



**Town Municipal Administration Gadap
City District Government Karachi**



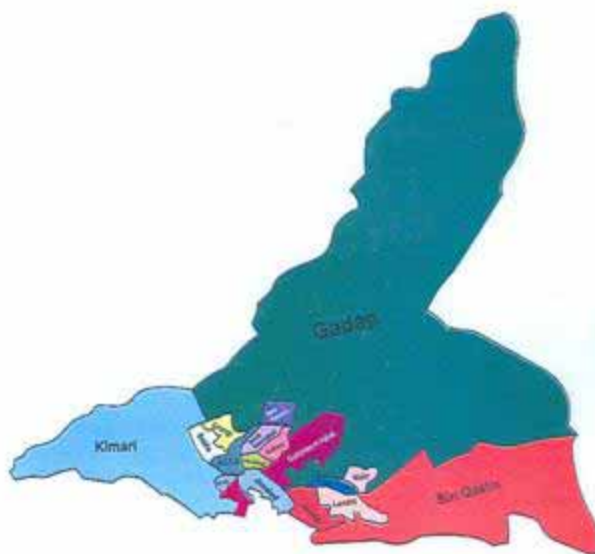
**Master Plan
for
Town Municipal Administration Gadap
2006 – 2026**

| |
|------------------------------------|
| PSU - 00000 |
| Finance Department, Govt. of Sindh |
| Distry No. <u>2615</u> |
| Inward Date <u>26/05/06</u> |



Town Municipal Administration Gadap

City District Government Karachi



**Master Plan
for
Town Municipal Administration Gadap
2006 – 2026**

Town Municipal Administration Gadap Karachi City

Government of Sindh

Local Government Spatial Development Department



**Master Plan
for
Town Municipal Administration Gadap**

2006 - 2026

**Programme Support Unit,
Sindh Devolved Social Services Programme**

May 06



OFFICE OF THE TOWN MUNICIPAL ADMINISTRATION
GADAP KARACHI

NO. T.M.A G / NAZIM/ 06-

96

Dated 25/05/2006

To,

PD-SDSSP
Finance Department
Government of Sindh,
Karachi

SUBJECT: **PREPARATION OF MASTER PLAN.**

Kindly refer to your letter No FD/SDSSP/PSU/WSS-91(03) (2006) Plan of Town Municipal Administration Gadap, is being submitted as desired.

The Master Plan has been prepared by the officers of Engineering Department of our Town, on the basis of available data according to their technical and administrative capacity. The data available in the Town needs to be updated. For which an extensive survey is required to be carried out in the Town in order to bring necessary improvements in the Master Plan.

For the conduction of survey and collection, compilation of data the technical capacity of the staff of Town Municipal Administration Gadap needs to be enhanced. Therefore necessary measures may kindly be taken for the capacity building of the staff of Town Municipal Administration Gadap.


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Town Municipal Administration Gadap

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INTRODUCTION:-



The Town Municipal Administration Gadap falls on the East North and Western side of main City District area of Karachi. It comprises of eight Union Councils as per list attached with population of each Union Council. The total population of the Gadap Council is 2,89,564. The area of the Council is spread over about 11 hundred square K.Ms.

The Town Council touches the borders of District Dadu in the East and North and Balochistan in the west.


The entire area is Hilly, barren and barani. The main profession of the people is agriculture, poultry, dairy and cattle farming. The economy of the area is dependent upon rains and in absence of which the permanent residence faces numerous problems.

The only source of water for human, livestock consumption and agriculture is rain and sub-soil water. A small part of Council is fetched water for human consumption and poultry farms through the KW & SB water supply scheme.

Union Council Maymarabad and Gujro are parts of KDA Scheme and are under developing process these areas together with Union Council Yousuf Goth are faced with problems of sanitation, sewerage and drinking water. These areas have been included with Town Administration Gadap were parts of defunct DMC / District Council. No sanitation staff and equipment such as Dumpers loaders and refused removing vehicles have been placed or transferred to Town Administration Gadap.


