intersection Type	ICU LOS
GTS CHOWK			
Roundabout	H	<ul style="list-style-type: none"> • Remodeling of roundabout. • Proper Left. Turn Channelization may be ensured • Bus Terminals may be shifted to reduce traffic on GTS Chowk to improve LOS. Alternatively, the bus terminal entry and exit may be re-planned to reduce traffic congestion. 	N/A
		<ul style="list-style-type: none"> • Un-signalized • Underpass/Flyover (Railway Road - Church Road) 	B
HILAL E AHMER CHOWK			
Roundabout	H	<ul style="list-style-type: none"> • Remodeling of roundabout. • Proper Left. Turn Channelization may be essential along with geometric design of roundabout including ICD and circulatory lanes width. 	N/A
Roundabout	H	<ul style="list-style-type: none"> • Un-signalized Underpass/Flyover (GTS Chowk - Katchery) 	A
		<ul style="list-style-type: none"> • Un-signalized Underpass/Flyover (Gumti - Chenab Chowk) 	B
MINERVA CINEMA CHOWK			
Un-Signalized along with provision of U-Turns for turning moments	H	<ul style="list-style-type: none"> • Proper Left. Turn Channelization. • Protected U-Turns at optimal distances to avoid weaving may be a short-term solution. 	N/A
		<ul style="list-style-type: none"> • Signalized 	H C (Intersection LOS)
NOVELTY PULL			

Existing Scenario		Possible Proposals	
Intersection Type	ICU LOS	Intersection Type	ICU LOS
Un-Signalized along with provision of U-Turn for turning moment	-	<ul style="list-style-type: none"> Geometric Design may be revised by providing protected U-Turn for turning movement coming from Jhal Chowk towards Novelty. 	N/A

4. PARKING

4.1 PARKING SURVEYS AND ANALYSIS

The parking locations in Faisalabad include minor parking spots like outside buildings, shopping malls, small hospitals and other centers, and major parking spots like Airport Parking, Railway Station Parking, Katchery Parking, and big Hospitals Parking of the city. Parking surveys were conducted on major parking spots as follows;

1. Airport Parking
2. Allied Hospital Parking
3. Civil Hospital Parking
4. Katchery Parking
5. Railway Station Parking

The pictures of above-mentioned parking spots are given below:



Figure 4-1: Airport Parking



Figure 4-2: Allied Hospital Parking



Figure 4-3: Civil Hospital Parking



Figure 4-4: Kachehri Parking



Figure 4-5: Railway Station Parking

After analyzing the parking survey data, it can be deduced that Faisalabad needs more Parking spaces in the city especially in areas with more public movement such as public buildings, shopping markets, colleges and universities, hospitals etc.

Table 4-1 shows the Parking spaces surveyed and the Average Parking time for vehicles on each parking area;

Table 4-1: Existing Average Parking Time at Major Parking Areas of Faisalabad

Parking Area Name	Average Parking Time (Minutes)
Airport Parking	33
Allied Hospital Parking	26
Civil Hospital Parking	44
Kacheri Parking	107
Railway Station Parking	36

Further analysis of data shows that at Airport Parking the vehicles are parked for longer durations during the night shift. with an average of 61 minutes compared to 16 minutes during the day time. Moreover, Katchery parking was recorded as the busiest parking area with an average time of 107 minutes per vehicle.

4.2 PARKING AND PARKING PLAZAS

Lack of adequate parking space is apparent especially in the central area of eight bazaar which is the commercial hub and Central Business District (CBD) of Faisalabad city. People are forced to park their vehicles along road sides of circular road. The problem is serious one and with the increasing number of cars in the city the need for more parking areas is obvious.

A research study “**Management of Traffic Congestion in the Old Area of Faisalabad City**” was done by Engr. Hassan Zaheer of FDA and others to analyze the parking problem in Eight Bazaar area and following solutions were given:

- ❖ The angle of on street parking lots to be changed from perpendicular (90°) on Circular Road to 45° or 60° by implementing strict traffic rules and regulations. This will improve the LOS of Circular road from “E” to “D” which is minimum acceptable LOS in urban areas. Although it is a short-term solution, it will bring relief to the traffic flow on Circular Road.

For off street parking so that maximum number of vehicles could be accommodated, three (3) sites were proposed in the study for parking plazas considering that these plots were already being used by the local shopkeepers and visitors for parking purposes. It is a long-term solution to the issue of parking problems in CBD area of Faisalabad.

5. PUBLIC TRANSPORT SYSTEM IN FAISALABAD

The major roads and arterials of Faisalabad are wide and provide free movement of road traffic because of structures like flyovers and underpasses, although the roads in urban areas are very congested and cause huge traffic and delays in main urban areas. According to Punjab Development Statistics 2016, the road network of Faisalabad comprises of 532 km of Provincial Highways, 261 km R&B Sector Roads, 1127 km of Farm to Market Roads, 534 km of Sugar Field Access Roads and 1408 km of District Council Roads.

In addition to private vehicles such as motor cycles, cars and trucks, the public transport modes of Faisalabad include:

- Public buses, large and medium size
- Mini buses (Delivery Vans), Mini-vans called 'Wagons'
- Auto Rickshaws, Qingqis (a motorcycle driven Rickshaw)
- Taxis
- Horse driven carriages and hand pulled carts

5.1 PUBLIC TRANSPORT SYSTEM

Faisalabad has enormous intra city and intercity movement of persons through conventional transportation modes. Rapid population growth and increasing vehicle ownership of Faisalabad, due to its industrialized activities and as an economical hub, has made its traffic worsened. Conventional transportation modes are strained under heavy demand for intercity and urban transport facilities. With better intercity transport links and its geostrategic location, this situation will only get worse in the absence of a complete overhaul of the transport infrastructure and public transport facilities.

Increasing demand for transport services and absence of efficient transport facilities have resulted in an overloaded road network in Faisalabad which leads to traffic congestion and several other problems mentioned below:

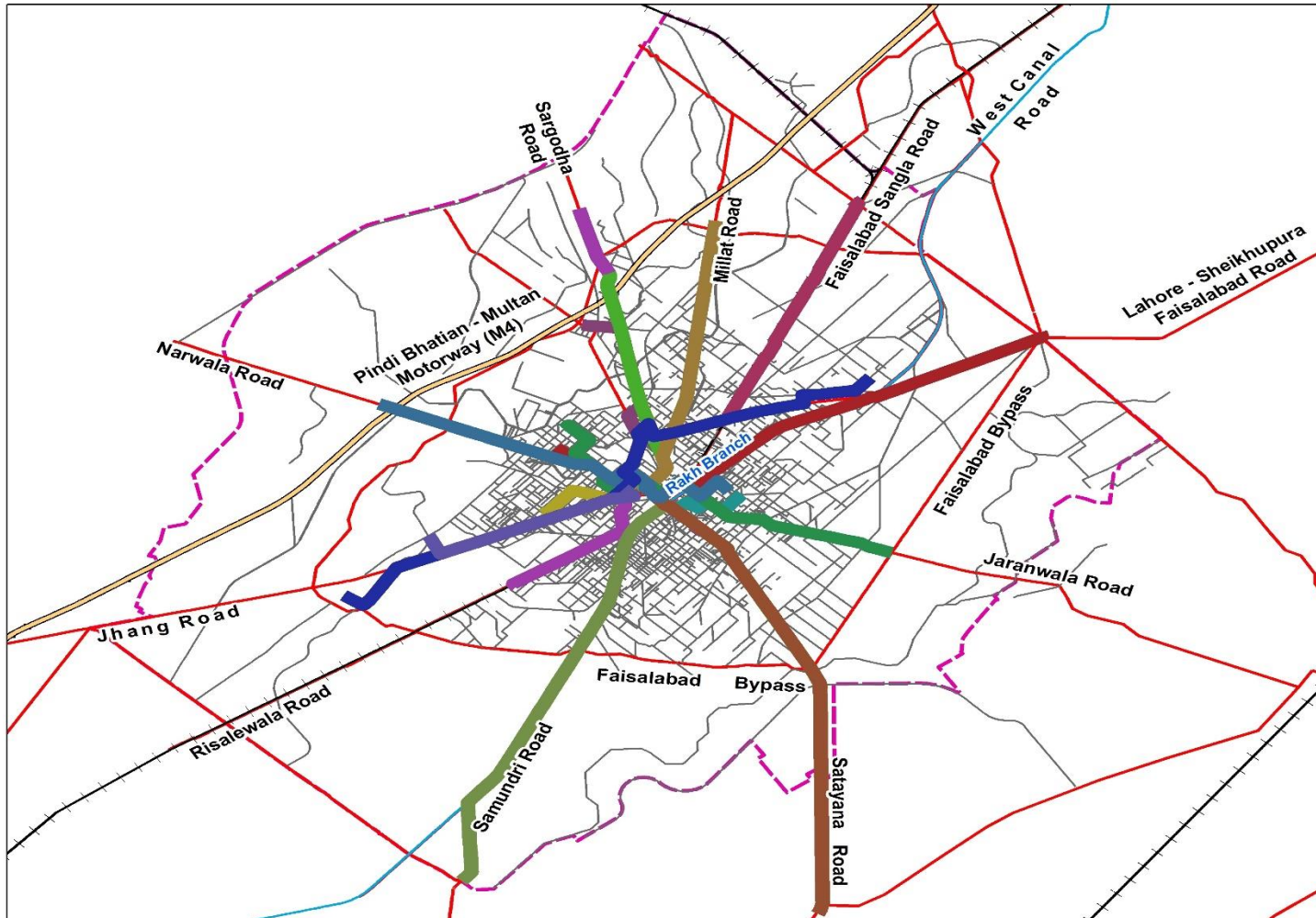
- Delays and low travel speeds;
- Traffic accidents and conflicts;
- Unregulated Parking;
- Environmental degradation;
- Economic losses; and
- Pedestrian facilities used by encroachers and drug addicts.

Several studies have been conducted in past to highlight the overall transport need and structure of Faisalabad city. These studies include Master Plan of Great Lyallpur (1968), Faisalabad Structure Plan (1986), Faisalabad Development Authority Master Plan (1994), Strategic Development Plan (2006), Infrastructure Investment Proposal (2010), and City Boundary Study (2010). Many of them has urged to introduce and develop transport network infrastructure to meet the future transport needs. Though some of the studies couldn't be implemented due to lack of funds and issues best known to authorities. Existing public transport network in Faisalabad highly favors personal transport modes which are resource heavy and with limited Right of Way available within the old city has resulted in chronic traffic congestion problems. Traffic mix includes pedestrians, animal carts, bicycles, motorcycles, auto rickshaws, cars, vans, intercity buses and trucks. Existing public transport facilities include a limited number of notified buses and wagons routes.

The total population of Faisalabad district sits today at more than 7.8 million and is growing constantly while the vehicle ownership is growing at a rate of about 13% per year. This

increase in vehicle ownership is putting a lot of stress on the development of a public transport network. The Public Transport System of Faisalabad generally comprises of government and private services with private services being the major contributor to the system.

There were around fourteen intra-city public transport routes in Faisalabad, shown in Figure 5-1 but today majority of these routes have been closed and the only routes operational are B-10, B-11 and W-20 as shown in Figure 5-2, which are very less to provide services to the public transport prospect users of Faisalabad. To cope up with the lack of proper public transport system, local private services such as wagons and rickshaws provide transportation to the people. These Services provide transport services to many major roads and intersections of the city, but they are limited by budget, number of routes and improper route timings and are unable to meet the overall demand.




MAP TITLE:
EXISTING ROUTES

PROJECT:
PREPARATION OF MASTER PLAN (2016-2036)
FOR FAISALABAD INCLUDING STRATEGIC
PLAN FOR FIVE YEARS

Legend



	B-1		Canal
	B-4		Motorway (M-4)
	B-6		Arterial Roads
	B-7		Collectors
	B-8		Railway Track
	B-9		FDA Boundary
	B-10		
	B-11		
	W-13		
	W-17		
	W-19		
	W-20		
	W-22		
	W-23		

ORIENTATION:



0 5 10 km

CLIENT:
FAISALABAD DEVELOPMENT AUTHORITY
GOVERNMENT OF PUNJAB


CONSULTANT:

Engineering - Architecture - Planning - Mapping - Technology
Lahore Office: 1st Floor, IEP Building,
97-B/D-1, Liberty Roundabout, Gulberg III, Lahore
Prof. S.N. Pollalis Inc.

Figure 5-1: Original Public Transport Routes in Faisalabad

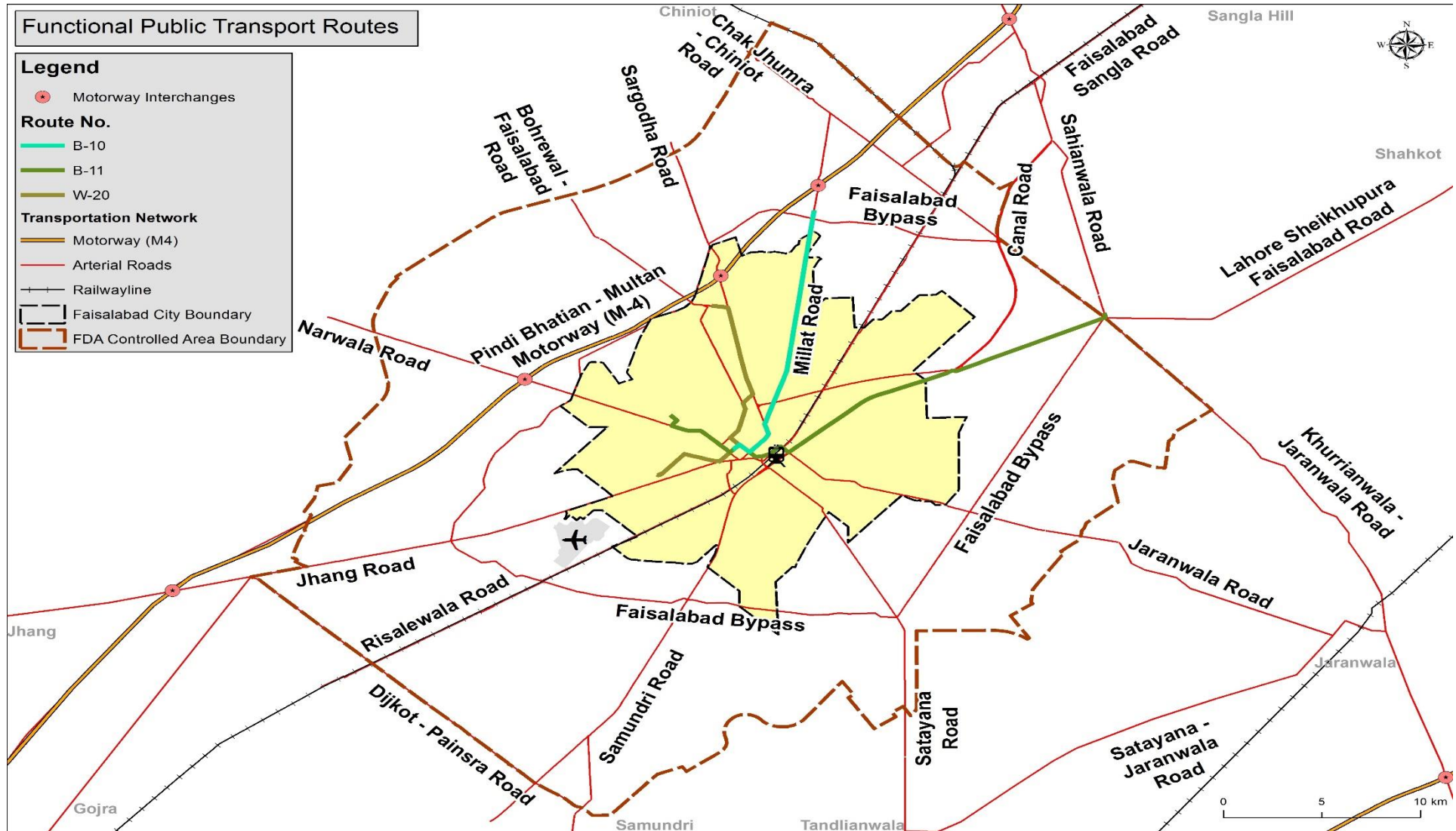


Figure 5-2: Functional Public Transport Route in Faisalabad

5.2 INTER CITY BUS SERVICES

The intercity public transport system of Faisalabad consists primarily of private service providers like Kohistan, Daewoo, New Khan, Baloch Transport, Bandiyal Transport, Bilal Daewoo, Faisal Movers, New Subhan Travels, Al Halal Travels, Khawaja Travel Service, Niazi Services and Skyways. These services provide transportation to other cities and districts such as Lahore, Sialkot, Multan, Jhang, Sargodha, Okara, Gojra, and Sahiwal. Some of the existing inter-city bus terminals are presented below in Figures 5-3 to 5-8.



Figure 5-3: General Bus Stand



Figure 5-4: Daewoo Bus Terminal



Figure 5-5: Faisal Movers Bus Terminal



Figure 5-6: Kohistan Travel



Figure 5-7: Al Halal Travels



Figure 5-8: New Subhan Travels

5.3 INTRA CITY BUS SERVICES

The intra city public transport of Faisalabad consists of government and private operators around the city. Most of the public bus services have been closed and only B-10, B-11 and W-20 are operational which cover only three of the major intersections i.e. Abdullahpur Overpass, GTS Chowk and Hilal –e- Ahmer Chowk. Present urban transport facility ‘Faisalabad Urban Transport System (FUTS)’ is grossly inadequate for a huge population of 3.2 million. There is

a need to bring large fleet of public transport into operation. The private sector be encouraged to ply more vehicles. Some private services such as wagons, rickshaws and qingqis cover the major roads and intersections of the city. These operators provide services to different institutions and landmarks across the city such as Degree College, Ghanta Ghar, Naimat Academy, Katchery and other hospitals and educational institutions. The intra city public transport of Faisalabad mostly comprises of private wagons which make-up for the lack of a proper public transport network in the city. According to Public Transport User surveys conducted, the transport services being provided are somewhat efficient but are unreliable and irregular. Moreover, majority of the people use public transport due to affordability but are willing to pay more for a better transport service than existing ones, which shows that there is a good demand for a better and a more functional public transportation system in Faisalabad city. Figure 5-9 shows pictures of existing wagon stand.



Figure 5-9: Intra City Wagon Terminal

Following are the major public transport services in Faisalabad;

5.3.1 Wagons and Mini Buses:

Many of the wagons and minibuses are operated by private organizations while a large number of wagons also operate without any type of regulation or licenses. These services are not very efficient and have unplanned routes. Although, they provide services to satellite towns and other urban areas, but they do not keep schedule and sometimes the routes are not even covered entirely.

5.3.2 Qingqis & Rickshaws:

Qingqis and rickshaws are also a favorite mode of public transportation in Faisalabad, as these services provide door-to-door services and hence are more convenient. Qingqis operate along designated routes and provide shared services while rickshaws provide private transportation. Most of the rickshaws and qingqis are operating without permits.

5.4 STRATEGIC DEVELOPMENTS IN PUBLIC TRANSPORT SYSTEM

An efficient public transport system is necessary for the stability of the traffic situation of a city. The city traffic can move towards more motorization and more congestions if free movement of people across the city is not provided via a sophisticated public transport system. With the issues in public transport system in Faisalabad, following developments are suggested;

5.4.1 Developments in Public Transport System

- A network of public transport buses should be introduced into the city, which can provide the Faisalabad public, a comfortable, cheap and efficient mode of public transportation.
- Moreover, private transport system operators should be taken into confidence and should be operated and maintained.
- Competing modes such as rickshaws and qingqis should be given proper permits to operate at certain locations in the city to serve as feeder routes to the main public transport modes.

5.4.2 Faisalabad Bus Rapid Transit (BRT) System

Faisalabad Bus Rapid Transit (BRT) system is a project which has significant potential in developing the Public Transport System of the city. The BRT network of Faisalabad consists of 2 lines as advised in The Feasibility Study for Mass Transit System in Faisalabad, December 2016.

1. Red Line
2. Orange Line

The parameters of the corridors of Faisalabad BRT System are shown in Table 5-1:

Table 5-1: Faisalabad Bus Rapid Transit System

Line Name	Line Length (Km)			No. of Stations		
	Elevated	At-Grade	Total	Elevated	At-Grade	Total
Red Line	8.85	12.68	21.53	10	14	24
Orange Line	4.68	14.67	19.35	6	15	21
Orange Line (Extension)	-	9.56	9.56	-	8	8
Total	13.53	36.91	50.44	16	37	53

The Alignment of the proposed lines in the Feasibility Study Report for Mass Transit System, Faisalabad are shown in Figure 5-10.

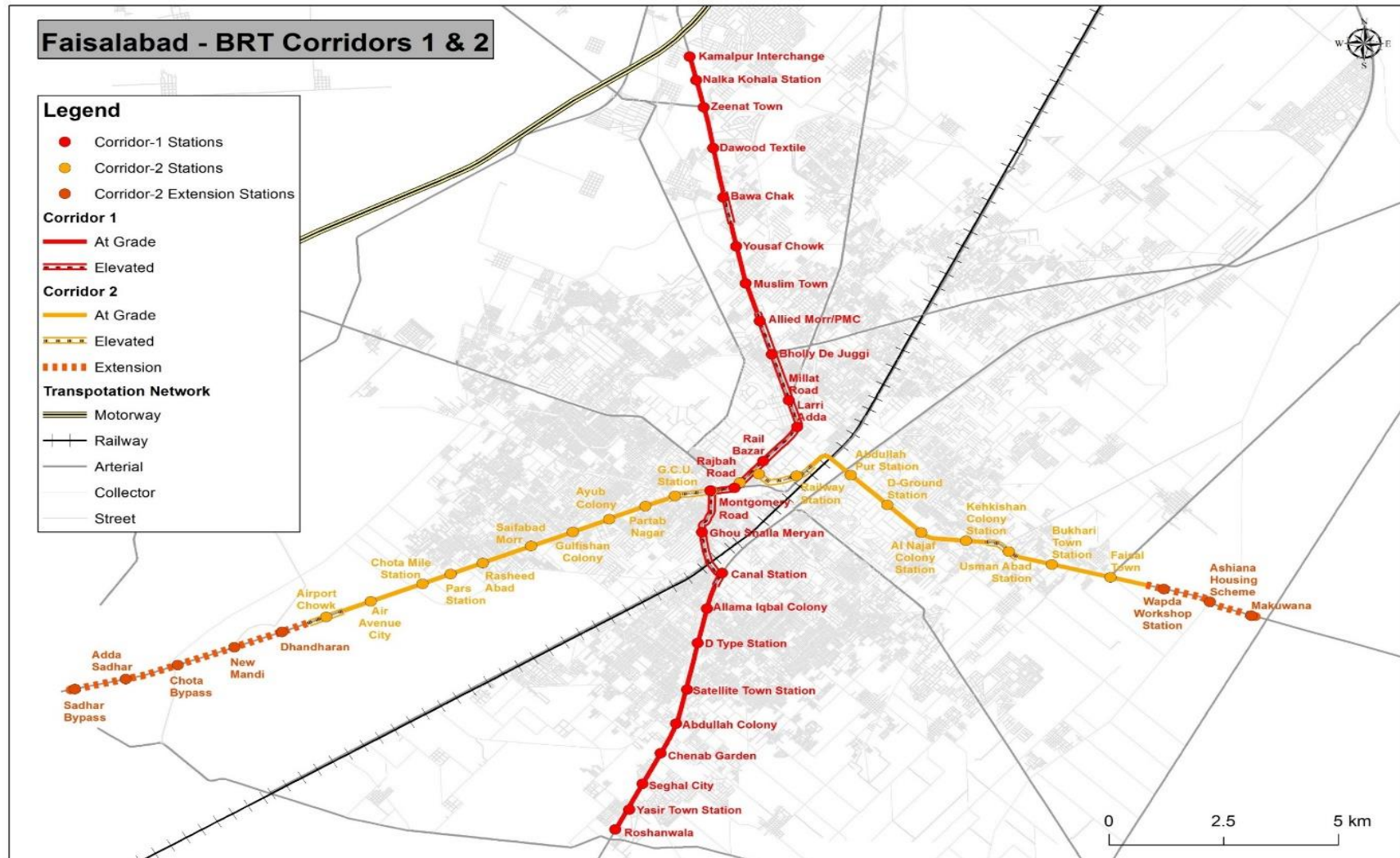


Figure 5-10: Proposed Red and Orange Bus Rapid Transits in Faisalabad

In addition to the BRT system, according to the Feasibility Study Report of Faisalabad BRT, the BRT network consist of feeder routes as well in order to provide the people with a proper feeder network and easy access to the main BRT corridors. The BRT feeder route network for Red line consists of 43 routes with a total length of 664km. Similarly, the feeder route network of Orange Line consists of 41 routes with a total length of approximately 675km.

