

Local Government & Community Development Department



Punjab Cities Program

Gap Analysis

of

Municipal Services infrastructure & service delivery

in

Okara City

July, 2019



Punjab municipal Development Fund Company

Section-1 City Background

1.1. District Status

Okara was originally a sub-divisional headquarters of Sahiwal district and emerged as the headquarters of the new district of Okara on the 1st of July, 1982. Okara derived its name from a tree known as 'OKAAN' which was standing on the embankment of a water tank, being maintained by a person known as "RANA". Prior to colonization, that was the only place for rest and drinking water in an otherwise, barren tract

1.2. Location

Okara district is composed of three sub-divisions Okara, Renala Khurd and Depalpur. Okara, the District Headquarters is about 127 Kilometers to the south-west of Lahore, on the National Highway and on the main Lahore-Karachi Railway track. Okara district spreads between latitudes of 30°-18' 'to 31°-08' North, and the longitudes of 73"-14' to 74"-09' East. The city coordinates are 30°-49' North latitude, and 73°-27' East longitude.

1.3. The Climate

Climate of the district varies from hot to very hot in summer and cold in winter especially in December and January. During the months of July and August, the weather is humid whereas spring is pleasant. Summer season starts in April and continues till September. June is the hottest month with mean maximum and minimum temperature of about 45 and 27 degree Celsius respectively. Winter season starts from November and lasts till February. Mean maximum and minimum temperature recorded during the month of January is about 20 and 6 degree Celsius respectively. Light rainfalls during winter season especially in the months of January and February is succeeded by a spell of pleasant spring weather. Monsoon starts in the first week of July. The average annual rainfall is about 625 millimeters.

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 357,935 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 443,396 persons in the year 2017 with an annual growth rate of 2.32 % and it is expected to rise to 557,695 persons in the year 2027. A large and thick 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 by consultation with MC staff & Public Health Engineering 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

Lower Bari Doab Canal (LBDC) is flowing at the western periphery of the city with designed discharge of 9800 cusecs. The average flows in this channel vary from 6500 to 8500 cusecs depending upon the water availability in the River Ravi. The canal is unlined and recharging the ground water in narrow belts on both sides with fresh water. The city has marginally fresh ground water near to the canal but the subsoil water of most of the city is brackish and unfit for human consumption. Skimming tube wells have been installed on the left bank of this canal to harness fresh subsoil water from the shallow aquifers being recharged by the canal. Water from these tube wells is being pumped into ground storage constructed at different locations of the city wherefrom it is again pumped into the overhead reservoirs and fed to the distribution system or pumped directly into the distribution system.

2.2. Water sources & pumping stations

2.2.1. The existing water sources

The city is divided into two zones by Lahore-Khanewal railway track and is called North & South Zones. Originally 19 tube wells for north zone were installed on the bank of Lower Bari Doab Canal (LBDC) between the LBDC and 4-L distributary whereas the tube wells for south zone were installed on the bank of 4-L distributary. Both the irrigation channels diverge away from each other at the south-western end of the city. The discharge of 4-L distributary is 260 cusecs only and after some time the water quality of the tube wells installed on the banks of this channel, deteriorated because of excessive withdrawals as compared to the recharge and became unfit for human consumption. In this way acute water shortage was experienced in the south zone.

2.2.2. Newly installed water sources

In order to address this issue of water shortage in the South Zone, Public Health Engineering Department (PHED) is executing a new scheme comprising of 26 tube wells of 1.0 cusec capacity on the left bank of LBDC in two groups. One group of 14 tube wells is located at the upstream of the LBDC in north of the city whereas the other group of 12 tube wells is located at south end of the city at downstream of LBDC. Two transmission mains each of 24” dia HDPE pipe from these groups of tube-wells, have been laid to transmit water to the ground storage being constructed in the southern zone. After installation of these tube-wells the present situation of the total source capacity is given below

Table-1 Total Source capacity

Zone	No. of tube wells	Capacity each (cusecs)	Total capacity (cusecs)	Working hours per day	Daily water production (mgd)	
					Present with 7 hours pumping	Possible with 15 hours pumping
North zone	Existing tube wells			Actual		
	18	1.0	18.0	7	2.84	5.74

	1	0.5	0.5	7	0.08	0.17
Total (North)	19	---	18.5	7	2.92	5.91
South zone						
Old tube-well	2	0.5	1.00	7	0.16	0.34
New tube-wells	26	1.0	26.0	Designed 15	8.78	8.78
Total (south)	27		26.5		8.94	9.12
Grand total	46	-	45.0	-	11.86	15.03
Present population of the city					443, 396	Persons
Possible water production per capita per day					33.5	Gallons

The quantity of water per capita per day can be adequate for the city if the water wastage is controlled by consumer metering and no further source capacity will be needed after commissioning of the newly installed tubewells.

Existing tubewells yield

It was reported by MC staff that 04 Nos tubewells have reduced their discharge and water quality of some of them has also been deteriorated due to over pumping. Hence replacement of these tubewells will be needed.

2.2.3. Scope of the ongoing scheme

Scope of the scheme being executed by PHED is described below;

Table-2 Scope of work of the scheme being completed by PHED

1	Tube wells 1.0 cusec capacity			26 Nos.
2	Transmission mains (225mm o/d to 630 mm o/d)			54,510 Rft
3	MS casing pipe 36"i/d for railway track crossing			360 Rft
4	Distribution System	3" to 24"i/d	PVC pipe	296,680 Rft
			HDPE pipe	26,800 Rft
5	Over Head Reservoir 100,000 gallons capacity			5 Nos.
6	Ground Storage Tanks in the city	100,000 gallons capacity		3Nos.
		150,000 gallons capacity		1 No
7	Pumping Machinery for tube wells			26 Sets
	Pumping Machinery for intermediate pumping stations			19 Sets
9	Staff Quarters			4 Nos.
10	Boundary wall for city water works			2,660 Rft
11	Pump House for tube-wells (12'x12')			26 Nos.
12	Pump houses for city water works			5 Nos
12	External Electrification			30 jobs

All tube-wells, transmission mains, GSTs, & OHRs have been completed. Distribution system is being laid. Funding position of the scheme is given below;

Total cost of the scheme	Rs. 800 million
Expenditure incurred up to June, 2019.	Rs 730 million
Balance funds not made available by now	Rs 70 million

The scheme can only be completed if balance funds are made available to PHED.

2.3 Intermediate Pumping stations:

Water pumped from tube wells is stored in ground storage tanks constructed in the intermediate pumping stations in the city from where it is further pumped into the overhead reservoirs or directly in the distribution system. Two intermediate pumping stations are located in the North Zone and 6 such pumping station including the newly constructed ones, are located in the South Zone. The description of these pumping stations is given below;

Table-3 Intermediate pumping stations in North Zone

Water works	Total No. of pumps	Capacity each (cusecs)	Total capacity (cusecs)	Working hour per day	Year of construction
Old water works	3	1.0	3.0	7	1971
	1	1.5	1.5	7	
Total	4		4.5	6	
Akbar Road water works	3	1.0	3.0	7	1971
	1	1.5	1.5	7	
Total	4		4.5	7	
Grand Total	8	-	9.0		

*These pumping units have outlived their life and have gone inefficient. The repairs are costing very high. Replacement of these pumping units is not included in the scope of the ongoing scheme being executed by PHED.

Table-4 Intermediate Pumping stations in South Zone

S.N.	Water works	Total No. of pumps	Capacity each (cusecs)	Total capacity (cusecs)	Working hour per day	Year of construction	No of pumping units requiring replacement
1	Jane Maula Road/	2	1.0	2.0	9	1987	Being abandoned
	Ghazi abad	4	2	8.0	As per need	Newly installed by PHED	
	Total active capacity	4	2.0	8.0			
2	Ghafoor Colony	6	2.0	12.0	do	Newly installed by PHED	
3	Chamra Mandi	2	1.0	2.0	9	1987	Being abandoned
		4	2.0	8.0	As per need	Newly installed by PHED	
		1	1.0	1.0			
	Total active capacity	5		9.0			
4	Sadiq Colony	3	2.0	6.0	As per need	Newly installed by PHED	
		1	1.0	1.0			
	Total active capacity	4		7.0			
5	New Khalid town	New OHR 100,000 gallons capacity fed from Ghafoor Colony pumping station					
6	Chak No. 5/4-L	Old OHR 10,000 gallons capacity fed from old tube-well installed at 4-L distributary.					