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B. Existing Situation and Development Trends

i). Location of the Town Municipal Administration Gadap.

The Town Municipal Administration Gadap was of 3,54,681 populations in the year 1998 is located in the Taluka Malir and District Malir in Sindh at a distance of about 42 km east of Gulberg Town. Important towns in the vicinity of Taluka Malir included Malir and West. Districts and Bin Qasim Talukas share their boundaries.

ii). Population Characteristics

The average population growth rate of 4.6 experienced an increase / decrease / stagnation during the 1951 – 1998 periods. It is expected that over the next 20 years the population growth in Town Municipal Administration Gadap will tend to approach the expected average growth rate of about 4.5% to 4.6% per year. According to this assumption, the population of Town Municipal Administration Gadap has increased from 1994 cause in 1998 to 3,95,000 in 2006 and will increase to 3,55,534 in 2011, 5,72,750 in 2016 and 8,30,487 in 2026.

iii). Household Characteristics

According to the 1998 District Census Report of 1994 the average household size in purchase was 6 persons. In order to provide forecasts for the 20-year plan period, a decreasing household size is assumed, reflecting the expected structural changes in the society advocated by the official human resource development policies. On this basis it is assumed that the average household size in Town Municipal Administration Gadap will gradually fall to 6 persons during the 20-year plan period.

iv). Labour Force and Employment

Based on the trends experienced in the country as a whole and especially in developing districts & talukas, the table in the next page, shows the expected employment figures and composition by sector of economic activity in 2006, 2016 and 2026. According to these estimates, the relative importance of primary sector (Agriculture & Forestry) will be significantly reduced. On the contrary, an increasing participation of the secondary (Manufacturing) and tertiary (Service & Business) sector in the future employment composition is expected, reflecting the strengthening of Town Municipal Administration Gadap's role as a service centre in the wider area. Finally, and on the basis of the available information on the general economic trends, it is estimated that the labour force to total population ratio will tend to approach in the future the average of the urban sector of the country (i.e. 32% to 34%).

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TOWN MUNICIPAL ADMINISTRATION GADAP
: EMPLOYMENT BY SECTOR OF ECONOMIC ACTIVITY
2006-2026

| Sector | 2006 | | 2016 | | 2026 | |
|--|------------|---------|------------|---------|------------|---------|
| | % | Persons | % | Persons | % | Persons |
| Primary (Agriculture & Forestry) | 6.5% | 10,700 | 40% | 74457 | 40% | 10,7963 |
| Secondary (Manufacturing) | 5.0% | 5135 | 6.0% | 5956 | 15% | 16194 |
| Tertiary (Service & Business) | 15% | 15405 | 20% | 14891 | 25% | 26990 |
| Total | 100 | | 100 | | 100 | |

Source: District Census Report 1998, survey & estimates.

vii). Housing

According to information locally collected, there were 46,083 dwellings in 2006 on May 2006. Considering the estimated total number of households 65,833 a dwelling unit occupancy ratio of 70% households, or 6 persons per dwelling, is produced. Housing needs concerning new buildings and additional residential land have been calculated for the years 2016 and 2026 and are presented in the following table.

TOWN MUNICIPAL ADMINISTRATION GADAP
: HOUSING NEED 2006-2026

| | 2003 | 2006 | 2016 | 2026 |
|---|--------|--------|------------|------------|
| No. of Households | 49,623 | 65,833 | | |
| Households per Dwelling | | 45,083 | | |
| Total Housing Needs | | 19,750 | | |
| Available Houses | | 46,083 | (1) | (2) |
| Need for Replacement of deteriorating dwellings | | | 95,438 | 13,8,414 |
| | | | | Nos |
| New Housing needs | | | 47,729 | 69,207 Nos |
| New Plot needs (3) | | | 240-120-80 | 69,207 Nos |
| Average Plot size in New Areas (sq.yds) | | | 400 | 240-120-80 |
| Needs in New Resid. Land ha/acres(4) | | | 1414 | 4382 |

