

Local Government & Community Development Department



Punjab Cities Program

Gap Analysis

of

Municipal Services infrastructure & service delivery

in

Burewala City



Punjab Municipal Development Fund Company

Section-1 City Background

1.1. District Status

The city of Burewala is the headquarters of Burewala Tehsil, an administrative subdivision of district Vehari. Shrine of Hazrat Baba Haji Sher Dewan Chawli Mashaikh is also situated in Dewan Sahib at a distance of 18 km. from Burewala. Prior to its settlement, the area was a jungle which was later on populated by the Dhuddi tribe. When the Pakpattan canal started operating in this area and agriculture developed, people started to settle in villages, resulting in jungles being cut to convert to cultivation fields. As this area was in 'Eastern Canal Division' so it was named village No. 134/EB (EB = Eastern Bar). In the northern side of Burewala, there are still signs of an old river which is now called Sukh Bias.

1.2. Location

Burewala is situated on the old Dehli Multan Road in the North-East of Vehari city at a distance of 35 kilometers. Sutlej River flows in the south of Burewala city at an average distance of 30 Km. The city is located at about 240 Kilometers to the south-west of Lahore on Lahore-Pakpattan-Lodhran Railway track. It has 30°-10' North latitude and 72°- 41' East longitude and elevation of 146 meters above mean sea level.

1.3. The Climate

The climate in Burewala is called a desert climate. July & August are hottest months when the temperatures generally reaches 45°C and in night the average minimum temperature drops down to 27°C. The average humidity of city in August is 72%

Winter season starts from November and lasts till February. Mean maximum and minimum temperatures recorded during the month of January are about 22 and 8 degree Celsius respectively. The average annual rainfall is 194 mm.

1.4. Demographic status

The population census report of year 2017 has not been published by Government of Pakistan. However the provisional data available for this census shows the population of 231,797 persons for the city within municipal limits. A land scan process was done to estimate the population of entire inhabited areas of city in close approximation which was found to be 264,014 persons in the year 2017 with an annual growth rate of 2.31 % and it is expected to rise to 331,598 persons in the year 2027. Some inhabitation has developed outside the municipal limits of the city and the municipal limits need to be extended.

1.5. Data collection

The formats for the data collection about the municipal services were designed and sent to the Municipal Committee. After receipt of these formats, the city was visited to;

- 1) Verify and correct the data provided by the Municipal Committee.
- 2) Update the descriptive maps of all the services in consultation with MC staff & Public Health Engineering Department local staff.
- 3) Identify the required improvements and extension of the municipal services infrastructure.
- 4) Identification of Public Private Partnership projects already executed.

- 5) Identify the capacity of the key officers to undertake the PPP projects and collaborative projects with other government agencies and MCs.
- 6) Public opinion surveys regarding the delivery of municipal services.

1.6. Situation analysis and Gap analysis

Situation analysis of the existing municipal services infrastructure and the quality of service delivery was done. Gap analysis was done to identify the problems, bottlenecks and shortcomings in the infrastructure itself and its operation & maintenance for each municipal service along with the correction/updating of descriptive maps which has been described in the following sections.

Section-2 Water supply system

2.1. Existing situation

The city is divided into two zones by Lahore Pakpattan-Lodhran railway track, Zone-1 oriented as Southern Zone) & Zone-2 given the name of Northern zone because of orientation.

Both zones, served, un-served, contaminated and water shortage areas have been marked on the map attached with the report.

2.2 The water source & storage

The city has contaminated shallow sub soil water which is unfit for human consumption. 5-L distributary is flowing at the eastern periphery of the city whereas Pakpattan-Islam Link (PI Link) Canal is located at the western boundary of the city. Tube wells have been installed at different locations of the city to harness the deep underground fresh water. 26 tube wells were working in the city prior to the installation of 21 tube wells in 2009 by PHE Department. All the 47 tube wells were taken over by defunct TMA. 15 Nos. tube wells have been abandoned due to non-availability of distribution system. Water from the operational tube wells is directly fed to the distribution system. Only one overhead reservoir is operative in the entire water supply system.

2.3 Installation of tube wells

Zone-1 (Southern zone):

13 tube wells have been installed in this zone at different locations and presently 8 tube wells are operational. Rest of the 5 tubewells could not be operated by PHE Department because of non-laying of the distribution system.

Zone-2 (Northern zone):

34 Nos. tube wells have been installed in this zone at different locations and presently 24 tube wells are operational whereas the rest of 10 tubewells could not be operated by PHED because of non-laying of the distribution system. In most of the areas distribution system is not sufficient to supply water to the consumers in adequate quantity although the source capacity is available. Total tube wells installed along with functional tube wells and source capacity has been given in the table below;

Total Source capacity

Zone	No. of tube wells	Capacity each (cusecs)	Total capacity (cusecs)	No of tube wells		Present working hours per day	Daily water production (mgd)		
				in working order	Non operational		Present with 5 hours pumping	Possible with 14 hours pumping	
								Working tubewell	All installed tubewells
Zone-1	13	1.0	13	8	5	5	0.90	2.52	4.10
Zone-2	34	1.0	34	24	10	5	2.70	7.56	10.71
Grand total	47	-	47	32	15	-	3.60	10.08	14.81
Present population of the city							264,014	Persons	

Possible water production per capita per day from working tubewells with 14 hours pumping per day	38	Gallons
Possible water production per capita per day with 14 hours pumping per day if all remaining 15 tubewells are made operational.	56	Gallons

The present source capacity of the installations is quite enough. If water wastage is controlled by consumer metering, then presently no further source capacity will be needed to feed the entire city. Distribution system is required to be laid in the areas where 15 tubewells have been installed but distribution system was not laid by PHED because the scheme became unfunded.

Bulk water meters have not been installed to measure the discharge of the tube wells. Further chlorinators for disinfection of water have been installed with 12 No tube wells only and others have to be installed.

2.4 Overhead reservoirs

13 Nos. overhead reservoirs exist in the city for continuous supply of water to consumers. Only one OHR is operative and remaining 12 Nos. are abandoned due to repair maintenance. The detail of OHR's is given below:

Location	Nos.	Capacity each (Gallons)	Operational Status	Type of repairs required
Azeem Abad	1	20,000		Major repairs required such as Civil works, rising mains, sluice valves and gauges etc.
Chak No. 447/EB	1	20,000	Abandoned	-do-
Y-Block Housing Scheme	1	20,000	Abandoned	-do-
Marzi Pura School	1	20,000	Abandoned	-do-
Aziz Abad	1	20,000	Abandoned	-do-
Yaqoob Abad	1	20,000	Abandoned	-do-
Chak No. 435/EB	1	20,000	Abandoned	-do-
P-Block	1	50,000	Abandoned	-do-
Chak No. 445/EB	1	20,000	Abandoned	-do-
M-Block	1	20,000	Abandoned	-do-
MC Colony	1	30,000	Working	-
Habib Colony	1	50,000	Abandoned	-do-
Mujahid Colony	1	20,000	Abandoned	-do-
Total	13	1,300,000		

2.5 Water filtration plants:

Total 12 Nos. filtration plants are being maintained by MC in the city to supply potable water to the inhabitants. All are working in good condition and no need for repair of its component to supply potable water to the inhabitants of the city.

