

## COMMUNITY PARTICIPATION IN DEVELOPMENT, OPERATION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE SERVICES

By

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### Abstract

Access to safe drinking water is the “Right” of every citizen. This is the resolution passed by the General Assembly of United Nations but also the aim and commitment of National and Provincial Governments of Pakistan to provide access to safe and sustainable drinking water supply to entire population within a certain frame of time.

Provision of facilities of access to safe drinking water and collection and disposal of waste water not only uplifts the living standard of people of the area but also improves hygienic and health condition of residents.

Development of basic infrastructure of water and sanitation services and its operation and maintenance in a sustainable manner by involving the community, residents of the area, ultimate beneficiaries and end users is always successful if it is implemented through proper planning, comprehensive social survey and creation of ownership concept.

### 1. Access to Drinking Water is the Right of every citizen

On 28th July 2010 General Assembly<sup>1</sup> of United Nations passed a resolution that “*Safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life and all other human rights*”.

National Drinking Water Policy<sup>2</sup> approved by the Federal Cabinet on 28<sup>th</sup> September 2009 describes that “*The Government of Pakistan, while recognizing that access to safe drinking water is the basic human right of every citizen and that it is the responsibility of the state to ensure its provision to all citizens, is committed for provision of adequate quantity of safe drinking water to the entire population at an affordable cost and in an equitable, efficient and sustainable manner*”.

#### 1. a. Millennium Development Goals (MDGs)

As per Millennium Development Goals (MDGs)<sup>3</sup> Target-10, by the year 2015, the population without sustainable access to safe drinking water and basic sanitation should be reduced by half.

#### 1. b. National Drinking Water Policy

As per National Drinking Water Policy<sup>4</sup>, the Government of Pakistan is committed to “Provide access to safe and sustainable drinking water supply to the entire population of Pakistan by 2025”.

**1. c. Punjab Drinking Water Policy**

As per Punjab Drinking Water Policy<sup>5</sup>, the vision of the Government is “Provision of safe drinking water of an adequate quantity at an affordable cost through equitable, efficient and sustainable services to all citizens by 2020”.

Presently, Pakistan is facing financial constraints, which is affecting the development activities. Construction of water supply and sewerage facilities, which are the fundamental elements of social sector, and their extension to the deprived areas / abadies / communities, are also being hit due to this financial crisis. Water supply and sanitation, therefore, declared as one of the key areas.

Poverty Focused Investment Strategy of Punjab (PFIS 2006) has identified Water and Sanitation as one of the key areas in which investment is poverty focused<sup>6</sup>.

Poverty focused sectors broadly include the impacting increase in incomes, enhanced access to quality social service delivery, and provision of social protection. Following the suggestion of the Planning and Development Department, the first PFIS includes the following sectors:

- Education and Literacy
- Health
- Water Supply and Sanitation
- Housing and Urban Development
- Small and Medium Enterprises (Punjab Small Industries Corporation)
- Livestock and Dairy Development

**2. Participation of Community Based Organization**

Considering the limitations of the foreign loans, it is suggested to accomplish the goals through local resources following Component Sharing approach. WASA can achieve the purpose with citizens / community participation in its future plans.

**2. a. Extension of Water and Sanitation Services to Unserved Areas**

In order to extend the services to un-served peripheral areas around the city, citizen’s participation is essential. The following steps may be decided:

1. Creation of Sub-Committees for coordination of Water Utilities and Community Based Organization (C.B.O.).
2. Establishing responsibilities.
3. Execution of System (Trunk System, Lateral System).
4. O and M of System.

5. Share of People, CBO and Water Utilities.

**Primary Works:**

- Tubewells.
- Overhead Reservoirs.
- Transmission Mains
- Disposal Stations

**Secondary Works:**

- Water Supply Distribution System.
- Lateral and Branch Sewers.
- Water Supply House Connections with High Density Polyethylene (HDPE) Pipes.
- Sewer House Connections.
- Construction of secondary and tertiary drains for storm water.

**2. b. Operation and Maintenance**

In order to ensure the recovery and collection of expenditures for provision of water and sanitation services and prevention from illegal connections, citizens can serve as the primary stakeholders. It would be in the interest of majority of the citizens to avoid illegal connections in the area. Thus elimination of illegal connection will result in enhancement of revenue and creation of resources for future investment.