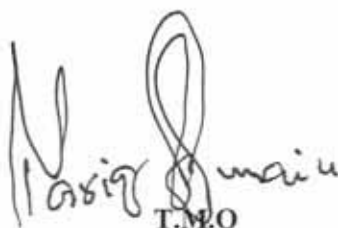
- (1) 50% of the (2006) housing stock
(2) 20% of the (2006) housing stock
(3) Based on a 1.3 dwelling-to-plot ratio
(4) The number of new plots, multiplied by the average plot size, assuming that the plot area equals 50% of the gross area.

Source: Survey & Estimates



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b). Up-grading of Existing Sewers

The sewerage network in Town Municipal Administration Gadap consists mainly of open drains and reinforced concrete underground sewers. This network is problematic; a number of underground sewers, poorly maintained, have deteriorated, several manhole covers are missing and the manholes themselves are obstructed by debris. Many open drains have become undersized due to densification of development in the respective areas that they are serving; in addition they are liable to clogging, as it is common practice to throw garbage into them, especially plastic bags that cannot be dissolved via natural processes.

The proposed project suggests that all existing sewers will be inspected and problematic parts of the networks will be cleaned and repaired so that they are brought back to acceptable working conditions.

c). Extension of the Sewerage Network to cover Developed Areas

This project will provide with sewerage facilities the parts of the city that are not served by the existing network. In order to improve hygienic conditions in the city and protect ground water from pollution, it is of paramount importance that all these areas of the city will be ultimately served with sewers or drains.

vi). Action Plan for Solid Waste

The refuse collection system applied today in Town Municipal Administration Gadap consists of employing 13 Nos Tractors / Dumpers workers with 800 animal-drawn carts and 2400 hand-barrows to collect refuse from homes and streets and to transport them to several tipping points scattered throughout the city; the refuse is then disposed of at Town Municipal Administration Gadap dump-sites inside the city, creating serious environmental problems and health hazards. It is, therefore, necessary to upgrade the refuse collection and disposal practices, by establishing an efficient refuse collection system and by transporting the collected refuse to a properly constructed sanitary landfill outside Town Municipal Administration Gadap. These needs are catered for by the action plan at hand, which comprises two projects, namely: (a) Improvement of Refuse Collection System; and (b) Construction of a Sanitary Landfill.



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a). Traffic Management for the Commercial area.

The purpose of this project is the provision of short term / low cost measures to improve the performance of the existing road network in an around the commercial area of area each UC. Such improvements refer to smoother traffic flows, safer environment, reduction of congestion and travel time and result in increased efficiency of the commercial area operations and strengthening of Traffic Management's role as an important service centre of the wider area.

b). Construction of a Truck Terminal

In spite of the fact that trucks are extensively used for the transport of goods from and to the commercial area of Uc Gjuro Sabzi Mandi, there is no properly organised truck terminal in the city at present. As a result, trucks are parked haphazardly on the roadside inside the commercial area creating all sorts of traffic problems.

In order to alleviate this problem and provide a proper place for the parking and servicing of trucks in Gujro / Sabzi Mandi, a truck terminal is proposed at Super Highway Road, near the new grain market.

c). Construction of a Ring Road

Town Municipal Administration Gadap is well served by a number of regional roads from all directions. A ring road is proposed, in order to provide a useful connection between these radial roads and greatly improve the performance of road systems in the city (reduced congestion in the commercial area, reduction of travel times between the radial roads, segregation of regional traffic etc.). At present, part of such a road is being constructed between Moidan and the road to Northern Bypass Road.

d). Up-gradation / improvement of roads, footpaths, traffic and street lighting

The conditions of roads, footpath, street lighting and traffic signals is in deteriorated situation and need to be improved immediately for smooth and efficient circulation of vehicular and pedestrian traffic.