2.6 Problems and gaps in the system

Under mentioned problems are bottlenecks are faced by the consumers in this water supply system;

2.6.1 Water shortage zones:

Water supply system is existing in the under mentioned parts of the city but these areas are subjected to sever water shortage

1-Amjad town	2-Marzi pura
3-Iqbal Nagar	4-Chak No.445/E.B
5-Chak No. 447/E.B	6- Chak No. 435/E.B

Reasons for water shortage

- The main reason for water shortage as investigated at site is that rapid development and congestion in the above mentioned areas has been observed and the existing source capacity in these areas is not adequate to supply water to the entire population.
- Water supply hours maintained by the MC are not enough to supply all the consumers with adequate quantity of water. Increase in water supply hours can address the water shortage in these areas.
- Water wastage and unequal distribution of water is another reason for water shortage wherein the consumers near to the tube wells waste lot of water by keeping the taps open whereas the consumers at remote end of the distribution system do not get water.

2.6.2 Un-served areas: (shown in pink color in the map)

21 tube wells were installed by PHE Department in 2009 but distribution system was not laid as per requirement of the area. Hence most of the tube wells remained un-operated and ultimately were abandoned. Under mentioned areas of the city have still not been provided with the facility of water supply.

1- New Barki	2- A part of amjad Town	3- Mujahid Colony
4- Zahidabad	5- Lot Bhattian	6- Bismillah Town
7- Tibba Mustafabad	8- Shabir Town	9- Fazalabad
10- Masoom Shah Colony	11- Shadman colony	12- Yaqoobabad - partially
13- Bhatta yousafabad		

2.6.3 Contaminated water zones:

The areas given below are being supplied with contaminated water and required steps to eliminate the contamination of water are required to be taken up.

1-Habib Colony	2-Rahmatabad	3- Akhtar Town
4-Part of Yousafabad	5-Yaqoobabad	6-Madina Colony
7-Taj Park	8-Riazabad	9-Fareed Town
10-Mujahid Colony	11- Iqbal Nagar (part)	12- Yousaf Block
13- Chak No. 435/E.B (part)	14- Marzi pura (part)	

Causes of contamination

- Main source of contamination is old and substandard consumer connections because of rusted and perforated GI service pipe resulting in ex-filtration and infiltration. Substandard PVC or lawn piping used in the consumer connections also causes pipe bursting and ultimate water contamination.

- Old and rusted main pipes are also leaking and producing contamination in the system. These pipes need replacement.
- The sluice valve chambers are filled with dirt and water and are one of the main sources of water contamination. This is due to non-packing of the valves stuffing boxes which is part of a routine maintenance.
- Non-cleaning and non-disinfection of the reservoirs develop bacteria and ultimately contaminate the system.
- Unfortunately the disinfection of the water is not regular. Either it is done in intervals or the disinfectant quality and dosage are not up to the mark which do not inject required amount of chlorine in the system and the contamination remains in place.

2.7 Water supply hours and consumer connections

Water is being supplied to the city in the below given timings.

Water Supply hours				Consumer connections			
Morning	Midday	Evening	Total	Domestic	Commercial	Industrial	Total
2	1.5	1.5	5.0	4210	44	Nil	4254

The water supply hours are very short and the water shortage prevails at remote ends of the distribution system because of unequal distribution of water in the absence of consumer metering.

2.8 Total coverage of the city

The total area coverage of water supply in the city is 57% out of which 6% area falls under water shortage and 13% under the water contamination. Rest of 43% area is unserved.

2.9 Tariff structure

The consumer connections are not metered and hence water wastage must be predominant over here. The tariff comprises of flat rates not even levied according to the area of houses. The water rates are given below;

Tariff Rates per month		
Domestic	Com.	Ind.
Rs. 70	Rs. 120	Nil

2.10 Required rehabilitation of the system

Under mentioned components of the existing system need rehabilitation. Component wise details are given below;

2.10.1 Tube wells

a) Re-commissioning of the pending tubewells

The installation of 15 Nos tubewells without provision of the distribution system is a question mark on the performance of PHE Department and is unnecessary blockage of money.

These tubewells were installed in the year 2009 and all tubewells are equipped with pumping machinery and all other allied works along with power connections. After passage of 10 year, the recommissioning of these tubewells may be a difficult job. However all 15 tubewells need to be retested to observe if these can be made operational. For this purpose the tube wells should be redeveloped to gain their designed discharge. Distribution system should be laid in these areas and connected with these tubewells.

However the tube wells which cannot be re-operated should be abandoned and replaced.

b) Repair & Replacements of pumping machinery

Type of Pump	Discharge each (cusec)	Replacement of tube wells	Replacement of pumping units	Repairs of pumping machinery
Deep well turbine pumps	1.0	0	5	0

These pumping units were installed in the year 1990 and have outlived their life. The repair is costly and the original efficiency cannot be achieved.

2.10.2 Repair of Pump Houses:

Condition of pump houses is not satisfactory and need repairs including plaster, White washing, painting and renovation. 5 Nos. pump houses are critical and need reconstruction.

Water works	Total Nos	Size (Ft.)	Type of repair/replacements
Tube wells	27	12'x12'	Require white washing, painting and renovation
	5	12'x12'	Require reconstruction

2.10.3 Overhead reservoirs

Major repairs of all the 13 Nos overhead reservoirs are required to maintain the adequate terminal pressure and supply of adequate quantity of water to all consumers.

2.10.4 Distribution system:

- The tubewells were installed in the year 2009 but for some of them no distribution system was laid. Hence new distribution should be laid in all these areas where tube wells have been installed and connected to the existing distribution system.
- The unserved areas should be equipped with the distribution system. Efforts should be made to feed the new distribution system with the existing tubewells. However in case of non-availability of enough water from the existing tubewells, new tubewells may be installed as per requirement and to meet the maximum day demand.

2.10.5 Repairs & replacement of other components

These components include;

- Repair of hypo-chlorinators = 20 Nos.

- Installation of bulk water meters = 32 Nos.
- Replacement of motor control unit = 32 Nos.
- Replacement of underground piping & saddles of approximately 4000 sub-standard consumer connections. The actual number of connections to be replaced will be identified during investigations for the preparation of feasibility report by the planning & design consultants.

2.11 Water wastage & Water management

Lot of water wastage is occurring in the water supply system in below given ways;

- Some consumer connections have no taps.
- Some consumers keep the taps open in all water supply hours although they do not need water.
- Most of the overhead tanks of the consumers have no float valve and when their tank is full, the water flows down to the drains continuously during the supply hours.

The water wastage requires excessive water production and high electricity consumption. It is exerting a large pressure on the municipal budget. Large savings in the electricity bills and ultimately the O&M cost, can be affected by reducing the water wastage at the consumer ends. It will save lot of water and water shortage can be addressed by conservation of water being wasted at present. The best and efficient way to save water and reduce O&M cost is the consumer metering.

2.12 Installation of consumer meters.

The only and the effective way of water preservation and reduction of O&M cost is the consumer metering. Hence all the 4254 consumer connections are required to be metered. This will result in equal distribution of water, addressal of water shortage and supply of adequate water at good terminal pressure to all the consumers in the city. The concept of 24/7 water supply can also be practiced if consumer metering is accomplished.

2.13 O&M Charges and revenue recovery

The operation & maintenance charges and the revenue recovery affected during the last five years is given below;

Year	2013-14	2014-15	2015-16	2016-17	2017-18	Total subsidy in five years
O&M charges (million Rs)	41.38	46.04	47.89	47.08	51.28	233.67
Revenue recovery (million Rs)	2.86	2.99	2.80	2.59	3.26	14.50
Recovery % as compared with O&M exp.	7%	6.5%	6%	5.5%	6.5%	6.2%
Subsidy injected (million Rs)	38.52	43.05	45.09	44.50	48.02	219.17

The above mentioned data shows a very weak billing and recovery system of the water revenue which is required to be improved by capacity building of the recovery staff and taking the elected representatives in confidence.

