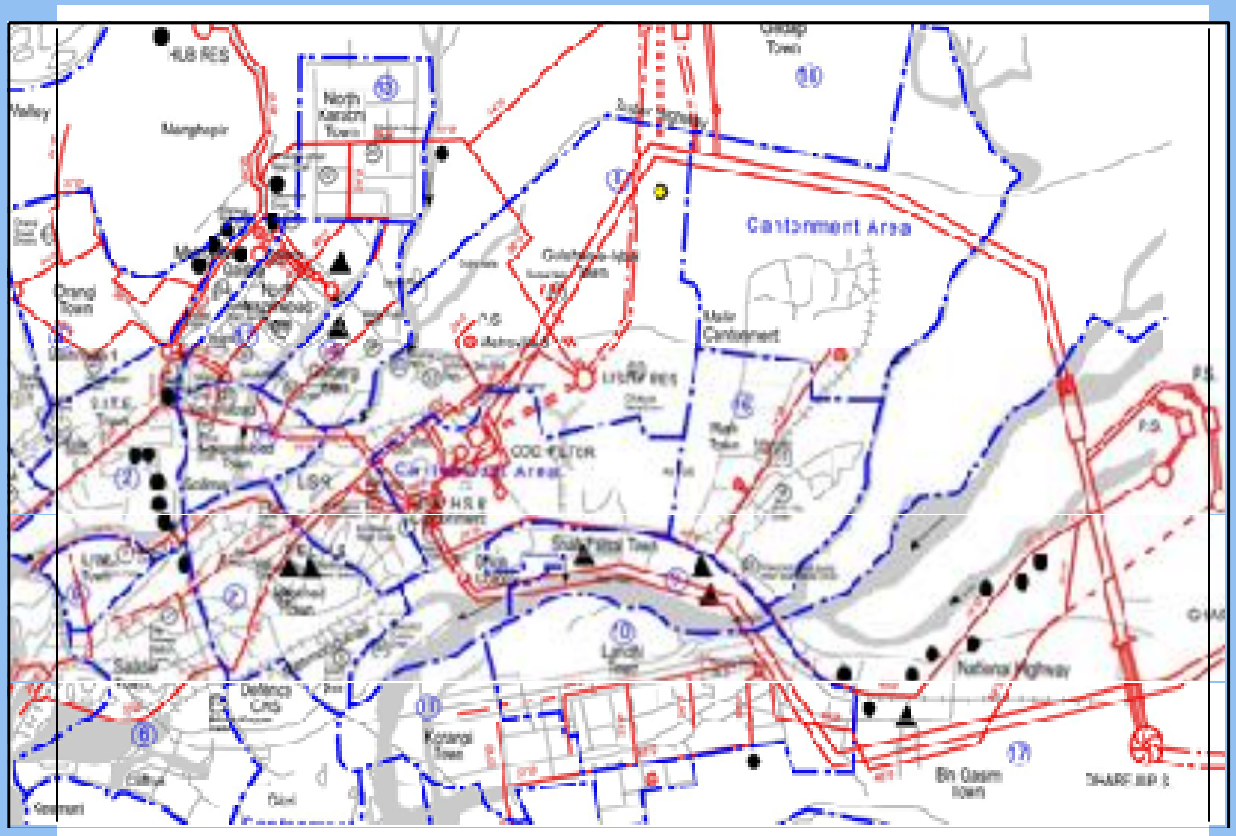
Water Supply IN KARACHI



Situation/Issues, Priority Issues and Solutions

Perween Rahman

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INTRODUCTION

Orangi Pilot Project-Research and Training Institute's experience of working to facilitate provision of water supply systems in low income settlements (poor peoples housing, known as katchi abadies) in karachi, while also documenting the water supply systems of more then 452 settlements (80% of the total settlements) showed that water supply lines exist every where, laid on self help by the people as well as laid by the government.

There is an oft-repeated claim that water is scarce. It was observed that in the settlements people purchased, expensive potable water either from:

i) the donkey cart suppliers

ii) the rangers (para military) who charge, unofficially, Rs. 250-300 for a three minute supply (about 500-600gallons)

iii) the private/unofficial tanker suppliers at Rs. 300-400 for a 1000 gallon tanker. Some purchased a mixture of brackish and potable water, at Rs. 250 (for a 1000 gallons tanker) or just brackish water for Rs. 150 (for the same quantity).

In the months of May to October supply through tankers is common every where in karachi. People of all areas, from the highest to the lowest income group, buy water.

The questions that arise out of the observations are:

a) If water is made available through tankers to whoever can pay then why isn't water available to people through pipes?

b) Also, taking into account the fact that the KWSB has implemented IFI-funded mega projects, of bulk mains, like K-I, K-II and K-III, so water that flows in the main pipes, where does it go?

In March 2007, on request by the OPP-RTI, the KWSB members arranged a meeting with JICA, the KWSB consultants, who were preparing a master plan for water supply for the city. It was felt that there was a need to understand the water plan for the city, which media reports informed was in the final stages, The hope was that through this some answers could be found to the myriad questions around the water issue. The officials of JICA explained that the focus of their plans was a 24/7 water supply as well as house level metering. The immediate query that necessitated out of this disclosure was: why 24/7, when presently at best people get water for a few hours every 2-3 days? The water is stored in underground tanks so that the supply is in effect 24/7. In poor settlements people get water for a few minutes per week, so here if people could get water for 2-3 hours once every week, their situation would be alleviated. **There seemed to be, thus, a mismatch between the plan and the reality.** In discussions with KWSB officials and partner Urban Resource Center, it was therefore imperative to undertake a study of the situation, find answers to the questions and prepare a proposal for a water plan for Karachi.