Approximately 18 numbers of roads alongwith footpath, streetlight, traffic islands and traffic signals have been included in the improvement project.

v). Action Plan for Sewerage

a). Construction of Sewage Treatment Plant and Disposal Works

Existing oxidation ponds have no provision for the disposal of the oxidised sludge setting at the bottom of the ponds; moreover, they are filled up to 90% with sludge due to lack of maintenance. The ponds are therefore unable to treat effluent and, as a result, untreated wastewater is discharged to 'nalas' and from there to the irrigation canal system (and ultimately on agricultural lands). This practice creates great health hazards. Purpose of this project is to establish in the city a safe effluent treatment and disposal system, which will safeguard public health and will protect agricultural lands from pollution.

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iii). Action Plan for Housing and Community Facilities

a). Upgrading of the Katchi Abadis

Improvement of housing conditions unquestionably starts from upgrading of the Katchi Abadi areas, where the housing stock is in a particularly bad shape. Given the marked failure of formal land development schemes for low-income households, it is expected that Katchi Abadis will remain integral parts of the urban areas in Sindh for many years to come. This reality, together with the significant percentage of present Katchi Abadis in Town Municipal Administration Gadap, demand that an action plan be launched to improve urban conditions in these areas.

It is therefore proposed to upgrade about 43.82 hector ha of Katchi Abadis area, housing an estimated population of about 8,30,487 people. Upgrading works include: (a) construction of local roads; (b) construction of local sewers and open drains; (c) construction of poles for street lighting; (d) improvement of open spaces and play grounds; (e) provision of communal water taps; and (f) replacement of dangerous structures and technical assistance for the repairing of houses.

b). Development of Town Municipal Administration Gadap Housing Plots and Construction of Residential Buildings for Low-income Households

A considerable percentage of households in Town Municipal Administration Gadap resort to informal schemes in order to solve their housing problem. These informal schemes refer to: (a) sharing a house with other low-income households; and (b) squatting. Living conditions in such informal arrangements are appalling; houses are overcrowded while utility services are rudimentary or non-existing.

In order to alleviate problems created by these situations, the public sector in Town Municipal Administration Gadap should launch as part of the Master Plan implementation and affordable development programme for low income housing plots. This programme should be initiated with the development of Town Municipal Administration Gadap low cost plots - a typical mohalla - in one of the new development areas of type I proposed by the plan. The project should also include construction of Town Municipal Administration Gadap two-storey residential buildings along the major roads of the proposed scheme.

c). Construction of a Community Park

In spite of the existence of numerous small green areas within the city near by Pass is short of organised big recreational spaces. At the same tie, cultural attitudes towards open-air recreation are very favourable in Pakistan, with families making extensive use of such facilities, whenever available. Furthermore, specialised studies show that households are willing to pay entrance fees in order to enjoy outdoor recreational facilities.

Taking these realities into consideration, it is proposed to construct two community parks in Near Nothern Bypass Surjani Town Location and sizes of these parks are Near Murad Memon Goth

iv). Action Plan for Traffic and Transportation

- 1) Near Nothern Bypass Surjani Town
- 2) Near Murad Memon Goth

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Major elements of the **Water Supply Plan (Option 2)** include the –

- Provision of quality water sufficient to meet the future requirements of the 8,30,487 upto 2026;
- Improvement of the operational characteristics of the system; and
- Extension of the networks to service the existing areas, which are presently not covered as well as new development areas proposed by the Master Plan upto 2026.

Major elements of the **Sewerage Plan** include the –

- Installation of a proper sewage treatment plant;
- Proper maintenance of the existing underground sewers and upgrading of the open drains; and
- Extension of the sewerage network to cover existing areas not yet covered and new areas proposed by the Master Plan upto 2026.

Major elements of the **Storm Water Drainage Plan** include the –

- Creation of proper road cambering and longitudinal slopes with catchment pits and interception drains;
- Stream lining of low-lying areas to stop the spreading of flood water;
- Installation of an adequate number of mobile pumps to pump out excess water during flooding from affected areas; and
- Protection of the existing disposal works pond from flooding (provision of mobile pumps to drain, if necessary, the area).

