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**Government of Gujarat
Water Supply Department**

Block No. 7, 9th floor, Sardar Bhavan,
Sachivalaya, Gandhinagar - 382 010

No.VWS/ 12/ 2012/ 43266/ Kh-4 dated March 16, 2012

To

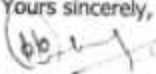
i.)	Chief Engineer & Additional Secretary (Projects) Government of Gujarat Sachivalaya, Gandhinagar
ii.)	Chief Engineer (Tech), GWSSB, Gandhinagar
iii.)	Chief Engineer (Planning), GWSSB, Gandhinagar
iv.)	Chief Engineer(Mech), GWSSB, Gandhinagar
v.)	Chief General Manager (Civil), GWIL, Gandhinagar
vi.)	Chief Engineer, WASMO, Gandhinagar
vii.)	Director, GJTI, Gandhinagar
viii.)	Superintending Engineer, GWSSB, Gandhinagar

Subject: Concept Note on the activities of Research and Development Cell

Sir,

Kindly refer this department's resolution no. VWS/ 12/ 2012/ 43266/ Kh-4 dated 18/ 1/ 2012 regarding constitution of Research and Development Committee in Water Supply Department. In this regard, I am directed to forward herewith a copy of Concept Note on the activities of Research and Development Cell for further necessary action.

Yours sincerely,


(K. K. Wakharia)
Executive Engineer
Water Supply Department

Encl: As above

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CONCEPT NOTE ON THE ACTIVITIES OF RESEARCH & DEVELOPMENT CELL

Water Supply Department looks after the activity of providing safe and potable drinking water supply to rural and urban population of the State and also for industrial houses. At present, the task of providing drinking water is accomplished through its robust infrastructure encompassing 22,214 kms bulk pipeline, 1,18,750 kms long distribution pipeline, 11,000 underground storage tanks (sumps) with a capacity of 2564 million liters, 11,400 elevated storage reservoirs (ESRs) with a capacity of 1,200 million liters, 1,87,000 hand pumps, 290 solar pumps and so on. Based on the survey of habitations, the Water Supply Department assessed the situation and initiated projects to cover problem habitations (NC, PC & QP) with the required water availability and to ensure potable water. The department has evolved through the time and framed new strategies to address the need of people of the State in water supply sector. On one hand, it has adopted a decentralized approach and empowered communities to manage the water resource and its equitable distribution while on the other hand adopted new technologies to address the quality problem leading to water security. The major decision in this regard was to switch over on surface water based source from traditional ground water based sources.

Water supply sector is primary social sector where lots of new technologies are under implementation and technological interventions are often required in its existing infrastructure. Presently, for implementation of various ongoing water supply schemes, the Department seeks technological expertise from the qualified professionals and even looks for exploring suitable technologies from private sector and overseas. However, there is no established mechanism in the department by which assessment of these new technologies can be done. Hence, due to lack of expertise and requisite knowledge in the field of water supply sector world wide, the department may not be in a position to implement the projects with the new skills and technologies available. With this in mind, after detailed deliberations, it has been decided to constitute a Research and Development Committee to steer the implementation of water supply projects by adopting the new technological innovations available in the drinking water supply sector. These technological interventions are available in both the fields i.e., in infrastructure set up and in managerial skills (soft skill approach). Accordingly, the Government of Gujarat, Narmada, Water Resources, Water Supply & Kalpsar Department, vide its order no. VWS/12/2012/43266/Kh-4 dated, 18th January, 2012 constituted a Research and Development Committee consisting of the following officers for formulation of Research and Development Cell (R&D Cell) with the given scope of work.

(i)	Chief Engineer & Addl. Secretary (Projects), NWRS&K Deptt. (WS)	Chairman
(ii)	Chief Engineer (Tech), GWSSB	Member
(iii)	Chief Engineer (Plg.), GWSSB	Member
(iv)	Chief Engineer (Mech.), GWSSB	Member
(v)	Chief General Manager (Civil), GWIL	Member
(vi)	Chief Engineer, WASMO	Member
(vii)	Officers in the rank of SEs from related deptts.	Invitees
(viii)	Director, GJTI	Convener

Research and Development is a vast subject and it is an ongoing process. It has to explore new technologies as per the requirement of organization. Following are the few indicative subjects on which the committee should deliberate and suggest the department for improvement.