2.14 Manpower deployment

Slot	Sanctioned strength	Existing strength	Vacant post	Manpower on daily wages	Total man power deployed	Additional MC demand
Tube-well operators	39	37	2	0	37	10
Chowkidars	27	26	1	0	26	5
Electricians	0	0	0	0	0	2
Plumbers	2	2	0	0	2	1
Plumber helpers	3	3	0	0	3	0
Water Superintendent	2	2	0	0	2	0
Total	73	70	3	0	70	18

The vacant positions of the field staff need to be filled for satisfactory service delivery.

2.15 Service delivery & recommendations

1. Water supply is intermittent and total 5 hours per day. The quantity of water being produced presently is not enough even in the served areas because of lesser supply hours which need to be increased to at least 10 hours a day.
2. Quite a large area is being supplied with contaminated water due to leaking pipes and substandard consumer connections. Replacement of these pipe lines is required for reduction of water contamination.
3. Most of the area is un-served due to lack of distribution system. Water supply facility for these areas needs to be planned & implemented.
4. Service piping and saddles of all existing substandard consumer connections in the underground should be replaced by HDPE piping and saddles.
5. Illegal connection should be detected by consumer surveys and regularized.
6. None of the consumer connection is metered and it is proposed to meter all the consumer connections to conserve water, reduce O&M cost, address water shortage and supply of adequate quantity of water to every consumer.

Section-3 Sewerage system

3.1. Existing situation

3.1.1. Coverage

The city has 60% coverage of sewerage system but only the main and branch sewers have been laid and the lateral sewers have been provided in small area of the city. The old city is mostly served by the surface drains discharging in main and branch sewers leading to Lorry Adda disposal station

3.1.2. Drainage zones.

The city has been divided in 3 zones in respect of the waste water drainage. Each zone with its coverage is described below;

a) Zone-1

This zone is comprised of areas lying in the south of the railway track along with some portion of the city in east side but located on north side of the railway track. A trunk sewer of 42 inch diameter collects the waste water from north eastern part of the city and crosses the railway track after which it joins the 48 inches diameter outfall sewer discharging in Chak No. 451/E.B disposal works after crossing the Pakpattan-Islam Link Canal. Some main sewers in this area were choked and PHE Department has replaced them.

All existing sewers in muhallahs of Barki, New Barki, Amjad Town Mujahid Colony, Green Town, Taj Park and Shah Faiz Park Colony have been completely choked and water from the surface drains in these parts of the city is now ponding on southern side of the city. PHED has a plan to lay new sewers in these areas and connect the collector sewer to the existing 42 inch diameter trunk sewer. The work on this plan is currently in progress. PHED is also laying some lateral sewers of 9" & 12" diameter in this zone to cover the left over areas.

Waste water from this disposal works is pumped into a sullage carrier which ultimately discharges into an old River Bias creek named as Sukh Bias without treatment. In the way the water is also used for broad irrigation.

b) Zone-2

This drainage zone comprises of central part of the city located in north of the railway track and is drained off into Lorry Adda disposal works. The muhallahs named as New Model Town, Gulistan Colony, Gulshan-e Ghuni, Kachi Abadi Azeemabad, Yaqoob abad Riaz abad, A, B, C, D, E, N, O and P blocks and Shaheen villas were initially connected with this system. Later on the main sewer of 36" diameter taking water to Multan Road disposal works was choked near 2-R Minor due to poor maintenance and water from this sewer was also directed to this disposal works by laying a 24" diameter link sewer. It is evident that the upstream part of 36" dia sewer will also choke ultimately. This shows poor maintenance of the sewers on the part of MC Burewala.

The waste water pumped through forced main collected into a sullage carrier and being used for broad irrigation. After completion of PHED planned scheme waste water of A, B, C, D, E, N, O and P blocks would be collected in new sewers leading to newly proposed Multan road disposal works.

c) Zone-3

This drainage zone comprises of most of the area located on the northern side of the railway track. The waste water is collected into main outfall sewer of 42” dia discharging into Multan road old disposal works from where it is pumped through a forced main of 16” dia across the Multan Road, railway track and then the Pakpattan-Islam link canal into a sullage carrier leading to a Sukh Bias creek without treatment.

The main sewer of 36” dia has been chocked as stated above and water has been diverted into Lorry Adda disposal works. However water from the rest of the area is being taken by 42” dia sewer of this system and pumped through Multan Road disposal works.

The disposal works of this zone is located at Multan road.

Due to chocking of number of main sewers, a new sewerage system has been designed by PHED and it is at the construction stage now. Water from all over the zone will be diverted to the new outfall sewer of 30” dia along the railway track and 42” dia outfall sewer at the western Periphery of the city. Both sewers of this system will discharge into a new disposal works being constructed along Multan Road. The new system will relieve the problems created by the chocked sewers presently but if the sewers are not de-silted and cleaned by MC Burewala, the present situation may arise again after 10-15 years.

A small area in the extreme east of the city was being drained through Rehmatabad disposal works. A newly laid sewer will divert this water to the Lorry Adda disposal works and in this way the Rehmatabad disposal works will be eliminated

Water from the new Multan Road disposal works will be pumped through a 36” dia GRP force main into a sullage carrier across the Pakpattan-Islam Link Canal which will discharge this water in the old Sukh Bias creek.

Main features of the scheme being constructed by PHED are given below;

3.1.3. Sewer lengths

The length of old sewers as per information given by the Municipal Committee, are given below; these are approximate lengths and may vary if actually measured at site;

Table3.1 Approximate lengths of existing sewers

Sewer dia. (inch)	9	12	15	18	21	24	27	Total length in Km
Length in Km	18	26	13	10	7.0	6.0	1.2	
Sewer dia (inch)	30	33	36	42	48	54	66	97 Km
Length in Km	2	1.3	2	4.5	1.0	5.0	0	

3.2. New sewerage system under construction by PHED

Salient features of the sewerage scheme being constructed by PHE Department along with present progress are given below;

Administratively approved cost	Rs 355.775 million
Cost of Technical Sanction	Rs 360.491 million
Expenditure to date	Rs 239.429
Scheduled date of completion	28.12.2016
Completion status	A sum of Rs 110 million is required to complete the entire system as per scope.

Description of work	Unit	Quantities as per estimate	Current Status as in Dec. 2018
Screening Chamber 28'×14'	No.	1	In progress
Collecting well 26' i/d	Nos.	2	
Pump house 12'×12'	No.	1	
Submersible pumps 6 cusec	Sets.	4	
Submersible pumps 2 cusec	Sets.	2	
Forced main GRP 36" i/d	Rft.	9,275	7,000
RCC sewers			
9" dia	Rft.	50,586	41,255
12" dia	Rft.	19,541	15,807
15" dia	Rft.	6,482	3,432
18" dia	Rft.	6,289	2,515
21" dia	Rft.	1,160	o
24" dia	Rft.	3,789	0
27" dia	Rft.	7,315	924
30" dia	Rft.	6,415	453
33" dia	Rft.	10,343	o
36" dia	Rft.	956	60
42" dia	Rft.	9,839	7,779
48" dia	Rft.	93	144

3.3. Existing pumping / disposal stations

The detail of each pumping station already working in the city is given below;

Location	Nos of collect. Tanks	Nos of pumps	Discharge each (cusecs)	Total discharge (cusecs)	Motor BHP	Working status	Force main /S. carrier			Ultimate disposal
							Size (inch)	Length (ft)	Cond.	
Lorry Adda	03	02	5.0	14.0	80	Fair	16" dia	2500'	Poor	Broad irrigation
		01	4.0		60				Fair	
Old Multan Road	03	06	4.0	24.0	80	Poor	16" dia	1800'	Fair	Sukh Bias creek
451/EB	02	02	3.0	22.0	40	Fair	Sullage carries			Sukh Bias creek
		04	4.0		60					
Rahamatabad	2	2	1	2.0	25	Poor	8" dia	500'	Poor	Broad irrigation

Rehmatabad pumping station will be eliminated after commissioning of the newly laid system by PHED.