Table 5-2 and Table 5-3 shows the feeder route networks for Red Line and Orange Line respectively in the Faisalabad BRT network.

Table 5-2: Summary of Integrated Feeders Routes (Red Line)

SUMMARY OF INTEGRATED ROUTES (RED LINE)		
Description	No. of Routes	Route Length (Km)
Phase-I	9	123.21
Phase-II	5	24.70
Phase-III	3	31.21
Phase-IV	12	93.05
Phase-V	4	72.49
Phase-VI	6	230.00
MBS	4	89.40
Total	43	664.07

Table 5-3: Summary of Integrated Feeders Routes (Orange Line)

SUMMARY OF INTEGRATED ROUTES (ORANGE LINE)		
Description	No. of Routes	Route Length (Km)
Phase-I	8	98.71
Phase-II	5	54.51
Phase-III	2	9.28
Phase-IV	12	120.10
Phase-V	4	72.49
Phase-VI	6	230.00
MBS	4	89.40
Total	41	674.49

The feeder routes networks for Red and Orange Line of Faisalabad BRT network are shown in Figure 5-11 & Figure 5-12, respectively.

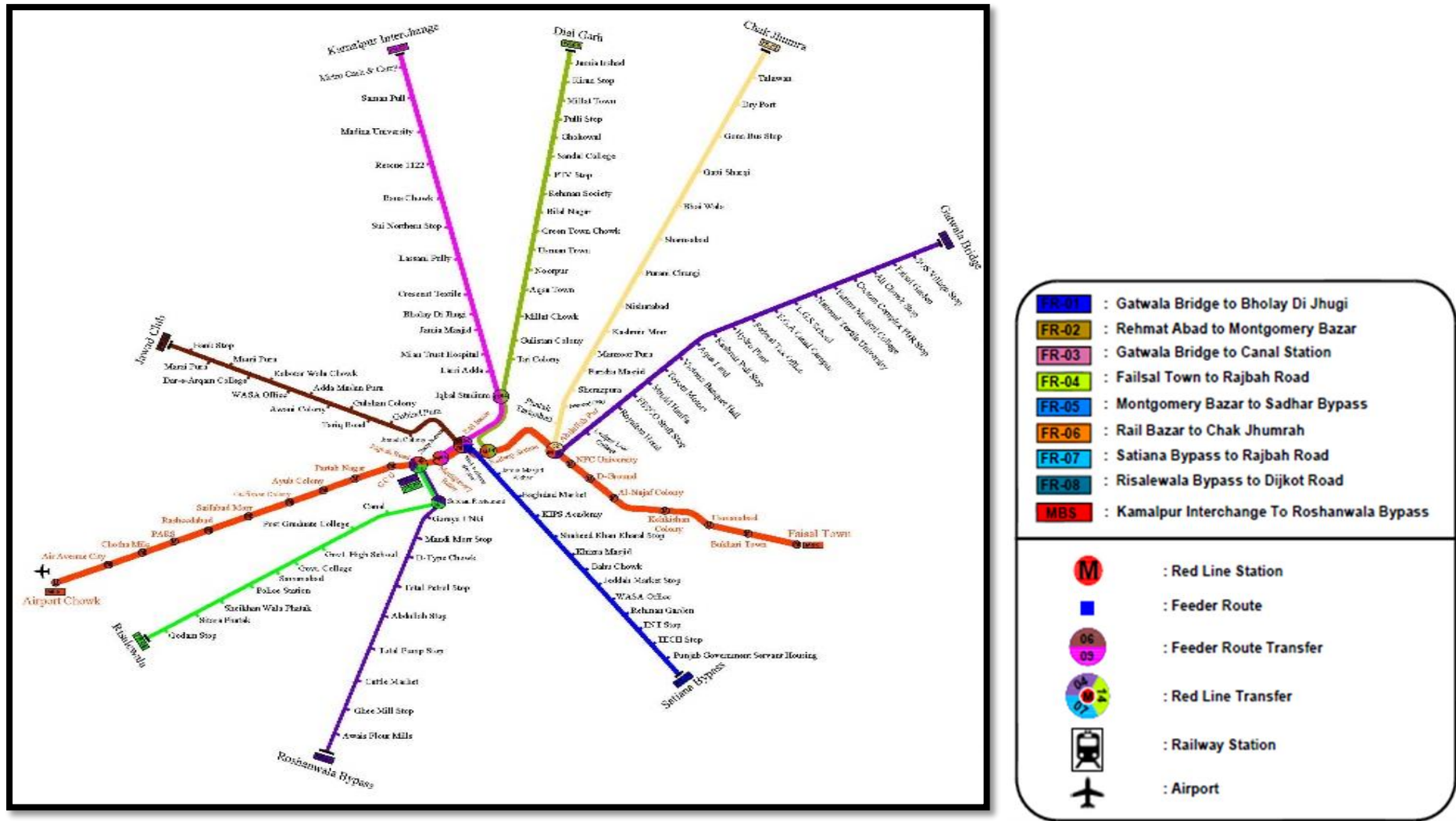


Figure 5-11: Feeder Route Network of BRT Red Line

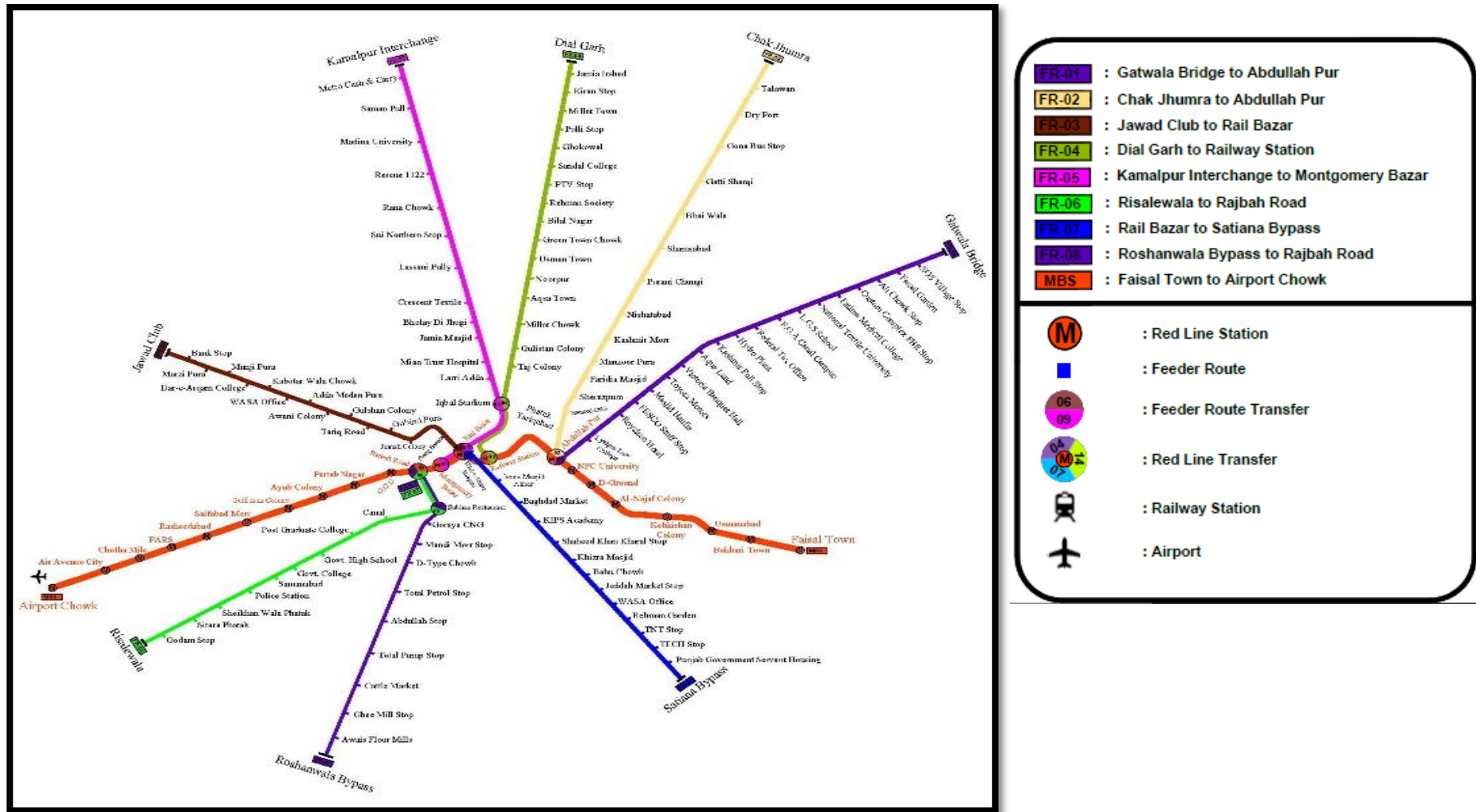


Figure 5-12: Feeder Route Network of BRT Orange Line

5.4.3 Integration of Public Transport System with Mass Transit Network

As we know that majority of the public transport providers in Faisalabad City are privately owned services such as wagons, minibuses, rickshaws and Qingqis. With the future development of Faisalabad BRT System, these services need to be integrated into the Mass Transit Network in such a way that they do not compete in ridership with the Mass Transit System. To achieve this target, following steps should be considered;

- Privately owned services such as wagons and minibuses should be given proper permits to operate in the city.
- The wagons and minibuses can be made part of the feeder route network by designating pre-planned and scheduled routes along the planned feeder routes of the Mass Transit Network.
- All services such as buses, wagons, rickshaws, and qingqis that are not a part of the Mass Transit Network should be removed from the main BRT corridor in order to urge the public to use the efficient articulated bus system only.
- Rickshaws and Qingqis should be allowed to operate inside the city's residential areas to allow people to move from their homes to the feeder routes.

5.4.4 Integration of Mass Transit System with Faisalabad Bypass

The Faisalabad bypass, circling around the city starts from the Pindi Bhattian Motorway (M4) and goes towards Samundari and other adjoining areas. With a number of people travelling via Faisalabad Bypass, it can be a huge prospect for the Faisalabad Mass Transit System. The Mass Transit Lines (Red & Orange) touch the Faisalabad Bypass at some point/station and can provide people moving on the Faisalabad Bypass an opportunity to easily move within the city from the bypass. The points at which the Mass Transit Lines touch the Faisalabad Bypass are shown in Table 5-4:

Table 5-4: Integration of BRT Line with Faisalabad Bypass

Line Name	Stations on Faisalabad Bypass
Red Line	Roshanwala Bypass
Orange Line + Extension	Sadhar Bypass, Makuana

The locations of these points along with the Faisalabad Bypass and BRT Lines are shown in Figure 5-13.

Moreover, the access to Red Line and Orange Line (advised in the Faisalabad Mass Transit Network Feasibility Study) from various points is also possible through feeder routes.

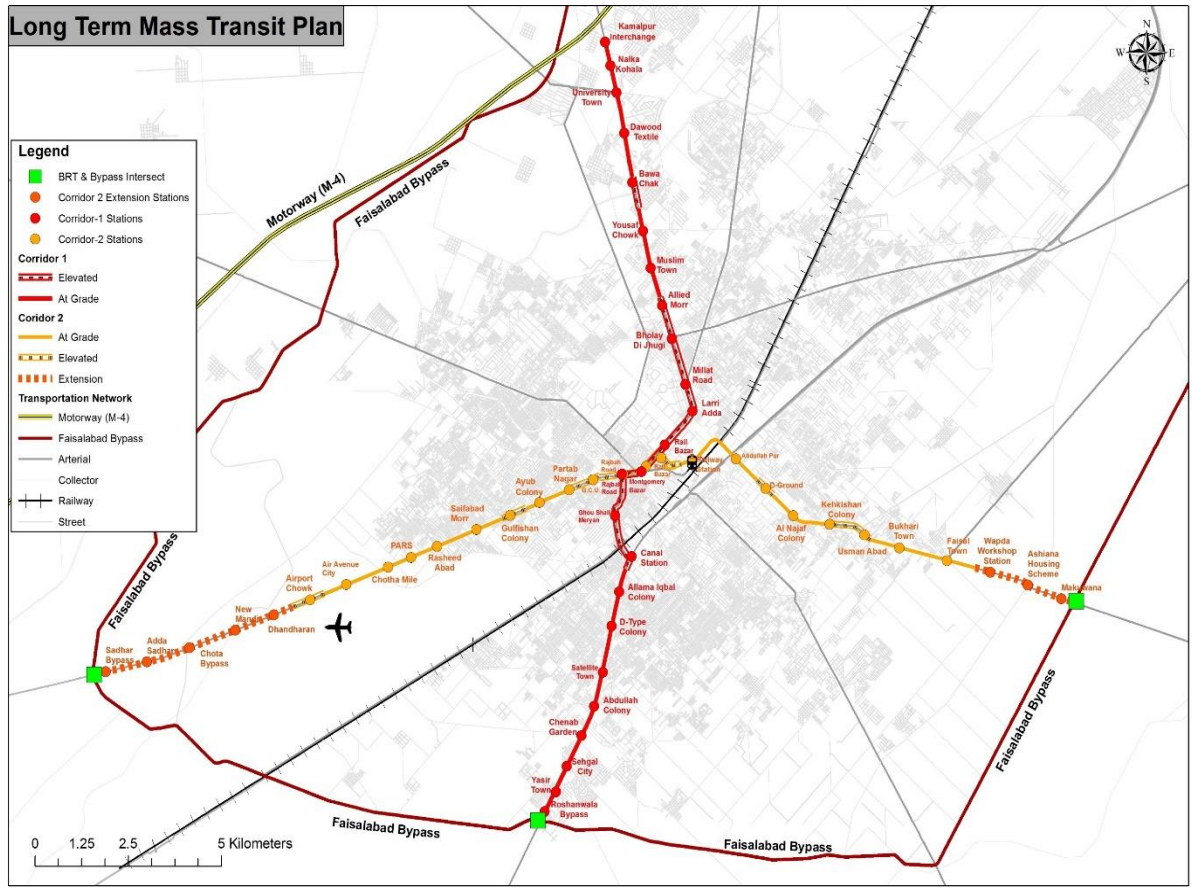


Figure 5-13: Long Term Mass Transit Plan with Stations on Faisalabad Bypass

6. TRAFFIC MANAGEMENT

Mainly due to institutional issues, traffic management is highly inefficient and ineffective in Faisalabad. Main aspects are: traffic laws, management of the public spaces, management of the physical infrastructure, traffic control, management of the drivers, provision of pedestrian facilities, safety of all road users and commercial activities.

6.1 TRAFFIC LAWS ISSUES

In general, traffic related regulations are insufficient, ineffective and obsolete; moreover, enforcement of rules is quite weak. This generally implies a chaotic and an in-disciplined traffic on roads, and therefore results in high rate of accident and even loss of life, injuries and damages to the properties. This chaotic situation is exacerbated by the diversity of the traffic in Faisalabad. The traffic laws are not applied on pedestrians, cyclists, animal-drawn carts and hand-pushed carts, even though these modes make up a larger portion of the total road users. The typical traffic enforcement fines are quite low and are in the range of around PKR 200 to 750.

6.2 MANAGEMENT OF PUBLIC SPACES

Management of public spaces is very poor in Faisalabad which results in an overall slow movement of traffic due to obstructions on the road. Encroachments on the sides of roads such as street hawkers, disorderly movements of pedestrians, animal driven carts and illegal parking result in an overall chaotic traffic scenario with delays and congestions.

Due to limited or no facilities present for movement of pedestrians and cyclists, the overall traffic scenario in Faisalabad is haphazard.

Since most of the traffic on the roads of Faisalabad consist of motorized vehicles like cars, buses, wagons, motorcycles, rickshaws and qingqis, the movement of animal driven carts and other slow moving non-motorized vehicles on the main roads of the city result in long queues at turns, intersections and interchanges. These animal driven carts enter into fast moving traffic and cause serious disruptions as well. These animal driven carts are usually parked on the road or on footpaths which cause hindrance in movements of pedestrians as well.

Due to the encroachments on footpaths and sidewalks, the pedestrians are forced to move on main roads which causes conflicts and results in serious accidents. Solid waste containers are also placed on the side of main roads hence resulting in restricted movement of road traffic. The presence of these encroachments also forces two-wheeler traffic to enter in the fast lanes and cause problems for cars and other larger vehicles. The traffic authorities also do not enforce the laws effectively and do not charge the offenders.

6.3 ROAD SAFETY ISSUES

Road safety measures have not significantly improved in Faisalabad from year 2012 to 2016 as the number of accidents resulting in fatalities has slightly decreased as shown in Table 6-1 below.

Table 6-1: Accident and Fatalities Data

Year	Total Accidents	Fatalities
2012	193	136
2016	149	121

Reference: Bureau of Statistics, Government of the Punjab, Lahore

Vulnerable road users are more exposed to traffic fatalities, including pedestrian, cyclist and motorcyclists due to inadequate walkways and cycle routes. Recent introduction of segregated highways within the city environment has led to severe disconnection, without adequate provision for road crossing via pedestrian bridges, particularly in dense urban areas, resulting in such high fatalities.

6.4 TRAFFIC CONTROL

Traffic control devices include traffic signs, signals, road markings and other devices (CCTV) are used and are key elements for managing traffic flow. There is no standard practice of using uniform traffic control devices in the Faisalabad, as well as Punjab. Also, many of the traffic signals are inoperative and signage is almost non-existent.

6.5 DRIVER AWARENESS

Most drivers especially who operate public transport vehicles such as rickshaws and wagons are untrained and do not follow traffic rules. They usually do not follow speed limits on major road and frequent lane changes result in accidents and traffic incidents. There is a significant safety issue concerning the motorbikes use, sometimes transporting two or more passengers, often without helmet for both driver and passengers. The general situation causes a fatal failure to follow traffic rules, which in turns leads to worsening of congestion level and contribute to road accidents.

6.6 PUBLIC MANAGEMENT ISSUES

Public management refers to the effective management of public movement across the city so that the public does not cause chaos in traffic system. In Faisalabad there are numerous issues with public management and movement.

1. In Faisalabad there are limited footpaths and sidewalks provided for the free movement of people.
2. Encroachments of motorized and non-motorized vehicles on sides of roads and on footpaths cause obstructions in movements of general public and pedestrians.
3. Proper road crossings are not provided on main roads due to which jaywalking is a serious issue which leads to road accidents sometimes resulting in fatalities.
4. The public is not educated enough to use crossing facilities like zebra crossings on signalized intersections.
5. Due to the lack of proper parking facilities in business hubs and areas with high commercial activities, the public is forced to adjust along with the illegally parked vehicles.
6. Enforcement of laws for public movement are also not regulated by authorities. These laws prevent the illegal movement of public on the roads especially jaywalking.
7. A proposal is shown below in Figure 6-1 which depicts tentative locations of pedestrian bridges or underpasses to facilitate pedestrian movements across the roads. The locations were marked near commercial / shopping hubs, hospitals, major parks, universities and major colleges, major intersections, bus stands (G.T.S., Larri Adda, Daewoo, etc.) and Railway Station, where the pedestrian bridges / underpasses were not available. Total proposed bridges locations are 52 and shown on the map. These may be constructed in phases depending on the location with respect to the downtown and major junctions warranting safety of pedestrian movements.

6.7 COMMERCIAL ACTIVITIES

The commercial activity whether whole sale or retail is mainly concentrated in the CBD area i.e., around the Clock Tower in eight bazars and on the Circular road. Faisalabad is the 3rd largest city of Pakistan and has earned reputation internationally for the manufacturing of fine textile, yarn, printed cloth, coarse cloth, oil, ghee, soap, sugar, chip board and agricultural tools etc.

In the preceding years no effort has been made to decentralize the commercial activities. This resulted into congestion in the CBD area. This state of affairs led to a number of problems in various fields, such as vehicular traffic, pedestrian movement, noise etc. However, FDA has made tremendous efforts in redressing this situation by providing the following markets/commercial areas in the different parts of the city.

1. Faisal Market
2. Quaid-e-Azam Market
3. Dijkot Road Market
4. Cotton Mills Road Market
5. Samundri Road Market
6. 212 Market
7. Iron Market
8. Faizabad Market
9. Shaheed-e-Millat Market
10. Millat Town Commercial Area.

This has helped a lot in relieving the ever-increasing burden on the CBD and also the people have easy access to their commercial needs. The traffic problems which were getting serious have been solved to a considerable extent. This has good effects on health, safety and convenience of the people. The commercial land use of Faisalabad city is depicted in Figure 6-2.

At most of the commercial areas, no space is available to plan designated parking plazas, however, in clock tower eight bazaar area at three locations parking plazas have been proposed. Two more parking plaza locations in Eight Bazaar Area were identified by Faisalabad Transport Company representative during Consultative Meeting on Traffic and Transportation on 26th November 2020. Besides, new commercial zones have been planned in Khurrianwala and accordingly parking plazas will be planned in detailed plans of the commercial zones.