1. Assessment of best technology in Bulk Transmission/ Distribution Systems:

- (i.) Type of material – CI, DI, MS, CPVC, HDPE, CC etc.
- (ii.) Coatings on pipelines – 3 LPE, Epoxy etc.

2. Operation & Maintenance (O&M) and repairs of all performing Electro-mechanical machinery which includes:

- i.) Leading techno based pumps with least O&M requirement;
- ii.) O&M manual for of all types of pumping machineries and their allied accessories;
- iii.) Enforcement of periodical checking and preparation of maintenance schedule;
- iv.) Imparting training and awareness of staff and agencies;
- v.) Optimisation technology for energy consumption;
- vi.) Implementation of alternative strategies and technology for O&M;
- vii.) Sharing of experiences, identifying and awarding good performance.

3. Performance Improvement Activity:

- i) Study regarding implication of the projects implemented;
- ii) Cost analysis of expenditure incurred on a particular project and its benefit;
- iii) Analysis of loopholes and suggestion for improvement by alternate solutions;
- iv) Enforcement of Vigilance and emergency auditing;
- v) Periodical checking and reporting MIS;
- vi) Energy auditing and energy saving models by best appropriate interventions;
- vii) Comparative study by pay back models;
- viii) Energy saving through ESCO routs;

- ix) Invitation of rates and execution.

4. Define, approval and enforcement of benchmark indicators/Service Level

A. Access to people:

- i.) According to norms or according to the service segment;
- ii.) Level of satisfaction;
- iii.) Generation of trust and faith on the services provided;
- iv.) Fulfillment of expectations;
- v.) Reduction of complaint ;
 - a) Customer redressal mechanism (Control Rooms);
 - b) Service;
 - c) Reduction of failure rate;
- vi.) Regularity;
 - a) Time and duration;
 - b) Quantity and delivery.

B. Consumption Level:

- i) Input reduction
- ii.) Electrical power consumption;
- iii.) Spare parts for repair;
- iv.) O&M and repair cost;
- v.) Optimum consumables;
- vi.) Time to repair:
- vii.) Manpower

C. Optimum output:

- i.) Least down time;
- ii.) Unaccounted for water and energy;
- iii.) Quality assurance level;
- iv.) Cost recovery level;
- v.) Cost per capita;
- vi.) Cost per 1000 liter.

5. SCADA/Water conservation, Water use efficiency and Control loss of water:

- i.) Research, compare and analyze different technologies available in water and other sector;
- ii.) Training and awareness;
- iii.) Real time data availability and dissipation to all concerned authority and department;
- iv.) Tendering, construction and O&M of system;

- v.) Monitoring and governance of ongoing schemes;
- vi.) Governance of SCADA.

6. Metering of water supply/Use of efficient Electro-mechanical systems:

- i.) Installation of meters according to the size/network;
- ii.) Selection of technology;
- iii.) Invitation of rates and execution;
- iv.) Water policy frame working;
- v.) Cost of water and tariff calculation;
- vi.) Assessment of water need and its availability.

7. Introduction of Technology:

- i.) Interaction with new vendors and technological seminars and presentations;
- ii.) Vendor policy and selection process;
- iii.) Comparison of technology available in market as techno-economical solutions;
- iv.) Invitation of rates, analysis as cost to benefit and applications;
- v.) Resource centre for the happening in and around water sector in case of technology;
- vi.) Support function and advisory activity to ongoing works and new projects;
- vii.) Interaction with all MOU holders and introduction of new projects;
- viii.) Application of various kinds of software for assistance in design and development;
- ix.) Close association with System manager for MIS.

8. Training and awareness:

- i.) Working in close association with WASMO and GJTI;
- ii.) On the job and induction training module design;
- iii.) Category and cadre-wise training need assessment;
- iv.) Course designing and syllabus.

9. Use of Technology – Pipes/Pumps/Valves which leads to efficiency

10. Best Practices/ Experience in other States/abroad