3.4. The main issues and problems in the system

The main problems and bottlenecks confronted by the city are given below:

3.4.1. Damaged & surcharging sewers

Some of the sewers have been choked or damaged and are resulting in surcharging and overflowing of waste water thus damaging public as well as private property. These sewers will require replacement. The detail is given below:

S.N.	From	To	Length in feet	Dia in inches	Problem	Solution
1	Chungi No.5	Multan road disposal	8,000	42"	Semi chocked	Desilting/ Replacement
2	Chungi No.5	Lorry Adda	5,000	36"	Semi chocked	do
3	Lorry Adda	Fawara Chowk	3,000	24", 27" &30"	Semi chocked	do

3.4.2. Areas flooded with waste water

Under mentioned areas of the city in the western side are usually subjected to waste water flooding because of sewer surcharging and overflowing.

1- Akhtar Town	2- Marzi Pura (Fareed town	3- Marzi Pura Kachi abadi
4- Iqbal nagar	5- Madina colony	6- Yousaf block & Zahidabad

- Main reason for flooding of these areas is the surcharging of main outfall sewer from Fawara Chowk to Multan road disposal.

Following areas in south-east of the city are also flooded badly.

1-Mujahid colony	2- Green Town	3- Shah Faiz Colony
4- Taj Park	5- Amjad Town	6- Bairki
7-New Bairki	8- Chack NO445 EB	

- The sewers in these parts of the city were completely chocked due to non-desilting and being at the remote end of the sewerage system. These sewers are being replaced by PHED now and after completion of the replacement these areas will be relieved of the flooding.

3.4.3. Un-served areas

The following areas of the city have not been provided with sewerage system as yet.

1- Govt. housing scheme	2- Mujahid Colony (partly)	3-445/EB (partly)
4- Ali town	5- Chak No. 447/EB	6- Zeshan town
7- Doltana farms	8- Green view	9- Jevan town
10- Alharam housing	11- Gulberg housing ph-II &III	12- Gulshan e Islam
13- Bairki (part)	14- Lot Bhattian	15- Bhatta Yousafabad
16- New city housing		

Extension of the facility to the above mentioned un-served areas is needed serving the entire population of the city.

3.4.4. Problems in the pumping stations

Presently under mentioned components of these disposal stations need repairs or replacement;

Location of disposal works	Year of construction	Required rehabilitation required
Existing Multan Road Disposal	1982-83	<ul style="list-style-type: none"> • Replacement of 4 Nos sullage pumping units • Replacement of MCUs =2 Nos • Replacement of suction & delivery pipes of all pumping units and sluice valves. • Repair of collecting tanks (plaster + railing) • Repairs of screening chambers (plaster + railing + manhole cover) • Replacement of screens = 2 Nos • Replacement of penstock = 2 Nos • Repair of boundary wall.
Lorry Adda disposal station	1930	<ul style="list-style-type: none"> • Replacement of 2 Nos sullage pumping units • Replacement of MCUs=2 Nos • Replacement of suction & delivery pipes of all pumping units • Replacement of penstock • Repair of collecting tanks (plaster + railing) • Repairs of screening chambers (plaster + railing + manhole cover) • Replacement of screen = 2 Nos • Replacement of sluice valves
Chak No. 451/E.B disposal station	2007-2008	<ul style="list-style-type: none"> • Replacement of MCUs = 1 Nos • Replacement of suction & delivery pipes of all pumping units • Repair of collecting tanks (plaster + railing) • Repairs of screening chambers (plaster + railing + manhole cover) • Replacement of penstock= 1 No • Replacement o screens = 2 Nos • Replacement of sluice valves
Rahamatabad disposal station	1992-93	<ul style="list-style-type: none"> • Replacement of MCU = 1 No • Repair of approach road • Repair of collecting tanks, screening chamber and pump house. • Replacement of suction & delivery pipes of all pumping units • Replacement of sluice valves • Repair of approach road

3.4.5. Desilting of sewers and collecting tanks

- 1) Number of sewers are being silted up and choked because of non-desilting of the sewers. Manual desilting of manholes is being done by MC but it is not so effective unless the silt from the barrel of the pipes is removed. For this purpose 2 No sewer desilting winch machines are required to eliminate the flooding of sewer line.

- 2) MC is not de-silting the collecting tanks due to which the sewer lines are being choked. Hence winch machine for the de-silting of collecting tanks will be required to keep the collecting tanks free of silt.

3.4.6. Sucker & jetting machines

01 No sucker and 01 No jetting machines are being used by MC to remove blockades and cleaning of sewers. The sucker machine is quite old and requires repairs along with supply of suction pipes. However, jetting machine is working in good condition.

3.4.7. Gully grating chambers and manhole covers:

- In some areas gully grating chambers have been provided in the sewerage systems to trap the silt and the floating materials but these are damaged and need repairs.
- In other areas these have not been provided. As such all floating materials and muck are entering into the sewers and are the main reason for choking the sewers. The gully grating chambers should be provided for prevention of sewer choking.
- Some of the manholes were observed to be damaged which should be repaired along with installation of new manhole base frames.
- Manhole covers at many places are missing and MC is not attending these complaints because of money constraints. Further MC will need to replace the missing manhole covers along with some base frames. MC should keep adequate number of manhole covers and base frames in stock to replace the covers immediately after these are damaged or stolen.

3.4.8. Sullage carriers

The sullage carriers of all disposal works need repairs through certain lengths which should be got repaired.

3.4.9. Waste water treatment

Waste water from all zones is either being disposed-off in the Sukh Bias creek or being used for broad irrigation of the lands situated around Burewala city. No treatment facility is available at all discharge points which is polluting the streams and lands. Waste water treatment plants are required to be constructed to lower down the BOD level as per National Environmental Quality Standards (NEQS).

3.4.10. Consumer connections

No consumer sewer/drain connection survey in the city has been conducted by this time. Hence the exact number of these connections cannot be estimated at this stage. However 718 Nos. drainage connections are available and paying per annum charges.

3.4.11. Tariff structure

All the sewer connections are not being charged. Only new connections being installed now are charged at the rate of Rs 200 per connection per annum.

3.5 Operation & maintenance cost vs revenue recovery

The operation & maintenance cost of the sewerage system for the last five years along with the revenue recovery is given below;

O&M Expenditure vs Revenue Recovery (million Rs) (includes manpower, electricity, repairs/replacement & supplies)						
Year	2013-14	2014-15	2015-16	2016-17	2017-18	Total for 5 years
O&M expenditure	21.396	22.207	23.4	21.217	19.246	107.47
Revenue earned	0.08	0.09	0.092	0.107	0.12	0.49
Percentage recovery vs O&M cost	0.37%	0.43%	0.39%	0.50%	0.62%	0.46%
Subsidy given	21.316	22.117	23.308	21.11	19.126	106.98

The service charges levied for the liquid waste management are very nominal and the collection of the revenue is not given any attention: neither by the key officers nor by the public representatives.

3.6 Manpower deployed

The manpower deployed presently for the operation & maintenance of the system is given below against the total regular strength of 52 persons.

Pump operators	7
Baildars	2
Supervisors	2
Sewer men	33
Total	44

MC is demanding additional manpower because of increase in population as they are serving those areas in the city which are not included within the municipal boundary.