It took OPP-RTI a years research to come up with the answers as to where the water that is to flow in pipes ends up and how can people have access to it at an affordable price. KWSB officials extended all support, shared their knowledge and provided maps and reports.

Six towns — Orangi, Site, Gulshan, North Karachi, Landhi and Gadap—were observed and studied in detail. These are towns with low and middle income populations and are located at various distances from the source of water supply. Map and documentation of water supply systems of thses towns were acquired. Theses were also randomly checked on site. The main supply lines and diameters were noted to understand the volumes supplied. Visits were made and detailed

interviews and discussions were undertaken with many KWSB officials– from the Town Superintending Engineers and Site Supervisors to Valvemen as with community activists and tanker suppliers. For all other towns information was gathered through interviews with KWSB officials, residents and study of town water supply maps and observations.

For the trunk mains there were interviews and discussions with the KWSB officials and with the on site team. Maps were studied and some checked on site.

For understanding the per capita, minimum, requirements for water, interviews were undertaken with residents in poor and the lower middle income areas, where community activists were also interviewed.

Community activists, tanker suppliers and KWSB officials provided information on the location of the unofficial hydrants/filling points. Sample survey of these hydrants/ filling points and interviews of the suppliers was undertaken. On the spot surveys of official hydrants and interviews with suppliers and drivers were also undertaken.

KWSB reports and budgets were studied.

On site work of various government agencies and community were observed and studied. These were undertaken as part of the regular monitoring of works by OPP-RTI.

Several KWSB senior members (on duty and retired) and the field team, community activists and tanker suppliers provided regular information and guidance during the course of the research.

WATER SUPPLY IN KARACHI

SITUATION/ISSUES

Source of supply

There are two sources of water supply in Karachi, i) River Indus supplies 1200 cusecs daily equal to 645 MGD; and ii) Hub dam supplies about 50 MGD. The Hub dam supply is rain fed so it fluctuates between about 30-75 MGD.

The total water supply to Karachi is 695 MGD. However, 30 MGD are supplied to the Steel Mills and Port Qasim before the water reaches the Dhabeji pumping station leaving the city with 665 MGD.

Bulk distribution

The supply from the River Indus comes via canals from Kinjhar, Haleji, Gharo and through conduits to the Dhabeji pumping station. The water is then distributed via conduits and distribution mains of diameters 66 inches and below. The routes are divided into, a) Northern - via Pipri to parts of the Malir cantonment areas, Gulshan COD reservoir, Gulshan Town then parts of Gadap, North Karachi, NEK, N. Nazimabad, Gulberg, Liaquatabad and parts of Lyari; and b) Southern, i.e Bin Qasim town, Landhi, Korangi, along the National Highway to Shah Faisal, Jamshed town, Saddar town

(including Defence/Clifton), Lyari and Kaemari. The water mains at placesare interconnected. The Hub source supply is mainly for Orangi, site and Baldia towns. The Hub and Indus supplies at the level of the distribution mains are interconnected. The supply is therefore shared, as needed. For details please refer to the map attached in appendix-1.

Towns quota

The Karachi Water and Sewerage Board (KWSB) has a quota of 417.65 MGD, of the available water for supply to the towns, the Cantonment and DHA areas. However the actual supply reaching the towns is only about 293 mgd. Seven towns—Orangi, Gadap, Baldia, Jamshed, Site, North Karachi and Gulshan—get 30-57 per cent of their quota, others get about 60-100 per cent. Cantonment gets 100 per cent, while DHA gets 133 per cent. Details are in appendix-2.

Official supply through tankers

The KWSB has nine official hydrants, managed by the Rangers (para-military), for supply of water through tankers. The officially sanctioned quantum of water is 13.75[1] MGD, to be supplied by 13,750 tanker trips[2]. **In reality 25 MGD is supplied** through about 8,377 tanker trips. Details of the survey are in appendix-3.

The official rate for water supplied through tankers[3] ranges from 15ps/ gallon to 25 ps/gallon depending on the distance and whether it is for residential or commercial use. The rates are: for 1000 gallons Rs. 150-250; 2000 gallons Rs. 300-450; 3000 gallons Rs. 450-800; 5000 gallons Rs. 1200. **In reality the rates are more then doubled** to 35-60 ps/gallon depending on the distance, bargaining with clients and the season in which the water is supplied and these rates

[1] 3.42 mgd is the quota for gratis supply to deficit areas, rest is for sale as per the official rates.
[2] For calculation, by KWSB, tankers of 1000 gallons capacity are considered. In reality the tanker sizes range from 1000 to 5000 gallons capacity and a few of 10,000 gallons too.
[3] These are supplied by the contracted tanker suppliers. Rangers are authorized to charge from the contractor a fixed amount per 1000 gallons of Rs. 44 (4.4ps/gallon)for water for residential
use and Rs. 73 (7.3ps/gallon) for water for industrial purposes. This then is to be sold at the official rates.

are: for 1000 gallons Rs. 350-600; 2000 gallons Rs. 700-1200; 3000 gallons Rs. 1600-1800; 5000 gallons Rs. 2000-2400. Therefore, the revenue generated per day from sale of water is average Rs. 10 million. This is shared between the various actors.