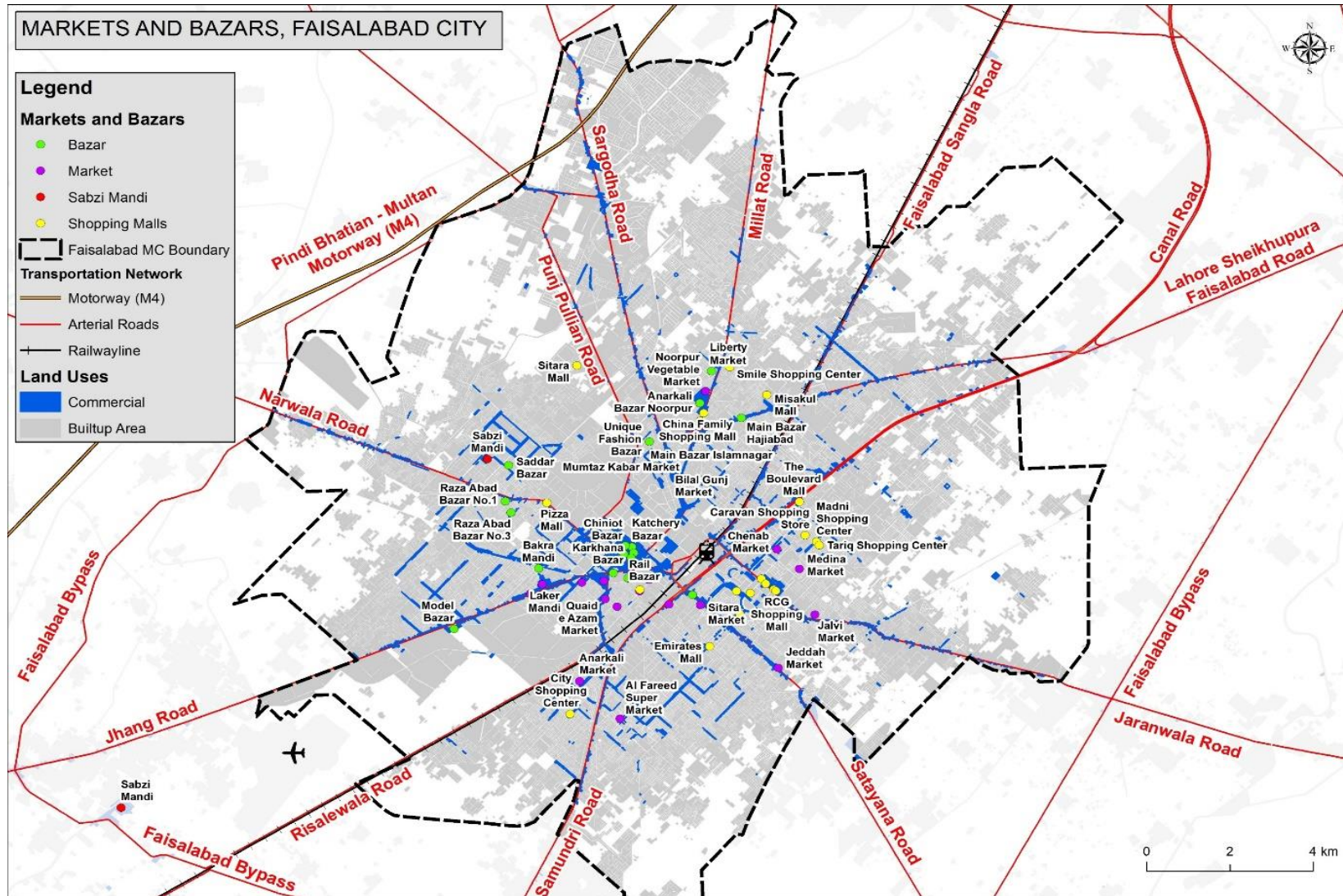


Figure 6-2: Commercial Land use of Faisalabad City

7. TRANSPORT SECTOR DEVELOPMENT PROJECTS IN FAISALABAD

The entire Master Plan period 2020-2040 has been divided into three phases for development of transport sector projects i.e., first phase spread over five years from 2020-2025 is categorized as Short Term Development Projects (STDP), 2nd phase also spread over next five years from 2025-2030 is categorized as Mid Term Development Projects (MTDP), and third phase spread over ten years from 2030-2040 is categorized as Long Term Development Projects (LTDP). However, this is tentative phasing which can be reviewed keeping in view the priority and available funding for the development of Transport Sector Development Budget.

7.1 SHORT TERM DEVELOPMENT PROJECTS (STDP) – 2020 TO 2025

Faisalabad needs road development projects which can improve the traffic situation in the city and provide the people with a free, fast and reliable method of vehicular movement around the city. The road network of Faisalabad needs immediate improvement warranting road rehabilitation and re-construction. Besides, the road right of way (ROW) needs to be clear off all encroachments especially on footpaths. Traffic management include repair and operation of existing traffic signals at major junctions, traffic signs and pavement markings and channelization of major intersections for turning movements. By improving road infrastructure and traffic management, the capacity of inner-city roads could be enhanced temporarily up to 20-25%.

The short-term development projects discussed in the following paras are conceptual only for the Master Plan of Faisalabad. Further refinement through preliminary design and detailed design by appointed Consultants of the executing agency will be required prior to preparation of tender documents for execution of these projects. The rough cost given in Table 7-4 is indicative only based on similar projects.

7.1.1 Roads Rehabilitation and Reconstruction

Road rehabilitation include overlay and minor repairs, whereas full depth pavement reconstruction will be required at deteriorated segments of road network. It will also include construction of footpaths, median, islands, drains, traffic signs and road markings, etc. Major road network as discussed in Section 2 include the following:

1. Faisalabad Bypass
2. Canal Road
3. Sheikhpura Road
4. Jaranwala Road
5. Satayana Road
6. Sammundri Road
7. Gojra Road
8. Jhang Road
9. Narwala Road
10. Punjpullian Road
11. Sargodha Road
12. Millat Road
13. Sangla Hill Road

7.1.2 Proposed New Road Network

Efforts have been made to follow the existing revenue paths / tracks to strengthen the future circulation pattern in the areas expected to be developed in next 20 years. Most of the

proposed new roads except few roads are on the existing revenue paths. Road network has also been proposed within the FDA area. In doing so, in some areas very good gridiron pattern has emerged. In the peripheral area of the city a good gridiron pattern can be observed linking villages / small settlements, specifically, on Faisalabad-Sangla Hill Road in between the West Canal Road and Millat Road. Similar pattern can be observed on south western side of the city beyond Faisalabad bypass.

The inner-city traffic can be improved by taking improvement measures proposed in this chapter, like carpeting of the existing major roads, marking of lanes, signalization, ensuring footpaths along roads for safe pedestrian movement, proper parking arrangements, phasing out of slow-moving traffic in the town center, etc. No new road could be introduced in the central area of the town. However, to facilitate the traffic movement a Ring Road has been proposed which would reduce traffic pressure in the town center to some extent.

The alignment, design and Right-of-way of these proposed roads is preliminary and can be finalized at the time of the detailed feasibility study of the project before execution.

Some of the proposed links looks very important and needs to be developed within next five years have been included in the STDP (first phase) because if these are not constructed immediately then it would be difficult to execute them due to expansion of the built-up area and it would be too late to develop these roads/links.

It is also proposed that Right-of-way (ROW) of all the roads connecting two settlements may be fixed as 80 ft. wide. If it is difficult to acquire land immediately due to lack of funding, then construction may not be allowed 40 ft. from center of the revenue road on either side. In this way 80 ft. wide ROW can be ensured through development control without spending money on acquisition of land for the ROW. This rule may be applied on all other roads having ROW of 100 ft., 120 ft., 150 ft. and 220 ft. but these roads and their ROWs may be notified in the official gazette for the information of general public and all other stakeholders. Four width of roads have been proposed depending upon the importance of the proposed link. The break-up of the roads i.e., number of roads and length of roads with reference to the Right-of-way in given in the Table 7-1 below:

Table 7-1: Proposed New Road Network

Sr. No	Proposed ROW	No. of Roads	Length (km)
1	80	27	109.7
2	100	39	292.6
3	120	20	157.1
4	150	6	80.0
Total		105	639.4

Out of total number of proposed roads of 104, roads having 80 ft. Right-of-way are approximately 27%, 100 ft. Right-of-way are 42% and 31% roads are having Right-of-way more than 100 ft. The proposed new road network with respective ROWs is shown in Figure 7-1.

The total length of all the proposed roads becomes 750 kilometers (approx.), this does not include Ring Road, Bypass and Expressways. All the proposed roads would be developed in the next 20 years in phases. Three phases have been proposed i.e., STDP - Phase I (2020-25), MTDP - Phase II (2025-30) and LTDP - Phase III (2030-40). The break-up of these roads with reference to the Right-of-way and phases is given in the Table 7-2 below:

Table 7-2: Number of Proposed Roads, Right of Way, Length and Phasing of Development

Phase	No. of Roads				Total Number of Roads	Length of Roads in km				Total Length of Roads (km)
	80 ft. ROW	100 ft. ROW	120 ft. ROW	150 ft. ROW		80 ft. ROW	100 ft. ROW	120 ft. ROW	150 ft. ROW	
STDP (Phase I)	10	22	13	1	46	38.9	164.9	59.4	10.4	273.6
MTDP (Phase II)	8	9	-	1	18	29.7	63.4	-	14.8	107.9
LTDP (Phase III)	9	8	7	4	28	41.0	64.3	97.7	54.8	257.8
Total	28	41	20	6	92	109.7	292.6	157.1	80.0	639.4

Phasing for Development of Road Network

Most important roads and the roads falling in the area expected to be developed in the next five years have been included in STDP (first phase), while the other roads have been included in the next two phases. Out of total length of about 750 kilometers, 40% length of roads fall in STDP (First Phase) and 40% in LTDP (Third Phase) while 20% length of roads fall in MTDP (Second Phase) of development. Major part of the Phase-I roads is coming within the Faisalabad Bypass, while major part of the Phase-III roads is coming beyond Faisalabad Bypass.

Cross-Section of the Proposed Roads

Cross-Section of four types of roads having Right-of-way of 80 ft., 100 ft., 120 ft. and 150 ft. has been prepared as shown in Figure 7-3.

7.1.3 Improvement of Major Intersections

Most of the major junctions in Faisalabad need channelization to improve their functionality. It will primarily include construction of Islands, resurfacing, drainage, footpaths, median, traffic signs and road markings, etc. Besides, most of the existing signalized intersections warrant rehabilitation to make them fully functional. Traffic police will be required at each signalized intersection for strict adherence to the traffic lights by drivers. Major intersections are listed below in Table 7-3 and shown in Figures 7-4 and 7-5:

Table 7-3: Major Intersections in Faisalabad

S#	Name of Intersection	Type	Signal
1	Kashmir Pull	Bridge Crossing on Canal, 4 Leg, Currently Underpass Under-construction	
2	Pipanwala Pull	Bridge Crossing on Canal	
3	Tattah Pul	Bridge Crossing on Canal, 4 Leg	
4	Abdullah Pur	Bridge Crossing on Canal, 4 Leg, Underpass along Canal Road	
5	Jhal Chowk	Underpasses and Flyovers Exist	
6	Novelty Chowk (Old name Jawala Nagar Chowk)	3 Leg	
7	Abbas Chowk	3 Leg	
8	McDonald Chowk	4 Leg	Signalized
9	GTS Chowk	4 Leg, Roundabout	

S#	Name of Intersection	Type	Signal
10	Hilal-e-Ahmer Chowk	4 Leg, Roundabout	
11	Mian Trust Chowk	3 Leg	Signalized
12	Chishtia Chowk	4 Leg	Signalized
13	Bholay di Jhugi	3 Leg	
14	Imam Bargah Chowk	4 Leg	Signalized
15	Narwala Chowk	3 Leg	
16	Jinnah Colony Chowk	4 Leg	Signalized
17	Allied Mor Chowk	4 Leg	Signalized
18	Jaranwala D Ground 1st intersection	3 Leg	Signalized
19	Jaranwala D Ground 2nd intersection	3 Leg	Signalized
20	D type pull	4 Leg, Small Roundabout	
21	Minerva Cinema Chowk (Old name Jhang Bazar Chowk)	5 Leg, Water body exist in Center, U-turns Exist	
22	Chenab Club Chowk	3 Leg	Signalized
23	Gumti Chowk	4 Leg, Small Roundabout	
24	Station Chowk	4 Leg, Roundabout	Signalized
25	Chiniot Bazar Chowk	3 Leg	Signalized
26	Kotwali Chowk	4 Leg	Signalized
27	Babar Cinema Chowk (Also Known as Chenab Chowk)	4 Leg	Signalized
28	Nadir Chowk	3 Leg	Signalized
29	University Chowk	4 Leg	Signalized
30	Jail Road T-Junction	3 Leg	Signalized
31	Allied Hospital	3 Leg	Signalized
32	Millat Chowk	4 Leg	Signalized
33	Larri Adda Intersection	3 Leg	Signalized
34	Zila Council	3 Leg	Signalized
35	Susan Road Intersection	3 Leg	Signalized
36	Chen one Intersection	3 Leg	Signalized
37	Radio Pakistan	4 Leg	Signalized
38	Talib Jalandri Chowk	3 Leg	Signalized
39	Kohinoor Chowk	3 Leg	Signalized
40	Bilal Chowk	4 Leg	

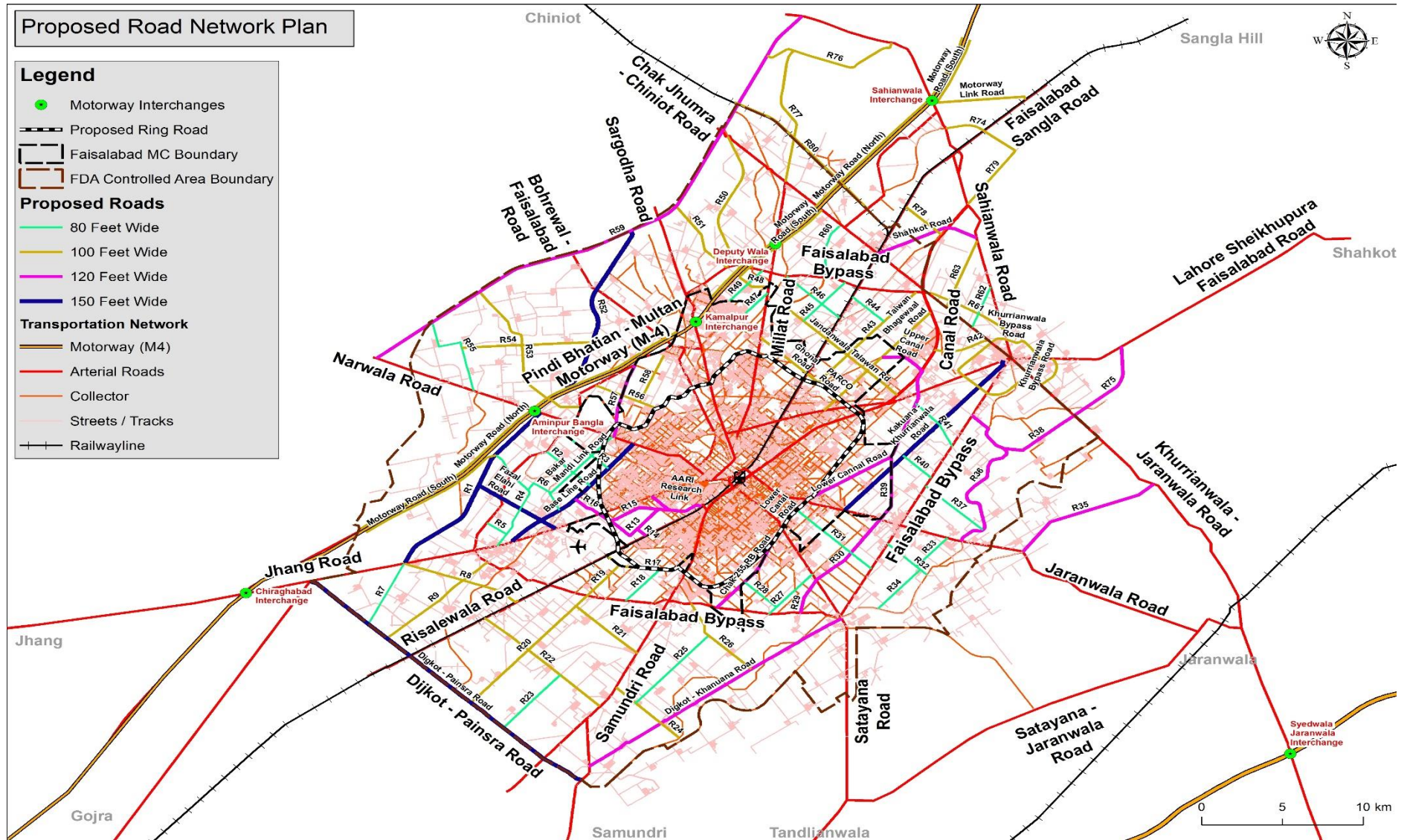
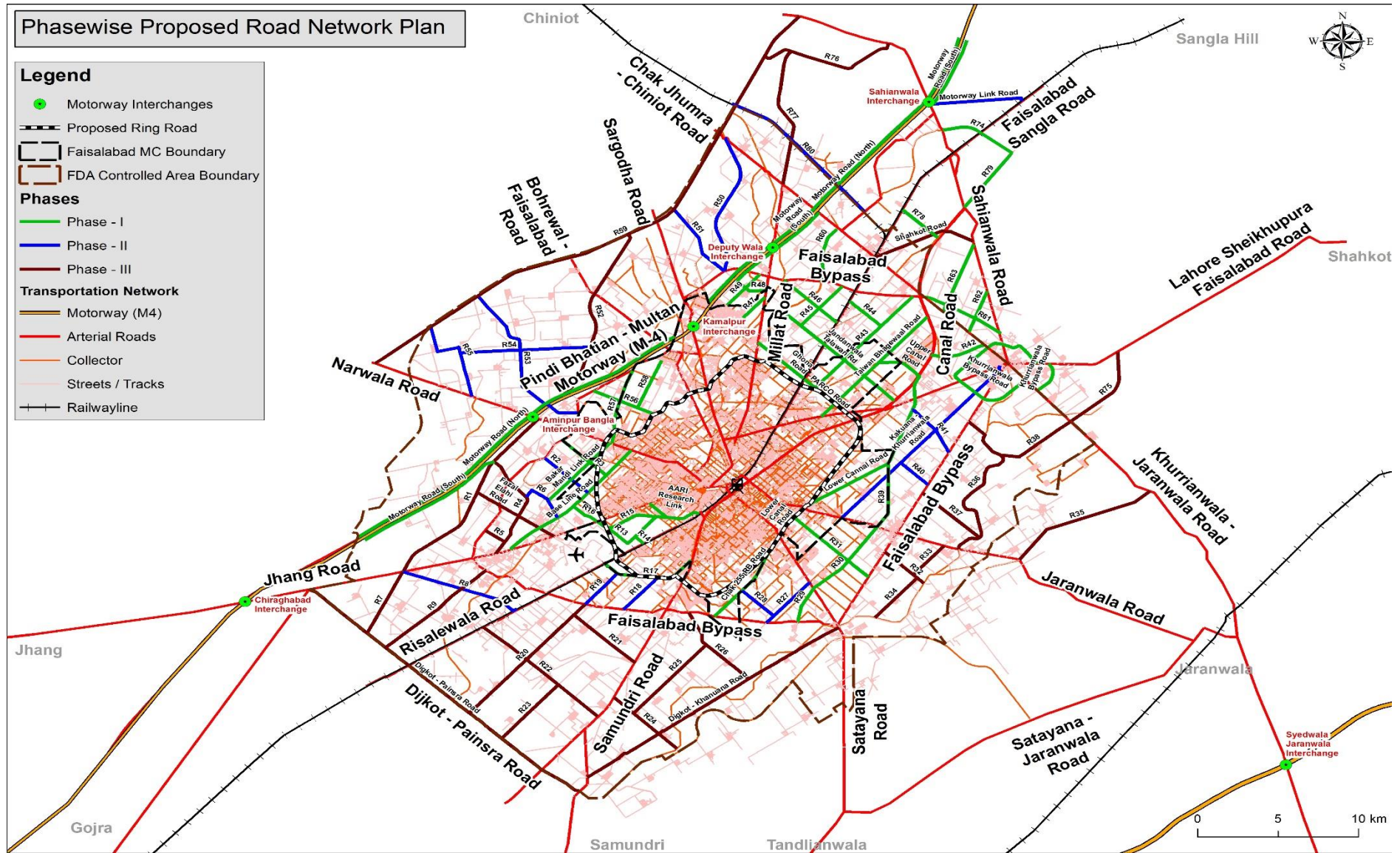