3.7 Service delivery level

The service delivery is not satisfactory. North zone is facing poor service delivery because of;

- Main sewer from Fawara Chowk to Multan road disposal is getting choked and at some places it has been completely choked. This is the main reason for choking of the branch and lateral sewers. All these sewers should be de-silted if possible and should be replaced if desilting is not possible.
- The area lying in remote end of the system are being silted up because of water stagnancy and very low velocity of water.
- In 40% of the city area no sewerage facilities have been provided.
- The city has main and branch sewers on main roads and streets but most of the streets are not equipped with lateral sewers. These areas are being served with surface drains discharging into the sewers without gully grating chambers which is allowing all the silt and the floating materials in the sewers. This forms the main reason for choking of sewers and flooding of the roads and streets.
- MC Burewala is desilting the sewers with manual methods which are least effective.

- Service delivery in areas with healthy sewerage system is good but it is poor in the areas which are subjected to sewer surcharging and flooding as well as those areas where sewerage system does not exist.

-

3.8 Remedy to the main issues

Interventions described below are required to be implemented for relieving the flooded areas.

- a) Rehabilitation or replacement of chocked sewers.
- b) Rehabilitation of the disposal/pumping stations.
- c) Completion of the system being laid by PHED.
- d) Laying the facility in the unserved areas.
- e) Construction of waste water treatment plants.

Section-4 Solid waste management

4.1 Existing situation

4.1.1 Available resources

a) Equipment & Machinery

Under mentioned collection and transportation machinery is available with MC to handle the solid waste.

S.N	Equipment/machinery	Total available Nos.	Working but requiring repair (Nos)
1	Trolleys	5	4
2	Tractors	8	8
3	Arm roll truck	1	1
4	5.0 m3 containers	23	0
5	Container carrier	1	-
6	3.0 m3 containers	17	7
7	Front blade tractors	1	-
8	Front end loaders	2	1
9	Water bowser with tractor	1	-
10	Hand carts	40	40
11	Dumper truck	1	1

The existing machinery is neither sufficient nor cost effective and efficient giving rise to low efficiency of collection and disposal of the waste and as a result of that MC is facing higher waste management cost as well as complaints regarding the insanitary conditions in the city. Efficient and cost effective machinery is needed to increase the efficiency of collection and transportation for improving the sanitary conditions and lowering down the operational and maintenance costs.

b) Manpower Deployed

The manpower deployed for collection, transportation and disposal of the solid waste is given in the table below. As indicated by MC Officers, this manpower is not sufficient to serve the entire city at the given standards. Additional manpower required by the MC is also given here. Actual requirement will be identified after detail design and implementation of the project.

Slot	Sanctioned strength	Existing strength	Vacant posts	Manpower on daily wages	Total man power deployed	Additional MC demand
Sanitary workers	186	146	40	46	192	50
Vehicle drivers	14	5	9	0	5	9
Supervisors	0	0	0	0	0	0
Sanitary inspectors	2	2	0	0	2	2
Clerk	4	4	0	0	4	0
Other	0	0	0	0	0	10
Total	206	157	49	46	203	71

The city has un-satisfactory solid waste management system. Limitation in resources is described as under;

4.2 Reasons for poor service

- a) MC is facing shortage of vehicle drivers and other staff.
- b) The equipment and machinery is neither efficient nor adequate to serve the entire city
- c) No landfill site is available for dumping of solid waste. Currently waste is being dumped in open space near Chak No. 435/E.B, along Multan road and Arifwala road which is totally unhygienic.
- d) The waste is being openly dumped without compaction and provision of covers which is creating all sort of hazards say; pollution of underground water, vector and vector borne diseases, obnoxious smell and highly insanitary conditions.
- e)

4.3 Un-served and partially served areas

The entire city is not served with solid waste collection and disposal. 55% area of the city is fully served, 12% is partially served and 33% is un-served as marked on the map. In partially served areas service is rendered intermittently depending upon availability of manpower and transportation machinery. The detail of these areas is given below.

a) Partially served areas

No regular service is rendered in the under mentioned areas. The main complaints are attended by sending the machinery & labor once or twice a week.

1	Zahidabad	2	Judicial colony	3	Chak No. 445/E.B
4	Govt. Housing Society	5	Kachi abadi	6	Shah Faiz Colony
7	Fazlabad (one part)	8	A part of Raizabad	9	A part of Yaqoobabad
10	Iqbal Nagar				

b) Unserved areas

Under mentioned areas are still unserved;

1	Zeshan town	2	Green view	3	Chak No. 447/E.B
4	Gulberg housing scheme	5	Ali town	6	Gulshan e Islam
7	Gulberg housing scheme-2	8	Doltana farms	9	New city housing
10	Shadman colony	11	Sadiq town	12	Defense view H S
13	Bismillah town	14	Alfatah city	15	Al-Raheem city
16	Chak No. 435/E.B	17	Mian town	18	Shaheen villas
19	Anwar town	20	Fiazabad	21	Shabir town
22	Kachi abadi Azeemabad	23	Fine city	24	Chak No. 441/E.B
25	Fazlabad (Part)				

4.4 Solid waste Generation & Disposal

The solid waste management efficiency along with present dumping sites are given below;

Total waste generated per day		Total waste collected (Tons)		% Efficiency of disposal	Name of dumping sites with distance in Km from the city center		
Cubic meters	Tons	Cubic meters	Tons		SiteNo-1	SiteNo-2	SiteNo-3
240	120	132	66	55%	Chak No. 435/E.B	Along Multan road	Along Arifwala road
					Present dumping	Site now abandoned	Site now abandoned
Distance from city center (Km)					4.5 KM	3.5 KM	4 KM
Open dumping= O Landfill= LF					O	O	O

4.5 Landfill development

Approximate area of 17 acres will be required for the next 10 years for construction of landfills for safe and sanitary disposal of the solid waste of the city. Presently the waste is being dumped in depressions belonging to a private person in Chack No-435 EB which has got an area of 6 acres. MC is trying to procure 17 Acres land near Chak No. 423/E.B for landfill. The suitability of the landfill site will be determined after detailed surveys and design of the project by catering the requirement of the environmental standards in vogue in Punjab.

4.6 Vehicle parking Area:

MC has no built-up parking area at present. Vehicles are parked in MC colony near Fire Brigade in open space measuring 3 kanal. This space is required to be converted in to proper parking area by construction of parking sheds, vehicles washing and service arrangements, small office and other allied facilities.

4.7 Levying of sanitation fees

No sanitation fee has been levied by MC and the entire expenditure given below is being met from MC's own resources and the PFC share being given by Provincial government.

4.8 Solid waste management financials (million Rs)

Year	2013-14	2014-15	2015-16	2016-17	2017-18
O&M Expenditure	78.827	92.723	101.568	119.768	121.546
Sanitation fee/month per house hold	Nil	Nil	Nil	Nil	Nil
Subsidy injected	78.827	92.723	101.568	119.768	121.546

MC will have to levy the sanitation fee to meet the expenditure on solid waste management or at least to lower down the subsidy presently being injected.

4.9 Service delivery

At the average, the service delivery level is not good with 55% efficiency. Some portion of the city is either un-served or partially served because of shortage of sanitary staff and machinery & equipment whereas the existing machinery and equipment is inefficient having costly operation and maintenance.

The solid waste is being dumped in the depression near Chak No. 435/E.B which is totally unhygienic because no proper landfill site is available. This is creating hazards like obnoxious smell, sub soil water pollution and breeding of vectors causing water borne and vector diseases. Apart from that this is also creating insanitary conditions resulting in frustration in the citizen.