Unofficial supply through tankers

In addition to the official hydrants there are many more unofficial hydrants/filling points all over Karachi, mostly located near the bulk distribution mains. There are about six areas in Karachi where clusters of hydrants and filling points have been reported: i) Hub reservoir to Banaras Chowk, along the Manghopir road; ii) Banaras chowk to Gutter Bagicha;iii) Mewashah graveyard to Shershah along Lyari nadi; iv)Near Saba Cinema,AyubGoth--- North Karachi and up into Gadap town; v) Along theNational Highway—Malir vi) Lalabad Landhi. **There are a total 161 unofficial hydrants/filling points reported.** Details are in appendix-4. Map showing location is in appendix-5.

Besides these, many more filling points have been reported in all the towns. Sample survey of nine unofficial hydrants was undertaken. These are located along the main roads and in four of the clusters. 19.78 MGD water is being supplied from these unofficial hydrants/filling points[4]. Details of the survey are in appendix-6.

Private Tankers Association

Private Tankers Association has reported that their members own 5000 tankers. Of these 60 per cent are of 5000 gallons capacity, 30 per cent of 3000-2000 gallons and 10 per cent of 1000 gallons. Each tanker makes 10-12 trips daily i.e a total of 50,000-60,000 trips are made. **About 185-222 MGD is supplied, of which 70 per cent is supplied to the industries.**

[4]Around 8288 tanker trips are made. Considering that each tanker makes about 10-12 trips daily, 690-829 tankers are used. Survey shows that filling points are of 4" to 8" diameter. A tanker of 1000 gallons capacity takes 2-3 minutes to fill up, of 2000-3000 gallons takes 5-10 minutes and of 5000 gallons takes 10-15 minutes.

Lack of water in pipes--Options for the poor

Getting water from the Union Council or KWSB managed storage tanks

Rangers tankers, unofficially, selling water that is meant to be supplied free.

Donkey cart supply, The poorest buy small quantities of potable water that is very expensive

Frequent street protests in poor areas, due to non supply of water

Supply for industrial areas

KWSB's quota for the five industrial areas is 46 MGD: for Landhi-13 MGD, Korangi-14 MGD, SITE-10.76 MGD, North Karachi-5 MGD and for F. B area-3 MGD. This quota is included in the towns supply.

The sweet water requirement for industries rangers from 100-145 MGD. **About 90 percent needs are met through the tanker supplies i.e. 90-131 MGD.** It appears therefore that the KWSB's quota does not reach the industrial areas.

Minimum requirement for residents

Surveys show that the minimum requirement of water supply for the lower income and lower middle income residents is about 20 gallons/ person/day.

The demand and supply gap--shortfall met through tanker supplies

Karachi's population is 16 million and with a minimum requirement of 20g/p/d, its need is 320 MGD: industries need an average of 123 MGD: for other uses the calculated average is 110 MGD. The total comes to 553 mgd. If higher incomes needs are added (i.e an extra15g/p/d for 20 per cent of the population) the total comes to 601 mgd.

Bulk supply to towns is 293 MGD[5] and thus there is a shortfall of between 260 to 308 mgd. **This shortfall is met through tanker supplies[6].**

Karachi's bulk supply is 665 MGD. With 15 per cent wasted due to technical leakages, the

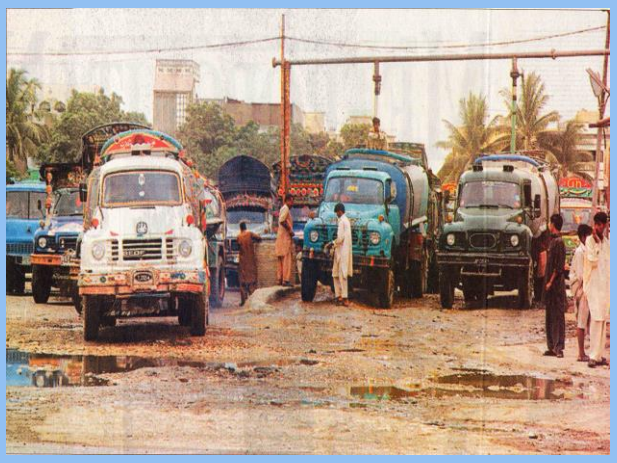
5 information provided by KWSB, also cross checked with calculations for pipe diameter and the carrying capacity. (details are in appendix 2)

6 Based on surveys and the information from the Private Tankers Association (PTA) there are a total of 10,000-12,000 tankers,(5000 of which belong to the PTA). About 1,00,000 to 1,20,000 trips are made daily. Each tankers makes about 10-12 trips daily. Tankers are of varying carrying capacity i.e. about 50% are of 5,000 gallons: 32% are of 2000-3000 gallons and 18% of 1000 gallons, some of 10,000 gallons also exist.