Total active capacity after commissioning of new scheme	19	--	36.0		
---	-----------	-----------	-------------	--	--

2.4 Storage Capacity:

Storage has been constructed in the form of ground storage tanks (GSTs) and overhead reservoirs (OHRs) as it is not possible to feed the OHRs directly from tube-wells because of long lengths of transmission mains and high pumping head involved. The status of the ground as well as overhead storage is given below;

Table-5 Detail of storage capacity in North Zone

S.N.	Water works	No. of GSTs	Capacity (gallons)	No. of OHRs	Capacity (gallons)	Year of construction	Replacements required
1	Akbar Road	1	80,000	-	-	1971	Outlived its life, replacement required but not included in the ongoing scheme of PHED
2	Old water works	1	80,000	1	50,000	OHR-1935 GST-1972	GST needs heavy repairs
	Total	2	160,000	1	50,000		

Table-6 Detail of storage capacity in South Zone

S.N.	Water works	Ground storage			No. of OHRs	Capacity (gallons)	Status of construction	Status
		Nos	Capacity each	Total Capacity				
1	Jane Maula Road	1	100,000	100,000	1	100,000	Pre-partition	OHR dismantled by MC
		-	-	-	1	100,000	Newly constructed by PHED	
	Total active capacity	1	100,000	100,000	1	100,000		
2	Ghafoor Colony	2	100,000	200,000	1	100,000	Newly constructed by PHED	
3	Chmara Mandi	1	80,000	80,000		-	1987	
		1	150,000	150,000	1	100,000	Newly constructed by PHED	
	Total active capacity	2	230,000	230,000	1	100,000		
4	Sadiq Colony	1	100,000	100,000	1	100,000	Newly constructed by PHED	
	New Khalid town	-	-		1	100,000	Newly constructed by PHED	
	Chak No. 5/4-L	From T/well 4-L			1	10,000	Old OHR	
	Total active capacity	6		630,000	6	510,000	After completion of the new scheme this storage capacity will be available	

2.5 Problems and gaps in the system

2.5.1 Water shortage

Acute water shortage exists in the entire south zone and especially in the below mentioned areas.

- 1- Sabri colony 2- Faisal colony No. 1&2 3- Chamanzar colony 4- Govt. colony
 5- Latifabad 6- Rehmatullah town 7-Chamanzar colony 8- Haq town
 9- Qadir colony 10- Khan colony No.1&2

Reasons for water shortage

- These parts of the city are located away from the Lower Bari Doab Canal (LBDC). Long transmission mains were involved in providing water to these areas. Some areas in this zone were provided water from LBDC tube-wells whereas for some areas the tube-wells were installed on the bank of 4-L distributary flowing nearer to this area and water was provided to these inhabitations.
- This irrigation channel does not carry enough discharge (260 cusecs only) to give greater recharge to the shallow aquifer. With passage of time the population increased and greater withdrawals from these tube-wells resulted in deterioration of water quality and reduced discharge. As such most of the tube-wells were closed. Presently only two tubewells are in operation and that too with lesser pumping hours. This resulted in acute water shortage in this zone.

After commissioning of the newly constructed scheme entire south zone will be covered by water supply system and no water shortage should persist.

2.5.2 Un Served Areas (shown in light pink color in the map)

a) The north zone

Most of this zone is not covered by the facility except for few area. The demand for the water supply system did not come up strongly from these areas because the subsoil water was fresh in the northern strip of this zone being nearer to the LBDC and residents had developed their own shallow water sources. Due to increase in population density, greater withdrawals from the aquifers are being done through private sources and that is why the water quality is deteriorating now. Therefore the residents of this area are also demanding fresh water supply system. The un-served inhabitations in this are given below;

Unserved areas in North Zone

1. Haroon town 2. Shafiq town 3. Al-Qadoos town 4. Shalimar town
 5. Al-Khair city 6. green city-II 7. Chack No-1/4L 8. Johar town
 9. Gulshan colony 10. Faisal Colony 11. Saad city 12. Society homes
 13. Green city 14. Fawad villas 15. Canal homes 16. Al- Raheem city
 17. Usman block

b) Un-served areas in south zone

Under mentioned areas located in the south zone are presently unserved.

- | | | |
|--------------------|------------------|-------------------|
| 1. Karmanwala town | 2. Bhutto Colony | 3. Noor Garden |
| 4. Roshan block | 5. Jawad Avenue | 6. Chak No. 55/2L |

These areas are outside the municipal limits and as per scope of work of the ongoing scheme of PHED, these areas are not being provided with water supply distribution system. Hence even after completion of this scheme the residents of these areas will not be provided with facility.

c) Contaminated water zones: (shown in light blue color in the map)

The pipe lines in the areas shown below, were laid in the year 1986 and were of cast iron, asbestos cement and PVC type. The streets in these areas are very narrow (5-10 feet) and subsequently sewer lines were also laid in these streets which damaged most of these pipelines.

- | | | |
|-----------------|----------------|--------------|
| 1-Shah Ali town | 2-Kot Fateh | 3-Dubai town |
| 4-Ghazia Abad | 5-Zafar colony | 6-Azhar town |
| 7-Khushi town | 8-Shams town | 9-Ahmad town |

Consequently leakages have developed from these pipes and water contamination is now witnessed.

Elimination of contamination

New distribution system is being laid in these areas by PHED. With completion and commissioning of this system the water contamination in these areas should be eliminated.

2.6 Filtration plants

18 filtration plants have been installed in the city to supply potable water to the inhabitants and people are fetching their drinking water requirements from these plants. Operation & maintenance of these plants is being looked after by MC. Repair of these plants is now needed to keep them in operation.

2.7 Water supply hours and consumer connections

Water Supply hours				Consumer connections			
Morning	Midday	Evening	Total	Domestic	Commercial	Industrial	Total
2.5	2.5	2.5	7.5	7722	37	Nil	7759

2.8 Total coverage of the city

After completion of the ongoing scheme the total coverage of the city will reach 62%.

2.9 Tariff structure

The consumer connections are not metered and hence water wastage should 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	Commercial	Industrial
Rs. 150	Rs. 1000	Nil

2.10 Required rehabilitation of the old water supply system

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

2.10.1 Tube wells

Repair & Replacements of tubewells, pumping machinery & pump houses

1	Replacement of tubewells along with pumping machinery and allied works*	4 sets
2	Construction of pump houses for these tubewells	4 Nos
3	Replacement of pumping machinery**	4 Sets
4	Repair of pumping machinery***	8 sets
5	Repair of existing pump houses	11 Nos

* These tube-wells were installed in the year 1988 and have reduced their discharge. Therefore they need replacement.

**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.

***The repairs will include all electrical and mechanical items and PCC pump foundations along with painting of all the installations

2.10.2 Overhead reservoirs and ground storage tanks

Replacements	Replacement of Akbar road GST
Repairs	Major repairs of; <ul style="list-style-type: none">• Old water works GST and OHR.• Jane Maula GST.• Chamara Mandi GST.• 10,000 gall capacity OHR in south.• Boundary walls of intermediate pumping stations

2.10.3 Filtration plants

Miscellaneous repairs of 18 Nos filtration plants including replacement of some pumping units is required.

2.10.4 Distribution system:

62% of the city area will be equipped with the distribution system after completion of the ongoing scheme. However distribution system in the left over portion of the city will be required to be laid along with construction of storage. The areas include all the unserved areas in north & south zone as described above.

2.10.5 Repairs & replacement of other components

These components include;

- Hypo-chlorinators = 20 Nos.
- Replacement of underground piping & saddles of sub-standard consumer connections = 4000 Nos.

2.10.6 Water wastage & Water management

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

- a) Some consumer connections have no taps.
- b) Some consumers keep the taps open in all water supply hours although they do not need water.
- c) 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*.

Installation of consumer meters on 7759 Nos consumer connections is required.