Section-5 Roads

5.1 City Roads Hierarchy

The main roads in the city and emerging from the city have under mentioned hierarchy;

S.No	Name of the road	Owner department
1	Burewala- Vehari road	Punjab Highway road
2	Burewala-Lahore road	do
3	Burewala-Chichwatni road	do
4	Luddun road	do
5	All other roads in the city	Municipal Committee roads

All these roads have been marked on the map of the city in different colors

5.2 Existing situation

Some of the primary roads in MC Burewala are in good condition & few main roads need rehabilitation, widening & improvement. Further many of the secondary roads/streets require rehabilitation. The detail of the problem roads is given below;

Problem roads in Burewala City

S.N	Name of road	From	To	Ownership	Pavement Type	ROW (ft)	Paved width (ft)	Approx. length (Km)	Condition
1	Joyia Road	Chowk Qasian	Chamra Mandi (Pump)	MC, Burewala	T.S.T	40	16	2	Poor
2	Mujahid colony road	Phatic Mujahid Colony	Canal	MC, Burewala	T.S.T	30	10	2	Poor
3	Dr. Irfan Ali road	Nadeem Iron Store	Office Agriculture	MC, Burewala	T.S.T	30	16	1	Poor
4	Iqbal nagar road	Multan Road	Iqbal Nagar	MC, Burewala	T.S.T	30	10	1.5	Poor
5	Fruit Mandi road	Lat Bhattian	Ishtiq Nagar	MC, Burewala	T.S.T	25	10	1	Poor
6	Barki road	Shah Faiz Park	Chak No. 445/EB Along BTM	MC, Burewala	T.S.T	28	16	3	Poor
7	Disposal road	Graveyard Shah Zakrai	Chak No. 435/EB near UC office	MC, Burewala	T.S.T	22	10	1	Poor
8	Shabir Town road	Chichawatni Road	Shabir Town	MC, Burewala	T.S.T	25	12	0.75	Poor
9	Imam Bargha road	Fountain Chowk	Imam Bargha	MC, Burewala	T.S.T	30	10	2	Poor
10	Adda Dewan link road	Adda Dewan Sahib	Habib Colony Link Luddun Road	MC, Burewala	T.S.T	30	10	1.5	Poor
11	Sadiq town road	Sadiq town	Chichawatni Road	MC, Burewala	T.S.T	24	10	2.5	Poor
12	Sharif town road	Sharif Town	Fareed Town	MC, Burewala	T.S.T	20	10	3	Poor
13	Akhtar Town road	Street No. 1 Marzi Pura	Akhtar Town	MC, Burewala	T.S.T	20	10	1.5	Poor
14	New Barki road	Mujahid Colony	Barki Link Canal	MC, Burewala	T.S.T	32	20	2	Poor

15	Afaq Khan Road	Afaq Khan Chowk	Multan Road	MC, Burewala	T.S.T	30	10	1.5	Fair
16	Arif Bazar	Arif Bazar	Lorry Adda chowk	MC Burewala	Asphalt	53	53	0.6	Poor
17	College Road	Goal Chowk	Multan Road	MC Burewala	Asphalt	48	48	0.46	Poor
18	Fish Bazar	Vehari Bazar	Joiya Road	MC Burewala	TST	30	16	0.25	Poor
19	Rail Bazar	Goal Chowk	Joiya road	MC Burewala	Asphalt	50	43	0.15	Poor
20	Vehari Bazar	Goal Chowk	Chowk Qasian	MC Burewala	Asphalt	49	40	0.24	Poor
21	Vehari Bazar	Chowk Qasian	Choungi No. 5	MC Burewala	Asphalt	70	30	0.83	Poor
22	Goal Chowk	Goal Chowk	Office M.C	MC Burewala	Asphalt	60	49	0.167	Poor
23	Anwar Town	Main Road		MC Burewala	TST	25	10	0.35	Poor
24	Shah Faiz Park	BTM	Barki Road	MC Burewala	TST	20	10	0.88	Poor
25	Shah Faisal colony	Doctor Majid	Meezan Super Store	MC Burewala	TST	20	10	0.97	Poor
26	Dumping Point	Pull Rehmat Abad	Chak 423/EB	MC Burewala	TST	24	24	2.32	Poor
27	Lat Bhattian	Multan Road	Graveyard	MC Burewala	TST	20	10	0.37	Poor

5.3 Widening & improvement of roads

12 No. major roads required widening & improvement in the city. The detail of roads is given below:

Sr. No	Name of road	ROW (Ft)	Length (Km)	Road width (Ft)	
				Existing	Proposed
W1	Joyia Road	40	2	16	20
W2	Dr. Irfan Ali road	30	1	10	20
W3	Iqbal nagar road	30	1.5	10	12
W4	Fruit Mandi road	25	1	10	12
W5	Barki road	28	3	10	12
W6	Disposal road	22	1	10	12
W7	Shabir Town road	25	0.75	12	12
W8	Sadiq town road	24	2.5	10	12
W9	Sharif town road	20	3	10	15
W10	Akhtar Town road	20	1.5	10	12
W11	New Barki road	32	2	10	12
W12	Afaq Khan Road	30	1.5	20	20

5.4 Resurfacing of roads

The condition of the following roads is very poor and required urgency resurfacing. The detail of the roads is given below:

Sr. No	Name of Roads	Type of Surface	Road Width (Ft)	Length (Km)
R1	Arif Bazar	Asphalt	53	0.6
R2	College Road	Asphalt	48	0.46
R3	Fish Bazar	TST	16	0.25
R4	Rail Bazar	Asphalt	43	0.15
R5	Imam Bargha Road	TST	10	1.45
R6	Vehari Bazar	Asphalt	49	0.24
R7	Vehari Bazar	Asphalt	30	0.83
R8	Goal Chowk	Asphalt	49	0.167

R9	Anwar Town	TST	10	0.35
R10	Shah Faiz Park	TST	10	0.88
R11	Add Dewan Sahib	TST	10	0.45
R12	Mujahid colony road	TST	12	1
R13	Shah Faisal colony	TST	10	0.97
R14	Dumping Point	TST	10	2.32
R15	Lat Bhattian	TST	10	0.37

5.5 Road Culverts & medians

Some road culverts and medians have been observed to be damaged which should be repaired.

Section-6 Parks and open spaces

6.1. Existing parks

Burewala city has three main parks as mentioned below;

Inventory of existing condition of parks owned by MC Burewala

S No	Name of Park	1	2	3	4
		Children Park	Park Jamia Hanfia	Family Park	Khadeeja tul Kubra
1	Location	Housing Scheme	I-Block Burewala	Chungi No.5 Aziz Abad	Bypass road
2	Area in acres	2-Acre	3-Acre	4-Acre	1-Acre
3	Watering & Irrigation	Yes	Yes	Yes	Yes
a	Tube well	No	Yes	No	Yes
b	Water Supply from municipal system	Yes	Yes	Yes	No
c	Underground water tank	No	No	No	No
d	Pumping unit	No	Yes	No	No
e	Distribution pipe lines	No	Yes	No	No
f	Valves	Yes	Yes	Yes	No
g	Sprinkler system	No	No	No	No
4	Landscaping & Plantation				
a	Grass beds	Yes	Yes	Yes	No
b	Flower beds	Yes	No	No	No
c	Hedges	No	No	No	No
d	Plants	Yes	Yes	Yes	No
5	Lights				
a	Poles and masts	Yes	Yes	Yes	Yes
b	Cables	Yes	Yes	Yes	No
c	Brackets and lights	Yes	Yes	Yes	No
d	Bulbs and tubes	Yes	Yes	Yes	No
e	Control units	Yes	Yes	No	No
6	Structures				
a	Buildings	Yes	Yes	Yes	No
b	Fountains & water fall structure	Yes	No	No	No

c	Walkways	Yes	Yes	Yes	No
d	Bridges & culverts	No	No	No	No
e	Boundary wall & gate	Damaged	Yes	Yes	Yes
f	Toilets	Yes	No	Yes	No
g	Lakes & brooks	No	No	No	No
7	Mechanical equipment				
a	Pumping units	No	Yes	No	No
b	Swings	Yes	Yes	Yes	No
c	Children games	No	No	No	No
d	Fixtures	No	No	No	No
e	Benches	Yes	Yes	Yes	No
8	Sanitation & water supply				
a	Litter bins	Yes	Yes	Yes	No
b	Toilet fixtures	Yes	No	Yes	No
c	Sewerage system	Yes	No	Yes	No
d	Vegetation cuttings & disposal	No	No	No	No
e	Drinking water	Yes	Yes	No	No
f	Water pipes	Yes	Yes	Yes	No