Hydrants thrive through siphoning water from the bulk and selling these all over the city

Type of siphoning

Piped connections from the bulk mains



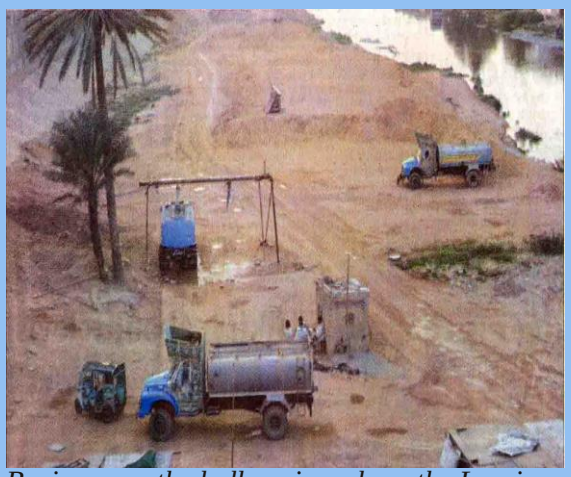
Hydrant along the main Manghopir road, in Site town Qasba --- And in Rexer

In Orangi a filling point in a lane in UC-7

A water main in Gadap town, is directly punctured, so forms a convenient filling point for tankers

Type of siphoning

Perpetually unattended leakages, causing seepage of water underground or ponds are formed.



Boring near the bulk mains, along the Lyari nadi -- a thriving filling point for tankers

Leakage in mains

At the bulk pumping station of Hub, water constantly overflows forming a pool, siphoning pipe is in place, a hydrant is in operation since more then 15 years.

available supply comes to 565.25 MGD. **The gap between the actual supply and the availability is 272.25MGD which is siphoned[7] from the bulk distribution and sold through tanker supplies.** This operation generates an estimated Rs.49.6 billion annually (at the average cost of Rs.0.5/gallon).

The nine hydrants surveyed supplied about 20 MGD. This data when extrapolated over the 161 hydrants reported shows that these can supply about 358 MGD;25 MGD is supplied from the official hydrants; about 333 MGD is supplied through the unofficial hydrants.There is 86 MGD supply of brackish water, which is used by some industries as well as by the residents in water deficient areas.

Frequent power breakdowns disrupt the quantum and schedule of supply

Most of the water is pumped and the supply is thus dependent on the supply of electricity. Due to frequent unannounced power breakdowns, the schedule of water supply to areas is thrown into chaos. This results in disruption in supplies[8] , leading to acute water shortages, area conflicts, violence, unplanned connections and use of suction pumps

A fifteen minutes power breakdown in the bulk can lead to 3-4 hours delay in supply. A number of times this also causes leakages and bursting of pipes due to the bulk's return pressure. Power supply at the bulk pumping

7 The methods of siphoning are:1) piped connection to the bulk distribution mains 2) perpetually unattended leakages in the bulk distribution mains, causes seepage of water. Boring at that sites become the filling points for hydrants. In some cases, like that of the Fauji commander's hydrant near the Hub reservoir, ponds are formed through which water is pumped out into tankers. Lately KWSB officials have informed that 73 piped connections to the bulk distribution mains have been disconnected in North Karachi and Gadap.

8 Supply schedules range from, the best being, 6 hours every 3rd day, (for example in Gulshan town), to the worst being, 30 minutes every 15 days, (examples being the deficit areas of Orangi, Site and Baldia). With power breakdowns this schedule becomes 2-3 hours every six days and 30 minutes once every month.

Elecricity breakdowns create chaos in the schedule of water supply to areas, resulting in uncertainly. People then resort to acute measures like suction pumps.

station (P.S), town P.S and area P.S all have to be synchronised for the schedule to be followed. With breakdowns in one the supply goes into a spin[9]. All towns have reported daily power breakdowns. There are generators at the five bulk P.S (Dhabeji,Pipri.COD,NEK and Hub) but these do not operate efficiently, so the switch over takes time. Effort is being made by KWSB, since long,to acquire power plants on BOT basis for the four main bulk water pumping stations[10] but the plan has not materialized as yet, For the town and areas P.S, standby generators are being installed.

KWSB's organizational Difficulties

Unplanned connections, both official and unofficial abound in all towns. Use of suction pumps is common, resulting in lack of pressure and faulty distribution. Everywhere there are the issues of verandas or portions of

[9] In the seven towns detailed (Orangi. Site, Gulshan,Gadap, N. Karachi, Landi and Bin Qasim) there are daily power breakdowns of 2-3 hours. This causes a 4-6 hrs delay and so a shortage in supply, for example in Orangi the supply schedule is 22 hrs after every 50 hrs, this then becomes about 16 hrs after every 50 hrs and can be further reduced.

[10] For P.S Dhabeji of 35 MW, NEK of 10 MW, Hub of 10 MW and Pipri of 10 MW.

buildings extending over the water lines, This makes maintenance very difficult and at times such undertakings are prone to violent reactions from owners of the premises.

In all the towns there is a lack of technically trained staff. The situation is compounded by the ban on recruitment within KWSB, since 1994. Most towns just have 4-5 technically trained field staff i.e. engineers or diploma holders. Most of the operational work, for example valve operation, maintenance and repairs, are managed by people on the posts of fitters, *baildars* and coolies, who have learnt the work on the job. In many places residents have kept, on payment, their own valve-men and these and others, numbering about 10-15 valvemen per town have been taken on daily wages by the KWSB in 2007.

Documentation of the existing system mostly the distribution mains is available with the KWSB field staff. These need to be updated.

KWSB has a meager O&M budget. KWSB has a meager annual O&M budget of Rs. 1.2 million per town. Development projects and repair works are undertaken through other funds like the Tameer-e-Karachi program, Provincial and City Government's annual development programs and also through the MNA, MPA, UC and town Nazim's funds. Most main line works are undertaken through the KWSB, while most secondary and lane level works like laying of pipelines, valve placements and repair works are undertaken independently of KWSB by the City Government., Town, UC, MNAs, MPAs and residents[11].