Figure 7-1: Proposed New Road Network with ROWs



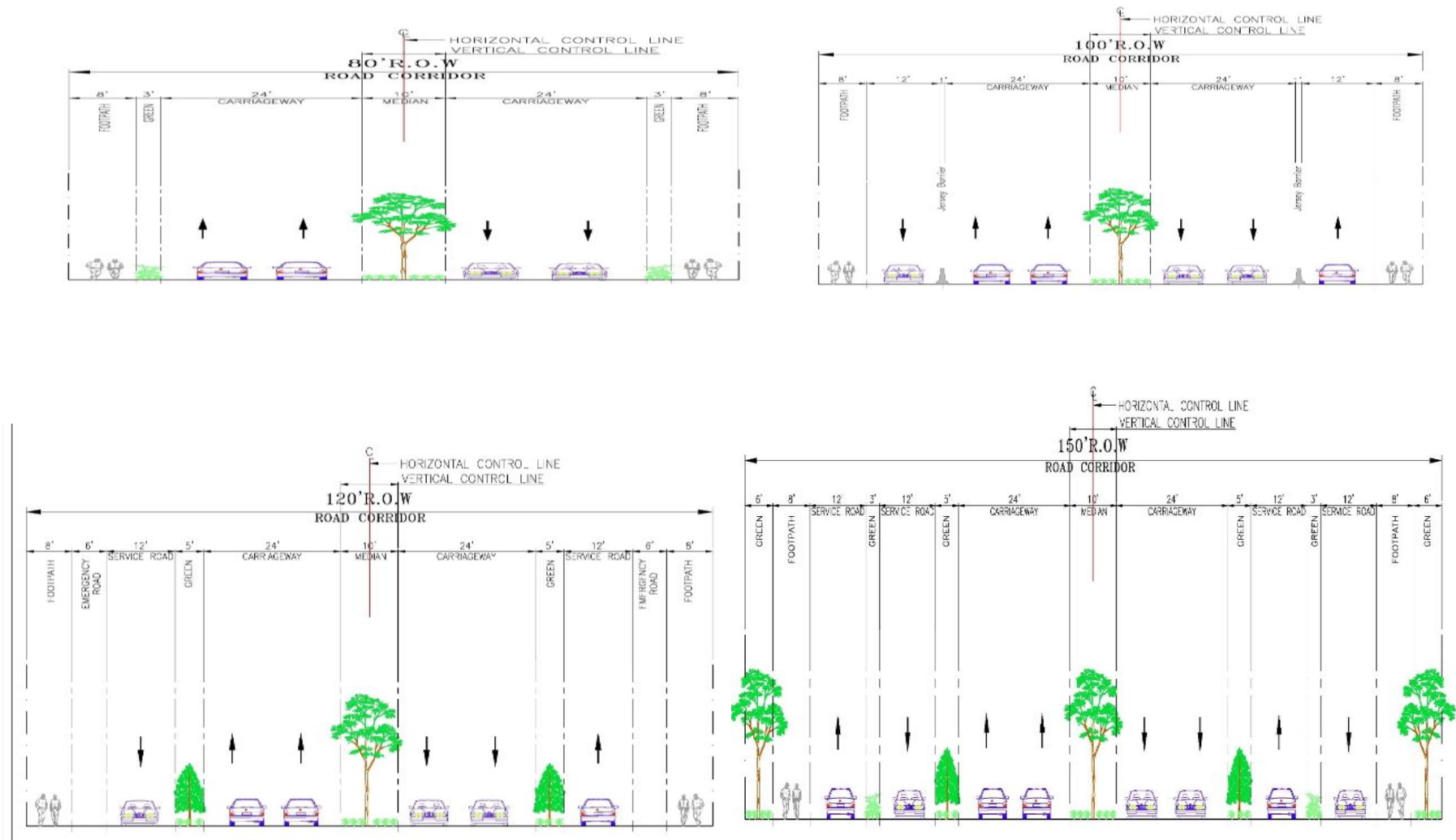


Figure 7-3: Typical Road Cross Sections for Proposed New Road Network

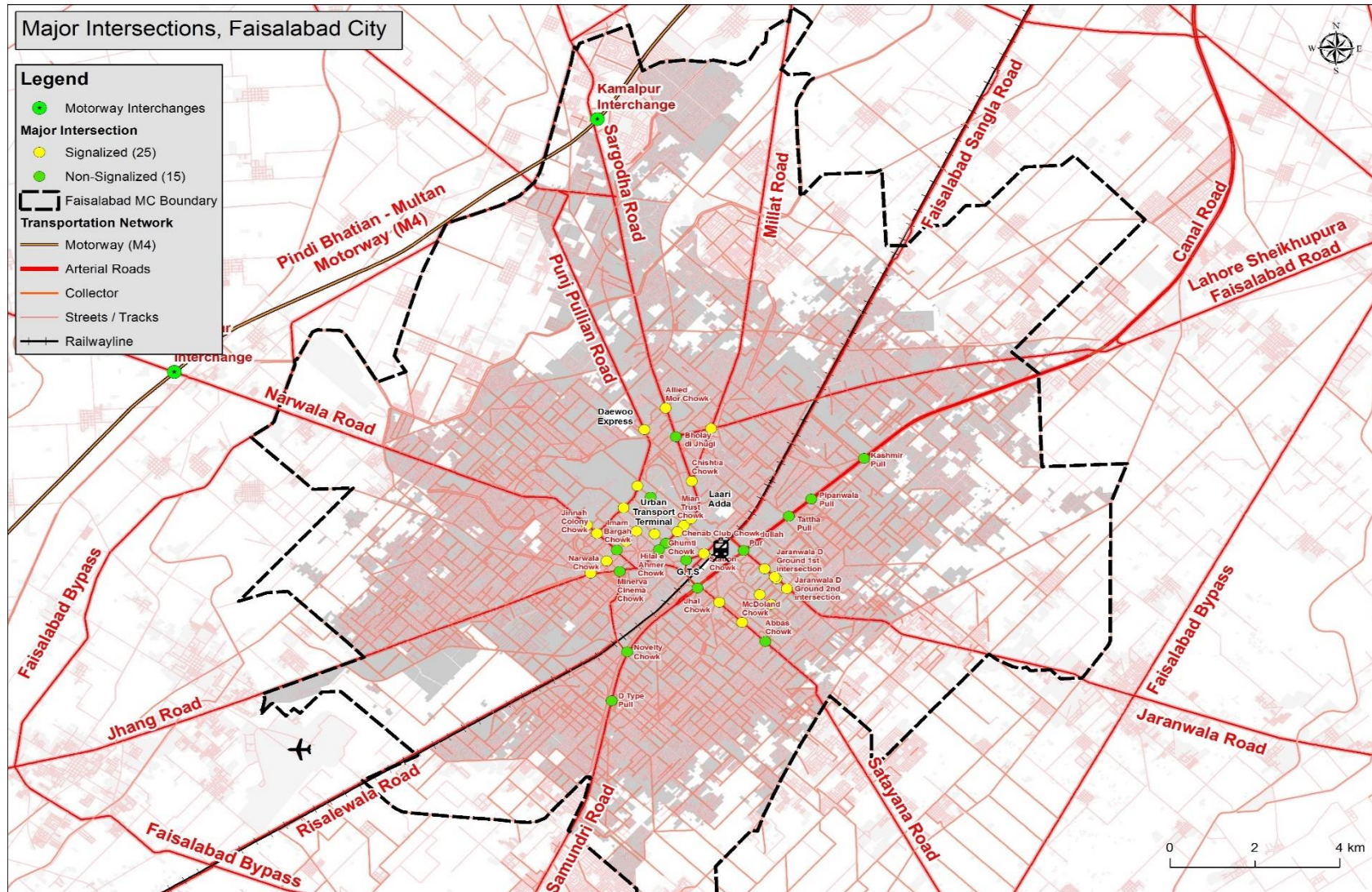


Figure 7-4: Major Intersections in Faisalabad

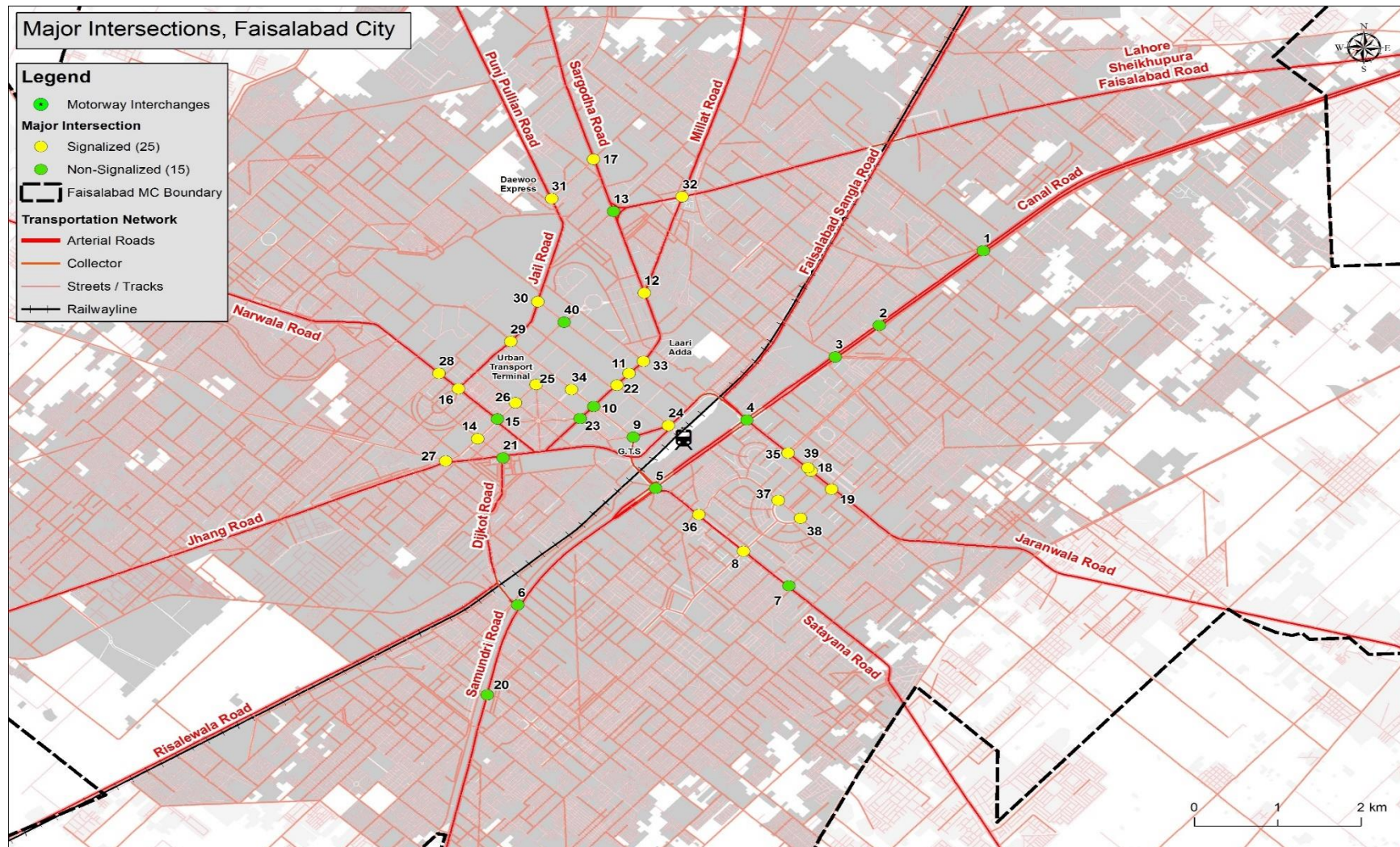


Figure 7-5: Major Intersections in Faisalabad (Blow up View)

7.1.4 Pedestrian Movement

Due to lack of footpaths, walkways the movement of pedestrians in the city especially in the center of the town is very unsafe. Foot paths are usually encroached by traders and vendors. This state of affairs result in conflict between pedestrians and vehicular movement. With the growth of traffic such conflicts are likely to increase in magnitude. Absence of proper road signs, Zebra crossings further increase the risk of vehicle-pedestrian accidents. Section 6 already covers the issue in depth and Figure 6-1 shows the proposed location of pedestrian bridges / underpasses to be constructed. An awareness campaign will also be required to educate people to use the pedestrian crossings for their own safety.

7.1.5 Parking and Parking Plazas

As discussed in Section 4, lack of adequate parking space is apparent especially in the central areas. People are forced to park their vehicles along road sides of circular road. The problem is serious one and with the increasing number of cars in the city the need for more parking areas is obvious. In the research study done in 2018 by Engr. Hassan Zaheer of FDA and others, three sites for parking garages were identified in the vicinity of Eight Bazaar area as shown below in Figure 7-6 with further details of each site in Figures 7-7 to 7-9:

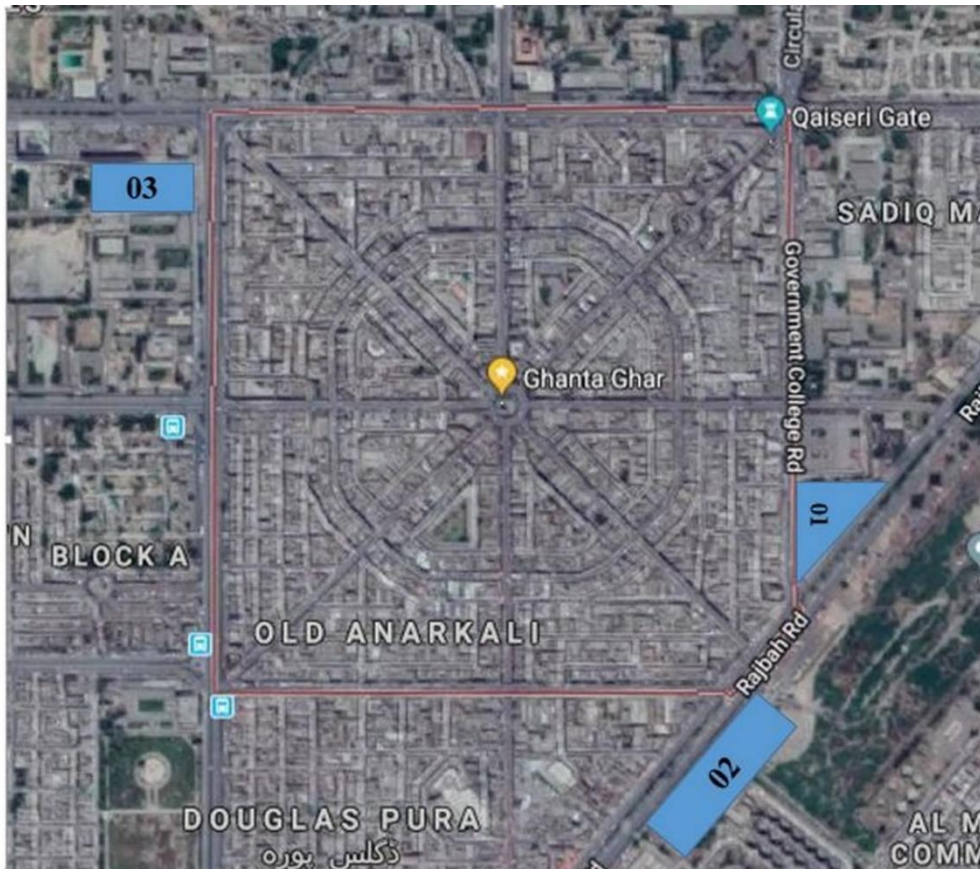


Figure 7-6: Proposed Sites for Parking Plazas

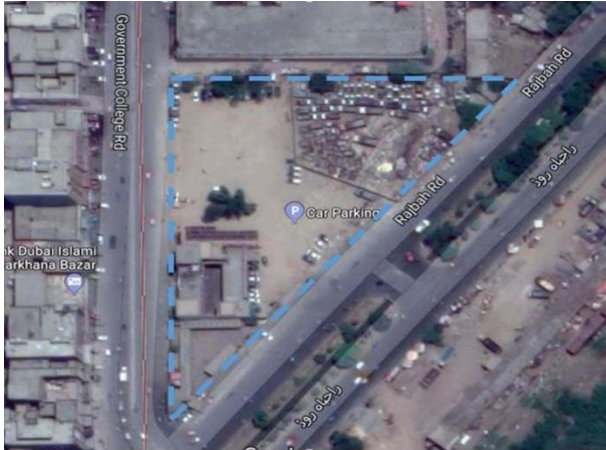


Figure 7-7: Parking Plaza Site 1



Figure 7-8: Parking Plaza Site 2

(Old MCF Building Parking site on Circular Road)

(Railway Parking Along Rajbah Road)

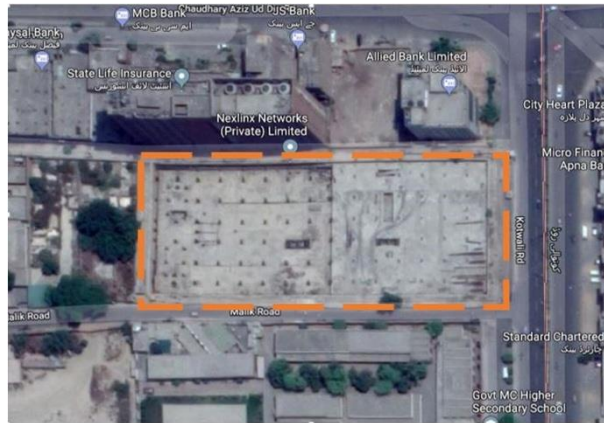


Figure 7-9: Parking Plaza Site 3

(Under Construction on Kotwali Road)

Site 1 on MCF Old Building on Circular Road will be constructed on 49,162 sq. ft. (9 Kanals) with 5 floors to handle 700 cars. Site 2 on existing Railway Parking on Rajbah Road on 150,754 sq. ft. (28 Kanals) will have 2 floors to handle 520 cars. A Parking Plaza-cum-Shopping Mall is being constructed in the vicinity of circular road confronting the Kotwali Road (Shown as Site 3 in Figure 7-9), comprising total area of the plot 72,207 sq. ft. i.e. 13.2 Kanals according to the Bye-Laws of Local Development Authority with basement + eight storeys having capacity of around 1422 Cars & 1200 Motorbikes (Hassan et al 2018). However, the construction of the Parking Plaza is on hold for the last couple of years.

During consultation of Master Plan on Traffic & Transportation of Faisalabad with stakeholders on 26th November 2020, two more parking plaza sites for eight bazaar area was identified by representative of Faisalabad Parking Company. Site 4 is on Aminpur Bazar, opposite to the Imam Bargah and has an area of 9792 sq. ft. (1.8 Kanals) with 2 floors for parking. Site 5 is near Zail Ghar at entrance to Katchery Bazar and has an area of 8704 sq. ft. (1.6 Kanals) with 2 floors for parking, which are depicted in Figures 7-10 to 7-12:

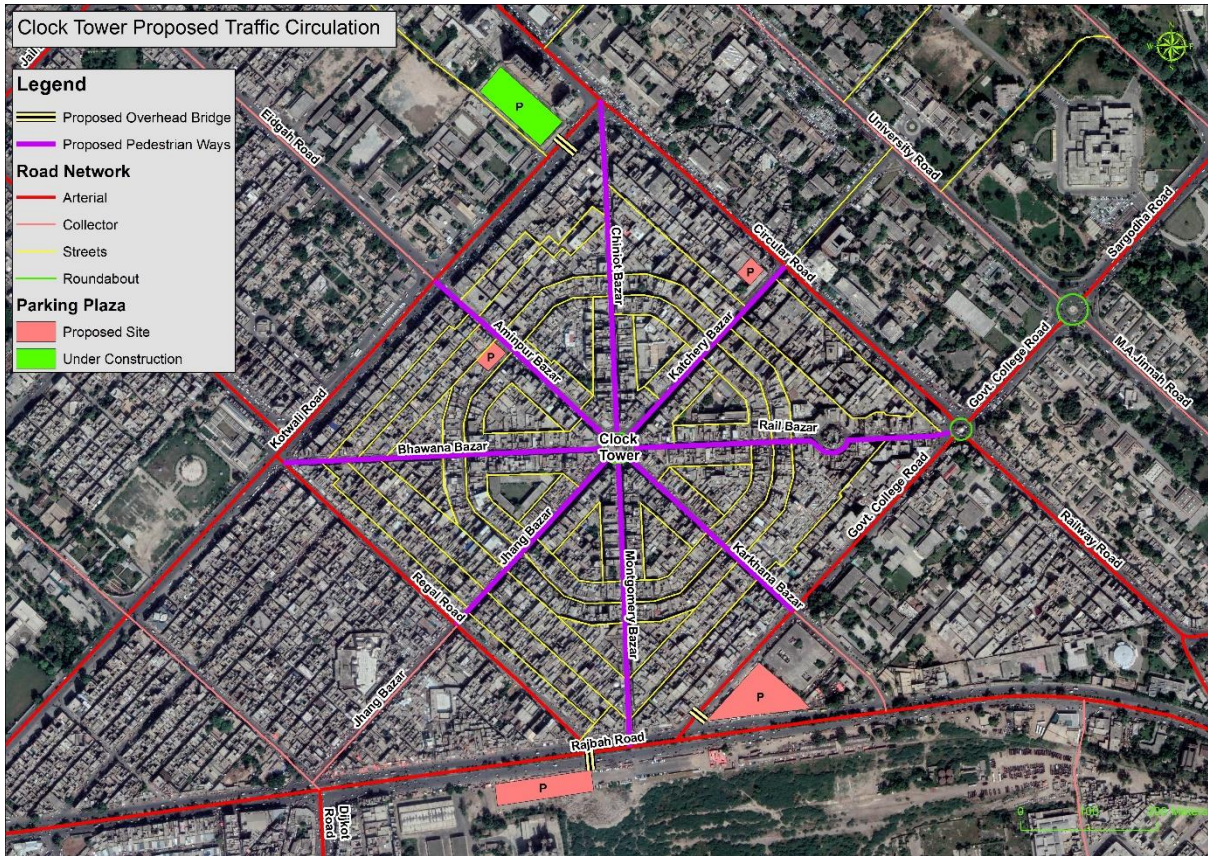


Figure 7-10: Proposed Additional Sites 4 and 5 for Parking Plaza with Eight Bazar Area



Figure 7-11: Parking Plaza Site 4

Figure 7-12: Parking Plaza Site 5

(Along Aminpur Bazaar, Opposite to the Imam Bargah)

(Near Zail Ghar at Entrance to Katchery Bazaar)

The Parking of Bikes may also be accommodated in the Parking Plazas and this would further reduce the congestion on the roads. These Parking Plazas may be developed through PPP mode. The location of the Parking Plaza plays important role in its success; therefore, these may be developed at a walking distance from busy business areas.

7.1.6 Pedestrianization of Eight Bazaar Area

To give relief to the traffic congestion in eight bazars, all bazars may be made pedestrian friendly by banning vehicular traffic in the evening as shown below in Figure 7-13. Much more is needed to be done to improve the traffic and parking situation in these bazars like removal of encroachments, removal of advertisement boards from the footpaths, adjustment of the parking facilities, installing traffic signs and signals, improvement of physical condition of roads and footpaths, road marking, improvement of geometry of intersections, etc. Besides, the use of donkey-carts and tractor trolley needs to be discouraged and phased out with the passage of time to improve traffic in the area.

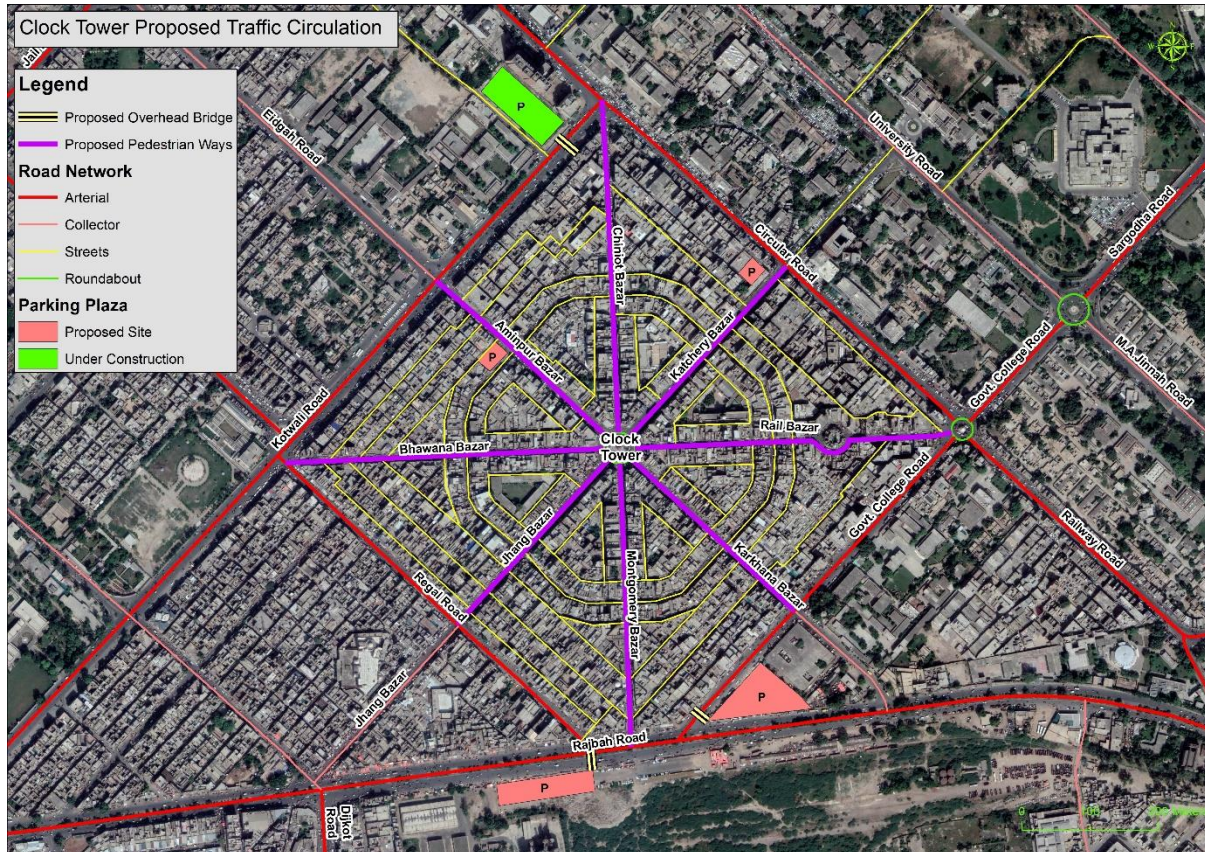


Figure 7-13: Pedestrianization of Eight Bazaar Area

7.1.7 Flyovers / Underpasses:

There are 6 level crossings in the city which are very significant due to located in densely built-up areas. Railway track divides the city into two parts. Overhead bridges have been constructed on four level crossing to ensure smooth flow of traffic and to avoid delays. Due to increase in frequency of trains and increase in average time of gate closure overhead bridges on all important level crossing has been justified. Flyovers or underpasses are required at following locations where analysis warrant grade separation traffic:

1. GTS Chowk (Railway Road to Church Road)
2. Hilal-e-Ahmer Chowk (GTS Chowk to Katchery)
3. Hilal-e-Ahmer Chowk (Gumti to Chenab Chowk)
4. Railway Station at Chak Jhumra
5. Faisalabad Bypass (2 locations)

Refer Table 7-4 for approximate budget needed for short term development projects:

Table 7-4 Approximate Budget Amount for STDP

S. No.	Project Description	Qty.	Unit	Rate (Pak Rs.)	Budget Amount (Pak Million Rs.)
1	Roads Rehabilitation	280	Km.	52,175,000	14,609
2	Roads Reconstruction	70	Km.	122,187,500	8,553
3	Proposed New Road Network (Phase I)	295	Km.	111,177,583	32,797
4	Improvement of Major Intersection	40	Nos.	45,000,000	1,800
5	Repair of Existing Signals to Make them Operational	25	Nos.	45,000,000	1,125
6	Traffic Signs and Pavement Markings	350	Km.	3,500,000	1,225
7	Parking and Parking Plazas near Eight Bazaar Area (290,619 sqft. Floor Area, 5 Nos.)	987,339	Sqft.	7,500.00	7,405
8	Pedestrianization of Eight Bazaar Area	464,000	Sqft.	300	139
9	Pedestrian Bridges in CBD Area (Phase 1 - 10 Out of 52)	10	Nos.	65,000,000	650
10	Flyover / Underpasses	6	Nos.	900,000,000	5,400
Sub-Total Amount Million Rs.					73,703
Consultancy Services for Preliminary Design, Detailed Design, Tender Documents and Construction Supervision of STDPs (5% of Total Cost)					3,685
Total Amount Million Rs.					77,388

7.2 MID TERM DEVELOPMENT PROJECTS (MTDP) – 2025 TO 2030

There are several projects which need to be undertaken under Mid Term to develop the transport sector of Faisalabad. The major ones include rehabilitation of Faisalabad Bypass, construction of segments of Ring Road and Khurrianwala bypass and bus stand. Besides, a link of M3 Industrial Estate with Faisalabad Bypass, an interchange on M3 on Satayana road, improvement of existing links and junctions within Science city, airport connection with Risalewala road and railway station are also proposed as part of MTDP.