2.11 O&M Charges and revenue recovery

The operation & maintenance charges and the revenue recovered during the last four years is given below;

Year	2013-14	2014-15	2015-16	2016-17	2017-18	Total for five years
O&M charges (million Rs)	24.255	26.80	35.046	37.30	40.00	163.40
Revenue recovery (million Rs)	0.772	0.685	0.849	0.699	1.00	4.00
Recovery % as compared with O&M exp.	3.2%	2.6%	2.4%	1.9%	2.5%	2.4%
Subsidy injected (million Rs)	23.483	26.115	34.197	36.601	39.00	159.40

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.

2.12 Manpower deployment

Slot	Sanctioned strength	Existing strength	Vacant post	Manpower on daily wages	Total manpower deployed	Additional MC demand
Tube-well operators	58	51	7	0	51	50
Chowkidars	14	13	1	0	13	10
Electricians	2	2	0	0	2	0
Plumbers	3	1	2	0	1	1
Clerks	2	2	0	0	2	0
Total	79	69	10	0	69	61

Additional demand has been put forward by the MC for the new installations.

2.13 Service delivery

1. Water supply is intermittent and total 7.5 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 12 hours a day.
2. Quite a large area is being supplied with contaminated water due to leaking pipes and substandard consumer connections. After replacement of the pipelines being done in these areas, the water contamination will be eliminated.
3. Most of the area in north zone is un-served as explained above which is not being covered by the ongoing scheme. Separate scheme for these areas needs to be planned & implemented.
4. After completion of the ongoing scheme by PHED, water shortage in the south zone will be eliminated. However for that purpose the supply hours will have to be increased in these areas.
5. All existing substandard consumer connections should be replaced by HDPE service piping only in the underground with HDPE pipe saddles. The numbers of registered consumer connections is 7722 domestic and & 37 commercial. Numbers of illegal connections do exist in the system which are required to be detected and regularized.
6. None of the consumer connection is metered and it is proposed to meter all the consumer connections to;
 - MC should reduce the water wastage to conserve fresh water and to save the electricity cost being incurred on production of water and pumping the waste water from sewerage systems.

Section-3 Sewerage system

3.1. Existing situation

3.1.1. Coverage

The city is equipped with sewerage system in 71% area. The city has been divided in to three areas called as Zones with respect to the drainage. The short description of each of the zones has been given as under;

3.1.2. Zone-1:

In zone-1 the outfall sewer line of 48” diameter was choked and has been subsequently got replaced by a 54” diameter sewer. The Disposal works of this system is located in Chack No-2/4L and the waste water from this disposal works is being pumped into a seepage/storm water drain through a force main up to LBDC and sullage carrier up to drain. The section of the sullage carrier is not adequate to carry the entire quantity of water and hence it overflows in private lands. To eliminate the overflow, the farmers divert the water to LBDC thus polluting this channel. Some of the water supply schemes are based on the direct abstraction from this canal and its off takes. Hence this is becoming the biggest problem of the day and the section of the sullage carrier needs to be increased.

3.1.3. Zone-2:

The disposal works of this zone is located in Chack No-1/4L. No problem in this zone is experienced as the sewers are relatively of much lesser age than the rest of the systems and not posing any problem of flooding of streets and roads. However the ultimate disposal of waste water is broad irrigation in the private lands across LBDC. When water is not required by the farmers, they divert this water into LBDC thus polluting the canal. The sullage carrier needs to be extended up to the seepage drain to eliminate pollution of the canal.

3.1.4. Zone-3:

This is relatively much bigger systems and covers most of the area lying in the south-east of railway track. The waste water is being discharged by gravity into a seepage/storm water drain flowing in the south eastern side of Okara city at a distance 6 Km through the outfall sewer of 66 inches diameter converting into a sullage carrier from its mid length to the end.

3.1.5. Sewers

Total length of sewers

The length of 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 sewers

Sewer dia. (inch)	9	12	15	18	21	24	27	Total length in Km
Length in feet	492,000	52,560	20,000	13,120	3,500	9,840	3,000	
Sewer dia (inch)	30	36	42	48	54	66	72	209 Km
Length in feet	3,200	7,500	3,200	1,800	2,300	18,000	-	

3.1.6. Pumping / disposal stations

a) Details of pumping stations

Zone No-1 & 2 are being served by pumping stations whereas zone No-3 is served by gravity outfall sewer and sullage carrier. The details of each one is given below;

Location	Nos of collect. Tanks	Nos of pumps	Discharge each (cusecs)	Total discharge (cusecs)	Motor BHP	Working status	Force main			Ultimate disposal
							Size (inch)	Length (ft)	Condition	
6	7	8	9	10	11	12	13	14	15	16
Chack No- 2/4L	03	05	7.0	40.0	80	Yes	2x18" dia	300' each	good	Seepage drain
		01	5.0		50		3x12" dia	300' each		
Chack No-1/4L	02	04	5.0	24.0	50	Yes	2 x 16" dia	960'	good	Broad irrigation
		01	4.0		25					
Zone-3	Out fall is working by gravity			64	0	Yes	66" dia	-----	good	Seepage drain

3.2. The main issues and problems in the system

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

3.2.1. Damaged & surcharging sewers

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

S.N.	From	To	Approximate Length in feet	Dia in inches	Problems	Solution
1	Sheikh Basti	Chungi No. 7	9,840	24"	Semi choked	Replaceable
2	Khalo block	Chungi No.7	13,120	18"	Defective	Replaceable
3	G.T road	Disposal Chongi No. 6	3,200	42"	Semi choked	Replaceable
4	Sabri colony	2/4-L road & surrounding area	20,500	9"	Semi choked	Replaceable
5	Rajba 4/L	Sharqi Muhallah road & surrounding area	22,000	9"	Semi choked	Replaceable

3.2.2. Areas flooded with waste water

Under mentioned areas are usually flooded with waste water;

1. Samadpura road	2. Chack 27 wala road	3. Mandi Road	4. Ghaziabad
5. Yaqoobabad	6. Sukh Chain town	7. Azhar town	8. Shams town
9. Marinda Chowk	10. Fawara Chowk	11. Gol Chowk	12. Machwal road
13. Zafar Colony	14. Firdos town	15 Doctor's Colony	

Reasons for flooding

- Main reason for flooding of these area is the surcharging of 66” dia outfall sewer because of repeated crown failures explained in the following paragraphs.
- Another reason lies in the fact that these areas are located at the remote end of the system and any problem in the branch or main sewers has maximum effects on these areas.

3.2.3. 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 for;
Chack No- 2/4L in Zone-1	1987 Upgraded in 2011-12	<ul style="list-style-type: none"> • Replacement of 01 Nos sullage pumping unit along with penstock and screen etc. • Replacement of suction & delivery pipes of all pumping units • Repair of 2 Nos pump houses. • Repair of collecting tanks (plaster + railing) • Repairs of 2 Nos screening chambers (plaster + railing + manhole cover + screen repairs) • Repair of pump control panels and change over = 2 Nos each • Repair of boundary wall and approach road • Repair of staff quarter • Construction of control room • Generator room extension and replacement of door • Repair of generator 350 KVA
Chack No-1/4-L in Zone-2	2011-12	<ul style="list-style-type: none"> • Painting of all pumps, piping, mechanical fittings. Doors & windows • Repairs and color wash of civil structures • Cleaning of the premises and plantation.

3.2.4. Sucker & jetter machines

2 Nos sucker and 2 Nos jetter machines are being used by MC to remove blockades and cleaning of sewers. The barrels of the sewers are also being desilted by winch machines. The sucker and jetting machines are quite old and require repairs along with supply of required pressure pipe for jetting.

3.2.5. Problems of ultimate disposal

- Waste water is being pumped across the BRBD canal from both of the pumping stations. AS stated above, the water from disposal works 2/4L is being discharged in a storm/seepage drain but the section of the sullage carrier is not enough to take this water and as a result of that it over flows in private lands. The landowners then break the RCC aqueduct over LBDC Canal to throw the water in the canal which is polluting the canal water.
- Water from 1/4L disposal works is used for broad irrigation in the lands across the canal. When farmers do not need water then they divert waste water in the canal thus polluting the canal water.
- Hence to eliminate the pollution of BRBD canal following works are required to be completed.
 1. Construction of katch sullage carrier from its present terminal point to storm water drain for discharging of waste water from 1/4L disposal wok in the storm water drain.
 2. Widening of the existing kacha sullage carrier of disposal works from LBDC up to the storm water drain.