**2. c. Water Conservation through Metered Water Supply**

Metering is the best option for water conservation and recovery. Lahore WASA needs to ensure the effective utilization of already installed 60,000 meters before introducing new 300,000 meters to new areas. Pilot areas can be selected and gradual metering plan can be made effective. Incentives on metered connections can encourage citizens to use the water meters. This goal can be efficiently achieved by community / citizen participation through building confidence in procuring and installation of water meters.

**3. Projects Executed with the help of Community Based Organization / Community Participation**

In order to expand the services to un-served and peripheral areas around the city, citizen's participation has been proved fruitful. The following two projects have been executed in past on the basis of community participation:

- i. Changa Pani Programme, WASA Lahore.

ii. Orangi Pilot Project Karachi.

**3. a. Project Executed by Lahore WASA - Changa Pani Programme.**

A project namely Changa Pani Programme as a strategic initiative of the Government of Punjab was launched through Urban Unit, P & D Department in partnership with City District Government Lahore, WASA Lahore (Water utility), Anjuman Samaji Bahbood (ASB) a civil society organization in the deprived areas of East Lahore including Badar Colony, etc. having a population of about 20,000 people.

**3. a. i. Existing Situation.**

- Piped water supply was non-existent.
- Existing water supply through ejector pumps and hand pumps, abstracting water of poor quality.
- No proper sewerage / drainage system.
- Unhygienic and improper sanitation conditions.
- Poor health status of the inhabitants.
- Excreta disposal through soakage pits / gharkies.







**3. a. ii. Objectives of the Project:**

- Provide adequate water supply and sanitation services to 20,000 people in the project area on 24 x 7 basis.
- Provide efficient, reliable, affordable and environmentally sustainable WATSAN system in poor urban area of Badar Colony UC-60 Lahore.
- Mobilize the community for internal component sharing of the project.
- Provide health, hygienic and environmental education for the community and related stakeholders.
- Develop a partnership model for WASA Lahore for replication in other parts of province / WASAs.
- Carry out research on policy learning of urban integrated water and sanitation projects in Punjab.

**3. a. iii. Social Survey:**

Social survey conducted:

- In order to make the community aware about the importance of hygiene and clean drinking water.
- To make the community well versed with the participatory development model.
- To convince the community that how the internal component provided by them would improve their living standards.

**3. a. iv. Components of the Project :**

- External Component.
- Internal Component.

**External Component : (Rs.110 Million)****Water Supply System**

Tubewell 04-cusec capacity = 01-No.

Overhead Reservoir 50,000 gallons capacity = 01-No.

Water supply lines:

12" dia:	5,500 Rft	
10" dia:	6,000 Rft	
8" dia:	4,000 Rft	
6" dia:	11,000 Rft	
Total: =	26,500 Rft	(08-KM)

**Sewerage System:**

Sewer lines:

48" dia:	5,500 Rft	
42" dia:	2,200 Rft	
36" dia:	1,600 Rft	
27" dia:	1,000 Rft	
24" dia:	1,500 Rft	
21" dia:	1,500 Rft	
18" dia:	2,200 Rft	
15" dia:	3,800 Rft	
12" dia:	8,000 Rft	
Total: =	27,300 Rft	(8.32-KM)

**Internal Component:(Rs.36 Million)**

**Water Supply System:**

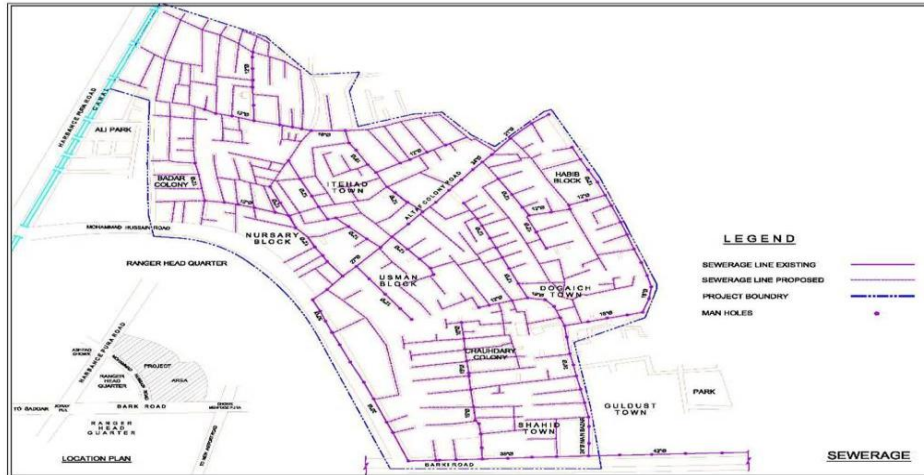
i. Water supply lines:

