

Planning Manual for

Water, Sanitation & Hygiene

Development Projects
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ACRONYMS

ADP	Annual Development Programme
ASER	Annual Status of Education Report
BCC	Behavioural Change Communication
BCR	Benefit to Cost Ratio
BISP	Benazir Income Support Programme
CBO	Community Based Organisation
CDWP	Central Development Working Party
CPM	Critical Path Method
DDC	District Development Committee
DDSC	Departmental Development Sub-Committee
DDWP	Divisional Development Working Party
DFI	Development Finance Institution
DoE	Department of Education
DoH	Department of Health
ECNEC	Executive Committee of National Economic Council
FEC	Foreign Exchange Component
GIS	Geographical Information System
HUD&PHED	Housing, Urban Development and Public Health Engineering Department
IMR	Infant Mortality Rate
IRR	Internal Rate of Return
LG&CDD	Local Government and Community Development Department
mgd	Million Gallons per Day
MICS	Multiple Indicator Cluster Survey
MTDF	Medium Term Development Framework
NGO	Non-Governmental Organisation
NPV	Net Present Value
O&M	Operation and Maintenance
P&DD	Planning and Development Department
PC	Project Cycle
PCRWR	Pakistan Council of Research in Water Resources
PCSIR	Pakistan Council for Scientific and Industrial Research
PDWP	Provincial Development Working Party
PERT	Project Evaluation and Review Techniques
PMIU	Project Management Implementation Unit
PMU	Project Management Unit
PRSP	Poverty Reduction Strategy Paper
PSDP	Public Sector Development Programme
PSLM	Pakistan Social and Living Standards Measurement Survey
PV	Present Value
RBF	Results Based Framework
Rs	Rupees

SDPI	Sustainable Development Policy Institute
SMART	Specific, Measurable, Achievable, Relevant, Time-bound
TMA	Town/Tehsil Municipal Administration
U5MR	Under Five Mortality Rate
UNICEF	United Nations Children's Fund
WASA	Water and Sanitation Agency
WASH	Water, Sanitation and Hygiene

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INTRODUCTION

Population

Punjab is the most populous province of Pakistan with approximately 55.6% of the country's total population. The population of Punjab increased from 20 million in 1951, to 73 million in 1998, 95 million in 2011 and is estimated at 101.391 million in 2015. The population growth rate in 1998 was 2.64%, which decreased to 1.9% in 2011. At the present growth rate of the population, Punjab is expected to double after 36 years. It is estimated that the population growth rate will reach 1.63% by 2030 with a population of 130 million, and by 2050 the population will have increased to 181 million. Rapid urbanisation and a growing population will continue to increase demands for sector and sub-sector services, as the current share of urban population is 31.3%.

Institutional Arrangements

At the provincial level, there are two main departments that are responsible for water and sanitation namely, Housing, Urban Development and Public Health Engineering Department (HUD&PHED) and Local Government and Community Development Department (LG&CDD). City District Governments are responsible for carrying out water and sanitation functions through Water and Sanitation Agencies (WASAs) and Solid Waste Management Companies. Town/Tehsil Municipal Administrations (TMAs) take care of both rural and urban water and sanitation in their respective tehsils. Coordination mechanisms between these two departments are improving gradually although there is still much that needs to be done to bring it to an optimal level. With regards to governance of water and sanitation, the institutional structure is as follows:

- At the provincial level Housing, Urban Development and Public Health Engineering Department (HUD&PHED) and Local Government and Community Development Department (LG&CDD)
- Local governments - Water and Sanitation Agencies (WASAs) are responsible for 5 big cities.
- All other areas - Town/Tehsil Municipal Administration (TMAs) are responsible that are likely to be replaced with elected councils very soon according to the Local Government Act.
- Rural Water Supply Schemes these are planned, designed and executed by PHED while operation and maintenance (O&M) is the responsibility of TMAs and Community Based Organisations (CBOs).

Drinking Water

As per the Punjab Multiple Indicator Cluster Survey (MICS) 2014, about 94% of the population uses an improved source of drinking water 89% in urban areas and 97% in rural. Further, 19.2% population of Punjab province has access to tap water followed by 41.7% motorised pump and 30.6% hand pumps. The proportion of population using tap water as a main supply of drinking water is higher in urban areas (39.2%) as compared to only 9.6% in rural areas.

There are disparities and differences across the regions and districts. District Lahore leads all other districts in piped water with 64% population enjoying this facility, while less than 3% of the population in Bhakkar, Layyah, Muzaffargarh, Rajanpur and Jhang use piped water. The situation in district Faisalabad is considerably worse than other districts- only 70% get drinking water from an improved supply source. The highest use of hand pumps is found in Muzaffargarh (84%), motorised pump/tubewell in Gujrat (75%), protected well/spring in Sahiwal (about 18%) and rainwater collection in Khushab (5.3%). Overall, out of those household members who are using unimproved drinking water supply sources, only 2.1% are found using an appropriate water treatment method, slightly higher in urban (2.4%) than rural (1.6%). About 4.1% are boiling the water followed by 1.8% who use a water filter.

Sanitation

As per Punjab MICS 2014, 75% of the population are living in households who use improved sanitation facilities, which is higher in urban (92%) as compared to rural areas (67%). Sanitation in Punjab has wide inequities. Residents of district Khanewal, Rajanpur, Jhang, Vehari, Multan, Lodhran and Muzaffargarh are less likely than others to use improved sanitation facilities. The data suggests that use of improved sanitation facilities is strongly associated with wealth index quintiles and is profoundly different between urban and rural areas. Only 24% of the population in the lowest quintile is using improved sanitation as compared to 93% and 97% of the population in the fourth and highest quintiles respectively. The 'flush connected to piped sewer system' is most common in Lahore district where 84% population are using it. The use of septic tank is more prevalent in Gujrat, Sialkot and Nankana Sahib where more than 80% of population are using it.

Hygiene

Infant Mortality Rate (IMR) and Under 5 Mortality Rate (U5MR) remain high in Punjab. The MICS 2014 found an IMR of 76 per 1000 live births and U5MR of 96 per 1000 live births. Evidence suggests that pneumonia, diarrhoea and malaria cause about 50% of all deaths in children in Pakistan. Recent data from the Punjab MICS 2014 has shown that 33.7% of children under 5 years are underweight, 33.5% are stunted and 17.5% are wasted. Analysis of data shows that districts that have high child mortality rates also have high rates of children who are underweight or stunted. Districts that have high rates of diarrhoea in the last two weeks show a similar picture to underweight and stunting patterns. Furthermore, a similar pattern is seen in districts that have high 'open defecation' rates. The findings suggest that poor sanitation; diarrhoea and nutritional status have a close correlation.

As per MICS 2014, it was observed that about 98% of the households had a specific place for hand washing, while only 0.5% households could not indicate a specific place where household members usually washed their hands. Among households where a place for hand washing was observed, almost 80% had both water and soap (or another cleansing agent) present at the specific place, and this was higher in urban (93%) as compared to rural areas (73%). In 17% of the households, only water was available at a specific place, while in 0.6% of the households the place had soap but no water. The remaining 2.5% of households had neither water nor soap available at the specific place for hand washing.

PURPOSE OF THIS MANUAL

The normal process for funding of public sector projects is through an Annual Development Programme (ADP). Every year, the Finance Department and Planning and Development Department issue a Budget Call Circular (BCC) requesting for updates on ongoing schemes and new schemes. Relevant government officers at district, divisional or provincial levels identify needs and develop project proposals on templates called PC-I (Project Cycle-1). The PC-I forms are then reviewed through a process, first at departmental level, and then at Planning and Development Department (P&DD) level before it is submitted for a formal approval process. Once a PC-I is approved, the new scheme/project is added to the ADP. Schemes are categorised as 'New', 'Ongoing' or 'Completed'. In recent times, the Government of Punjab has introduced a rolling forecast methodology that allows a long term perspective of a project under a Medium Term Development Framework (MTDF) supported by a Results Based Framework (RBF).

Over the last decade, it has been observed by P&DD reviewers that the standard of planning as articulated in the PC-I forms has been going down gradually. This is a cause of serious concern, and in order to address this, the Government of Punjab has directed that planning processes be improved at departmental level for their respective sectors.

Furthermore, various policy and planning frameworks now exist in Punjab for different sectors. For instance, in water, sanitation and hygiene (WASH), the following frameworks guide project planning:

- Punjab Economic Growth Strategy 2014-18 - provides an overarching strategic direction for development in the province.
- Punjab Drinking Water Policy 2012 - provides policy guidelines for drinking water supply.
- Draft Punjab Sanitation Policy - provides policy guidelines for sanitation services.
- Punjab WASH Sector Development Plan 2014-2024 - provides strategic goals and actions with a performance measurement framework.
- Punjab Behavioural Change Communication Strategy for WASH - provides strategy and guidelines for changing community behaviours for improved WASH practices.
- Tehsil level Equity Mapping for WASH - provides an equity profile for WASH up to tehsil level and is very useful for prioritisation.

The scope and purpose of this manual is to assist PHED and LG&CDD staff at policy, planning and operational levels to align PC-I development with policy and planning frameworks, especially the WASH Sector Development Plan 2014-2024.

The intended learning outcomes of this manual include the following:

- Demonstrate an improved understanding of drinking water, sanitation and hygiene and its implications for project planning.
- Apply a disciplinary perspective and approach to planning for WASH using policy and planning frameworks and sector plans.
- Interpret available WASH data in selected government publications and apply these for planning.
- Critically evaluate the existing situation in the project area based on statistical data from Government of Punjab, sector plan, and field level information to establish and justify a need for a project.
- Apply the acquired knowledge and research skills to improve the quality of project planning in formulating PC-Is.
- Be a ready reference for PHED and P&DD staff when reviewing WASH related PC-Is.
- Serve as a training tool for PHED and LG&CDD field staff.

This manual does not intend to duplicate the work done by the Planning and Development Department, which developed a comprehensive resource called "[The Planning Manual](#)" - [Government of the Punjab, 2015](#). The Planning Manual provides detailed information of the generic planning process used in the province.

The “[Manual for Development Projects, 2010](#)” developed by the Planning Commission, Government of Pakistan is also a useful reference for further reading.

The WASH Planning Manual focusses on what the different sections of the PC-I form mean for WASH and how they relate to developing a good quality proposal. Where appropriate, material from official government documents e.g. planning manuals, has been adapted as necessary for sake of consistency and coherence.

The Performance Measurement Framework as indicated in the WASH sector development plan is included in this manual for easy reference. It is aligned with the Economic Growth Strategy 2014-18, Urban Development Sector Plan 2014-18, Health Sector Plan 2014-18, and Industries Sector Plan 2014-18 of Government of Punjab.

The water and sanitation status of tehsils is included in the annex.

PROJECT CYCLE FORMS

PC-I Proforma

The PC-I form comprises four parts.

Part 'A' is the "Project Digest", containing eight questions which are more or less common to all sectoral PC-Is forms. These require mainly information on: (i) name of project, (ii) authorities responsible for sponsoring and executing of the project, (iii) completion period, (iv) a summary of cost in detail and (v) objectives of the project.

Part 'B' entitled "Project Description and Financing", forms the core of the PC-I. The precise nature and form of the questions varies from sector to sector. The principal information asked for includes: (i) location, (ii) market analysis, (iii) general description and justification, (iv) operating or recurrent cost estimates, (v) technical description, (vi) capital cost estimates, (vii) unit costs, sectoral benefits, cash flow, financing arrangements, foreign exchange component, risk analysis, beneficiaries participation etc.

Part 'C' deals with "Project Requirements". The information sought in this part includes: (i) manpower requirements during implementation, (ii) physical and other facilities required and (iii) materials, supplies and equipment.

Part 'D' deals with environmental aspects. It includes information required in respect of (i) impact assessment undertaken separately in case of water, sewerage and solid waste and (ii) recommendations along with the measures to be taken to control environmental pollution.

Low Cost PC-I Proforma

A separate PC-I form for the small development projects costing up to Rs 1.00 million (non-recurring) should be used in respect of all the sectors, instead of comprehensive PC-I form for each sector.