3.2.6. Manhole base frames and covers

At number of locations the manhole base frames and covers were found damaged or missing which need replacement.

3.2.7. Crown failures in main outfall sewer of Zone-3

- The main problem experienced in gravity based sewerage system of zone-3 is the crown failures on 66” dia outfall sewer right in a narrow street of the city where the sewer cannot be replaced as the excavation will damage all public and private properties on both side of the street.
- The solution to the problem lies in by-passing this street and laying the sewer on the main road. New route of sewer will involve extra length which will involve further drop in the sewer. This will have to be determined whether this drop is admissible in this sewer or not. The problem should be investigated during the preparation of the Feasibility Report or Field Appraisal Report (FAR) of this system.
- This will involve abandoning the main outfall sewer in the narrow street and laying new sewers of sizes 27” to 42” from Firdos Town to main outfall sewer 66” dia through Chack No-36/2-L in a length of 6500 Rft.

3.2.8. Un-served areas

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

1-Bhutta Colony	2-Chack No-1/4-L	3-Sabri colony	4-Rehman Colony
5-Chack No 55/2L	6-Chack No-27/2L road	7-Karmanwala	8-Mehboob Villas

9-Roshan Block	10-Gulshan Gulzar 1& 2	11-Usman Town	12-Hussain Block
13-Jawad Avenue	14-Makka- Madina Town- III & IV	15-Shabbir Town	16-Mujahid Town
17-Al-Khair City	18-Basti Town	19-Noor Garden	20-Al- Raheem City
21-Hashmi Town	22- Green city Extension	23-Mehar Colony	24-Yaqoobabad
25-Saad City-2	26- Sukh Chain Town		

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

3.3. Shifting of load from North Zone to South Zone for reduction of sewage pumping

As explained earlier, Zone-1 & 2 in the Northern area of the city are being served by pumping of waste water whereas Zone-3 is served by a gravity flow with ultimate disposal into the seepage drain without pumping. Some areas from the Zone-1 can be shifted to Zone-3 which will save the cost of pumping of the waste water thus reducing the O&M cost. The proposal will be taken up under new projects when the gravity flow will be assured by spot leveling. The approximate lengths and the location of sewers to be laid for this purpose are given below;

Location of sewers	Diameter (inches)	Approx. Length (Feet)
Sabazmandi road	12	1700
Fawara Chowk to Harnianwala Chowk	12	1000
Kalma chowk to railway crossing	12	3600
On Sahiwal road	12	2000
Tank Chowk to Harnianwala chowk	18	3500
Akbar road to Harnianwala chowk	36	6000
Harnianwala chowk to Khushi town	42	5000
Khushi town to main line 66 inches dia.	48	5100

3.4. Waste water treatment

Waste water from Zone-3 is being discharged into a storm water/seepage drain flowing at a distance of 6 Km from the city. Waste water from Zone-1&2 is being used for broad irrigation of the lands situated across the LBDC or waste water is discharged in a seepage/storm water drain without treatment. No treatment facility is available at all discharge points which is polluting the streams and lands. Waste water treatment plants are required be constructed to lower down the BOD level as per National Environmental Quality Standards (NEQS).

3.4.1. 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.

3.4.2. Tariff structure

The liquid waste user charges were very nominal and included in other tax heads before 2017-18. Now separate user charges have been approved and levied in 2017-18 which are given below;

Up to 5 Marlas house area Rs 300 per annum

Above 5-Marlas house area Rs 500 per annum

3.4.3. 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	41.76	43.84	46.04	48.06	50.08	229.78
Revenue earned	0.07	0	0.12	0	0.08	0.28
Percentage recovery vs O&M cost	0.18%	0	0.27%	0	0.16%	0.12%
Subsidy given	41.685	43.84	45.92	48.06	50.00	229.50

The service charges levied for the liquid waste management are very nominal and the collection of the revenue is not being given any attention by the key officers and the public representatives.

3.4.4. Manpower deployed

The manpower deployed for the operation & maintenance of the system is given below;

Pump operators	10
Baidars	12
Supervisors	2
Sewer men	121

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.

3.4.5. Chocking and de-silting of sewers

- a) 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 gulley grating chambers which is allowing all the silt and the floating materials in the sewers. This forms the main reason for chocking of sewers and flooding of the roads and streets.
- b) MC Okara is de-silting the sewers with winches but the pace of work is very slow. 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. The remedy to this problems is given below;

3.5. Service delivery

The service delivery in Zone-1 & 2 is satisfactory. However the north eastern area of the south zone is facing poor service delivery because of;

- Crown failures and blockades in the 66” dia main outfall sewer.
- The area lies in remote end of the system and sewers are being silted up because of water stagnancy and very low velocity of water.
- In 29% of the city area no service is rendered.
- Waste water disposal in zone-1&2 is problematic and polluting the LBDC water.

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.No	Equipment/machinery	Total available Nos	In working condition
1	Tractor trolleys	12	12
2	Front blade tractors	2	2
3	Water bouzers	6	6
4	Mechanical sweepers	1	0
5	Rikshaws	1	1
6	Front end loaders	2	2

Most of the machinery though working but is in deplorable condition and requires repairs to get full efficiency out of that. The tires of the waste transport vehicles are worn out and MC is not replacing them because of budgetary constraints.

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 increased waste management cost as well as complaints regarding the insanitary conditions in the city. The repair of the existing machinery & equipment needs to be done immediately whereas in the long run efficient and cost effective machinery is needed to increase the efficiency of collection and transportation for improving the sanitary conditions in the city and lower 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 post	Manpower on daily wages	Total manpower deployed	Additional MC demand
Sanitary workers	447	427	20	66	493	150
Vehicle drivers	4	0	4	12	12	12
Supervisors	0	0	0	0	0	10
Sanitary inspectors	01	01	0	0	01	03

Other	0	0	0	0	0	10
Total	452	428	24	78	506	185

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

4.2 Reasons for poor service

- MC is facing shortage of vehicle drivers and other staff.
- The equipment and machinery is neither efficient nor adequate to serve the entire city. Some of the machinery and equipment requires immediate repairs.
- No landfill site is available for dumping of solid waste. Currently waste is being dumped along the road sides which is totally unhygienic.
- No proper collection points in city are available. However at some places walled dumps have been constructed wherein solid waste is collected and transported to the dumping sites.
- 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.

4.3 Un-served and partially served areas

The entire city is not served with solid waste collection and disposal. 60% area of the city is fully served, 15% is partially served and 25% 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 blow;

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-Khushi Town	2-Azhar Town	3-Samadpura	4-Lateefabad
5- Usman block	6-Rehmatpura	7-Fath Town	8-Gungno Chowk
9-Faisal Town	10-Gulshane Iqbal	11-Doctors colony	12-Yaqoob abad

b) Unserved areas

Under mentioned areas are still unserved;

1-Kot Jan Muhammad	2-Ahmad Town No-2	3-Shamas Town
4-Sukh Chain Town	5-Shabeer Town	6-Gulshan-e- Gulzar No-1 & 2
7-Makkah Madina Town No-1 & 3	8- Basit Town	9-Hashim Colony

10-Chack No - 55/2L	11-Bhutta Colony	12-Shalimar Town
13-Alraheem City	14-Haroon Town	15-Shafiq Town
16-Alqadoos Town	17- Green City & extension	18-Al-Khair City
19-Govet. Colony	20-Fawad Villas	21-Saad City-1&2
22-Fatima Block	23-Jauhar Town	24-Gulshan Colony
25-Canal View	26- Baber Block	27-Sahara City
28-Mehboob Villas	29-Royal Palm	30-Ghausia Block

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	
Cubic meters	Tons	Cubic meters	Tons		SiteNo-1	SiteNo-2
295	147*	196	98	67%	Along 4-L Distributary near Faisalabad Road	Main open dumping along LBDC near Zaman Park.
Distance from city center (Km)					6 KM	5 KM
Open dumping= O Landfill= LF					O	O

*Assumed density of loose solid waste = 500 KGs per cubic meter

4.5 Landfill Site development

Approximate area of 30 acres will be required for the next 10 years for construction of landfills for safe and sanitary disposal of solid waste of the city. MC has 13 acres land near Chak No. 6/4-L reserved for the landfill whereas 17 acres additional land is required to fulfill the needs of the city in next 10 years.