4" dia =	13,200 Rft
3" dia =	29,000 Rft
Total =	42,200 Rft (12.86-KM)

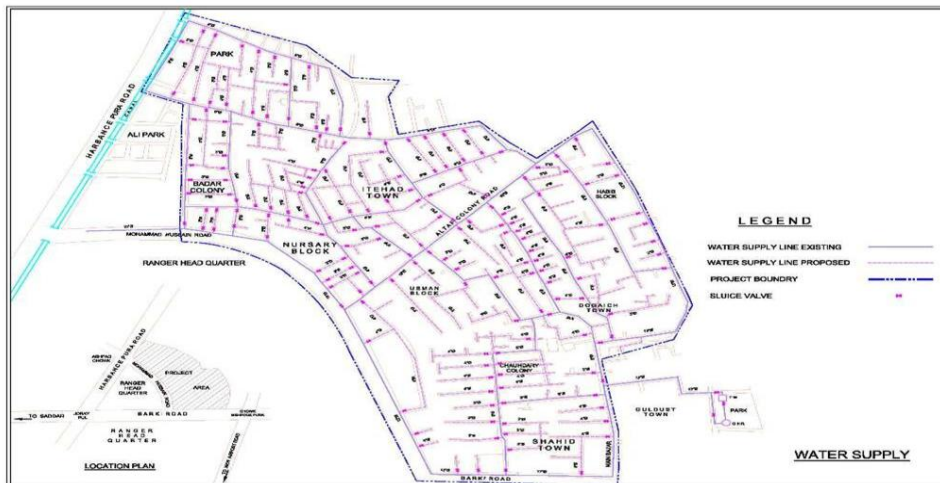
**Sewerage System:**

i. Sewer lines:

9" dia =	30,000 Rft (9.14KM)
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**Plan of Water Supply**



**Plan of Sewerage System**







### **3. a. v. Memorandum of Understanding (MOU):**

A memorandum of understanding was signed by all the stakeholders and the salient features of MOU are:

#### **Steering Committee:**

A steering committee was formulated to examine the progress of the project. Urban Unit was appointed as Secretariat of the Steering Committee. The chairmanship of the committee was given to the Project Director, of Urban Unit. The members of the Committee were:

- PD, Urban Unit, PandDD (Convener)
- Anjuman Samaji Bahbood.
- DMD (OandM), WASA, LDA.
- Nazim, UC-60

#### **Scope of Steering Committee:**

- Coordination regarding successful design and implementation of the project

- MOU Implementations
- Conflict resolution between the partners
- Other matters related to the project

#### Functions of different Stakeholders under MOU:

- WASA responsible for design, implementation, monitoring, preparation of PC-I, its process and approval and operation and maintenance of the system including monitoring of water quality during and after execution of the project.
- Anjuman Samaji Bahbood (ASB) responsible for social mobilization, capacity building, data collection, documentation of Internal and External component and conducting the Socio Economic Survey.
- Urban Unit responsible for building broad consensus between the partners, to facilitate in quality assurance for implementation of internal and external component and research work (*under this programme a teacher's training programme for Aziz Bhatti Town area was conducted at WASA Training Centre*).
- City District Government (UC-60) responsible to coordinate and support ASB, facilitation in community dialogues, liaison with WASA and Urban Unit and represent community in the Steering Committee.

#### Position Before and After





### 3. b. Orangi Pilot Project:

**Component Sharing Model** of Orangi Pilot Project Karachi is another example to involve the citizens in the development work. According to this model, Karachi Water and Sewerage Board (KWSB) focus on the provision of **external** infrastructure comprising main lines, disposal stations and treatment plants while the citizens were to develop **internal** infrastructure on low cost and self help model comprising house level septic tanks and street sewerage system. This Pilot Project has been held up as one of the best examples of NGO-led development in an urban area and as one of the most successful NGO led sanitation provision projects. This program has helped over one million people to improve sanitation condition since its inception in year 1980.

#### 3. b. i. Background:

With approximately one million inhabitants, Orangi is the largest squatter settlement in Karachi. Until 1980, most households used bucket latrines and soak pits for the disposal of human waste and open sewers for carriage of wastewater, resulting in a high rate of water-borne diseases.

