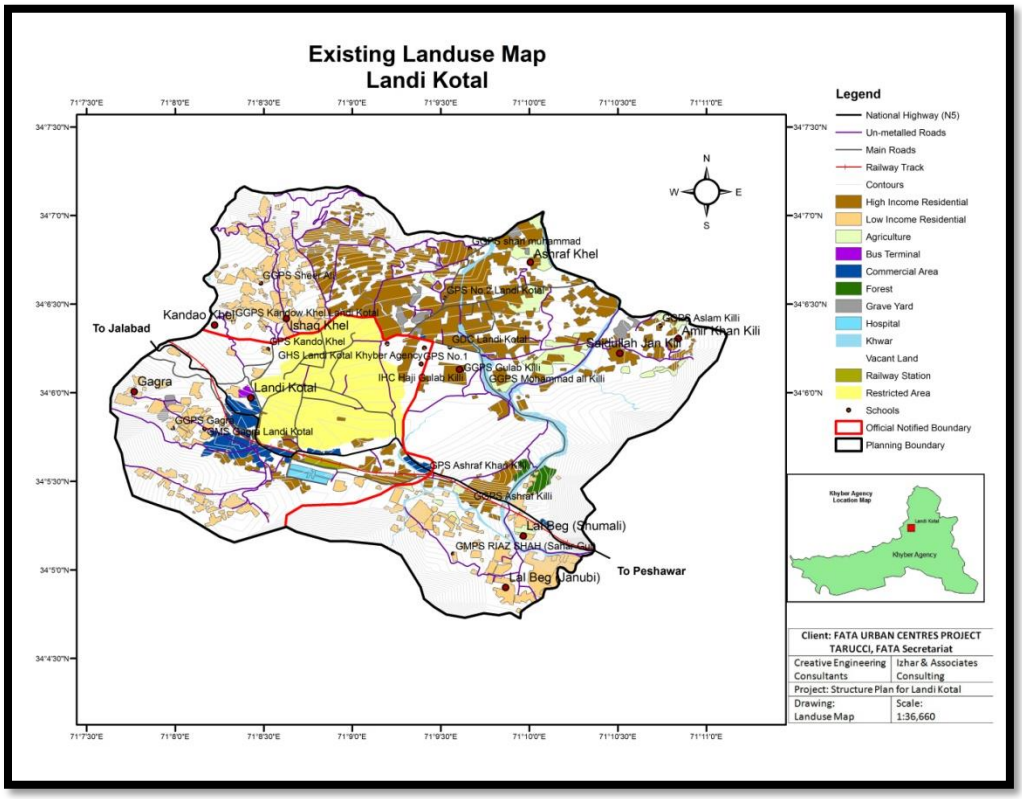
Tribal Areas Rural-to-Urban Centers Conversion Initiative (TARUCCI)

FATA URBAN CENTERS PROJECT (FUCP)
Structure Planning For Landi Kotal Town
(Khyber Agency)

FINAL STRUCTURE PLAN

September, 2015



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List of Abbreviations

CEC	Creative Engineering Consultants
CVSP	Conflict Victims Support Project
DLG&RD	Directorate of Local Government & Rural Development
EOI	Expression of Interest
FATA	Federally Administered Tribal Areas
FC	Frontier Constabulary
FCR	Frontier Crimes Regulations
FRs	Frontier Regions
FUCP	FATA Urban Centres Project
GSP	Governance Support Project
HH	Household
IAC	Izhar& Associates Consulting
JV	Joint Venture
MCC	Manual Classified Count
PMU	Project Management Unit
P&DD	Planning & Development Department
PPC	Pakistan Panel Code
R	Coefficient of Correlation
TARUCCI	Tribal Areas Rural To Urban Centres Conversion Initiative
TOR	Terms of Reference
WFP	World Food Program

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1. PREFACE

Urbanisation in most cases cannot be stopped. Because of economies of scale, Cities keep on growing; they overgrow to an extent that diseconomies of scale begin to accrue. These may be in form of pollution, traffic problems, congestion, dilapidated housing, overburdened infrastructure & municipal services, and so on. Karachi has over grown; and this is one of the reasons behind political turmoil there. It has roots in bad or lack of planning, weak urban management, scarcity of municipal services and lop-sided income distribution, resulting in ethnic strives, social upheaval and law & order problems. In the first place, planners and administrators should be able to foresee this and take mitigation measures. But when such a stage has been reached, planners are forced to think about urban decentralization, in terms of planning new satellite towns in the vicinity of mega city, or improving nearby existing small towns to make them more livable, and hence attract people, reducing pressure on the mega city.
Here we are talking about decentralization. But the situation in tribal areas is quite different. The headquarters of all the seven agencies of FATA are predominantly rural in character; these need to be urbanised. This can be done only if all the urban infrastructure, civic amenities, etc are provided. Cities are engines of growth. Landi Kotal should serve as an urban area, and look like an urban area.

The project will contribute towards the implementation of the Tribal Areas Rural-to-Urban Centers Conversion Initiative (TARUCCI) for the 14 urban centers in FATA. Under the auspices of World Bank, TARUCCI Project is being implemented by Project Management Unit (PMU), and FATA Secretariat's Directorate of Local Government & Rural Development (LG&RD).

The TARUCCI program is a rational, long term strategy for fundamental social and economic transformation through the 14 urban centers in FATA, and has three Strategic objectives, which are to:

a. Enhance responsiveness and effectiveness of the state to restore citizen trust;
b. Stimulate employment and livelihood opportunities;
c. Ensure delivery of basic services.

The program is designed to set the stage for overall socio-economic development through a range of basic services to improve the quality of life in FATA, and takes into account the potential of these towns to act as engines of socio-economic growth, and provide livelihood opportunities.

The TARUCCI Program is based on the recognition that any strategy to achieve lasting peace and cost effective sustainable development has to be based on encouraging urbanization as a means of social transformation. It is based on the premise that the scattered settlement pattern in FATA is a key cause of poor service delivery, lack of accessibility, scarce livelihood opportunities, and inadequate security leading to opportunities for militants to challenge the writ of the government. It therefore envisages focusing on the existing urban centers in FATA to enable provision of quality services, employment opportunities, and security.

Urban centers in FATA are already attracting rural population owing to better security, employment opportunities, and basic services. The TARUCCI program envisages supporting their expansion and densification by improving access to planned housing, quality education and health care, municipal services, diverse economic opportunities for trade and employment, recreation, and security. Once these 14 urban centers are developed, they are expected to reduce the sense of deprivation and despondency currently prevalent amongst the people of FATA. The selected urban centers under TARUCCI Program are shown in Table-1 below:

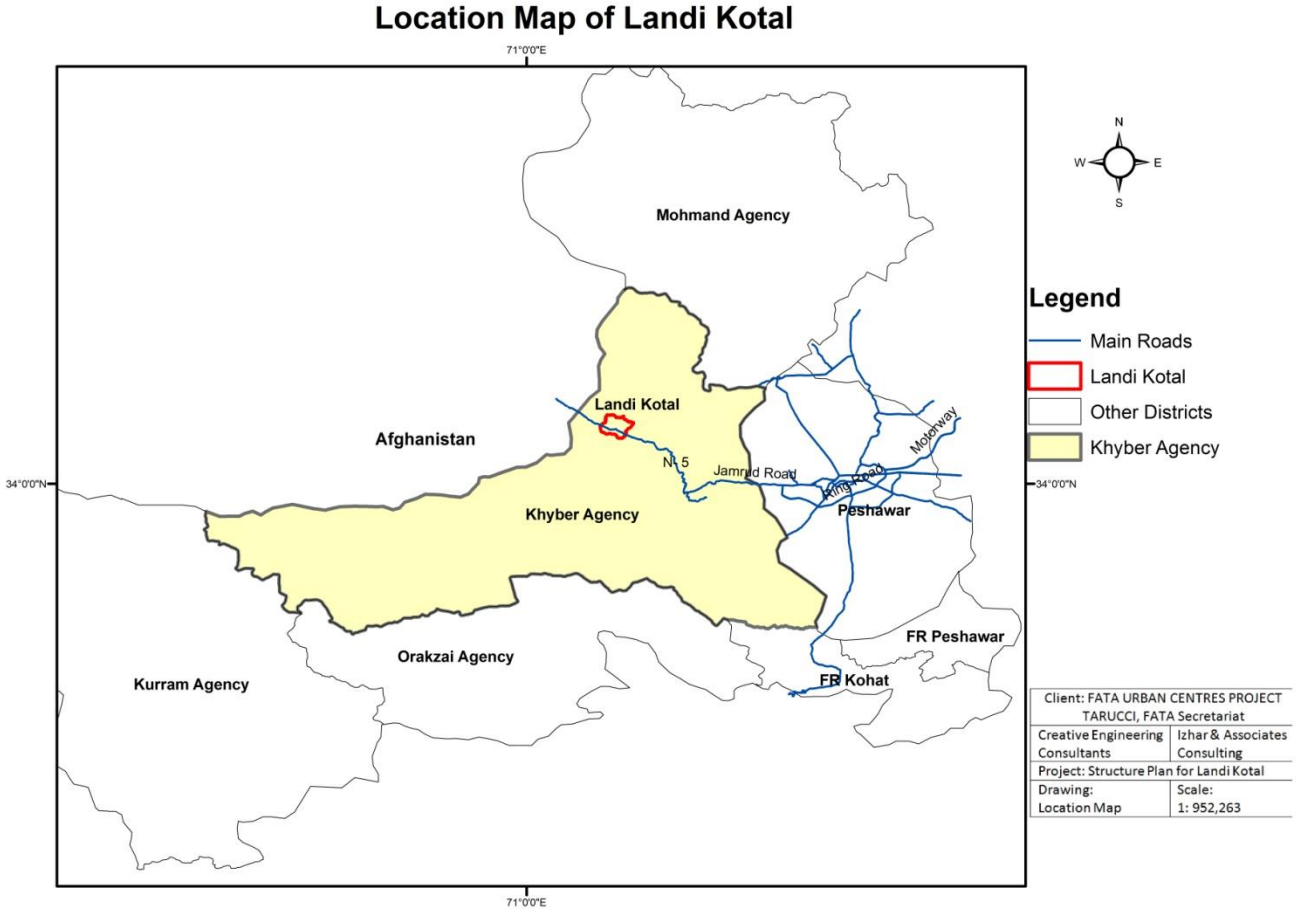
Table 1: Urban Centres Proposed Under TARUCCI

S.No	**Urban Centre**	**Agency**	**S.No**	**Urban Centre**	**Agency**
1	Khar	Bajaur	8	Wana	SWA
2	Ghalanay	Mohmand	9	Sarwakai	
3	Parachinar	Kurram	10	Kalaya	Orakzai
4	Sadda		11	Ghiljo	
5	Miran Shah	NWA	12	Darra Adam Khel	FR Kohat
6	Mir Ali		13	Darazinda	FR D.I.Khan
7	Landi Kotal	Khyber	14	Jandola	FR Tank

As per Agreement, the Project is to accomplish five deliverables by June 30, 2015. First three deliverables i.e. Inception Report, Base Map and Existing Situation Report have already been submitted. The current document (Revised Draft Structure Plan) is the fourth of the five deliverables to be submitted sequentially. It has been revised on basis of World Bank Comments on its earlier version. Summary of deliverables submitted and to be submitted is given in the Table-2. The tasks already completed have been highlighted. The location map of Landi Kotal in context of Khyber Agency and surrounding areas is shown in Map 1.

Table 2: Status of Project Deliverables

S. No.	**Deliverables**	**Status**
1.	Inception Report	Submitted
2.	Base Maps	Submitted
3.	Existing Situation Report	Submitted
4.	Draft Structure Plan	Submission
5.	**Final Structure Plan**	**Under Submission**



Map 1: Location Map of Landi Kotal

2. METHODOLOGY

To initiate the process of structure planning for Landi Kotal, the FATA Urban Centers Project (FUCP) through a press notification invited Consultants to submit technical/financial proposals. Based on our proposal through open competition, CEC-IAC Consortium was selected and awarded the Project.

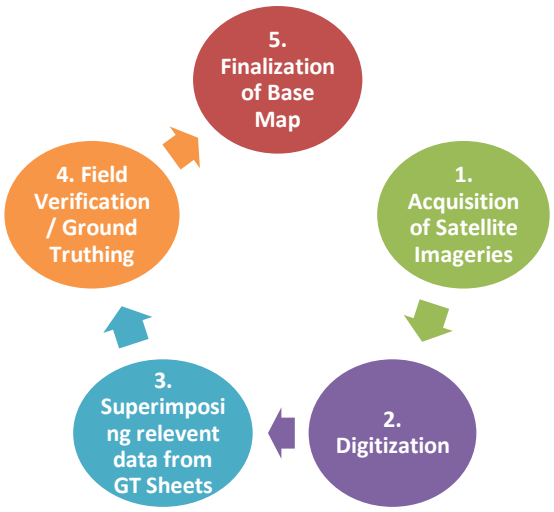
The primary objective of this consultancy, as specified in the Terms of Reference, is to develop Spatial Plan for the future development of Landi Kotal in Khyber Agency, taking into account the projected population growth, possible economic development scenarios, the need to service existing and future development and other relevant factors.

The approach adopted by Consultants to accomplish the above is elaborated below:

2.1 DIGITISED BASE MAPS

For preparation of base maps, the Consultants acquired satellite images and digitized them using GIS software (ArcGIS). The relevant data from Ground Topographic (GT) sheets was superimposed on the digitized map. Ground verification was then done using GPS. The Base Map was thus finalized.

Figure 1: Process Adopted for Preparation of Digitized Base Map



2.2 EXISTING SITUATION REPORT

Concurrently, work on preparation of Existing Situation Report was initiated, which included collection and analysis of data from both primary and secondary sources.

2.2.1 Primary Data Collection

For primary data collection, the following surveys were conducted:

- Household Surveys
- Group Interviews
- Land use Surveys
- Infrastructure Surveys
- Traffic Surveys
- Institutional Surveys.

Household questionnaire was prepared after thorough deliberations in house with experts, these were pre-coded and then field tested. Based on the questions, a tabulation plan was prepared including some cross-tabs. A statistically representative sample size was then determined and field surveys were conducted. The data thus collected was cleaned, entered in computer using SPSS and the required tables were generated and the data was then analyzed. Details about sampling and survey methodology employed have been described in a subsequent part of this Report.

Besides, group interviews were also conducted, which included women groups, Politicians, Journalists, community elders/ maliks, businessmen/ transporters and marginalized poor segment of the community.

Even though the base map prepared by the consultants clearly identified all physical features and were marked over it, but a physical confirmation of land use was considered necessary to confirm the nature of the landuses in the project area. Standard color codes were used for showing the different landuses, as given in the legend of base map. For example, brown color is usually used for residential areas, blue for commercial, green for open spaces, and so on.

For traffic counts, fresh manual classified counts (MCC) were conducted by the Consultants, at the entry and exit points. The inferences from the data thus collected are given in the relevant section.

2.2.2 Secondary Data Collection

Apart from primary data mentioned in previous section, The Consultants also collected secondary information and held detailed meetings in Landi Kotal and in Peshawar with different stake holders and collected secondary data of relevance for the Project. The officials met among others included the following:

i. Secretary & officials of P&D Department, FATA Secretariat
ii. Director and officials of Directorate of Local Government and Rural Development, FATA
iii. Directorate of Projects, FATA
iv. Political Agent, Khyber Agency
v. Assistant Political Agent, Landi Kotal
vi. Community elders
vii. Maliks
viii. Women Groups
ix. Politicians
x. Journalists
xi. Youth
xii. Representatives from Government Departments/Directorates
    a) XEN/SDO, Department of Works and Communication (W&S)
    b) XEN/SDO, Public Health Engineering Department
    c) XEN/SDO, Department of Irrigation
    d) Agency Health Officer
    e) Agency Education Officer
    f) SDO/ XEN WAPDA/PESCO
    g) Nominated Municipal Committee Officials
    h) FUCP/ World Bank Staff

Some of the documents collected for reference included:

i. Structure Plan for Khar, Bajaur Agency
ii. FATA Sustainable Development Plan, 2007-2015, Civil Secretariat, FATA, Peshawar.
iii. Tribal Areas Rural-To-Urban Centers Conversion Initiative (TARUCCI), FATA Secretariat, Peshawar.
iv. Citizens Pre-Budget (2014-15) Consultation Report on Khyber Agency, 25 February 2014, Implementation Support Unit, DOP, P&DD, FATA Secretariat, Peshawar.
v. FATA Development Statistics-2013, BoS, FATA Cell, P&DD, FATA Secretariat, Peshawar

vi. Important Agency/ FR wise Socio-Economic Indicators of FATA-2013, BoS, FATA Cell, P&DD, FATA Secretariat, Peshawar
vii. Miscellaneous PC-1s of development initiatives
viii. List of Foreign Aided Projects in FATA

The Consultant's team visited Landi Kotal a number of times, not only to collect primary and secondary data, but also to engage local officials of Landi Kotal, and obtain information about all aspects of existing situation in the Town. A number of group interviews were held involving communities, women groups, officials and representatives of different segments of society. The survey teams were given training and understanding about the nature and objectives of the Project before sending them to field for data collection.

The emphasis has been on community-based approach for data collection and planning options and local staff was engaged for collection of most of the data.

2.3 DRAFT STRUCTURE PLAN

Using the information given in the Base map, Existing Situation Report, consultations with various stakeholders and numerous field visits by Consultants team, Draft Structure Plan for Landi Kotal was prepared. In accordance with the TOR, it included assessment of growth and development scenarios, which have been used as the basis for the Draft Structure Plan, showing the expected/preferred pattern and extent for the future growth of the town.

The Structure Plan also assessed options for meeting priority needs/fostering the implementation of the Structure Plan and developed preliminary proposals for schemes to meet needs and facilitate implementation of the Structure Plan. It includes possible options for meeting priority needs of the stakeholders, which may have to be modified based on their feedback about the proposals.

2.4 FINAL STRUCTURE PLAN

The Draft Structure Plan was submitted to the World Bank through FUCP, and a meeting was held in World Bank Islamabad in first week of June, 2015. The participants included officials of WB, FUCP and the Consultants. The Draft Structure Plans were thoroughly discussed; and based on written comments received through FUCP, a revised version of Draft Structure Plan was submitted. The comments on revised version mostly pertained to minor editing and the World Bank gave a go-ahead for presenting the Plan to stakeholders.

The Draft Structure Plan was then presented to various stakeholders belonging to Landi Kotal; for this purpose a meeting was arranged on August 10, 2015 in which the Draft Structure Plan and the identified projects were explained. The

proceedings of the meeting are presented in a separate document entitled 'Appendix to Final Structure Plan', and form a part of this submission. The comments/suggestions of participants have been incorporated to finalize the Structure Plan and list of priority projects. List of participants is given in Annexure 7.

On August 28, 2015 a wider stakeholder's consultative workshop was held at Hotel Pearl Continental, Peshawar in which an MNA from Khyber Agency, Senator from Mohmand Agency, Secretary AIC FATA, Project Director and other officials from FUCP, and representatives of various Departments participated. Some very useful suggestions were received which have been incorporated in this Final Report. The suggestions are given in Annexure 8. Details of workshop proceedings are given in a separate document 'Appendix to Final Structure Plan'.

PART A: EXISTING SITUATION

1. HOUSEHOLD SURVEYS

1.1 SAMPLE SIZE AND SURVEY METHODOLOGY

Household Surveys were conducted to determine demographic, social and economic aspects of households and their level of satisfaction with different facilities. The survey was based on observed variations in the respondent households, using stratified samples based on our prior knowledge of locality types and access to infrastructure facilities.

The questionnaire for household surveys was prepared after through deliberations, shared with the Client, was pre-coded and field tested. Based on the questions, tabulation plan was prepared which included some cross-tabs. The interviewers were comprehensively trained; each question was explained and survey methodology elaborated.

Sample Size was determined through a number of statistical methods which included:

i) Margin of Error
ii) Confidence Level
iii) Universe (i.e. total number of households in the project area)

The margin of error is the amount of error that can be tolerated. Margin of error adopted was 7% for household surveys in Landi Kotal Urban Area. The confidence level is the amount of uncertainty that can be tolerated. With a confidence level of 95%, one would expect that for one of the questions in the survey, the percentage of people who answer *yes* would be more than the margin of error away from the true answer. The true answer is the percentage one would get if everyone was exhaustively interviewed. Typical choices for confidence level are 90%, 95%, or 99%. For Landi Kotal, confidence level of 95% was adopted.

Universe in statistical terms is the total number of people or households, from which sample is to be drawn. The population of Landi Kotal Urban area in January 2015, as calculated from WHO's polio data, is around 91,000. Thus the parameters adopted to calculate sample size included:

i) Margin of Error = 7%
ii) Confidence Level = 95%
iii) Universe = 91,700

Applying the above values in the formula, the recommended sample size is 196[1]. A round figure of 200 interviews was adopted.

Having determined sample size, the next step was to conduct actual surveys, in a way so as to capture variations among respondents of different areas within the project area.

As a first step, all the areas/localities falling in the delineated urban area were noted and their 2015 population as already explained in 'Existing Situation Report' was listed. There are 10 localities/ villages in the project area, and their total population works out to be 91,712. Based on this, the percentage population of each locality was calculated.

The fundamental question for the sampling protocol was to capture information from each village/settlement that fell in the delineated urban area of Landi Kotal. The purpose was to capture some, if not all, variations to ensure a representative sample. The overall representative sample size as calculated to be 200. The settlement-wise sample size was calculated by applying the population percentage to 200. Thus sample size varied with the population of settlements, ranging from 4 in case of Shikhmal Khel-I to 29 in case of Kandaw Khel. However Shikhmal Khel-I is an exception, because in all other 9 settlements, the sample size was fairly close (Ref. existing Situation Report).

Having determined the settlement-specific sample size, the field officers collected information about number of 'hujras' in each settlement and visited each hujra. Thus if a locality had four hujras, all four were visited. Through the local elders, people to whom that 'hujra' belonged were invited for interviews. Preference for interviews was given to heads of the household, but where they were not available; the elder son/close relative living in the same household was interviewed. Unlike settled areas, many people in tribal areas live in family compounds. Families living in a compound are closely related, but may have separate kitchens. Thus there can be two or more households in a compound. The interviewers ensured to interview representative of only one household in the compound to ensure dispersal and representation of each sub-locality. The data thus collected was entered in computer using SPSS software, and required tables/cross-tabs generated.

1.2 SURVEY FINDINGS

The findings of household surveys were presented in detail in the 'Existing Situation Report' for the planning area as a whole. However results relating to water sources, sanitation and drainage etc have to be seen in the context of

[1]Source: http://www.raosoft.com/samplesize.html

multiple villages or 'clusters' that make up the urban area. At survey stage, Landi Kotal Planning Area was divided into nine clusters and population based proportionate survey sample was selected from each cluster[2]. It was important because service delivery patterns could be highly dependent on various urban clusters with significant variations. This however did not affect the sample size taken for the entire urban area, as each cluster was proportionately represented, as stated earlier.

Following are the summarized salient survey findings[3] for the planning area. The statistical Tables are presented in Annexure 2. Cluster-wise finding, particularly for services are presented in Section 6, and visually presented in Maps 4, 6 and 8.

1.2.1 Household Sizes and Age-Sex Composition

- The average household size in Landi Kotal is 14.93. In 34.50% of the surveyed household, the size is 6 to10 members, while in 26.5%, the household size is between 11-15. Collectively, these two categories constitute 61% of the total households. However, in 22.5% of the surveyed households, the size is more than 20.

- The total male population is 54.6% while the female population is 45.4%. The sex-ratio is 83.3, i.e. for every 100 males, there are 83.3 females. In other words, there are 1.20 males/female in Landi Kotal, as against the national average of1.06 males/female. This indicates either under-reporting of female population or high female mortality (or both).

1.2.2 Drinking Water and Household Satisfaction level

- About 23% household purchase drinking water from water tanker, closely followed by well (around 18%), municipal tap (around 16%), and motor pump (about 15%). Other sources are tube well and hand pump. In case of about 13% households, drinking water is brought from sources outside the village, mostly fetched by women.

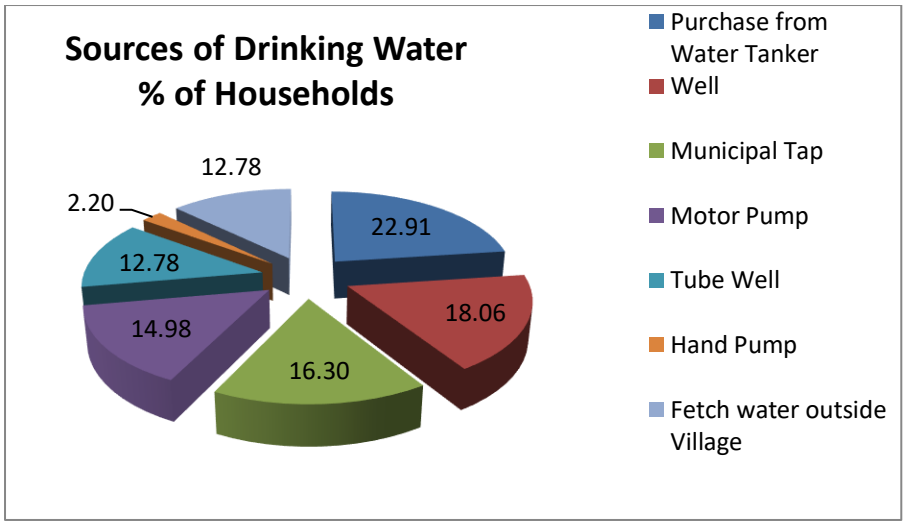
- Most households are not satisfied with drinking water. These include 80% of hand pump users, 65% of those which fetch water from outside village primarily because of distances involved and time consumed; 65% to 68% are not satisfied with drinking water obtained from well, municipal tap, motor pump and tube well.

[2] Detailed methodology is presented in Existing Situation Report.
[3] Results are based on Household Surveys conducted by the Consultants; and have been derived from 'Existing Situation Report' where the findings are presented in more detail.

Reasons for dissatisfaction have been described in 'Existing Situation Report', Table E-6, Page 47 (March 2015). For ready reference, the relevant Table is reproduced below as Table 3. It appears that people are more concerned about the *availability* of water, rather than its quality. It also signifies the magnitude of problem.

Table 3: Reasons for Dissatisfaction with Drinking Water

Reasons	Frequency	%
Tube well not fully functional	48	24.0
Cannot afford to purchase water	26	13.0
Water has to be fetched from distant Sources[4]	23	11.5
Insuffient water in wells/other sources	22	11.0
Water Shortage due to Load Shedding	19	9.5
Insufficient Capacity/No Water Storage Tank	18	9.0
Wastage of time due to rush of water seekers	18	9.0
No Water Facility within House	11	5.5
Other Reasons	15	7.5
Total	200	100



Graph 1: Sources of Drinking Water

- However in case of drinking water obtained from water tanker, only 48% are not satisfied, while 52% are satisfied.

1.2.3 Human Waste Disposal

[4] Mostly by women.

- When asked if there was an arrangement for disposal of human waste, the response was in affirmative in about 87% of the interviewed households. Of these, more than 51% use dry system, 18.5% had flush latrine, while around 30% use other methods.

- Dry system used by 51% households is direct drop pit latrine toilet. When filled, it is either emptied for reuse or filled with dirt and another one is dug.

- Household who do not have a proper human waste disposal system, defecate in house and throw it on garbage heaps/open areas or let it flow outside the house. More than 70% households were not satisfied with the prevailing system. The main reasons cited for dissatisfaction were that there was no flush latrine in their houses, about 29% lacked resources to afford flush system, and about 15% responded that there was not enough water to dispose-off human waste.

1.2.4 Drainage

- More than 82% of the households reported that drainage is through open unlined drains, while about 12% had open but lined drains. Households served with covered or piped sewerage are negligible.

- About 89% of the households are not satisfied with the prevailing drainage system. The reasons described by households included katcha/open/narrow drains, causing damage to streets, problems for pedestrians particularly during rain, and get frequently blocked.

- There is practically no arrangement for solid waste disposal, and people complained of bad smell, unhygienic/dirty environment, diseases and obstructions for pedestrians.

1.2.5 Housing

- Houses of about half of the interviewed households (49%) are in family compounds (Average number of houses in a family compound is 3.78); more than a quarter houses are in row (26.5%); 12% houses are semi-detached while a similar percentage is for isolated/free standing houses.

- Average Number of Habitable Rooms per house is 3.69. Except for one-room houses (which are only 4.5%) and two-room houses (which are more than 25%); in all other categories the distribution is fairly uniform, ranging from 13% in case of 5-room houses to 19.5% houses having 5+ habitable rooms.

- It is worth mentioning here that the Household Sizes and number of habitable rooms are only moderately co-related (Coefficient of correlation 'R'= 0.53). In other words, larger household size does not necessarily mean more habitable rooms. There is another way of looking at it. The total number of rooms in houses of 200 households was found to be 800. The households surveyed were 200; their average household size was calculated to be about 15, implying that the total population of these 200 households is 200X15=3,000. As mentioned above, the number of rooms is 800; thus occupancy rate or number of persons per habitable room is calculated to be 3,000/800=3.75, which is quite high indicating congestion/over-crowding.

- Regarding non-habitable rooms (baths, latrines, kitchens);around 16% houses have no bathrooms, 18% have no latrines and 13% have no formal kitchen.

- All houses are owner occupied; in the sample the consultants did not come across any rented/leased house or any other form of tenure status.

- Most of the houses are katcha (68%) while 22.5% are semi-pucca houses; these two categories constitute about 90% of the total housing stock. Less than 10% of the houses are pucca.

- Period of construction: Among the categories formulated, maximum number of houses (42.5%) was constructed over the past 26 to 50 years, and 21.5% were constructed during the past 11-25 years. 18% of the total sample houses are older than 50 years.

- Overwhelming majority of houses (93%) is of single storey. Only 6.5% houses are double storey.

- Plot sizes of more than one-third houses (36.5%) are above on kanal. Plots sizes of less than 5 marlas are only 4.5%, while those falling in the range of 5 to 7 marlas 9%. In the remaining 3 categories, the distribution is fairly even, ranging from 14.5% to 19%. In cumulative terms, 28% of the total plots are less than 10 marlas.

- About 93% of the households are living in their present house for the last more than 5 years, and practically none of them want to shift elsewhere.

1.2.6 Earning Members

- In 60% households, the earning members are 1-2, while in 29% households, the number of earning members is 3 to 4. These two categories constitute 89% of the total households.

- All earning members in the sample were males, except for one household which had a female earning member, who was in tailoring business.

- On average, there are 2.26 earning members per household. Since household size is about 15, the dependency ratio is 15/2.26=6.64, i.e. average number of household members depending on one earning member is 6.64. This is quite high and indicates high unemployment.

1.2.7 Household Incomes

- Average household income through earning members is Rs. 24,795. However if other sources of income (agriculture, property rent, transport etc) are also included, the average income per household increases to Rs. 29,236.

  It needs to be emphasized however that averages such as above hide important internal differences and do not indicate income inequalities. Distribution of sample households across different incomes categories are therefore shown in Table 4.

Table 4: Monthly Household Incomes

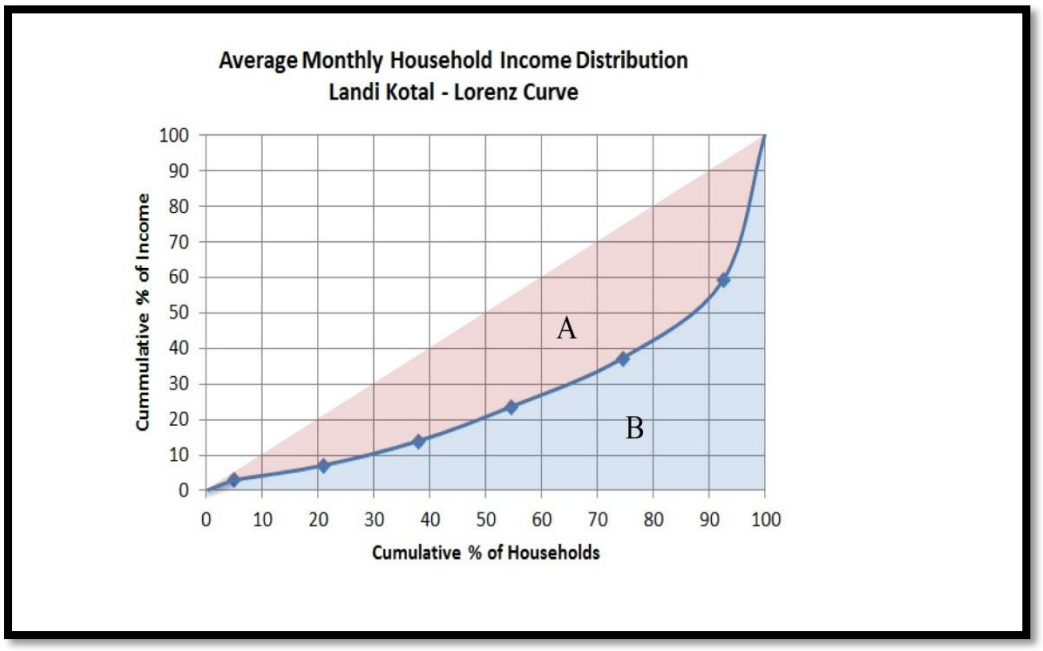
Monthly Household Income (Rs.)	No. of Households	% of Households	Cumulative % of Households
Up to 5,000	10	5	5
5,000-10,000	32	16	21
10,001-15,000	34	17	38
15,001-20,000	33	16.5	54.5
20,001-30,000	40	20	74.5
30,001-50,000	36	18	92.5
Above 50,000	15	7.5	100
Total	200	100	

It is clear from the Table that monthly income of 21% of the households is up to Rs. 10,000; 38% households earn up to Rs. 15,000 and so on.

It may be mentioned here that the commonly used inequality measure is Gini-coefficient. The coefficient varies between 0, which reflects complete equality and 1, which indicates complete inequality (i.e. one person has all the income or consumption, all others have none). Graphically, the Gini coefficient can be easily represented by the area between the Lorenz curve and the line of equality.

Lorenz curve for Landi Kotal is shown in Graph 2; and the Gini coefficient has been has been calculated by the following formula:

Gini coefficient = Area of A/Area of sum of (A+B), i.e. A/(A+B); which has been calculated to be 0.49, which indicates high income inequality in Landi Kotal. As the graph shows, the share of bottom 20% households is less than 10% of the total income, while the top 20% households get 41% of the total incomes. The income distribution in Landi Kotal is thus highly skewed.



Graph 2: Lorenz Curve – Landi Kotal

- It is worth mentioning that there is weak relationship between household Income and household size (R= 0.406). This indicates that larger household size does not imply higher household income, and vice versa.

- Again, there is no relationship what so ever between household income and type of house (R= -0.029); implying that a relatively higher income household may be living in a row house, and the household with moderate income may be living in semi-detached house or family compound.

1.2.8 Priority Problems

- The top five problems identified by households are as below:

    - Priority 1 Problem: Shortage of drinking water

- Priority 2 Problem: No flush latrine
- Priority 3 Problem: Flooding Issues
- Priority 4 Problem: No proper drainage
- Priority 5 Problem: No garbage disposal

2. GROUP INTERVIEWS

A detailed exposition of the group interviews was included in the 'Existing Situation Report'. The interviews were held in the first two weeks of March 2015, and included groups of different stakeholders such as:

- Women
- Journalists
- Transporters
- Youth
- Marginalized group
- Community elders
- Politicians

Through informal and inter-active discussions, the information was obtained regarding main issues of the town and their urgent priorities/developmental requirements.

Based on the information thus collected, the priority sectors and schemes under each sector, as identified by the stakeholders are summarized below.

- **Water Supply**
  - Up gradation of existing facilities
  - Water transmission should be from perennial sources like Sadu khel or Char Bagh
  - Pipelines installation to New tubewells
  - Additional Water tanks
  - Up-gradation of gravity based facilities
  - Solar system for tube wells
  - Restoration of existing water facilities
  - Establishment of new tube wells
  - Storage tanks
  - Motor pumps
  - Pipes installation
  - Additional tube wells needed
  - Up gradation of existing sources
- **Sewerage/Drainage**
  - Drains construction

- Households latrines construction
- Need flush latrines

- **Storm Water Drainage**
  - Street pavements
  - Retaining walls
  - Pipe culverts along link roads
  - Drains
  - Flood protection walls
  - Pipe culverts construction on link roads
  - Street pavements
  - Construction of culverts
  - Drains for rain water
- **Solid Waste Collection**:
  - Vehicles for garbage disposal
  - Deployment of sweepers
- **Road Rehabilitation:**
  - Ashraf khel road
  - Kandaw khel road
  - Fatmi khel road
  - Sheikhmal khel road
  - Gaagra road
  - Sadu Khel road
  - Nadir khan killi road
  - Pikawro Chowk
- **Public Toilets**
  - Public toilets should be provided near bazaar
  - Provision of water in existing public toilets
  - Construction of new toilets near bazaar and hujras
- **Slaughter House**
  - Relocate existing slaughter house
  - Water supply for slaughter house
  - Rehabilitation of existing slaughter house
  - Trainings on hygiene
- **Bus Terminal**
  - Should be located near railway station
  - Bus terminal should be established in Said Jamala area
  - Establishment of planned bus terminal near railway station
  - Establish new bus terminal near Agency Headquarter Hospital and Railway Station
- **Park**
  - Construction of new park in Hamza Baba area.

- Construction of sports ground near to Hamza Baba mazar and Tatara
- Reconstruction of park at Tatara
- Sports ground at Sadu khel, Hamza Baba.
- Park should established in Sadu khel

Table 5: Priorities as Identified by Stakeholders[5]

Stakeholders Group	**Priorities Identified**									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Journalists	Drinking Water	Improvements of Roads/streets	Garbage Disposal	Sewerage System	Storm Water Drainage	Public Toilets	Slaughter House	Bus Terminal	Park	
Transporters	Drinking Water	Storm Water Drainage	Improvements of Roads/streets	Sewerage System	Garbage Disposal	Bus Terminal	Park	Slaughter House	Public Toilets	
Youth	Drinking Water	Storm Water Drainage	Garbage Disposal	Sewerage System	Improvements of Roads/streets	Slaughter House	Bus Terminal	Public Toilets	Park	Skill Centre
Marginalized Group	Drinking Water	Storm Water Drainage	Improvements of Roads/streets	Slaughter House	Sewerage System	Public Toilets	Garbage Disposal	Bus Terminal	Park	
Village Elders	Drinking Water	Storm Water Drainage	Sewerage System	Improvements of Roads/streets	Garbage Disposal	Public Toilets	Park	Slaughter House	Bus Terminal	Sports Ground
Politicians	Drinking Water	Storm Water Drainage	Improvements of Roads/streets	Sewerage System	Garbage Disposal	Park	Public Toilets	Slaughter House	Bus Terminal	Sports Ground
Women	Drinking Water	Roads	Sewerage System	Storm Water Drainage	Garbage Disposal	Public Toilets	Bus Terminal	Park	Slaughter House	Sports Ground
Households	Drinking Water	Flush System	Flood Control Measures	Storm Water Drainage	Garbage Disposal					

[5]Source: Group interviews conducted by Consultants.

3. LANDUSE SURVEYS

3.1 GENERAL

Landuse is the most stable component of urban dynamics, as changes are likely to modify the landuse structure over a rather long period of time. This comes as little surprise since most real estate is built to last at least several decades. The main impact of land use on urban dynamics is its function of a generator and attractor of movements.

Land use implies a set of relationships with other land uses. For instance, commercial land use involves relationships with its supplier and customers. Thus, a level of accessibility to both systems of circulation must be present. Since each type of land use has its own specific mobility requirements, transportation is a factor of activity location, and is therefore associated intimately with land use.

Landi Kotal, like any existing urban area, has expanded on basis of indigenous growth; there is no 'standardized' landuse distribution of activities. The proportions and forms of urban landscape are the resultants of past and present socio-economic forces. The market processes have a strong pervasive power, and hence the scope of planned interventions in urban landuse pattern needs to be understood.

The landuse distribution in Landi Kotal has been analyzed and the text below presents pen picture of the location and broad description of the landuses with respect to type of landuses and spatial location etc.

3.2 LANDUSE DISTRIBUTION

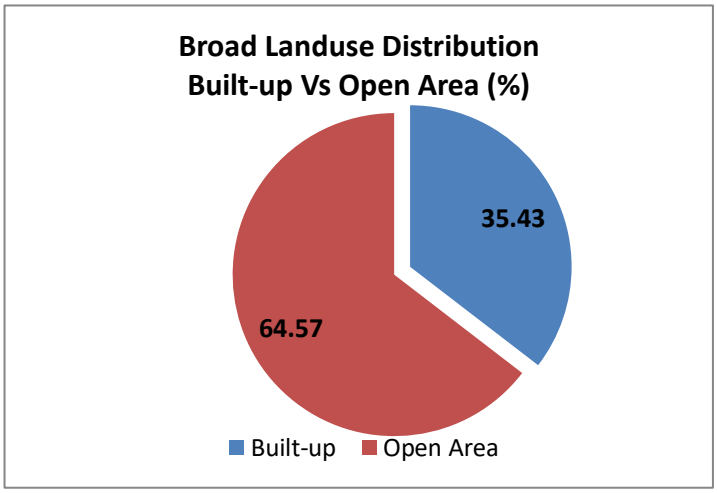
The urban boundary of Landi Kotal has roughly rectangular shape, with N5 passing through its lower southern portion. Town's main non-residential 'activity area' or the 'urban hub' is along N5.

The landuses concentrated here are the main commercial area, Agency Headquarter Hospital, railway station, transport terminal etc. The cantonment lies north of N5, opposite to railway station.

Most of the residential expansion has taken place towards north of Cantonment and south of N5, and to some extent towards west. The expansion has been relatively least in the eastern direction. The growth towards north of Cantonment is more contagious. In other directions, spatial growth is less intensive and sporadic. The overall landuse pattern is diffused and there is admixture of landuses.

3.2.1 Built-Up Vs. Open Area

The field information about existing landuses was computerized using GIS and using standard color codes. The survey statistics thus obtained reveal that the urban area of Landi Kotal Town is spread over around 3,612 acres i.e. 14.62 square kilometers, of which around 1,280 acres or about 5.2 square kilometers (35.43%) is built-up while around 2,332 acres or 9.44 square kilometers (64.57%) is open or non-built up area.



Graph 3: Built-up Area Vs Open area

The built-up areas include residential, commercial, restricted area, educational, health, road network including transport terminals, graveyards and offices etc.

The non-built up areas include vacant area (including physically difficult area, mainly steep slopes at the edges of urban boundary), agricultural land, forests and Khawars.

3.2.2 Landuse Distribution in Built-Up Area

The total built-up area in Landi Kotal Urban Area is about 1,280 acres (5.2 square kilometers), of which about 60% (762 acres or 3.1 square kilometers) is under residential uses. Thus, as the name suggests it is pre-dominantly residential area but also includes internal streets and lanes, and purely low-end, local level facilities. The next landuse category is restricted area (mainly cantonment area) which covers 25% of the total area, more than 4% under commercial area, and about 4.4% under road network (includes only N5 and mettaled roads; but not internal access roads; also the un-mettaled/katcha roads generally pass through Khawars etc and their area has also not been included in under road network). The detailed statistics about landuse distribution in built-area are given in Table 6, in square kilometers, acres and as percentages of the total built-up area.

Table 6: Landuse Distribution in Built-up Area[6]

Landuses	Area in Sq. Kms	Area in Acres	%
Residential	3.09	762.05	59.54

[6] Area calculations based on Landuse surveys conducted by Consultants in March, 2015.

Landuses	Area in Sq. Kms	Area in Acres	%
Commercial	0.22	54.06	4.22
Restricted Area	1.29	317.44	24.81
Educational	0.10	23.95	1.87
Health	0.05	11.34	0.88
Road Network	0.23	55.74	4.36
Railway Station	0.03	8.50	0.66
Bus Terminal/Car Stand	0.01	2.69	0.21
Grave Yards	0.10	24.76	1.94
Others (Offices, Mobile Tower, Water Tank etc)	0.08	19.27	1.51
Total Built-up Area	5.2	1279.8	100

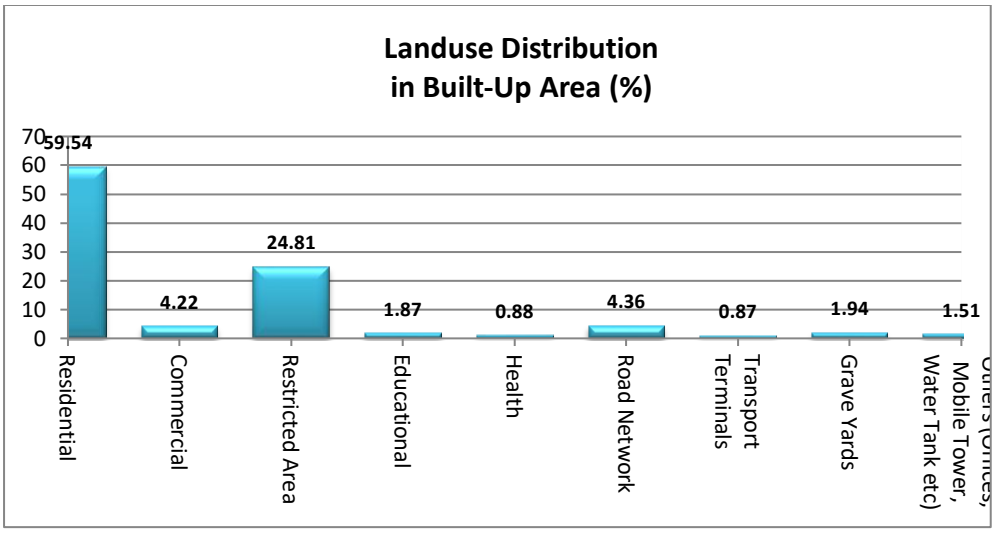
3.2.3 Landuse Distribution in Open Area

The total open area within urban limits is more than 2,332 acres (9.44 square kilometers), most of which (more than 92%) is vacant land, but it includes physically difficult area at the edges of the urban boundary. If this is excluded, the vacant area would be lesser. The other open areas, as seen in Table5, are relatively insignificant and include Khawars (3.78%), agricultural land (3.31%) and forests (less than 0.6%).

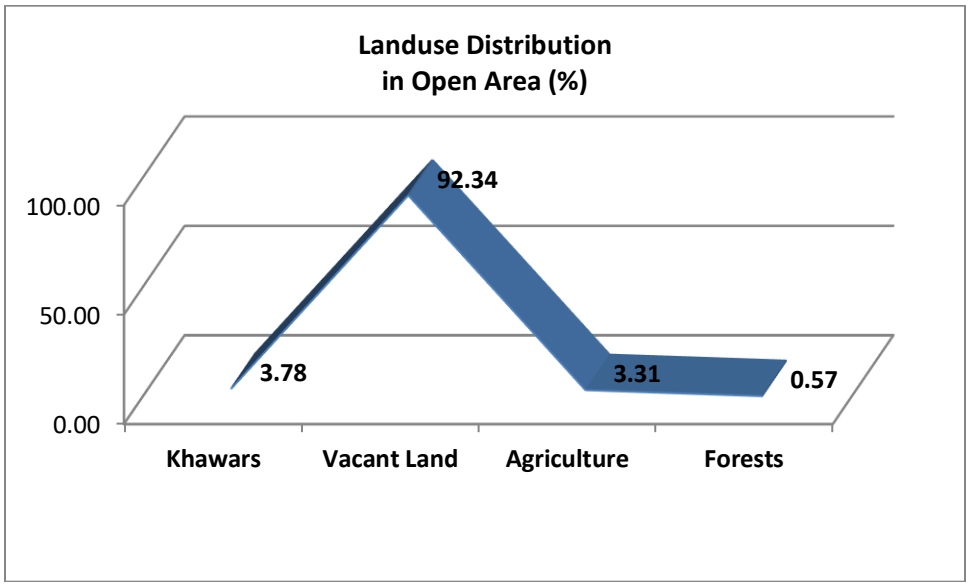
Table 7: Landuse Distribution in Open Areas[7]

Landuses	**Area in Sq. Kms**	**Area in Acres**	%
Khawars	0.36	88.15	3.78
Vacant Land	8.72	2153.71	92.34
Agriculture	0.31	77.26	3.31
Forests	0.05	13.20	0.57
Total	**9.44**	**2332.31**	**100.00**

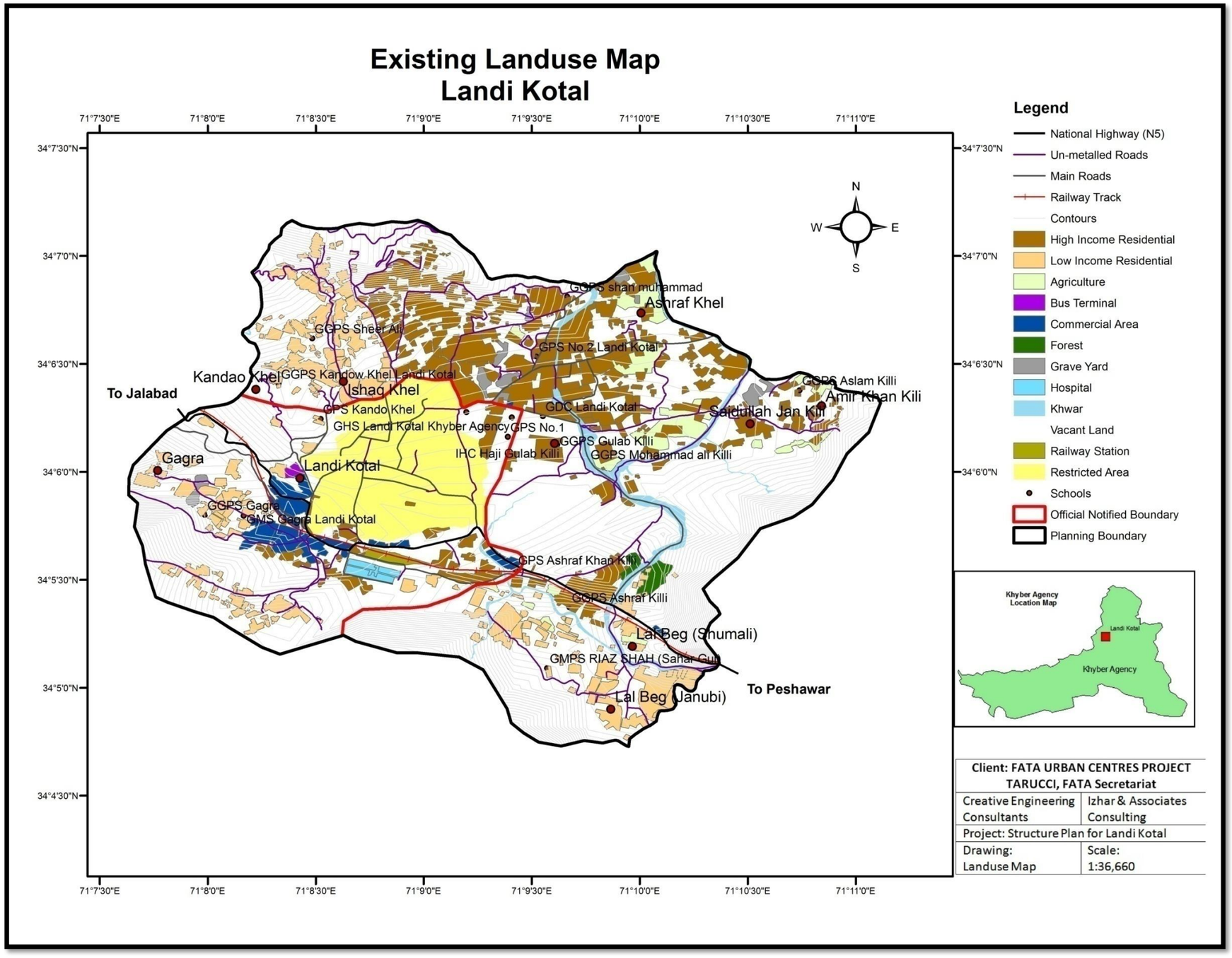
[7] Source: ibid



Graph 4: Landuse Distribution in Built-up Area



Graph 5: Landuse Distribution in Open Area



Map 2: Existing Landuse Map

4. COMMERCIAL SURVEYS

Most of the commercial area lies towards western part of the Town, on both sides of N5, and also spreading to adjacent inner areas. Some commercial linear strips in form of ribbon developments are also located elsewhere such as opposite to railway station and near Ashraf Khan Killi along N5.

Table 8: Shop Categories[8]

Category	Number of Shops
General store	424
Fruit/vegetables/poultry/meat	116
Clothing/tailor/shoes	183
Construction material	26
Sales/services for electronic/mechanical equipment	206
Pharmacies	114
Restaurants	95
Mobile phone shop	77
Personal grooming	8
Others	424
Total	1,673

Landi Kotal Bazaar is situated in the capital of Khyber Agency along the main Pak-Afghan road, approximately 35 kilometers from Peshawar. Due to the bazaar's location on the Khyber Pass, along the Afghanistan border, it is a hub for tax-free imported items from Afghanistan that are sold here for individual consumption, which are also distributed and sold elsewhere in Pakistan.

There are a large number of restaurants in the bazar as well that attract local customers, and "transit" visitors who are en route to or from Afghanistan. The bazar is one of the oldest in the agency.

The bazaar is comprised of approximately 1,673 shops. Goods commonly sold include spare auto parts, cooking oils, clothes, fruits, and vegetables. The bazaar is also a popular place to buy pharmaceutical products and medicines. A more detailed breakdown of the composition of the bazar is given in the Table6.

[8] Source: Field Surveys conducted by Consultants.

5. OTHER LANDUSES

5.1LANDI KOTAL RAILWAY STATION[9]

The Landi-Kotal railway station was opened in November 1925 alongside the Khyber Pass Railway's newly laid tracks between Jamrud and Landi Kotal. In 1982, regular service to the Landi Kotal railway station was terminated. However, beginning in the 1990s, the station served as the terminus of the Khyber train safari, a tourist train running from Peshawar to Landi Kotal via the Khyber. The route was closed in 2006 due to extensive flooding.

The Khyber train safari had been described as "a journey into time and history." The train consisted of one parlor car and two second class coaches pulled by two locomotives that took tourists through rugged mountainous terrain. The train covered a total of 52 kilometers through 34 tunnels and 92 bridges and culverts. The steam safari climbed more than 1,200 meters to reach Landi Kotal. One of the unusual features of this train journey is that its path passes through the Peshawar Airport runway. The train was run on the first Sunday of every month and on charter.

5.2 AGENCY HEADQUARTER HOSPITAL[10]

There is an elaborate Agency Headquarters Hospital (AHQ) in Landi Kotal which started operation in August 1984. It is a 112 bedded hospital and recently has been upgraded to a a modern facilities. The total sanctioned staff strength is 70 including doctors, specialists and nursing staff. The filled positions at present are 57 whereas 13 positions are vacant. The facilities existing in the AHQ are: X-Ray, Laboratory, Dental Unit, Labour Room, Blood Bank, Operation Theater, Ultrasound and medicine store. The distribution of beds is: 10-in Male Medical Ward, 10- Male Surgical Ward, 10 Female Medical ward, 10-Female Surgical Ward, 10-ENT/ Eye Ward, 10-Children Ward, 10-ICU, 10- Private Ward, 12-Isolation Ward and 10 for Casualty. The facility also has 11 doctor's residences, 15 Flats for Bachelor Doctors, 29 other official residences and 29 rooms Nursing Hostel. The weekly OPD count is around 5,200 patients.

5.3 TRANSPORT TERMINAL[11]

A formal and organized transport terminal does not exist in Landi Kotal. However, the trade and transportation of passengers and goods between Afghanistan and down country use the Landi Kotal Bypass road and a modern terminal building at Torkham is being constructed to serve as border facility. In order to cater to local passenger and goods transport linking Landi Kotal to Peshawar, Torkham and surrounding villages, as many as three addas/ stands are located within the Landi Kotal bazaar area. These are

[9] Information Taken from FATA website
[10] Information obtained from Incharge AHQ Hospital
[11] Information obtained from President of Transporters in the Terminal

serving incoming and outgoing vehicles which vary in shape, size and nature from small Suzuki cars, pickups, shehzor to heavy trucks. An estimated daily load of 1,155 light vehicles enter with passengers into Landi Kotal from Peshawar, Torkham and the nearby villages. The same number of passenger vehicles leaves Landi Kotal daily for the same destinations. Goods transported to Landi Kotal on a daily basis are mainly from Peshawar through 54 number light and heavy trucks. Summary of daily passenger vehicles to and from Landi Kotal is shown in Table 7 and details are included in Table 8.

Table 9: Summary of Daily Number of Vehicles To and From Landi Kotal[12]

1	Passenger Vehicles (cars, suzuki vans, buses, Datsun etc)	1155 vehicles from Peshawar, Torkham and other villages	1155 vehicles from Peshawar, Torkham and other villages
2	Goods Vehicles (Trucks, Shehzor, Datsun etc)	54 Vehicles mainly bringing goods from Peshawar	NIL

Table 10: Passengers and Goods In and Out of Landi Kotal[13]

Nature	Passengers	From Landi kotal to…	Number	To Landi Kotal from…	Number	Loaded Trucks	From
Suzuki car	4	Torkham	100	Torkham	100	Nature	Peshawar
Datsun	20	Torkham	10	Torkham	10	Datsun	Peshawar
Hiace	18	Torkham	20	Torkham	20	Datsun	Peshawar
Suzuki carry	7	Torkham	15	Torkham	15	Datsun	Peshawar
Suzuki open	15	Shikhmal Khel	200	Shikhmal Khel	200	Trucks	Peshawar
Suzuki open	15	Piro Khel	50	Piro Khel	50	Trucks	Peshawar
Datsun	20	Mukhtar Khel	50	Mukhtar Khel	50	Shehzore	Peshawar
Datsun	20	Fatmi Khel	20	Fatmi Khel	20	Suzuki	Peshawar
Suzuki open	15	Ashraf Khel	50	Ashraf Khel	50	Datsun	Peshawar
Suzuki open	15	Ashaq Khel	20	Ashaq Khel	20	Shehzore	Peshawar
Datsun	20	Ash Khel	10	Ash Khel	10	Suzuki	Peshawar
Hiace	18	Loi Shalman	20	Loi Shalman	20		
Datsun	20	Loi Shalman	20	Loi Shalman	20		
Toyota car	6	Loi Shalman	50	Loi Shalman	50		
Hiace	18	Kam Shalman	10	Kam Shalman	10		
Toyota car	6	Kam Shalman	10	Kam Shalman	10		
Suzuki open	15	Kam Shalman	10	Kam Shalman	10		
Datsun	20	Kam Shalman	10	Kam Shalman	10		
Suzuki open	15	Kandaw Khel	20	Kandaw Khel	20		
Hiace	18	Peshawar	60	Peshawar	60		
Toyota car	4	Peshawar	70	Peshawar	70		
Bus	40	Peshawar	10	Peshawar	10		

[12] Source: President Transporters
[13] Source: President Transporters

Nature	Passengers	From Landi kotal to…	Number	To Landi Kotal from…	Number	Loaded Trucks	From
Suzuki open	15	Khyber	50	Khyber	50		
Datsun	20	Khyber	20	Khyber	20		
Toyota car	6	Khyber	50	Khyber	50		
Suzuki open		Khuga Khel etc.	200				

6. INFRASTRUCTURE SERVICES

6.1 TRANSPORT AND COMMUNICATION:

6.1.1 Roads:

Landi Kotal is the main trading hub between Pakistan and Afghanistan since the Peshawar- Torkham Road (N-5) passes through Landi Kotal which is situated only about 6 Km short of Torkham. Landi Kotal Bazar is bypassed through a link to avoid congestion, traffic jams and smooth flow of heavy vehicle. The National Highway N-5 (Peshawar-Torkham) and its Bazar bypass portion are being reconstructed/ rehabilitated to modern standards by National Highway Authority (NHA). Another connecting road as the Landi Kotal-Shalman- Mullagory-Jamrud road is also being constructed under the Annual Development Program (ADP) 2014-15 by the Works and services (W&S) department. In addition, a network of roads measuring over 20 Kms, almost all paved[14], exists within the urban limits of the city which facilitate local transportation needs. Except N-5 all other road network in the area is owned, constructed, operated and maintained by the W&S department, FATA. Map E-1 show the network of existing major roads within the urban area.

Figure 2: College Road

Figure 3: Hamza Baba Road

Consultant's field survey teams traversed and physically inspected along with representatives of the W&S department local office almost all major roads and their salient features like length and surface conditions are presented in Table 9. In Figures 2 and 3 the existing condition of some of the roads are captured.

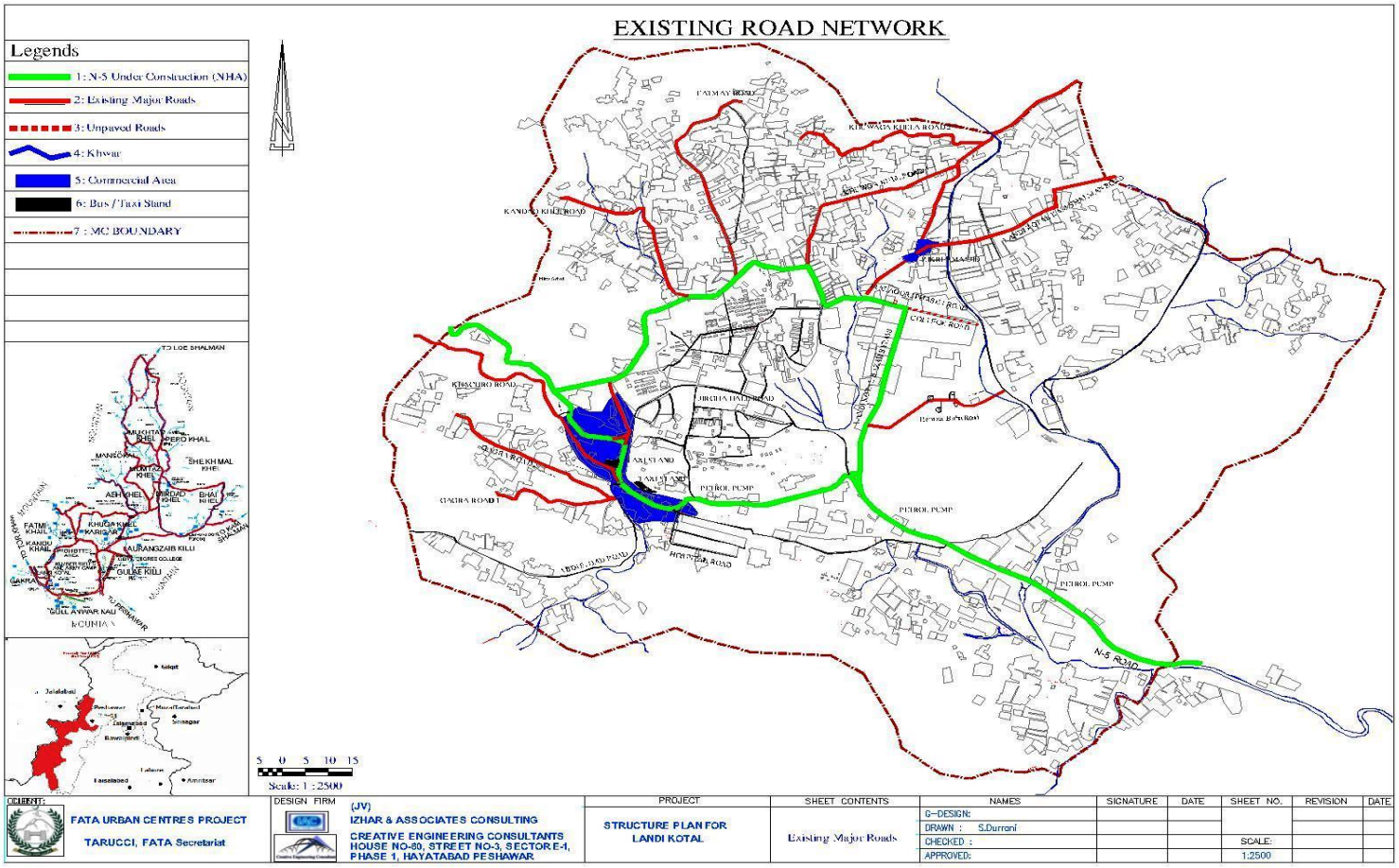
[14] Consultants Surveys with the staff of Works and Services Department)

Several addas/ stands are located within the bazaar area from where taxis, pickups, vans, suzukis and light/ heavy trucks ply between Landi Kotal, Peshawar, Torkham and the surrounding villages.

Table 11: Road Network within Urban Area

Sl. No	Name of Road	Length in Km	Paved/ Unpaved	Existing Condition
1.	Hamza Baba	0.5	Paved	Poor
2.	College Road	0.45	Unpaved	Very Bad
3.	Landi Kotal Kam Shalman	1.7	Paved	Good
4.	Mullagori Phase-I	0.8	Paved	Good
5.	Khugakhel 1	1.15	Paved	Good
6.	Khugakhela 2	2.25	Paved	Fair
7.	Fatmi Khel	1.3	Paved	Poor
8.	Landi Kotal Bazar Road (portion)	0.3	Paved	Poor
9.	Bazar Bypass (part of N-5)*	1.5	Paved	Under Construction
10.	Kandao Khel	1.1	Paved	Fair
11.	Khacharo Kusa	1.6	Paved	Good
12.	Peshawar-Torkham Road (N-5)	5 Portion of N-5	Paved	Under Construction

N-5 loop within the urban limits consists of the existing road passing through bazaar as well as the bazaar by pass portion.
Source: Consultant's Field Survey with W&S representatives



Map 3:Existing Road Network

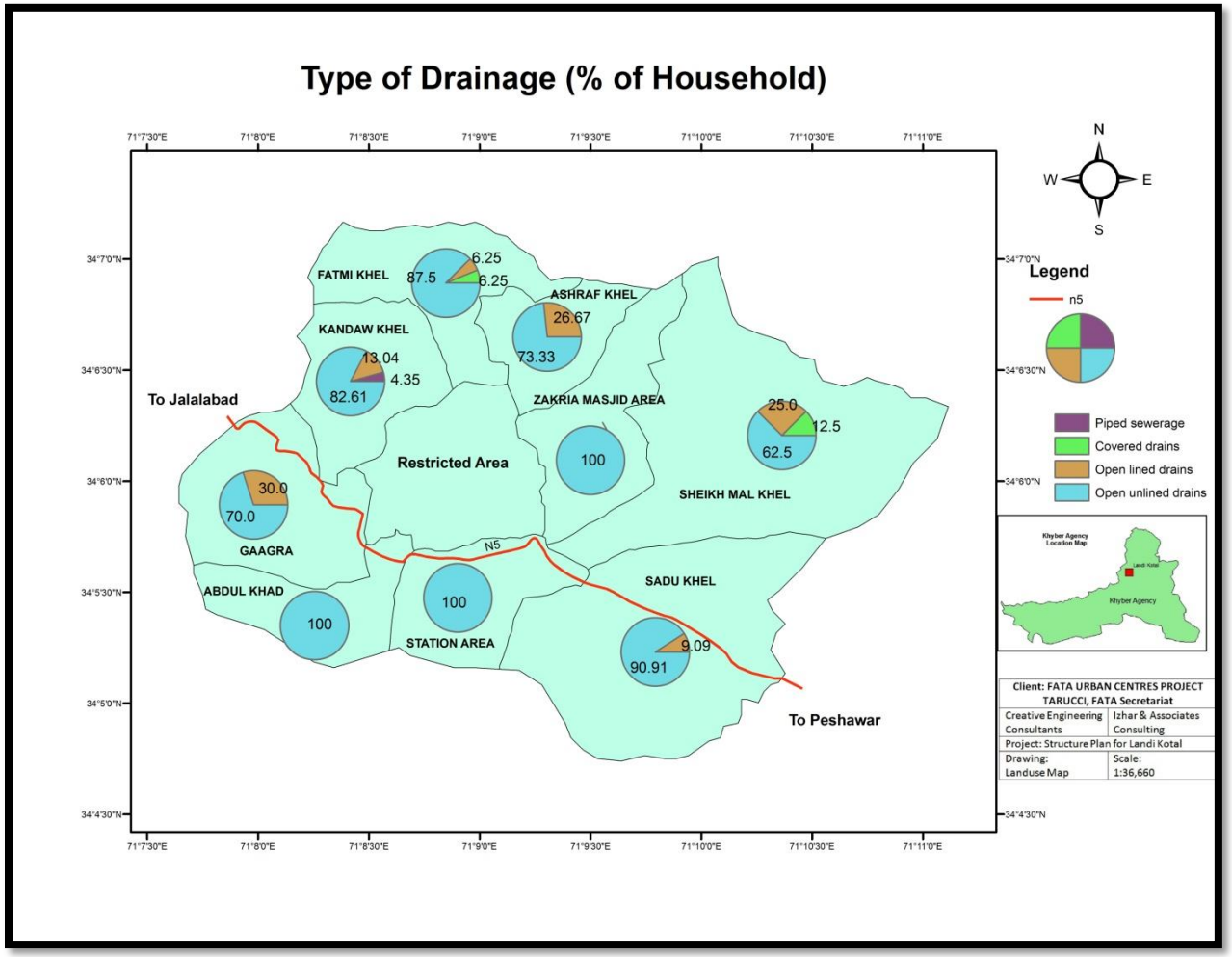
6.1.2: Streets and Drains:

Household survey from a sample of 200 household in the area revealed that from over 60 to 100% of the streets within the urban area are kacha and having unlined drains. The distribution of responses over the area is presented in Figure 4. The consultant's field survey team physically inspected almost all the streets and confirmed the findings of the household survey that majority of the streets and drains within the urban boundary are kacha and drains are unlined. It is observed that within the bazaar area, some brick pavement on the streets is visible with some pucca drains. Existing conditions of the kacha streets and unlined/ improper drains can be seen in Figures 5 and 6. An estimated length of 13 Kms[15] of streets are present in the urban limits and the majority is kacha. The lengths of lined drains are estimated about 3 Km and all other drains in the kacha streets are unlined. Major drains along the road side in bazaar area are being lined as the road is under reconstruction. Existing streets and drains are shown in Map 5.

Figure 4: Improper Drains

Figure 5: Unpaved Streets

[15] Consultants Field Surveys using GPS/GIS

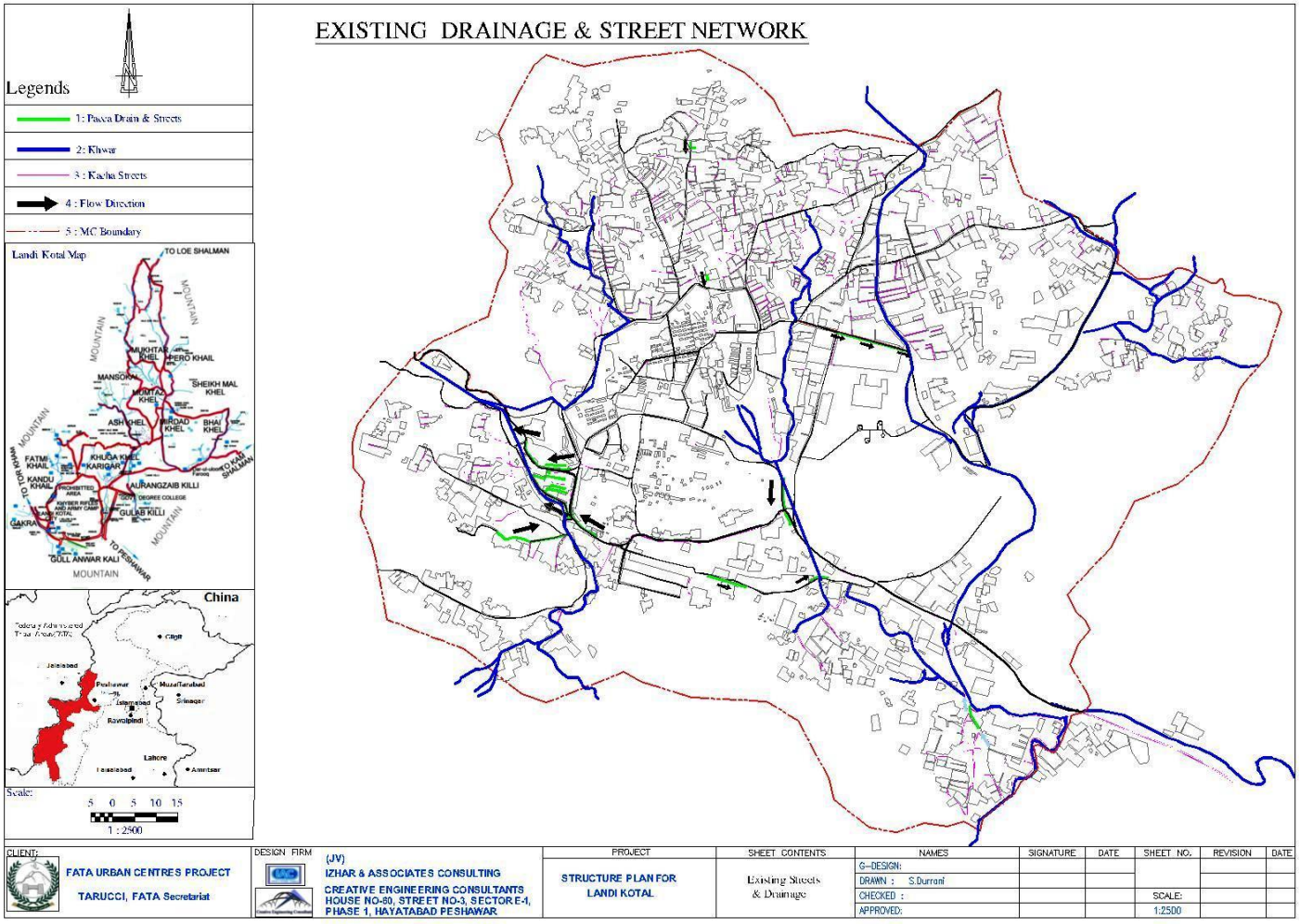


Map 4: Type of Drainage in Different Clusters (% of Households)

6.1.3 Telephone and Postal Services:

Pakistan Telecommunication (PTCL)[16] and mobile phone services are available to the majority of residents. There is a PTCL digital telephone exchange in Landi Kotal with Fiber Optics. Almost all mobile phone service providers have installed towers in the area and the bazaar has several mobile selling and repair shops. Express mail services including a post office and the private sector fast delivery services (TCS) are present in Landi Kotal.

[16] Consultants Survey and PTCL



Map 5: Existing Drainage & Street Network

6.2 WATER SUPPLY AND SANITATION

Drinking water supply systems are scarce in Landi Kotal and since pre-partition times water supply to Landi Kotal has been managed by carrying water from sources at a distance of several kilometers[17]. At present the main source feeding Landi Kotal urban area is from springs located in ***Landi Khana*** which is feeding ***Mirza Talaab*** (storage capacity: one Million Gallons) through a 4.7 Km long main pipe and the ***Bank Tank*** (storage capacity: 100,000 gallons) through a 3.81 Km long main transmission line. In addition, within the city nine (9) tube wells exist out of which only four (4) tube wells (one being Solar)[18] are meeting water supply requirements of the people. The other five (5) tube wells are not connected to the system, some are not functional and some stand alone type from where people collect water directly when these are in operation depending upon power supply. Total storage capacity in the urban town of the water storage tanks is over 1,280,000 gallon. However, there are four (4) water tanks which are not connected to any supply line and these run dry with one additional storage tank under construction. Public Health Engineering section of the W&S department does not maintain detailed layout plans/drawings for the network and were able only to identify seven major connections to villages: one each to Fatmi Khel, Ashraf Khel, two connections to Army camp, one to Zikria Masjid and one each to Ashiq Khel and Sadu Khel. The total served area under these connections is hardly 20% of the built up area within the urban limit. The availability of household water to the people was explored through the household survey and as shown in Figure 7, there is minor coverage of public water supply in Sheikh Mal Khel (6%), moderate in Kandaw Khel (14%), Station area (26%) and major coverage in Sadu Khel (90%). Sadu Khel area has the largest number of tube wells meaning water source availability and relatively much higher coverage to the people compared with other areas.

The exiting water supply network is shown in Map 7. Table 10 and 11 give details of the source, length of mains, villages served and storage capacity of water storage tanks. In addition to the Public Water Supply managed by the Public Health section of W&S department, several privately owned motorized/ non- motorized wells, hand pumps and storage tanks have been made privately or through donors/ NGOs. In view of lacking public water systems in the area, a significant part of the population buys water from tankers at costs much above their affordability (Rs. 60 -150 per drum[19] as shown in picture below). Area residents often complain about the non availability of drinking water and staff of the PHED suggested genuine and strong need to explore local sources for additional tube wells since the older sources are not meeting the needs of the people as majority of the population is not covered under these systems.

[17] Consultants Survey with Staff of Public Health Engineering Department
[18] It was an existing electric tube well non functional for 15 years. In 2013, PHE converted it to Solar
[19] Capacity of a drum is 240 liter

Figure 6: Bank Tank

Figure 7: Drums for collection of water from Tankers

Table 12: Existing Water Supply

Sl. No	Name of Scheme	Source Location	Functional/ Non Functional	Villages Served	Length of Distribution Pipes
1.	Landi Khana	Landi Khana Spring	Functional	Kandao Khel, Zikria Masjid, Ashiq Khel, Ashraf Khel, Fatmi Khel, Army Camp	Main is 4.7 Km
2.	Landi Khana	Landi Khana Spring	Functional	Some bazaar area	3.81 Km Main
3.	Sadu Khel Station	Tube Well	Functional	Sadu Khel Village	1.2 Km Main
4.	Sadu Khel	Solar Tubewell	Functional	Sadu Khel	0.9 Km Main
5.	Zargarano Kalli	Hospital Tube Well	Functional	Zargarano Kalay and Hospital	0.7 Km Main
6.	Zargarano Kalli	Tehsil Tube Well	Functional	To be commissioned to Bank Tank	2 KM Main
Source: Consultant's Field Survey with PHE					

Table 13: Water Storage Points and Capacity

Sl. No	Storage Tank	Capacity Gallons	Source
1.	Mirza Taalab	1,000,000	Landi Khana
2.	Sadu Khel Tank	20,000	Sadu khel Tube Well
3.	Tank under Construction@ Sadu Khel	20,000	N/A
4.	Dry Tank @ Dost Muhammad	10,000	N/A
5.	Dry Tank@ Loi Shalman Road	20,000	N/A
6.	Dry Tank@Darya Khan Kalay	50,000	N/A
7.	Bank Tank	100,000	Landi Khana
8.	Overhead Tank in Hospital	10,000	Zargarano Kalay Hospital Tube Well
9.	Tank in Hospital	30,000	Bank Tank
10.	Zargarano Kalay Tank	20,000	Hospital Tube well
Source: Consultant's Field Survey with PHE			

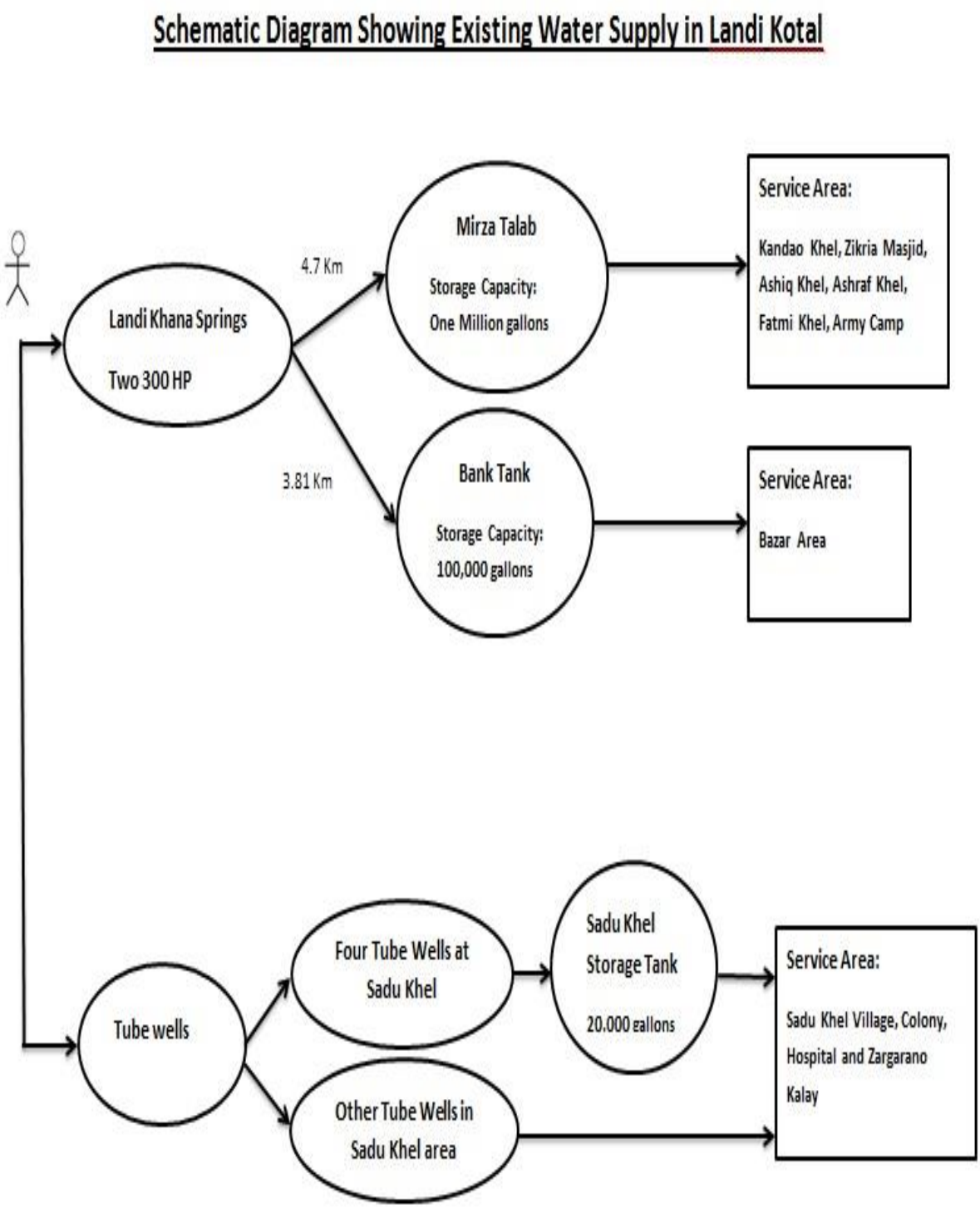
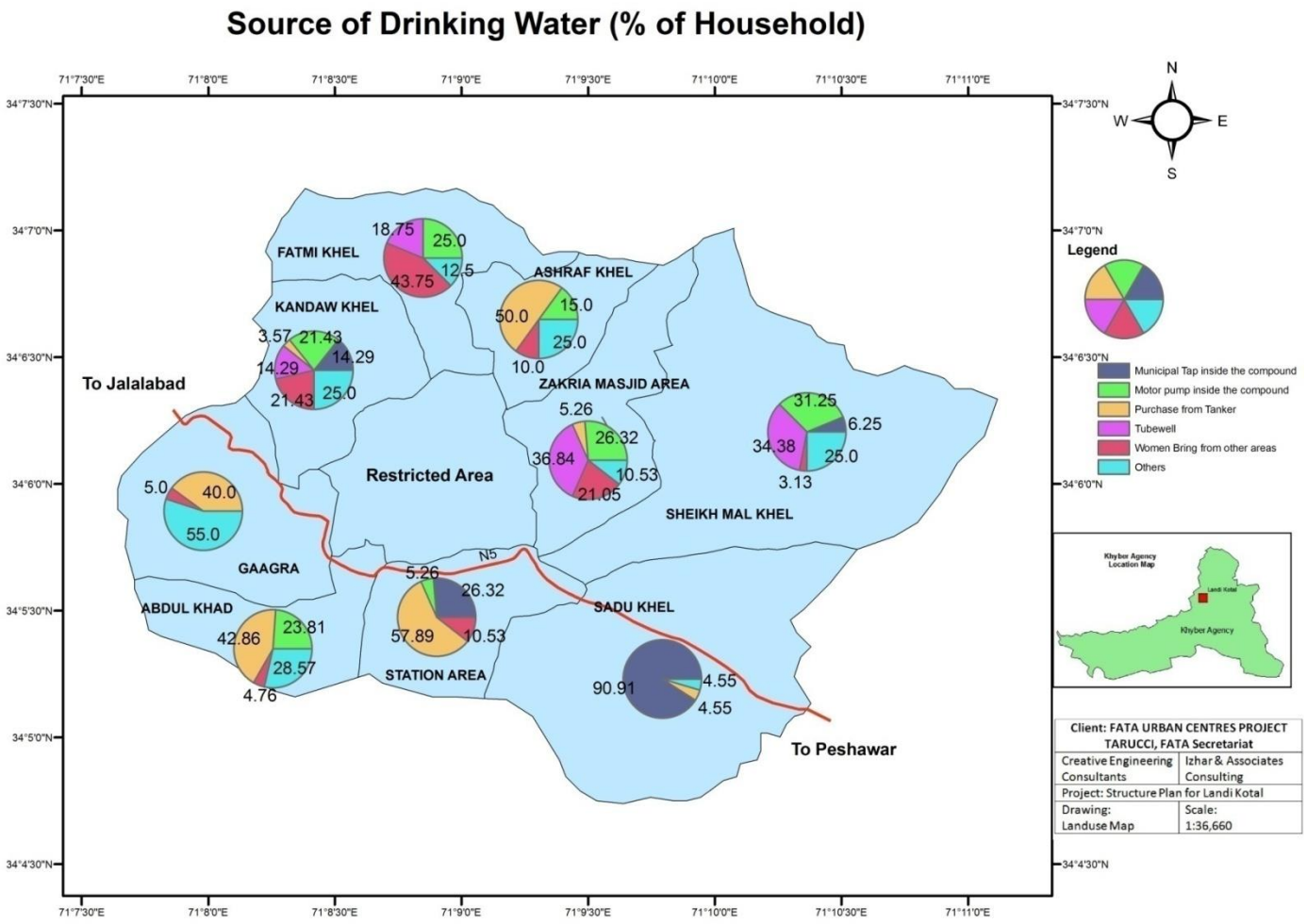
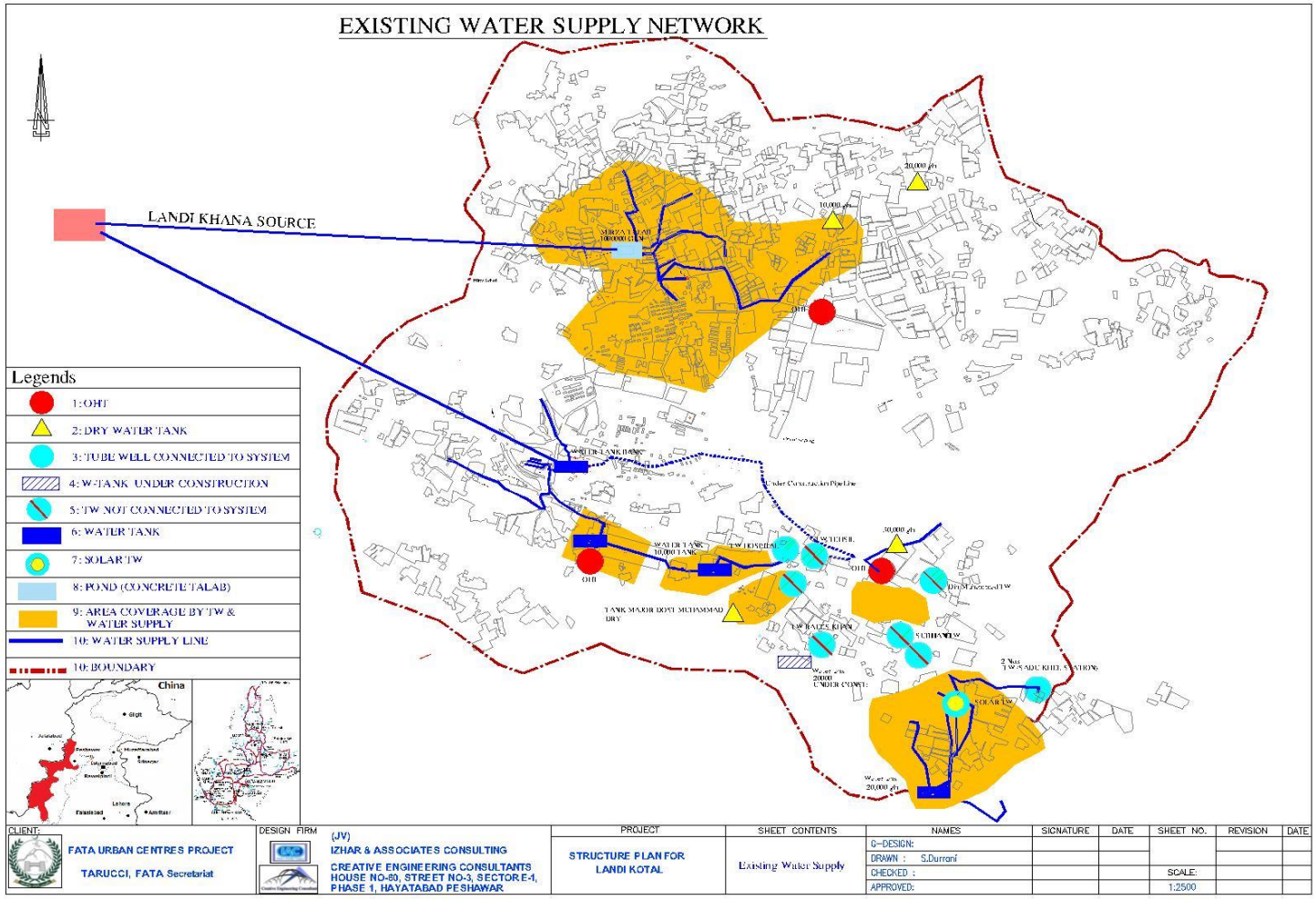


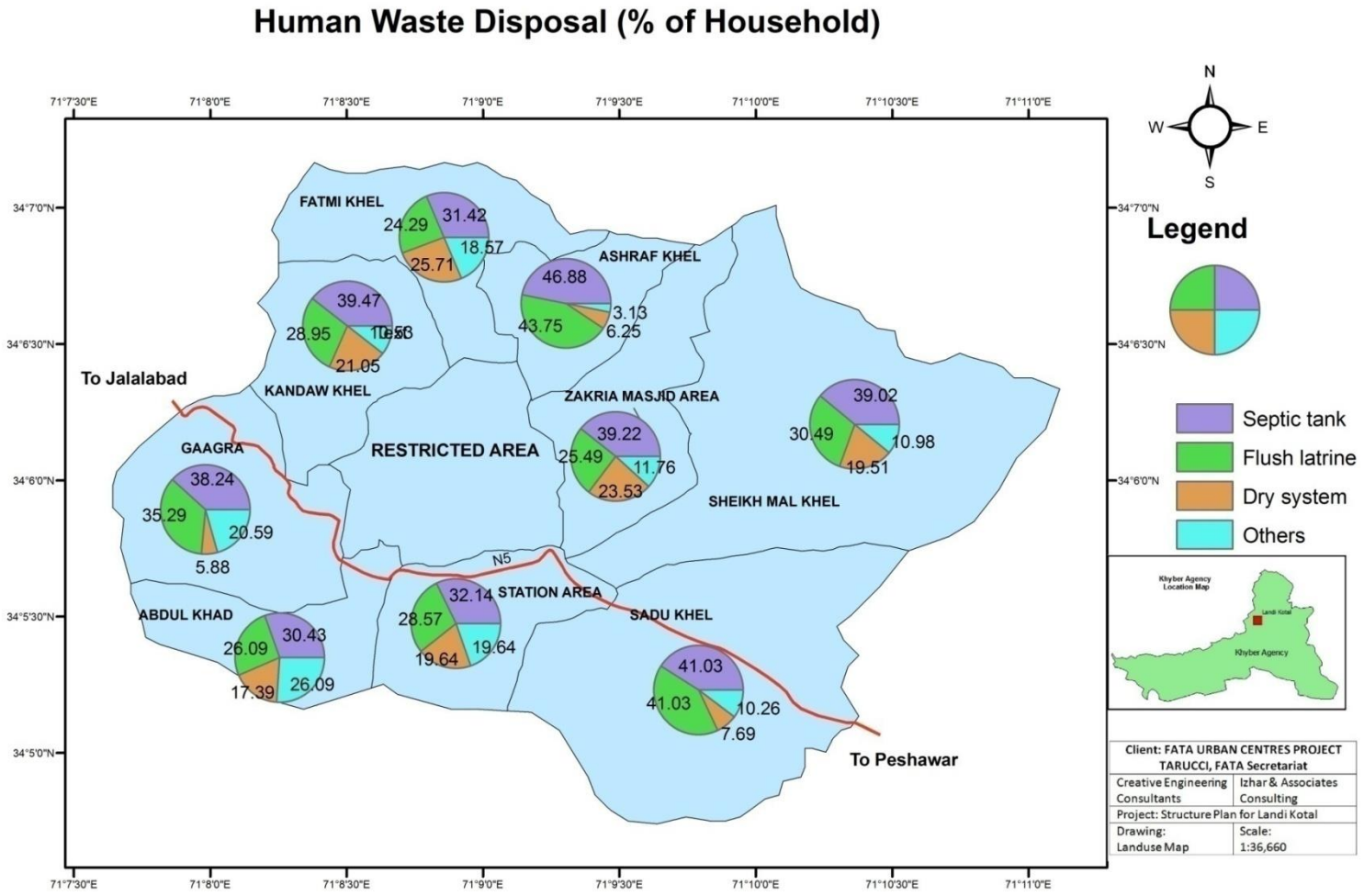
Figure 8: Schematic Diagram showing Existing Water Supply in Landi Kotal



Map 6: Sources of Drinking Water in Different Urban Clusters (% of Households)



Map 7: Existing Water Supply Network



Map 8: Human Waste Disposal in Different Urban Clusters (% of Households)

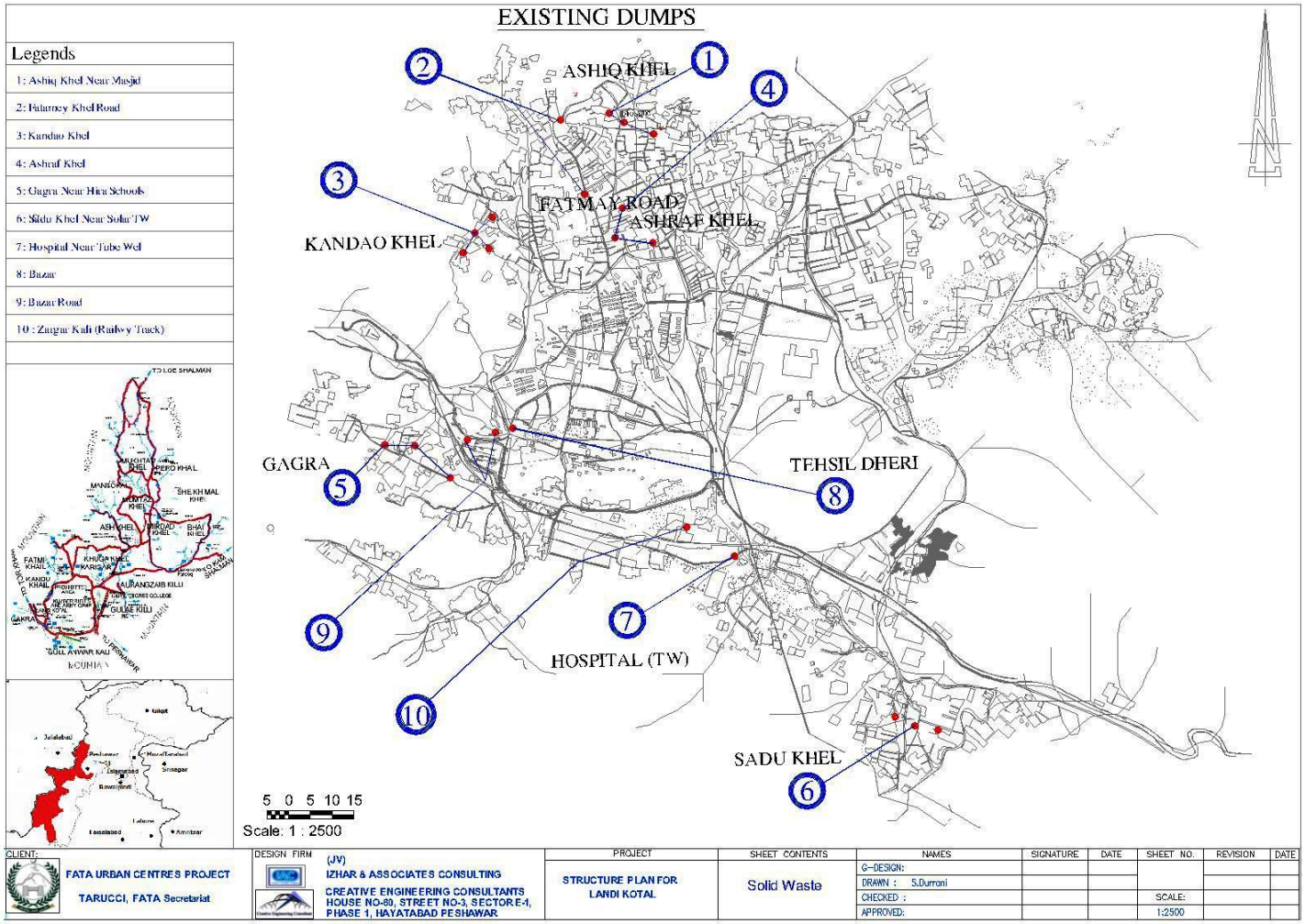
6.3 SOLID WASTE MANAGEMENT

There is no formal system of solid waste disposal in Landi Kotal. Garbage dumps (locally known as *Deran*) can be seen on the road side[20] in the bazaar area and in open spaces in the villages. Traditional systems of garbage disposal is in practice as the residents collect all garbage from their households and dump it in a designated area called *Deran*. Household survey response on waste disposal indicate almost 100% of the population transport their waste out of the houses only and dump it either in heaps (Derans), direct it to the drains outside their houses or throw it in the ravines and let nature take care of it. The responses over the area from household survey are given in Figure 8. There is no arrangement for garbage collection and proper disposal. The Political Administration has employed seventy (70) sweepers out of which 40 sweep the offices, residences in the colony, schools and hospitals. Thirty (30) sweepers are assigned to the bazaar out of which fifteen (15) are always absent.
Field investigators identified over 10 dumps of garbage in the urban areas and are marked on Map E-4.

Figure 9: Dumping Site

Figure 10: Dumping Site

[20] Consultants Field Survey



Map 9: Existing Solid Waste Dumps

6.4 ELECTRICITY:

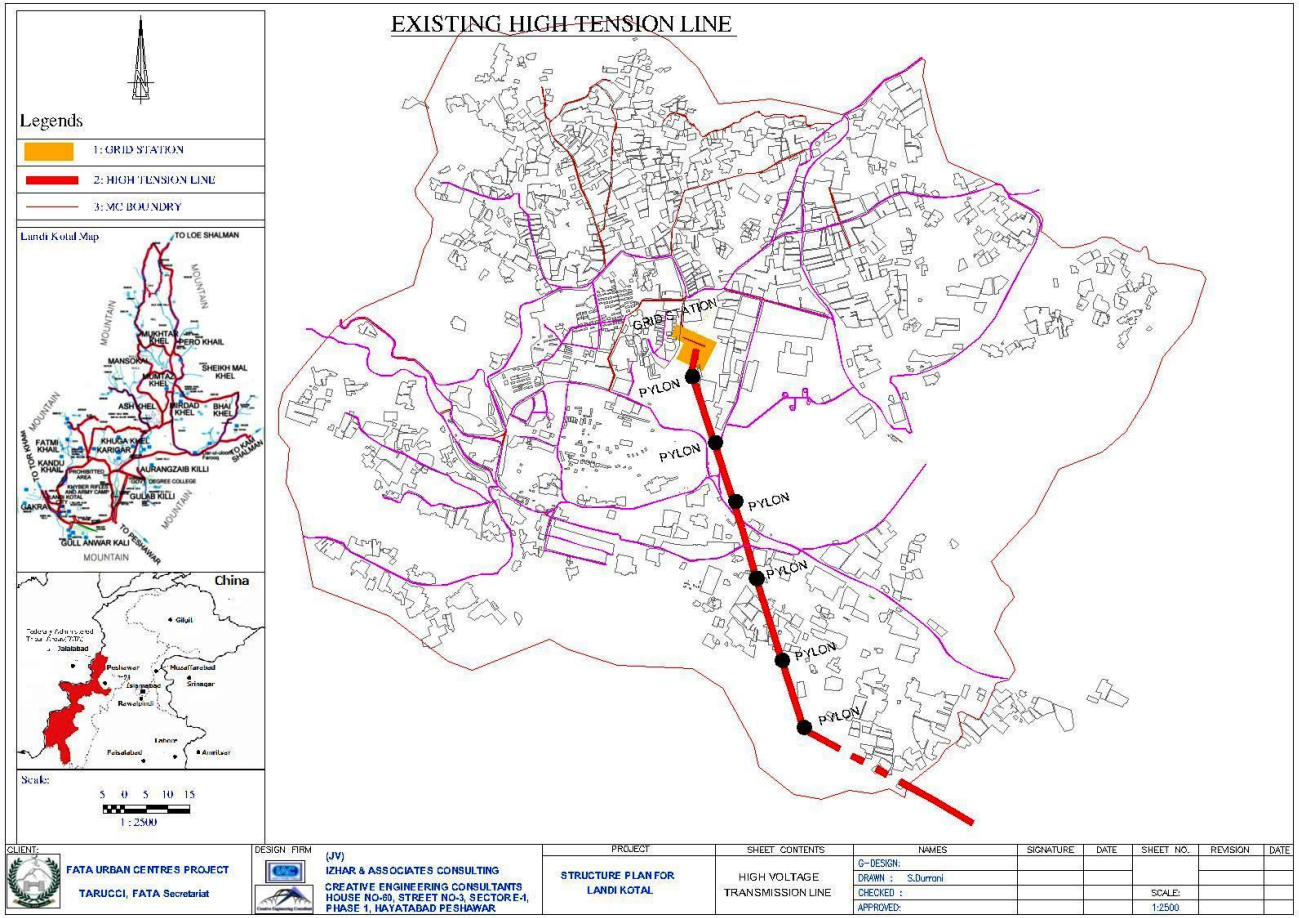
The electrification system in Landi Kotal Sub Division comprise a Grid Station, a 1.58 Km High Tension Line, 15 number 11 KV Feeder lines totaling 339 Kilometer long distribution lines and 1,034 distribution transformers. There are 35,910 domestic connections, 1,174 commercial connections, 12 industrial connection and 34 Tube Well connections (Table12). Consultant's field investigators had several meetings and deliberations with the respective TESCO staff and worked out estimated domestic connections in the order of **6,270** for the urban area of Landi Kotal.

Table 14: Power Infrastructure Data (Ref: TESCO)[21]

Grid Station	Connections				11 KV Feeder	Distribution T/F	Length of Lines
	Domestic	Commercial	Industrial	Tube Well			
1	35,910	1,174	12	34	15	1,034	339 Km

The satisfaction level of residents is very low from the supply of electricity. General complaints are similar to that elsewhere in FATA as excessive load shedding, low voltages, frequent breakdown and absence sometimes for days.

[21] Information obtained from staff of TESCO. Data pertains to entire Landi Kotal Sub-division, covering much more area than urban area.



Map 10: Existing High Tension Line

6.5 PUBLIC LATRINES/PARKS/CULTURAL AND SPORTS FACILITIES:

There are no public latrines and the need is emphasized by the locals through the household surveys and group interviews. One park is being developed in the vicinity of Hamza Baba Mazar by the Local Government and Rural Development Department (LG&RDD) through the Annual Development Program (ADP).

There is no facility for holding of sporting events for the youth and cultural events for the public though patches of barren land is available where the youth mostly organize foot ball and cricket matches.

6.6 ADP SCHEMES IN LANDI KOTAL (2014-2015)

The Annual Development Programme 2014-15 provides for an outlay of Rs. 91.115 million in Landi Kotal. More than 60% of allocation has gone for construction of road from Jamrud via Mullagori to Landi Kotal Ph-III, around 15% for Rehabilitation of 06 Kms Road in Kala Khel Area and Rehabilitation of Road from Karamna to Ghulai Main Bazaar Zakha Khel Road, Landi Kotal (12 Kms); more than 10% for Construction of Press Club at Jamrud and Landi Kotal; about 3.3% for establishment of 02 Veterinary Diagnostic Labs in Civil Veterinary Hospital Jamrud and Landi Kotal; 5.18% for execution of Rural Works Programme for 2012-13 in Khyber Agency (Small Drinking water supply and sanitation in Bara, Jamrud and Landi Kotal Subdivisions) and 5.85% for completion of incomplete Schemes and Construction of Water Storage Reservoir and Removal of deficiencies at Hamza Baba Mazar in Landi Kotal. The above are summarized in Table13.

Table 15: ADP Schemes for Landi Kotal (2014-2015) [22]

S.No.	Name of Scheme	Allocation for 2014-15 (Rs. in millions)	%age Allocation
1	Construction of Road from Jamrud via Mullagori to Landi Kotal, Ph-III.	54.908	60.26
2	Rehabilitation of 06 Kms Road in Kala Khel Area and Rehabilitation of Road from Karamna to Ghulai Main Bazaar Zakha Khel Road Landi Kotal (12	13.747	15.09
3	Construction of Press Club at Jamrud and Landi	9.407	10.33
4	Establishment of 02 Veterinary Diagnostic Labs in Civil Veterinary Hospital Jamrud and Landi Kotal.	3.000	3.29

[22] ADP received from FATA Secretariat

5	Execution of Rural Works Programme for 2012-13 in Khyber Agency (Small Drinking water supply and sanitation in Bara, Jamrud and Landi Kotal Subdivisions).	4.720	5.18
6	Completion of Incomplete Schemes and Construction of Water Storage Reservoir and Removal of deficiencies at Hamza Baba Mazar Landi Kotal.	5.333	5.85
Total		91.115	100
Source: Extracted from ADP 2014-15, Khyber Agency			

PART B: SPATIAL PLAN FOR LANDI KOTAL

7. LOCATION AND LINKAGES

Landi Kotal is a town of the Federally Administered Tribal Areas (FATA). It is located at 34°6'4N 71°8'44E and lies on the Khyber Pass. At 1,072 meters above sea level, it is the headquarters of the Khyber Agency.

Landi Kotal lies on Jamrud-Torkham Road, which is a National Highway (N5), under the jurisdiction of National Highway Authority and connects Pakistan and Afghanistan at Torkham. The Town is located at a distance of 40 kms from Peshawar and just 5 kms from Afghan border. It is one of the major markets of Khyber agency and lies on the main trade route between Pakistan and Afghanistan.

The major road is National Highway (N5) which enters Khyber Agency from District Peshawar, and after passing through Tehsil Jamrud of the Agency, enters Tehsil Landi Kotal near a village called 'Gambat'. The Road leads to Landi Kotal Town and ultimately to Afghanistan. Within Landi Kotal Tehsil, some of the villages that are located along N5 till it reaches Landi Kotal Town are Kata Kushto, Gurguna, Matta Khel, Wali Khel, Shekhuwal, Lal Beg and then to Landi Kotal.

There is a full-fledged Agency Headquarter Hospital in addition to an MCH Centre. There are a number of schools and colleges both for boys and girls. Many tribes are Shinwari, Zakah Khel, and Shalmani. Sources of income are mostly business and transport. There is also an army cantonment and presence of Khyber Rifle of FC in Landi Kotal.

Infrastructure is marginal and needs much attention. The town has expanded organically and thus its layout is not well-defined. New infrastructure will therefore have to be laid/designed with dexterity.

8. LANDI KOTAL IN REGIONAL CONTEXT

The conventional paradigms of urban planning do not apply to a place like Landi Kotal. The municipal area notified by the Political Agent in 2011 is not sufficient to cope with the future area requirements. The planning area envisaged for the next 20 years is thus more extensive. Besides, considering the character of area, structure Planning of Landi Kotal in isolation is meaningless without wider, regional context, which has been accomplished in the sections below. Following is a brief about the Khyber Agency as a whole, followed by settlement pattern in the Agency.

8.1 THE KHYBER AGENCY

Landi Kotal lies in Khyber Agency, which is one of seven tribal agencies in the Federally Administered Tribal Areas of Pakistan. It ranges from the Tirah Valley down to Peshawar and is bordered by the Kabul River and Koh-e-Sufaid range in the North, Peshawar District in the East and Kurram Agency in the West. In the North-West lies Afghanistan, Orakzai Agency in the South and Mohmand Agency in the North-East.

Khyber Agency derives its name from the world famous Khyber Pass which is situated at a height of 3,870 feet and forms the most vital link between Pakistan and Afghanistan. Khyber Pass starts about 5 kilometers beyond Jamrud Fort and is a narrow gorge winding up towards Afghanistan through the Koh-e-Safaid range.

The Agency generally has a barren and rugged mountains terrain. It also has some beautiful Valleys with plain culturable lands. The important Valleys are Rajgal, Maidan, Bara and Bazar. The Valleys lying near the sources of Bara River are generally known as Tirah. Rajgal Stream from Rajgal Valley and Shalobar Toi from Maidan Valley join up at Dwa-Toi, and thereafter it is called as Bara Valley.

The major plains are the Khajuri Plain and the Bara Plain. There are two main rivers; the Bara and Chora Rivers. On the northern border, River Kabul runs between the area of Shalmanis and Mullagoris and separates the Khyber Agency from the Mohmand Agency. All these rivers run into the Peshawar Valley.

Large areas within the agency are inaccessible, such as the Tirah in Bara subdivision, Bazaar Zakha Khel in Landi Kotal subdivision and Chora in Jamrud subdivision. Khyber Agency is the meeting place of the Koh-e-Safaid series of ranges, which are off-shoots of the mighty Hindukush Mountains, and include Lacha Ghar, Karagah Ghar, Surghar, Tor Ghar Morgah and Kalauch ranges.

The climate of the Agency is extreme, with severe winters and summers. The hottest months are from May to August, whereas, the coldest are from November to January. During summer, Tirah region is pleasant. In the rest of the Agency, the day temperature is high, but is pleasant under the shade in hilly areas. The summer nights are moderately cool.

Rainfall is scanty. Winter rain is brought by westerly winds, while the summer rain is associated with the monsoon. The average annual rainfall is about 400 mm. On the highland precipitation in the form of snow is common in winter. Khyber Agency has extreme climate with severe winter and summer seasons. May, June, July and August are the hot months. The maximum and minimum temperature during the month of June is about 40 and 26 degree Celsius

respectively. The winter starts from November and continues till April. December, January and February are the coldest months. The maximum and minimum temperature during the month of January is about 18 and 4 degree Celsius respectively. The average annual rainfall is about 400 mm.

There are about 795 kms of roads in Khyber Valley[23], of which around 573 kms are high type and about 222 kms are low type[24]. On average, there are 0.31 kms roads per square km of Khyber Agency. In Khyber, the total length of paved roads is about 335.52 km, while unpaved roads are about 372.16 km. The National Highway Authority supervises the 41 km long Jamrud-Torkham road (N5), which connects Pakistan and Afghanistan at Torkham. The Landi Kotal-Mullagori road (64 km) connects Peshawar with Landi Kotal and Torkham, as an alternate route.

8.2 ECONOMIC PRODUCTIVITY

The economy of a region is critical to discuss since economic productivity and the nature of economic activity are major drivers of urban growth. Various aspects of economy in Khyber Agency are as below:

8.2.1 Agriculture[25]

The geographical area of Khyber Agency is 2,576,000 hectares, while the cultivated area is 20,000 hectares i.e. only 0.78% of Agency total. The production of different crops during 2008-2009 in the Agency was as below:

- Wheat: 20,597 tons
- Vegetables: 1,906 tons
- Sugar Cane: 15,475 tons
- Fruits: 1,439 tons

8.2.2 Industry[26]

Majority of the industrial units in FATA are located in Khyber Agency. Of the total 193 industrial units in FATA in 2007-08, about 55% are in Khyber Agency, employing 2,300 or more than 60% of total industrial labour in FATA.

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[23] Source: FATA Works & Services Department

[24] High Type Road is one having cement concrete or bituminous concrete surface, and Low Type Road is generally made of stone, bricks, gravel or ordinary earth properly aligned and with drainage structures provided.

[25] Source: Important/Agency/F.R. Wise Socio-Economic Indicators of FATA, 2009, Bureau of Statistics (FATA Cell), Planning & Development Department, FATA Secretariat, Peshawar.

[26] Source: FATA Official Website : http://fata.gov.pk/downloads.php

Hundreds of thousands of people are associated with the weapons' manufacturing industry. These weapons are traded in huge markets in Darra Adam Khel, a town located between Peshawar and Kohat in the NWFP, Sakhakot (Malakand), Bara (Khyber Agency), Peshawar's Karkhano Market, Miranshah, the main town of North Waziristan Agency, and in Mohmand Agency. Though at smaller scale, weapons manufacturing and trade exists in all of FATA region.

8.2.3 Minerals[27]

Around 98% of lime stone in FATA is produced in Khyber Agency (1,156,822 tons) while the entire production of Fluorite (768 tons) and Barite (51 tons) in FATA is also produced in the Agency. Other minerals produced are marble (17,336 tons or about 1.5% of FATA total) and soap stone (1,396 tons or more than 13%).

8.2.4 Quantum of Trade[28]

Traders, businessmen and citizens from Pakistan and Afghanistan are pinning hopes for greater trade and cultural ties on a new customs and trade terminal built at the Torkhum border, a few kilometers from Landi Kotal. The terminal built by the National Logistics Cell (NLC) – the logistics enterprise of Pakistan military – at the border crossing is run in cooperation with of civil government. The mega terminal at the crossing would assist the burgeoning trade between the two countries and beyond. The relevant offices of Federal Investigation Agency (FIA), National Database and Registration Authority (NADRA), Pakistan's Customs and administration offices would work under one roof at the terminal, saving time and money for those seeking to do business or travel to Afghanistan.

Pakistan's imports from Afghanistan amount to roughly USD 250 million. These include commodities such as dried and fresh fruit, carpets and herbal remedies. Pakistan also relies on Afghanistan as a trade conduit for its imports to Central Asian countries. There is a local saying in Afghanistan – "Everything we need comes from Pakistan, minus the air and water."

According to the Afghanistan Chamber of Commerce and Industries, Afghanistan imports commodities worth USD 2.5 billion from Pakistan annually. These include food items, fabric, medication, plastic materials, electric tools and construction materials.

[27] Source: ibid
[28] Source: Ashrafuddin Pirzada in 'Economic Development', April 30, 2015

Customs estimates put the average number of trade containers moving on Pakistani trucks from Pakistan to Afghanistan and back at 40,000-50,000 per year. The fare of each truck from Karachi to Kandahar and Jalalabad ranges between Rs 250,000 to Rs 400,000 respectively, adding Rs 13bn to the national economy annually.

8.2.5 Informal Trade

The economy of Pakistan's FATA region is deeply linked with that of Afghanistan due to a number of factors, the main ones being the geographic and ethnic proximity. Being a mountainous region, FATA does not offer vast agricultural land. The tribesmen mainly engage in business or trade, irrespective of the legality of their ventures. Illegal trade of arms and narcotics, transit trade to Afghanistan through Pakistan, foreign exchange transactions through *hawala*, *hundi*, and goods transport are among the major businesses in the tribal areas.

Pakistani tribesmen are closely involved in the trade of narcotic substances originating in Afghanistan. Though statistics on the volume of narcotics trade through the tribal areas are not available, the FATA is known to be major narcotics trafficking route.

Smuggled goods are big business in all seven tribal districts, and traders in nearly every FATA agency have defined their niche mark. If one agency is known as a trading hub for smuggled tyres, another deals exclusively in smuggled cars, weapons, or chemicals. Whenever the government of Pakistan introduces any changes in the taxation system that push up the prices of any such goods or cracks down more vigorously on the illegal weapons trade, smuggling of these articles into Pakistan through these routes begins.

Goods are brought to Karkhano Market from Iran, Central Asia and China through different routes. Karkhano shopkeepers have contacts in the world's biggest markets. One can find electronics, cosmetics, clothes, household items, etc. of any international brand. Some of the distribution agencies' owners supply their merchandise to the whole of Afghanistan or Pakistan.

8.3 SETTLEMENT PATTERN IN KHYBER AGENCY

8.3.1 Number and Hierarchy of Settlement

There are 325 rural settlements[29] and 2 urban settlements in Khyber Agency (Landi Kotal TC and Jamrud TC having population of 32,143[30] and 46,132 respectively).

Based on BoS projected populations of individual villages & urban units of Khyber Agency for 2014-2015, the Consultants have categorized the populations of settlements into groups i.e.:

- Above 5,000
- 3,000-5,000
- 1,000-2,999
- Below 1,000

Out of the total 325 rural settlements in Khyber Agency, 218 or around 67% settlements are in Tehsil Bara, 60 settlements (about 18.5%) in Tehsil Landi Kotal, 31 settlements (9.5%) in Tehsil Jamrud and 16 settlements (about 5%) in Tehsil Mulagori.

Looking at the distribution with respect to population category sizes, more than 55% of the rural settlements are in the population group 1,000-2,999, followed by 21.54% villages whose population is below 1,000. Together these two categories constitute about 77% of total villages in Khyber Agency. Larger settlements with population above 5,000 are only 5.2%.

Focusing on Tehsil Landi Kotal, as already stated, the number of villages in it is 60 of the total settlements (325) in Khyber Agency. Smaller settlements in Tehsil Landi Kotal are more than 48% in the population range of 1,000-2,999, while those below 1,000 are 10%. There are 6 larger settlements (10%) in the Tehsil with population of above 5,000.

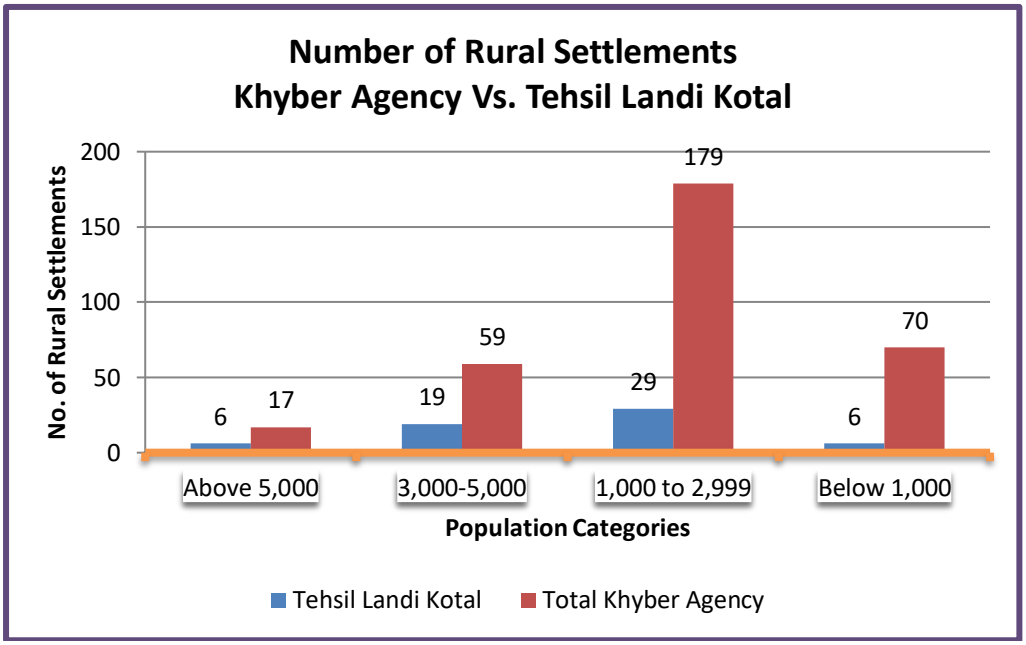
Table 16: Number of Settlements in Khyber Agency

Population Categories	Tehsil Bara	%	Tehsil Jamrud	%	Tehsil Landi Kotal	%	Tehsil Mulagori	%	Total Khyber Agency	Pop. Category %
Above 5,000	7	3.21	4	12.90	6	10.00	0	0	17	5.23
3,000-5,000	30	13.76	9	29.03	19	31.67	1	6.25	59	18.15
1,000-2,999	125	57.34	14	45.16	29	48.33	11	68.75	179	55.08
Below 1,000	56	25.69	4	12.90	6	10.00	4	25.00	70	21.54

[29] Source: FATA Bureau of Statistics

[30] This population as given in the official statistics is for Landi Kotal TC, which covers much smaller area than the proposed Landi Kotal Planning Area.

Population Categories	Tehsil Bara	%	Tehsil Jamrud	%	Tehsil Landi Kotal	%	Tehsil Mulagori	%	Total Khyber Agency	Pop. Category %
Total	218	100.0	31	100.0	60	100.0	16	100.0	325	100.0
Tehsil %	67.08		9.54		18.46		4.92		100	



Graph 6: No. of Rural Settlements (Khyber Agency Vs. Tehsil Landi Kotal)

In case of Khyber Agency, there are 19 settlements (including the two urban centres i.e. Landi Kotal and Jamrud, whose population is above 5,000. In case of Tehsil Landi Kotal, there are seven such settlements having current population of above 5,000 (including Landi Kotal Town and six rural settlements).

Table 17: Tehsil-Wise Settlements above 5,000 Populations in Khyber Agency[31]

Settlement	Population	Status	Tehsil
Jamrud TC	46,132	Urban	Jamrud
Landi Kotal Planning Area	91,709	Urban	**Landi Kotal**
ALI MASJID	8,668	Rural	Jamrud
M. MOHD AKBAR/GHANI KHEL KILI	8,161	Rural	**Landi Kotal**
SOOKH	7,313	Rural	Bara
M.WALI KHAN MASHIN WALA KILI	7,302	Rural	Jamrud
MALIK UMARA KHAN KILI	6,491	Rural	**Landi Kotal**
MIRO KHEL KANDAO	6,415	Rural	Bara

[31] Tabulated by Consultants based on BoS population data.

CHANGI KHEL/CHINAR KHAN KILI	6,334	Rural	**Landi Kotal**
UMER KHEL	6,295	Rural	Bara
KALANA	6,188	Rural	Bara
MALIK AURANGZEB KILI	5,860	Rural	**Landi Kotal**
SPIN QABAR NO.2	5,741	Rural	Bara
TAKHTAKAI	5,448	Rural	Bara
TOOR TOOT	5,336	Rural	Bara
M.INYAT KHAN MASTAL KHEL	5,171	Rural	Jamrud
BAKURRA KILI	5,124	Rural	Jamrud
PIR KHEL-BACHA MALIK KILI	5,116	Rural	**Landi Kotal**
CHINA	5,018	Rural	**Landi Kotal**

8.3.2Landi Kotal in Emerging Development Corridor

Ideally, there should be a FATA Regional Development Plan, which should identify growth poles where maximum investments can be made for maximum returns, which will then have spill-over effects in the surrounding area and ultimately in FATA as a whole.

In absence of such a Plan, the Consultants have attempted to identify 'Development Corridors' in Khyber Agency, which will encourage integrated development within a given space defined by its economic potential rather than by political boundaries, and will have a positive impact on a wider area including Landi Kotal.

Development corridors are those which have economic potential but are presently under-utilized, the development of which would be explored through spatial planning and development projects. They are therefore seen as a means of prioritizing and promoting inter-related infrastructure and large-scale investments in defined geographic areas and optimize the use of infrastructure. The identified corridors in Khyber Agency demonstrate more economic potential through quantifiable qualities such as well-located and relatively more populous settlements, located along or near the main road. The idea is that limited public resources should be focused in areas where they are likely to have the most advantage, rather than being spread so thinly that they have inadequate impact. The corridor approach represents an understandable and reasonably objective way to prioritize Agency-level infrastructure projects, stimulate investments into productive capacity and achieve economic densification.

The emerging Development Corridor in Khyber Agency is along N5, from Jamrud to Landi Kotal, because of the following reasons:

- Jamrud-Landi Kotal Corridor Along N5 connects port to Afghanistan
- Proximity to Peshawar, A large number of people commute daily

- Export Processing Zone for Central Asia can be established
- People of the corridor are aware of urban culture, and are in main stream
- Import of power from central Asia can boost industrialization in the area
- Wind power possibility
- Torkham Container Terminal is nearby
- All this will have positive impact on Jamrud-Landi Kotal corridor; resulting in good hotels, commercial activities and employment opportunities etc.

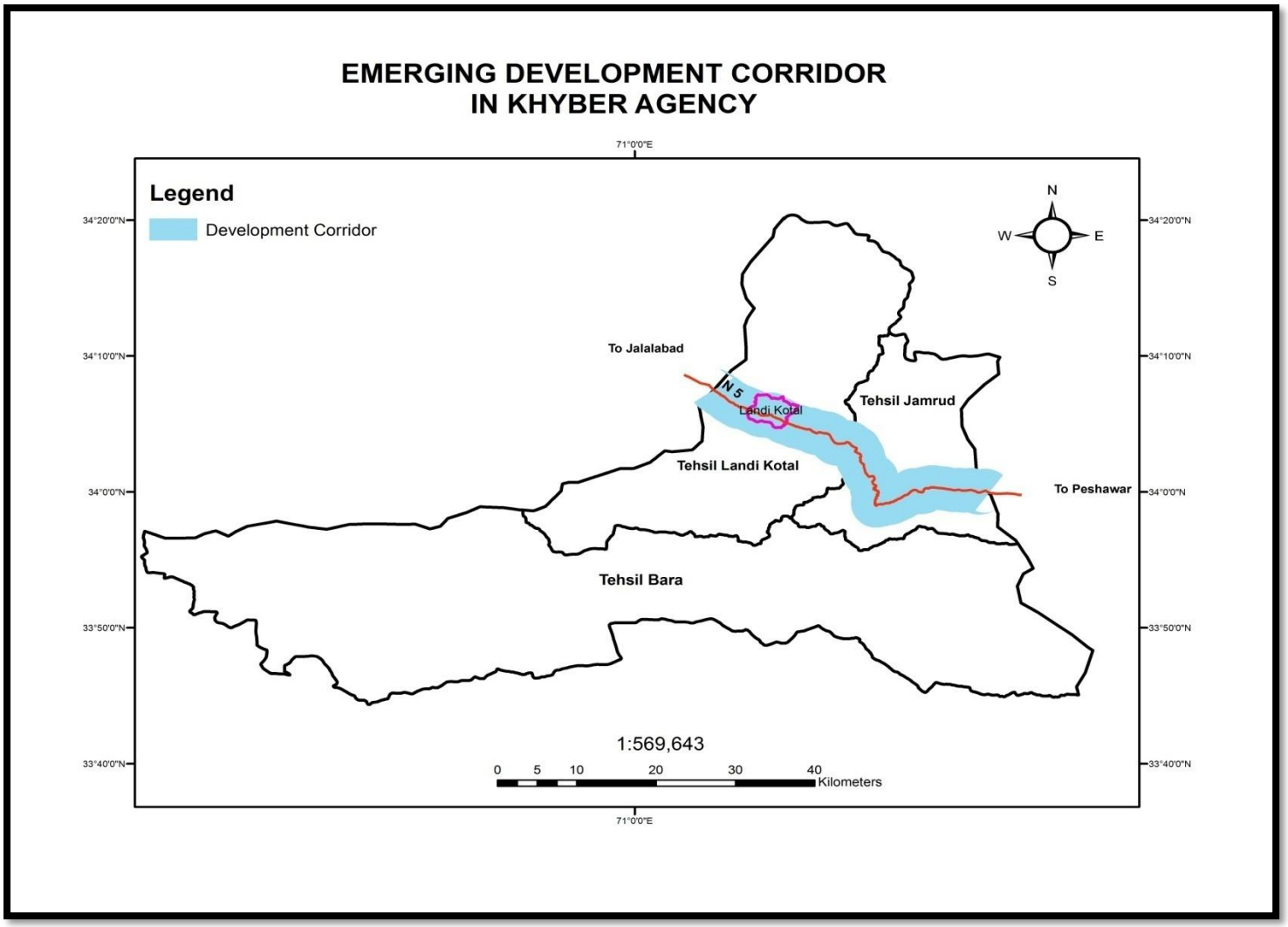


Figure 9: Emerging Development Corridor in Khyber Agency

9 LANDI KOTAL BOUNDARIES

9.1 THE NOTIFIED URBAN BOUNDARY

According to a notification by Political Agent Khyber dated 17 January 2011 (Annex 4), the urban boundary of Landi Kotal has been delimited as below:

- Exact urban Boundaries:
    - Charwazai
    - Landi Kotal College
    - Custom Colony
    - AHQ Hospital
    - Railway Station
    - Village Gagra
    - Part of Village Adel Khad
    - Bye-Pass Road
    - Landi Kotal Cantonment Area
    - Landi Kotal Bazaar
    - Gagra
    - Part of Adel Khad

According to the notification (Annexure 4), population living in the municipal area is between 35,000 to 40,000. However, the Planning Area, as described in the section below is much larger than the officially notified area, encompassing more settlements/villages. Hence the population of Planning Area (around 87,000) is more than the population of notified area (35,000 to 40,000).

9.2 THE PLANNING BOUNDARY

Planning boundary proposed by the Consultants is more extensive than the official urban boundary, as it caters for land requirements and ancillary uses for a longer period of time, i.e. 20 years from now. Establishing planning boundary is a relatively simple exercise for settlements having abundant flat land, which may be undulating but developable, and adjacent to the city being planned.

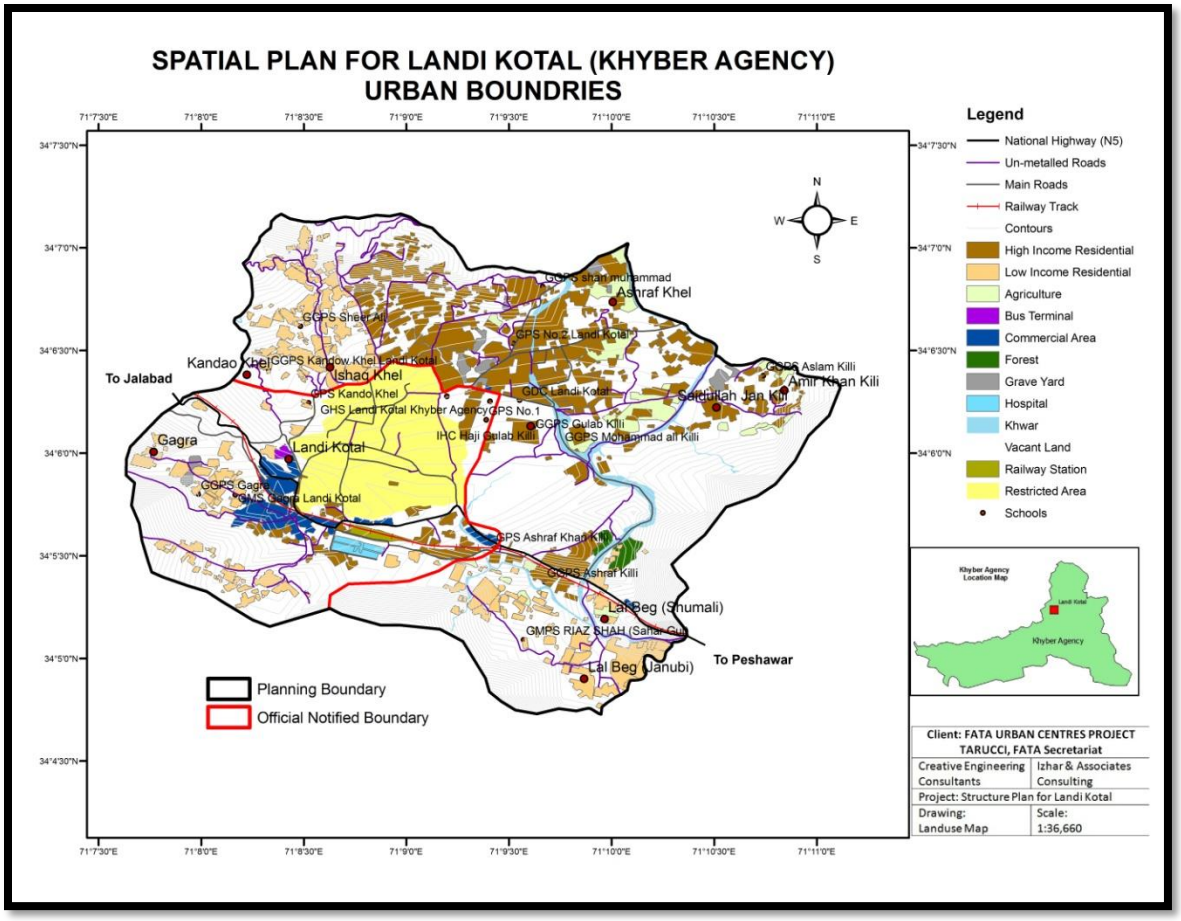
But the scenario is quite different for a place like Landi Kotal, which by itself is a small settlement and thus has to be seen in larger context. In fact the entire FATA, including Khyber Agency comprise of a series of small and medium sized valleys, and each valley has limited space for urban expansion over a long-term

basis. There are a number of villages fairly close to Landi Kotal which are dependent on it as it is the major bazaar area of Khyber Agency.

The Planning Boundary for Landi Kotal therefore had to be marked with dexterity, and the Consultants considered it appropriate to do so in close coordination with Agency Officials, particularly PA and APA. Special attention was given to village proximity, i.e. those villages which are fairly close to Landi Kotal and have strong linkages/dependence over it. Care was taken to draw the boundary in such a way that villages which are close to the potential boundary should not be left out and should become a part of Landi Kotal's urban fabric. These were thus also included in the proposed urban boundary. Another factor was that the area encompassed by the proposed boundary should be able to collectively cater for the future land requirements, where ever suitable patches are available.

- Notified area as given in previous section
- Gaagra
- Abdul Khad
- Khuga Khel
- Sheikhmal Khel
- Sadu khel
- Station Area

The population of the proposed planning area is estimated to be about 87,000 which has been calculated by using different methods.



Map 11: Urban Boundaries

10 ASSESSMENT OF GROWTH AND DEVELOPMENT SCENARIOS

10.1CURRENT POPULATION (2015)

The accuracy of estimating the total number of residents for an urban area remains highly questionable and problematic. Professionals of different fields have tried various means of estimating populations by using standard multipliers and complex formulas for making inferences from historical records. Even differences in the physical size of a settlement, amount of area devoted to housing, the number of stories per house, or even the issue of what constitutes the extent of an urban area remain highly debated issues. These questions continue today with human settlements.

Cities are the living creations of people and societies that are in a constant state of flux as people move into and out of the city. Major population changes occur between seasons, during times of war, or other significant events of the time. This is particularly true for the disturbed urban centres of FATA, including Landi Kotal.

The Consultants thus encountered many problems and suffered from limited information from different sources pertaining to Landi Kotal's current population. Because of disturbances in the area and influx of IDPs in Landi Kotal, the situation regarding actual population of the Town is fluid. This entailed more spadework, intensive field investigations and primary data collection, so as to assess correct current population.

Landi Kotal's planning area is not just its notified municipal area, but also suburbs lying outside the municipal area. Unlike urban settlements in settled areas, there are no definite boundaries/maps of Agency Headquarters/urban areas. Such areas in FATA are at best agglomerations/clusters of small settlements along with administrative area/civil colony, and their historic population growth rates/populations as reported in past census data are neither comparable nor reported in a way that can be used to assess current populations or make future estimates.

The Consultants therefore used a number of alternate methods to estimate current population of Landi Kotal, which are:

- Population Estimates from Polio Campaign Data
- Population Estimates Using Domestic Electricity Connections

- Population Estimates through House Count on GIS Map
- Population Estimates through Landuse Map

These are described below:

10.1.1 Population Estimates from Polio Campaign Data

The under 5-years populations of areas falling in urban limits of Landi Kotal as delineated by Consultants was obtained from different polio campaign data sets such as WHO's micro plan, mobilization plan and social mapping. As already stated, data of only those localities was obtained which fell within urban limits. The under 5-years population constitutes around 17% of the total population[32].

Based on this premise, the total population of each urban locality was calculated and then added. Accordingly, the current urban population of Landi Kotal, for the year 2015 works out to be about 91,700 as given in Table 19.

Table 18: Population of Landi Kotal Planning Area - 2015

S.No	Name of Area/ Village	Under 5 years children (17% of total population)	Total Population (2015)
1	Gaagra	1,575	9,265
2	Abdul Khad	1,680	9,882
3	Khuga Khel	6,731	39,594
4	Sheikhmal Khel	2,531	14,887
5	Sadu khel	1,600	9,411
6	Station Area	1,474	8,670
Total		**15,591**	**91,709**

It needs to be stated here that Landi Kotal TC's population in 2014-2015 is reported to be 32,143. Because of the spatial amalgamation over the past 17 years, the TC area has not only expanded, but the smaller villages in the vicinity have also amalgamated with Landi Kotal resulting in increased population. Besides, the urban area notified in 2011 and that delineated by consultants in 2015 encompasses much more area, whose population as calculated in 'Existing Situation Report' is 91,709. Thus while Landi Kotal TC's population in 2014-2015 is reported to be 32,142, the population of Planning Area is 91,709.

10.1.2 Population Estimates Using Domestic Electricity Connections

[32] Source: i) WHO officials who carry out polio campaign once in forty days confirmed that under-5 year children are 17% of total population. ii) Government of Pakistan, Bureau of Statistics web site where it is mentioned that under 5 years children are 16.9% of total population in Pakistan.

The total number of domestic electricity connections in Landi Kotal Planning Area is 6,217[33]. The household size as assessed from household surveys conducted by Consultants is 14.93. The total population thus works out to be 92,820.

10.1.3 Population Estimates through House Count on GIS Map

Many of the houses are independent or semi-detached units, and therefore can easily be counted on GIS map. However in the inner area, the developments are dense and organic. Housing count in this area was therefore problematic, and could only be conducted through physical survey, which is not a part of TOR.

The individual house count on the GIS base map developed from satellite imagery was 4,267. Assuming a margin of error of 20 percent (replicating Khar model in Bajaur Agency), the total housing units in Landi Kotal Planning Area would be 5,120. As already stated, the household size in the area is 14.93. The population thus works out to be 76,448.

10.1.4 Population Estimates through Landuse Map

The residential area as calculated in Section 3.2.2 is 762.05 acres. As the name suggests, it is pre-dominantly residential area but also includes internal streets and lanes, and low-end local level facilities. Allowing 15% for the internal streets etc, the net residential area is around 648 acres or 103,632 marlas[34]. The average plot size, as calculated through household surveys is 18 marlas, implying that the number of houses is 103,632/18=5,757. Since the household size is 14.93, the population works out to be 5,757x14.93=85,952.

10.1.5 Summary of Population Estimates by Different Methods

Table 20 gives a summary statement of population estimates for Landi Kotal Planning Area:

Table 19: Summary of Population Statement by Different Methods

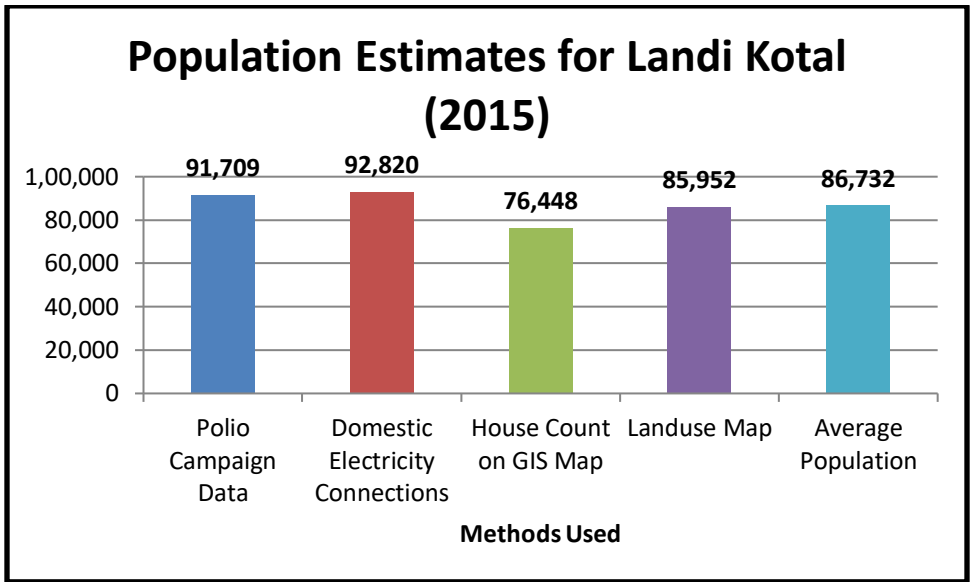
S.No.	Methodology Based On:	Population Estimates (2015)
1	Polio Campaign Data	91,709
2	Domestic Electricity Connections	92,820
3	House Count on GIS Map	76,448
4	Landuse Map	85,952

It is thus clear that population estimates for Landi Kotal for the year 2015 vary between 76,448 in case of house count on satellite imagery to 92,820 as assessed through domestic electricity connections. The average population based

[33] Source: TESCO, Landi Kotal.

[34] 1 acre=8 kanals, 1 kanal=20 marlas, 1 marla=272 square feet, 1 acre=160 marlas.

on the four methods used is calculated to be 86,732. **Rounding it to nearest 1000, the adopted population of Landi Kotal planning area is 87,000.**



Graph 7: Population Estimates (2015)

10.2 POPULATION FORECASTS (2035)

10.2.1 Projections on 5-Yearly Basis

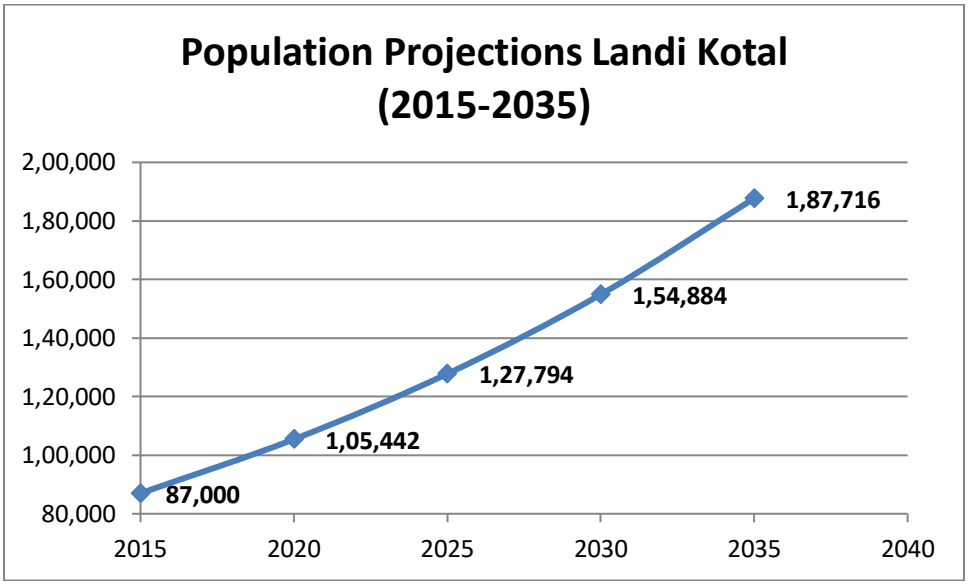
Population till the year 2035 has been projected for the Planning Area by extrapolation method, using the following formula:

$P_{n=}P_0 X (1+r/100)^t$
Where:
P_n=Population of desired year
P_0 = Population of base year
r = Population growth rate
t = Time period

Population of Planning Area for the year 2015 as stated earlier has been calculated to be 87,000. This has been projected on 5-yearly basis till the year 2035. Forecasts were made on the basis of Khyber Agency growth rate (3.92%). Table 18 also shows projections on 5-yearly basis.

Table 20: Population Forecasts (2015-2035)

Year	Population Projections[35]
2015	87,000
2020	105,442
2025	127,794
2030	154,884
2035	187,716



Graph 8: Population Forecasts (2015-2035)

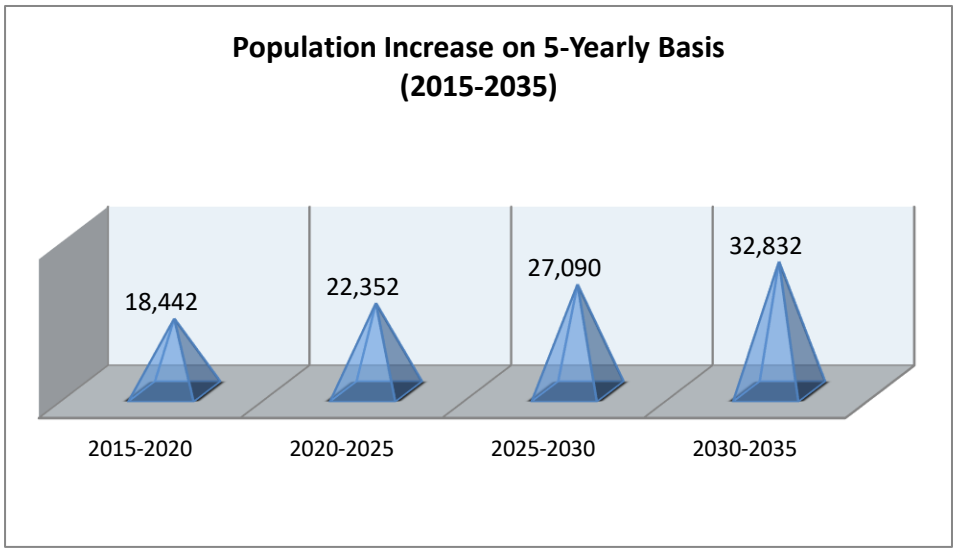
10.2.2 Extent of Future Population Growth (2015-2035)

In the Table below, population forecasts till the years 2035 on 5-yearly basis are given for the notified area as well as planning area. Also shown is the additional population or extent of growth for the periods 2015-2020, 2020-2025, 2025-2030 and 2030-2035. Also shown is the overall additional population for the period 2015-2035. During this period (i.e. next 20 years) the additional population will be around 45,000 in the notified area and around 85,000 in the planning area. Detailed statistics are shown in Table 19 and illustrated graphically in Graph 6.

[35] Using Khyber Agency Growth Rate (3.92%)

Table 21: Extent of Population Growth on 5-Yearly Basis

Year	Population Forecasts	Time Period	Population Increase
2015	87,000	2015-2020	18,442
2020	105,442	2020-2025	22,352
2025	127,794	2025-2030	27,090
2030	154,884	2030-2035	32,832
2035	**187,716**	**2015-2035**	100,716



Graph 9: Extent of Population Change

11 DEVELOPMENT SCENARIOS AND GROWTH PATTERN

11.1 STRUCTURE PLANNING APPROACH

How will Landi Kotal be in next twenty years? Are the Political Agency, Line Departments, other local municipal entities and FATA Secretariat equipped to operate successfully in future? How will Landi Kotal be affected by environmental degradation? Reduced resources? Increased population? Strategic Plan attempts to address some of these concerns.

Structure Plan is a flexible plan or road map of sector strategies, subtly integrated, and derived from analysis of surveys, investigations and consultations with different stakeholders. It is likely to steer landi Kotal in a focused direction.

Broadly, goals of a long-term development scenario are to address the major challenges facing Landi Kotal. The settlements within the proposed planning

boundary of Landi Kotal should maintain their character and vitality. However the growth opportunities should be supported throughout the Khyber Agency, and not just in the urban area.

Landi Kotal is expanding in all directions; expansion is however more pronounced along N5 because of a number of factors such as existing physical & social infrastructure, better transport linkages, and easier accessibility to different facilities and services. Substantial built-up area is also towards northern part of urban area, which apart from some new developments also includes established villages such as Kando Khel, Ishaq Khel, Ashraf Khel, and Gulab Kili etc.

For the future urban growth, the most optimum growth direction/s needs to be identified. In which directions urban expansion should be encouraged and why? The Section below attempts to react to these questions.

11.2 DIRECTIONS FOR FUTURE EXPANSION

Comprehensive approaches are needed to explore future expansion alternatives and promote growth patterns that are economically viable and environmentally sustainable. Forms and directions of future physical growth of Landi Kotal depend on the spatial strategy adopted for it.

In some directions of Landi Kotal urban area, the expansion is restricted or limited because of certain physical constraints; for example towards north of railway station/commercial area lies cantonment area; and towards west expansion is restricted because of nearby Afghan border, which is less than 10 kms away from Afghan border.

11.3 DENSIFICATION AND EXPANSION

11.3.1 Densification

There is substantial scope for densification as there are large vacant areas within the built-up areas and between different villages falling within the Planning Area. These can be used for in-fill development over the next 20 years, to absorb the incremental population during the period 2015-2035.

Total net built-up area of the delineated planning area is 1,280 acres, while the vacant land is 2,332, of which 1,982 acres is developable. The additional population during the period 2015-2035 has been calculated to be 101,000. Based on the adopted population density of 55 persons per acre, land required for the additional population till the year 2035 has been calculated to be 1,836 acres, while 1,982 acres of developable vacant land is available for densification.

The calculations have been made as below:

Total Built-up Area	=	1,280 acres (Table 4)
Total Vacant Land	=	2,332 acres (Table 5)
Developable Vacant Land[36]	=	1,982 acres
Additional Population (2015-2035)	=	101,000 (Table 19)
Adopted Population Density	=	55 persons per acre

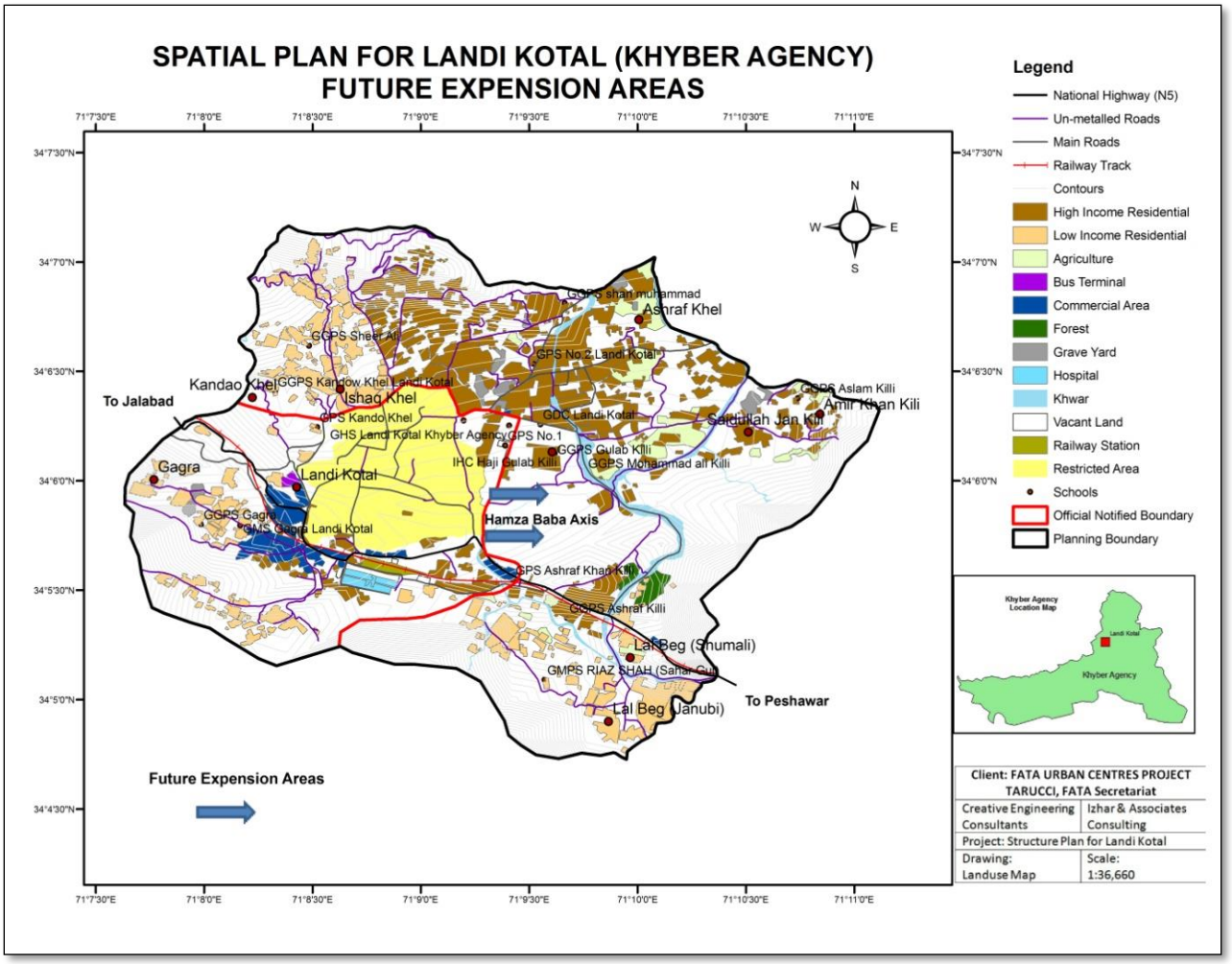
Land required for Additional Population=Additional Population/Population Density=101,000/55=1,836 acres

The conclusion from the above figures is that population growth for the next 20 years can be accommodated within the planning area.

11.3.2 Future Expansion towards Hamza Baba Axis

A fairly large tract of land is lying vacant towards east of Landi Kotal, in the direction of Hamza Baba Mizar. A part of this may also be used for a small well-planned housing colony, but most of this Govt. owned land should be utilized for common urban facilities, as demanded by stakeholders through discussions with them at different level. Some of the facilities proposed by stake holders in that direction include park, community centre, educational facilities etc. The Government may also consider preparing a detailed master plan for this vacant land.

[36] @85% of total vacant land.



Map 12: Future Expansion Areas

11.4 DETAILED PLANNING OF HAMZA BABA MAZAR AREA

During discussions with Political Agent Khyber, it surfaced that around 350 kanals of vacant land towards Hamza Baba Mizar area is Government owned. It is recommended that this may be used for common urban facilities as identified during a series of consultative sessions with different stakeholders at different levels.

Table 22: Space Standards for Proposed Landuses

S. NO.	Landuses	Area (Kanals)	NRM Reference[37]
	Central Open Space (includes Community Park and a separate enclosed Ladies Park)	77 (22.00%)	P-138

[37] Adapted from 'National Reference Manual for Planning and Infrastructure Standards', Govt of Pakistan, Environment and Works Division.

	Community Centre/Jirga House	10 (2.86%)	--
2.	Educational Complex	70 (20.00%)	P-110
	Planned Commercial Area	40 (11.43%)	--
6.	Jamia Mosque	4 (1.14)	P-128
8.	Health Centre	5 (1.43%)	P-123
	Miscellaneous/Reserved Area	75 (21.43%)	
	Circulation/Parking	69 (19.71%)	
	Total	350 (100%)	

12 LANDUSE ZONING

Future landuse policy for Landi Kotal should respect the fact that much of its distinct character lies in its diversity of landuses, and its physical, economic and cultural characteristics. Complete segregation of landuses, particularly in the inner areas is neither possible nor desirable. However rampant landuse conversions, which impede easy flow of traffic and a non-amenable living environment for the local residents must be controlled. Congestion puts further pressure on the already overburdened infrastructure and public services. Commercial areas are of course part and parcel of any human habitat. Planned commercialization itself is not bad; it is the indiscriminate proliferation which should be controlled.

Landuse profile of an urban area and its relationship of human activities and spatial uses are essential for better urban planning in general and landuse zoning in particular.

Planned and optimal urban expansion can be accomplished by implementing the Structure Plan through zoning regulations and local ordinances for landuse conversions and subdivisions. Zoning is the most widely used form of landuse regulation. Ordinances may include permitted landuses in specific zones the height and size of buildings, lot sizes, permissible density, parking requirements, and other characteristics of development.

The criteria for earmarking the zones were based on the following characteristics:

- Physical and Urban Characteristics
- Predominant landuses

- Intensity of development

Considering the measures discussed above, Landi Kotal is proposed to be zoned as follows:

- Zone 1: Civic Zone
- Zone 2: Restricted Area
- Zone 3: Urban Residential Area/Peripheral Localities
- Zone 4: Mixed Landuse Area Towards Hamza Baba Extension Axis

These are described as below:

12.1 ZONE 1 – CIVIC ZONE

Most of the civic facilities are located in this zone, and lie on both sides of N-5 and railway line. These include civil hospital, main commercial area, bus terminal, and railway station etc. There is not much residential area in this zone but there is heavy commercialization along N-5 passing through it. Because of character and nature of landuses in this zone, there is indiscriminate road-side parking of private cars/taxis. Besides, unplanned/unauthorized public transport 'addas' have not only substantially reduced the road capacity, but also impede efficient flow of traffic. Thus it is important to identify adequate parking areas at appropriate locations, and road-side parking be penalized. This is possible only when municipal institutions are in place; this aspect has been discussed in detail in Section 16.

12.2 ZONE 2 - RESTRICTED AREA

It is the cantonment area with its ancillary landuses. It is managed by army authorities, and not by civil administration.

12.3 ZONE 3 – URBAN RESIDENTIAL AREA/PERIPHERAL LOCALITIES

The proposed planning area basically comprises of Civic Zone as already described and Urban Residential Area along with peripheral localities.

Most of the urban residential area/peripheral localities are situated towards northern part of planning area, which apart from some new developments also includes established villages such as Kando Khel, Ishaq Khel, Ashraf Khel, and Gulab Kili etc. However, such localities are also scattered in other directions of planning area, although to a lesser extent.

12.4 ZONE 4 – MIXED LANDUSE AREA TOWARDS HAMZA BABA EXTENSION AXIS

Commercial activities and civic facilities, as already stated are mostly concentrated in the Zone-1 (Civic Zone). However, a separate, well planned mixed landuse zone for Landi Kotal in proposed Zone 4 (Hamza Baba Axis). A fairly large tract of vacant land towards Hamza Baba Mizar area will be the focus in terms of future physical expansion of Landi Kotal, as it is adjacent to current urban area, is well connected to N-5, and is close to main commercial area, civil hospital and other urban facilities.

It will maximize the aggregate convenience of traders and the inhabitants and will also help to decongest Zone 1 (Civic Zone). The residents at least partially will be able to avoid areas of traffic congestion. Besides, many shoppers living away from the central area will have to travel lesser distances for major shopping and related purposes.

In Landi Kotal, absence of adequate and planned open spaces is a serious shortcoming. Provision of such spaces for active outdoor recreation is a necessity. Thus reserving land for recreational purposes such as a play ground for active recreation, and a park for passive recreation is proposed in Zone 4.

Educational institutions are of course scattered throughout the project area. However, a separate area is required for higher order educational facilities, and is also proposed in zone-4.

Zone-4 is thus proposed as mixed landuse zone, having:

- Residential Area
- Commercial Area
- Recreational Facilities (active/passive)
- Educational Complex
- Planned parking areas.

12.5 ENFORCEMENT OF LANDUSE ZONING

There is a strong need to protect and enhance the quality of Landi Kotal's built environment. To accomplish this, zonal boundaries have been clearly marked to delineate different zones based on their present and anticipated landuse characteristics. The purpose is to control and direct the use and development of properties in each zone; ensure landuse compatibility, ascertain minimum standards of health & safety and provide land for public goods and services.

Distribution of planning area into different zones is attempted to regulate and promote a systematic relationship and interaction between various land uses/activities in respect of their approach and accessibility. Non-conforming uses developed either lawfully or unlawfully have to be discouraged with the aim of their gradual elimination from different areas. The zoning regulations proposed herein are a broader spectrum towards existing and future developments and are kept flexible in giving permission to auxiliary activities in different zones.

Stringent building control in areas like Landi Kotal, at current level of socio-economic development is neither desirable nor possible. In fact, strict control may hinder the developmental activities. Nevertheless, there have to be some guiding principles to rationalize and reasonably exercise planning control in different zones.

It is therefore imperative that effective municipal institutions should be in place, and proper land use planning and zoning practices be developed along with supporting legislation in order to streamline urban growth.

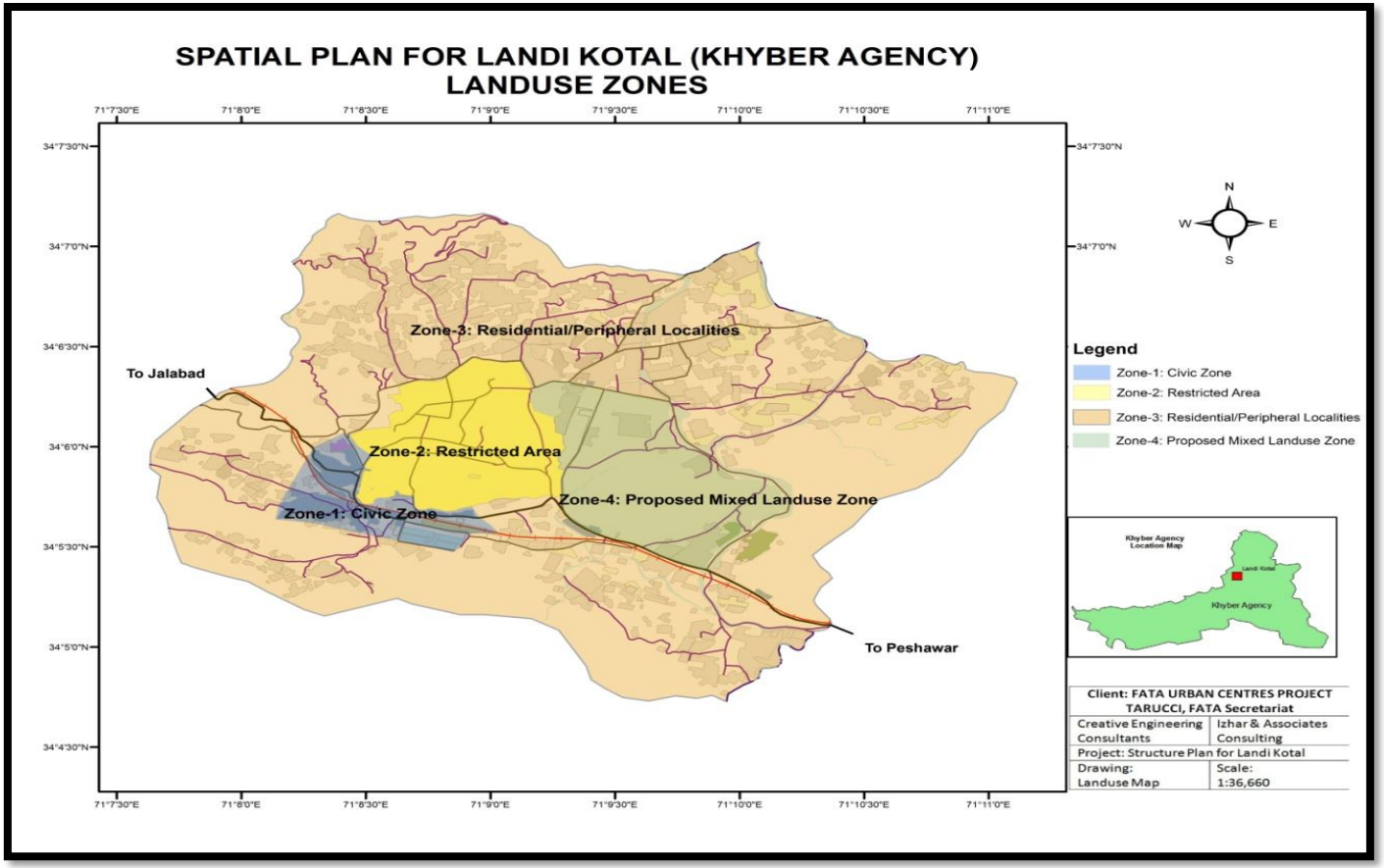
It is also important that qualified staff including urban planners should be recruited for municipal body, and initiate trainings to economize land consumption, and allocate land to its proper uses.

To enforce proposed zoning, the following landuse regulations may be considered. These are based on landuses permitted/permitted on appeal in different planning zones as proposed in Table 22 below. Permitted landuses are those, which the proposed Municipal Committee may allow in a particular zone. Landuses that can be 'permitted on appeal' should be carefully scrutinized by the municipal committee and decided on case-to-case basis. Uses not specifically provided in a particular zone are prohibited and should not be permitted.

Table 23: Landuses Permitted/Permitted on Appeal in Proposed Zones of Landi Kotal

Zone	Uses Permitted	Uses Permitted on Appeal
Zone-1: Civic Zone	Wholesale/retail commercial markets and establishments. Restaurants/Hotels. Business and professional offices Transportation Terminals Recreational Uses Public utilities and buildings	Petrol and gas filling stations

Zone	Uses Permitted	Uses Permitted on Appeal
	Approved parking provisions.	
Zone-2: Restricted Zone	This zone is under army/law enforcing agencies and in general civil municipal regulations are not applicable in such areas.	
Zone-3: Urban Residential Area/Peripheral Localities.	Houses, Mosques Primary/High Schools Clinics/Dispensaries Social/Cultural Institutions Local Shopping & Recreational Uses Vegetable gardens and nurseries. Incidental ancillary uses which must be free from nuisance and hazard.	Commercial Offices and Service Shops of Local Character Non-commercial poultry Taxi/rickshaw stand. Restaurants, Graveyards
Zone 4: Mixed Landuse Zone towards Hamza Baba Mizar Axis	Residential areas, Shops and commercial centres, educational institutions, recreational places, parks and open spaces, public and religious buildings Playgrounds and related uses, Taxi and rickshaw stands/car parking, Public utilities and municipal facilities.	Petrol filling stations, Hospitals, main transport terminals, storage facilities.



Map 13: Landuse Zones

13 INFRASTRUCTURE PROJECTS

The existing situation of infrastructure has been presented earlier in Part A, Section 6 of this Report. However, some gaps identified based on internal analysis of each sector are described below:

13.1TRANSPORTATION

13.1.1 Roads

Landi Kotal is the main trading hub between Pakistan and Afghanistan since the Peshawar- Torkham Road (N-5) passes through Landi Kotal. Within the city, the main heavy transport vehicles bypass the bazaar to avoid congestion, traffic jams and smooth flow of the multi wheelers. The National Highway N-5 (Peshawar-Torkham) and its bazaar bypass portion are being reconstructed/ rehabilitated to modern standards by NHA. Table 20 shows average daily traffic count for N-5 passing through Landi Kotal.

Table 24: Average Daily Traffic Count on N5 Passing Through Landi Kotal[38]

Type of Vehicle	Peshawar-Torkham	Torkham- Peshawar
22 Wheelers	598	589
14 Wheelers	317	328
6 wheelers	365	369
Buses/ Mazdas	412	417
Cars	3,277	2,815
TOTAL	4,969	4,518

Another road connecting Landi Kotal to Peshawar is the Landi Kotal-Shalman-Mullagory-Jamrud road which connects Jamrud to Mullagory, Shalman and then Landi Kotal. This road is being constructed through the Annual Development Plan (ADP) and Phase-III of the project is part of the current ADP: 2014-15.

In addition, a network of internal roads connecting the nearby villages measuring over 20 Kms in length exists within the urban boundary. *Most of the major roads are paved but some require rehabilitation/ reconstruction. Immediate improvements to be made to the roads are shown in Map 10.*

There are also several unpaved tracks connecting Landi Kotal to the nearby villages and these tracks may be paved to facilitate transportation and to open up new areas.

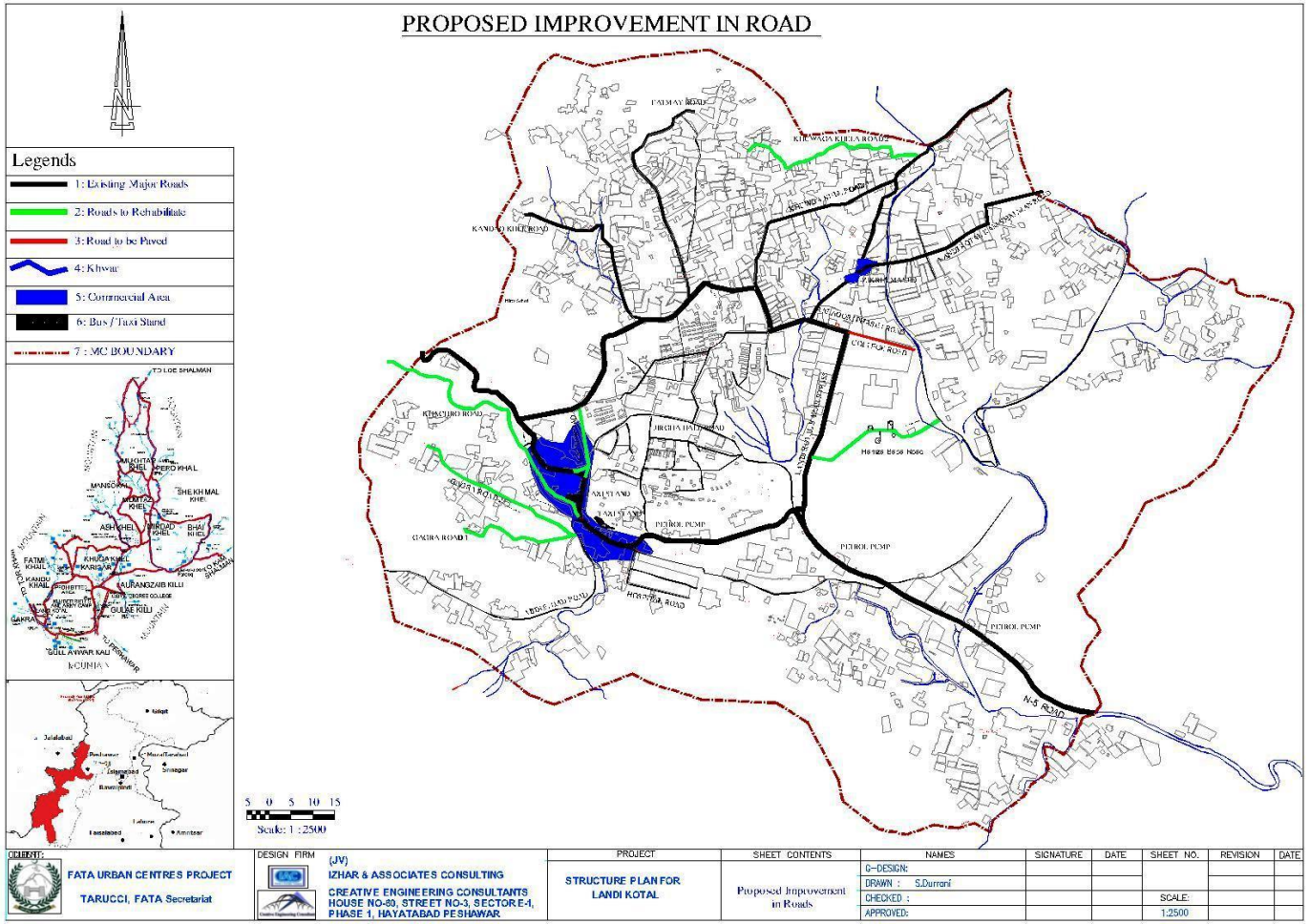
[38]The data does not include NATO supply vehicles and vehicles owned by locals of Landi Kotal (FWO Traffic Count for 12 hours on November 14, 2014).

13.1.2 Terminal /Addas/ Bus/ Taxi Stands

A formal and organized transport terminal does not exist in Landi Kotal. In order to cater to local passenger and goods transport linking Landi Kotal to Peshawar, Torkham and surrounding villages, as many as three addas/ stands are located within the Landi Kotal bazaar area. These are serving incoming and outgoing vehicles which vary in shape, size and nature from small Suzuki cars, pickups, shehzor to heavy trucks. An estimated daily load of 1,155[39] light vehicles enter with passengers into Landi Kotal from Peshawar, Torkham and nearby villages. The same number of passenger vehicles leaves Landi Kotal daily for the same destinations. Goods transported to Landi Kotal on a daily basis are mainly from Peshawar through 54 number light and heavy trucks. In view of this internal heavy traffic (more than 2,000 vehicles per day) within the Landi Kotal town/ urban area and predominantly in the bazaar area create heavy congestion, traffic jams and blockage of road in the bazaar because of the unorganized stands and addas.

A modern self contained Bus/ Taxi Terminal/ Stand need to be provided out of the bazaar area preferably in open space between the AHQ Hospital and the railway station.

[39] Data obtained from records of the President of Transporters



Map 14: Proposed Road Improvements

13.2 DRINKING WATER SUPPLY

13.2.1 Quantity of Water Supplied

Drinking water supply systems providing water to Landi Kotal area at the present is from a spring located at ***Landi Khana*** which is feeding ***Mirza Talaab*** (storage capacity: one Million Gallons) through a 4.7 Km long main pipe and the ***Bank Tank*** (storage capacity: 100,000 gallons) through a 3.81 Km long main transmission line.

At the Landi Khana source, two pumps, 12,000 gallons per hour and 18,000 gallons per hour discharge run for an average of 10 hours a day and supply a total of 300,000 gallons to the two tanks in a day.

In addition, within the city four tube wells (one being Solar) are meeting water supply requirements of the people. These are on the average supplying 10,000 gallons each per hour each and run for an average of four hours a day due to interruptions in electric power. The total water supplied from these tube wells is approximately 160,000 gallons per day. Hence an estimated supplied water quantity by the PHED is approximately 460,000 gallons per day. There is a storage capacity of over one million gallons (1,280,000) in the town and several tanks/ ponds have been constructed. The areas covered through public water supply are marked on the map included in the previous section.

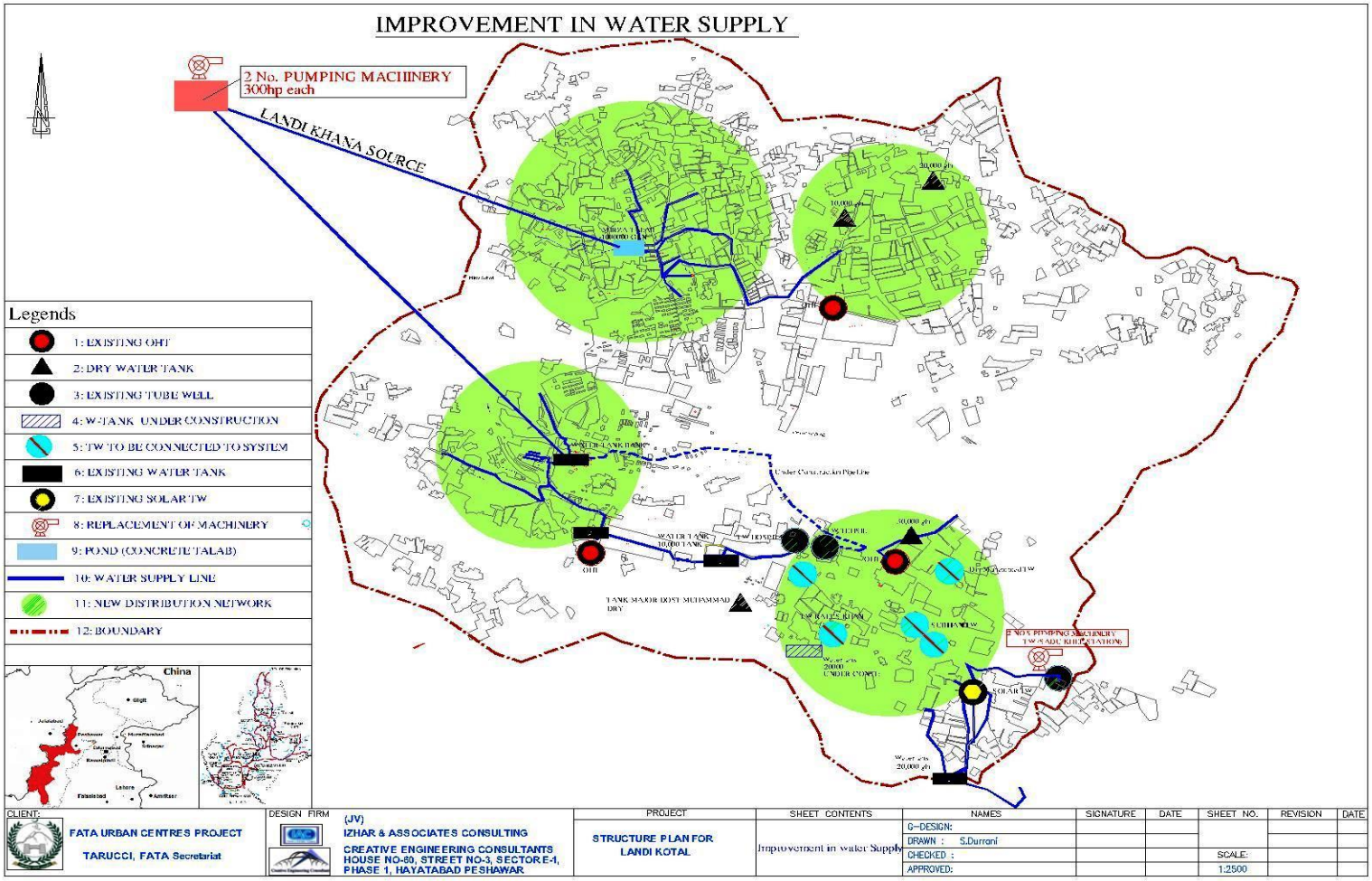
13.2.2 Water Quantity:

According to the estimates, the available water quantity of 460,000 gallons per day serves only 15-20% of the current population[40] which would not be more than 20,000 persons and receiving 23 gallons per capita per day. If this water is supplied to the entire present estimated population (86,732), the coverage would only be 5 gallons per capita per day. However if 70% of the present population is served, it will be 7 gallons per capita per day. The served population has excess water as the standard for FATA[41] can be taken as 7 gallons per capita per day at the minimum. *Actually, the supplied water is adequate to meet the needs of larger population than presently served but wastages might be enormous and the mains as well as pipelines might be old, broken and leaking as confirmed also be the consultant's field surveyors and the PHE section of the W&S department.*

[40] The Household survey responses show that only Sadu Khel area has Municipal taps in majority of the houses with little presence in Shaikh Mal Khel and Kandaw Khel. In major area the household responded negative to public water supply tap in their household, Ref. Figure 7.

[41] National Drinking Water Policy, Pakistan: Rural Areas: Minimum 20 liters (5 gallons) per capita per day: Urban Areas: Minimum 40 liters (10 gallons) per capita per day. FATA on the verge of rural to urban transformation, the requirement may be estimated at a minimum of 7 gallons per capita per day.

In addition to the Public Water Supply managed by Public Health Department (PHED), several privately owned wells, hand pumps and storage tanks have been made privately or through donors/ NGOs. Major segment of the population fulfill their needs from these sources. In view of lacking public water systems in the area, a significant part of the population buys water from tankers at costs much above their affordability (as high as Rs. 60-150 per drum). *Most of the existing pumping machinery and some mains need replacement as well as distribution network need to be extended and more existing tube wells which are not functional need to be integrated within the system and made operational. Under construction tube wells and connections also need to be completed and connected as early as possible. Map 11 show proposed improvements to the water supply network.*



Map 15: Proposed Improvements in Water Supply

13.2.3 Quality of Water Supplied:

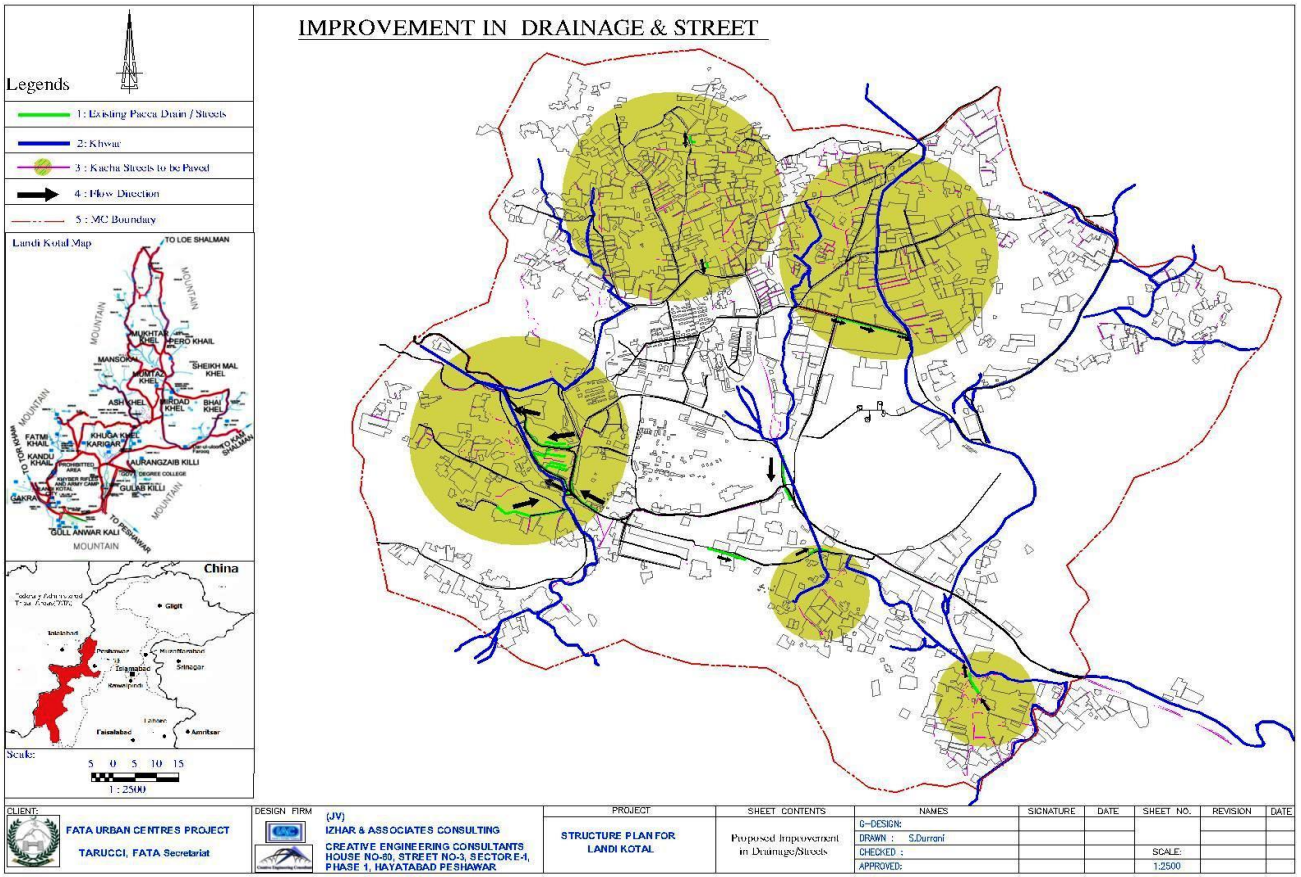
Five drinking water samples were collected from the Bank Tank, Mirza Talab, Hospital tube well No. 2 and 3 and Sadu Khel Tank. These were tested from the Environmental Laboratory of the University of Engineering and Technology (UET), Peshawar for physical and chemical testing. Aditional water samples were collected from Mirza Talab and Sadu Khel tank and were tested for bacteriological contamination. Reported test results are within permissible limits as prescribed by the WHO and 0/100ml total Coli form were observed. The test results are included in Annexure 4.

13.2.4 Drinking Water Needs:

The estimated 2035 population of the planning area would approximately be 187,135 persons. Drinking water requirements at an average of minimum 7 gallons per capita per day requires supply of at least 1,238,384 gallons per day. Additional water requirements are thus 1,309,945 gallons per day. If the number of additional tube wells having capacity of 10,000 gallons per hour and 6 hours daily operation is considered, supply of the *additional water would require 22 tube wells to be drilled in a phased manner up to 2035. Alternatively, a greater water supply feasibility be explored which may transmit over a million gallons per day to the area.*

13.3 STREETS AND DRAINS

Majority of the streets in the villages are unpaved. An estimated length of 13 Kms of kacha/ pacca streets are present in the urban limits and the majority require pavement. These are streets within the villages of varying dimensions and some may allow vehicular traffic while most will be used by pedestrians. Hence, a detailed mapping would be required to decide about the type of pavement *A detailed study of streets and drains in the entire area needs to be conducted and a program to pave katcha streets, clean choked drains and line the drains providing adequate section and slope to improve sanitation conditions within the urban areas. Tentative areas where improvement in streets and drains are needed are marked in Map 12.*



Map 16: Proposed Improvements in Drainage & Streets

13.4 TELEPHONE/ POSTAL SERVICES

Pakistan Telecommunication (PTCL) and mobile phone services are available to the majority of residents. There is a PTCL digital telephone exchange in Landi Kotal with Fiber Optics. ***The exchange need to be upgraded to meet the future requirements of the population.*** Almost all mobile phone service providers have installed towers in the area and the bazaar has several mobile selling and repair shops. Express mail services including a post office and the private sector fast delivery services (TCS) are present in Landi Kotal and these businesses will grow as the population and demand grows.

13.5 SEWERAGE SYSTEM

There is no underground or covered sewerage in the municipal area. More than 70% households were not satisfied with the prevailing system. The main reasons cited for dissatisfaction was the lack of flush latrine in their houses, about 29% lacked resources to afford flush system, and about 15% responded that there was not enough water to dispose-off human waste. However, in the shorter term, the drains which carry human excreta need to be efficient and cleaned regularly to resolve the sanitation issues somewhat. In the long term, measures to construct flush latrines and underground sewer lines and safe disposal of the materials shall be considered. *By 2035, the potable water supply demand would reach approximately 1.3 million gallons a day and taking 70% of the available water as waste water, approximately 910,000 gallons of waste water would need to be drained. Thus adequate drainage system would be needed.*

13.6 SOLID WASTE MANAGEMENT

There is no formal system of solid waste disposal in Landi Kotal. Garbage dumps (locally known as *Deran*) can be seen on the road side in the bazaar area and in open spaces in the villages. Traditional systems of garbage disposal is in practice as the residents collect all garbage from their households (including human excreta in some cases) and dump it in a designated area called *Deran*. Several dumps in the town have been identified in the study and discussed in the existing situation report. Solid waste generation by 2035 would reach in excess of 47 tons per day[42]. *In the longer term, the municipality needs to launch awareness campaigns along with measures to collect and transport the waste/ garbage to a safe disposal site by designing an integrated system of collection, transportation; recycling and safe disposal shall be introduced.*

[42] 0.25 Kg per capita per day: borrowed from elsewhere in FATA.

13.7 POWER SUPPLY

The electrification system in Landi Kotal comprise a Grid Station, a 1.58 Km High Tension Line, 15 number 11 KV Feeder lines totaling 339 Kilometer long distribution lines and 1,034 distribution transformers. There are 35,910 domestic connections (6270 in the urban area), 1,174 commercial connections, 12 industrial connection and 34 Tube Well connections. The satisfaction level of residents is very low from the supply of electricity. General complaints are similar to that elsewhere in FATA as excessive load shedding, low voltages and frequent breakdowns. Consultations with TESCO reveal that the following immediate steps are necessary:

- ***Up gradation of the Grid Station***
- ***Metering of all connections***

13.8 SPORTS AND RECREATION

There are no public latrines and the need is emphasized by the locals through the household surveys and group interviews. One park is being developed in the vicinity of Hamza Baba Mazar by the Local Government and Rural Development Department (LG&RDD) through the Annual Development Program (ADP). There is no facility for holding of sporting events for the youth and cultural events for the public though patches of barren land is available where the youth mostly organize foot ball and cricket matches. *Adequate Parks, recreational facilities, public toilets, street lighting and sporting facilities need to be provided.*

14 LONG TERM PROJECTS

Keeping in view the future development of the area, some needed interventions are indicated for each sector as the long term investment plans.

14.1 ROADS

i. Paved Link roads connecting Landi Kotal to the surrounding villages.
ii. The Landi Kotal-Shalman-Mullagory-Jamrud road to be completed.

14.2 WATER SUPPLY

i. Feasibility to explore possibility of storage dams and uplift water systems to be launched.
ii. Potential of ground water aquifer within or the periphery of the planned area to be determined to cater to Landi Kotal residents.

14.3 STREETS/ DRAINS AND SANITATION

i. All streets within the urban area shall be paved and lined drains shall be provided.

11.4 SOLID WASTE MANAGEMENT

i. An integrated Solid waste Management System including collection, transportation, transfer stations, recycling, landfill, etc shall be established for the town.
ii. Extensive education and awareness campaigns on personal and house hold hygiene through development and implementation of strategies for Behavior Change Communication and Hygiene Promotion shall be unity development projects.

14.5 OTHERS

i. Recreational facilities like Parks, Sports Grounds, Bus stand and Community meeting hall shall be provided.
ii. A modern Slaughter house within healthy environment need to be provided within the Municipal area with suitable operational arrangements.
iii. Public toilets in the bazaar area, with parks and other public spaces shall be provided and maintained in clean and hygienic conditions through a suitable arrangement.
iv. Parking spaces for public and private vehicles shall be provided.

15 SHORT TERM PROJECTS (IMMEDIATE ACTION PLAN)

The Immediate Action Plan identifies projects which have been finalized on the basis of field surveys, group interviews and discussions with different stakeholders including the line departments of the agency. These projects/schemes need to be taken up urgently and executed in the next 3-5 years. The Action Plan sets-out measures to be taken over a 5-year period, detailing actions required on yearly basis. Actions have been phased over time and include sufficient time for feasibility, detailed planning & design process, political approval and securing investment and operating budgets. The plan can have major political, institutional, technical and financial implications, all of which will have to be addressed clearly and effectively if it is to be agreed, adopted and implemented.

The Projects identified under the Immediate Action Plan are as below:

Roads:

1. Hamza Baba Road to be rehabilitated and improved.
2. Custom Colony-College Road to be paved.
3. Khugakhel Road 2 needs rehabilitation and improvement.
4. Landi Kotal Bazar Road (identified portion) to be rehabilitated and improved.
5. Khacharo Kusa-Landi Kotal-Michni post Road to be rehabilitated and improved.
6. Gagra Road 1 to be rehabilitated and improved.
7. All existing roads within the town need surface treatment.

Water Supply:

1. Feasibility studies to map existing water supply network, requirements, aquifer potential, new ground water sources and the possibility of a greater water supply/ gravity flow options for Landi Kotal shall be carried out.
2. Two number 300 HP pumps need to be installed as standby at Landi Khana/ Tangi Pumping station.
3. Two pressure pumps at Sadu Khel Booster station to be repaired.
4. Pipelines up to 8,000 meters needed for distribution network within the town.
5. All unconnected/ non functional tube wells in Sadu Khel area to be integrated in the system and made functional.
6. All dry storage tanks to be connected and made functional.
7. Distribution network served by AHQ Hospital tube well to be replaced.
8. Un-served areas as marked need to be provided with distribution network.

Streets/ Drains and Sanitation:

1. Approximately 10 Km of streets needs to be paved.
2. Approximately 5 Km of drains needs to be constructed/ lined.
3. Existing pucca drains shall be cleaned and rehabilitated.

Solid Waste Management:

1. Existing garbage dumps to be contained and properly managed.

16 INSTITUTIONAL ARRANGEMENTS

Present administrative set up, infrastructure provision, operation and maintenance responsibilities of various line departments, proposed Municipal Committee and an implementation structure proposed for the structure plan are discussed in detail in Annexure 6.

The LGO 2012 for FATA included elaborate section on Municipal Committees in all agencies but since the LGO 2012 could not be implemented so far due to several reasons, therefore a formal municipal committee does not exist at present in Landi Kotal. The Governor Khyber Pakhtunkhwa approved the establishment of Municipal Committees in the fourteen urban hubs identified by TARUCCI and a notification by FATA Secretariat was issued in November 2010 (Notification copy included in Annexure 6).

The functions of a Municipal Committee in respect of municipal planning, management and service delivery as contained in LGO 2012 and described in the Notification require the establishment of the Municipal Committee and assigning of appropriate staff (Municipal Officer, Engineers, Town Planner, Water supply and sanitation as well as Solid Waste Management systems and resources) as the first step. Future developments and improvement in service delivery within the municipality will only be possible if an integrated, holistic approach by an entity with ownership is established. Otherwise, investments will have to be made through the existing line department's portfolio and the operation/ maintenance responsibilities will suffer since the line departments already have meager resources for subsequent operation and maintenance of facilities. Thus it is essential that the structure for a Municipal Committee is put in place as early as possible. In the absence of an MC, annexure 6 presents some possible options for implementation of the structure plan, immediate and long term action plans.

17 REVENUE GENERATION

Chapter IX of FATA Local Government Regulations, 2012 is about Local Council Taxation. Salient features of this Chapter are as below:

i. On commencement of the above regulations, every town shall be a rating area.
ii. The Municipal Committee shall determine the rate of property tax in its area; Provided that in the areas within a town where rate has not been determined, the areas shall be deemed to be exempted from property tax till determination of the rate.
iii. A Local Council subject to the provisions of any other law may, and if directed by the Governor shall, levy all or any of the taxes, cesses, fees, rates, rents, tolls, charge, surcharges and levies specified in the Second Schedule.
iv. The Governor may cause Model Tax Schedules to be framed and when such Schedules have been framed a Local Council shall be guided by them in levying a tax, rate, toll or fee.
v. Failure to pay any tax and other money claimable under this Regulation shall be an offence.

vi. The Governor may empower any Local Council to recover arrears of taxes or any other moneys claimable by the Local Council under this Regulation by distress and sale of the movable property belonging to the person concerned or by attachment and sale of the immovable property belonging to him.

vii. A Local Council may by notification, call upon any person to furnish such information, produce such record or accounts or to present such goods or animals liable to any tax as may be necessary for the purpose of determining the liability of such person, goods or animals to a tax.

viii. If a Local Council levies a tax on professions, trades or callings, it may require the employer of the person liable to such tax to deduct the tax from the salary or wages payable to such person, and on such requisition the amount of the tax due shall be deducted from the salary or wages of the persons concerned and credited to the Local Fund of the Council.

ix. All taxes and other charges levied by a Local Council shall be imposed, assessed, leased, compounded, administered and regulated in such manner as may be provided by rules.

x. Rules framed under this article may, among other matters, provide for the obligation of the tax payer and the duties and powers of the officials and other agencies responsible for the assessment and collection of taxes.

ANNEXURES

Annexure 1: Projected Population of Individual Villages & Urban Units of Khyber Agency in 2014-15[43]

[43] Source: Bureau of Statistics, FATA.

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
***KHYBER AGENCY**	**787,212**	**409,786**	**377,426**
*BARA TEHSIL	412,064	213,353	198,710
*AFRIDI TRIBE	412,064	213,353	198,710
*ADAM KHEL SECTION	4,206	2,154	2,052
BAZI KHEL	1,293	644	649
FARID KHEL	577	274	304
GOHAR KHEL	749	364	384
SEEN GASS	1,587	873	714
*AKA KHEL SECTION	92,938	47,998	44,941
ASHRAF KILI	2,125	1,081	1,044
BADI ATTARI KILI	958	498	459
GHATI TAPAI	3,142	1,621	1,520
GHULAM RAHIM KILI	1,807	940	867
GUL AFZAL KILI	3,326	1,702	1,624
HAJI INAYAT KILI	767	439	328
HAJI LAL JAN KILI	1,568	808	760
HAJI ZARIF KILI	3,011	1,532	1,479
HAKIM KHAN KILI	1,211	654	557
JALAL ABAD	1,800	903	897
JEHAZ GROUND	2,818	1,489	1,329
KHATAM SHAH KILI	1,048	492	556
MADA KHEL KILI	3,428	1,777	1,652
MALIK FAQIR KHAN KILI	947	495	452
MAREY KILI	2,530	1,336	1,194
MILWAT CAMP	4,091	2,298	1,793
MIRO KHEL KANDAO	6,415	3,218	3,196
MOHAMMAD KILI	2,112	1,080	1,032
MOLVI SALAMAT SHAH KILI	3,317	1,703	1,614
NOOR AHMAD KILI	1,466	734	731
QAMBAR KHEL KILI	3,235	1,551	1,685
QAZI ABAD	3,070	1,575	1,495
QAZI KILI	2,168	1,116	1,053
SAID AHMAD SHAH KILI	1,094	564	530
SAID AKBAR KILI	1,194	613	580
SAID BAD SHAH KILI	1,688	886	802
SAID MUHAMMAD KILI	1,814	963	851
SAMANDAR KILI	2,626	1,315	1,312

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
SANDA CHAP KILI	4,819	2,536	2,284
SHER KALI	795	397	397
SHER REHMAN KILI	1,198	693	505
SPIN QABAR	2,119	1,101	1,018
SULTAN KHEL	2,714	1,362	1,352
TAKYA QAUMI MASJID	4,891	2,531	2,360
WARA TAPAI	1,908	933	975
YAR SHAH KILI	4,629	2,423	2,206
YASEEN KILI	4,023	2,062	1,961
ZAWA KILI	1,065	575	491
*BAR QAMBAR KHEL SECTION	79,517	41,379	38,139
AMIN SHAH KILI	249	138	111
ATTARI	1,310	674	636
BARAN DHAND	786	422	364
BHOOTAN	3,718	2,001	1,716
CHEERLANGI	1,826	989	837
CHERLANGO	1,708	860	848
DARYA KHAN KILI	2,723	1,349	1,374
FAQIR DHAND	1,319	661	658
GHANDAL KHAN KILI	1,960	1,019	940
GUL ZAMAN KILI	1,267	661	606
HAIDER GUL KILI	2,171	1,087	1,084
HISARA KHAWAR	1,924	937	986
JAN KHAN KILI	2,792	1,467	1,325
KHAISTA KHAN KILI	795	407	387
KHAN AHMAD KILI	1,605	812	793
KHATINAI	1,508	763	744
KHAWAJA KHAIL	2,053	1,050	1,004
KHAWAJA KHEL	3,369	1,718	1,652
LALAI KAS	2,897	1,616	1,281
MERGI KHEL	1,667	824	844
MIRZABI KHAIL	1,103	547	556
MOHD HASHIM KILI	1,179	589	590
NARHAO	1,706	880	826
NEHAR GHARA(BANK)KILI	1,878	960	917
NEHAR TANDEL	2,216	1,214	1,002
PAKY TARRA	3,117	1,617	1,500

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
SAID BADSHAH KILI	600	317	284
SAIDAN KILI	3,063	1,636	1,427
SAM BABA AREA	3,437	1,735	1,702
SAMAND KHAN KALAI	1,186	635	551
SARMAST KILI	1,480	752	729
SHAH KASS KILI	2,851	1,506	1,345
SHALOBAR KILI	1,129	557	572
SHINKI KAMAR	1,489	767	721
SPIN DHAND	1,676	862	814
SURKI KAMAR	1,821	1,019	802
TAKYA KILI	2,219	1,074	1,145
TOOR TOOT	5,336	2,782	2,554
TOOTKI DHAND	2,232	1,194	1,038
WALI ABAD	2,153	1,280	873
*BARA SECTION	15,496	8,042	7,454
MIRO DARA	1,443	760	682
RAJGAL	1,991	1,001	991
SAVI KOT	2,669	1,328	1,342
SHEEN KAMAR	3,821	2,062	1,760
SPIN DRAND	2,072	1,040	1,032
SRA SHAGA	2,490	1,310	1,179
TAN	1,009	541	468
*KAMAR KHEL SECTION	23,884	11,684	12,200
ALLAH DHAND	1,647	808	839
BAZ GARHA STARRA (LARGE)	1,097	536	562
BAZ GARHA WARA(SMALL)	1,090	526	564
GEDARRO BAZAR	517	266	251
KHAWANA ZIARAT	920	439	481
MAIRA	966	497	469
MALIK SHIN AKBAR KILI	484	255	229
MIR DIN DHAND	1,567	790	776
NAZIR KHAN KILI	1,050	546	504
OCHPUL	438	206	232
SOOKH	7,313	3,399	3,914
TAKHTAKAI	5,448	2,734	2,714
TANDA CHINA	1,348	682	665
*KUKI KHAIL SECTION	9,484	4,780	4,704

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
MEHRABAN KALAI	4,576	2,317	2,259
NOOR BANO KALAI	3,857	1,952	1,905
RAJGAL	1,051	511	540
*MALIK DIN KHEL SECTION	65,863	34,374	31,490
ALAM KHEL	2,046	1,135	911
ALAM KHEL	1,114	586	528
BAR DAULAT KHEL	826	432	395
BARMAR KHAN KHEL	479	236	243
CHARGAI DAGARRI	1,123	599	524
DAULAT KHEL JUMAT	3,513	1,768	1,745
DOZI KILI NALA	1,205	603	602
FARASH KILI	2,334	1,222	1,112
FORT SLOOP CAMP	2,049	1,040	1,009
GHUNDAI KARNA KHEL	2,819	1,436	1,384
HAR KULA KHEL	500	256	243
JUMA BAZ KILI	1,711	916	795
KAGA GHAGA	743	371	371
KAGANO KAMAR	566	311	255
KALANA	6,188	3,371	2,818
KARAWAL BARAMI	2,448	1,300	1,148
KARIM ABAD	1,919	968	952
KARNA KHEL	3,592	1,839	1,754
KHAN BI KHELO MELA	603	292	311
KOHI KILI	3,353	1,724	1,630
KULA KHEL KARAWAL	1,178	592	586
LAR KALA KHEL	2,115	1,094	1,021
MADGALI ATTARI	363	171	192
MIR KHAN KHAIL	2,249	1,235	1,014
MISRY KHEL MELA	958	494	464
MOKHAI DHAND	782	403	379
NALA KHAWARA	1,415	726	690
NAVEY KAMAR	1,153	598	556
OCHA PAIL	3,428	1,721	1,708
OCHEY GARAY	750	343	407
REHMAT ULLA DHAND	658	357	301
SAID MALANG KILLI	1,355	664	691
SAR DHAND	1,783	1,276	507

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
SHAMSHER KHAIL	2,248	1,178	1,070
UMER KHEL	6,295	3,119	3,176
*SEPAH SECTION	51,026	26,606	24,420
AKHUN KILI	3,317	1,676	1,641
ANWAR ABAD	356	193	163
AYUB KILI	1,983	1,008	975
BAZ MOHD KILI	520	262	258
BERA DHAND	788	402	386
DORA KILI	795	416	379
GANDAO KILI	317	167	150
GANDAO ZARIF KILI	1,555	786	769
GHAIBI NEKAI	1,269	665	603
GUL BADSHAH KILI	2,186	1,137	1,048
GUL MOHD KILI	969	504	465
H.JUMA KHAN KILI	782	369	413
JHANSI FORT	799	534	265
KARIGAR GARHI	1,657	890	767
LARI KILI	707	369	338
MAIDAN KILI	919	446	472
MALANG GARHI	1,076	570	505
MALIK GARHI	540	386	154
MALIK GARHI KARKANA JAT	456	275	181
MANDI KASS	1,356	734	622
MOHD AKBAR KILI	1,950	926	1,024
MOHD KHAN KILI	1,533	799	734
MORCHO KHAWARA	1,837	898	939
NALA PECKET	884	459	425
NEHAR KILI	1,198	619	579
PIPAL GARHI	1,715	893	822
SAMANDAR KILI	681	343	338
SANDAI KILI	864	478	386
SANDANA	2,369	1,204	1,165
SARI KILI	855	432	423
SILK ABAD	3,052	1,508	1,545
SPIN QABAR NO 1	1,760	855	904
SPIN QABAR NO.2	5,741	2,963	2,777
SWATI KILI	371	190	181

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
TANDI KILI	599	304	295
WARMANDO KHAWARA	708	373	335
YOUSAF TALAB	1,217	605	612
ZIARAT GARHI	367	245	122
ZULFIQAR GARHI	979	723	256
*SHALOBAR QAMBAR KHEL SECTION	47,150	24,676	22,473
ABAD AKBAR	973	544	429
ARJALI NADAI	2,716	1,405	1,310
AZRAM KILI	1,245	675	570
DONGA SHAH WALI	1,195	583	612
GARY KILI	1,693	888	805
HAZRAT SHAH KILI	600	315	285
JAMAL BAZ KILI	1,477	731	746
JOSHI HIQAB GUL KILI	1,247	615	632
KHAN MOHD KILI	965	482	482
KHUSHKI MALBEY AREA	2,799	1,407	1,392
MALIKM WASIS KHAN KILI	1,542	828	714
MOHD AKBAR KILI	752	400	351
MOHMAND KILI	988	500	488
MUTABAR KILI	1,185	671	514
NABI ABAD	613	325	288
PABBI KHEL	2,838	1,474	1,364
PARI ATTARI	1,437	731	706
PORDIL KILI	1,549	809	740
QAMBAR ABAD	1,870	958	913
QAMBAR ABAD BAZAR	1,532	826	706
QAMBAR ABAD MARKET	821	610	210
RAHIM GUL KILI	1,525	778	747
REHMAN KILI	1,497	778	720
SAIDI KILI	1,061	541	520
SHAH KASS AREA	2,527	1,322	1,205
SHEIKH MALI	1,901	970	930
SUHBAT DHAND	2,278	1,146	1,132
SUR KAMAR	600	318	282
TOOR KHEL	1,567	809	757
WARSAK	2,707	1,438	1,269
YAR MOHD KILI	1,448	795	654

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
*ZAKHA KHEL SECTION	13,193	7,060	6,134
BOOKAR	3,087	1,607	1,480
MANDATO KASS	2,448	1,332	1,116
SHAH KHEL	4,554	2,383	2,171
SORAI KANDAO	3,104	1,738	1,366
*ZANDIN ZAKH KHEL SECTION	9,306	4,602	4,704
AFZAL KHEL KANDAI	2,119	1,053	1,067
BABAR KHEL KANDAI	3,878	1,924	1,954
DOSTI KHEL KANDAI	960	495	465
KHAWATA KHEL	2,348	1,130	1,218
*JAMRUD TEHSIL	92,365	47,786	44,579
*KUKI KHEL TRIBE	92,365	47,786	44,579
*ABDUL KHEL SECTION	8,668	4,441	4,227
ALI MASJID	8,668	4,441	4,227
*KATIA KHEL SECTION	34,510	17,988	16,522
BAKURRA KILI	5,124	2,599	2,526
GANJ GARHI	3,804	1,957	1,847
JALAL DIN	3,683	1,893	1,790
KHAN MOHD KILI	3,292	1,711	1,581
M.INYAT KHAN MASTAL KHEL	5,171	2,942	2,229
MAJAN KHAN KILI	2,469	1,231	1,238
SARFARAZ KHEL KILI	4,934	2,536	2,399
SHAH ALAM/IBRAHIM KHEL KILI	3,276	1,735	1,541
SHAMAS KILI	246	131	115
SPERAI KILI	1,155	596	559
TORA TARRA KILI	1,356	658	698
*KUKI KHEL SECTION	14,699	7,931	6,769
KATA KUSHTA	2,579	1,735	844
M.WALI KHAN MASHIN WALA KILI	7,302	3,643	3,659
MULA JUMA GUL WALI KHEL KILI	4,819	2,553	2,266
*LALA CHINA SECTION	2,347	1,150	1,197
LALA CHINA	2,347	1,150	1,197
*MALIK DIN KHEL SECTION	5,857	3,076	2,782
MALIK DARID KHAN KILI	886	445	441
QAMBER KHEL-SARAGARHI	2,164	1,191	973
TAUDA MELA	2,808	1,440	1,368
*MANYA KHEL SECTION	9,686	4,936	4,750

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
REKALA	2,059	1,029	1,029
SHAH GAI	1,667	926	742
SULTAN ZAI KAPAR TANGI	4,416	2,190	2,226
WALI KHEL KILI	1,544	790	753
*SALORPLARI SECTION	12,761	6,379	6,383
FATEH KHAN KILI	1,273	667	606
GUL MASH KILI	390	192	199
MADO KHEL KILI	4,053	1,984	2,069
MALIK ISMAIL NAWAB KILI	4,203	2,055	2,148
SHER AKBAR WARA TABAI KILI	593	294	299
WARMANDO MELA	2,249	1,188	1,061
*SIKANDAR KHEL SECTION	3,836	1,886	1,950
MAJ MIR HAWAS KILI	1,676	861	815
SUB MERAM KHAN KILI	2,160	1,025	1,135
*LANDI KOTAL TEHSIL	176,224	91,314	84,910
*SHINWARI TRIBE	176,224	91,314	84,910
*SHINWARI SECTION	96,202	50,005	46,198
ARRAG SHAH KILI	1,963	1,037	926
BACHA MENA TORKHAM	1,505	1,048	456
CHARBAGH	1,117	759	359
DARGAI-RAGHA	2,406	1,256	1,150
DELHAD	1,535	783	752
GUL ANWAR KARIGRAN KILI	3,420	1,844	1,575
HAJI NOOR ALAM KARIGARAN KILI	3,536	1,817	1,719
HAJI RAMZAN KILI	1,853	976	877
HAJI SHAHZADA KILI	2,723	1,375	1,348
ITBAR GUL KILI	2,587	1,336	1,251
KAM-SHELMAN	4,583	2,307	2,276
M. MOHD AKBAR/GHANI KHEL KILI	8,161	4,331	3,830
MALIK ABDUL HALIM KILI	3,365	1,819	1,546
MALIK ALAF KHAN KILI	3,862	1,934	1,928
MALIK AURANGZEB KILI	5,860	3,029	2,831
MALIK GHANAM GUL KILI	3,379	1,739	1,640
MALIK GHULAB KHAN KILI	821	423	397
MALIK MIRAS KHAN KILI	2,043	969	1,074
MALIK SARFARAZ TANGI KILI	4,409	2,246	2,163
MALIK SHAMA GUL KILI	2,707	1,277	1,430

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
MALIK UMARA KHAN KILI	6,491	3,415	3,076
MIR AHMAD SHAH KILI	4,985	2,520	2,465
MUKHTIAR KHEL	2,723	1,382	1,341
PIR KHEL-BACHA MALIK KILI	5,116	2,693	2,423
PRANG DARA	1,787	790	996
SHAHEED KHEL KILI	3,366	1,757	1,610
SHEIKH GUL SAHIB KILI	4,147	2,167	1,980
SHINPOKH-SAMSAI	2,107	1,084	1,022
ZAMIN KHAN KILI	3,647	1,891	1,757
*ZAKHA KHEL SECTION	80,021	41,309	38,712
ASHRAF KILI	2,849	1,495	1,355
BARH KASS	2,631	1,427	1,204
CHANGI KHEL/CHINAR KHAN KILI	6,334	3,152	3,182
CHINA	5,018	2,494	2,524
GUL MOHD KILI	1,431	752	680
GUL WALI ZIARAT KILI	4,248	2,226	2,022
HAJI ABDUL REHMAN KILI	3,922	2,047	1,875
HAJI AYUB KILI	1,774	926	848
HAJI HAKIM KHAN KILI	708	367	341
HAJI KHAN WALI KILI	1,542	780	762
HAJI MOHD HANIF KILI	1,089	559	530
HAROOGI DARYA KHEL	4,442	2,194	2,248
HISARA KILI	3,389	1,785	1,604
JABAGAI	2,527	1,276	1,251
KUNJOONA	2,785	1,508	1,277
LOE-DHAND	4,926	2,403	2,523
MALIK ABDUL HALIM KILI	2,695	1,477	1,218
MALIK AYUB AFRIDI KILI	4,410	2,317	2,094
MALIK HAJI SHUJA KILI	680	315	364
MALIK NADIR KHAN KILI	2,377	1,233	1,145
MALOOK KILI	926	471	455
MANGAL BAGH KANDAO RAGHA SHAN	2,166	1,096	1,070
MEENA DAR KILI	1,207	638	569
SAIFULLAH KILI	1,662	870	792
SAROBI KANDAO	4,144	2,214	1,929
SHAH HUSSAIN KILI	2,340	1,191	1,149
SHAH KHAN KILI	1,341	720	621

Projected Population of Urban/Rural Settlements in Khyber Agency

NAME OF MAUZA /DEH / VILLAGE /SETTLEMENT	POPULATION 2014-15		
	BOTH SEXES	MALE	FEMALE
SUB BATEL SHAH KILI	917	490	428
ZABETA KHAN KILI	418	217	200
ZAINTARA	3,251	1,657	1,594
ZARJAN SUFIDRESH KILI	1,875	1,014	861
*MULAGORI TEHSIL	28,285	14,426	13,859
*MULAGORI TRIBE	28,285	14,426	13,859
*MOHMAND SECTION	-	-	-
SHINSARI	-	-	-
*MULAGORI SECTION	28,285	14,426	13,859
BAKURAI KILI	1,289	665	623
BARA DARA	956	511	445
GARHI DAULAT KHEL	2,625	1,276	1,349
GHAZI KILI	1,464	766	698
GUJAR DHAND	2,585	1,402	1,182
JAWARA MENA	759	395	364
MIAN MORCHA	2,965	1,493	1,472
MURAD DHAND	1,843	873	970
MURADI KHEL	2,305	1,178	1,127
NALA KILI	1,663	795	868
PAINDI LALMA-2	4,358	2,212	2,147
SHAHEED MENA	736	374	361
SHEIKH SWAT KHAN KILI	1,382	759	623
SUB NOOR MOHD KILI	1,464	756	708
TATARA	1,801	923	878
ZAMAKO BARO	89	49	40
Urban Area			
*KHYBER AGENCY	78,275	42,906	35,369
*JAMRUD TEHSIL	46,132	24,712	21,419
*JAMRUD TC	46,132	24,712	21,419
*CHARGE NO 01	46,132	24,712	21,419
CIRCLE NO 01	28,776	15,474	13,301
CIRCLE NO 02	17,356	9,238	8,118
*LANDI KOTAL TEHSIL	32,143	18,194	13,949
*LANDI KOTAL TC	32,143	18,194	13,949
*CHARGE NO 02	32,143	18,194	13,949
LANDI KOTAL	32,143	18,194	13,949

Annexure 2: Household Survey Questionnaire

Tribal Areas Rural to Urban Centres Conversion Initiative (TARUCCI)
FATA Urban Centres Project (FUCP)
Structure Plan for Landi Kotal/Ghalanay
HOUSEHOLD SURVEYS

Form ID: _____

INSTRUCTIONS

Begin the interview with the following:

- Your name and professional affiliation with the project
- Assurance of confidentiality
- Expected duration of the conversation: Approximately 20 minutes
- Ask them if they have any questions for you (prepare answers to possible questions)
- Ask for consent to conduct the interview

<table>
<tr><td>I1. Name of Surveyor:</td><td colspan="2"></td><td>I2. Survey Date (dd/mm/yy):</td><td colspan="2"></td></tr>
<tr><td rowspan="2">I3. Name of Head of the Household</td><td colspan="2" rowspan="2"></td><td rowspan="2">I4. Respondent: (Circle one number)</td><td>Head of HH</td><td>1</td></tr>
<tr><td>Other
Please Specify</td><td>2</td></tr>
<tr><td rowspan="2">I5. Name of Town (Circle one number)</td><td>Landi Kotal</td><td>1</td><td rowspan="2">I6.Name of Locality/ Mohalla</td><td colspan="2" rowspan="2"></td></tr>
<tr><td>Ghalanay</td><td>2</td></tr>
</table>

Q1. How many persons are living in this house? ***(Please fill the following spaces)***

Total	Gender	
	Female	Male

Q2. Age-Sex Composition of Household: ***(Please fill the following spaces)***

S. No.	Age (years)	Gender
		Male = 1 Female = 2

1		
2		
3		
4		
5		
6		
7		
8		
9		
10 +		

Q3. What are the main Sources of Drinking Water ***(Circle one number in each row for distance and level of satisfaction)***

Sources of drinking water	**Distances to drinking water sources (kms)**							**Level of satisfaction with drinking water**				
	0	< 1	1-2	2-5	> 5	Not Applicable ***(Don't read)***	Don't Know ***(Don't read)***	Satisfied	In-different	Not Satisfied	Not Applicable ***(Don't read)***	Don't Know ***(Don't read)***
Municipal Tap inside the House/compound	1	2	3	4	5	97	98	1	2	3	97	98
Municipal Tap outside compound	1	2	3	4	5	97	98	1	2	3	97	98
Motor pump inside the compound	1	2	3	4	5	97	98	1	2	3	97	98
Hand pump inside the compound	1	2	3	4	5	97	98	1	2	3	97	98
Hand pump outside the compound	1	2	3	4	5	97	98	1	2	3	97	98
Well	1	2	3	4	5	97	98	1	2	3	97	98
River/Canal/Stream	1	2	3	4	5	97	98	1	2	3	97	98
Any Other (Specify)	1	2	3	4	5	97	98	1	2	3	97	98

Q4. Are you satisfied with the drinking water inside the house?***(Circle one number)***

Satisfied	1	***Skip to Q5***
Natural/Indifferent	2	***Skip to Q5***
Dissatisfied	3	***GOTO Q4a***
Not applicable***(Do not read)***	97	***Skip to Q5***
Don't Know***(Do not read)***	98	***Skip to Q5***

Q4a. If not satisfied in Q4, Please state the reason of dissatisfaction;

Q5. Do you have sanitation system (Human waste) inside the house?***(Circle one number)***

Yes	No	***(DO NOT READ)***	
		Don't Know	Refused to answer/No reply
1 ***GOTO Q5a***	2 ***Skip to Q7***	98 ***Skip to Q7***	99 ***Skip to Q7***

Q5a. Type of sanitation system (Human waste) inside House: ***(Circle one number)***

Piped sewerage	1
Septic tank	2
Flush latrine	3
Non-flush latrine (Dry system)	4
Any other facility (Please Specify)	5
Don't Know ***(Do not read)***	98

Q6. Are you satisfied with the sanitation system inside the house?***(Circle one number)***

Satisfied	1	***Skip to Q7***
Natural/Indifferent	2	***Skip to Q7***
Dissatisfied	3	***GOTO Q6a***
Don't Know ***(Do not read)***	98	***Skip to Q7***

Q6a. If not satisfied in Q6, Please state the reason of dissatisfaction;

Q7. Is there any system for drainage of Rainwater & Household Wastewater outside the House?
(Circle one number)

Yes	No	***(DO NOT READ)***	
		Don't Know	Refused to answer/No reply
1 ***GOTO Q7a***	2 ***Skip to Q9***	98 ***Skip to Q9***	99 ***Skip to Q9***

Q7a. Type of drainage of rainwater & household wastewater outside the House:
(Circle one number)

Piped sewers	1
Covered drains	2
Open lined drains	3
Open unlined drains	4
Any other facility (Pl. Specify)	5
Don't Know ***(Do not read)***	98

Q8. Are you satisfied with the drainage of rainwater & household wastewater outside the House?***(Circle one number)***

Satisfied	1	***Skip to Q9***
Natural/Indifferent	2	***Skip to Q9***
Dissatisfied	3	***GOTO Q8a***
Don't Know ***(Do not read)***	98	***Skip to Q9***

Q8a. If not satisfied in Q8, Please state the reason of dissatisfaction;

Q9. Is there any system of collecting solid waste? ***(Circle one number)***

Yes	No	***(DO NOT READ)***	
		Don't	Refused to answer/No

		Know	reply
1 ***GOTO Q9a***	2 ***Skip to Q11***	98 ***Skip to Q11***	99 ***Skip to Q11***

Q9a. Who Collects Solid Waste? ***(Circle one number)***

Municipal Committee	1
Union Council	2
Privately	3
Paid Sweeper	4
Any other facility (Pl. Specify)	5
Don't Know ***(Do not read)***	98

Q10. Are you satisfied with the Solid Waste Disposal System?***(Circle one number)***

Satisfied	1	***Skip to Q11***
Natural/Indifferent	2	***Skip to Q11***
Dissatisfied	3	***GOTO Q10a***
Don't Know ***(Do not read)***	98	***Skip to Q11***

Q10a. If not satisfied in Q10, Please state the reason of dissatisfaction;

Q11. What Are the Main Problems of Your Area (in order of priorities?)

- Problem 1:
- Problem 2:
- Problem 3:
- Problem 4:
- Problem 5:

Housing

Q12. Type of house***(Circle one number)***

Isolated/Free Standing	1
Row House	2

Semi Detached	3
House in Family Compound If house in compound, state number of houses in Compound _____	4
Others ***(Please specify)***	6

Q13. Number of habitable[44] and other Rooms ***(tick/write in appropriate column):***

One	Two	Three	Four	Five	Greater than five	No. of Baths	No. of latrines	Bath & Latrine Combined	No. of Kitchens[45]
1	2	3	4	5	6				

Q14. Nature of Tenure ***(Circle one number)***

Owned	1
Rented	2
Govt. Residence	3
Any other facility (Pl. Specify)	4
Don't Know ***(Do not read)***	98

Q15. Period of construction in Years ***(Circle one number)***

Last 5 years	1
5 – 10 years	2
11 – 25 years	3
26 – 50 years	4
More than 50 years	5
Don't Know ***(Do not read)***	98

Q16. Type of structure ***(Please observe and not ask from the respondent)***

Pucca	1
Semi-pucca	2

[44] Excluding kitchen, latrine, bathrooms etc.
[45]If used separately by different households in a house.

Katcha	3

Number of Storeys ***(Please observe and not ask from the respondent)***

Single	1
Double	2
Triple	3
More than 3	

Plot Size

Size (Marlas)	
5 & Below	
5 to 7	
7-10	
10-15	
15-20	
20+	
Total	

Q17. Since when are you living in this house ***(Number of years)***:
_____

Q18. Where did you live before shifting here:_____

Q19. Do you intend to shift from this place to some other area in near future?

Yes	No	***(DO NOT READ)***	
		Don't Know	Refused to answer/No reply
1 ***GOTO Q19a***	2 ***Skip to Q20***	98 ***Skip to Q20***	99 ***Skip to Q20***

Q19a. If yes in Q19, Which area you are planning to move:
_____

Q19b. If yes in Q19, What is the reason of moving:
_____

Q20. Number of Earning Members in the Household

Male	Female	Total

Q21. Details about Earning Members:

Earning Members in the Household	Occupation	Age	Qualification	Gender	Monthly Income
1st					
2nd					
3rd					
4th					
5th					

Q22. Annual Household Income from Other Sources

Source	Annual Income (Rs)
Agriculture	
Property Rent	
Shop Keeping	
Transport	
Other (Pl. Specify)	
Total	

Q23. Number of Students the Household

Level	Number of Male Students	Number of Female Students
Below Primary		
Primary		
Middle		
High		
College		
University		
Others (Specify)		

Q24. Number of Literate Members in the Household *(**Other than Students**)*

Educational Level	Number of Male Members	Number of Female Members
Under Primary		
Primary		
Under Matric		
Matric		
Intermediate		
Graduate		
Post Graduate		
Others (Pl. Specify)		

Q25. What Priority Projects Are Needed for Your Area

Signature of Surveyor_____

Checked and Countersigned by Survey Supervisor_____

Date_____

ENDING THE QUESTIONNAIRE:

- END ON A POSITIVE NOTE
- Offer to answer any questions the respondent may have
- Thank the respondent for their time

Annexure 3: Household Survey Data

Table A-1: Sample Sizes for Household Interviews				
S.No	**Name of Area**	**Total Population (2015)**	**% population**	**No. of Interviews Conducted**
1	Gaagra	9,265	10.10	20
2	Abdul Khad	9,882	10.78	22
3	Kandaw Khel	13,471	14.69	29
4	Fatmi Khel	10,294	11.22	22
5	Ashraf Khel	6,788	7.40	15
6	Zakaria Masjid area	9,041	9.86	20
7	Shikhmal Khel-I	1,865	2.03	4
8	Shikhmal Khel-II	13,024	14.20	28
9	Sadu khel	9,412	10.26	21
10	Station Area	8,671	9.45	19
Total		**91,712**	**100.00**	**200**

Table A-2: Age-Sex Composition in Landi Kotal						
Age-Groups	Gender		Total	%Male	%Female	Total%
	Male	Female				
Upto 4	40	38	78	51.28	48.72	100.00
5-9	77	69	146	52.74	47.26	100.00
10-14	102	72	174	58.62	41.38	100.00
15-19	138	101	239	57.74	42.26	100.00
20-24	137	134	271	50.55	49.45	100.00
25-29	111	96	207	53.62	46.38	100.00
30-34	109	82	191	57.07	42.93	100.00
35-39	70	56	126	55.56	44.44	100.00
40-44	38	62	100	38.00	62.00	100.00
45-49	61	40	101	60.40	39.60	100.00
50-54	28	19	47	59.57	40.43	100.00
55-59	20	20	40	50.00	50.00	100.00
60-64	24	13	37	64.86	35.14	100.00
65-69	8	7	15	53.33	46.67	100.00
70-74	6	3	9	66.67	33.33	100.00
75+	7	1	8	87.50	12.50	100.00
Total	976	813	1789	54.56	45.44	100.00

Table A-3: Sources of Drinking Water			
S. No.	**Sources of Drinking Water**	**Frequency (Cumulative)**	**%**
1	Purchase from Water Tanker	52	22.91
2	Well	41	18.06
3	Municipal Tap	37	16.30
4	Motor Pump	34	14.98
5	Tube Well	29	12.78
6	Hand Pump	5	2.20
7	Fetch water outside Village	29	12.78
Total		**227**	**100.00**

Table A-4: Satisfaction with Drinking Water				
S.No.	**Sources**	**Satisfied%**	**Dissatisfied%**	**Total%**
1	Purchase from Tanker	51.92	48.08	100.00
2	Well	31.71	68.29	100.00
3	Municipal Tap	35.14	64.86	100.00
4	Motor Pump	32.35	67.65	100.00
5	Tube Well	34.48	65.52	100.00
6	Hand Pump	20.00	80.00	100.00
7	Fetch water outside Village	34.48	65.52	100.00

Table A-5: Reasons for Dissatisfaction with Drinking Water		
Reasons	Frequency	%
Tube well not fully functional	48	24.0
Cannot afford to purchase water	26	13.0
Water has to be fetched from distant Sources46	23	11.5
Insuffient water in wells/other sources	22	11.0
Water Shortage due to Load Shedding	19	9.5
Insufficient Capacity/No Water Storage Tank	18	9.0
Wastage of time due to rush of water seekers	18	9.0
No Water Facility within House	11	5.5
Other Reasons	15	7.5
Total	200	100

[46]Mostly by women.

Table A-6: Mode of Human Waste Disposal		
Mode	Responses	
	No.	Percent
Flush latrine	32	18.50
Non-flush latrine (Dry system)	89	51.44
Others	52	30.06
Total	173	100.0%

Table A-7: Satisfaction with Disposal System		
Response	Frequency	Percent
Satisfied	51	29.48
Dissatisfied	122	70.52
Total	173	100

Table A-8: Reasons for Dissatisfaction		
Reasons	Frequency	Percent
No Flush Latrine	22	18.03
Lack of Resources	35	28.69
Lack of water	18	14.75
No Drainage System	21	17.21
Lack of space	9	7.39
No women latrines in home	1	0.82
No response	16	13.11
Total	122	100

Table A-9: Satisfaction with Drainage System		
Response	**Frequency**	**Percent**
Satisfied	11	9.40
Indifferent	2	1.71
Dissatisfied	104	88.89
Total	117	100

Table A-10: Reasons for Dissatisfaction with Drainage System		
Response	**Frequency**	**Percent**
Drains are katcha/unlined	58	55.77
Open Drains	16	15.39
Narrow Drains	6	5.77
No protection wall for storm water	6	5.77
Unlined drains cause damage to roads	5	4.81
Drains get Blocked	3	2.88
Lack of resources	3	2.89
Low quality plastic pipes	1	0.96
No maintenance	2	1.92
Problematic for pedestrians	2	1.92

Others	2	1.92
Total	104	100

Table A-11: Number of Habitable Rooms		
Number of Rooms	**Frequency**	**Percent**
One	9	4.5
Two	51	25.5
Three	38	19.0
Four	37	18.5
Five	26	13.0
> five	39	19.5
Total	200	100.0

Table A-12: Number of Non-Habitable Rooms								
No. of Rooms	Baths		Latrines		Baths & Latrines Combined		Kitchens	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
0	32	16.0	36	18.0	193	96.5	26	13.0
1	43	21.5	156	78.0	5	2.5	165	82.5
2	43	21.5	6	3.0	0	0	7	3.5
3	28	14.0	0.0	0.0	0	0	2	1.0
3+	54	27.0	2	1.0	2	1	0	0
Total	200	100.0	200.0	100.0	200	100.0	200	100.0

Table A-13: Type of Housing Structure		
Type	**Frequency**	**Percent**
Pucca	19	9.5
Semi pucca	45	22.5
Katcha	136	68.0
Total	200	100.0

Table A-14: Period of Construction			
Period	**Frequency**	**%**	**Cumulative %**
Last 5 years	10	5.0	5.0
6-10 years	24	12.0	17.0
11-25 years	43	21.5	38.5
26-50 years	85	42.5	81.0
>50 years	36	18.0	99
No Reply	2	1.0	100.0
Total	200	100.0	

Table A-15: Plot Sizes			
Plot Sizes (marlas)	**Frequency**	**%**	**Cumulative %**
<5	9	4.5	4.5
5-7	18	9.0	13.5
7-10	29	14.5	28.0
10-15	33	16.5	44.5
15-20	38	19.0	63.5
>20	73	36.5	100.0
Total	200	100.0	

Table A-16: Period of Stay in this House			
Period	**Frequency**	**%**	**Cumulative %**
<1 year	5	2.5	2.5
1-3 years	5	2.5	5.0
4-5 years	5	2.5	7.5
>5 years	185	92.5	100.0
Total	200	100.0	

Table A-17: Household-Wise Number of Students Vs Non-School Going Children in Different Categories											
Category	0	1	2	3	4	5	6	7	8	9	10
Below Primary											
Male	88	51	0	18	2	4	0	0	1	0	0
Female	120	46	21	8	1	3	1	0	0	0	0
Primary											
Male	133	50	0	3	4	1	0	0	0	1	0
Female	178	8	6	3	3	0	1	1	0	0	0
Middle											
Male	116	60	18	3	3	0	0	0	0	0	0
Female	197	2	1								
High											
Male	154	38	7	1	0	0	0	0	0	0	0
Female	199	1	0	0	0	0	0	0	0	0	0
College											
Male	152	35	12	0	1	0	0	0	0	0	0
Female	199	1	0	0	0	0	0	0	0	0	0
University											
Male	188	9	2	0	0	0	0	0	0	0	0
Female	200	0	0	0	0	0	0	0	0	0	0

Table A-18: Household-wise Literate Vs Illiterate Members (Excluding Students)											
Category	0	1	2	3	4	5	6	7	8	9	10
Below Primary											
Male	146	39	10	2	0	1	1	0	1	0	0
Female	186	10	1	1	1	0	1	0	0	0	0
Primary											
Male	151	38	6	4	1	0	0	0	0	0	0
Female	188	9	1	2	0	0	0	0	0	0	0
Under Matric											
Male	101	68	18	9	3	1	0	0	0	0	0
Female	196	1	2	0	0	0	0	0	0	1	0
Matric											
Male	151	35	10	3	0	1	0	0	0	0	0
Female	199	1	0	0	0	0	0	0	0	0	0
Intermediate											
Male	159	35	5	1	0	0	0	0	0	0	0
Female	200	0	0	0	0	0	0	0	0	0	
Graduates											
Male	157	37	6	0	0	0	0	0	0	0	0
Female	199	1	0	0	0	0	0	0	0	0	0
Post Graduates											
Male	177	16	5	1	0	1	0	0	0	0	0
Female	200	0	0	0	0	0	0	0	0	0	0

Table A-19: Earning Members per Household		
Earning Members	Frequency	Percent
0	8	4.0
1-2	120	60.0
3-4	58	29.0
5-6	8	4.0
Above 6	6	3.0
Total	200	100

Table A-20:Household Income through Earning Members			
Monthly HH Income	**No.**	**%**	**Cum %**
Up to 5,000	10	5	5
5,000-10,000	32	16	21
10,001-15,000	34	17	38
15,001-20,000	33	16.5	54.5
20,001-30,000	40	20	74.5
30,001-50,000	36	18	92.5
Above 50,000	15	7.5	100
Total	200	100	

Table A-21: Household Income through all Sources[47]			
Monthly Income	**No.**	**%**	**Cum %**
Up to 5,000	9	4.5	4.5
5,000-10,000	21	10.5	15
10,001-15,000	35	17.5	32.5
15,001-20,000	36	18	50.5
20,001-30,000	33	16.5	67
30,001-50,000	41	20.5	87.5
Above 50,000	25	12.5	100
Total	200	100	

Table A-22: Number of HHs Vs Priority Problems										
Problems	**Priority 1**	**%**	**Priority 2**	**%**	**Priority 3**	**%**	**Priority 4**	**%**	**Priority 5**	**%**
Shortage of Drinking Water	69	34.67	16	7.96	9	4.37	0	0.00	1	0.57
No Solarization of Tube well	33	16.58	6	2.99	5	2.43	7	3.89	3	1.71
Load shedding	21	10.55	15	7.46	12	5.83	13	7.22	13	7.43
Village Streets are unpaved	17	8.54	23	11.44	32	15.53	32	17.78	25	14.29
No Proper Drainage	12	6.03	25	12.44	15	7.28	36	20.00	20	11.43
No Water Storage for Drinking Water	10	5.03	15	7.46	5	2.43	5	2.78	5	2.86
No latrine/flush Latrine	9	4.52	50	24.88	36	17.48	21	11.67	18	10.29
Flooding Issues	8	4.02	16	7.96	37	17.96	18	10.00	17	9.71
No Garbage Disposal System	3	1.51	17	8.46	31	15.05	22	12.22	37	21.14
Motor pump on well/Tube Well	2	1.01	3	1.49	0	0.00	0	0.00	0	0.00
No Village Link Road	2	1.01	0	0.00	2	0.97	3	1.67	5	2.86
No transformer/Over loaded Transformer	1	0.50	8	3.98	13	6.31	7	3.89	9	5.14
No Play Ground/Park	1	0.50	2	1.00	1	0.49	3	1.67	1	0.57
No health facilities	2	1.01	1	0.50		0.00	4	2.22	7	4.00
No Educational Facilities	2	1.01	1	0.50	3	1.46	2	1.11	3	1.71
Others	7	3.52	3	1.49	5	2.43	7	3.89	11	6.29
Total	199	100	201	100	206	100	180	100	175	100

[47]Apart from income of earning members, also includes income from agriculture (2 households), property rent (9 households), shop keeping (10 households), transport (17 households), others (39 households).

Annexure 4: Notification for Delimitation of Urban Boundaries, Landi Kotal

No. 574 /TARUCCI/AG/010 Dated Peshawar the 17/1 /2011.
From: The Political Agent, Khyber.
To : The Director,
LG&RDD FATA, Secretariat, Peshawar.

SUBJECT: **DELIMINATION OF URBAN BOUNDARIES.**
MEMO:

Reference your letter No.DF(RD)TARUCCI/2010-11, dated 27.12.2010 on the above noted subject.

The information asked for, is furnished as under:-

1.	Exact Urban Boundaries	Charwazgai, Landikotal College, Custom Colony, AHQ Jospital, Railway Station, Village Gagra, a part of village Adel Khad, By Pass road.
2.	Names of villages in Municipal Committee.	Landikotal Cantonment area, Landikotal Bazar, Village Gagra, some portion of village Adel Khad.
3.	Village wise population.	Population of the whole area comes in Muncipal Committee is round about 35 to 40 thousand, however, village wise population can be provided by the ADRD, Khyber.
4.	Proper Maps of Urban areas.	Map of Urban area of Municipal Committee Landikotal is enclosed.

17/1/11

Political Agent, Khyber.

No. /TARUCCI/AG/010.
Copy to:-

1. The Secretary(A&C) FATA Secretariat, Peshawar.
2. The PS to ACS(FATA) Peshawar.
3. The ADRD Khyber to provide village wise population of the above areas direct to the quarter concerned under intimation to this office.
4. The Assistant Political Agent, Landikotal.

Political Agent, Khyber.

Annexure 5: Water Quality Test Results

DEPARTMENT OF CIVIL ENGINEERING

UNIVERSITY OF ENGINEERING AND TECHNOLOGY, PESHAWAR.

Environmental Laboratory

Test Report No: 04
Dated: 11/ 05/ 2015
Reference: SSP/FATA/WQT/A-02

Water Sample **Creative Engineering Consultants, House No. 60, Street No. 03 Sector No. E-1 Phase-I, Hayatabad Peshawar.**

S. No.	Name of Parameters	Bank Tank	Mirza Talab	Hosplel T. Wele No. (2)	Hosplel T. Wele No. (3)	Sadu khel No. 1 Tank	WHO Guideline Value for Drinking Water
1.	Total Dissolved Solids (mg/l)	149	149	148	190	152	500
2.	Calcium Hardness (mg/l)	160	149	158	192	160	300
3.	Magnesium Hardness (mg/l)	43	54	46	38	42	175
4.	Bicarbonate (mg/l)	262	256	240	252	240	250
5.	Carbonate (mg/l)	5	4	12	0	1.0	30
6.	Chloride (mg/l)	36	36	40	66	42	250
7.	Sulfate (mg/l)	51	51	42	58	53	400
8.	Nitrate (mg/l)	2.3	1.8	2.6	2.0	3.2	10
9.	Nitrite (mg/l)	0.021	0.012	0.021	0.015	0.019	0.5
10.	Turbidity (mg/l)	9.4	6.5	6.6	1.7	3.2	5
11.	pH	7.1	7.1	7.15	7.2	7.1	6.5 – 8.5
12.	Potassium (mg/l)	1.86	1.8	1.6	2.2	1.9	75
13.	Sodium (mg/l)	19.1	19.0	18.0	24.2	20.6	200

Note: This report states the result(s) of the test(s) performed on the sample as received by the laboratory from the above stated **"Client/Agency"**. Verification or acknowledgment of the origin or association of a sample being tested to a particular site is beyond the responsibility of this department.

Incharge
Environmental Laboratory.

INCHARGE
Environmental Engineering Laboratory

Phone #: 9216941
9216796 ext: 3035

DEPARTMENT OF CIVIL ENGINEERING

UNIVERSITY OF ENGINEERING AND TECHNOLOGY, PESHAWAR.

ENVIRONMENTAL LABORATORY

Test Report No.07
Dated:22/06/2015
Test Reference JV/IAC-CEC/MP/FATA/16

BACTERIOLOGICAL TEST

Creative Engineering Consultants H-60, Street-3 E-1, Phase-1, Hayatabad, Peshawar.

Water Sample

S. No.	Name of Parameters	Chanda Booster	Mirza Talab	Saudi Khel	WHO Guideline Value for Drinking Water
1.	Total Coli form by Membrane Filter Method	0/100ml	0/100 ml	0/100 ml	0/100ml

Note.

This report states the result (s) of the test (s) performed on the sample as received by the laboratory from the above stated "Client/Agency". Verification or acknowledgment of the origin or association of a Sample being tested to a particular site is beyond the responsibility of this department.

Incharge,
Environmental Chairman
Department of Civil Engineering
University of Engineering & Technology, Peshawar

Annexure 6: Institutional Arrangement in Landi Kotal

6.1 Present Administrative Structure

Present administrative structure is as given in Table below:

Table 25: Present Administrative Structure[48]

Administration and Judiciary	
Political Agent	Overall Charge-de-Affairs of the Agency
Additional Political Agent	Oversees development activities in the Agency
Assistant Political Agent	Admin/ Judicial affairs of their respective Sub Divisions
Political Tehsildar	Admin/ Judicial affairs of their respective Tehsils
Political Naib Tehsildar (PNT)	Support Political Tehsildar in routine administrative business
Law and Order	
Subedar Major of Levis and Khasadars (Agency level)	In charge of Levies/ Khasadars (Local Police force) on Agency level
Line Officer of Levis and Khasadars (Sub-Division level)	In charge of Levies/ Khasadars (Local Police force) on Sub Divisional level
Subidars/ Naib Subedars of Lavies and KKF (Khyber Khasadar Force)	Assists Line officers in law and order implementation
Education	
Agency Education Officer, A.E.O	Overall In charge of Schools (Primary to Higher Secondary)
Assistant Agency Education Officer (Female)	In charge of Girls schools
Assistant Agency Education Officer (Male)	In charge of Boys schools in their respective subdivisions
Health	
Agency Surgeon	Overall In charge of Health Facilities
Medical Superintendent, M.S	In charge of Agency Head Quarter (AHQ) Hospital
Support Departments	
Executive Engineer, XEN (C&W) Highway Division	In charge of Civil work (roads)
Executive Engineer, XEN (C&W) Building Division	In charge of Civil work (Buildings)
Sub-Divisional Officer, SDO (TESCO)	In charge of Electricity supply
Assistant Divisional Engineer, ADE (PTCL)	In charge of Telephone services
Sub Divisional Officer, SDO (Public Health)	In charge of water supply/ tube wells
Assistant Director, AD (Forests)	In charge of Forests plantation and conservation etc.
Assistant Director, AD (Agriculture)	In charge of agriculture affairs
Assistant Director, LGRDD with Assistant Engineer and Sub Engineer	In charge of Municipal affairs

[48] Source: Consultants Institutional Survey and FATA Secretariat

6.2 Provision, Operation And Maintenance Of Infrastructure And Services:

Various Line Department & Directorates in FATA Secretariat through its field offices and under the supervision of the APA are responsible to provide, operate and maintain essential infrastructure and services in Landi Kotal as indicated below:

Table 26: Departments Responsible for Infrastructure & Services

Department	Infrastructure/ Services
Works and Services (W&S) Department	Public Buildings, Roads, Water Supply and Sanitation
National Highway Authority (NHA)	National Highways, N-5
Education Directorate	Primary and Secondary Education
Health Directorate	Health Services
Local Government and Rural Development (LG&RDD) Directorate	Rural Development Infrastructure, Parks, Streets, etc
Directorate of Projects (FATA Secretariat)	Foreign Aided Projects, Relevant Services, Agriculture, Irrigation, etc

6.3 Status of Municipal Committee

There is no formal structure of a Municipal Committee present in Landi Kotal. The Draft Local Government Ordinance 2012[49] contained the following provisions for establishment of a municipal committee in each agency:

"CHAPTER –II"

LOCAL AREAS AND CONSTITUTION AND COMPOSITION OF LOCAL COUNCILS

3. Local Areas.-

(1) For the purposes of this Regulation, a Local Area shall be a town.

(2) The Governor may, by notification, extend, curtail or otherwise alter the limits of a Local Area and declare that any area shall cease to be a local area.

4. Delimitation of a ward.-

(1)A ward shall be an area comprising one census block, or as may be prescribed.

(2) The Governor may, for purposes of election, divide a local area into such number of wards having a definite boundary as he may determine.

[49] Draft Local Government Ordinance 2012, FATA

5. Constitution of Local Councils.-

(1) The Local Councils to be constituted under this Regulation shall be municipal committees for each of the notified towns;

(2) As soon as may be, the Local Councils mentioned in sub-article (1) shall be constituted in accordance with the provisions of this Regulation.

6. Municipal Committee.-

(1) A municipal committee shall, subject to other provisions of this Regulation, consist of such number of general members equaling the number of wards in the Municipality.

(2) The general members of the Municipal Committee shall be elected through direct election based on adult franchise and joint electorate.

(3) The Governor may from time to time determine and notify the number of additional members representing traders, women or other special groups in respect of a municipal committee subject to the condition that total number of such members shall not exceed twenty five percent of the total membership of the respective council.

(4) The additional members provided for under sub article (3) shall be elected by the directly elected members of the municipal committee through secret ballot.

7. Chairman and Vice-Chairman.-

For every Local Council there shall be a Chairman and a Vice-Chairman, elected in prescribed manner, by the respective local council.

CHAPTER -VI

COMPULSORY FUNCTIONS OF MUNICIPAL COMMITTEES

58. The compulsory functions of the municipal committees shall be as under:

(A) PUBLIC HEALTH
i) Responsibility for sanitation.
(ii) Insanitary buildings and lands.
(iii) Removal, collection and disposal of refuse.
(iv) Latrines and urinals.
(v) Birth and deaths.
(vi) Infectious diseases.
(B) WATER SUPPLY:

(vii) Water Supply.
(C) DRAINAGE:
(viii) Drainage.
(ix) Drainage and sewerage schemes for commercial and industrial area.
(D) ARTICLES OF FOOD AND DRINK:
(x) Private markets.
(xi) Slaughter houses.
(E) ANIMALS AND CATTLE:
(xii) Prohibition on picketing or tethering in streets.
(xiii) Prohibition against keeping and maintaining cattle.
(xiv) Dangerous animals.
(xv) Disposal carcasses.
(F) PUBLIC SAFETY:
(xvi) Fire Fighting.
(xvii) Dangerous and offensive articles and trades.
(G) MUNICIPAL PLANNING:
(xviii) Master Plan.
(xix) Site Development Schemes.
(xx) Execution of the Site Development Schemes.
(H) BUILDING CONTROL:
(xxi) Erection and re-erection of buildings.
(xxii) Completion of buildings, alteration of buildings, etc.
(xxiii) Regulation of buildings.
(I) STREETS:
(xxiv) Public Streets.
(xxv) Streets.
(xxvi) Street lighting.
(xxvii) Street Watering.
(J) TRAFFIC VEHICLES:
(xxviii) Traffic control.
(xxix) Public vehicles.
(K) ARBORICULTURE:
(xxx) Arboriculture.
(L) SPORTS AND CULTURE
(xxxi) Holding sports events and tournaments
(xxxii) Celebrating national days, and special events
(xxxiii) Arranging literary and culture events

OPTIONAL FUNCTIONS OF MUNICIPAL COMMITTEES

59. The optional functions of municipal committees shall be as under:

(A) PUBLIC HEALTH:
i) Promotion of public health.
ii) Health and maternity centre, etc.
iii) Hospitals and dispensaries.
iv) Medical aid, relief and medical education.
v) Environmental pollution.
(B) DHOBI GHATS, etc.:
vi) Bathing and washing places.
vii) Dhobi ghat.
viii) Public water courses.
(C) ARTICLES OF FOOD AND DRINK:
ix) Bye-laws for articles of food and drink.
x) Regulating quality of milk supply.
xi) Public Markets.
xii) Animal Husbandry and Animals homes and farms.
xiii) Registration of the sale of cattle.
xiv) Livestock improvement.
xv) Cattle shows, Zoo, etc.
(E) PUBLIC SAFETY:
xvi) Famine.
xvii) Burial and burning places.
(F) TREES, PARKS AND GARDENS:
xviii) Gardens.
xix) Open spaces.
xx) Nuisances pertaining to trees and plantations.
xxi) Tanks and low-lying areas.
(G) EDUCATION:
xxii) As directed or authorized by the Governor.
(H) CULTURE:
xxiii) Culture.
xxiv) Libraries.
xxv) Fairs and shows etc.
(I) SOCIAL WELFARE:
xxvi) Social Welfare"

6.4 Future Municipal Services Responsibility

Unfortunately, the LGO 2012 for FATA has not been implemented so far. The Governor Khyber Pakhtunkhwa approved the establishment of "Municipal Committees" in the fourteen urban hubs identified by TARUCCI and a Notification

was issued in November 2010, included at the end. However, at present, no formal structure or system of a municipal committee has been adopted in Landi Kotal.

The functions of a Municipal Committee in respect of municipal planning, management and service delivery as contained in LGO 2012 and also described in the above Notification require the establishment of the Municipal Committee and assigning of appropriate staff (Municipal Officer, Engineers, Town Planner, Water supply and sanitation as well as Solid Waste Management systems and resources) as the first step.

Future developments and improvement in service delivery within the municipality will only be possible if an integrated, holistic approach by an entity with ownership is established. Otherwise, investments will have to be made through the existing line department's portfolio and the operation/ maintenance responsibilities will suffer since the line departments already have meager amounts for subsequent operation and maintenance of facilities. Thus it is essential that the structure for a Municipal Committee is notified and it shall be made functional before the Immediate Action Plan of this structure plan is implemented. It is believed that the basic Municipal Services like Drinking Water Supply, Sanitation, Street Pavements, Parking spaces, Slaughter Houses, Parks, drainage and Solid waste Management will be carried out through the municipal committee with support as technical assistance and capacity building where needed.

1.5 Structure Plan Implementation Options

The implementation of the structure plan and various projects emerging out of the effort shall ideally be carried out by the municipal committee but since there is no operational MC in Landi Kotal, the various projects will have to be executed, operated and maintained through other arrangements till a functional MC is able to take over the responsibility. In present scenario, the following options are there;

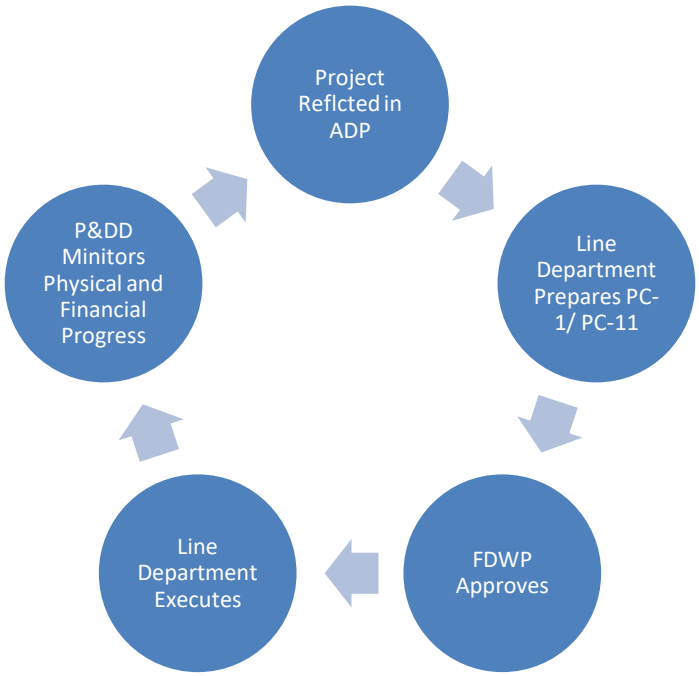
a) Through existing Line Departments
b) Through FUCP-PMU
c) Through FATA Infrastructure and Works Authority (FIWA)

a) Through Existing Line Departments

In absence of a municipal committee, the existing line directorates in FATA through its field offices will execute relevant projects and will be responsible to operate and maintain these facilities until an MC is operational and empowered to take over charge. Various line directorates and departments of FATA Secretariat like Health, Education, Works and Services, Public Health, Irrigation, Local Government and Rural Development, etc are fully capable and operational through their respective field/ agency offices and are responsible to implement FATA Annual development Portfolio related to their

sectors. The departments follow standard procedures to reflect projects in ADP prepare PC-1s/ PC-11s, present these to FATA Development Working Party (FDWP) for approval, and receive funding through finance department and tender contracts for execution. The departments supervise either through their staff or through hired consultants. On completion, the projects are operated and maintained by the line departments. The whole project cycle is supervised/ monitored by the Planning and Development department (P&DD) in FATA Secretariat.

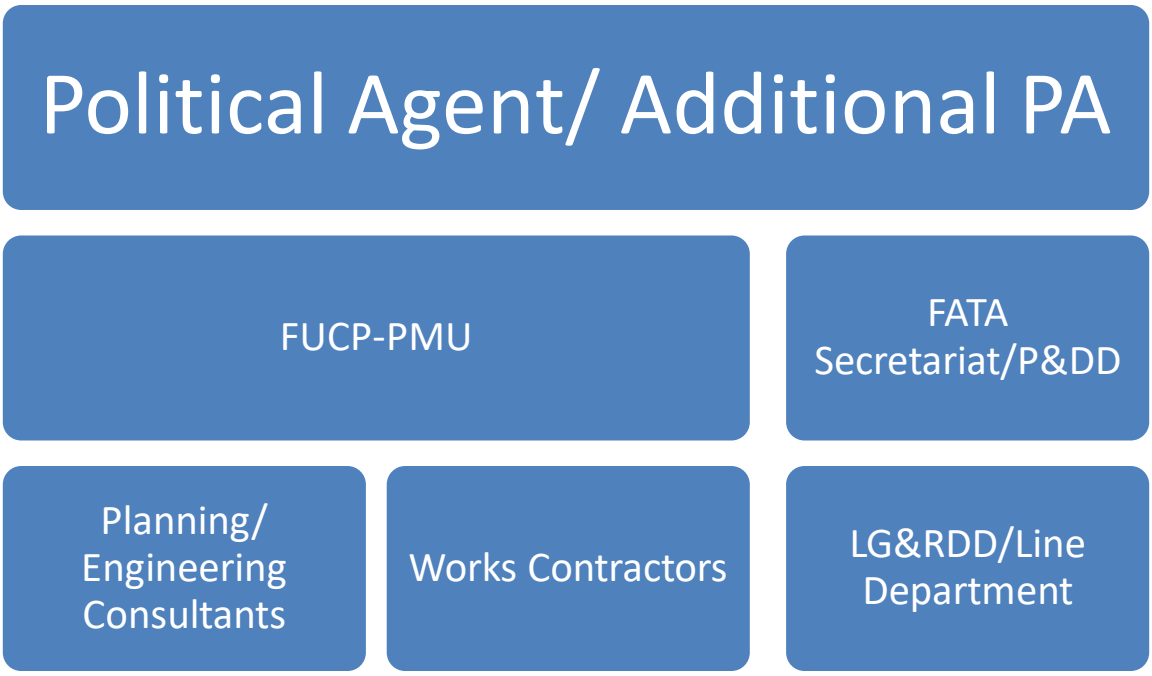
Line Departments Execution Process of Projects



b) Through FUCP-PMU

The Project Management Unit (PMU) of FUCP established for Khar, Bajawar agency already has experience of implanting structure plan for Khar and can take up the implementation of further structure plans in other agencies. This option however requires coordination among the political administration, several line departments including the LG&RDD and the responsibility for smooth coordination falls on PMU. A relationship / coordination diagram for this arrangement may be as given below;

Relationship/ Coordination Diagram



c) Through FIWA

The Governor Khyber Pakhtunkhwa has initiated within FATA Secretariat a FIWA unit responsible to establish an exclusive authority to undertake infrastructure and works throughout FATA. The FIWA unit has completed tremendous preparatory works including several PC-1s for FATA highways and draft regulations for establishment of a fully autonomous body as the FATA Infrastructure and Works authority. It is believed that until the time FIWA is established the FIWA unit will execute works independently.

FATA SECRETARIAT

(Administration & Coordination Department)
Dated Peshawar the 25th of November, 2010

NOTIFICATION

No. PD/TARUCCI/MCs/1-1/2010: The Governor Khyber Pakhtunkhwa is pleased to approve the constitution of Municipal Committees in the 14 urban hubs identified under TARUCCI including Khar in Bajaur Agency, Ghalanai in Mohmand Agency, Landikotal in Khyber Agency, Kalaya and Ghiljo in Orakzai Agency, Parachinar and Sadda in Kurram Agency, Miranshah and Mirali in North Waziristan Agency, Wana and Sarwakai in South Waziristan Agency, Dara Adamkhel in FR Kohat, Jandola in FR Tank and Darazinda in FR D.I Khan, as per the following constitution and Terms of Reference and with defined Urban Growth Boundary as determined under TARUCCI:-

(i) Composition of Municipal Committee

a. 6 x General Councilors - elected Members
b. 1 x Councilor from peasants /workers – elected Member
c. 1 x Councilor from traders / merchants – elected Member
d. 1 x Councilor from women – elected Member
e. 1 x Councilor from minorities – elected Member
f. 4 x Elders nominated by FATA Sectt as Councilors/Members
g. Additional Political Agent for an MC at Agency Head Quarter or APA for Tehsil/FR - ex official Member
h. Chief Officer of the MC – ex-officio Member-cum-Secretary
i. XEN C&W – ex-officio Member
j. XEN PHE – ex-officio Member
k. DFO – ex-officio Member
l. Agency Agriculture Officer – ex-officio Member

(ii) The Chairman shall be elected by simple majority from amongst Councilors. Tenure of Chairman, elected and nominated Members, except ex-officio Members, shall be 3 years from the date of taking of oath;

(iii) The Additional Political Agent, or as the case may be, the APA shall be the Vice-Chairman of the MC.

(iv) Till such time proper delimitation of wards for election to the MCs is not carried out the Political Agent concerned shall act as the Chairman of the MC concerned provided that in case of an FR, the DCOs concerned shall act as such.

(v) Functions and Powers of MC

a) Frame, manage and execute development plan for the town;
b) Exercise control over land use, land development and zoning;
c) Enforce all municipal laws, rules and bylaws governing its functions
d) Provide, manage, operate, maintain and improve municipal services;
e) Prepare budget and develop multiple-year plan;
f) Propose and collect taxes, cess, fees, rates, rent, tolls etc;
g) Carry out commercial activity on its property and acquire property and assets for the purpose;

h) Prepare financial statements and present them for internal and external audit in the manner prescribed;
i) Authorize officer or officers to issue notice to a person committing any municipal offense and initiate proceedings for continuance of such offense or for failure to comply with directions contained in such notice;
j) Regulate affixing of sign boards and advertisements; and
k) Any other function assigned by the Government

(vi) **Standard Services to be Provided and Maintained by MC**

a) Water Supply & Sanitation
b) Street lights
c) Small roads and foot paths
d) Building codes
e) Fire brigades
f) Maintenance of small parks/green areas
g) Slaughter house
h) Garbage collection and dumping grounds
i) Bus and Truck terminals
j) Enterprises/Markets management
k) Any other service indicated as such by the Government

2. The Directorate of Local Government FATA shall be the administrative Directorate for all affairs connected to the MCs in FATA including:
a) Determination of exact/standard municipal services for the MC and developing towards that standard;
b) Clear identification and delineation of revenue sources, assets, expenditure heads and proper accounting procedure; and
c) Formation of Human Resource structure and linkage at the MC, Assistant Director Local Government and Directorate of Local Govt FATA level.

3. The Directorate of Local Government shall form a separate cadre for the employees of these MCs including the permanent employees, the Assistant Directors / Planning Officers, the Chief Officers, the ministerial staff of the MCs as well as the Directorate of Local Government and officer cadre. The Directorate of Local Government shall develop service rules not in conflict with other prevalent service rules and policy and linkages amongst various cadres in lateral and vertical hierarchy. This shall include proper service structure including disciplinary and other rules applicable to similar staff elsewhere.

4. The Director of Local Government shall frame detailed bylaws for MCs including bylaws on financial and administrative management, enterprise development and market regulation, building codes, legality and penalties and other allied matters.

5. In all matters not expressly provided for in the above provisions, the Directorate of Local Government FATA shall submit proper proposal to the competent authority for orders.

Additional Chief Secretary FATA

Endst No and Date even:

1. Secretary to Governor Khyber Pakhtunkhwa
2. All Secretaries FATA
3. DG Projects with the request to circulate it amongst the donors
4. All Commissioner FATA
5. Chief Economist FATA
6. All Political Agents FATA
7. All DCOs FRs FATA
8. All Heads of Line Directorates FATA -
9. P.S to ACS FATA

(Asad Sarwar)
Project Director TARUCCI

Annexure 7: List of Participants in Local Stakeholders Meeting

Attandance sheet for stakeholders dialogue TARUCCI (FUCP) Landi Kotal Khyber Agency

S. No	Name	Department Designation	Contact	Sign
1	Shah Khalid	MNA Representative	0333-3801112	
2	Abdul Walid	MNA Rep	0303-5566788	
3	Eng. Khalid	PHE Subengineer	03008582643	
4	Malak Nadeem	Local Elder	0300-9086888	
5	Naseem Jan	S/worker	03339922155	
6	H. Gul Rahim	Rep of Tajar Union		
7	Malak Nisar	Local elder	03005959072	
8	H. Parveen	local elder	03459102623	
9	Fareedullah	PML (N)	03048092092	
10	Nek Mohd		03009027190	
11	Saleh Mohd		03451932902	
12	Welson Wazir	Rep of Minority	0301-5921238	
13	Waheed	MNA	0300-5346665	
14	Abdul Rahim		03359087522	

15	Safiullah	Bar Union	03469122775	
16	Mohd Wazir	Bar Union	03679499458	
17	M. Rehman	Rep PPP	03009025045	
18	Waris Aziz	Rep PPP		
19	Noman Farooq	SDO TESCO	0313-9191933	
20	Shakir	TESCO	03469550470	
21	Khalil afridi	journalist (Khyber News)	03008911066	
22	Ali Shinwari	DUNYA NEWS	03444940238 03005863595	
23	Wajid afridi	Journalist	03075985393	
24	Khalil	Journalist	03005911066	
25	Hedayat ullah	Sub Engineer CG DRUDD	0333-9125538	
26	Azmatullah	S.D.O. Landikotal	0341-4777909	
27	Akhtar Gul	S/E Landikotal	0333 9144269	
28	Engr. M.S. Fahad	Field Engineer	0333-9394779	
29				
30				

Annexure 8: Suggestions from Wider Stakeholders Consultation Workshop, August 28, 2015

1. Generally the Draft Structure Plans for Landi Kotal and Ghalanai were well received and the participants praised the level of detail and the planning process adopted by the consultants. Most of questions and remarks related to clarifications of various aspects of the methodology and proposed infrastructure facilities. The responses satisfied all queries and useful/ constructive suggestions of the participants were noted.

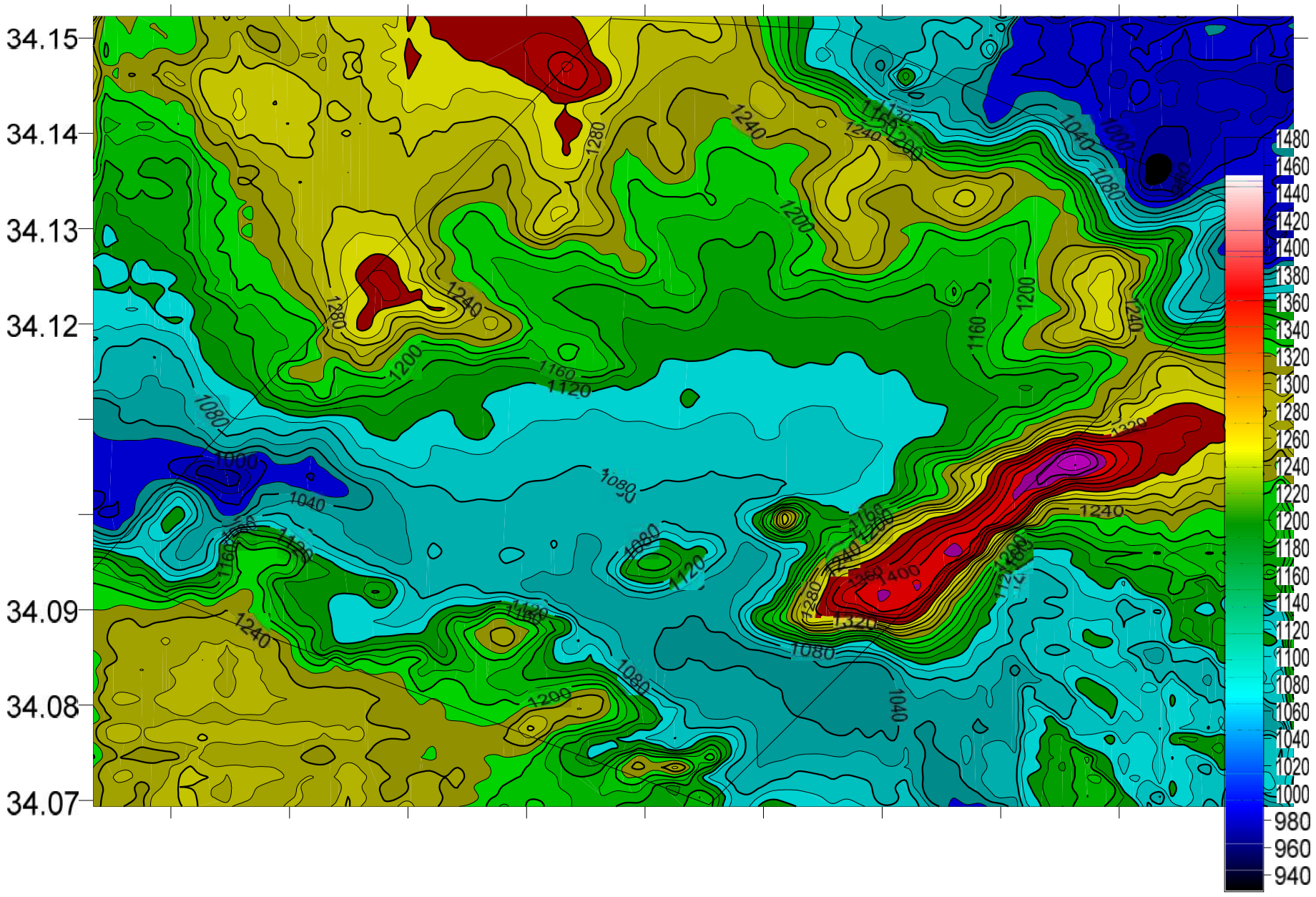
2. Most of the suggestions/ recommendations made by the participants have already been included in the report and these were clarified in the workshop. All participants were given copy of the Draft structure plan where they can find details.

3. The Project Director, FUCP required that a section on revenue stream for the proposed municipality may be included. This has been included under the institutional arrangements as the revenue part of MC.

4. The Project Director, FUCP also desired that future proposed facilities should be accommodated in the designated space particularly in the Hamza Baba Mazar area in Landi Kotal. Based on the suggestion, the Consultants have proposed suitable landuses for the site and their area requirements. Micro detailing of proposed landuses would be accomplished in the subsequent design phase.

5. Both the Member National Assembly, Khyber Agency , Alhaj Shahjee Gul Afridi and Senator from Mohmmand Agency, Mr. Hilal Ur Rehman suggested immediate attention to improving drinking water supply systems in both the towns with provisions/ studies for ground water recharge, construction of dams and supply of bulk water to the towns.

Annexure 9: 3-D Modeling of Landi Kotal Area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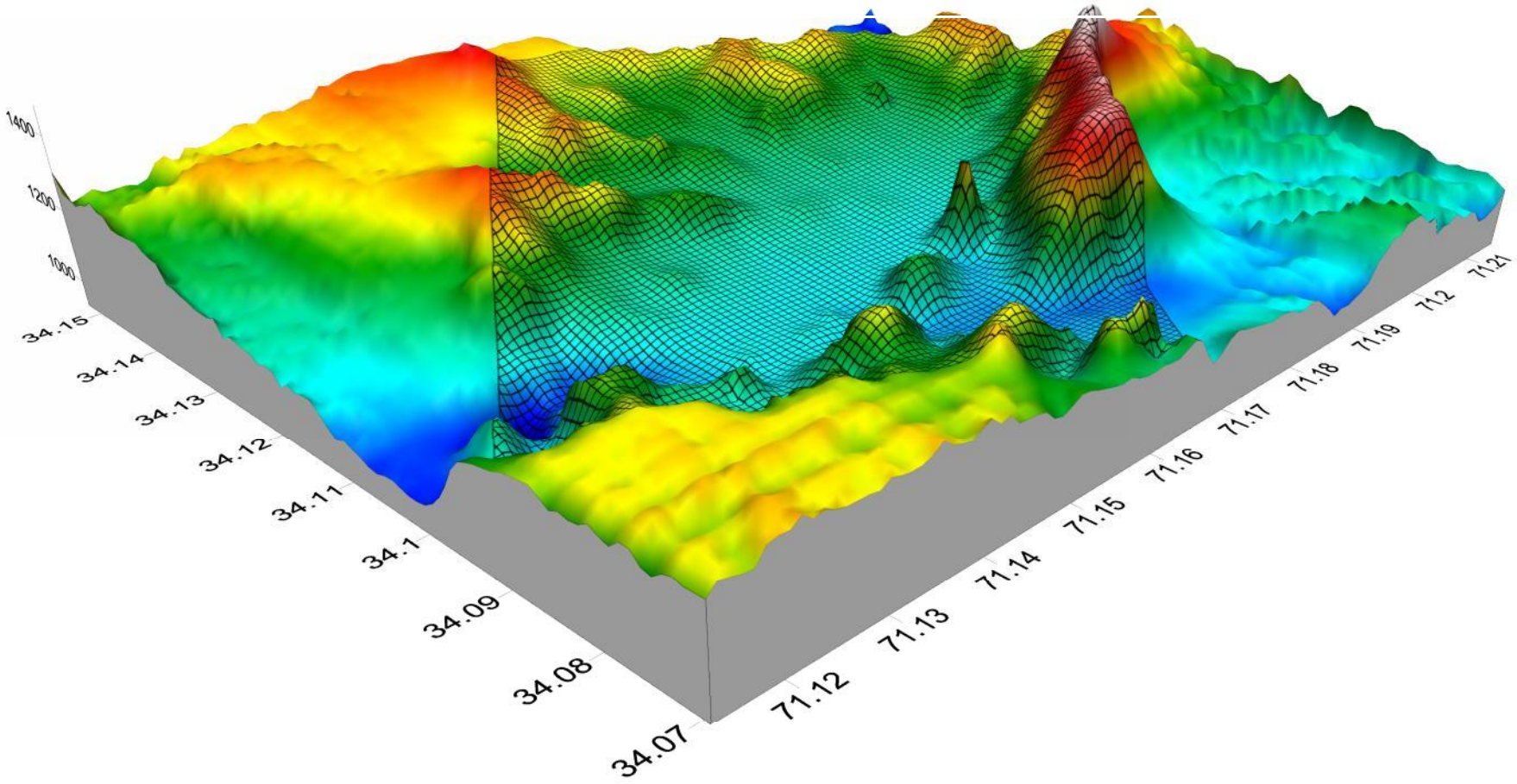
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