The suitability of the landfill site will be however 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. Some vehicles are parked in the office premises whereas others are parked in open space measuring 4 kanal near Fire Brigade.

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.)

The annual expenditure incurred by MC for last 5 years is given below which includes manpower, energy, repairs, supplies etc.)

Year	2013-14	2014-15	2015-16	2016-17	2017-18
O&M Expenditure (million Rs)	107.70	112.77	124.55	140.16	155.77

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 67% 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 and needs repairs.

The solid waste is being dumped at two different points along the LBDC because no proper landfill site is available which 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. MC has a piece of land measuring 13 acres for the development of Landfill site but it could not be developed due to financial constraints.

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	Southern Bypass Road	National Highway Authority
2	Northern Bypass Road along LBDC	District Council Okara but it is now being maintained by MC Okara.
3	Main GT Road (inside city)	Provincial Highway road
4	Depalpur Road	do
5	Faisalabad Road	do
6	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 Okara are in good condition & few main roads need rehabilitation, resurfacing and widening & improvement. Further many of the secondary roads/streets require either rehabilitation or new construction with concrete pavers. The detail of the problem roads is given below;

5.3 Problem roads

The detail of all these roads is given on the next page. A total of 20 roads in the city need rehabilitation out of which 8 roads need widening & improvement, 7 roads require repairs and resurfacing, 5 roads require new construction (3 with flexible pavements and 2 with concrete pavers).

Inventory of primary & secondary roads in Okara City

Road categories A = dual carriage way B = Single road with two lanes C = Single road with one lane

Sr.#	Name of road	From	To	Road information									Interventions required			
				Category of road	Row (ft)	Length (km)	Width (ft)	TST, Asphalt or concrete pavers	Median (yes/No)	Road condition	Street light (yes/No)	Road drainage (yes/No) & its condition	Raising (feet)	Drain section	Raising of manholes (yes/No) (give Nos)	Provision of street light (yes/No)
1	Benazir avenue	Rajba 4/L	Railway crossing 1/4L	A	100	3.5	60	TST	Yes	Poor	Yes	No	1	1.5x1.5	yes	Yes
2	Allama Iqbal road	Rajba 4/L	G.B.S	B	40	4.2	20	TST	Yes	Poor	Yes	No	1	-	yes	Yes
3	Garden town	Satluj Girls school	Allama Iqbal road	C	30	3	30	TST	No	Paver	No	No	1	-	yes	Yes
4	Basti Shah din	M.A Jinnah road	Akbar road	C	40	2.5	40	TST	No	Paver	No	No	2	1 x 1	yes	Yes
5	Akbar road	Benazir Avenue	Pull LBDC	B	55	7	50	TST	No	Paver	No	No	1	1.5 x.5	yes	Yes
6	Haq town road	Faisalabad road	2/4L	B	40	3	40	TST	No	paver	No	No	1	-	yes	Yes
7	Markazi Grave yard road	Chowk graveyard	Distributary 4-L	C	30	2	20	TST	No	Repairable	No	No	1	-	yes	Yes
8	Disposal road	Faisalabad road	Akbar road	B	60	1.5	40	TST	No	Repairable	Yes	No	1	-	yes	Yes
9	Junior Model school	Faisalabad road	Sabazi Mandi	C	40	2.5	50	TST	No	paver	Yes	Yes	1	-	yes	Yes
10	Link road 1/4L	Kharal chowk	1/4L road	C	30	2	30	TST	No	paver	No	No	1	-	yes	Yes
	4L School road	Faisalabad road	Michal farm	B	60	8	24	TST	No	poor	No	No	1	-	-	-
11	Shahzad park road	Faisalabad road	1/4L	C	40	2.5	40	TST	No	paver	No	No	2	-	yes	Yes
12	2/4L road	Akbar road	2/4L	C	40	1.5	40	TST	No	paver	No	No	2	-	yes	Yes
13	Lalazar colony	Sawar chowk	Overhead bridge	C	40	1.5	40	TST	No	Paver	No	No	2	-	yes	Yes
14	New Lalazar	Church road	-do-	B	40	1.5	20	TST	No	Poor	No	No	2	-	yes	Yes
15	M.A Jinnah roads	Tank chowk	MCB chowk	A	120	1.5	80	Asphalt	Yes	Poor	Yes	yes	1	-	yes	Yes

16	Link road	Mehboob alam chowk	1/4L road	C	40	3	40	TST	Yes	Repairable	No	No	1	-	yes	Yes
17	Girls college road	Old Disposal	G.T road	B	40	1.5	20	TST	No	Poor	No	No	1	-	-	-
18	27 Wala road	G.T road	Irshad town	C	25	2.5	20	TST	No	Repairable	No	No	1	-	-	-
19	Sawar colony road	Adda road	Chowk depalpur	B	60	1	20	TST	No	Poor	No	No	1	-	No	Yes
20	Mehboob town	36/4L road	Depalpur road	C	40	5	40	TST	No	Repairable	No	No	1	-	yes	Yes
21	5/4L main road	G.T road	Bypass	C	40	5	40	TST	No	Repairable	No	No	1	-	yes	Yes
22	Kot Nehal singh	G.T road	Bypass	C	40	4	40	TST	No	Repairable	No	No	1	-	yes	Yes
23	Rao Sikandar road	Pull District council	Michal farms	B/R1	60	9	24	TST	No	Repairable	No	No	1	-	Yes	Yes
24	Khalid town road			C	30	1	10	TST	No	Repairable	No	No	1	-	Yes	Yes
25	Faizan-e-madina road			C	30	1	10	TST	No	Poor	No	No	1	-	Yes	Yes
26	5/4L-P17 road	G.T road	Bypass	C	33	0.5	20	Non metaled	No	Poor	No	No	No	-		
27	Main shadman colony road			C	60	0.34	30	Non metaled	No	Poor	No	No	No	-		
28	4L canal road	Faisalabadd road	Michal farm	New	60	1	24	Non metaled	-	-	-	-	-	-	-	-
29	53-2L road			New	40	5	20	Non metaled	-	-	-	-	-	-	-	-
30	5/4L road	G.T road	Bypass	New	33	1.5	20	Non metaled	-	-	-	-	-	-	-	-
31	Imran Akram villas road	MA Jinnah Road	Banezir Road	A	44	0.80	30	TST	Yes	Repairable	Yes	No	No	No	No	No
32	Chamra Mandi road	Chamra Mandi Water Works	GT Road	C	25	0.75	16	TST	No	Repairable	No	No	No	No	No	No
33	Chak ¼-L road	Sardar Chowk	Grave yard ¼-L road	C	44	1.5	30	TST	No	Repairable	No	No	No	No	No	No
34	General Bus Stand road	GT road	Internal GBS	C	55	0.20	40	TST	No	Repairable	No	No	No	No	No	No

5.4 Required interventions

5.4.1 Widening & improvement of roads

The roads given in the table below are in poor condition. The traffic intensity has increased on these roads and their widening and improvement is required.

Sr. #	Name of road	ROW	Length	Pavement width	
				Existing	Proposed
		Ft	Km	Ft	Ft
W1	4L School road	60	8.0	24	24
W2	New Lalazar Gilani road	40	0.5	10	20
W3	M.A Jinnah road	120	1.5	40	40x2
W4	Girls College road	40	1.5	20	20
W5	27/2L road	30	2.5	20	20
W6	Sarwar colony road	60	1.0	20	30
W7	Khalid Town road	30	1.0	10	20
W8	Faizan-e-Madina road	30	1.0	10	20

5.4.2 Repair & resurfacing of roads

The below given roads have developed potholes and broken edges and need repairs and resurfacing.