Dr. Akhtar Hameed Khan established the Orangi Pilot Project (OPP) in 1980 with the objective of improving living conditions in the area and to develop a model for replication in other areas.

The OPP commenced with a study of the problems in Orangi and identified four levels in a modern sanitation system:

- Sanitary toilets inside the house.

- Underground sewer lines with house connections and manholes in the house access lanes.
- Secondary collector drains.
- Main drains and the treatment plant.

OPP research revealed that house owners were willing and competent to assume the responsibility for construction and maintenance of the first three levels that constitute about 90 percent of the system. The main drains and the treatment plants are certain responsibilities of the government.

### **3. b. ii. Motivation of the Residents:**

The involvement of the residents did not stop after the completion of construction stage since regular maintenance was also very important. As the residents made a contribution towards the construction of the system, they were also highly motivated to ensure its sustained operation through regular maintenance.

### **3. b. iii. Effects of the Project:**

The rate of sanitation-related diseases has gone down giving residents, especially women, more time and energy for productive activities. Because less money is now to be spent on medical treatment, a handsome amount from the family income can be used for education, housing, nutrition etc.

## **4. Future Outlook:**

As already pointed out that presently Pakistan is facing financial constraints, which are badly affecting the development activities. Considering the limitations of the foreign loans, WASA Lahore endeavors to accomplish its goals through local resources following Component Sharing approach following Changa Pani Programme and Orangi Pilot Project. At the same time we assess that the Citizens can be the Better Donors.

According to the mentioned model protocols, Water Utilities should focus on the provision of **external** infrastructure including main lines, disposal stations and treatment plants while the citizens should develop **internal** infrastructure on low cost and self help model which includes house level septic tank and street sewers.

**The component sharing model** is likely to reduce the cost of the development works to a considerable level and dependence of WASAs and other water utilities on foreign loan institutions and Government subsidies. Further it ensures the effective utilization of the facility because citizens will take care of their own investment.

Maintenance of the services can be transferred to the citizens by formulating citizen organizations. These organizations will reduce the regular cost of the WASA being spent on maintenance. In case of Changa Pani Programme. The WASCO (Water and Sanitation Committee) is a very good example, which is operating the internal component of water supply and sewerage system of the area. In a two years span the number of connections has increased to 2640 out of 2860 houses of the locality (92%).

Lahore WASA has already included this aspect in formulation of their six years Business Plan. Citizen Liaison / Steering Committees may be formulated as done in case of Changa Pani Programme.

**5. Recommendations:**

- i. Keeping in view the financial constraints of the country, the community participation in the development, operation and maintenance may be encouraged.
- ii. The successful examples of community participation projects like Changa Pani Programme and Orangi Pilot Project may be followed.
- iii. Water Utilities should focus on the provision of external infrastructure including main lines, tubewells, overhead reservoirs, trunk sewers, disposal stations and treatment plants while the citizens should develop **internal** infrastructure like small distribution lines, water and sewer house connections, septic tank and lateral sewers (street sewers) on low cost and self help model basis.
- iv. Maintenance of the services can be transferred to the citizens by formulating citizen organizations. These organizations will reduce the regular cost of the WASA being spent on maintenance. (In case of Changa Pani Programme). The WASCO or Water and Sanitation Committee is a very good example, which is operating the internal component of water supply and sewerage system of the area. In a two years span the number of connections has increased to 2640 out of 2860 houses of the locality (92%). Lahore WASA has already included this aspect in formulation of their six years Business Plan.
- v. Citizens Liaison / Steering Committees may be formulated consisting of water utility, representative of TMA and community based organizations as done in case of Changa Pani Programme.
- vi. Scope of Work of City Liaison Committee may be established which may include:
  - Help Water Utility in identification of Civil Society Organizations/NGOs working in the water and sanitation sector.
  - Assist Water Utility in mapping and documentation of un-served areas with citizen participation.
  - Suggest citizen involvement measures in all upcoming Water Utility schemes.

- Suggest ways to educate citizens about water quality, Water Utility services and reduce water wastage.
- Suggest ways to develop partnership with CBOs/NGOs working on component sharing model.
- Assist Water Utility on any other measures relevant to promote citizen participation in Water Utility governance.

**References**

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3. Millennium Development Goals Report 2005, Page-84, Target-10
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5. Draft Punjab Drinking Water Policy 2010, Vision, Page 4
6. Poverty Focused Investment Strategy of Punjab (PFIS 2006), Page-10 and 22.
7. PC-I of Changa Pani Programme.