PC-II Proforma

PC-II is required for conducting surveys and feasibility studies, in respect of larger projects, intended to get full justification for undertaking the project before large resources are tied up with them.

PC-III Proforma

PC-III form is designed to furnish information on the progress of on-going projects on quarterly basis and is required to be submitted by the executing agencies/departments within 20 days of the closing of each quarter. This form gives financial as well as physical progress of the schemes with information on any bottlenecks experienced during the execution of a project.

PC-IV Proforma

PC-IV form is required to be submitted at the time when the project is adjudged to be complete.

PC-V Proforma

PC-V form is to be furnished on an annual basis for a period of five years by the agencies responsible for operation and maintenance of the projects.

COMPONENTS OF PC-I PROFORMA

The PC-1 form (Social Sectors) used for water supply and sewerage projects has the following 15 components.

Section	Component	Explanation
1	Name of the Project	Refers to the title of project by which it will be known
2	Location	Refers to the geographical location like Union Council, Tehsil, District, Division, or whole province
3	Authority responsible for: ◦ Sponsoring ◦ Execution ◦ Operation and Maintenance ◦ Concerned Federal Ministry	‘Sponsoring’ usually refers to the entity that will provide the funds e.g. Government of Punjab ‘Execution’ usually refers to the entity that will execute the project e.g. PHED ‘Operation and Maintenance’ refers to who will be responsible for O&M of the scheme/project e.g. it may be a concerned TMA ‘Concerned Federal Ministry’ refers to the ministry in case of a Federally supported scheme
4	Plan Provision	Refers to whether this is a new funding proposal or whether it already has some allocation e.g. MTDF, ADP or ‘Block Provision’
5	Project objectives and its relationship with Sectoral objectives	Requires clear articulation of objectives of the project and how they relate to the sectoral objectives (which in this case is the WASH Sector Development Plan). The project objectives should be specific, measurable, achievable, relevant, and time-bound (SMART)
6	Description, justification and technical parameters	The description of the project should provide information pertaining to its physical features and technical aspects. It should also include its justification and rationale, in addition to a brief account of the work done in the past, any feasibility study undertaken and Government instructions and policies on the subject.
7	Capital cost estimates	The cost estimates of a project have to be prepared with a lot of care so that these are not revised again and again and implementation is not delayed due to non-availability of provision of funds and revised sanction of the competent authority. Besides, the cost debitable to the development budget has to be distinguished from the cost debitable to the revenue budget.
8	Annual operating and maintenance cost after completion of the	This is a critical part of the proposal and must be given due attention. Annual

	project	costs for O&M must be itemised up to 5 years. Ensure that fixed and variable costs are provided separately.
9	Demand and supply analysis	Indicate existing capacity of services and supply, estimated project demand for 10 years, capacity of projects in area being implemented by government and private sector, what is the demand gap for supply, and what capacity and output is being designed by the project
10	Financial Plan and mode of financing	The sponsoring agency has to indicate the financial plan of the project in the appropriate column of the PC-I. The position in this regard has to be indicated in specific terms so that there remains no ambiguity or confusion in getting the necessary funds from the sources indicated. In case, a foreign agency is committed to finance the project either partly or fully, the name of the agency with the amount of foreign exchange and local currency committed, is to be mentioned in the PC-I. Similarly, the source and amount of the rupee component, which may be as under, should be indicated.
11	Project benefits and analysis ◦ Financial ◦ Social benefits with indicators ◦ Employment generation (direct and indirect) ◦ Environmental impact ◦ Impact of delays on project cost and viability	‘Financial’ may include financial impact, judgement of efficient resource use, assessment of incentives, provision of a sound financing plan, coordination of financial contribution and financial management competence. ‘Social benefits’ may include aspects like employment opportunities and income distribution. ‘Employment generation’ may include the number and cadre of persons who will be employed directly by the project and indirectly. ‘Environmental impact’ may include whether the project would have any environmental impact, how a positive impact would be sustained, or what environmental issue it would address and its likely outcome ‘Impact of delays’ may include health or environmental issues, costs, how this may impact another related development project etc.
12	Implementation schedule	Time calculated for the completion of the project should be on a realistic basis. Project Evaluation and Review Techniques (PERT), Critical Path Method (CPM) or Bar Charts can be prepared to help implementation of the project according to the plan.
13	Management structure and manpower requirements including specialised skills during execution and operational phases	The administrative requirements for the project should be clearly defined and differentiated for execution and

		operationalisation.
14	Additional projects/decisions required to maximise socio-economic benefits from the proposed project	Indicate if there are any other projects or decisions pending or in progress that can enhance the benefits of this project.
15	Certified that the project proposal has been prepared on the basis of instructions provided by the Planning Commission for the preparation of PC-I for Social Sector projects.	A certification duly signed by the person who has prepared the project proposal and the person who has checked it.

NAME OF THE PROJECT

The section on name of the project should include the following information.

1. Specific name of the project proposed
2. The specific section of the WASH sector development plan that this project will address (please refer to Annex 1 for various sections)

The various sections of the WASH sector development plan include the following:

- Legislations, Regulations, Policies and Strategies
- Water Resources
- Water Supply
- Water Quality
- Sanitation (Sewerage and Drainage)
- Solid Waste Management
- Waste Water Management
- Health and Hygiene
- Education
- Sector Efficiency
- Sector Capacity
- Sector Financing
- Sector Coordination
- Sector Monitoring and Evaluation

Example 1

Name of Project

**Urban water supply scheme in Kasur City,
District Kasur**

	Sector Plan Section being addressed - Water Supply
Example 2 Name of Project	Establishment of a water testing laboratory in Chiniot City, District Chiniot
	Sector Plan Section being addressed - Water Quality

LOCATION

This part of the PC-1 has two sections.

1. Place and administrative district where the project is located
2. Map of the project area

In addition, it is advisable to include the following information as well in this section.

Reasons for selection of location. In this connection, it may be noted that many projects have suffered tremendously in the past from cost over runs and delay in implementation due to hasty selection of site. The project also suffers due to delay in acquisition of land. Therefore, the availability of land needs to be assured. In selecting the location, area and population to be served by the project, the income and social characteristics of the population will have to be kept in view, and therefore, need to be presented in this section. Similarly, the economic characteristics of the area i.e. present facilities and availability of inputs and regional development needs will also have to be taken into consideration.

Please also clearly indicate whether the environmental aspects of the project have been duly taken into account.

Practical Tip

It is not enough to just state the name of location and administrative district. Remember to include a map of the location, preferably one that also maps out key landmarks like housing areas, sewerage and drainage lines, overhead reservoirs, solid waste disposal site, schools, health facilities, and proposed site of project etc.

Give special attention to include reasons for selection of location as indicated above.

AUTHORITIES RESPONSIBLE FOR

In this section, indicate details of authority responsible for:

1. Sponsoring - in most cases, this would be Government of Punjab. However, some projects may receive foreign funding, while others may be part of a public private partnership. Therefore, all sponsoring agencies would need to be mentioned.
2. Execution - this would be the agency who implement the project from start to its completion. This agency would be responsible for ensuring timely completion of the project.
3. Operation and Maintenance - this would be the agency who would be responsible for O&M of the project once completed. Depending on the nature of the project, the Executing agency may or may not also be responsible for O&M.

Presently, O&M of water and sewerage schemes is a major bone of contention between PHED and LG&CDD, whereby PHED executes the schemes while LG&CDD is supposed to assume responsibility of O&M. Currently, the schemes only cater for about 6 months O&M cost before handing over.

Practical Tip

It has been shown that a large number of water and sewerage schemes have become dysfunctional or non-functional due to poor or no O&M. It is therefore recommended that while preparing the project, a provision of O&M cost for at least 2-3 years should be included in the cost estimate to ensure its functionality before handing over the scheme to another agency after this period.

Give special attention to how O&M is going to be managed and plan for O&M costs for at least 3 years as part of the project before any handing over takes place.

PLAN PROVISION

This section indicates where the funding is being sought from. The following information needs to be provided.

1. If the project is included in the medium term/five year plan, specify actual allocation
2. If not included in the current plan, what warrants its inclusion and how is it now proposed to be accommodated
3. If the project is proposed to be financed out of block provision, indicate:

Total Block Provision	Amount already committed	Amount proposed for this project	Balance available

4. Provision in the current year PSDP/ADP

Firstly, find out from PHED if the project is included in the MDTF for the water supply and sanitation, and if so, what is its allocation.

Secondly, if it is not already included, provide the rationale of why it should be included. For instance, indicate whether the project has been identified by its relevance to the Provincial and Annual Development Plans. Indicate the viability and desirability of the project's impact on provincial economic growth, social development, generation of greater resources/revenues and overall Government policy. In addition, clarify whether the project has been identified as a result of special policy directives of the Government. Indicate whether any feasibility study has been conducted and its salient findings and recommendations.

Thirdly, if it is to be finance out of a block provision, indicate the information as requested in the table. Fourthly, indicate if there is any allocation in the current PSDP/ADP.

Practical Tip

Give special attention to the project's relevance to provincial and annual development plans and its impact on provincial economy and social development. Ensure that you write in narrative as to what warrants its inclusion.

PROJECT OBJECTIVES

This section focusses on alignment of the project with MDTF and sector plans. It requires the following information.

1. The objectives of the sector/sub sector as indicated in the medium term/five year plan be reproduced. Indicate objectives of the project and develop a linkage between the proposed project and sectoral objectives.
2. In case of revised Projects, indicate objectives of the project, if different from original PC-I.

While preparing a project, pay particular heed to the objectives and targets it would achieve in terms of the goals and targets set out in the WASH sector development plan (please refer to Annex 1). Besides, its relationship with the other projects of the same sector/sub-sector should be shown over and above an indication of its own contribution, in quantifiable terms, to an integrated programme or multi-year plan. In this regard, the sponsors have to obtain information from other related agencies by personal contact or correspondence. The desired information can also be obtained by consulting the various published documents like the Punjab Growth Strategy, Annual

Plan of the P&DD , Economic Survey of the Finance Division and statistical data periodically published by the Punjab Bureau of Statistics.

Example

WASH Sector Development Plan 2014- 2024 Goal **100% piped water coverage in cities and towns**

WASH Sector Development Plan 2014-2024 strategic action(s)	Extend distribution networks and supply lines to provide 60% coverage in cities and towns
Project Objectives	◦ Water supply scheme in Toba Tek Singh City to enhance coverage from 30% to 50% ◦ Availability of piped water supply to 100,000 population in two years by June 2018 ◦ Piped water 100% treated at source by chlorination ◦ Additional 50,000 gallons capacity of overhead reservoir enhanced

Practical Tip

Identify the section of the WASH sector plan that you wish to address. Identify the respective goal and actions that your project can contribute towards. Conceive SMART project objectives that can best help achieve the WASH sector plan goal and actions.

DESCRIPTION AND JUSTIFICATION OF PROJECT

In this section, the following information is required.

- Describe the project and indicate existing facilities in the area and justify the establishment of the Project.
- Provide technical parameters and discuss technology aspect of the Project.
- Provide details of civil works, equipment, machinery and other physical facilities required for the project.
- Indicate governance issues of the sector relevant to the project and strategy to resolve them.
- Present and projected population and water availability/ demand.
- Indicate source and water availability (mgd) during next 5,10,20 years.
- For waste water/sewerage, provide present and future disposal requirements, gaps if any and proposed treatment methods and capacity.
- Indicate present and proposed per capita water supply in the project area, comparison be made with water supply in similar localities.
- Indicate whether the proposed project is a part of the master plan. If so, provide details.

Practical Tip

Before writing this section, first obtain all the necessary information required. Refer to the WASH sector plan strategic actions to help formulate your project activities as per the objectives. The activities should preferably be sequential and will then form the basis for activity based budgeting. It is vital to have an up to date situation analysis of your project area with regards to the project. In some instances, it may be preferable to have a feasibility study first depending on the scope of the project. Population estimates can be obtained from the latest version of Punjab Development Statistics. Ensure that all points for which information is required are addressed in clear narrative. Add any additional supportive information as annexure. Enquire from the relevant TMA and Urban Unit about any master plan and GIS map for water and sanitation services, and what part your project proposes to address. It is recommended that the **“Technical and Service Delivery Standards for Water Supply and Sanitation Sectors”** developed by Government of Punjab are used for reference for ensuring that the project meets the technical and service delivery standards.