Sr. #	Name of road	ROW	Length	Pavement width
		Ft	Km	Ft
R1	Markzi Graveyard Chowk to Distributory 4L	30	2.0	20
R2	Link road M.A Jinnah road to Benazir road (Imran Akram villas)	44	0.80	30
R3	Faisalabad road to Akbar road bank 4L distributory	60	1.5	40
R4	Chamra Mandi (chamra Mandi water works)road to G.T road	25	0.75	16
R5	Sardar Chowk to graveyard 1/4L main road	44	1.5	30
R6	G.T road to Irshad town (27 wala road)	25	2.25	20
R7	Internal road General Bus stand	50	0.2	44

5.4.3 Construction of new roads

Below given roads are needed to be reconstructed for the reasons given against each;

Sr. #	Name of road	ROW	Length	Pavement proposed		Reason for new construction
		Ft	Km	Width	Type	
		Ft	Km	Ft	Flexible pavement	Presently non-metalled
N1	4L Canal road	60	1.0	24	do	do
N2	53-2L	40	5.0	20	do	do
N3	5-4L main road	33	1.5	20	do	do
C1	5/4L –P 17 road	33	0.5	20	Concrete pavers	do
C2	Main Shadman road	60	0.34	30	do	do

Section-6
Parks and open spaces

6.1. Existing situation

6.1.1. Existing Parks

Okara City has seven main parks as mentioned below;

S.N.	Name of park	Area in acres	Ownership & maintained by
1	Jinnah Park	5.79	Municipal Committee Okara
2	Safdar Shaheed Park	8.00	do
3	Sher-e- Rabbani colony park	0.25	do
4	Shamsia Colony Park	0.50	do
5	Garden Town Park	2.5	do
6	Peoples colony park	0.13	do
7	Qadir Colony park	0.12	do
8	Sindhu colony park	0.22	do
9	Zaman Park	17.0	Zila Council Okara
10	Lady Park	3.5	do
11	Iqbal Park	40.0	do

6.1.2. Inventory of parks

Inventory of main four parks owned by MC OKara with complete details is given below;

S.#	Name of Park	1	2	3	4
		Jinnah Park	Safdar Shaheed Park	Shere Rabbani colony park	Shamsia colony park
1	Location	M.A Jinnah road	Tehsil road	-do-	-do-
2	Area of park in acres	46 K 06M	64K 01 M	2-K	4-K
3	Watering & irrigation				
a	Tube well	No	yes	No	yes
b	Water supply from municipal system	-	-	-	-
c	Underground water tank	-	-	-	-
d	Pumping unit	Irrigation	Submersible	-	Replacement required
e	Distribution pipe lines	Improvement needed	installed	Nil	Installed

f	Valves	Nil	16	Nil	4
g	Sprinkler system	Nil	Nil	Nil	Nil
4	Landscaping & plantation				
a	Grass beds	Yes	Yes	No	Yes
b	Flower beds	yes	Yes	No	No
c	Hedges	Yes	Yes	No	No
d	Plants	Yes	Yes	No	Yes
5	Park Lights				-
a	Poles and masts	yes	yes	No	No
b	Cables	yes	yes	No	Yes
c	Brackets and lights	Replacement needed (LED)	Replacement needed (LED)	No	New needed (LED)
d	Bulbs and tubes	Replacement needed (LED)	Replacement needed (LED)	No	New needed (LED)
e	Control units	yes	yes	No	Yes
6	Structures				
a	Buildings	good	-	No	No
b	Fountains & water fall structure	Repair needed	Repair needed	No	No
c	Walkways	Yes	Yes	No	No
d	Bridges & culverts	No	No	No	No
e	Boundary wall & gate	Yes	Yes	Yes	Yes
f	Toilets	New toilets needed	Yes	No	New toilets needed
g	Lakes & brooks	-	-	No	No
7	Mechanical equipment				
a	Pumping units	Irrigation	1	No	1
b	Swings	No	No	No	No
c	Children games	No	No	No	No
d	Fixtures	No	No	No	No
e	Benches	New needed	New needed	No	New needed
8	Sanitation & water supply				-
a	Litter bins	Yes	Yes	No	Yes
b	Toilet fixtures	Yes	Yes	No	No
c	Sewerage system	Yes	Yes	No	No
d	Vegetation cuttings & disposal	Yes	Yes	No	Yes
e	Drinking water	Yes	Yes	No	No
f	Water pipes	Yes	Yes	No	Yes

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 all the required interventions in these parks for their upgrading are given blow;

S.N.	Name of Park	Area in acres	Details of rehabilitation and extension of facilities
1	Jinnah park	5.79	<ol style="list-style-type: none"> 1) Improvement of the water supply pipe lines. 2) Provision of sprinkler lawn watering system. 3) Repair of Fountain. 4) Replacement of park lights by LED lights. 5) Provision of benches 6) Construction of toilets 7) Provision of swings and children outdoor games.
2	Safdar Shaheed Park	8.00	<ol style="list-style-type: none"> 1) Provision of sprinkler lawn watering system 2) Repair of fountain and water fall structure. 3) Replacement of park lights by LED lights 4) Provision of benches 5) Provision of swings and children outdoor games.
3	Sher-e- Rabbani colony park	0.25	The park is provided with gate and boundary wall only. All other facilities of the parks are required to be constructed.
4	Shamsia colony park	0.5	<ol style="list-style-type: none"> 1) Replacement of the pumping unit. 2) Provision of lawn sprinkling system 3) Installation of new park (LED) lights 4) Construction of walkways. 5) Provision of new benches 6) Construction of toilets with sewer. 7) Provision of swings and children outdoor games. 8) Provision of drinking water arrangements.
5	Garden Town Park	2.5	<ol style="list-style-type: none"> 1) Replacement of the pumping unit. 2) Provision of lawn sprinkling system 3) Repair of walkways. 4) Provision of new benches 5) Provision of swings and children outdoor games. 6) Provision of dustbins 7) Construction of boundary wall
6	Peoples colony park	0.13	<ol style="list-style-type: none"> 1) Replacement of the pumping unit. 2) Provision of lawn sprinkling system 3) Plastering and painting of boundary wall 4) Provision of swings and children outdoor games. 5) Provision of dustbins
7	Qadir Colony park	0.12	<ol style="list-style-type: none"> 1) Replacement of the pumping unit. 2) Provision of new benches 3) Provision of swings and children outdoor games. 4) Provision of dustbins

8	Sindhu colony park	0.22	1) Replacement of the pumping unit. 2) Provision of new benches 3) Provision of swings and children outdoor games. 4) Provision of dustbins
---	--------------------	------	--

6.3. Open spaces to parks

The city has 8 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

Sr. No.	Location of open space	Area of open space (Acres)	Proposed utility
1	Samad pura	0.5	Park
2	Latifabad	2.25	Park
3	Govt. Colony (open space No. 1)	6.0	Park
4	Govt. Colony (open space No. 2)	4.0	Park
5	Govt. Colony (open space No. 3)	6.0	Play-ground
6	Mukhtar Town	2.75	Park
7	Spaces along the bank of LBDC	10.0	Parks

6.4. O&M expenditure and revenue recovery

Year	2013-14	2014-15	2015-16	2016-17	2017-18	Total for 5 years
O&M expenditure	8.81	9.09	9.24	11.99	14.99	54.120
Revenue earned	0.711	1.667	1.00	0	0.602	3.980
Percentage recovery vs O&M cost	8.07%	18.34%	10.82%	0.00	4.02%	7.35%
Subsidy given	8.099	7.423	8.24	11.99	14.388	50.140

Section-7 Street Light

7.1. Existing situation

MC Okara has street lights on major roads and Mohallahs the detail of which is given below;

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;