Finally, the Refuse Collection and Disposal Plan includes the –

- Upgrading of the existing refuse collection practice by establishing an efficient door-to-door collection system;
- Construction / organisation of a proper sanitary landfill upto the need of 2026; and
- Setting-up of a system for daily transportation of the collected refuses to the landfill site.

D. Immediate Action Proposals

Based on the Master Plan proposals, a number of action plans are put forward for Town Municipal Administration Gadap. These plans cover the areas of economic development, housing and community facilities, traffic and transportation and utility services; each action plan comprises a number of projects, as follows.

i). Action Plan for Economic Development

Construction of a Shopping Complex

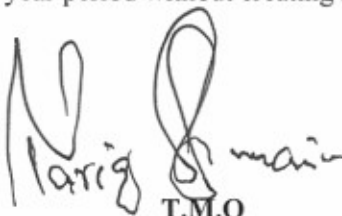
It is acknowledged that the commercial area of Town Municipal Administration Gadap is facing serious congestion problems today. In order to alleviate these problems, the structure plan proposes the extension of the commercial area to the southwest of the city. The commercial area expansion should be initiated with the construction of a municipal shopping complex that will create the necessary impetus for the involvement of the private sector in the long-term operation. This solution will ease pressures on the existing commercial area and will allow for the eventual removal of encroachments, since some of the affected shop owners may move to the new commercial expansion area.

The actual size of the proposed commercial development should be determined following a detailed feasibility study. At this stage it is estimated that construction of Town Municipal Administration Gadap shops is sufficient to cover the extra demand during the next 5-year period without creating major upheavals to the existing commercial area.



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a). Housing Plan

The housing plan for Town Municipal Administration Gadap is envisaged as a medium-term plan covering the period 2006 – 2016. This approach is expected to minimise dangers inherent to plans based on long-term projections, which may, or may not, retain their validity after a period of time.

The housing plan is structured around the following rules:

- Residential areas, existing and new, are structured on the basis of related, but at the same time, relatively self-sufficient and independent residential units;
- New housing schemes are developed strictly on the basis of adopted standards according to the income bracket they belong; and
- Community facilities are arranged along 'corridors' connecting the various public assembly places and forming citywide networks, reproducing the successful land use pattern observed in Town Municipal Administration Gadap.

Considering the foregoing rules, it is estimated that the housing plan can accommodate about 572750 people up to the year 2016.

b). Traffic and Transportation Plan

This plan has again been formulated for a medium-term planning period and incorporates the following goals and strategies;

- A proper road network hierarchy should be established, reflecting the structuring of the Town Municipal Administration Gadap in residential units and enhancing its positive aspects regarding the smooth functioning of the Town Municipal Administration Gadap ;
- Improvement in traffic circulation and traffic management.

c). Public Utilities Plan

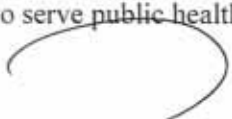
This plan deals with water supply, sewerage, and storm water drainage and refuses collection and disposal for the period up to 2026. Problems related to the development of infrastructure are tackled taking into account the limited resources of the local economy.

Water supply (Option 1)


The tendency of common people in Town Municipal Administration Gadap is to use hand pumps or individual single-phase electric motors to fetch ground water, which is potable, less, contaminated than the water supplied by water supply system. More over it is available all the time with compare to water supply system, which used to be operated only one hour each in the morning and in evening. There are no charges to fetch ground water, where as for having connection through water supply system one had to pay usual regular charges. The position of recovery of water charges remained highly unsatisfactory.

Presently the pumping machinery and tube well bores have lost their life. Distribution system has been damaged at various places due to construction of nalas, under ground cable system, Sui gas distribution lines etc. The existing system has lost its life.

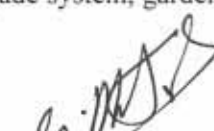
Hence the existing system is in un-running position and public do not demand this facility and they prefer to use ground water for the reason explained above; now the supply of water is stopped to town. Only, the high service reservoir (HSR), of 50,000 gallons capacity is been used to supply water to serve fire brigade system, gardening purpose and to serve public health colony area.



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xii). Storm Water Drainage

There is no separate storm water drainage system in Town Municipal Administration Gadap, except for temporary mobile pumping units, which are used in emergencies. Open sewers or drains have been designed to carry rainwater too, but as they are often clogged or under-designed; their proper operation is severely hindered during rain. Moreover, as the topography of the Town Municipal Administration Gadap is flat and the roads have no proper cambering and longitudinal slopes, rainwater over-floods the sewers during the rainy periods and inundates the streets. This water stagnates in low-lying areas and creates great public health hazards.

xiii). Refuse Collection and Disposal

Town Municipal Administration Gadap lacks organised refuse collection: houses usually dump their garbage on the streets from where it is occasionally collected. Available vehicles fall short of the required number to meet the needs of the Town Municipal Administration Gadap. This shortage creates severe problems with refuse being scattered all over Town Municipal Administration Gadap. Congested residential areas, commercial streets and markets are presumably more adversely affected by the presence of refuse and leakages from it, on the streets. Less than 50% of the refuse-generated daily in Town Municipal Administration Gadap is actually collected and disposed of in Town Municipal Administration Gadap dumpsites without any sanitary measures.

C. Proposed Master Plan

The problems of Town Municipal Administration Gadap outlined in the foregoing paragraphs, are dealt with within the context of the proposed Master Plan for Town Municipal Administration Gadap 2026 and its associated sectoral plans.

The Master Plan is essentially a statement of proposals that will guide the future development of Town Municipal Administration Gadap. Seed funding for the realisation of the proposals is expected to meet through Federal, Provincial, District and Taluka's resources. On this basis, the goals and strategies of the Master Plan must be laid down within the constraints of the national & local economic environment. Within the framework provided by the evaluation of the existing conditions and the national policy documents, especially the medium and long-term targets of the National Development Plan, the following overall goals have been framed for the Master Plan of 2026:

- Utilization of the interesting environment surrounding of Town Municipal Administration Gadap;
- Compact development of the city/town;
- Establishment of a linear growth pattern;
- Provision of affordable municipal services;
- Affordability of housing and community standards; and
- Safeguarding of valuable agricultural land from urban development.

In order to materialise the foregoing goals, a number of strategies have been developed addressing all major issues of spatial development for the period 2006 – 2026. These strategies, illustrated in the so-called 'Master Plan', are as follows (cf. Fig 6359 page 14):

- Development of Town Municipal Administration Gadap will take place in the areas between the existing radial roads, followed by expansion along a northeast-southwest axis;
- The existing city centre will be re-organised and it will expand on a southeast direction;
- Two secondary (community) centres will be established to complement the existing commercial area;
- A public / institutional zone will be established across the Town Municipal Administration Gadap to complement the existing institutional area;
- An industrial area will be established to the north of the city; and
- Planned open spaces will be created.

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x). Water Supply (Option 2)

At present, the water sources in Town Municipal Administration Gadap are: (a) Indus / Hub, K3 (c) a number of tube wells. of with a depth, which is a major canal situated at a distance of 25 km from 45 KW&SB. In order to reach the city, the water is transmitted by gravity through an open channel for 15 km and is pumped through concrete pipes for another 45 km. The channel is partly lined. When the water supply from Hub Canal is closed, is obtained from K3 Canal, which flows by the side of the Surjani Town / Dumlotee waterworks. During the period that both canals are closed (three to four weeks per year) the city relies on water pumped from 400 / depth tube wells situated around the existing raw water storage tanks.

Based on the observed consumption indices the following table presents the water demand expected in Town Municipal Administration Gadap for the year 20-years development plan period.