The mid-term development projects discussed in the following paras are conceptual only for the Master Plan of Faisalabad. Further refinement through preliminary design and detailed design by appointed Consultants of the executing agency will be required prior to preparation of tender documents for execution of these projects. The rough cost given in Table 7-8 is indicative only based on similar projects.

7.2.1 Faisalabad Bypass

The Faisalabad Bypass is an expressway constructed that bypasses the Faisalabad city starting from the Motorway (M-3) and providing approaches to outer areas of the city such as Sahianwala, Lahore, Sheikhupura, Jaranwala, Satayana, Sammundari, Risalewala, Jhang Narwala, Sargodha, Sangla, etc. The traffic from the internal parts of the city and other adjoining areas use the Faisalabad Bypass in order to move to other cities via Motorway. Most of the segments of Faisalabad bypass are in deteriorated condition warranting rehabilitation of the 95 km bypass.

The Right-of-Way of Faisalabad Bypass is not uniform throughout its length. This is not desirable from traffic point of view. Moreover, it is a single carriageway. Keeping in view the importance of this road in future, it is proposed that Right-of-way of Faisalabad Bypass be fixed as 120 feet and dual carriage be developed to increase its utility as shown in Figure 7-14.

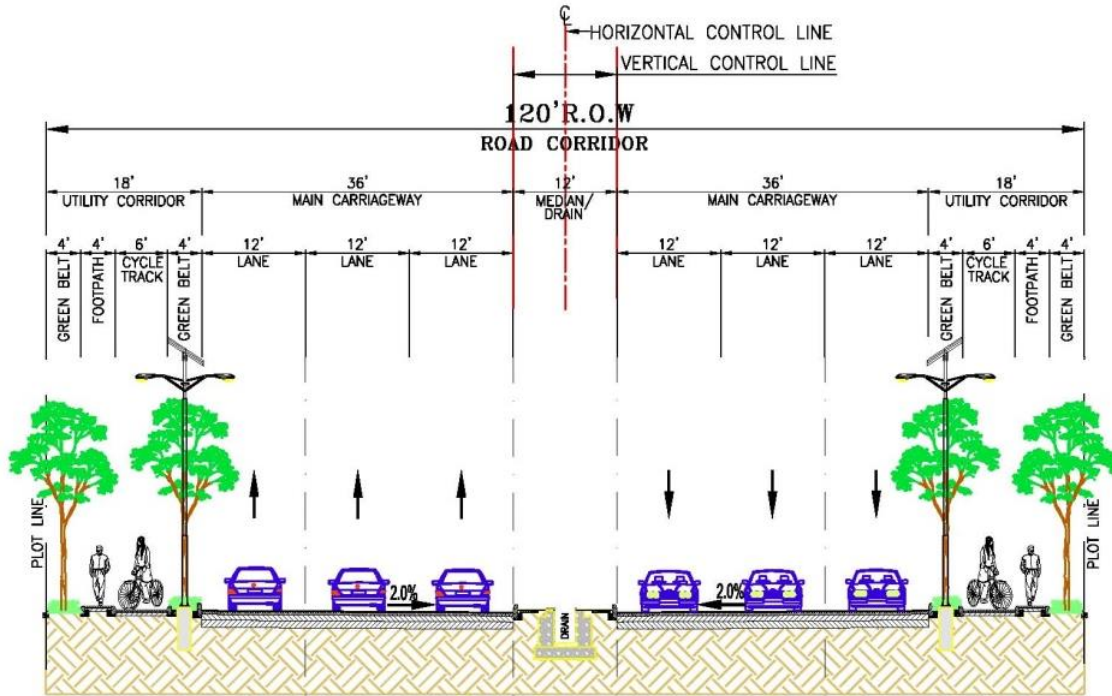


Figure 7-14: Proposed Cross Section for 120' ROW Faisalabad Bypass

7.2.2 Faisalabad Ring Road (FRR)

Efficient Road network is a prerequisite for harnessing the development potential of the city according to the priorities of the government. Faisalabad city has been expanding rapidly along primary roads and urban sprawl is increasing day by day. Due to lack of Ring Roads the traffic load in the CBD has been unnecessarily overburdened. Heavy traffic volume is passing through the CBD area, which causes congestion and accidents. Thus, current road network required to be relaxed by avoiding unnecessary traffic movements from outside of the city into CBD. Therefore, construction of Ring Road has been proposed. The proposed alignment of FRR (Option 2) would help in reducing traffic congestion, air pollution and accidents in the city area.

The approximate length of the proposed FRR is 54.2 km and it encircles an area of 183 sq. km of the city. The proposed alignment would link all the 12 inter-city roads emerging out from clock tower in a Radial pattern. The average distance of proposed alignment from the Clock Tower is 7 km. The proposed FRR will help in reducing traffic congestion, accidents and air pollution in the city area. The proposed Ring Road would result in positive impacts on the economy of Faisalabad and its surrounding areas and will help in rehabilitating the Natural Habitat by plantation of tree along the FRR and in the median of the FR road.

The proposed Ring Road will provide a speedy link between all the intercity roads. Furthermore, the proposed Ring Road will facilitate quick and safe movements between different parts of the city and suburb areas. The Faisalabad city especially the CBD area is going to be the main beneficiary of the project, the project will provide relaxation to the city by reducing traffic on inner city roads, as the proposed Ring Road located in the proximity of the city area would encourage drivers to diverge. There will be net benefits of reduced noise and

air-pollution level and accidents for people living in the city area. The proposed Ring Road will provide speedy access to airport and will feed Motorway M3 and M4, and existing bypass which is currently underutilized. The project will also help in providing an improved access to employment, economic and social services to local people.

Overall, the project will have positive impact on the economy of Faisalabad and its surrounding cities and will help in rehabilitating the Natural Habitat by plantation of tree along the road and in the median of the proposed Ring road. The proposed Ring Road could be developed in Phases. The project could be constructed on BOT basis under Public Private Partnership and may involve both foreign and local funding. The proposed Ring could contain a toll facility to make the project sustainable for a long period and to generate funding for development and construction in phases.

The Faisalabad Ring Road (FRR) is one of the key projects proposed by the Faisalabad Development Authority (FDA) for the development of the road network of Faisalabad and enhance the traffic conditions of the city. The project was proposed keeping in view the following objectives under consideration;

1. To relief the traffic on internal urban arteries.
2. Smooth and more efficient movement of goods and passengers.
3. Facilitate the traffic by providing different diversion options and reliable links.
4. Provide an ease to the overall environment.

The detail study of FRR was awarded to the Techno Consult International in 2009. Study commenced in April 2010 and completed in December 2011. The alignment of Faisalabad Ring Road was proposed by Techno Consult, circled around the city with a total length of 66km and 13 interchanges.

- As per alignment study by Techno Consult:
- Length of proposed ring road = 66 km
- Nos. of Interchanges = 13
- Average distance from the city center = 8 km
- Total Travel Time (Approx.) = 39 min.

The proposed Option-1 as shown in Figure 7-15 for Faisalabad Ring Road is passing through all the major Cordon/Entry/Exit points of Faisalabad City. Faisalabad Ring Road (Proposed by Techno Consult) is also serving the Faisalabad Bypass, which is a major part of the planning infrastructure of the city. The Ring Road will serve the traffic moving on Faisalabad bypass as well in order to provide movement for them, in-case they decide to travel within the city.

Based on available data from the Feasibility Study for Mass Transit System in Faisalabad, December 2014, two options have been proposed, length of Option-2 is 54.2 km along with 12 Nos. of interchanges as shown in Figure 7-16.

The option-2 has reduced length and travel time as compared to the option-1 as shown in Table 7-5 given below.

Table 7-5: Features of Faisalabad Ring Road (FRR) Option-2

S#	Description	Length (km)	Reduction in Length (km)	Reduction in Time (Minutes)
1	FRR (Option-2)	54.2	11.8	8

Faisalabad Ring Road will attract majority of the road users travelling in and out of all the cordon points of the city as it will provide them a faster and efficient means of travel from one part of the city to another. The Origin-Destination Surveys conducted on all the major cordon points mentioned in Section 3 (Refer Table 3-4), show that people travel via these routes on daily basis for different purposes such as work, business, education, shopping and social activities. With such a diverse movement along these cordon points on a daily basis, a Ring Road passing through these points will benefit the daily road users greatly. People who enter the city from these points will not be restricted to use local roads for internal movements to other parts of the city and will easily be able to move to their desired locations.

The Table 7-6 describes the parameters of the two options proposed for Faisalabad Ring Road.

Table 7-6: Features of Faisalabad Ring Road (FRR) Option-1,2

S#	Faisalabad Ring Road (FRR) Alignment	Length (km)	Interchanges (Nos.)
1	Option-1 (By Techno Consult)	66	13
2	Option-2	54.2	12

The Figure 7-18 shows two options of FRR along with cordon points. The creation of a complete ring connecting all major roads is not possible as the land in some of the areas is not available. However, an attempt can be made to connect Sheikhpura Road with Satayana Road via Jaranwala Road and Sargodha Road with Jhang Road via Narwala Road. These two links would facilitate the diversion of traffic to the inter-connecting road by-passing the main city junctions. The two links comprising of 26 km length will be constructed in Phase 1 under MTDP, whereas the 28 km of remaining ring road length will be taken up under LTDP. The total length of the dual carriage way Ring Road is approximately 54 Kilometers and estimated cost is Rs. 540 million. The proposed Right-of-Way of the Ring Road is 120 feet. Thus, the total surface area becomes 21,260,880 sq. ft. (470 acres).

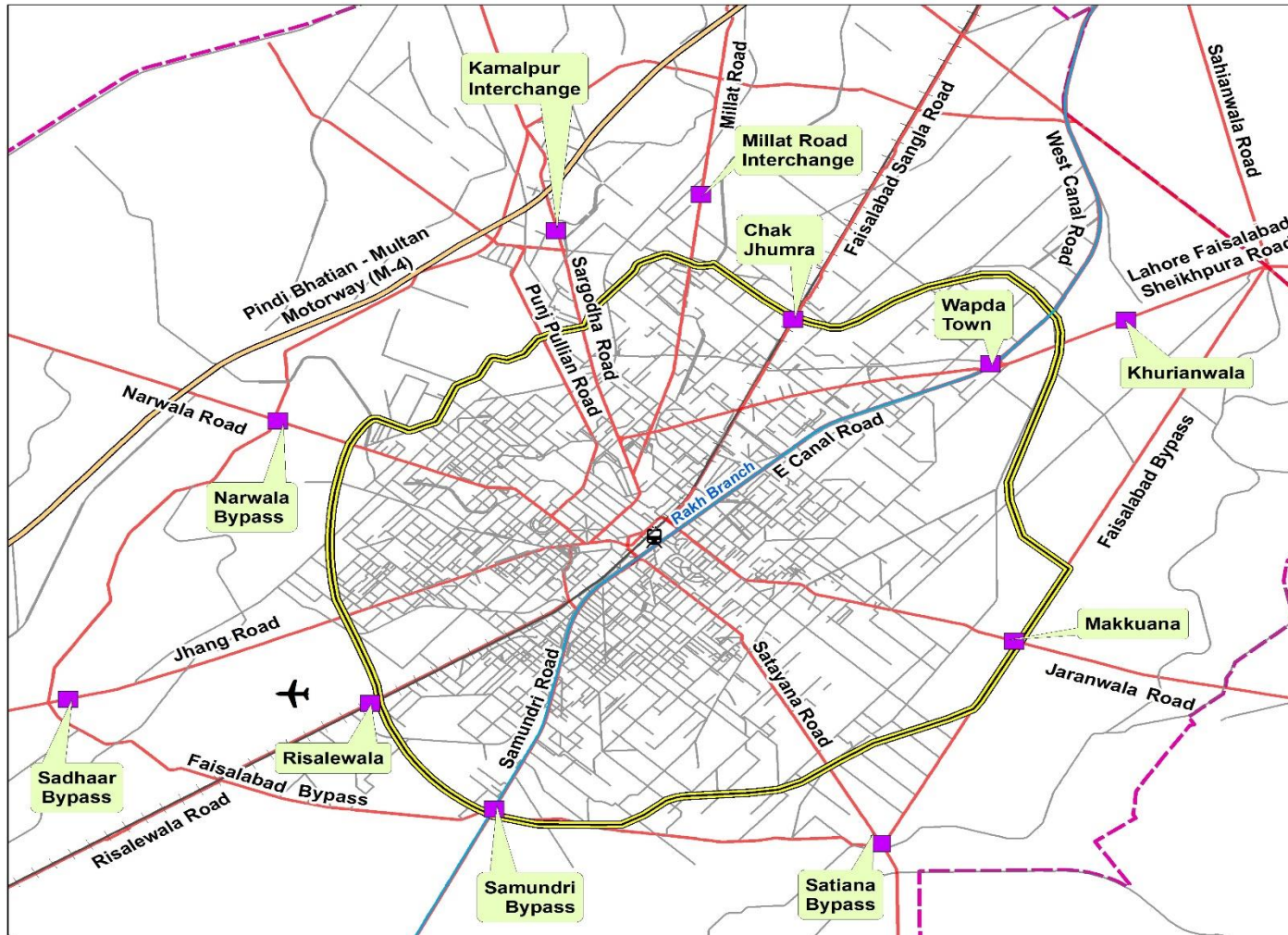
7.2.3 Proposed Road Linking M3IC Industrial Estate with Bypass

To improve connectivity of the M-3 Industrial Estate a road has also been proposed linking Industrial Estate with the Faisalabad Bypass along the exiting drain. The length of this road would be 4.2 kilometers with Right-of-way of 80 feet the area of this road would be 25.3 acres as shown in Figure 7-19.

7.2.4 Khurrianwala Arterial Road Network

Khurrianwala Town about 20 Kilometers from Faisalabad on Lahore-Sheikhpura-Faisalabad Road has been growing as an urban settlement. Industrial Estate by the name of Value-Added City (Faisalabad Garment City Company) and other important industries on Khurrianwala-Sheikhpura Road and Khurrianwala-Jaranwala Road already exist there. The town would expand with fast pace due to the proposed Industrial Estate and proposed Residential, Commercial, Institutional and Recreational development. Therefore, its arterial road network needs to be improved without further delay. The existing Right-of-Way of Khurrianwala-Faisalabad Road is 120 feet. Same Right-of-Way be fixed for Khurrianwala-Sheikhpura Road i.e., 120 feet. Khurrianwala-Jaranwala Road is an important link, and it would further become more important due to industrial development, therefore, it is proposed that its Right-of-Way be further widened from 100 feet to 120 feet. Khurrianwala-Sahianwala Road is an important link between Khurrianwala-Chiniot and between two industrial estates, therefore, its Right-of-Way be increased from 70 feet to 120 feet. The Right-of-Way of Faisalabad Bypass vary from 60 feet to 80 feet. Keeping in view its importance in future, it is proposed that its Right-of-Way

be fixed as 120 feet dual carriage-way throughout its length. With the proposed commercial, institutional and recreational development in Khurrianwala town the Khurrianwala - Khanuana road would become important in future. Therefore, it is proposed that its Right-of-Way be fixed as 100 feet. If due to paucity of funds it is difficult to acquire land for the widening of the Right-of-Way of Roads building construction should not be allowed within 50 feet from center on either side of the road where the Right-of-Way is fixed as 100 feet. Similarly, buildings should not be allowed within 60 feet from center of the road on either side where the Right-of-Way has been fixed as 120 feet. Most of these road segments will be improved under other identified projects.












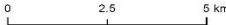



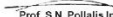
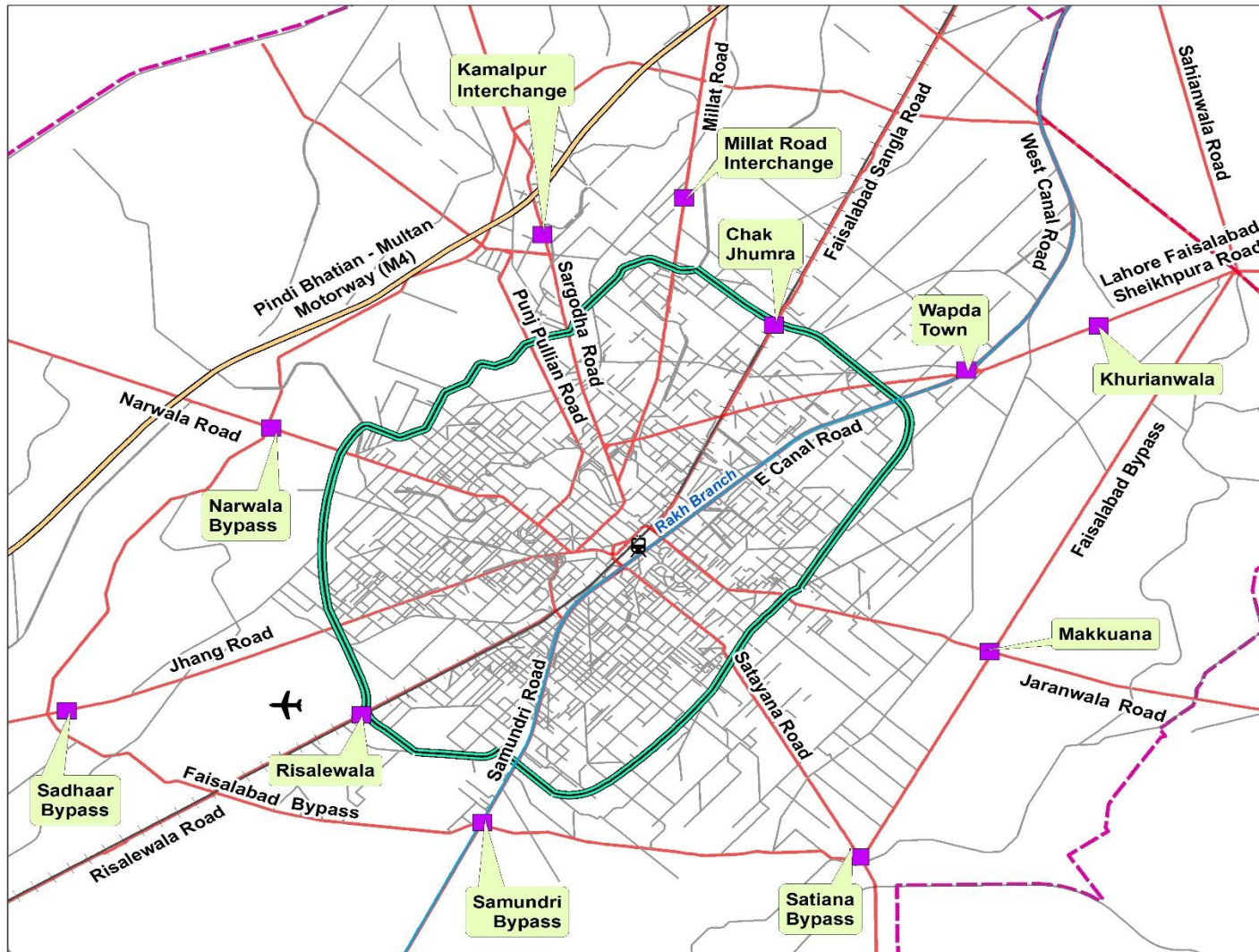
MAP TITLE:	
PROPOSED RING ROAD (OPTION 1)	
PROJECT:	
PREPARATION OF MASTER PLAN (2016-2036) FOR FAISALABAD INCLUDING STRATEGIC PLAN FOR FIVE YEARS	
Legend	
	Entry / Exit Points
	Canal
	Proposed R.R.- Techno Consult (Option 1)
Transportation Network	
	Motorway (M-4)
	Arterial Roads
	Collectors
	Railwayline
	FDA Boundary
ORIENTATION:	
 	
CLIENT:	
FAISALABAD DEVELOPMENT AUTHORITY GOVERNMENT OF PUNJAB	
 	
CONSULTANT:	
 Engineering - Architecture - Planning - Mapping - Technology Lahore Office: 1st Floor, IEP Building, 97-B/D-1, Liberty Roundabout, Gulberg III, Lahore 	