Sr.#	Name of Road/Street	Type of light (LED, Sodium, Energy Saver)	Length (Km)	No. of Lights	Type of Poles
1	Tehsil road	Sodium 250watt	1.3	28	WAPDA poles
2	M.A Jinnah road	Sodium 250watt	1.0	24	WAPDA poles
3	Mandi road	Sodium 250watt	0.6	12	WAPDA poles
4	Tanki Chowk to Jahaz Chowk	Sodium 250watt	0.4	7	Doble Arm Pole
5	Ravi Road	Sodium 250watt	0.3	6	WAPDA poles
6	Church road to Jahaz Chowk	Sodium 250watt	1.0	18	WAPDA poles
7	College Road	Sodium 250watt	0.3	7	WAPDA poles
8	Banazir road from Jinnah Park to Phatak Chak 1/4L	Energy Saver 65watt	4.6	102	Doble Arm Pole
9	DHQ Hospital road	Energy Saver 65watt	0.5	11	Single Arm Pole
10	Stadium road	Energy Saver 65watt	0.4	8	WAPDA poles
11	Depalpur road from Islamia High School to Sarwar Chowk	Energy Saver 65watt	0.8	16	WAPDA poles
12	Ghool Chowk	Sodium 250watt	0.7	14	WAPDA poles
13	Hospital Bazaar	Sodium 250watt	0.2	4	WAPDA poles
14	Fire Brigade Road	Sodium 250watt	0.2	4	WAPDA poles
15	Allama Iqbal Road	Sodium 250watt	2.5	52	Single Arm Pole

16	Samadpura Road	Energy Saver 65watt	2.2	26	WAPDA poles
17	Sirki Muhallah Road	Energy Saver 65watt	1.0	20	WAPDA poles
18	Sadar Bazaar	Sodium 250watt	0.4	8	WAPDA poles
19	Rail Bazaar	Sodium 250watt	0.2	4	WAPDA poles
20	Akbar Road	Sodium 250watt	3.3	72	WAPDA poles
21	Faislabad Road From FECTO Chowk to Khan Colony Chowk	LED	2.0	100	Doble Arm Pole
22	Chun Peer Road Govt. Colony	LED	0.5	12	Single Arm Pole
		Total		555	

7.1.2 Ward wise detail of existing street lights

Ward No	Area	Light type			Total	Operational	Poles type WAPDA pole/ St light pole
		LED	Tube light	Energy Saver			
1	Khalid town, Rafee Masood Block, Green town, Basti Mehar Deen			15	15	15	WAPDA pole
2	Madina market, Baba Farid market, Sabir colony,			15	15	12	WAPDA pole
3	Pak colony, Ghafoor colony, Shafqat block	25			25	21	WAPDA pole
4	Rehman colony street no. 1 to 9	39			39	35	WAPDA pole
5	Allah Dad colony street no. 1 to 8, Choudhary colony G.T road.	15		10	25	12	WAPDA pole
6	Sadiq Nagar, Firdous town, Shafee block, Sharif block	10		20	30	26	WAPDA pole
7	Wazir colony, Shamas colony, Umar Usman park, Jalal tow, Kot Nihal Singh	15		15	30	25	WAPDA pole
8	GBS, Bajwa Super market, Farooq-abad	10		25	35	32	WAPDA pole
9	Sher-e-Rabani town, Samad pura, Kirpa Ram factory	20		20	40	35	WAPDA pole
10	Samad Pura, Ghazi Abad	60			60	55	WAPDA pole
11	Ghazi Abad, Astana road	20		15	35	30	WAPDA pole

12	Mohallah Darussalam, Niaz Abad, Hamza block, Rehman Pura, Glass factory	10		28	38	33	WAPDA pole
13	Gulshan Fatima, Sirki mohallah, Ahmad Abad	15		23	38	35	WAPDA pole
14	Ahmad Abad, Dera Usman	15		5	20	16	WAPDA pole
15	Samad Pura, Rafeeh colony, Dera Usman, Shafiq Nagar, Jalal Kot	25		20	45	40	WAPDA pole
16	Bajwa colony, Garden town, E line	10		16	26	23	WAPDA pole
17	Samad Pura, Peoples colony, Zafar colony, Abdullah town, Atta colony	25		40	65	60	WAPDA pole
18	Samad Pura, Peoples colony, Riaz-ul-Muslameen, Tariq Abad, Mustafa Abad	5		13	18	15	WAPDA pole
19	A colony, Garden town, Rauf Abad, E block, Dubai town, Taj town	10		6	16	15	WAPDA pole
20	Sirki mohallah, Basharat park, Kot Ameer Ali Shah, Maqbool park, Chamra Mandi	14	10	10	34	28	WAPDA pole
21	Sheikh Basti, Resham Pura, Kot Liaqat Hayat	28		20	48	42	WAPDA pole
22	Kot Liaqat Hayat, Faisal Mehmood colony street no. 1,2,3, B colony, C colony	12		20	32	30	WAPDA pole
23	Kot Ghulam Mohammad, Kot Nihal Singh, Jalal town	18		10	28	25	WAPDA pole
24	Qari colony, Sharif pura, Chiragh Sindhu colony, Nadeem park, Qadir colony	8	20	20	48	44	WAPDA pole
25	Faiz Abad, Azeem Abad, Akbar road	8		30	38	27	WAPDA pole
26	Shadman colony, Mian colony, Wahab town, Nasim Fatima colony	5		10	15	10	WAPDA pole
27	Faiz Abad, Azeem Abad, Sardar Gulzar park, Farid Abad, Master park	5	3	4	12	11	WAPDA pole
28	Mohammad pura, Farid town, Raheem Karim town, Gulshan colony, Darul Hasaan town	4	4	8	16	14	WAPDA pole
29	Co-Operative Society, Maryam town, Basti Iqbal Nagar, Faisal town, Basti Shah Deen, Mohammad town	15	15	5	35	26	WAPDA pole

30	Fateh Noor town, Sardar town, Sabri colony	8	10	30	48	38	WAPDA pole
31	C, D, A & F Block	75	75	100	250	215	WAPDA pole
32	Basti Rehmat pura, Gulshan Iqbal town, Choudhary colony, Hussain Super market	10	10	12	32	28	WAPDA pole
33	Ahmad Aziz park, Sidra Ghafoor town, Gulraiz colony, Chaman Zar colony, Haq town, Model town	10	12	30	52	48	WAPDA pole
34	Christian colony, Muslim colony, Bohr Wali Basti, Qaim pura, Shamsia colony	18	15	5	38	33	WAPDA pole
35	Sabzi Mandi, Nai Lakar Mandi, A, B Block, Depalpur road, Ravi road, Ghalla Mandi	28	20	20	68	57	WAPDA pole
36	Khan colony, Faisal colony	4	6	2	12	8	WAPDA pole
37	Kot Fateh Jamal, Purani Lakar Mandi, Al Aziz Housing Scheme, Hafiz town.	35	15	25	75	64	WAPDA pole
38	Rehmat-Ullah town, Faisal colony no. 2, Fateh town	10	10	24	44	38	WAPDA pole
39	Kausar town, Amir colony, Nawab colony, Officer's colony, Waris colony	18	20	30	68	63	WAPDA pole
40	Lalazar colony, Sindhi mohallah	32	30	30	92	77	WAPDA pole
41	Qadir colony, Haider colony, Khan colony, Faisal colony no. 2	15		20	35	26	WAPDA pole
42	Latif Abad, Rehman colony, Govt. colony	18	5	5	28	22	WAPDA pole
43	Mohallah Ali pur, Seth colony, Aziz Yaqub town	20	15	25	60	55	WAPDA pole
44	Aziz Yaqub town, Seth colony, Karim town, Hussain colony, Govt. colony	50	20	35	105	100	WAPDA pole
45	Chak no. 5/4L	5		5	10	6	WAPDA pole
46	Chak no. 5/4L	5		7	12	8	WAPDA pole
47	Chak no. 5/4L	5		5	10	8	WAPDA pole
48	Chak no. 2/4L	5		10	15	12	WAPDA pole
49	Chak no. 1/4L	4	4	4	12	10	WAPDA pole
Grand Total					1987	1708	

7.2. Replacement of luminaries & Street light poles on Roads

The lights equipped with sodium luminaries are required to be replaced by LED lights for saving the energy cost. The replacements will be done on the under mentioned roads;