TOWN MUNICIPAL ADMINISTRATION GADAP WATER DEMAND 2006-2026

| Year | Population | Per Capita Water Demand (1) | | Total (2) |
|------|------------|-----------------------------|---------------------|-----------|
| | | Excl. Losses | Include. Losses | |
| 2003 | 3,54,681 | | | |
| 2006 | 4,02,562 | 54,7,48,432 | 65,61,7,606 | |
| 2016 | 5,83,714 | 95,7,29,096 | 11,49,91,658 | |
| 2026 | 8,98,920 | 17,97,84,000 | 21,57,40,800 | |
| | | 33,02,61,528 | 39,63,50,064 | |

(1) Lit/cap/day 396.35 millions

(2) Cu.m/day

Source: PHED, TMA, Survey & Estimates.

xi). Sewerage

The sewer network in Town Municipal Administration Gadap consists mainly of open drains ('nalas') and reinforced concrete underground sewers. Open drains, with some exceptions, constitute the collection drains in lanes and streets, receiving effluent from dwellings. Wastewater is collected into main sewers and flows by gravity into the disposal works. According to information provided by PHED / TMA, about 70% of the city area is covered by this network. The remaining 30% dispose of their wastewater to septic tanks or to cesspools. Wastewater is collected from cesspools and septic tanks by donkey carts or tractor trolleys with tanks.

The following table presents the estimated effluent production in Town Municipal Administration for the 20-year Master Plan period. Estimates are based on the projected water consumption presented in the previous table of water demand for the period 2006-2026.

TOWN MUNICIPAL ADMINISTRATION GADAP EFFLUENT PRODUCTION 2006-2026

| Year | Population | Effluent Production | |
|------|------------|---------------------|--------------|
| | | Per Capita (1) | Total (2) |
| 2006 | 40,2,562 | (109+-) | 43,87,9,258 |
| 2016 | 58,3,714 | (131) | 76466534 |
| 2026 | 89,8,920 | (160) | 14,38,27,200 |

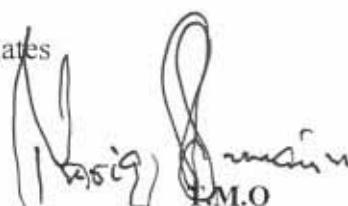
(1) Lit/cap/day

(2) Cu.m/day

Source: PHED, TMA, Survey & Estimates


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The following table presents the estimated total demand for major types of urban land for the years 2016 and 2026. The calculation of this demand is based on analysis regarding residential land.

-----: **TOTAL DEMAND FOR URBAN RESIDENTIAL LAND**
2016 – 2026

| 2016 | | 2026 | |
|----------|-------|----------|-------|
| Hectares | Acres | Hectares | Acres |
| 1414 | 3500 | 4382 | 10846 |

Source: Survey & Estimates

ix). Traffic and Transportation

Town Municipal Administration Gadap is well served by a number of regional roads from all directions including: (Sheet Attached) villages. There is also a ring road encircling major parts of the ----- and connecting various regional arteries with each other (cf. Fig.--- page.---). However, only a small portion of this ring road is metalled, while the remaining portion is a 'katcha' (unpaved) track. A by-pass road between Hub Road and Super Highway Road has been constructed by the Highway Department. A fly over has also been constructed to cross --.

Most urban roads in Town Municipal Administration Gadap, with the exception of those found in the commercial area, follow gridiron patterns.

Road Memon Goth Road, Gadap Road, Darsano Chano Road, Surjani Road, and Manghopir Road are some of the most important urban arterials. Pavement conditions in these roads are in general satisfactory and the instituted ROWs are adequate. However, projections, encroachments and parked vehicles, particularly around the CBD, reduce the effective road widths and create congestion in many central localities.

N.A is divided into two parts by the N.A branch line of Pakistan Railway. A branch line to N.A also starts from N.A. Movement across the railway a line is effected through N.A grade-separated and N.A level crossings are of limited usefulness since their low clearance height does not allow trucks and buses to use them.