Figure 7-15: Faisalabad Ring Road (Option-1) with Cordon Points

















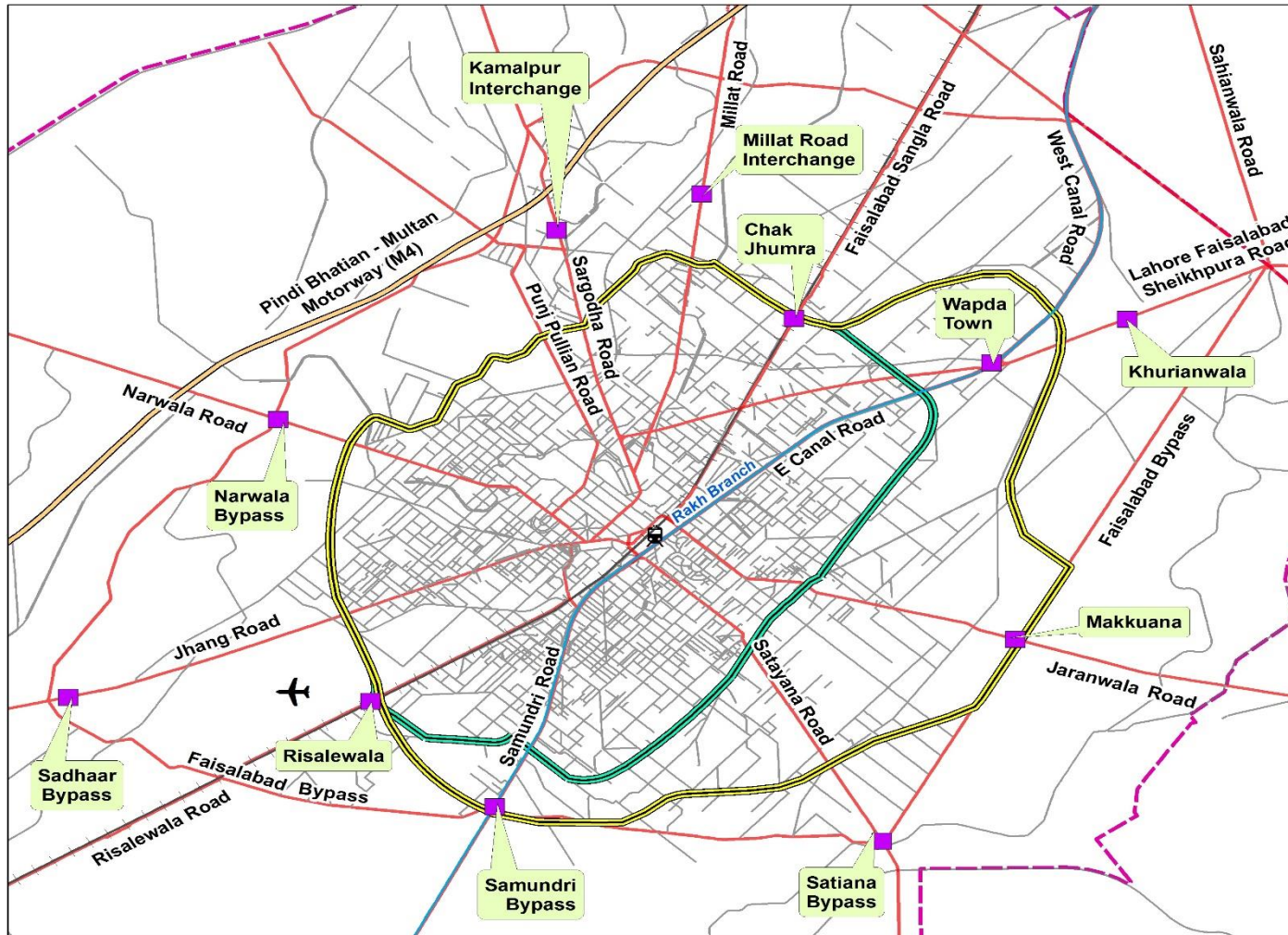
MAP TITLE: PROPOSED RING ROAD (OPTION 2)	
PROJECT: PREPARATION OF MASTER PLAN (2016-2036) FOR FAISALABAD INCLUDING STRATEGIC PLAN FOR FIVE YEARS	
Legend	
	Entry / Exit Points
	Canal
	Proposed Ring Road (Option 2)
Transportation Network	
	Motorway (M-4)
	Arterial Roads
	Collectors
	Railwayline
	FDA Boundary
ORIENTATION:	
 	
CLIENT: FAISALABAD DEVELOPMENT AUTHORITY GOVERNMENT OF PUNJAB	
 	
CONSULTANT:	
 Engineering - Architecture - Planning - Mapping - Technology Lahore Office: 1st Floor, IEP Building, 97-B/D-1, Liberty Roundabout, Gulberg III, Lahore 	

Figure 7-16: Faisalabad Ring Road (Option-2) with Cordon Points



MAP TITLE:
PROPOSED RING ROAD (OPTION 1 & 2)

PROJECT:
PREPARATION OF MASTER PLAN (2016-2036) FOR FAISALABAD INCLUDING STRATEGIC PLAN FOR FIVE YEARS

Legend

- Entry / Exit Points
- Canal
- Proposed R.R. Techno Consult (Option 1)
- Proposed Ring Road (Option 2)

Transportation Network

- Motorway (M-4)
- Arterial Roads
- Collectors
- Railwayline
- FDA Boundary

ORIENTATION:

CLIENT:
FAISALABAD DEVELOPMENT AUTHORITY
GOVERNMENT OF PUNJAB

CONSULTANT:
OSMANI
Engineering - Architecture - Planning - Mapping - Technology
Lahore Office: 1st Floor, IEP Building,
97-B/D-1, Liberty Roundabout, Gulberg III, Lahore
Prof. S.N. Pollalis Inc.

Figure 7-17: Faisalabad Ring Road (Option-1, 2) with Cordon Points

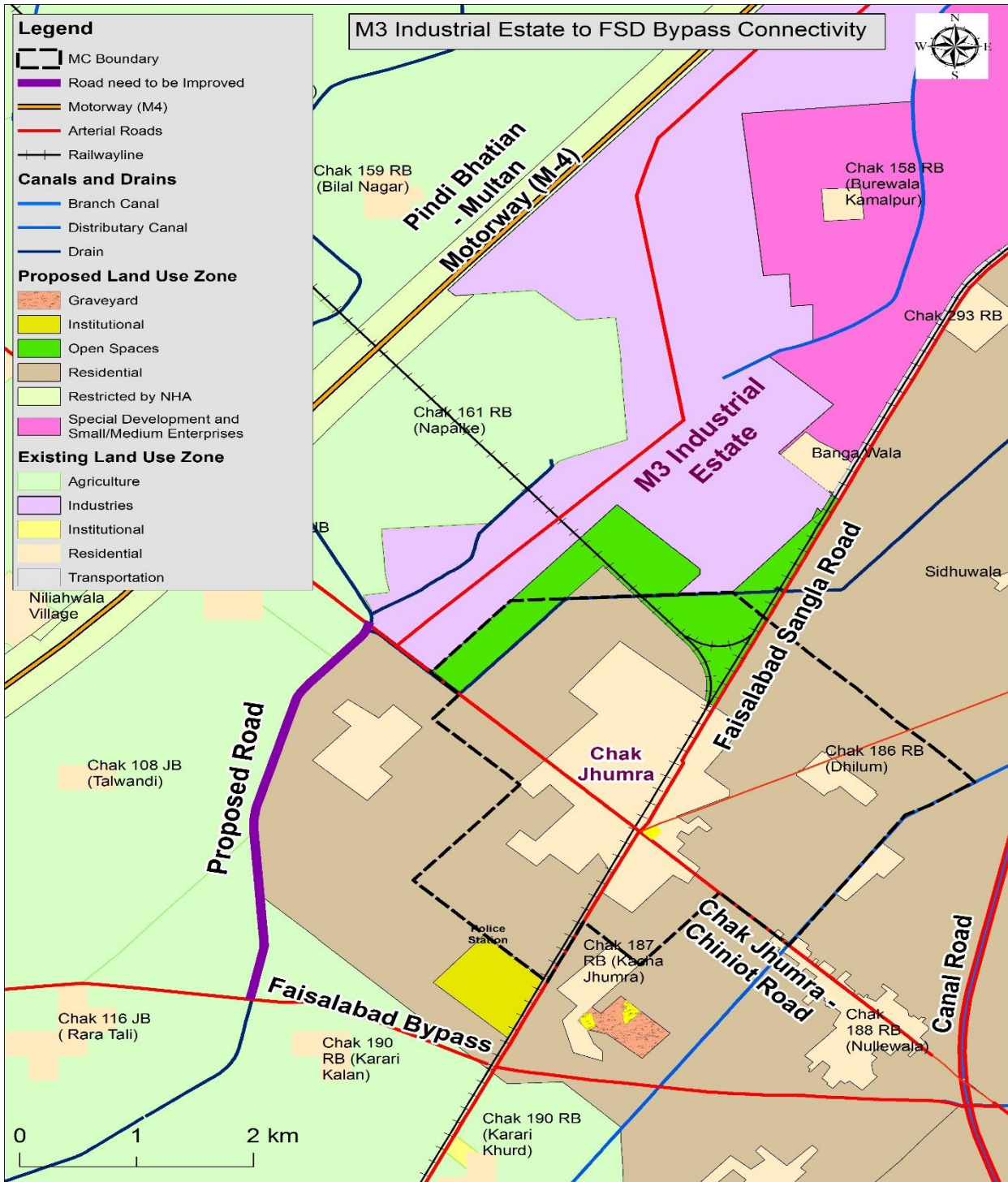


Figure 7-18: Link of M3 Industrial Estate FIEDMC with Faisalabad Bypass

Currently seven existing roads have been radiating out from the Khurrianwala Town as presented in Figure 7-20. Their names and Right-of-ways are given in the following Table 7-7.

Table 7-7: Khurrianwala Roads with Existing and Proposed Right of Ways

S#	Name of Road	Existing Right-of-Way (ROW) in feet	Proposed Right-of-Way (ROW) in feet
1	Khurrianwala-Sheikhupura Road	100	120
2	Khurrianwala-Faisalabad Road	120	120
3	Khurrianwala-Jaranwala Road	100	120
4	Khurrianwala-Sahianwala Road	70	120
5	Khurrianwala-Makuana Bypass	80	100
6	Khurrianwala-Canal Bypass	60	100
7	Khurrianwala-Khanuana Road	40	100

7.2.5 Khurrianwala Bypass

To improve the traffic condition in the town and to achieve sustainable industrial development in the proposed Zone A Bypass has been proposed around the town. The length of this bypass would be 14.7 kilometers with Right-of-way of 100 ft. Total area required for this bypass would be 111 acres. This proposed bypass would connect all the roads converging in the center of the town thereby improving the connectivity among radial roads as depicted in Figure 7-20.

7.2.6 Khurrianwala Bus Terminal

A Bus Terminal over an area of 31 acres has been proposed on Lahore-Sheikhupura-Faisalabad Road to cater for the needs of the industrial town as shown in Figure 7-20.

7.2.7 Linkages to Lahore-Karachi Motorway (M-3) i.e., Satayana Road and Sammundri Road

Two interchanges on M3 links Faisalabad city with the Lahore-Karachi Motorway i.e., Syed Wala Jaranwala Interchange and Samundri Interchange. It is proposed that one more interchange be developed in between these two interchanges at Satayana Road. This would further shorten the travelling between Faisalabad and M-3 Motorway. The proposed interchange has been shown in Figure 7-21.

7.2.8 Improvement of Existing Link Roads between Risalewala Road and Jhang Road

It is proposed that two existing link roads of Science City between Risalewala Road and Jhang Road be widened, and 9 junctions of these links be improved. Total length of these links is 14 Km and existing ROW is 40 ft. It is proposed that the Right-of-Way (ROW) of these links be increased to 80 feet. In this way total area required to be acquired for these links would be 42 acres. The suggested links and associated junction to be improved within Science City are shown in Figure 7-22.

7.2.9 Airport Link Road

A link road with 100 feet Right-of-Way (ROW) has been proposed on the eastern side of the Airport to link Risalewala Road with the Jhang Road. The proposed link will also connect airport with Risalewala railway station. The length of this road is 4 Km and the area required for this road is 30 acres. The suggested connection is presented in Figure 7-23.

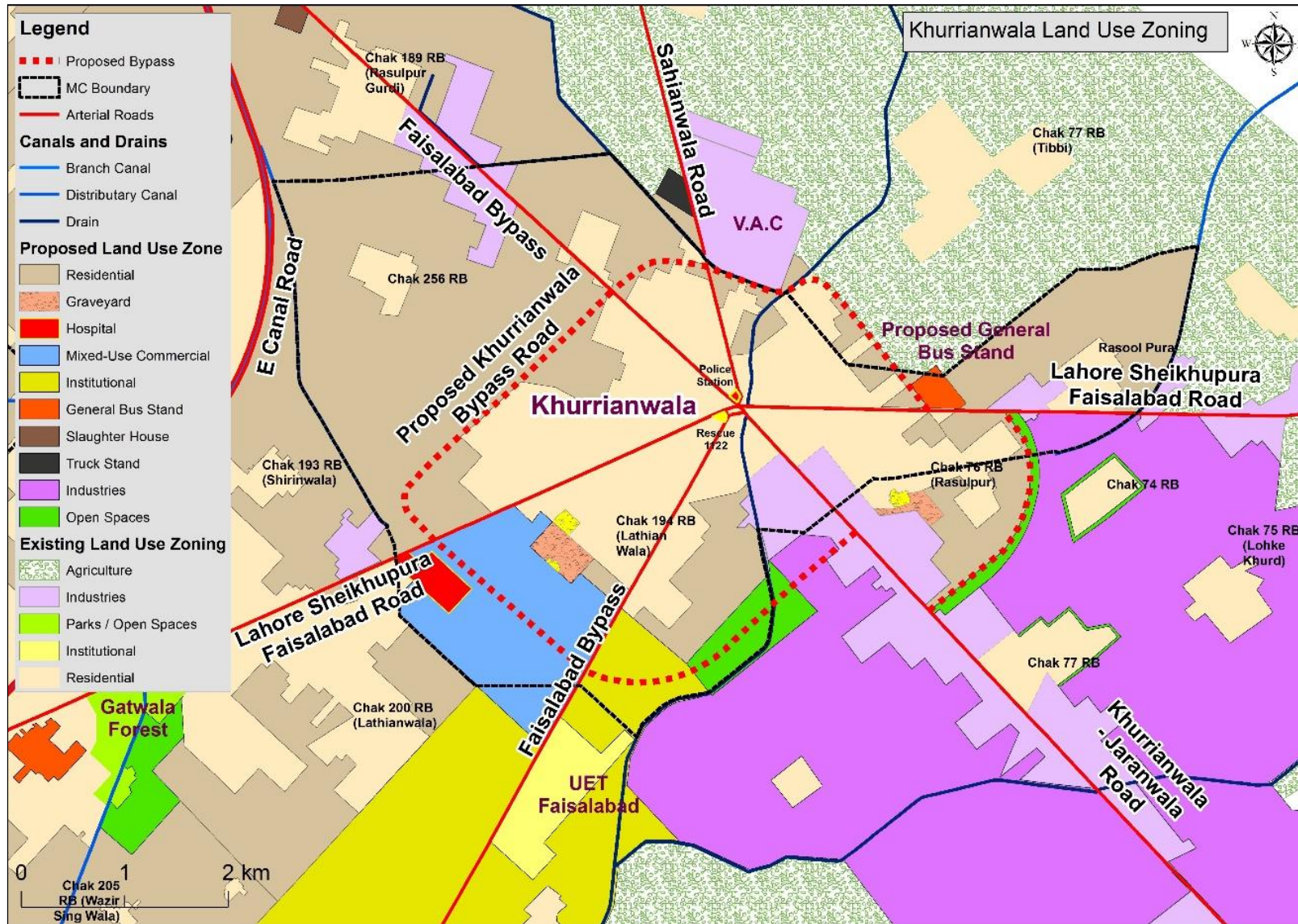


Figure 7-19: Khurrianwala Arterial Network-Proposed Bypass- Proposed Bus Stand

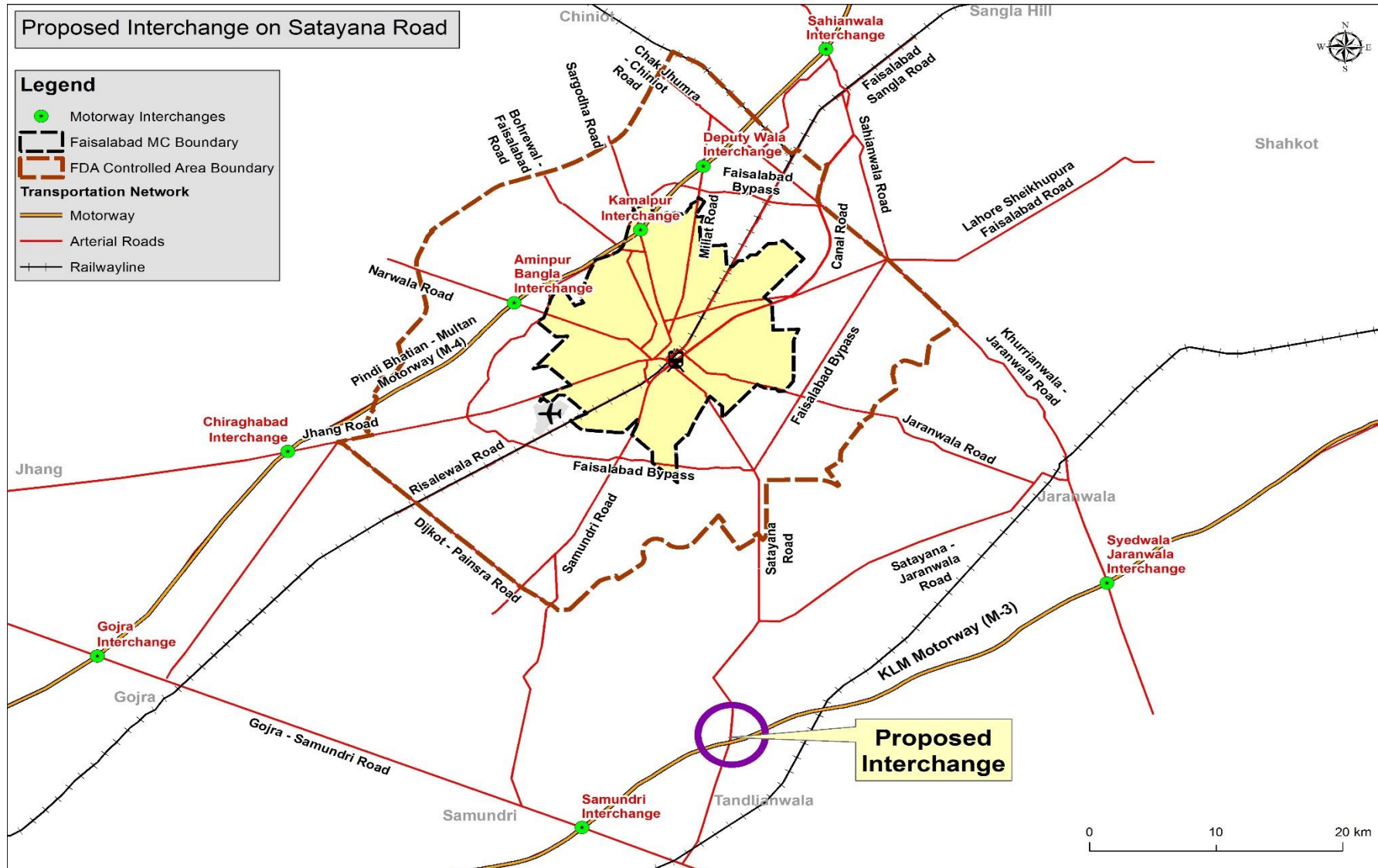


Figure 7-20: Proposed Interchange on M3 at Satyana Road

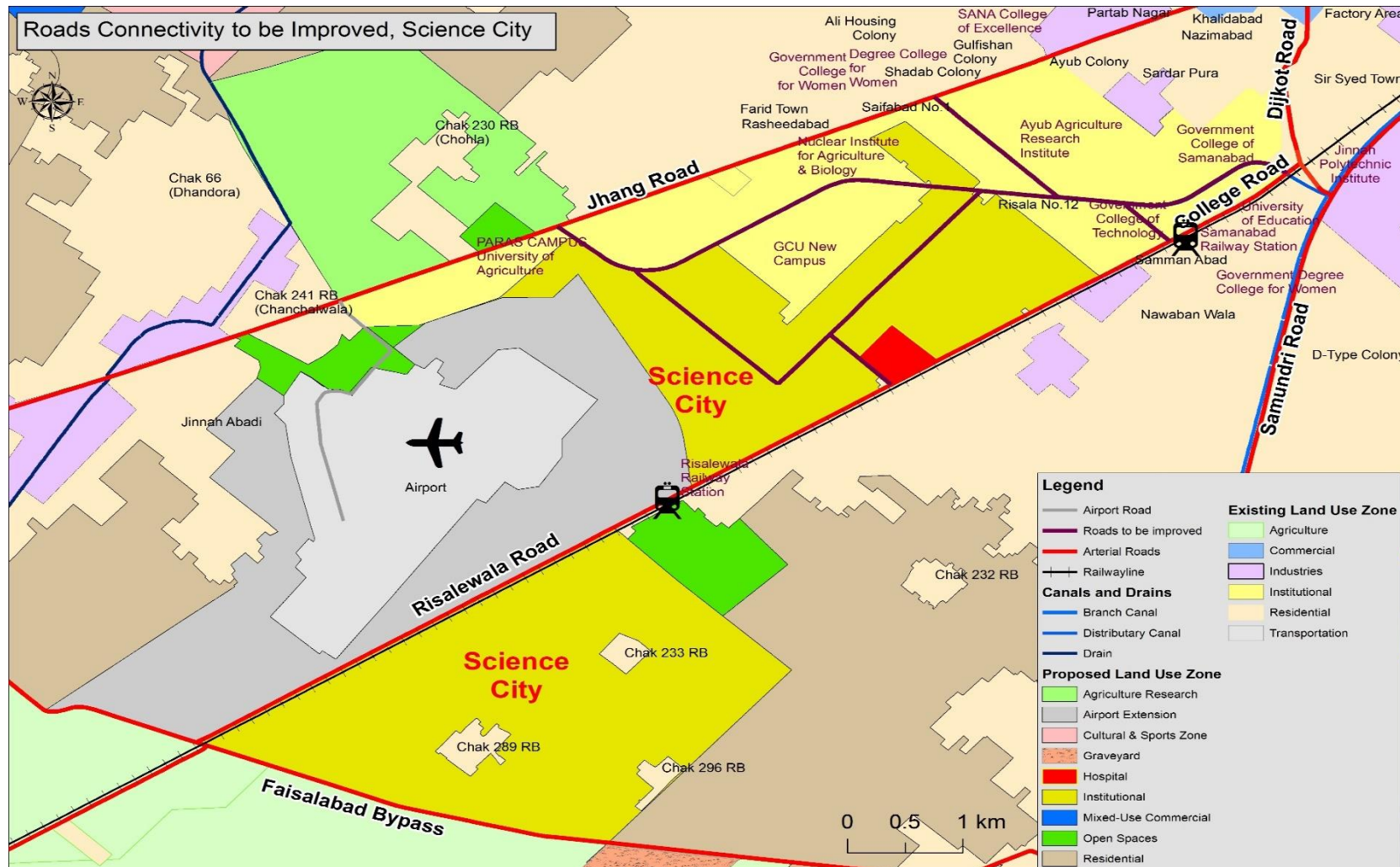


Figure 7-21: Improvement of Proposed Links and Associated Junctions of Science City

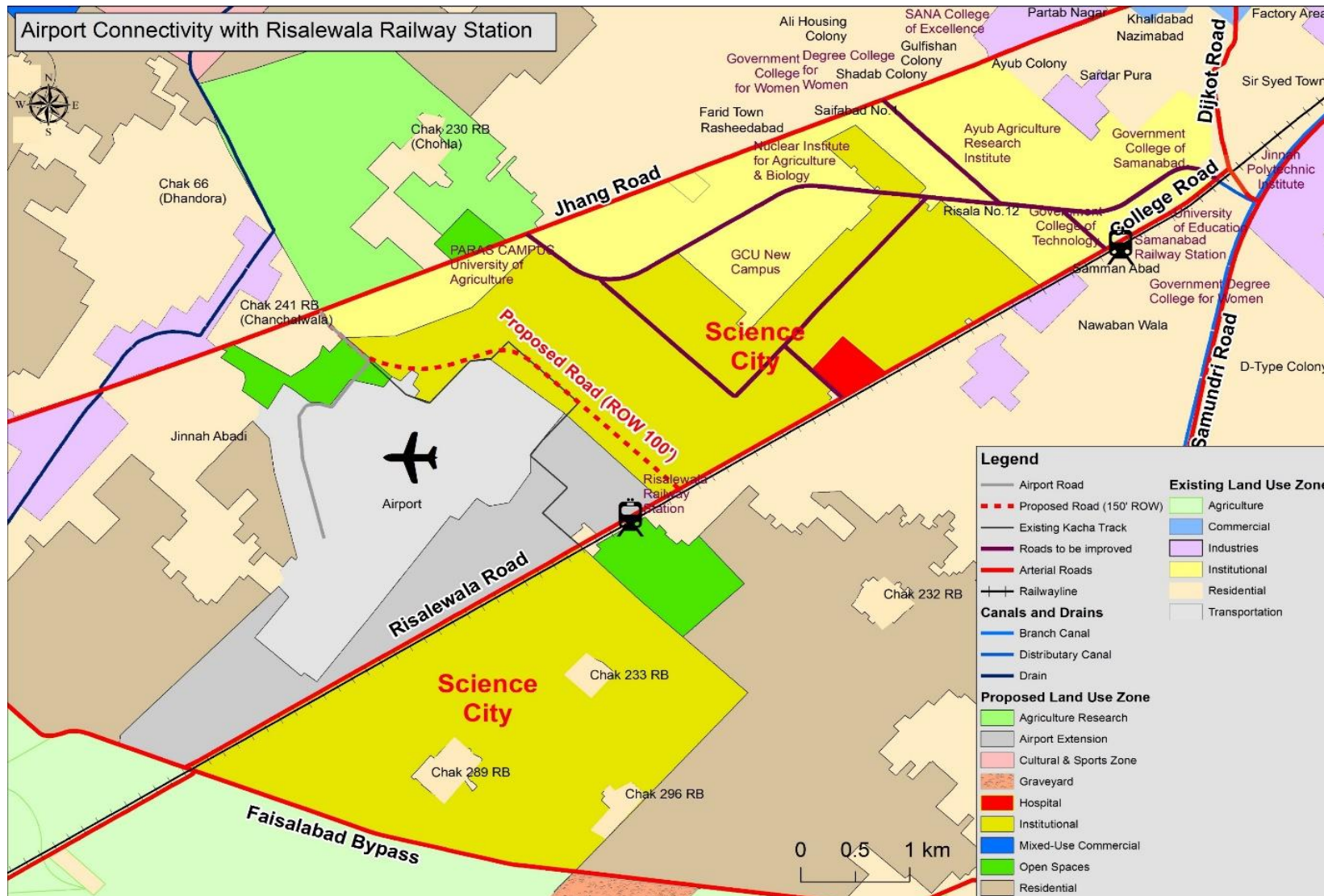


Figure 7-22: Airport Connectivity with Risalewala Road and Railway Station

Refer Table 7-8 for approximate budget needed for mid-term development projects:

Table 7-8: Approximate Budget Amount for MTDP

S. No.	Project Description	Qty	Unit	Rate (Pak Rs.)	Budget Amount (Pak Million Rs.)
1	Proposed New Road Network (Phase II)	135	Km	110,035,768	14,855
2	Faisalabad Bypass Rehabilitation	95	Km	75,600,000	7,182
3	Construction of Faisalabad Ring Road Links (Phase 1)	26	Km	205,840,000	5,352
4	Faisalabad Bypass Link with M3-Industrial Estate (FIEDMC)	4.20	Km	142,250,000	597
5	Khurrianwala Bypass	14.70	Km	190,840,000	2,805
6	Khurrianwala Bus Stand	31	Acres	110,000,000	3,410
7	Interchange on M3 at Satayana Road	1	No.	2,500,000,000	2,500
8	Improvement of Existing Links and Associated Junctions of Science City	14	Km	131,600,000	1,842
9	Airport Link between Risalewala and Jhang Roads	4	Km	190,840,000	763
10	Pedestrian Bridges in CBD Area (Phase 2 – 15 out of 52)	15	Nos.	65,000,000	975
Sub-Total Amount Million Rs.					40,281
Consultancy Services for Preliminary Design, Detailed Design, Tender Documents and Construction Supervision of MTDPs (5% of Total Cost)					2,014
Total Amount Million Rs.					42,295

7.3 LONG TERM DEVELOPMENT PROJECTS (LTDP) – 2030 TO 2040

There are several projects which need to be undertaken under Long Term to develop the transport sector of Faisalabad. The major ones include construction of expressway between motorways M-3 and M-4, railways shuttle service from Sangla Hill to Abbaspur in two phases and construction of BRT corridors (Red Line and Orange Line). Besides, General Bus Stands on Millat Road and Lahore – Sheikhpura – Faisalabad Road, Extension of Truck Stands on Sargodha Road, construction of new Truck Stands on Faisalabad Bypass near Satayana Road, Sahianwala Road near VAC and near Sahianwala Interchange on M4 are also proposed as part of LTDP.

The long-term development projects discussed in the following paras are conceptual only for the Master Plan of Faisalabad. Further refinement through preliminary design and detailed design by appointed Consultants of the executing agency will be required prior to preparation of tender documents for execution of these projects. The rough cost given in Table 7-10 is indicative only based on similar projects.

7.3.1 Construction of Expressway between Motorway M-3 and M-4

In order to improve connectivity and convenience, Motorway M-3 and M-4 are proposed to be connected by construction of Expressway on Public Private Partnership Model. This road will link Sahianwala Interchange on M4 and Syed Wala Jaranwala Interchange on M3 through Khurrianwala – Jaranwala Road in north side, Junction of Faisalabad bypass with Satayana

Road to Sammundari interchange on M3, Gojra interchange on M4 to Sammundari Interchange on M3 and Chiraghadabad interchange on M4 to Sammundari Interchange on M3 in south side. It will improve intercity connectivity and gear up industrialization. The approximate length of the proposed expressways is 54.5 km, 45.8 Km, 41.2 Km and 50.4 Km with 120' ROW. Figure 7-24 & Figure shows the proposed alignment of expressway connecting M3 and M4.

7.3.2 Railways Shuttle Service from Sangla Hill to Abbaspur

Maximum number of passengers travel to Lahore, followed by Karachi. Rail network is used by people living at Sangla Hill, Chak Jhumra, Gatti, Toba Take Singh and Gojra. The people travel in usual express and slow trains. The express trains are always overcrowded and tightly packed. On the other hand, passenger trains run very slow and a lot of man-hours are wasted. To overcome this problem and to improve traffic conditions in the Faisalabad city and to facilitate mass movement of industrial labour a Railway Shuttle Service has been proposed from Sangla Hill to Abbaspur Railway Station along with branch line from Chak Jhumra to Chiniot Railway Station as shown in Figure 7-25. The total length of this shuttle service would be about 86 Kilometers which would be laid in three phases. In first phase the shuttle service would be provided from Sangla Hill to Gatti Dry Port via Sahianwala and Chak Jhumra. The total length of first phase would be about 34 Kilometers. In second phase the shuttle service would be extended from Gatti Dry Port to Abbaspur via Faisalabad. The total length of the second phase would be 26 kilometers. Moreover, in third phase the shuttle service would be provided along branch line from Chak Jhumra to Chiniot Railway station. The total length of the third phase would be 26 kilometers.

7.3.3 General Bus Stand

Existing Bus Stands:

The existing General Bus Stand (GBS) often called as Larry Adda spread over an area of about 31.3 acres is located in the center of the city along Sargodha Road. In close vicinity to the Larry Adda, there is a Government Transport Service (GTS) bus stand on 8.3 acres. Besides, the private transporters bus stands are also scattered in the city center as shown in Figure 7-26 for Faisal Movers, Kohistan Express, Bilal Travels, New Subhan Bus Service, Nadir Flying Coach, Daewoo Express, Al-Halal Travels, etc. Traffic accidents and congestion in addition to environmental pollution are the major problems associated with these bus stands in the city center. However, the bus commuters' convenience is plus point for bus terminals within city center. The decision to move these existing bus terminals outside the city is a tradeoff based on advantages and disadvantages of having bus terminals within city.

Proposed Bus Stands:

Four General Bus Stands have been proposed for the city traffic. One has been proposed on Narwala Road at a distance of about 11 kilometers from center of the city with an area of 34.2 acres. It would cater the traffic requirements coming from Sargodha and Islamabad through Pindi-Bhattian-Multan Motorway (M4). Second GBS has been proposed on Lahore-Sheikhupura-Faisalabad Road about 11 kilometers from center of the town, with an area of 90.6 acres. The proposed General Bus Stand is 2.5 kilometers away from the proposed Ring Road. Third GBS has been proposed on Satayana road with an area of 43.1 acres. Vacant land is available at proposed locations, but land is to be purchased from the open market. Faisalabad Municipal Corporation (FMC) is the agency responsible for developing and maintaining the General Bus Stand. A suitable fee can be levied to recover the investment. The initial investment may be loaned by the Government to FMC. The location of the proposed bus terminals is presented in Figure 7-26. Fourth GBS has been proposed in Khurrianwala on 31 acres along Lahore – Sheikhupura – Faisalabad Road as already discussed under MTDPs.

7.3.4 Truck Terminals, Auto Workshops and Auto Spare Parts Markets

Existing Truck Stands:

There are two existing truck stands in Faisalabad. One Truck Stand along with workshops has been recently established on Jhang Road having an area measuring 15.3 acres. The other existing truck stand at junction of Sargodha Road and Faisalabad Bypass is proposed to be decrease in area from 16.1 acres to 13.9 acres. Goods forwarding agencies, auto workshops and an auto spare parts market are also proposed to be accommodated within this area.

Proposed Truck Stands:

Four new Truck Stands have been proposed in Faisalabad. One truck stand measuring 39.4 acres has been proposed on Faisalabad Bypass near its junction with Satayana Road. This would cater for the needs of goods traffic coming from southern side of the city. Goods forwarding agencies and auto workshops would also be accommodated within this area to facilitate the repair and maintenance of heavy vehicles. It is appropriate that an auto spare parts market may also be planned within this area. Second Truck Stand on 22 acres is proposed on Sahianwala Road in the vicinity of planned Khurrianwala Industrial area, Value Added City (VAC) and existing industries on Khurrianwala-Sheikhupura Road and Khurrianwala-Jaranwala Road. Third Truck Stand has been planned on 21.8 acres near Sahianwala Interchange on M4 to serve the M3 Industrial Estate. Fourth Truck Stand has been proposed near Jhang road with an area of 25 acres. All the existing and proposed truck stands have been shown on Figure 7-27.

7.3.5 Dry Port

The existing dry port at Gatti Railway Station covering an area of 23.1 acres is proposed to be extended to 66 acres as the goods traffic would increase many folds with the increase in industrial manufacturing activity in the city in the shape of new industrial estates. It was informed by Railway Authorities that the expansion of Dry Port at Gatti Railway Station, Faisalabad is feasible as Pakistan Railways has owned land adjacent to the existing Dry Port. The existing dry port location is shown in Figure 7-28.

7.3.6 Shifting of Oil Depots

The Bulk Oil Depots belonging to M/s Pakistan State Oil, M/s Caltex and M/s Burma Shell are presently located over an area measuring 9.1 acres along Ganesh Mills road in the heart of the city. Existence of these depots is a serious safety risk. There is an urgent need for shifting of these Depots from this area on top priority basis to ensure public safety. M/s Pak-Arab Refinery Company (PARCO) has developed a site over 66 acres at Chak No. 201/RB (Gatti) for the establishment of Bulk Oil Depots near Gatti Railway Station along Jhumra Road. PSO also has an Oil Depot over an area of 12.4 acres 6 kilometers from Gatti towards Sangla Hill. Shifting of these Depots to the proposed PARCO site would not only eliminate the public safety risk but also reduce the traffic problems in the city center. The site so vacated may be used for flatted industries with adequate car parking in the basement. This area may also be used for middle class apartment housing. The existing and proposed bulk depots for dry port, PSO, Caltex, Burma Shell and PARCO are shown in Figure 7-28.

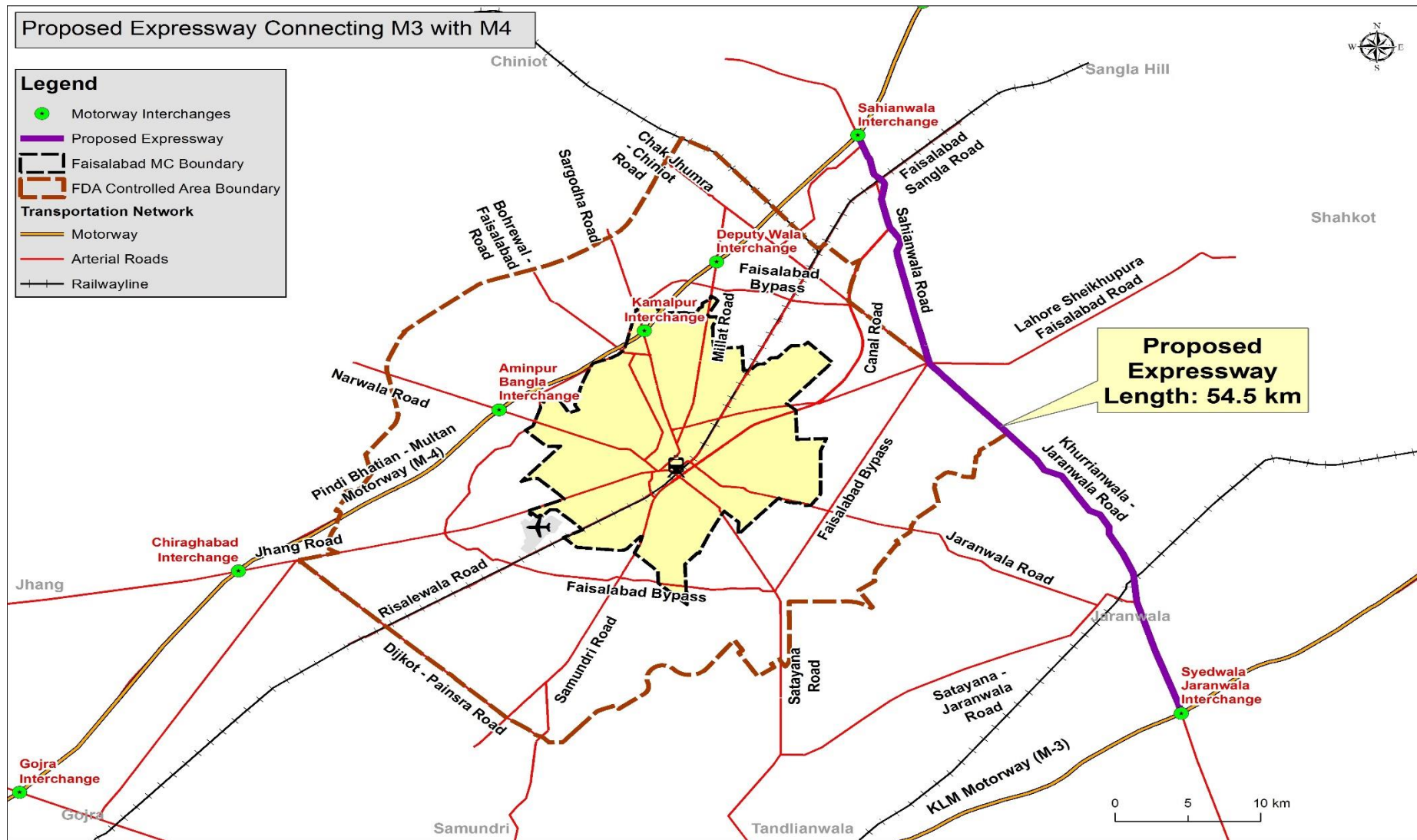


Figure 7-23: Proposed Expressway Connecting Motorways M3 and M4

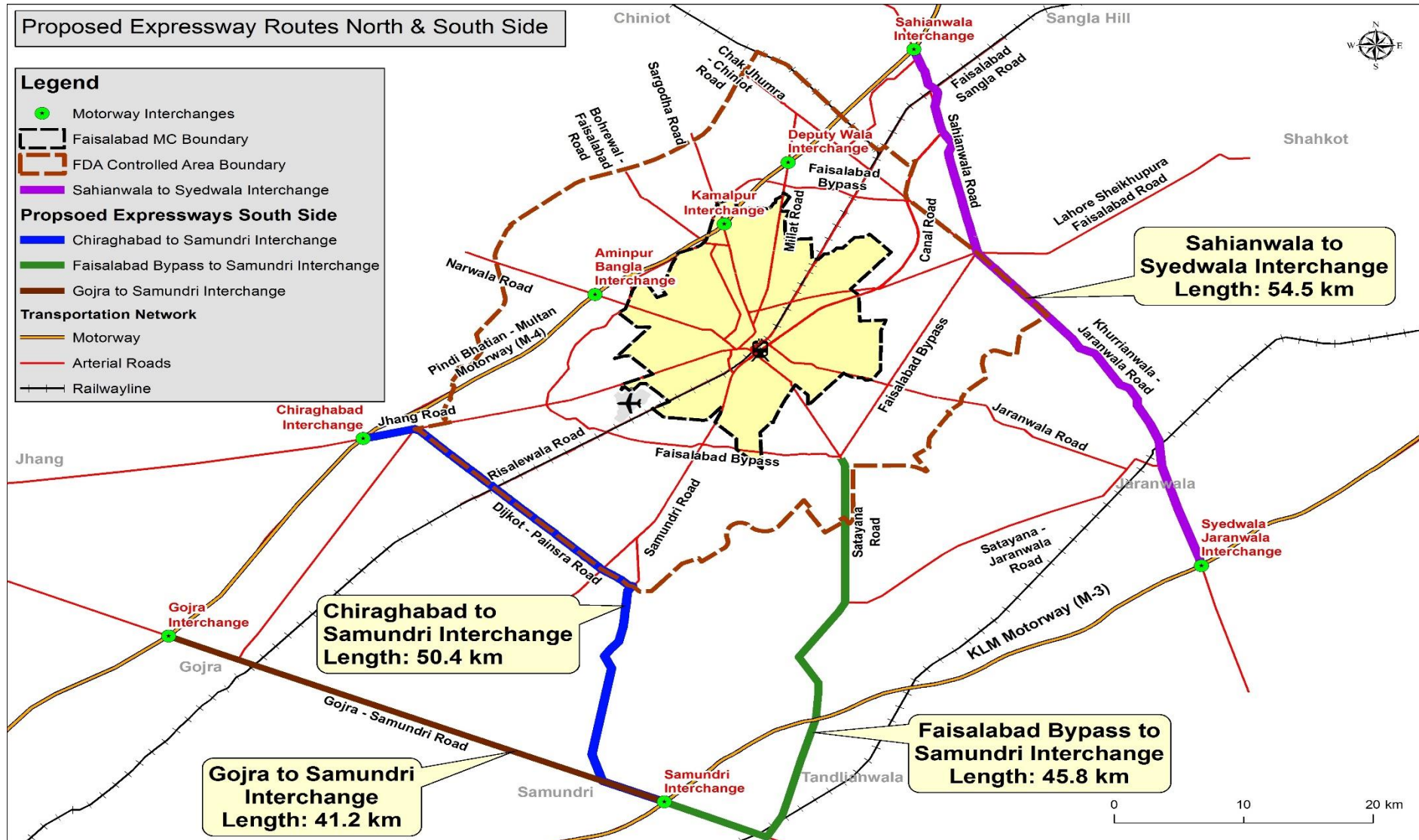


Figure 7-24: Proposed Expressway Connecting M3 and M4

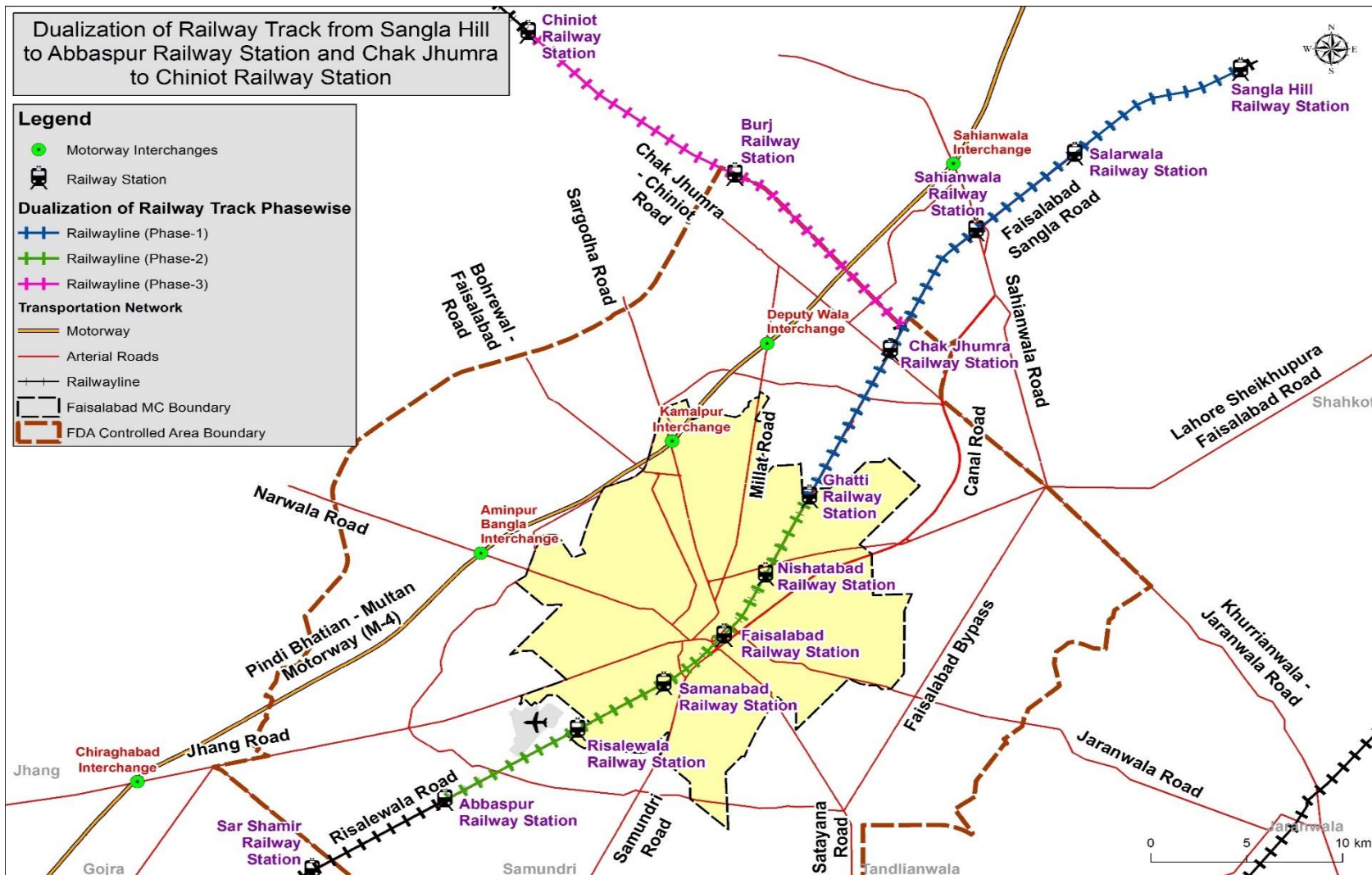


Figure 7-25: Proposed Railway Shuttle Service from Sangla Hill to Abasspur Railway Station

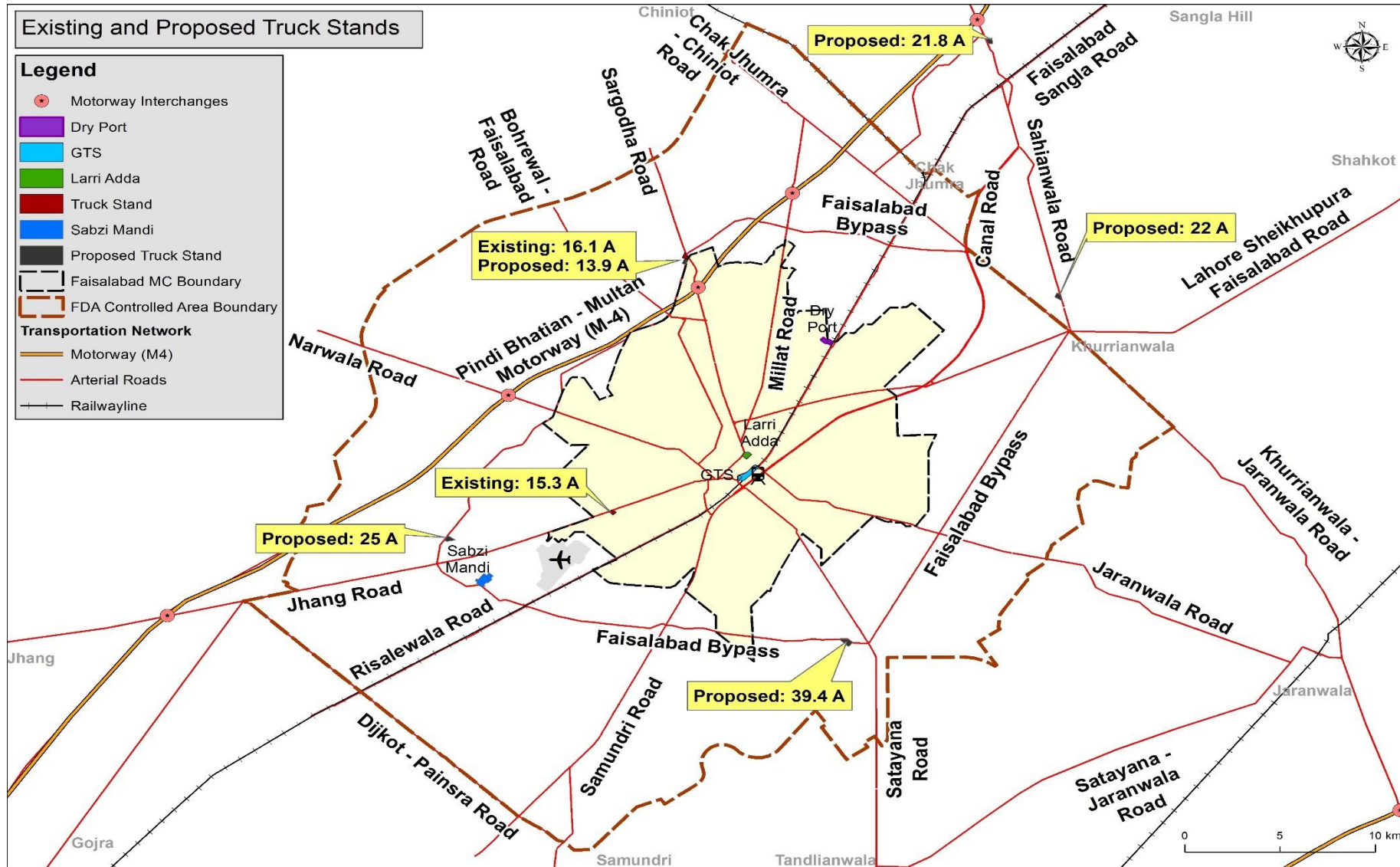


Figure 7-27: Existing and Proposed Truck Terminals

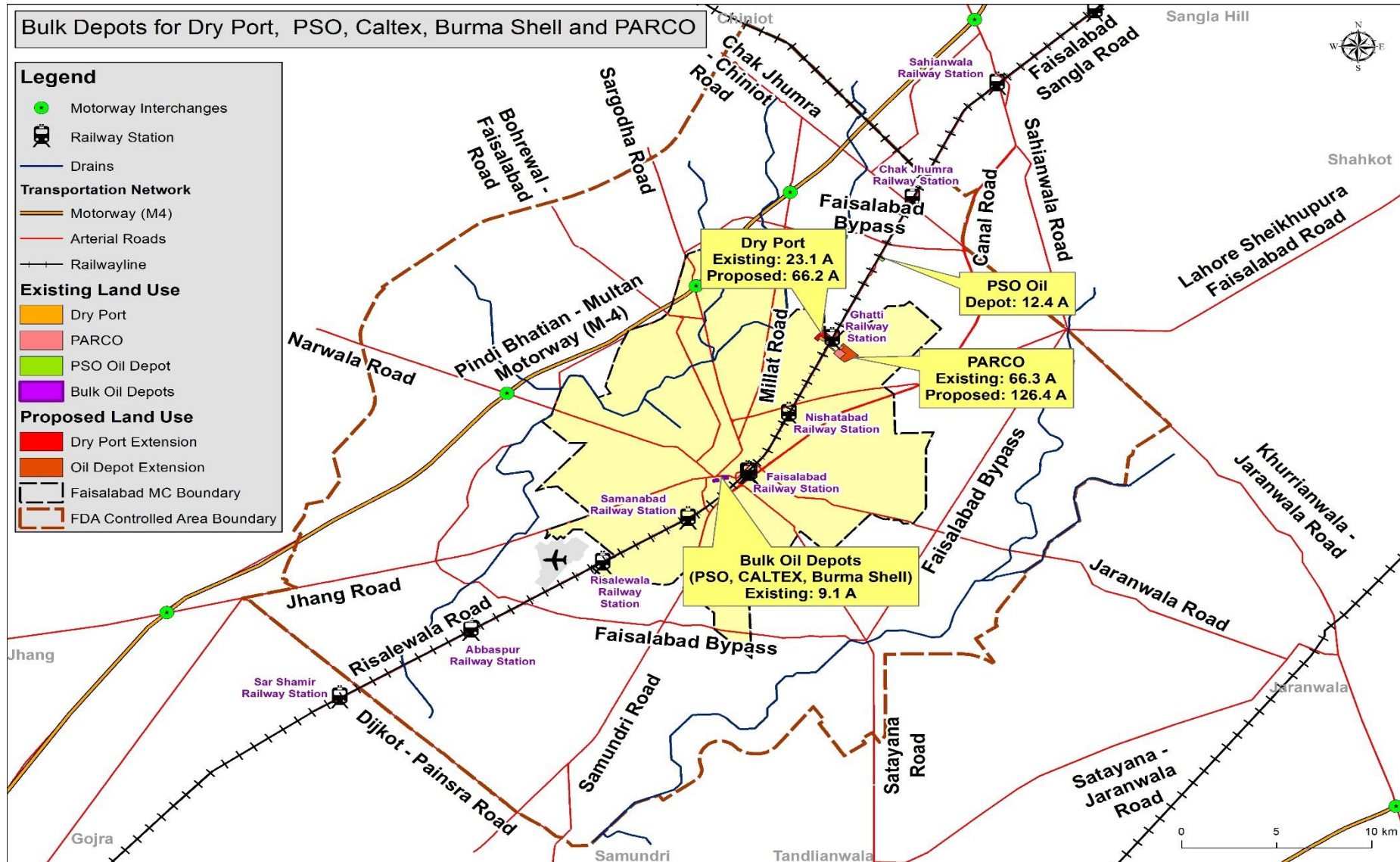


Figure 7-28: Existing and Proposed Bulk Depots for Dry Port, PSO, Caltex, Burma Shell and PARCO

7.3.7 Mass Transit System (Bus Rapid Transit)

As advised in The Feasibility Study for Mass Transit System in Faisalabad, December 2016, and discussed in preceding Section 5, there are two potential BRT corridors in Faisalabad:

1. Red Line
2. Orange Line

However, since the Feasibility Study for mass transit system was carried out long time ago, it is recommended to re-validate the study prior to execution of BRT corridors or any other associated contracts. The parameters of the corridors of Faisalabad BRT System are shown in Table 7-9 which is reproduced below:

Table 7-9: Parameters of the Corridor of Faisalabad BRT System

Line Name	Line Length (Km)			No. of Stations		
	Elevated	At-Grade	Total	Elevated	At-Grade	Total
Red Line	8.85	12.68	21.53	10	14	24
Orange Line	4.68	14.67	19.35	6	15	21
Orange Line (Extension)	-	9.56	9.56	-	8	8
Total	13.53	36.91	50.44	16	37	53

The Alignment of the proposed lines in the Feasibility Study Report for Mass Transit System, Faisalabad are shown in Figure 5-13 of section 5:

7.3.8 Feasibility Study for Integrated Bus Operations (IBO)

An integrated public transport system provides a seamless travel to a passenger who can enjoy good services connection, reasonable waiting time at transfer, comprehensive information and an integrated ticketing between different transport modes. Consequently, the system is essential to offer passengers an integrated travel using all public transport modes to suit their routing. The major components of an IBO are as follows:

- Fare Integration: The introduction of single, common fare smartcard that can be used in the recommended Primary (Mass Transit routes), Trunk and Feeder services of Public Transport. Fares could be distance-based fare, flat fare or zone-based fare.
- Physical Integration of Public Transport Network which will ease commuters transfer from one mode to another.
- Operational Integration aspect of planned system which will ensure that headway (Successive interval between buses) and operation hours matched between different types of Public Transport Services.
- Information Integration of public transport services to provide fare information, route information and departure and arrival time to commuters.

For IBO Network Operation following are essential features:

- a) Physical Infrastructure: The public transport infrastructure for IBO contains bus stops, bus bays, depots, terminal stations and other allied facilities associated with smooth and efficient operation of the public transport of the city.
- b) Engineering & Communication System: It includes Command and Control Center (CCC), Automated Fare Collection System (AFCS), Surveillance System (SS), Bus Scheduling System (BSS)

The major cost components of an IBO are as follows:

- a) Civil Works cost include infrastructure cost, parking facilities cost and other costs (contingencies etc.)
- b) Operational cost includes procurement, operation and maintenance of buses; operation and maintenance (O&M) of engineering systems and other O & M Costs.

A Feasibility Study is required to be conducted for Integrated Bus Operations (IBO) in Faisalabad prior to its implementation.

7.3.9 Feasibility Study for Circular Connectivity of Thirteen (13) Radial Roads

After up-gradation of Faisalabad Bypass and construction of Faisalabad Ring Road, the expansion of the existing radial road network with circular connectivity is essential in the form of shorter / partial ring roads. A Feasibility Study need to be conducted to identify those links for circular connectivity of radial road network comprising of 13 roads.

Refer Table 7-10 for approximate budget needed for long term development projects:

Table 7-10: Approximate Budget Amount for LTDP

S. No.	Project Description	Qty.	Unit	Rate (Pak Rs.)	Budget Amount (Pak Million Rs.)
1	Proposed New Road Network (Phase III)	320	Km	121,052,035	38,737
2	Construction of Expressway Connecting M3 and M4	54.50	Km.	205,840,000	11,218
3	Railway Track from Sangla Hill to Gatti Dry Port (Phase 1)	34	Km.	75,000,000	2,550
4	Railway Track from Gatti Dry Port to Abbaspur (Phase 2)	26	Km.	75,000,000	1,950
5	Railway Track on branch line from Chak Jhumra to Chiniot (Phase 3)	26	Km.	75,000,000	1,950
6	Construction of Faisalabad Ring Road Remaining Links (Phase 2)	28	Km.	205,840,000	5,764
7	General Bus Stand on Millat Road	75.90	Acre	110,000,000	8,349
8	General Bus Stand on Lahore - Sheikhpura - Faisalabad Road	84.30	Acre	110,000,000	9,273
9	Extension of Existing Truck Stand on Sargodha Road	37.50	Acre	50,000,000	1,875
10	Truck Stand on Faisalabad Bypass Near Satayana Road	110.80	Acre	50,000,000	5,540
11	Truck Stand on Sahianwala Road near VAC	22	Acre	50,000,000	1,100
12	Truck Stand on Sahianwala Interchange on M4	21.80	Acre	50,000,000	1,090
13	Extension of Dry Port at Gatti Railway Station	43.10	Acre	50,000,000	2,155
14	Construction of BRT Corridors (Red Line + Orange Line)	50.44	Km.	1,795,200,000	90,550
15	Pedestrian Bridges in CBD Area (Phase 3 - 27 out of 52)	27	Nos.	65,000,000	1,755
16	Feasibility Study for Integrated Bus Operations (IBO)	-	-	100,000,000	100
17	Feasibility Study for Circular Connectivity of Thirteen (13) Radial Roads	-	-	100,000,000	100
Sub-Total Amount Million Rs.					184,056
Consultancy Services for Preliminary Design, Detailed Design, Tender Documents and Construction Supervision of STDPs (5% of Total Cost)					9,203
Total Amount Million Rs.					193,211

7.4 PRIORITIZED PLAN – 2020 TO 2040

The prioritized plan for Transport Projects with timeline and priority for the proposed projects with possible modes of financing are given below:

Sr. No.	*PROJECT	TIMELINE RANKING			PRIORITY RANKING			Estimate d Rough Cost	**Mode of Financing
		Short Term 2020-2025	Mid Term 2026-2030	Long Term 2031 - 2040	High	Medium	Low	Rs. In Million	
1	Rehabilitation and Improvement of Existing Roads (280 km)	✓			✓			14,609	ADP
2	Reconstruction of Existing Roads (70 km)	✓			✓			8,553	ADP
3	Proposed New Road Network (Phase I – 295 km)	✓			✓			32,797	ADP, LN
4	Improvement of Major Intersection (40 Nos.)	✓			✓			1,800	ADP
5	Repair of Existing Signals to Make them Operational (25 Nos.)	✓			✓			1,125	ADP
6	Traffic Signs and Pavement Markings (350 km)	✓				✓		1,225	ADP
7	Parking and Parking Plazas near Eight Bazaar Area (290,619 sft. Floor Area, 5 Nos.)	✓			✓			7,405	PPP / LTB
8	Pedestrianization of Eight Bazaar Area (464,000 sft.)	✓			✓			139	ADP
9	Pedestrian Bridges in CBD Area (Phase 1 – 10 out of 52) – 10 Nos.	✓				✓		650	ADP
10	Flyover / Underpasses (6 Nos.)	✓			✓			5,400	ADP
11	Proposed New Road Network (Phase II – 135 km)		✓			✓		14,855	ADP, LN
12	Faisalabad Bypass Rehabilitation (95 km)		✓		✓			7,182	ADP
13	Construction of Faisalabad Ring Road Links (Phase 1 – 26 km)		✓			✓		5,352	PPP
14	Faisalabad Bypass Link with M3-Industrial Estate (FIEDMC) (4.2 km)		✓			✓		597	Funds by FIEDMC
15	Khurrianwala Bypass (14.7 km)		✓			✓		2,805	ADP, LN

Sr. No.	*PROJECT	TIMELINE RANKING			PRIORITY RANKING			Estimate d Rough Cost	**Mode of Financing
		Short Term 2020-2025	Mid Term 2026-2030	Long Term 2031 - 2040	High	Medium	Low	Rs. In Million	
16	Khurrianwala Bus Stand (31 Acres)		✓			✓		3,410	PPP
17	Interchange on M3 at Satayana Road		✓			✓		2,500	Funding by NHA
18	Improvement of Existing Links and Associated Junctions of Science City (14 km)		✓			✓		1,842	ADP, LN
19	Airport Link between Risalewala and Jhang Roads (4 km)		✓			✓		763	Funding by CAA
20	Pedestrian Bridges in CBD Area (Phase 2 – 15 out of 52) – 15 Nos.		✓			✓		975	ADP
21	Proposed New Road Network (Phase III – 320 km)			✓			✓	38,737	ADP, LN
22	Construction of Expressway Connecting M3 and M4 (54.5 km)			✓	✓			11,218	PPP
23	Railway Track from Sangla Hill to Gatti Dry Port (Phase 1 – 34 km)			✓		✓		2,550	Funding by Pak Railways
24	Railway Track from Gatti Dry Port to Abbaspur (Phase 2 – 26 km)			✓			✓	1,950	Funding by Pak Railways
25	Railway Track on branch line from Chak Jhumra to Chiniot (Phase 3 – 26km)			✓			✓	1,950	Funding by Pak Railways
26	Construction of Faisalabad Ring Road Remaining Links (Phase 2 – 28 km))			✓		✓		5,764	PPP
27	Bus Stand on Millat Road (75.9 Acres)			✓			✓	8,349	PPP
28	Bus Stand on Lahore - Sheikhupura - Faisalabad Road (84.3 Acres)			✓			✓	9,273	PPP

Sr. No.	*PROJECT	TIMELINE RANKING			PRIORITY RANKING			Estimate d Rough Cost	**Mode of Financing
		Short Term 2020-2025	Mid Term 2026-2030	Long Term 2031 - 2040	High	Medium	Low	Rs. In Million	
29	Extension of Existing Truck Stand on Sargodha Road			✓		✓		1,875	PPP
30	Truck Stand on Faisalabad Bypass Near Satayana Road			✓			✓	5,540	PPP
31	Truck Stand on Sahianwala Road near VAC			✓		✓		1,100	PPP
32	Truck Stand on Sahianwala Interchange on M4			✓		✓		1,090	PPP
33	Extension of Dry Port at Gatti Railway Station (43.1 Acres)			✓		✓		2,155	Funding by Pak Railways
34	Construction of BRT Corridors (Red Line + Orange Line) (50.44 km)			✓			✓	90,550	DF
35	Pedestrian Bridges in CBD Area (Phase 3 – 27 out of 52) – 27 Nos.			✓			✓	1,755	ADP
36	Feasibility Study for Integrated Bus Operations (IBO)			✓			✓	100	ADP, PMA
37	Feasibility Study for Circular Connectivity of Thirteen (13) Radial Roads			✓	✓			100	ADP

*The development projects listed above are conceptual only for the Master Plan of Faisalabad. Further refinement through preliminary design and detailed design by appointed Consultants of the executing agency will be required to firm up the rough budget costs and preparation of tender documents for execution of these projects.

** Mode of Financing: ADP - Annual Development Programme;
 LN - Loan by FDA;
 LTB – Long Term Bonds by FDA / FMC;
 DF – Donor Funding (World Bank, Asian Development Bank, DFID);
 PPP – Public Private Partnership;
 PMA – Punjab Mass Transit Authority

8. STRATEGIC DEVELOPMENTS IN TRAFFIC AND PUBLIC MANAGEMENT

For improvement of the overall traffic and public movement scenario in Faisalabad, several steps need to be taken in order to make developments in these sectors. These solutions do not necessarily address to capital-intensive infrastructure development. Instead, institutional coordination among relevant government agencies and public involvement and awareness are keen to improve the situations for efficient and safe road space utilization. To overcome traffic and public management issues such as traffic safety, the following developments are suggested;

8.1 SHORT TERM DEVELOPMENTS IN TRAFFIC MANAGEMENT

- Street vendors, hawkers and other encroachments should be removed from the main road as they cause hindrance in traffic movement.
- Parking facilities need to be provided in order to stop parking of vehicles on roads. Special parking tickets/tokens should be introduced, and vehicles should be only allowed to be parked at dedicated parking spots in commercial zones.
- Proper registration of all motorized and non-motorized vehicles should be brought into practice in order to make them an integral part of traffic infrastructure of the city.
- The encroachments in the Right-of-way of Railway line must immediately be removed and plantation be done all along the Railway line to create aesthetic view along the railway track and to control environmental pollution in the area.

8.2 MID TERM DEVELOPMENTS IN TRAFFIC MANAGEMENT

- Provisions of proper pedestrian crossings/bridges and side-walks/footpaths for movements of people along roads with significant movement of traffic. In addition to this, dedicated lanes for the movement of cyclists should be provided in order to reduce obstructions to motorized traffic movement on the roads.
- Proper service lanes should be provided in areas with high commercial and social activities so that the parking, slow moving public and traffic are restricted to service lanes only.
- Proper education and training of law enforcement officials should be carried out so that they can deal with traffic related matters in a more professional and efficient manner.

8.3 LONG TERM DEVELOPMENTS IN TRAFFIC MANAGEMENT

- All road junctions/intersections must be provided with some sort of traffic controlling methods such as roundabouts, traffic signals, or grade separation.
- Non-motorized vehicles such as animal drawn carts and cycles should be completely removed from the main roads and dedicated lanes should be provided for their movements.
- Dedicated lanes for motorcycles and scooters should be adjusted on the main roads of the city so that they don't intervene the movement of larger vehicles on the roads.

8.4 DEVELOPMENTS IN PUBLIC MANAGEMENT SYSTEM

Following are some of the possible and practical solutions to the public management issues in Faisalabad;

- Dedicated footpaths/sidewalks should be provided on all major roads of the city, especially in areas with high business and social activities.
- Illegal parking of vehicles on footpaths and sidewalks should be removed by law enforcement agencies.
- All vehicles should be restricted beyond a certain point at commercial and social areas and the public movement should be given priority in these areas.

- For pedestrian movements across the roads, overhead bridges should be provided, and the public should be encouraged to use them.
- Traffic enforcement authorities should implement and enforce laws related to public movement e.g. In the US, Jaywalking carries a fine up to \$60 (approx. Pak Rs. 8500). Only well trained, well equipped and adequately staffed traffic police can come up to the expectations in tackling the problems of traffic violations in the city.