Sr.#	Name of Road/Street	Length (Km)	Required Intervention
R1	Tehsil road	1.0	Replacement of luminary by LED & new street light pole
R2	M.A Jinnah road	1.0	Replacement of luminary by LED & new street light pole
R3	Mandi road	0.6	Replacement of luminary by LED & new street light pole
R4	Tanki Chowk to Jahaz Chowk	0.4	Replacement of luminary by LED
R5	Ravi Road	0.3	Replacement of luminary & new street light pole
R6	Church road to Jahaz Chowk	1.0	Replacement of luminary & new street light pole
R7	College Road	0.3	Replacement of luminary & new street light pole
R8	Banazir road from Jinnah Park to Phatak1/41	4.6	Replacement of luminary by LED
R9	DHQ Hospital road	0.5	Replacement of luminary by LED
R10	Stadium road	0.4	Replacement of luminary & new street light pole
R11	Depalpur road from Islamia High School to Sarwar Chowk	0.8	Replacement of luminary & new street light pole
R12	Ghool Chowk	0.7	Replacement of luminary & new street light pole
R13	Hospital Bazaar	0.2	Replacement of luminary & new street light pole
R14	Fire Brigade Road	0.2	Replacement of luminary & new street light pole
R15	Allama Iqbal Road	2.5	Replacement of luminary & new street light pole
R16	Samadpura Road	2.2	Replacement of luminary & new street light pole
R17	Sirki Muhallah Road	1.0	Replacement of luminary & new street light pole
R18	Sadar Bazaar	0.4	Replacement of luminary & new street light pole

R19	Rail Bazaar	0.2	Replacement of luminary & new street light pole
R20	Akbar Road	3.3	Replacement of luminary & new street light pole

7.3. Requirement of new street lights on Major Roads

Some roads are not equipped with street light. These are very busy roads and require installation of street lights.

S.N	Name of road/street	Length (Km)
N1	M A Jinnah road (Extension)	1.0
N2	Tehsil road (Extension)	0.5
N3	Slaughter house road	0.3
N4	Eid Gah road	1.0
N5	Church road (Extension)	0.5
N6	Mandi road	0.8
N7	Khan Baba Road	2.5
N8	Main G.T road	7.0
N9	Sirqi Mohalla road (Extension)	1.0
N10	Samadpura road (Extension)	1.0
N11	Chowk Depalpur road to bypass (Extension)	4.0

7.4. Expenditure on street lights

Under mentioned expenditure on the Operation & Maintenance of the existing street lights has been incurred by MC Okara 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	28.12	29.91	25.33	21.87	26.18

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 Okara. 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	34.513	5.356	5.384	10.729	50.00
Source of Financing of Development Projects	Own source revenue				
	ADP grants				
	PFC share				

9.2. Expenditure on O&M of services and revenue generated

Description	2013-14	2014-15	2015-16	2016-17	2017-18
<u>Water supply</u>					
Total O&M cost	24.255	26.80	35.046	37.300	40.00
Revenue earned	0.772	0.685	0.849	0.699	1.00
% revenue earned vs O&M charges	3.2%	2.6%	2.4%	1.9%	2.5%
Subsidy injected	23.485	26.115	34.197	36.601	39.0
<u>Sewerage/drainage</u>					
Total O&M cost	41.76	43.84	46.04	48.06	50.08
Revenue earned	0.07	-	0.12	-	0.08
% revenue earned vs O&M charges	0.18%	-	0.27%	-	0.16%
Subsidy injected	41.685	43.840	45.920	48.060	50.0
<u>Solid waste management</u>					
O&M cost	107.70	112.77	124.55	140.16	155.77

Revenue earned	Nil	Nil	Nil	Nil	Nil
Subsidy injected	107.70	112.77	124.55	140.16	155.77
<u>Parks</u>					
O&M cost	8.81	9.09	9.24	11.99	14.99
Revenue earned	0.711	1.667	1.00	-	0.602
Subsidy injected	8.099	7.423	8.24	11.99	14.388
Slaughter houses					
O&M cost	0.375	0.347	0.367	0.393	0.271
Revenue earned	0.48	0.50	0.525	0.625	0.72
Subsidy injected (-) Income (+)	0	0	0	0	0
Street Light					
Total Expenditure	28.12	29.91	25.33	21.87	26.18
Revenue earned	The service is not charged.				

Section-10
Manpower deployment & shortage

The manpower deployed by MC Okara 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)	6	2	4	-	4	-
2	Sub engineers	4	2	2	-	2	-
3	Support staff (BPS-16 & below)	134	124	10	-	-	-
	Total office manpower (A)	144	128	16	-	6	-
B	Municipal services						
1	Water supply	79	69	10	-	17	61
2	Sewerage	145	72	3	70	3	50
3	Solid waste management	452	428	24	78	18	185
4	Parks	18	14	4	-	4	10
5	Roads	21	17	4	-	4	-
6	Street lights	6	5	1	-	-	-
7	Slaughter houses	1	-	1	-	-	-
	Total municipal services (B)	722	605	47	148	46	306
	Grand Total (A+B)	866	733	63	148	52	306

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	20	11	6	3	0	Poor
2	Water supply quality	20	15	4	1	0	Poor
3	Sewerage	20	2	9	9	0	Good
4	Drain cleaning	20	10	6	4	0	Fair
5	Street sweeping	20	6	9	5	0	Fair
6	Solid waste collection & disposal	20	7	7	6	0	Fair
7	Condition Parks & play grounds	20	9	9	2	0	Fair
8	Slaughter house functioning	20	11	9	0	0	Poor
9	Street light functioning	20	10	8	2	0	Fair
10	General condition of roads	20	4	7	8	1	Good
11	Complaint attending capability	20	6	7	7	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	Abdul wali khan	Muhammad pur	Fair	Poor	Good	Poor	Good	Fair	Good	Fair	Poor	Fair	Good
2	SabeelArshad	Mehboob Town	Poor	Poor	Good	Poor	Poor	Poor	Good	Fair	Fair	Poor	Poor
3	M. Khalid	Shairrubani Town	Good	Poor	Good	Poor	Good	Good	Good	Good	Poor	Fair	Good
4	Junaidshaikh	Saman Abad	Poor	Poor	Fair	Poor	Fair	Poor	Poor	Fair	Fair	Fair	Fair
5	Jawaidrauf	Chamramandi	Good	Fair	Poor	Good	Good	Good	Good	Poor	Poor	Poor	Poor
6	M. jawaid	Kerparam factory	Fair	Good	Fair	Good	Good	Good	Fair	Fair	Fair	Fair	Poor
7	Ch. Abdul Ghani	Gazi Abad	Fair	Poor	Fair	Poor	Fair	Fair	Fair	Poor	Fair	Good	Good
8	Basharatali	Rehman colony	Poor	Fair	Good	Good	Poor	Good	Poor	Fair	Poor	Fair	Good
9	Abbas Shah	B line	Poor	Poor	Good	Good	Poor	Poor	Fair	Poor	Poor	Poor	Poor
10	M. Amjadsabri	Garden Town	Good	Poor	Fair	Fair	Good	Fair	Excellent	Good	Fair	Poor	Fair
11	Malik Ameen	Zafer colony	Fair	Poor	Good	Poor	Poor	Poor	Good	Poor	Fair	Good	Good
12	Haji younas	Jalal kot	Poor	Fair	Fair	Poor	Fair	Fair	Fair	Fair	Poor	Poor	Fair
13	Tariq saeed	Allah dad colony	Fair	Fair	Good	Poor	Poor	Poor	Good	Poor	Poor	Poor	Poor
14	QasimShaha	Shafqat block	Poor	Poor	Fair	Poor	Fair	Poor	Good	Poor	Poor	Poor	Poor
15	NazirHafeez	Samadpura	Poor	Poor	Good	Fair	Fair	Good	Poor	Poor	Poor	Fair	Fair
16	Shahid Watoo	Sabirpia town	Fair	Poor	Poor	Fair	Poor	Good	Poor	Fair	Fair	Poor	Fair
17	Hafiz liaqatali	Govt. Colony	Poor	Poor	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Fair	Good
18	Adnan Riaz	Faisal Colony	Poor	Poor	Fair	Fair	Fair	Good	Good	Fair	Fair	Poor	Fair
19	Ch. Shahid Advocate	Master park	Poor	Poor	Good	Fair	Fair	Fair	Fair	Poor	Fair	Poor	Good
20	M. Yaseen	Shadman Colony	Poor	Poor	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair