NWRB Studies/Beneficiaries/Programs/Projects Conducted and Status of Implementation

1. Amendment of the 1976 Water Code of the Philippines

The amendment to the 1976 Water Code of the Philippines is necessary for it to be responsive to the changing needs of the country and its environment considering its more than three decades of adoption and implementation. There are current issues and challenges which need to be addressed thus, the revision is necessary to effectively implement and enforce the Water Code.

The amendment to the Water Code of the Philippines has been proposed as a draft bill entitled "An Act Revising the Water Code of 1976 and for Other Purposes". The key proposed amendments are as follows:

- Adoption of practices, principles embodied in the Integrated Water Resources Management (IWRM);
- Institutionalization of river basin organizations (RBOs);
- Incorporation of principles of climate resiliency on resource regulation;
- A new chapter on economic regulation;
- Incorporation of water demand management principles;
- Emphasis on community partnerships and indigenous peoples and benefits to host communities;
- Science-based research and development needs; and
- Improvement in data collection and disclosure

Regional consultations have been conducted in Visayas and Mindanao, specifically in Iloilo City and Cagayan de Oro City, respectively. An Experts' Forum was also held in Q.C. in March 2016. Further enhancement of the draft is currently on-going. Conduct of Thematic Group meetings/consultations is being considered prior to the conduct of a National Consultation. The target date for submission to Congress is in August 2016 and NWRB aims to find water champions in the Congress & Senate for the passage of the proposed amendments into law.

2. Water GIS Philippines Project

The Establishment of an Integrated 3D GIS-Based Water Resources Management Information System for the Provinces of Pampanga and Bulacan or

the Water GIS Philippines Project is a Korean government-assisted venture aims to automate the analysis, monitoring and over-all management of water resources in the pilot areas of Bulacan and Pampanga. The project provides real-time data, exact location information, analysis and design of consumption pattern, spatial simulation and selection of suitable water resources locations. Among the most significant features of the project is the monitoring of Ipo, Bustos and Angat dams.

The turn-over to NWRB of this breakthrough technology commenced in December 2015 through the final presentation of its completed output. Aside from this sophisticated information system, it also provided state-of-the art IT facilities in the NWRB Data Room as well as local and international trainings on the utilization of system.

The Water Philippines GIS Project benefits the public through the availability of selected useful information in the Bulacan and Pampanga water resources system. It will be accessible online through the NWRB website www.nwrb.gov.ph

Trainings were held in South Korea attended by some NWRB staff under the project.

- Capacity Building Course on GIS Development for Managers in 2014
- Capacity Building Course on GIS Development for Working Level Officials in 2014

A Training on Improved Decision-Making Using GIS Operations and Management will be held From June 11 -27 of this year to be attended by some concerned NWRB staff

3. Groundwater Management Plan and Establishment of Monitoring Wells

In 2013, NWRB started the project "Development of Groundwater Management Plan for Highly Urbanized Water Constraint Areas" which piloted in the city of Iloilo. Final report for Iloilo was already completed in 2014. Formulation of policies on groundwater management in the area based from the recommendations in the plan will be conducted. Dissemination of the report to all stakeholders in the area is recommended.

Groundwater Management Plan for Cagayan de Oro City, the second location, was already completed in May 2015

The NWRB's project pursued the areas of Angeles City in Pampanga, Metro Manila and Cavite. Initial reports for Angeles City (e.g. Inception, Groundwater Vulnerability Assessment, Groundwater Modeling and Analysis, and Groundwater

Monitoring Network and Design) except draft and final reports were already accomplished. For Metro Manila and Cavite, some reports (e.g. Inception, Georesistivity Analysis, Groundwater Vulnerability Assessment and Groundwater Modeling and Analysis) were already completed.

A major component of the project is the installation of monitoring wells in the target areas. In 2015, all six (6) monitoring wells in Pavia, San Miguel, Alimodian and Iloilo City were already operational. NWRB monitors water level and water quality twice a year.

There are already initial eight (8) monitoring wells installed in 2015 in Cagayan de Oro. The remaining two (2) are expected to be completed in September 2016.

Development of Groundwater Management Plan for Angeles City and Metro Manila and Cavite is still on-going.

4. **Comprehensive Water Resources Assessment for Major River Basins**

The project is an assessment and updating of water availability and quality situation that could sustain the projected population and developments using the river basin as appropriate planning area. The main objective of this endeavor is to garner a wholistic knowledge on the current water resources situation of the area which will be used in the effective implementation of NWRB's regulation and policy formulation functions.

The NWRB conceptualized the Comprehensive Water Resources Assessment for the Agno River Basin first. The project started in July 2015 and has already come up with several reports (e.g. Inception Report, Groundwater Modelling and Analysis, and Monitoring Network Design). Completion of the project is in April – May 2016.

Comprehensive Water Resources Assessment for the Panay River Basin started in February 2016 is to be completed in November 2016.

5. Accreditation Program for Technical Service Providers

ATSP or the Accreditation Program for Technical Service Providers is a "support program for small water utilities (SWUs) to improve their access to expert advice, mentoring on technical, financial and management matters, including strategic and investment planning." Its objectives are 1) to assist SWUs to comply with the NWRB requirements and 2) to expand coverage and improve their quality of service through the development of their administration and operations.

Upon the program completion in 2015, the service coverage of 22 water utilities increased from 50% to 53%. At least 43,779 people were served with piped water supply in which 19,139 of the number came from poor households. Eleven thousand families located in waterless communities were provided with access to water.

The operations of SWUs also improved through the technical assistance of trained TSP specialists. They were able to comply with NWRB n requirements at about half the time of their usual processing.

The on-going program is expected to garner more positive outputs in terms of added water service coverage which will contribute in the aspiration of the government to provide water for all Filipinos.

6. Listahang Tubig

Listahang Tubig or Water Register Project is a national survey of all water utilities in the country. The project started in October 22, 2014 after the signing of the memorandum of agreement (MOA) among various stakeholders such as NWRB as the lead agency, DILG, LWUA, NEDA, PAWD, and all local government units (LGUs) in the Philippines. It is supported by the World Bank Water and Sanitation Program (WB-WSP).

In 2015, the first of its kind countrywide survey was completed by the five assessment teams of World Bank through the utmost cooperation of all participating parties. Two major challenges were encountered along the data gathering stage including the participation of LGUs mostly due to lack of manpower and poor internet connection as well as the integrity of inputted data. These issues were resolved by the deployment of provincial enumerators who directly collect, encode and endorse data together with the stationing of data checkers.

Although it's primary objective is only to create a database of water utilities operating in the Philippines, it expanded to generating profiles, establishing a benchmark for level 3 water utilities, facilitating improvement in water regulation and water service delivery through access to information of participating water service providers (WSPs).

Listahang Tubig data is readily available in its cloud-based system through http://listahangtubig.cloudapp.net/. An infographic printed material is also created to promote and inform the public about the endeavor in Listahang Tubig.

The maintenance of the cloud web-based system of the national database of all water service providers is currently being sponsored by one of the responsible

cooperating partners in the implementation of the Listahang Tubig and will expire by December 2016. Budget for the sustainability of Listahang Tubig database is being proposed for tier II budget allocation for 2017.

7. Water Permit Management System

Issuance of water rights through a water permit (WP) is one of the major functions of the National Water Resources Board. Citizens from all over the Philippines flock in the NWRB headquarters in Metro Manila to apply and secure a WP. It usually takes four (4) to six (6) months, without protest, to process a water permit considering external factors beyond the control of NWRB.

To make the process more efficient, the NWRB, through the assistance of World Bank and IBM Research, came up with the project Transforming Traditional Permitting to Context-Aware Water Rights Management. The project, once developed, will improve NWRB's capacity for stewardship of the groundwater resource. The system is planned to be linked in the Billing Unit of the NWRB for easier preparation of Statement of Accounts (SOAs) of all existing WPs thus it is expected to result in increased revenue collection.

The project aims to expedite the water permit application process with its online component. Applicants residing from far-flung areas may submit their forms, requirements and payments remotely.

This endeavor started in June 2015 and is expected to be finished by April 2016.

8. Climate-Resilient Management of the Dams and Reservoirs in the Upper Agno River Basin (UARB)

Another project for the Agno River Basin is the Climate-Resilient Management of the Dams and Reservoirs in the Upper Agno River Basin (UARB). It is specifically focused in the operation, regulation and monitoring of the water resources in the UARB area highlighting the possible impacts of climate change in its hydrological regime.

The overall objectives of the Project are: 1) to appraise the water resources the impacts of climate change on the hydrological regime of the Upper Agno River Basin; and (2) to develop an optimization model for the operation regulation and monitoring of the water resources systems of the Upper Agno River Basin.

The endeavor started in the lattermost part of the year and is still on-going.

9. Development of Electronic Records Management System

In 2014, the National Water Resources Board started the Development of Electronic Management System to digitize the records filing system of the agency's pertinent records. The project is divided into five portions including 1) Systems Development and Configuration, 2) Infrastructure Design and Commissioning, 3) Data Conversion and Management, 4) Database Development, Integration and 5) Testing and Technology Transfer.

Part of the project is the scanning of documents totaling to 1,000,000 pages in various paper sizes. Among the documents translated into digital form are the water permits, certificates of public convenience, case and board resolutions, annual audit and financial reports, office orders, memoranda, and other correspondences relevant to NWRB.

Upon its completion in 2016, the project has finished scanning 2,200 paper-filed water permits. Most of these permits are also inputted in the system which is readily accessible for reference.

Among the significant impacts of this project is the convenience of retrieving the electronic files by few clicks in the computer. All NWRB employees can access these files through the ERMS portal.