CAPITAL COST ESTIMATES

This section deals with the cost estimates for the project. Cost estimates should be based on present market survey or/and pre-tender quotation. The schedule of rates used in estimating the project cost should be regularly updated by taking into account the market rates, instead of allowing across-the-board premium on the schedule of rates. The following information needs to be provided in this section.

- Indicate date of estimation of Project cost.
- Basis of determining the capital cost must be provided. It includes market survey, schedule rates, estimation on the basis of previous work done etc.
- Provide year-wise estimates of Physical activities by main components as per following:

Component-wise, year-wise physical activities

Items	Unit	Year-I	Year-II	Year-III
A				
B				
C				

- Phasing of Capital cost be worked out on the basis of each item of work as stated above and provide information as per following.

(Million Rs)

Year-wise/component-wise financial phasing

	Item	Year-I			Year-II			Year-III			Total		
		Total	Local	FEC	Total	Local	FEC	Total	Local	FEC	Total	Local	FEC
A													
B													
C													
	Total												

In case of revised Projects, provide:

- Projects approval history, year wise PSDP allocations, releases and expenditure.
- Item-wise, year-wise actual expenditure and Physical progress.
- Justification for revision of PC-I and variation in scope of the project if applicable.
- Item-wise comparison of revised cost with the approved cost and give reasons for variation.
- Indicate exchange rate used to work out FEC in the original and revised PC-I.

A break-down of the total cost has to be given item-wise, for example:

- Land and development
- Civil Works
- Machinery and Equipment
- Supplies
- Consultancy, if any
- Project Staff

Practical Tip

The list of physical activities identified under project description will help to complete this section. For each of the components identified for activities, they will usually require supporting information that can be presented as back-end tables in Annexures. Perform the back-end analysis and present information in tabular form as appropriate. The summary information from these back-end tables can then be inserted into the two phasing tables in this section. Remember, the phasing of physical activities must coincide and reconcile with the financial phasing.

It is useful to calculate the Unit Cost for the main components as this will be required in a later section. Check with your Director Technical whether the activities, their phasing and their costing is reasonable and realistic.

Where appropriate, the PC-I should be supported with a feasibility study, survey and investigation and market survey report etc.

ANNUAL OPERATING COST

This section requires the following information.

- Item-wise annual operating cost for 5 years and sources of financing

The basic criteria for the selection, for example, of a rural water supply and sanitation scheme is that the initial proposal for the construction of the facilities should come from the beneficiaries. After the proposals are received from the community, the line departments will carry out a technical and financial feasibility of the proposal on the basis of present facilities, coverage, availability of source and willingness to bear the O&M cost by the beneficiaries. The community would then be provided with options in terms of quantity of water to be supplied, the daily hours of supply, and the type of service. The community has to decide whether they will choose community taps for the service or would like to have house connections. These options would decide the operational cost of the system. The system finally built would be that which is within the financial capability of the community to operate and maintain with their own resources. Effort will be made to replicate cheaper appropriate technology to reduce cost of maintenance to the community.

Community management and participation to undertake O&M cost of the completed rural water supply scheme is essential. Besides, there is need for a unified policy for cost recovery, tariff and O&M costs for rural water supply schemes.

There should be no over-lapping with the schemes under any other programme and the schemes being implemented under the Annual Development Programme of the Federal/Provincial Governments and Local Bodies, or non-government organisations.

Practical Tip

For any new scheme, ensure that discussions are held well in time with all relevant stakeholders and that a plan of O&M is agreed upon and signed through an agreement. All items pertaining to O&M must be clearly identified, itemised and costed. Most water supply and sanitation projects that fail do so due to inadequate planning for and funding of O&M.

DEMAND SUPPLY ANALYSIS

Many PC-Is for water supply and sanitation schemes do not adequately address this important section. In fact, many leave this section blank.

This is a vital section for planning and requires the following information:

- Existing capacity of services and its supply
- Projected demand for ten years
- Capacity of projects being implemented both in the public and private sector
- Supply - demand gap
- Designed capacity and output of the proposed project

Ideally, a feasibility study or survey prior to formulating a project concept would to a large extent help provide answers to these questions. A situation analysis report would provide information about existing capacities of services and their supply, and capacity of (similar) projects being implemented in the public and private sector.

A feasibility study would help determine projected demand for the next ten years. The information obtained from both reports would assist in determining the supply-demand gap and provide the basis to design capacity and output of the proposed project. Not all projects require a feasibility study. This should be discussed with your line department and P&DD.

Practical Tip

Do not underestimate the value of this section. It is a logical link and provides the coherence between the project concept, its scope and objectives, description and costing. It provides the rationale of why this project needs to be undertaken and what gaps it will address. A feasibility study, situation analysis and market survey provide robust planning information that together strengthen and improve the quality of a PC-1.

FINANCIAL PLAN

The sponsoring agency has to indicate the financial plan of the project in the appropriate column of the PC-I. The position in this regard has to be indicated in specific terms so that there remains no ambiguity or confusion in getting the necessary funds from the sources indicated. In case, a foreign agency is committed to finance the project either partly or fully, the name of the agency with the amount of foreign exchange and local currency committed, is to be mentioned in the PC-I. Similarly, the source and amount of the rupee component, which may be as under, should be indicated.

Sources of financing

(a) Equity: Indicate the amount of equity to be financed from each source:

- Sponsors own resources
- Federal government
- Provincial government
- DFI's/banks
- General public
- Foreign equity (indicate partner agency)
- NGO's/beneficiaries
- Others

b) Debt

Indicate the local and foreign debt, interest rate, grace period and repayment period for each loan separately. The loan repayment schedule should also be annexed.

c) Grants along with sources

d) Weighted cost of capital

Practical Tip

This section depends on source of funding. If the source is the provincial government, which is the case for most water and sewerage schemes, then many of the questions would not be applicable. However, it is advisable to discuss this with the line department and obtain clarification and confirmation about the source of funding.

PROJECT BENEFITS AND ANALYSIS

This is also a critical section of the PC-I, which in many water supply and sanitation proposals is taken lightly or not addressed at all. This section requires the following information.

(a) Project benefits and analysis

- Financial: Income to the project along with assumptions.
- Social: Quantify benefit to the target group
- Environmental: Environmental impact assessment negative/positive.

(b) Project analysis

- Quantifiable output of the project
- Unit cost analysis

- Employment generation (direct and indirect)
- Impact of delays on project cost and viability

When PC-Is are reviewed by P&DD, they are examined and submitted to various analyses. These include technical analysis, institutional/organisation/managerial analysis, social analysis, commercial analysis, financial analysis, and economic analysis.

Technical Analysis

The analysis for determining the technical viability of the development project is based on the technical data and information given in the PG I form as well as the earlier experience of carrying out similar projects. The technical analysis concerns the project's input (supplies) and output (production) of real goods and services. The technical analysis looks into the following questions which therefore should be addressed in this section of the proposal:

- There is a sound rationale for the selected technical design or approach.
- The proposed design conforms to international standards to the extent possible.
- The proposed design meets the identified needs in the best possible way.
- The proposed technology has been proven or tested or has been in practice elsewhere.
- The proposed design is aligned with existing structure/facilities/programmes.
- A list of equipment and machinery to be installed with the costs and specifications of the equipment is attached.
- Equipment capacity is satisfactory and in line with requirements.

Institutional/Organisation/Managerial Analysis

A whole range of issues in project preparation revolves around the overlapping institutional, organisational and managerial aspects of the project, which clearly have an important effect on project implementation. The proposal is examined to see that the project is manageable and a relationship has been developed amongst the project, region, province and the country. Some of the areas that this analysis explores includes questions around:

- Are the authority and responsibility properly linked?
- Does the organisational set-up encourage delegation of authority?
- Does the proposed organisation take proper account of the customs and organisational procedures common in the country or, alternatively, does it introduce enough change in organisational structure to break the traditional organisation forms?
- What about training arrangements?

Social and Environmental Analysis

Social analysis is undertaken to examine the aspects like employment opportunities and income distribution. The project analysis also examines the effects of a project on particular groups/regions. This section should also address the social and environmental dimensions, which may include the following:

- Is the project likely to cause air and water pollution?
- Is the project posing any threat to community health, safety and security?
- Is the project resulting in any land acquisition and involuntary resettlement?
- Is the project likely to create differential access to project benefits or changes in traditional rights or entitlements or does it ensure equal opportunities and resources for women, girls and other vulnerable groups?
- Is the project likely to adversely affect labour and working conditions?
- Is the project going to threaten biodiversity conservation and natural resource sustainability?
- Is the project causing any harm to indigenous peoples?
- What is the public perception and degree of voice in governance of the project?
- Has the project proposal ensured the adequacy of the targeting and delivery mechanism?
- Are interests of various stakeholder groups including women likely to be affected and have they been consulted?
- What are the intended and unintended impacts on various social groups, including women, girls and minority groups?
- Is the project going to destroy cultural heritage in any way?

- Has the project proposal addressed gender considerations to ensure balanced participation by women?
- Does the project have a poverty focus?

The tehsil level equity mapping of WASH in Punjab can be a useful resource to complete part of this section.

Commercial Analysis

For projects that have a commercial component, the commercial aspects of a project include the arrangements for marketing the output produced by the project and the arrangement for the supply of inputs needed to build and operate the project. On the output side, careful analysis of the proposed market for the project's production is essential to ensure that there will be an effective demand at a remunerative price. It needs to be ensured that adequate input supplies are available for the efficient operation of the project.

Financial Analysis

Financial analysis involves assessment of financial impact, judgement of efficient resource use, assessment of incentives, provision of a sound financing plan, coordination of financial contribution and assessment of financial management competence. The main objective of financial analysis is to determine the requirements of funds/timing and the expected returns on investment from the points of view of the various parties involved in the financing of the project. Under this analysis, judgement is framed about the project's financial efficiency, incentives, credit-worthiness and liquidity. In financial analysis, cost and benefits are calculated using current market prices. Interest payments on borrowed capital and repayment of loans are not included. Taxes in the form of excise duties, customs duties, sales taxes are considered cost, while subsidies and loan receipts are considered benefits and are fully accounted for in the analysis.

Economic Analysis

Analysis from the economic aspect assesses the desirability of an investment proposal in terms of its effect on the economy. The question to be addressed here is whether the investment proposal contributes to the developmental objective of the province/ country and whether this contribution is likely to be large enough to justify the use of scarce resources such as capital, skilled labour, managerial talents etc., that would be needed to implement and operate the project. The two main steps in economic analysis are: (a) the "pricing of project inputs and outputs" and (b) the "identification of project costs and benefits".

An important technique which is followed for correct quantification of costs and benefits is "with and without project" comparison of costs and benefits. Project analysis tries to identify and value costs and benefits that arise with the proposed project and to compare them with the situation as it would be without the project. The difference is the incremental net benefits arising from the project investment. This approach is not the same as comparing the situation "before" and "after" the project. The "before" and "after" comparison fails to account for changes in production over the life of the project that would occur without the project and thus leads to an erroneous statement of benefits attributable to the project investment.

This section may take into consideration generally discounted cash flow techniques, which take into account the time value of money. People generally prefer to receive benefits as early as possible while paying costs as late as possible. Costs and benefits occur at different points in the life of the project, so the valuation of costs and benefits must take into account the time at which they occur. This concept of time preference is fundamental to proper appraisal and so it is necessary to calculate the present values (PVs) of all costs and benefits. Other examples include use of Net Present Value, Internal Rate of Return (IRR), Benefit to Cost Ratio (BCR), Sensitivity Analysis etc. Not all would be applicable. It would be advisable to discuss this with technical resource persons in P&DD to complete this section as appropriate.

Practical Tip

Ensure that each component of this section is answered in narrative form. Avoid use of vague statements like *'A good number. of people would get employment'* for the question "Employment generation (direct and indirect)"; or *'Cost will increase'* to the question "Impact of delays on project cost and viability". Some suggestions include the following:

(a) Project benefits and analysis

- Financial: Income to the project along with assumptions - provide the rationale and basis for estimating income, and indicate the assumptions
- Social: Quantify benefit to the target group - describe the social benefit and indicate how you arrived at that analysis
- Environmental: Environmental impact assessment negative/positive - first describe the environmental aspects the project hopes to address, and then explain giving specifics as to what environmental benefit will arise from the project. Indicate whether an environmental impact assessment has been done - and if not, include it as a project activity and budget for it.

(b) Project analysis

- Quantifiable output of the project - tabulate the quantifiable outputs of the project. Use the work done on Project Description to help answer this question
- Unit cost analysis - use information obtained in Capital Cost Estimates to help answer this question
- Employment generation (direct and indirect) - tabulate this information and provide a narrative explanation how the project aims to achieve this
- Impact of delays on project cost and viability - explain in narrative how delays will impact on the project providing specific calculations. This information can also be presented in tabular form or as a graph

IMPLEMENTATION OF THE PROJECT

This section provides a roadmap for execution of the project. Oftentimes, PC-Is for water and sanitation schemes are deficient in this area and do not provide a sound overall implementation plan. This section requires the following information.

- Indicate starting and completion date of the project
- Item-wise/year-wise implementation schedule in line chart co-related with the phasing of physical activities.

The time calculated for the completion of the project should be on a realistic basis. The following factors will need to be taken into consideration to firm up the implementation period:

- a) Total allocation made in the MTDf.
- b) Expected allocations in the ADP, keeping in view the past experience.
- c) Time to be taken in preparing the detailed design(s), invitation of tenders and award of contract(s).
- d) Availability of land; time taken in its acquisition.
- e) Time to be taken in the land development, keeping in view its topography and construction of access road etc.
- f) Availability of professional and technical manpower.
- g) Availability of materials, supplies and equipment.
- h) Project Evaluation and Review Techniques (PERT), Critical Path Method (CPM) or Bar Charts should be prepared to help implementation of the project according to the plan.
- i) The implementation schedule should be based on Bar Charts/PERT/CPM and should essentially form part of every project document.

Practical Tip

Do not take this section lightly. Before completing this section, obtain the information required for points a) to g).above. Present the information in narrative form attempting to answer the above questions. Obtain the assistance of a computer expert familiar with Bar Charts/PERT/CPM, if you are not versatile with these techniques. Using the physical activity phasing plan developed under Capital Cost Estimates and Annual Operating Cost, develop a project implementation plan of physical activities (already aligned with financial phasing) using Bar Charts/PERT/CPM.

MANAGEMENT STRUCTURE AND MANPOWER REQUIREMENTS

This section requires the following information.

- Administrative arrangements for implementation of the project.
- Manpower requirements during execution and operation of the project be provided by skills/profession.
- Job description, qualification, experience, age and salary of each job be provided.

This section is an important one because it provides the administration plan for the project. It is not sufficient to answer the above questions with a vague statement like *‘The scheme will be executed with the help of existing staff of the department’*.

Practical Tip

Determine the management structure for the project and clearly indicate who is in charge of the project, the execution team, authorisation pathway, delegation of responsibilities, communication and reporting pathway, periodicity of formal project reviews, documentation of meeting minutes, review of follow-up actions etc.

Identify the human resource requirements for execution and operation by cadre, skills and profession. The project staff identified and tabulated under Capital Cost Estimates can be used to complete this section.

For each cadre of project staff, clarify the job description, qualification, experience, age and salary. These details may be included as annexures with only summary information being included in this section.

ADDITIONAL PROJECTS OR DECISIONS REQUIRED

In this section, one is required to indicate additional projects/decisions required to optimise the investment being undertaken on the project.

This may depend on whether a feasibility study or research report is awaited, or detailed design is required after formal approval of the PC-I, or other development work is in progress whose completion has a bearing on execution of this PC-I.

Sometimes, the PC-I is intended to be funded from a block provision whose administrative approval is still awaited, or there may be a special directive of the government under which this PC-I is to be implemented but is still awaiting administrative orders.

Practical Tip

Enquire about the status of the proposed project vis-a-vis any pending decisions or any additional projects that may affect the start of the PC-I project. In such a case, indicate what steps are being taken, the anticipated schedule and how the PC-I implementation plan is aligned with this.

CERTIFICATE

In this section, the name, designation and phone number of the officers responsible for preparing and checking the PC-1 need to be provided. It is also necessary to confirm that the PC-I has been prepared as per instructions for the preparation of PC-I for social sector projects.

The PC-I along with the certificate must be signed by the Principal Accounting Officer to ensure its ownership.

Approval of Development Projects

It is important to understand the procedure for approval of development projects in Punjab¹.

The Planning & Development Department acts as the Secretariat for the Provincial Development Working Party (PDWP). The approval process of development projects is categorised as follows:

Executive Committee of National Economic Council (ECNEC)

ECNEC is the final approving authority for any provincial project costing beyond Rs. 10,000 Million and projects as mentioned below:

- Any project involving foreign component
- Any project of irrigation costing 1,000 billion or more

Central Development Working Party (CDWP)

CDWP, which is located at Planning and Development Division, Planning Commission, Islamabad, is a clearing house for any provincial project. The technical, financial and economic analyses of various projects are carried out by the Appraisal and Evaluation, Technical and other related sections. Projects with individual costs exceeding Rs. 10,000 million are recommended by the PDWP to the CDWP.

¹ Delegation of Financial Powers Rules, 2006 (Rule 8 of Second Schedule)

Practical Tip

Enquire from your line department as to which committee the PC-I will be submitted and the number of copies required. Maintain liaison with your line department for review and feedback regarding the draft PC-I before finalisation for making copies. Ensure that the complete bound PC-I with all necessary supporting annexures, maps and signatures is submitted in time for necessary review and approval.

PERFORMANCE MEASUREMENT FRAMEWORK

Result Statements	Performance Indicators	Targets for 2018	Collection Methods	Collection Frequency
Outcome Results				
Access to improved water sources and sanitation	Proportion of Population with Access to Improved Water Sources (%)	93% Rural 100% Urban	MICS	4 years
	Proportion of Population with Access to Improved Sanitation (%)	90% Rural 100% Urban	MICS	4 years
Reduced Child Mortality	Proportion of Children Under 5 Who Suffered from Diarrhoea in the Last 30 Days (%)	<10%	MICS PSLM	4 years Annual
Outputs				
1. Village water ponds causing contamination eliminated	Number of villages where ponds are eliminated	500	LG&CDD	Monthly
2. Solid waste management in villages	Number of villages with solid waste management system	6	LG&CDD	Monthly
3. Implementation of sanitation schemes	Number of sanitation schemes implemented	95 42 Rural 53 Urban	HUD-PHED LG&CDD	Monthly
4. Implementation of water supply schemes	Number of water supply schemes implemented	78 37 Rural 41 Urban	HUD-PHED LG&CDD	Monthly
	Rehabilitation of Dysfunctional schemes	172	HUD-PHED LG&CDD	Monthly
5. Implementation of ODF in villages	Number of villages ODF certified	3360	PHED LG&CDD	Monthly
6. Water filtration Plants established	Number of filtration plants installed and operational	1479	HUD-PHED	Monthly
	Number of beneficiaries getting clean drinking water		HUD-PHED	Quarterly
Result Statements	Performance Indicators	Targets for 2018	Collection Methods	Collection Frequency
7. District Water quality testing labs	Number of water quality testing laboratories in operation	36	HUD-PHED	Quarterly
	Number of water samples examined		HUD-PHED	Monthly

8. Water resources effectively managed	Number of cities with schemes for rain water harvesting initiated	19	HUD-PHED LG&CDD	Annually
9. Environment friendly disposal of sewage water	Number of pilot decentralised sewage water treatment system constructed	1 big city 1 intermediate city 1 small city	HUD-PHED LG&CDD	Annually
10. Improved sectoral governance	Number of cities with Master Plans for sanitation, water supply and drainage up to 2035	4 big cities 4 intermediate cities	HUD-PHED LG&CDD	Annually
	Consumer water meters installed for accurate billing for small and medium cities (water supplies) and big cities (through service connection fee/ government support)	10 small and intermediate cities 5 big cities	HUD-PHED LG&CDD	Annually
	Number of cities where bulk meters installed at major distribution system, tube wells, distribution stations and overhead reservoirs to measure quantity pumped of water	30 small and intermediate cities 5 big cities	HUD-PHED LG&CDD	Annually
	Number of cities with Master plans for solid waste management	20 cities	HUD LG&CDD	Annually
11. Enhanced solid waste collection	Percentage of garbage/waste collected against the estimated amount of garbage produced	70% 20 cities	LG&CDD	Monthly
	Number of cities where secondary collection points established for small and medium cities	20 cities	LG&CDD	Monthly

Result Statements	Performance Indicators	Targets for 2018	Collection Methods	Collection Frequency
12. Improved waste disposal system	Percentage of waste finally disposed	70% 20 cities	LG&CDD	Monthly
	Number of cities where hospital hazardous waste shall be managed and disposed of	40	LG&CDD DoH DoE	Monthly
	Percentage of waste disposed at land fill sites against the total waste collected for cities	75% 20 cities	LG&CDD	Monthly

(Source: Water, Sanitation and Hygiene Sector Development Plan 2014-2024. Government of Punjab)

SOURCES OF INFORMATION

The matrix below provides a useful guide on sources of information for different sections of the WASH sector development plan. It is recommended that latest available reports should be sourced to provide the necessary information when developing a PC-1 for WASH.

Area of Inquiry	Reference Documents
Population	Punjab Development Statistics
Poverty	District Poverty Profile of Pakistan - SDPI BISP Poverty Profile
Equity	Tehsil Level Equity Mapping of WASH in Punjab
Water Supply	Drinking Water Policy, PSLM, MICS, PHED, WASAs, Urban Development, Technical and Service Delivery Standards for Water Supply and Sanitation Sectors
Water Quality	PCRWR, PCSIR, PHED, UNICEF, Technical and Service Delivery Standards for Water Supply and Sanitation Sectors
Sanitation	Sanitation Policy, BCC Strategy, PSLM, MICS, PHED, WASAs, Urban Development, Technical and Service Delivery Standards for Water Supply and Sanitation Sectors
Wastewater	WASAs, Irrigation Department, PCSIR, Local Government, Technical and Service Delivery Standards for Water Supply and Sanitation Sectors
Solid Waste	Local Government, Waste Management Companies, Urban Development, Technical and Service Delivery Standards for Water Supply and Sanitation Sectors
Health	Health Sectoral Plan, Health Waste Management Rules, DHIS
Education	Education Sectoral Plan, PMIU, ASER
Sector Efficiency	WASAs, Local Government, Pakistan Water Operators Network
Sector Capacity	WASAs, Local Government, Water and Sanitation Academy, Local Government Academy
Sector Financing	PRSP financial reports (Ministry of Finance), Finance Department, PHED
Sector Coordination	PMU
Sector Monitoring	PMU, PHED, Local Government, Performance Measurement Framework

ANNEXURES

1. Issues identified in Consultative Workshp

- There is lack of political will at all levels - political directives override needs and priorities
- Resource envelope pre-defined which means that very little priority needs can be met
- Needs and planning do not match resources made available
- ADP allocations made without supporting PC-1s
- Scheme identification not need based
- Multiplicity/duplication of executing agencies makes coordination and planning extremely challenging
- Lack of ownership for O&M
- No knowledge management mechanism
- Lack of opportunity to incorporate new ideas
- Lack of need based assessment
- Institutional capacities are under-resourced
- No systematic capacity building system
- Foreign trainings usually lapse even though there are staff who could benefit from these
- Long time for completion of scheme due to low funding
- Need for a water resource management cell
- Water and sanitation schemes are implemented through a piecemeal approach owing to low funding when there is need for an integrated approach
- Sustainable mechanism model is necessary for O&M
- TO (I&S) given other responsibilities but not able to provide O&M which is the real responsibility
- Limited technical capacity of LG&CD resulting in very little ownership by LG
- Lack of computer software for water and sanitation
- No awareness about water treatment
- Sanitation - sewerage schemes do not have wastewater treatment; there is contamination of water sources
- Urban level metering and collection is very limited
- Multiple disposal sites of solid waste with no proper collection, transfer and disposal
- Unchecked urban development without proper planning for services
- Need for technical heads in P&DD and PHED to finalise planning and allocations
- Urgent need for a design cell and research and development cell in PHED
- O&M funding in new schemes should be extended to 2-3 years and not 6 months as is the current practice
- PC-V of completed forms not completed - this should be made mandatory and enforced
- Several PHED staff are still on contract despite having worked for 7-8 years- need to regularise their status
- Dire need of rain water harvesting in Pakistan is let especially in urban areas like Lahore where storm water can be channelled for recharging the sub soil water level.
- Soaked pits in houses should be linked with rained water into sub soil

- Learning from Water Supply Scheme of Narooni Dhan District Jhelum through formation of Water Regulatory should be documented and scaled up. This includes revenue collection team, maintenance team under supervision of district coordination officers and executive engineer PHE Department.
- The use of rainwater harvesting and separation of storm water from the domestic and industrial waste would reduce the load of wastewater there by reducing the size of sewers and wastewater treatment plant.

2 – Wash Sector Development Plan 2014-24 Consolidated Strategy and Actions

Legislations, Regulations, Policies and Strategies			
Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
Finalisation of drafted policies and strategies and their implementation	Approval of Draft Sanitation Policy and Strategy, Punjab Drinking Water Strategy, Draft Behaviour Change Communication Strategy and their implementation Develop and implement bye-laws of solid waste management at town and metropolitan level		
A legal framework that governs municipal water	Enactment and promulgation of the Punjab Municipal Water Act	City and Town master plans developed and incorporate zone-wise development of water supply, sewerage and drainage, and solid waste management	Industrial wastewater management regulations put into effect in industrial zones and curbs to stop pollution enforced
Punjab Water Commission that acts as a regulatory body	Establishment of the Punjab Water Commission	Tariff structure revised Minimum service delivery standards established for municipal services (water, sanitation, solid waste management) Ensure that each local government has a master plan on water, sanitation and solid waste management for its area of jurisdiction	Review water, sanitation hygiene and solid waste policies and strategies and update them accordingly
Municipal services duty bearers have necessary managerial and leadership skills for an integrated water supply, sewerage and drainage, and solid waste management programme	Capacity building programme of city, town and union council officials on application of regulations, policies and strategies in planning, development and delivery of municipal services	Capacity building programme of city, town and union council officials on planning for and implementing integrated water supply, sewerage and drainage, and solid waste management	Municipal services training and capacity building programme provides at least 75% or more coverage to TMA officials

Water Resources			
Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
Sectoral capacity for climate change adaptation and mitigation developed	Sub-sector climate change adaptation and mitigation strategies developed	Piloting of climate change adaptation and mitigation in selected towns	Climate change mitigation capacities developed in phased manner in towns located in zones vulnerable to climatic events
Municipal services duty bearers fully conversant with climate change and its mitigation strategies	Need assessment of sub-sector human resources for climate change adaptation and mitigation	Capacity building programme of city, town and union council officials in pilot areas on climate change mitigation strategies	Capacity building programme of city, town and union council officials on climate change mitigation strategies extended to other areas
Mega and intermediate cities with ample precipitation have rainwater harvesting systems in place	Rainwater harvesting pilot projects evaluated and plan to extend to other feasible cities developed	In participating cities, rainwater harvesting provides at least 10% of water used for non-domestic municipal services and horticulture	In participating cities, rainwater harvesting provides at least 30% of water used for non-domestic municipal services and horticulture
Increase use of surface water for municipal services	Joint programme with Irrigation department to map potential areas for surface water use	Build water storage reservoirs and water treatment plants with distribution supply in viable areas	Incorporate surface water use in town planning and municipal services in selected areas
Artificial recharging of groundwater enhanced	Storm water management plan developed for cities and town with ample precipitation	Storm water holding areas developed in 25% of selected sites	Storm water holding areas developed in 50% of selected sites

Water Supply

Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
All rural areas, cities and towns have surveys, strategies and action plans for integrated water supply, sewerage and drainage, and solid waste management	All cities have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management	At least 50% of towns and rural areas have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management	At least 100% of towns and rural areas have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management
Dysfunctional tube wells/schemes adequately rehabilitated and maintained	A phased plan for rehabilitation of dysfunctional tube wells/schemes developed according to district and TMA and implemented in a phased manner	At least 50% of dysfunctional tube wells/schemes rehabilitated and operational, and O&M system functioning	At least 100% of dysfunctional tube wells/schemes rehabilitated and operational, and O&M system functioning
Shallow tube wells replaced by deep tube wells	Mapping of shallow tube wells by districts and TMAs	Phased replacement plan for at least 10%	Phased replacement plan for at least 20%
Rehabilitation and replacement of old infrastructure	Each city and town has mapped out old infrastructure and leaky mains that need rehabilitation or replacement	At least 10% of old infrastructure in cities and 20% in towns replaced or rehabilitated as part of city or town development	At least 20% of old infrastructure in cities and 40% in towns replaced or rehabilitated as part of city or town development
Existing functional tube wells/schemes continue to perform optimally	Each district and TMA has a scheduled tube well/scheme maintenance plan	Tube wells/schemes perform at 80% or better functionality	Tube wells/schemes perform at 95% or better functionality
Energy efficient water supply schemes	Map areas that have persistent power shortage Introduce solar energy supported water supply schemes At least 20% of water supply schemes converted to solar energy All new water supply schemes are solar energy compliant where feasible	At least 40% of water supply schemes converted to solar energy	At least 60% of water supply schemes converted to solar energy
100% piped water coverage in cities and towns	Extend distribution networks and supply lines to provide 60% coverage in cities and towns	Extend distribution networks and supply lines to provide 70% coverage in cities and towns	Extend distribution networks and supply lines to provide 100% coverage in cities and towns
65% piped water	Extend distribution	Extend distribution	Extend distribution

coverage in rural areas	networks and supply lines to provide 20% coverage in rural areas (depending on baseline)	networks and supply lines to provide 40% coverage in rural areas	networks and supply lines to provide 65% coverage in rural areas
Enhanced coverage of filtration plants in zones with high hand/motor pump use	High prevalence hand/motor pump use areas mapped in all TMAS Filtration plants installed in 25% of areas with high hand/motor pump use	Filtration plants installed in 45% of areas with high hand/motor pump use	Filtration plants installed in 65% of areas with high hand/motor pump use
Water flows monitored at tube wells	Bulk flow meters and pressure gauges installed at 20% of tube wells	Bulk flow meters and pressure gauges installed at 40% of tube wells	Bulk flow meters and pressure gauges installed at 60% of tube wells
Additional water storage capacity developed	Storage capacity needs of cities and towns determined	At least 25% TMAs build extra overhead storage capacity	At least 50% TMAs build extra overhead storage capacity

Water Quality			
Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
Monthly water quality testing at water source	PHED water testing laboratories conduct monthly water quality tests of TMA water supplies and filtration plants, and quarterly testing of at least 25% of tube wells	PHED water testing laboratories conduct monthly water quality tests of TMA water supplies and filtration plants, and quarterly testing of at least 50% of tube wells	PHED water testing laboratories conduct monthly water quality tests of TMA water supplies and filtration plants, and quarterly testing of at least 75% of tube wells
Periodic water quality testing of distribution network	At least 30% coverage of distribution system every quarter Water quality testing linked with health alerts from disease surveillance cell	At least 60% coverage of distribution system every quarter Water quality testing linked with health alerts from disease surveillance cell	At least 90% coverage of distribution system every quarter Water quality testing linked with health alerts from disease surveillance cell
Periodic monitoring of water quality zones	PHED, PCRWR and Irrigation department conduct joint mapping of sweet, brackish and salt water zones and arsenic zones every two years Remedial measures monitored and reported Upgrade PHED laboratories to test for heavy metals	PHED, PCRWR and Irrigation department conduct joint mapping of sweet, brackish and salt water zones and arsenic zones every two years Remedial measures monitored and reported	PHED, PCRWR and Irrigation department conduct joint mapping of sweet, brackish and salt water zones and arsenic zones every two years Remedial measures monitored and reported
All ground and overhead reservoirs supplied with chlorination treatment	Status of ground and overhead reservoirs in cities and towns determined Scheduled quarterly cleaning and maintenance of all reservoirs Installation of chlorinators in 30% of reservoirs (or tube wells where storage capacity does not exist)	Scheduled quarterly cleaning and maintenance of all reservoirs Installation of chlorinators in 60% of reservoirs (or tube wells where storage capacity does not exist)	Scheduled quarterly cleaning and maintenance of all reservoirs Installation of chlorinators in 90% of reservoirs (or tube wells where storage capacity does not exist)

Sanitation (Sewerage and Drainage)

Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
All cities and towns have surveys, strategies and action plans for integrated water supply, sewerage and drainage, and solid waste management	All cities have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management	At least 25% of towns and rural areas have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management	At least 50% of towns and rural areas have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management
Optimal sewage flow capacity maintained	Sewage flows determined for all cities and towns, and de-silting and cleaning of 30% drains and sewers with safe sludge disposal per quarter in TMAs and zones in cities	De-silting and cleaning of 60% drains and sewers with safe sludge disposal per quarter in TMAs and zones in cities	De-silting and cleaning of 90% drains and sewers with safe sludge disposal per quarter in TMAs and zones in cities
Optimal status of sewer maintenance equipment (sucking machine, jetting machine, sucking/jetting machine)	Status of equipment availability and functionality determined for each TMA and city zone At least 30% of TMAs and city zones equipped with sewer maintenance equipment	At least 60% of TMAs and city zones equipped with sewer maintenance equipment	At least 90% of TMAs and city zones equipped with sewer maintenance equipment
Adequate and functional collector and branch sewers	Status of collector and branch sewers in each city determined Phased replacement or laying of new lines instituted	Phased replacement of 25% non-functional collector and branch sewers or laying of new lines instituted	Phased replacement of 50% non-functional collector and branch sewers or laying of new lines instituted
Optimal functionality of pumping stations	Status of pumping stations in each city and TMA determined Phased rehabilitation plan instituted for at least 30% dysfunctional pumping stations	Phased rehabilitation plan instituted for at least 60% dysfunctional pumping stations	Phased rehabilitation plan instituted for at least 90% dysfunctional pumping stations
82% sewerage coverage in cities and towns	Extend sewerage system lines to provide 60% coverage in cities and towns	Extend sewerage system lines to provide 70% coverage in cities and towns	Extend sewerage system lines to provide 82% coverage in cities and towns
70% sewerage coverage in rural areas	Extend sewerage system lines to provide 10% coverage in rural areas	Extend sewerage system lines to provide 40% coverage in rural areas	Extend sewerage system lines to provide 70% coverage in rural areas
Replacement of open drains by sewers	Replace 10% open drains with sewers and install	Replace 25% open drains with sewers and install	Replace 50% open drains with sewers and install

	wastewater treatment with maintenance plan	wastewater treatment with maintenance plan	wastewater treatment with maintenance plan
Promote safe sanitation practices in high open defecation zones	Develop provincial and district level road maps on PATS/ODF for 11,904 villages in 21 priority districts Government allocates funds through its regular programme for soft component and facilitates 30% villages to obtain the status of ODF Incentivising the ODF villages by laying of water supply scheme, sewerage system, waste water treatment, provision of hand pumps etc Execution of schemes on component / cost sharing basis i.e. Community invests in internal component, while Government invests for external component Collaborate with NGOs for WASH services delivery	Government allocates funds through its regular programme for soft component and facilitates 60% villages to obtain the status of ODF Incentivising the ODF villages by laying of water supply scheme, sewerage system, waste water treatment, provision of hand pumps etc Execution of schemes on component / cost sharing basis i.e. Community invests in internal component, while Government invests for external component Collaborate with NGOs for WASH services delivery	Government allocates funds through its regular programme for soft component and facilitates 90% villages to obtain the status of ODF Incentivising the ODF villages by laying of water supply scheme, sewerage system, waste water treatment, provision of hand pumps etc Execution of schemes on component / cost sharing basis i.e. Community invests in internal component, while Government invests for external component Collaborate with NGOs for WASH services delivery

Wastewater Management			
Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
Elimination of stagnant ponds and prevention of ponding	Mapping of ponds in each TMA and categorise by size and level of risk Prioritise cleaning of large and high risk ponds At least 50% of mapped ponds eliminated and preventive measures instituted	At least 100% of mapped ponds eliminated and preventive measures instituted	Prevention measures in place to prevent recurrence of ponding
Water supply and sanitation schemes linked with wastewater treatment	At least 25% of new schemes have in-built wastewater treatment facility Incorporate wastewater treatment options (like oxidation ponds, wetlands, sewerage treatment units, community septic tanks) in rural sanitation schemes	At least 50% of new schemes have in-built wastewater treatment facility Incorporate wastewater treatment options (like oxidation ponds, wetlands, sewerage treatment units, community septic tanks) in rural sanitation schemes	At least 75% of new schemes have in-built wastewater treatment facility Incorporate wastewater treatment options (like oxidation ponds, wetlands, sewerage treatment units, community septic tanks) in rural sanitation schemes
Wastewater treatment plants for cities	Each mega city has at least one wastewater treatment plant functional	Each intermediate city has at least one wastewater treatment plant functional	Each large town (especially those that are discharging into surface water) has at least one wastewater treatment plant functional and wastewater recycled for reuse in agriculture and horticulture
Monitor contamination levels of industrial effluent	PHED, Land Reclamation department, PCSIR and Punjab Environment Protection Agency map major industrial wastewater flows in relevant districts and conduct periodic wastewater testing and public reporting of industrial effluent quality Environment protection regulations enforced	Hazard and risk GIS mapping of contaminated rivers and water bodies done Conduct periodic wastewater testing and public reporting of industrial effluent quality Environment protection regulations enforced	Conduct periodic wastewater testing and public reporting of industrial effluent quality Environment protection regulations enforced
Increased proportion of treated industrial wastewater	Set up Combined Effluent Treatment Plant (CETP) for cluster of industries where feasible focusing on Faisalabad, Lahore,	At least 3% - 5% of industrial wastewater treated Incentivise industries	At least 6% - 10% of industrial wastewater treated Incentivise industries

	Sialkot, Gujranwala, Sheikhupura and Rahim Yar Khan as priority districts Identify industries with high volume of untreated effluent and prioritise for enforcement of regulations Incentivise industries who set up WWT with a tax rebate	who set up wastewater treatment with a tax rebate	who set up wastewater treatment with a tax rebate
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Solid Waste Management			
Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
All cities and towns have surveys, strategies and action plans for integrated water supply, sewerage and drainage, and solid waste management	All cities have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management	At least 25% of towns and rural areas have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management	At least 50% of towns and rural areas have completed surveys, GIS mapping and strategies, and start implementing action plans for integrated water supply, sewerage and drainage, and solid waste management
Solid waste collection and disposal	At least 70% of solid waste generated is collected and disposed of per day At least 30% TMAs providing door to door collection service Village based solid waste management piloted in selected villages	At least 80% of solid waste generated is collected and disposed of per day At least 40% TMAs providing door to door collection service Village based solid waste management scaled up to 10% villages in Punjab	At least 90% of solid waste generated is collected and disposed of per day At least 50% TMAs providing door to door collection service Village based solid waste management scaled up to 30% villages in Punjab
Effective solid waste management	Establish water and sanitation companies in large and intermediate cities whose mandate includes solid waste management and specify service zones Develop a minimum standards list of hardware and equipment for solid waste management and upgrade in 30% of TMAs Establish an Enforcement Wing to ensure effective solid waste management	Upgrade the hardware and equipment for solid waste management in 60% of TMAs	Upgrade the hardware and equipment for solid waste management in 90% of TMAs
Efficient Solid waste disposal and recycling	At least 30% TMAs establish transfer stations to reduce disposal time Recycle at least 10% of solid waste by systematic separation Regional sanitary landfill options identified for 2-3 TMAs where feasible	At least 60% TMAs establish transfer stations to reduce disposal time Recycle at least 15% of solid waste by systematic separation At least 20% of TMAs served by sanitary landfill sites	At least 90% TMAs establish transfer stations to reduce disposal time Recycle at least 20% of solid waste by systematic separation At least 40% of TMAs served by sanitary landfill sites

Waste to Energy	Formalise contracts with companies for waste to energy options	At least each mega city has a WTE option in place	At least each intermediate city has a WTE in place
Safe hospital high risk waste disposal	TMAS and Department of Health orient each hospital waste management committee oriented on Environmental and Medical Waste Management Guidelines, municipal solid waste and high risk waste and their separate disposal Each mega city and intermediate city has a centralised and functional high risk hospital waste disposal facility At least 50% of hospital high risk waste disposed of safely	Each TMA has a centralised and functional high risk hospital waste disposal facility At least 60% of hospital high risk waste disposed of safely	At least 90% of hospital high risk waste disposed of safely
Safe and hygienic Slaughterhouses	Update status of slaughterhouses in each TMA and prioritise those for rehabilitation, solid waste and wastewater management Develop slaughterhouse safety and hygiene practice guidelines and orient 100% slaughterhouse staff in TMAs in safe handling and disposal of carcass, entrails, hides, and wastewater At least 30% of municipal services dispose of slaughterhouse solid waste safely	Provide refresher training on slaughterhouse safety and hygiene practice guidelines to 100% slaughterhouse staff in TMAs in safe handling and disposal of carcass, entrails, hides, and wastewater At least 60% of municipal services dispose of slaughterhouse solid waste safely	Provide refresher training on slaughterhouse safety and hygiene practice guidelines to 100% slaughterhouse staff in TMAs in safe handling and disposal of carcass, entrails, hides, and wastewater At least 90% of municipal services dispose of slaughterhouse solid waste safely
Efficient and effective management of Industrial Solid Waste	Determine the current status of industrial solid waste production and disposal	Develop strategies and actions for efficient and effective management of industrial solid waste	

Health and Hygiene			
Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
WASH integrated in health promotion in primary health care	WASH health education module added to curriculum of Lady Health Workers with supporting training material Master trainers, district trainers and facility trainers oriented in key WASH messages and LHWs provided training on WASH health promotion and hygiene At least 100% of LHWs trained in WASH health promotion and hygiene	At least 60% of LHWs receive refresher training in WASH health promotion and hygiene	At least 100% of LHWs receive refresher training in WASH health promotion and hygiene
WASH integrated in health campaigns and health weeks	WASH component of health promotion and hygiene integrated in mother and child health weeks At least two WASH health promotion and hygiene campaigns run every year in each district with regional, local, cultural festivals and events	At least two WASH health promotion and hygiene campaigns run every year in each district with regional, local, cultural festivals and events	At least two WASH health promotion and hygiene campaigns run every year in each district with regional, local, cultural festivals and events
Effective disease surveillance cell	Dissemination of health alerts linked with TMAs using mobile technology At least 50% TMAs have a technology system to receive health alerts	At least 100% TMAs have a technology system to receive health alerts	
Fully functional water and sanitation services in health facilities	TMAs collaborate with district health administration to ensure all health facilities have functional water and sanitation services, soap and hand sanitizers At least 50% of first level health facilities have usable water and sanitation services	At least 100% of first level health facilities have usable water and sanitation services, soap and hand sanitizers	
School health promotes WASH	WASH integrated into school health programme run by School Health Nutrition Supervisors At least 25% of schools receive WASH health promotion and hygiene	At least 50% of schools receive WASH health promotion and hygiene	At least 75% of schools receive WASH health promotion and hygiene

Education			
Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
WASH integrated in teacher training programme	Collaborate with Curriculum Wing and incorporate WASH hygiene promotion in teacher training programme WASH hygiene promotion cascaded through Directorate of Staff Development, District Training and Support Centres and Cluster Training and Support Centres At least 2 teachers per school of 25% schools receive training in WASH hygiene	WASH hygiene promotion cascaded through Directorate of Staff Development, District Training and Support Centres and Cluster Training and Support Centres At least 2 teachers per school of 50% schools receive training in WASH hygiene	WASH hygiene promotion cascaded through Directorate of Staff Development, District Training and Support Centres and Cluster Training and Support Centres At least 2 teachers per school of 75% schools receive training in WASH hygiene
WASH integrated in schools curriculum	Collaborate with Textbook Board for inclusion of topics on water, sanitation and hygiene in curriculum for classes 1 to 12		
All schools have usable drinking water and usable latrines	Collaborate with PMIU PESRP on status of missing facilities in schools More than 80% of schools have usable drinking water and usable latrines	More than 90% of schools have usable drinking water and usable latrines At least 50% public schools have 1 latrine for 25 girls and 1 latrine for 50 boys	100% of schools have usable drinking water and usable latrines At least 50% public schools have safe drinking water At least 90% public schools have 1 latrine for 25 girls and 1 latrine for 50 boys
Chief Minister's Water Ambassadors Programme	In collaboration with School Education department and school health programme, launch a Chief Ministers Water Ambassadors Programme for primary and middle school children. Children leaders trained to act ambassadors for water conservation and family hygiene At least 30% of schools	At least 60% of schools have Water Ambassadors	At least 90% of schools have Water Ambassadors

	have Water Ambassadors		
Menstrual hygiene management integrated in health and hygiene for girls	WASH hygiene promotion module incorporates menstrual hygiene management for girls At least 25% of girls middle and high schools impart menstrual hygiene management education in WASH hygiene promotion	At least 50% of girls middle and high schools impart menstrual hygiene management education in WASH hygiene promotion	At least 75% of girls middle and high schools impart menstrual hygiene management education in WASH hygiene promotion

Sector Efficiency

Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
Improved and efficient use of Water Production	Public education campaign launched about water conservation In areas with production of more than 200 L/capita/day, reduce water production to 136 L/capita/day (30 gallons/capita/day) In areas with production of 100-200 L/capita/day, maintain at 136 L/capita/day (30 gallons/capita/day) Revise 50 gallons per capita per day formula and reduce to 30 gallons per capita per day and use for all new schemes	Public education campaign maintained about water conservation Maintain water production at 136 L/capita/day or less (30 gallons/capita/day)	Public education campaign maintained about water conservation Maintain water production at 136 L/capita/day or less (30 gallons/capita/day)
Improved water conservation through improved water consumption practices	In areas with consumption of more than 200 L/capita/day, reduce water consumption to 114 L/capita/day (25 gallons/capita/day) In areas with consumption of 100-200 L/capita/day, maintain at 114 L/capita/day (25 gallons/capita/day)	Reduce and maintain water consumption at 114 L/capita/day or less (25 gallons/capita/day)	Reduce and maintain water consumption at 114 L/capita/day or less (25 gallons/capita/day)
Reduced systems leakages of Non Revenue Water and Unaccounted for Water	Reduce to 20% or less Outsource at least 25% of revenue collection	Reduce to 20% or less	Reduce to 20% or less
Increased household water metering	Introduce water metering in phases All new connections to be metered At least 100% of high income areas have metering in place All commercial and business premises have water metering	At least 10% of medium income areas have metering in place	At least 20% of medium income areas have metering in place

Water flows monitored at tube wells	Bulk flow meters and pressure gauges installed at 20% of tube wells	Bulk flow meters and pressure gauges installed at 40% of tube wells	Bulk flow meters and pressure gauges installed at 60% of tube wells
Cost and Staffing efficiency	Water staff rate reduced to 2-3 per 1000 connection Wastewater staff rate reduced to 2-3 per 1000 connections	Water staff rate maintained at 2-3 per 1000 connection Wastewater staff rate maintained at 2-3 per 1000 connections	Water staff rate maintained at 2-3 per 1000 connection Wastewater staff rate maintained at 2-3 per 1000 connections
Efficient Billing and Collection	Collection period reduced to less than 30 days Billing efficiency increased to 50% Financial collection efficiency increased to 50% Outsource billing and collection	Collection period reduced to less than 15 days Billing efficiency increased to 75% Financial collection efficiency increased to 75%	Collection period maintained at less than 15 days Billing efficiency increased to 90% and above Financial collection efficiency increased to 90% and above
Enhanced and sustainable Financial Performance	Operating cost coverage ratio of 0.5 achieved Working ratio reduced to 2.0 or less	Operating cost coverage ratio of 0.75 achieved Working ratio reduced to 1.5 or less	Operating cost coverage ratio of 1.0 or more achieved Working ratio reduced to less than 1.0
Enhanced and sustainable financial performance by TMAs	At least 30% of TMAs have a working ratio of 4.0 or less	At least 60% of TMAs have a working ratio of 3.0 or less	At least 90% of TMAs have a working ratio of 2.0 or less
A functional Biometric tracking system in all cities and TMAs	All mega cities have an installed and functional biometric tracking system for staff, equipment/vehicles At least 50% of intermediate cities have an installed and functional biometric tracking system for staff, equipment/vehicles At least 30% of TMAs have an installed and functional biometric tracking system for staff, equipment/vehicles	At least 50% of intermediate cities have an installed and functional biometric tracking system for staff, equipment/vehicles At least 60% of TMAs have an installed and functional biometric tracking system for staff, equipment/vehicles	At least 90% of TMAs have an installed and functional biometric tracking system for staff, equipment/vehicles

Sector Capacity			
Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
Improved human resource development and management	Each sub-sector covering cities and TMAs conducts a human resource development assessment, need for professional staff placements and develops an action plan	At least 30% of human resource development actions implemented in cities and TMAs	At least 60% of human resource development actions implemented in cities and TMAs
Establish a Punjab Municipal Services Institute	A municipal services institute established for professional and technical training of TMA staff Core curricula and faculty development plan formulated Professional and continuing education programmes launched	At least 30% of TMA professional staff undergo continuing professional development in defined technical areas At least 30% of professional staff placements in TMA subsectors achieved At least 30% of TMAs prepare their budgets according to TMA development plans	At least 60% of TMA professional staff undergo continuing professional development in defined technical areas At least 60% of professional staff placements in TMA subsectors achieved At least 60% of TMAs prepare their budgets according to TMA development plans
Local Government Academy upgraded	Infrastructure and capacity development plan developed for Local Government Academy at Lala Musa Administration training curricula reviewed and updated Core package of administration and soft skills training developed Upgradation plan initiated	At least 30% of TMA staff trained in core package of administration and soft skills	At least 60% of TMA staff trained in core package of administration and soft skills
Improved performance of WASAs	Complete process of capacity and performance assessment of all WASAs	All WASAs implement at least 75% of all critical capacity and performance improvement measures	All WASAs implement at least 75% of all essential capacity and performance improvement measures
Establish a Water and Sanitation Academy for WASA staff	Water and Sanitation Academy established Core curricula and faculty development plan formulated	At least 30% of WASA professional staff undergo continuing professional development in defined technical areas	At least 60% of WASA professional staff undergo continuing professional development in defined technical areas

	Professional and continuing education programmes launched	At least 30% of professional staff placements in WASAs achieved	At least 60% of professional staff placements in WASAs achieved
CBOs capacities strengthened	Strengthen CBO through their capacity building and registration under the Government Act	Strengthen CBO through their capacity building and registration under the Government Act	Strengthen CBO through their capacity building and registration under the Government Act

Sector Financing			
Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
Increased Own Source Revenue (OSR) in sub-sectors by TMAs	Incentivise by providing matching grants to TMAs related to sub-sector OSR At least 30% of TMAs increase their baseline sub-sector OSR by 100% or more	At least 60% of TMAs increase their baseline sub-sector OSR by 200% or more	At least 75% of TMAs increase their baseline sub-sector OSR by 300% or more
Increased regulated private sector participation in sub-sectors	Incentivise private sector with subsidies to provide water supply, filtration plants, O&M services, rehabilitation of dysfunctional schemes, solid waste management, wastewater treatment in selected areas and city and town zones Determine type of contract arrangement and ensure regulatory mechanism in place	At least 30% or more of coverage of municipal services in mega cities provided by private sector At least 30% or more of coverage of municipal services in intermediate cities provided by private sector At least 25% or more of coverage of municipal services in TMAs provided by private sector	At least 60% or more of coverage of municipal services in mega cities provided by private sector At least 60% or more of coverage of municipal services in intermediate cities provided by private sector At least 50% or more of coverage of municipal services in TMAs provided by private sector
Increased development expenditure allocation to sub-sectors	Proportionate increase in sub-sector development expenditure allocation and release with increase in overall development expenditure allocation At least 80% of sector development allocation requirement and release achieved	Proportionate increase in sub-sector development expenditure allocation and release with increase in overall development expenditure allocation At least 90% of sector development allocation requirement and release achieved	Proportionate increase in sub-sector development expenditure allocation and release with increase in overall development expenditure allocation At least 100% of sector development allocation requirement and release achieved
Punjab Town Improvement Programme	Town Improvement Programme for 105 towns developed that incorporates integrated water supply, sewerage and drainage, wastewater treatment and solid waste management, and climate change adaptation and mitigation	Town Improvement Programme launched in 20% of TMAs	Town Improvement Programme launched in 40% of TMAs
Fast track approach for declaring priority districts ODF	At least 30% of 11,904 villages in priority districts declared ODF	At least 60% of 11,904 villages in priority districts declared ODF	At least 90% of 11,904 villages in priority districts declared ODF

Sector Coordination

Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
Improved governance mechanism for coordination	Constitute a Punjab Steering Committee on WASH under the Punjab Water Commission Set up sub-sector Task Forces under the Steering Committee Ensure multi-stakeholder representation as appropriate NGOs initiatives in sub-sectors linked and synergised with master plans of cities, municipalities, towns, district councils so as to strengthen existing systems, assist government efforts to reduce open defecation and improve WASH hygiene	Six monthly meetings of Steering Committee and sub-sector task forces Monitor progress of sector development plan and report to Chief Minister NGOs initiatives in sub-sectors linked and synergised with master plans of cities, municipalities, towns, district councils so as to strengthen existing systems, assist government efforts to reduce open defecation and improve WASH hygiene	Six monthly meetings of Steering Committee and sub-sector task forces Monitor progress of sector development plan and report to Chief Minister NGOs initiatives in sub-sectors linked and synergised with master plans of cities, municipalities, towns, district councils so as to strengthen existing systems, assist government efforts to reduce open defecation and improve WASH hygiene
Improved operational performance and information and knowledge management	Establish a Project Management Unit (PMU) for the sector plan to support the Punjab Water Commission PMU devises M&E framework PMU monitors district scorecard for WASH PMU collates key sector related information from various departments PMU provides updates to Punjab Steering Committee and presents progress on operational performance according to M&E framework to Chief Minister every quarter	PMU monitors district scorecard for WASH PMU collates key sector related information from various departments PMU provides updates to Punjab Steering Committee and presents progress on operational performance according to M&E framework to Chief Minister every quarter	PMU monitors district scorecard for WASH PMU collates key sector related information from various departments PMU provides updates to Punjab Steering Committee and presents progress on operational performance according to M&E framework to Chief Minister every quarter
Special Panel on Research	A Special Panel on Research constituted under the Punjab Water	Collate and synthesise research in the sub-sectors and present a	Collate and synthesise research in the sub-sectors and present a

	Commission to review existing evidence and recommend wastewater treatment options for different urban, peri-urban and rural settings Identify gaps where more research is needed Collate and synthesise research in the sub-sectors and present a biennial 'State of Water, Sanitation, Hygiene and Solid Waste Research in Punjab' Report to the Punjab Water Commission and recommend practical applications of the research in the context of the sector development plan	biennial 'State of Water, Sanitation, Hygiene and Solid Waste Research in Punjab' Report to the Punjab Water Commission and recommend practical applications of the research in the context of the sector development plan	biennial 'State of Water, Sanitation, Hygiene and Solid Waste Research in Punjab' Report to the Punjab Water Commission and recommend practical applications of the research in the context of the sector development plan
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Sector Monitoring and Evaluation

Strategic Goal	Short Term 1 - 3 years	Medium Term 4 - 6 years	Long Term 7 - 10 years
Enhanced management performance of water and sanitation operators and TMAs	Each WASA ensures quarterly updating of WASA performance indicators of previous quarter and updated on website Each TMA ensures quarterly updating of sub-sector indicators of previous quarter and updated on TMA website Each TMA ensures utilisation of computerised Financial Management System, Performance Management System, Client Tracking System and updated on TMA website every quarter	Each WASA ensures quarterly updating of WASA performance indicators of previous quarter and updated on website Each TMA ensures quarterly updating of sub-sector indicators of previous quarter and updated on TMA website Each TMA ensures utilisation of computerised Financial Management System, Performance Management System, Client Tracking System and updated on TMA website every quarter	Each WASA ensures quarterly updating of WASA performance indicators of previous quarter and updated on website Each TMA ensures quarterly updating of sub-sector indicators of previous quarter and updated on TMA website Each TMA ensures utilisation of computerised Financial Management System, Performance Management System, Client Tracking System and updated on TMA website every quarter
Consolidated Dashboard of sub-sector performance	Collaboration with Urban Unit and Punjab Information Technology Board to develop web-based information management system that links WASA performance system, TMA performance system, District Water Quality monitoring and other periodic monitoring data (financial allocation, release and utilisation; wastewater quality; industrial wastewater contamination etc.) Dashboard housed and operated by PMU, which generates a quarterly District Scorecard and provides updates on its website	PMU generates a quarterly District Scorecard, a city scorecard, TMA scorecard and provides updates on its website	PMU generates a quarterly District Scorecard, a city scorecard, TMA scorecard and provides updates on its website
Production of an annual sector status report	PMU produces an annual "State of Water, Sanitation and Solid Waste in Punjab" Report PMU produces biennial	PMU produces an annual "State of Water, Sanitation and Solid Waste in Punjab" Report PMU produces biennial	PMU produces an annual "State of Water, Sanitation and Solid Waste in Punjab" Report PMU produces biennial

	provincial data for JMP and GLAAS reports	provincial data for JMP and GLAAS reports	provincial data for JMP and GLAAS reports
Periodic sector review	Strategic review of sector plan at end of short term	Strategic review of sector plan at end of medium term	Strategic review of sector plan at end of long term

3 – Overall Tehsil WASH Coverage and Ranking

Tehsil/Town	Improved water		Piped Water		Improved Sanitation		Open Defecation		Soap and Water Available for Hand Washing	
	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
Ahmadpur East	98.8	33	2.6	124	47.0	131	45.0	134	39.8	147
Bahawalpur City	88.5	125	5.9	98	83.4	49	10.6	38	74.9	86
Bahawalpur Sadar	99.8	10	6.0	95	59.8	111	35.2	113	61.6	118
Hasilpur	96.0	71	27.2	35	57.9	116	29.7	103	62.4	115
Khairpur Tamewali	97.6	50	3.5	117	36.5	145	43.1	128	41.0	144
Yazman	97.3	54	23.9	41	54.9	121	42.4	126	58.4	127
Bahawalnagar	91.1	119	42.3	21	51.1	126	43.1	128	74.1	88
Chishtian	94.6	91	54.1	13	67.3	94	28.3	99	82.1	71
Fort Abbas	88.1	126	33.0	30	74.9	72	24.5	84	82.7	69
Haroonabad	91.0	120	59.9	9	77.4	66	22.0	79	83.0	65
Minchinabad	96.3	66	24.6	39	50.9	127	43.4	130	65.2	107
Khanpur	99.4	22	4.7	106	60.5	108	25.7	90	63.8	111
Liaquatpur	96.6	63	10.8	69	49.6	128	37.4	118	50.4	137
Rahim Yar Khan	94.9	81	7.0	87	68.0	92	27.9	97	53.8	134
Sadiqabad	91.3	118	12.8	59	60.0	109	36.6	115	50.2	138
Dera Ghazi Khan	81.9	142	7.6	82	42.5	138	50.4	141	40.4	145
Taunsa	94.1	98	57.6	10	38.9	143	50.0	139	21.3	150
Chobara	100.0	1	0.3	141	44.1	136	55.5	145	51.4	136
Karor	99.9	4	0.1	145	69.4	87	27.7	96	59.6	124
Layyah	99.9	4	0.1	145	62.5	102	34.6	110	68.6	100
Alipur	99.5	20	1.1	134	38.2	144	58.0	147	54.6	132
Jatoi	99.9	4	0.0	148	31.2	146	67.4	149	44.2	143
Kot Addu	99.4	22	0.0	148	57.5	118	39.8	122	57.5	129
Muzaffargarh	96.3	66	3.3	119	45.2	134	52.0	143	61.6	118
Jampur	83.2	138	3.7	115	29.6	147	69.1	150	60.4	123
Rajanpur	87.0	128	1.1	134	40.3	142	49.8	138	85.6	52
Rojhan	95.8	73	6.0	95	28.8	148	67.3	148	63.6	112
Chak Jhumra Town	97.7	49	12.4	61	91.2	29	8.4	33	82.8	68
Iqbal Town	47.3	150	12.3	63	96.2	16	2.9	21	89.2	42
Jinnah Town	75.2	145	38.6	25	95.3	19	1.3	12	95.2	12
Lyallpur Town	92.1	113	33.7	28	96.5	12	1.8	15	90.0	37
Madina Town	64.6	148	12.1	64	93.3	21	3.2	22	94.2	18
Jaranwala Town	93.9	101	10.8	69	82.5	52	16.3	64	86.3	49
Sammundri Town	84.5	135	15.0	52	93.1	23	5.7	24	86.2	50
Tandlianwala Town	96.7	60	0.3	141	52.3	124	45.9	135	48.8	140
Chiniot	99.2	30	1.6	129	51.4	125	40.0	123	73.3	90
Bhowana	99.8	10	0.0	148	41.1	140	57.5	146	52.0	135
Lalian	95.7	76	7.4	85	46.6	132	51.6	142	59.0	126
Ahmadpur Sial	100.0	1	0.2	144	41.6	139	52.2	144	61.7	117
18 - Hazari	99.4	22	0.1	145	59.2	113	38.7	120	65.6	105

Jhang	98.2	41	1.3	131	44.2	135	44.3	133	48.5	141
Shorkot	99.4	22	4.8	104	53.0	123	42.8	127	63.1	114
Gojra	91.7	115	41.6	22	90.6	30	8.2	32	85.5	53
Kamalia	94.0	100	3.8	114	73.5	77	26.0	93	68.7	99
Toba Tek Singh	95.8	73	52.1	15	89.9	31	9.5	37	77.5	82
Aroop Town	90.5	121	4.6	108	98.6	6	0.6	9	96.9	6
Khialli Shahpur Town	94.7	87	4.3	111	97.8	8	1.4	13	92.9	23
Nandipur Town	97.8	46	9.9	74	97.5	9	1.0	10	93.3	22
Qila Dedar Singh Town	95.5	78	15.9	48	96.7	11	1.2	11	92.9	23
Naushera Virkan Town	99.8	10	4.8	104	93.2	22	5.9	27	90.1	36
Kamoke Town	96.5	64	5.9	98	94.6	20	2.4	19	92.0	26
Wazirabad Town	94.9	81	11.0	68	96.4	14	2.1	17	97.4	3
Gujrat	96.8	58	28.4	34	87.6	34	12.0	46	97.1	4
Kharian	99.4	22	8.8	76	86.5	40	13.5	53	95.9	9
Sarai Alamgir	96.5	64	7.5	83	83.8	46	16.0	61	94.0	19
Hafizabad	94.7	87	1.7	127	84.4	44	14.2	54	94.9	13
Pindi Bhattian	98.3	38	0.8	137	58.5	114	37.3	117	93.5	20
Malakwal	98.0	42	1.2	133	68.3	90	31.0	104	79.7	76
Mandi Bahauddin	93.7	103	2.4	125	81.9	53	17.3	67	85.7	51
Phalia	94.8	83	2.7	123	71.3	81	28.3	99	81.1	73
Narowal	82.3	141	17.3	47	87.5	35	11.5	42	85.4	54
Shakargarh	99.9	4	2.2	126	79.3	59	20.4	76	94.7	15
Zafarwal	97.5	52	7.8	81	81.8	54	18.1	69	88.3	44
Daska	99.7	17	4.4	109	96.4	14	2.7	20	90.7	34
Pasrur	98.6	36	11.6	67	84.6	43	14.6	55	85.0	58
Sambrial	94.4	94	12.4	61	92.5	25	5.8	26	91.7	29
Sialkot	84.5	135	15.8	50	95.9	17	3.3	23	95.7	10
Cantonment	81.0	143	65.4	7	96.5	12	0.0	1	91.4	30
Aziz Bhatti Town	97.1	56	82.4	6	98.6	6	0.3	8	95.5	11
Data Ganj Bakhsh Town	94.3	95	88.9	3	100.0	1	0.0	1	97.0	5
Gulberg Town	92.9	107	92.2	1	100.0	1	0.0	1	98.7	2
Iqbal Town	97.8	46	45.5	18	95.8	18	1.8	15	90.6	35
Nishtar Town	97.2	55	54.8	12	96.8	10	1.6	14	89.5	39
Ravi Town	95.5	78	89.7	2	99.2	5	0.0	1	96.0	8
Samanabad Town	85.2	134	83.9	5	99.9	3	0.0	1	98.9	1
Shalimar Town	88.9	123	87.9	4	99.8	4	0.0	1	94.7	15
Wagha Town	96.2	69	36.0	27	87.5	35	8.1	30	93.5	20
Chunian	92.5	109	11.7	66	72.5	79	24.7	85	85.1	57
Kasur	98.8	33	29.8	32	66.4	95	28.2	98	81.1	73
Kot Radha Kishan	92.3	111	4.4	109	82.7	51	11.7	44	83.5	63
Pattoki	95.0	80	9.7	75	78.5	63	16.1	62	81.9	72
Shahkot	82.7	139	1.7	127	88.9	32	10.6	38	85.0	58
Sangla Hill	82.7	139	3.1	121	86.4	41	12.3	49	84.3	62
Nankana Sahib	94.1	98	3.9	113	70.9	83	27.6	95	72.8	91
Safdarabad	97.5	52	0.6	138	87.5	35	8.6	34	88.5	43

Ferozewala	98.3	38	20.5	44	77.4	66	8.6	34	83.2	64
Muridke	93.7	103	13.6	56	91.6	28	7.1	29	82.2	70
Sharaqpur	96.7	60	14.6	54	91.8	27	5.7	24	92.7	25
Sheikhupura	97.9	44	6.2	93	87.0	39	8.1	30	88.3	44
Bosan Town	94.7	87	12.9	58	70.6	85	16.3	64	64.3	109
Mousa Pak (Shaheed) Town	93.8	102	14.1	55	41.0	141	13.1	51	66.5	104
Shah Rukn-E-Alam Town	94.5	93	15.9	48	55.9	120	11.8	45	69.3	98
Sher Shah Town	94.3	95	8.1	79	45.4	133	15.8	59	61.6	118
Jalalpur Pirwala Town	96.1	70	10.6	72	23.4	149	49.0	136	38.3	148
Shujabad Town	97.8	46	2.9	122	20.7	150	44.0	131	34.8	149
Jahanian	97.0	57	7.0	87	64.9	99	11.2	41	77.8	81
Kabirwala	99.8	10	5.3	103	48.2	129	38.2	119	59.4	125
Khanewal	98.9	32	6.2	93	71.1	82	16.4	66	70.1	96
Mian Channu	99.6	18	3.3	119	68.8	89	12.6	50	71.6	95
Dunyapur	96.7	60	44.0	19	76.4	68	22.8	81	60.6	122
Karor Pacca	98.5	37	4.1	112	56.5	119	41.3	125	54.3	133
Lodhran	98.3	38	6.4	91	61.9	103	34.6	110	58.2	128
Burewala	94.3	95	10.6	72	73.8	75	15.4	57	89.7	38
Mailsi	96.8	58	7.9	80	67.9	93	31.8	105	50.2	138
Vehari	96.3	66	5.9	98	61.1	105	29.1	101	79.3	78
Gujar Khan Town	86.1	131	8.4	77	80.6	57	17.6	68	88.2	46
Kahuta Town	69.8	147	13.4	57	68.1	91	20.7	77	89.4	40
Kallar Syedan Town	79.7	144	12.0	65	70.7	84	20.2	75	89.4	40
Kotli Sattian Town	56.2	149	7.4	85	60.0	109	23.6	82	81.1	73
Murree Town	71.2	146	23.5	42	76.1	70	11.6	43	72.1	93
Taxila Town	92.3	111	52.8	14	92.4	26	2.3	18	94.3	17
Potohar Town	94.7	87	48.2	17	78.9	62	13.3	52	94.9	13
Rawal Town	88.0	127	62.1	8	93.1	23	0.0	1	96.5	7
Attock	91.4	117	38.8	24	81.3	55	12.0	46	67.6	101
Fateh Jang	85.8	132	24.8	38	63.6	101	29.1	101	64.2	110
Hazro	92.1	113	10.7	71	86.1	42	6.9	28	63.4	113
Hassanabdal	95.6	77	49.7	16	83.8	46	9.1	36	71.8	94
Jand	92.9	107	19.3	46	81.3	55	16.1	62	56.9	130
Pindi Gheb	91.7	115	37.7	26	75.2	71	19.9	73	61.6	118
Chakwal	86.4	130	26.0	36	79.3	59	19.6	72	66.7	103
Choa Saiden Shah	85.5	133	33.6	29	78.2	65	21.6	78	76.1	84
Kalar Kahar	83.4	137	32.7	31	83.7	48	15.4	57	72.6	92
Talagang	99.4	22	23.0	43	79.0	61	20.1	74	55.3	131
Dina	96.0	71	24.2	40	88.6	33	10.8	40	85.2	55
Jhelum	97.6	50	8.4	77	87.1	38	12.1	48	91.1	33
Pind Dadan Khan	93.3	105	56.4	11	73.7	76	24.4	83	76.5	83
Sohawa	89.0	122	19.8	45	74.6	73	25.0	86	83.0	65
Chichawatni	98.8	33	6.4	91	66.0	96	25.2	87	84.5	61
Sahiwal	94.8	83	4.7	106	72.4	80	26.4	94	91.2	32
Depalpur	97.9	44	6.0	95	61.1	105	35.1	112	82.9	67

Okara	94.6	91	6.9	89	57.6	117	37.0	116	84.9	60
Renala Khurd	99.4	22	3.7	115	43.2	137	49.5	137	91.9	27
Arifwala	94.8	83	12.6	60	61.0	107	33.0	109	85.2	55
Pakpattan	99.4	22	3.5	117	59.8	111	39.1	121	75.8	85
Bhalwal	95.8	73	6.7	90	73.4	78	25.7	90	73.5	89
Kot Momin	99.8	10	0.5	139	58.2	115	41.1	124	65.4	106
Sahiwal	99.9	4	1.4	130	66.0	96	32.7	108	91.8	28
Sargodha	93.3	105	14.8	53	83.9	45	15.9	60	87.3	47
Shahpur	99.6	18	7.5	83	65.9	98	32.2	107	86.9	48
Sillanwali	88.9	123	5.6	102	76.4	68	22.3	80	91.3	31
Bhakkar	99.8	10	0.9	136	70.6	85	25.8	92	64.6	108
Darya Khan	99.9	4	0.3	141	61.8	104	32.1	106	62.0	116
Kalur Kot	100.0	1	1.3	131	69.0	88	25.5	89	67.1	102
Mankera	99.8	10	0.4	140	48.0	130	50.2	140	40.3	146
Khushab	92.4	110	39.7	23	78.3	64	19.4	70	69.7	97
Nurpur Thal	99.5	20	25.8	37	54.9	121	44.2	132	46.8	142
Qaidabad	94.8	83	15.2	51	64.1	100	35.9	114	79.4	77
Isa Khel	87.0	128	42.5	20	74.6	73	25.3	88	74.6	87
Mianwali	98.0	42	28.8	33	80.0	58	19.5	71	78.0	80
Piplan	99.0	31	5.9	98	82.8	50	15.0	56	79.0	79

(Source: Tehsil Level Equity Mapping Water, Sanitation and Hygiene (WASH) Punjab, Pakistan Government of Punjab, 2015)