6.2. Rehabilitation of the existing parks

Some of the facilities in these parks are working in good condition but some of these are in poor condition and need to be rehabilitated. On the other hand some important facilities are missing and need to be provided. The detail of required interventions in these parks are given below for their upgrading;

S.N.	Name of Park	Area in acres	Details of rehabilitation and extension of facilities
1	Children park	1	1) Improvement of water supply system. 2) Provision of sprinkler lawn watering system. 3) Repair of Fountain. 4) Replacement of park lights by LED lights 5) Replacement of benches 6) Construction of additional toilets

			<ul style="list-style-type: none"> 7) Provision of additional swings and children outdoor games. 8) Repair of civil works
2	Jamia Hanfia park	3	<ul style="list-style-type: none"> 1) Provision of sprinkler lawn watering system 2) Provision of fountain and water fall structure. 3) Replacement of park lights by LED lights 4) Replacement of benches 5) Provision of additional swings and children outdoor games. 6) Rehabilitation of toilets with sewer. 7) Repair of civil works
3	Family park	4	<ul style="list-style-type: none"> 1) Provision of lawn sprinkling system 2) Installation of new park (LED) lights 3) Rehabilitation of walkways. 4) Provision of additional benches 5) Construction of new toilets with sewer. 6) Provision of additional swings and children outdoor games. 7) Provision of drinking water arrangements. 8) Repair of civil works
8	Khadeeja tul Kubra	1	<ul style="list-style-type: none"> 1) Provision of lawn sprinkling system 2) Installation of new park (LED) lights 3) Rehabilitation of walkways. 4) Provision of additional benches 5) Construction of new toilets with sewer. 6) Provision of additional swings and children outdoor games. 7) Provision of drinking water arrangements. 8) Repair of civil works

6.3. Open spaces

The city has 3 open spaces. Municipal Committee desires to convert the open spaces in to parks because of congestion in the existing parks. Construction of these parks will bring about good recreational facilities for the citizen. Details of open spaces for conversion in to parks are given below:

Conversion of open spaces to Parks/Play-ground

S.No	Name of open space	1	2	3
		Marzipura	Zahidabad	Habib colony
1	Location	Multan road	Bairki Road	Pasco Road
2	Area in acres	2-Acre	5-Acre	3-Acre
3	Present land use	Nil	Nil	Nil
4	Water table depth & quality	Water table depth = 70 ft Quality-good		
5	Does MC intends to convert it into	Yes	Yes	Yes

	park?			
6	Does MC intends to convert it into playground or stadium?	-	-	-
7	If no what are bottlenecks	-	-	-
8	Will the space attract visitors if converted to park?	Yes	Yes	Yes
9	If both the proposals are not there then what land use is proposed by MC?	-	-	-

6.4. Expenditure on Maintenance of Parks

Under mentioned expenditure has been incurred on the upkeep of parks during the last 5 years;

(All figures in million Rs.)

Year	2013-14	2014-15	2015-16	2016-17	2017-18
O&M cost	2.753	3.544	4.638	4.38	5.367
Revenue earned	Nil	Nil	Nil	Nil	Nil
Subsidy injected	2.753	3.544	4.638	4.38	5.367

Section-7 Street Light

7.1 Existing Situation

MC Burewala has street lights on major roads and Mohallahs

7.1.1 Street lights on Major roads:

Some roads in the city have been provided with street light. The detail of these installations is given below;

S.N.	Name of Road/Street	Type of luminaries	No. of Lights	Type of Poles
1	Stadium Road	LED 50 Watt	25	Double Arm Pole
2	Link BTM Road & Part of BTM Road	LED 50 Watt	26	WAPDA Pole
3	Vehari Bazar Road	LED 50 Watt	52	Double Arm Pole
4	Vehari bazar road (P2)	Energy saver	10	WAPDA Pole
5	Arif bazar	Energy saver	15	WAPDA Pole
6	College road i/c goal chowk	Energy saver	15	WAPDA Pole
7	Rail bazar	Energy saver	15	WAPDA Pole
8	City graveyard road	LED 50 Watt	15	WAPDA Pole

7.1.2 Ward wise detail of existing street lights

Energy saver bulbs are being used instead of LED lamps which are fulfilling the requirements in different Mohallas.

Ward No	Area	Energy Saver 24 to 30 W	Operational Status	Poles types WAPDA pole /Street light pole
1	Waraich Town Jilal Town, Chak No. 437/E.B	21	12	WAPDA pole
2	Aziz Abad Gaow Shala	10	6	WAPDA pole
3	Bashier Town	15	10	WAPDA pole
4	Gulshan e Rehman	17	8	WAPDA pole
5	Madina Colony	30	11	WAPDA pole

6	Madina Colony Qaberstan Road	18	10	WAPDA pole
7	Iqbal Nagar	33	15	WAPDA pole
8	Muhammad Nagar	21	12	WAPDA pole
9	Shadman Colony	10	5	WAPDA pole
10	Ahata Shah Nawaz	19	11	WAPDA pole
11	W block	38	20	WAPDA pole
12	F block	17	8	WAPDA pole
13	Lot Bhattian	23	11	WAPDA pole
14	Masoom Shah Colony	28	13	WAPDA pole
15	Habib Colony	26	12	WAPDA pole
16	Civil Park	30	15	WAPDA pole
17	Yousaf Abad	14	6	WAPDA pole
18	Chak No. 447/ E.B	17	11	WAPDA pole
19	Chak No. 445/ E.B	22	14	WAPDA pole
20	New Bairki	14	6	WAPDA pole
21	Shah Faiz Park	29	12	WAPDA pole
22	Mujahid Colony No.1	31	20	WAPDA pole
23	Alla Abad	40	16	WAPDA pole
24	Azeema abad	27	14	WAPDA pole
25	Chak No. 435/ E.B	28	11	WAPDA pole
26	Shah Faisal Colony, Shah Faiz Colony	26	13	WAPDA pole
27	Yaqooba abad	14	6	WAPDA pole
28	Rehamt Abad	10	5	WAPDA pole
29	P block	19	11	WAPDA pole
30	N Block	10	8	WAPDA pole
31	M Block	17	11	WAPDA pole
32	H Block	40	16	WAPDA pole
33	A Block	35	17	WAPDA pole

34	Satellite Town	30	15	WAPDA pole
35	Mujahid Colony No.2	36	14	WAPDA pole
36	Gulbarg Colony	10	6	WAPDA pole
	Total	825	411	

7.2 Replacement of luminaries & Street light poles on Roads

The lights equipped with energy saver are required to be replaced by LED lights and Separate Street light have to be provided for saving the energy cost. The replacements will be done on the under mentioned roads;

S.N.	Name of Road/Street	Existing type luminaries	No. of Lights	Type of Poles
R1	Vehari bazar road (P2)	Energy saver	10	WAPDA Pole
R2	Arif bazar	Energy saver	15	WAPDA Pole
R3	College road i/c goal chowk	Energy saver	15	WAPDA Pole
R4	Rail bazar	Energy saver	15	WAPDA Pole
R5	City graveyard road	LED 50 Watt	15	WAPDA Pole

7.3 Repair of allied components

Some allied components of these lights such as cables, wires and control panels require repairs or replacement because of which some of the lights are not operational. The repairs should be affected to operate the lights.