[11] distribution pipeline at the neighbourhood and household levels exist every where, laid by various government departments as well as by the residents on self help basis. An OPP-RTI survey of 334 katchi abadis (dated 2004) that mapped and documented infrastructure, showed that in 71% lanes, water lines exist with 50% laid by the people on self help investing Rs.154.52 million. Therefore the priority at the neighbourhood level is provision of water and not projects for laying pipelines.

KWSB's budget is dependent on government subsidy

KWSB's current annual budget (2007-2008) is Rs. 5.3 billion; Rs. 2 to 2.5 billion are recovered as the water/ sewerage taxes, rest is government subsidy. A total of Rs. 18.678 billion are outstanding dues against the government and others. Details are in appendix-7.

Water supply to all at affordable and humane costs is possible

A comparison of the KWSB's annual budget of Rs. 5.3 billion to the Rs. 49.6 billion generated from the sale of 272 MGD, that is siphoned and supplied through tankers, shows the irony of the situation. If KWSB can supply this water, it can earn profit as well provide water to all at affordable, humane costs.

Example: if only the minimum requirement of 20g/p/d (320 MGD) is supplied at the humane cost of 5 ps/g,[12] Rs. 5.8 billion can be generated annually. This is more than the KWSB's annual budget. Through sale of the rest, about 245 MGD, at the present average, tanker supply, rate of 50 ps/gallon, Rs. 44.7 billion can be generated annually. This is the huge bonus that can be used to resolve the issues 2 and 3 as stated below.

[12]This amount comes to about Rs. 200/month, is affordable by all households and is the same as the average tax billed all over the city. In water deficit areas, poor people are spending an average Rs. 500-600/month in buying sweet and brackish water. People are willing to pay this amount to the KWSB for provision of sweet water. In addition some of the poorest are buying sweet water supplied through *gadha garis*, the cost of which comes to Rs. 100-120 for about 25 gallons i.e Rs 4 /gallon. (about eight times the cost of water supplied thru tankers).

PRIORITY ISSUES

Siphoning of 272 mgd (41%) of water from the bulk distribution

Its supply through tankers and sale on profit, generating an estimated Rs.49.6 billion**—the profitable parallel supply.**

Electricity breakdowns

Causing daily disruptions and reductions in supplies while schedules cannot be followed. This in turn gives rise to serious problems in supply and management.

KWSB's organizational difficulties

Lack of technical staff, meager maintenance budget, lack of recovery of water/sewerage tax from GOP and the financial dependence on government (i.e subsidy for financing the managerial and development expenses).

Problems 2 & 3 are linked to KWSB's managerial and financial difficulties which are intrinsically linked to issue 1.

SOLUTION

Bulk distribution system is a strategic asset, so it has to be considered to be such. Siphoning has to be stopped on war footing.

KWSB has the technical responsibility to undertake technical plugging of the bulk distribution, while Nazims have to play the political role of ensuring that the bulk distribution remains unhampered. **Mega management is needed.** This would enable provision of water to all at an affordable humane cost as already detailed, while making KWSB a solvent institution.

Metering of bulk supply is essential. This will assist in checking the siphoning and ensuring that towns get their share. Once the water reaches the towns its distribution can be handled by TMAs and UCs and be linked to recovery of water taxes within towns. The siphoning and technical leakages within town can then be handled. Quotas to towns can be revised considering the current

population and its needs, unlike the present quota.

Efforts for metering the bulk distribution have always been made by KWSB. Latest push was about a year back and continues, but then there is no implementation.

Official supplies through tankers should revert to KWSB. As supply by rangers has in addition to not solving the problem, become prone to siphoning. KWSB and elected Nazims to be responsible and so accountable for managing this supply. Since a year there are CDGK orders for the same, but then the handing over has always been delayed.

The phase wise steps needed to stop the siphoning can be decided on further discussions with KWSB, suppliers and citizens. Once it is accepted that there is siphoning, detailed actions needed can be identified through forums.

Independent power supply is needed.

KWSB's plans for installing power plants at the bulk P.S and generators at the area P.S will resolve the problems of breakdowns. Finances are needed for these. With siphoning controlled KWSB can invest in this vital need.

Resolution of KWSB's organizational issues is linked to 1 and 2 so possible, with the following.

a) acceptance of the priority issue of siphoning and making efforts to resolve it, in the process generating finances, becoming efficient and independent;

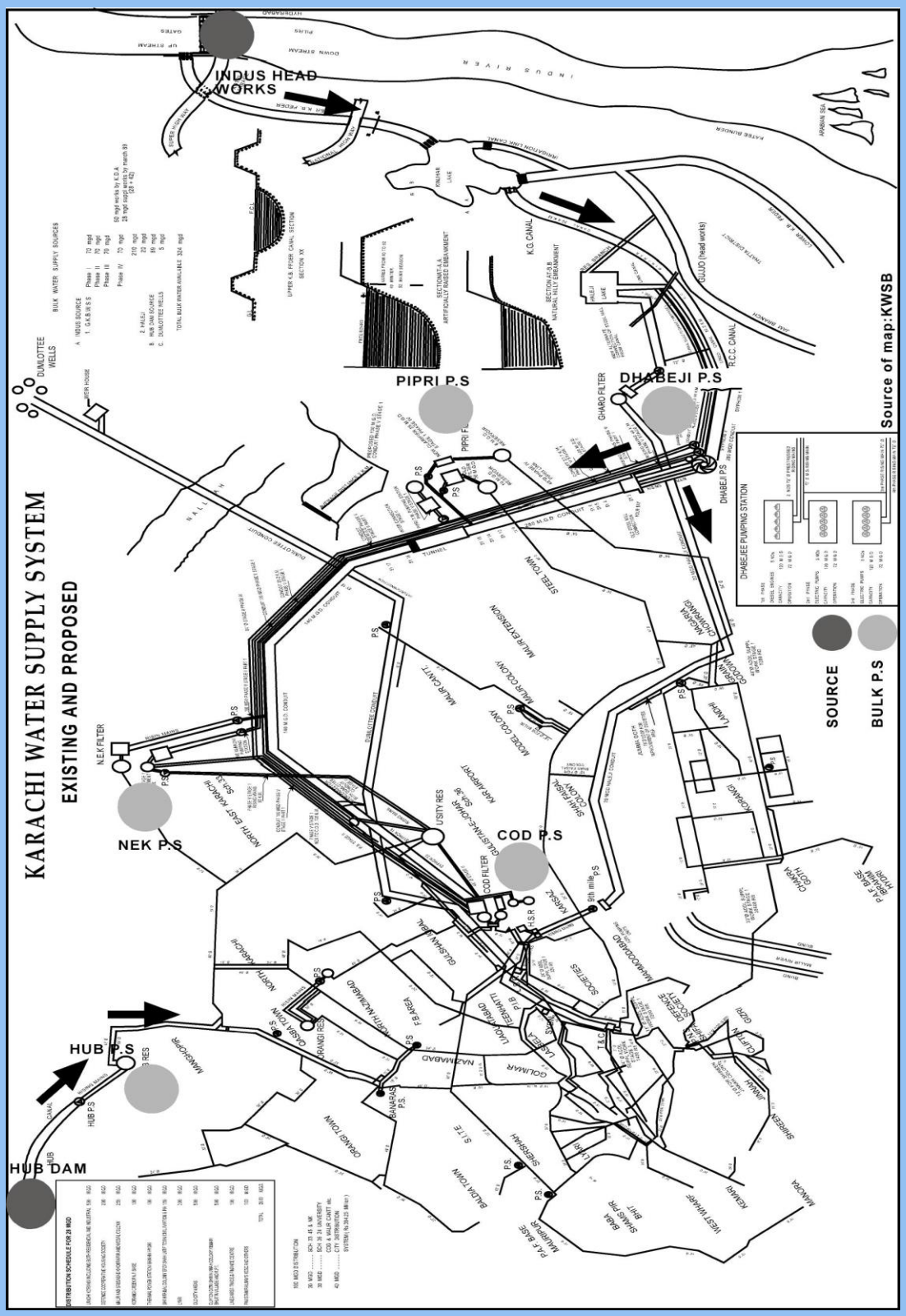
b) deciding that water supply has to be a public sector responsibility and working towards making the organization a viable public sector institution[13].

[13] A remnant of the efforts, by GOP, for privatization of KWSB is the ban on recruitment in place since 1994, this needs to be lifted. It is important to note here, that efforts for privatization, which gained in momentum in 1997-98, were stopped due to immense public pressure.

APPENDICES

Appendix-1

Maps of Karachi's Water Supply system



Appendix-2

KWSB's Townwise quota for water supply and the actual received.

Sr. No.	Town	Quota (mgd)*	Actual Received	
			(mgd)!	% quota
1.	Lyari	14	12	85
2.	Saddar	32	30	93
3.	Kaemari	10	8	80
4.	Jamshed	30	14	46
5.	Gulshan	35	20	57
6.	Shah Faisal	12	9	75
7.	Malir	20	12	60
8.	Landhi	16	20	125
9.	Korangi	24	21	87
10.	Bin Qasim	14	14	100
11.	Gulberg	22	17	77
12.	North Nazimabad	20	14	70
13.	Liaquat abad	18	18	100
14.	North Karachi	35	20	57
15.	Orangi	40	12	30
16.	Baldia	20	8	40
17.	Site	18	10	55
18.	Gadap	8	3	37
19.	Cantonment	22	22	100
20.	DHA	6	9	133
	Total	416	293	

***** Karachi Master Plan 2020 document. (Includes the quota for industries.)

! Information acquired thru interviews with the KWSB Chief Engineers, Superintending Engineers and the Executive Engineers. Information has also been cross checked with the data on the full flow possible in the supply mains w.r.t the diameter of pipes.

- Calculations for the full flow (supply in mgd) in pipes for the respective diameter shows:

Pipe diameter	**flows (mgd)**
66"	54
54"	36
48"	28
36"	16
33"	15
24"	7

Appendix-3

Survey of the Official Hydrants*:

Map in Appendix-6 shows the location of these Hydrants

Sr.No.	Name	Hours Open /day	No.of Tankers /day	Capacity (gallons/tanker)	Gallons/day	Gallons/day/ hydrant
1	LIA	20	400	1000	4,00,000	
			200	2000	4,00,000	1,200,000
			80	5000	4,00,000	
2	Shah Faisal	24	300	1000	3,00,000	
			150	2000	3,00,000	9,00,000
			100	3000	3,00,000	
3	Jamia Millia	24	480	1000	4,80,000	
			240	2000	4,80,000	1,440,000
			160	3000	4,80,000	
4	NEK	24	288	1000	2,88,000	
			720	2000	14,40,000	3,768,000
			360	3000	10,80,000	
			192	5000	9,60,000	
5	F.B. Area	24	288	1000	2,88,000	6,72,000
			192	2000	3,84,000	
6	Muslim Abad	24	144	2000	2,88,000	
			192	3000	5,76,000	6,264,000
			1080	5000	54,00,000	
7	Sydnum	24	144	2000	2,88,000	
			384	3000	11,52,000	5,760,000
			864	5000	43,20,000	
8	Sakhi Hasan	24	120	1000	1,20,000	
			120	2000	2,40,000	3,960,000
			720	5000	36,00,000	
9	Juma Goth	24	240	1000	2,40,000	
			130	2000	2,60,000	7,70,000
			90	3000	2,70,000	
	Total		**8378**			2,47,34,000 Say 25 mgd.

Capacity	**No.of Tankers**	**%**
1000 gallon	2116	25.2%
2000 gallon	2040	24.35%
3000 gallon	1286	15.33%
5000 gallon	2936	35.04%

* Survey was conducted during the months of July – Sept 2007. There was average 1-2 hours vigil per hydrant. This data was extrapolated over the hours that the hydrant functioned, to get the per day data. Info was also gathered thru talk with tanker operators and area persons

Appendix-4

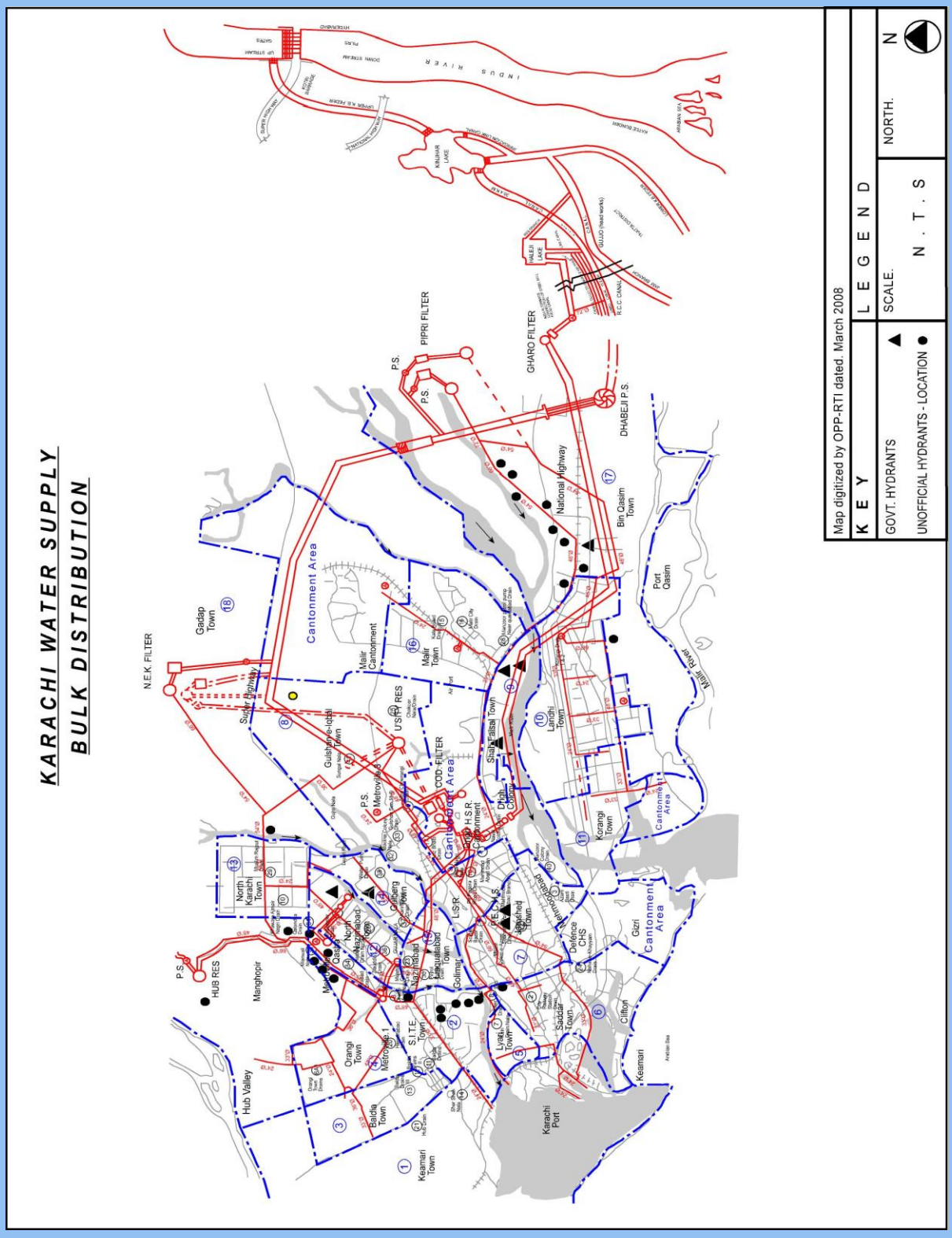
Unofficial Hydrants/Filling points*: Location and numbers

1)	Around Ayub goth and extending in to Gadap town:	100
2)	Manghopir road – Banaras chowk to Hub reservoir:	6
3)	Site town along Lyari nadi:	8
4)	Mewashah graveyard:	25
5)	Near Bismillah Hotel, Old Golimar:	3
6)	Khairabad:	3
7)	Garden:	1
8)	Malir National Highway and also along Malir nadi:	5
9)	Rexer Old Golimar:	1
10)	Hino Chowk, Haroonabad:	2
11)	Lalabad Landhi:	5
12)	Gutter Bagicha:	2
	Total –	161

* As reported by Community Activists, KWSB Officials, Unofficial Hydrant Operators, as well as observed and randomly checked.

Appendix-5

Map showing the location of the official and the unofficial hydrants/filling points.



Appendix-6

Sample Survey of the Unofficial hydrants/filling points:

Sr. No.	Name	No.of Tankers/day	Capacity Gallons/tanker	Gallons/day	Gallons/day /hydrant
1	Garden	60	1000	60,000	2,40,000
		90	2000	1,80,000	
2	Haroonabad-I	540	1000	5,40,000	2,542,000
		324	3000	9,72,000	
		206	5000	1,030,000	
3	Haroonabad-II	540	1000	5,40,000	2,542,000
		324	3000	9,72,000	
		206	5000	1,030,000	
4	Rexer	400	1000	4,00,000	3,766,000
		307	3000	9,21,000	
		379	5000	1,895,000	
		55	10000	55,000	
5	Gutter Bagicha	120	1000	1,20,000	7,20,000
		180	2000	3,60,000	
		80	3000	2,40,000	
6	Fauji Commander	200	1000	2,00,000	8,00,000
		120	5000	6,00,000	
7	Hino Chowk	960	1000	9,60,000	5,566,000
		800	2000	1,60,000	
		1002	3000	3,000,000	
8	Gutter Bagicha (Old golimar)	309	1000	3,09,000	2,884,000
		540	2000	1,080,000	
		218	5000	1,090,000	
		40	10000	4,00,000	
9	Ayub Goth-I	180	1000	1,80,000	7,20,000
		108	5000	5,40,000	
	Total	**8288**			**19,780,000**
		Tanker Trips (690-829 tankers make 10-12 trips daily)			19.78 mgd Say 20 mgd.

Tanker (cpty/gallons)	1000	2000	3000	5000	10,000
Qty	3309	1610	2037	1237	95
Percentage	39	19	25	16	10

* Survey was conducted during the months of July – Sept2007. There was average 1-2 hours vigil per hydrant. This data was extrapolated over the hours that the hydrant functioned, to get the per day data. Info was also gathered thru talk with tanker operators and area persons.

Appendix- 7

FINANCIAL POSITION OF KWSB AS ON 30.04.2007

Rs. In Million

Sr. #	PARTICULARS	Estimates of Budget 2006-07	%age	30.04.2007 Receipt & Payment	
1	**Receipts**				
1.1	Water & Sewerage	3,026.000	69%	1,901.80	
1.2	Arrear recoverable from GOP/GOS/CDGK	1,376.179	31%	-	
	Total Receipts:	4,402.179	100%	1,901.80	43%
	Govt. Aided Project	903.742			
	Total Receipt:	5,305.921			
2	**Expenditure**				
2.1	Electricity	1,820.000	41%	500.44	27%
2.2	Salaries	1,259.015	29%	848.61	67%
2.3	Improvement & Maint. Works	671.539	15%	330.32	49%
2.4	POL	118.133	3%	82.09	69%
2.5	Debt Retirement	277.000	6%	-	0%
2.6	Tools Stationery, Telephone, Soap, Duster	85.992	2%	40.59	47%
2.7	Medical	55.500	1%	48.16	87%
2.8	Alum Chlorin	85.000	2%	39.17	46%
2.9	Gas	30.000	1%	24.88	83%
	Total Expenditure:	4,402.179	100%	1,914.26	43%
	Govt. Aided Project				
	(i) K-III	903.742		210.000	
	Grand Total Expenditure:	5,305.921		2,124.26	

SUMMARY REPORT OF KW&SB OUTSTANDING DUES AGAINST GOVERNMENT OF PAKISTAN (DEPARTMENTS CALCULATION ON THE BASIS OF CONSUMPTION DULY AGREED & SIGNED BY THE CONCERNED DEPARTMENT)

S.No	Name of Department	Water	Sewerage	Conservancy	Fire	Grand Total
1.	Defence	120,079,537	344,057,960	353,897,785	206,452,159	1,024,487441
2.	Science & Technology	182,287	11,464,961	13,294,453	7,812,122	32,753,823
3.	Atomic Energy	84,621	2,652,301	2,842,980	1,436,942	7,016,844
4.	Petroleum	387,206	23,704,927	24,304,825	15,789,295	64,186,253
5.	Commerce	48,132	856,265	1,092,610	1,091,831	3,088,838
6.	Food, Agriculture & Live Stock	642,800	1,312,963	1,312,963	672,255	3,940,981
7.	Industries & Production	131,475,000	512,205,488	540,369,409	461,160,935	1,645,210,832
8.	Finance	1,456,078	363,778	363,778	30,306,851	32,490,485
9	Ports & Shipping	101,225,362	196,679,739	223,042,113	178,050,617	698,997,831
		355,581,023	1,093,298,382	1,160,520,916	902,773,007	3,512,173,328
	Others				Say Rs.	3.512 Billion
						15.166 Billion
					TOTAL :	18.678 Billion

Source: Presentation briefing to the District Coordination Officer, City District Government Karachi, by the Managing Director KWSB on 18th May 2007.

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