X). Water Supply (Option 1)

Town Municipal Administration Gadap is located in between Hub Canal – K3 / Damloti Conduct canal. Due to this fact the aquifer in the area is annually replenished and it is there for there is plentiful potable ground water even at Tube well shallow depths and the residents of the city can tap the water without creating salinity problems to the aquifer. Residents used to extract ground water from Tub well depths, but in recent years, because of fear of upper water strata being contaminated, depths of wells have been increased.

Although the ground water at 400 feet dept is potable and sufficient to meet the day-to-day requirements of the city population, however, during last three decades, the water supply infrastructure was also been developed in various phases.



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viii). Future Demand for Urban Residential Land

- 1) Gadap Road
- 2) Angara (Mukhi Road)
- 3) Ghulam Mohmmmed : to Mukhi Goth
- 4) Farsi Garden Road
- 5) Main Memon Goth Road
- 6) From Darsano Channo to Link Road
- 7) Razzaq abad to Murad Memon Goth
- 8) Ghul shan-e-Maymar to Mukhi Goth

SURJANI

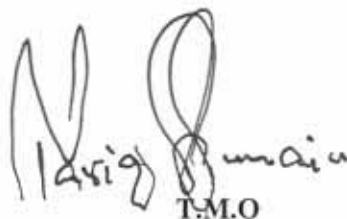
- 1) 4k to Allah abad
- 2) L-1 to 5b
- 3) 7-a to 7b
- 4) L-1 to Shadabad
- 5) 7-b to 7C
- 6) 4-C to 4d
- 7) 5-d to L1
- 8) 5-e to 5d
- 9) 5-e to Shoping Centre
- 10) F-L Side 4K Chorangi to Sector 6.

Gujro – Al – Asif Squire
 Memon Goth Main Bazar
 Gadap City to Konkar
 Sirjani to Hab Dam



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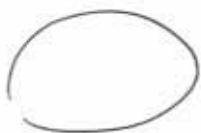
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E. Summary of Projects

The following table presents a summary of the capital cost requirements for the action plans and associated projects presented in the previous sections. Figure ----- on page number ----- illustrates the location of specific Development Proposals.

| <i>Town Municipal Administration Gadap</i> | |
|--|---|
| Action Plans / Projects | Capital cost requirement (in millions of Rs) |
| Action Plan for Economic Development | |
| Construction of a Shopping Complex | 184 |
| Action Plan for Housing and Community Facilities | |
| - Upgrading of the Katchi Abadis | 600 |
| - Development of Town Municipal Administration Gadap Housing Plots and Construction of Residential Buildings for Low-income Households | 1500 |
| - Construction of a Community Park | 50 |
| Action Plan for Traffic and Transportation | |
| - Traffic Management for the Town Municipal Administration Gadap CBD | 50 |
| - Construction of a Truck Terminal | 400 |
| - Construction of a Ring Road (70 km) | 175 |
| - Road, footpaths, streetlight Improvement | 200 |
| Action Plan for Water Supply | |
| Construction of Water Treatment and Supply Installations | 1200 |
| Action Plan for Sewerage | |
| - Construction of Sewage Treatment Plant and Disposal Works | 200 |
| - Upgrading of Existing Sewers | 600 |
| Extensions of the Sewerage Network to cover Developed Areas | 900 |
| Action Plan for Solid Waste | |
| - Improvement of the Refuse Collection System | 200 |
| - Construction of a Sanitary Landfill | 100 |
| <hr/> | |
| Total for all projects | 6359 M |

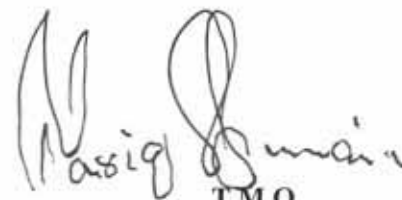


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