Photo electric switches should be installed with each control panel to activate the auto switching of lights.

7.4 Provisions of new street lights

The detail of the proposed provision of services is as follows.

S.N	Name of road/street	Length (Km)
N1	Vehari Road (Fawara Chowk to Disposal Multan Road)	6.2
N2	Chichawatni road (Lari Add to Chak No. 435/EB)	2.0
N3	Main Joyia Road	0.5
N4	BTM road (Judicial Colony to Fawara Chowk)	1.8
N5	Zahidabad road (Faiz Park colony to Zahid Abad)	0.8
N6	Factory road (Ghalla Mandi to Afaq Khan Chowk)	0.7

N7	Luddun road (Choungi No. 5 to Judicial Colony)	1.7
N8	Masoom Shah Road	1.0
N9	Chak No. 505/EB Road (Chongi No. 5 to Bismillah Town 505/EB Road)	0.6
N10	PASCO road (Habib Colony Phatic to Joyia Road)	0.9
N11	Islam Marble Road (LHR Road to Sadiq Town Corner)	0.5
N12	Doggar Road	0.7
N13	Waraich Town Road	1.5
Total length in Km		18.9

7.3 Expenditure on street lights

Under mentioned expenditure on the Operation & Maintenance of the existing street lights has been incurred by MC Burewala during the last 5 years. This includes the energy cost, manpower cost and cost of repairs and replacements.

(All figures in million Rs)

Year	2013-14	2014-15	2015-16	2016-17	2017-18
O&M Expenditures	0.984	0.978	0.857	0.924	1.695

The expenditure is quite low as the energy cost is lesser because of energy saver luminaries.

Section-8

Public Private Partnership projects & Collaborative Projects executed by MC

8.1. Planning & Execution of PPP projects

As informed by Chief Officer no project in the Public Private Partnership Mode & Collaborative Mode has ever been executed by the Municipal Committee or defunct TMA Burewala. As such the key officers and staff have no experience as well as capacity for planning estimation and execution of such projects.

Section-9

Budgetary provisions on development of services infrastructure and O&M Cost

9.1. Development expenditure

The expenditure incurred on the development projects from year 2013-14 to the current financial year & source of financing is given below

(All figures in million Rs)

Description	2013-14	2014-15	2015-16	2016-17	2017-18
Expenditure on Development Projects	91.808	120.529	32.043	38.701	96.479
Source of Financing of Development Projects	Own source revenue	ADP grants	PFC share	PPP	Others (Specify)
	√	-	√	-	-
Expenditure on O&M of services and revenue generated					
Water supply					
Total O&M cost	41.38	46.04	47.89	47.08	51.28
Revenue earned	2.86	2.99	2.805	2.593	3.26
% revenue earned vs O&M charges	6.90%	6.50%	5.80%	5.50%	6.40%
Subsidy injected	38.52	43.05	45.085	44.50	48.02
Sewerage/drainage					
Total O&M cost	21.396	22.207	23.4	21.217	19.246
Revenue earned	0.08	0.09	0.092	0.107	0.12
% revenue earned vs O&M charges	0.37%	0.41%	0.39%	0.50%	0.62%
Subsidy injected	21.316	22.117	23.308	21.11	19.126
Solid waste management					
O&M cost	78.827	92.723	101.568	119.768	121.546
Revenue earned	Nil	Nil	Nil	Nil	Nil

Subsidy injected	78.827	92.723	101.568	119.768	121.546
Parks					
O&M cost	2.753	3.544	4.638	4.38	5.367
Revenue earned	Nil	Nil	Nil	Nil	Nil
Subsidy injected	2.753	3.544	4.638	4.38	5.367
Slaughter houses					
O&M cost	0.324	0.329	0.826	0.16	0.161
Revenue earned	0.406	0.596	0.462	0.646	0.676
Subsidy injected (-) Income (+)	0.082	0.267	-0.364	0.486	0.515
Street Light					
Total Expenditure	0.984	0.978	0.857	0.924	1.695
Revenue earned	The service is not charged.				

Section-10 Manpower deployment & shortage

The manpower deployed by MC Burewala in various Municipal Services is given below. MC is experiencing manpower shortage in some of the services which is also explained herein.

S. No	Description	Sanctioned Regular strength	Actual Regular deployment	Regular Vacant Slots	Employed on daily basis	Shortage of regular personnel	Additional requirement
A	Office manpower						
1	Key officers (BPS-17 & above)	1	0	1	0	1	0
2	Sub engineers	1	0	1	0	1	0
3	Support staff (BPS-16 & below)	7	7	0	0	0	0
	Total office manpower (A)	9	7	2	0	2	0
B	Municipal services						
1	Water supply	73	70	3	0	3	18
2	Sewerage	52	44	8	4	0	0
3	Solid waste management	206	157	49	46	0	71
4	Parks	11	10	0	0	2	2
5	Roads	7	6	0	0	2	2
6	Street lights	1	1	0	0	2	2
7	Slaughter houses	1	1	0	0	2	2
	Total municipal services (B)	351	289	60	50	11	97
	Grand Total (A+B)	360	296	62	50	13	97

Section-11

Summary public opinion surveys regarding the municipal service delivery

S. No.	Name of Service	Total persons interviewed	Opinion of the persons interviewed				Average consumer opinion
			Poor (Nos)	Fair (Nos)	Good (Nos)	Excellent (Nos)	
1	Water supply quantity	8	4	3	1	0	Poor
2	Water supply quality	8	3	3	2	0	Fair
3	Sewerage	8	6	1	1	0	Poor
4	Drain cleaning	8	4	3	1	0	Poor
5	Street sweeping	8	0	6	2	0	Good
6	Solid waste collection & disposal	8	5	2	1	0	Poor
7	Condition Parks & play grounds	8	4	3	1	0	Poor
8	Slaughter house functioning	8	2	6	0	0	Fair
9	Street light functioning	8	6	2	0	0	Poor
10	General condition of roads	8	3	3	2	0	Good
11	Complaint attending capability	8	3	3	2	0	Good

Survey of Public general view over service delivery

S. No	Name of person interviewed	Muhallah or colony	Water supply		Sewerage	Drain cleaning	Street sweeping	Solid waste collection & disposal	Roads	Parks & play grounds	Slaughter houses	Street light	Complaint addressal
			Quantity	Quality									
1	Ammar Basheer	Warriach town	Fair	poor	Poor	Fair	Fair	poor	Fair	Fair	Fair	Poor	good
2	M. Anwar	Yaqoobabad	poor	good	Poor	Fair	Fair	Fair	poor	Fair	poor	Poor	Fair
3	Abdul Rasheed	Zahidabad	poor	poor	Poor	Poor	Fair	poor	poor	poor	Fair	Poor	poor
4	Javed Ali	Marzi pura	poor	poor	Poor	Poor	Fair	poor	poor	poor	Fair	Poor	Fair
5	M. Yaseen	Masoom colony	Fair	Fair	Poor	Poor	Fair	poor	Fair	poor	Fair	Poor	poor
6	Ansar Iqbal	Bhatta Yousafabad	poor	Fair	Poor	Poor	Fair	poor	Fair	poor	Fair	Poor	Fair
7	M. Shahid	Vehari bazar	good	good	Fair	good	good	Fair	good	Fair	Fair	Fair	poor
8	Faheem Khan	Y-block	Fair	Fair	good	Fair	good	good	good	good	poor	Fair	good