

Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City

19TH CONGRESS
Third Regular Session

HOUSE BILL NO. **10653**



Introduced by Honorable Michael L. Romero

EXPLANATORY NOTE

The **1987 Constitution** mandates the state to provide a **National Flood Management, Evacuation and Recovery Protocol** through appropriate technology and research, with adequate finance, facilities and other support services.

The republic of the Philippines recognizes the occurrence of **floods** throughout the whole year. Without knowledge, awareness or beyond the local region in which they occur, these flooding often do not receive the entry of efficient and urgent support that can follow large-scale emergencies or disasters.

To support these flooding-disasters and to provide initial frontline services before such emergency appeals are launched for large-scale flooding, it is imperative that the national government establishes a **National Flood Control Act**.

The country has been distressed by the **catastrophic natural disasters** that have struck the nation over the past decades. The loss of life has been enormous, and the social disruption has caused heartrending setbacks for society. The destruction of properties has been immensely discouraging in the economic system in which capital goods are scarce and the potential for saving and investment is very limited.

The government has undertaken several **flood control** and **disaster prevention measures** to reduce the impact of natural disasters. Both structural and non-structural measures are of utmost importance in improving the level of the quality of alleviating human suffering and advancing development.

However, it has been observed that there are **flood control structures** that are either frequently damaged or not functioning as intended. One of the causes is inadequate planning, mainly due to budget constraints and lack of reference materials. It is essential that flood control structures are carefully planned and designed with due consideration on local site conditions, river hydraulic principles and phenomena to ensure that structures are effective in mitigating water-induced disasters. The formulation of a **Manual on Flood Control Planning** under the JICA - Assisted Project for the Enhancement of Capabilities in Flood Control and Sabo Engineering (**Project ENCA**) is an effort by the **DPWH** through the **PMO-Flood Control** and Sabo Engineering Center to provide references in planning of flood control structures.

Responsive approaches in planning of flood control structures are envisioned as this manual becomes available to the offices concerned in the **Department of Public Works and Highways**. Eventually in effect, improved flood control structures built by this department are effective, economical and sustainable.

Deep appreciation to the **DPWH** engineers and staff who gave time and effort and the **JICA** experts dispatched for this Project for the technical assistance in the formulation of this manual. Likewise, sincerest appreciation likewise to the continuing support extended by **JICA** in the development of our technical capabilities in dealing with water-related disasters.

This House Bill seeks to create and establish urgent **Flood Control measures and mechanisms**. To enable all concerned and affected personnel, organizations to carry out their unique role after a flooding-disaster.

Thus, the early passage of this bill is earnestly requested.

A handwritten signature in black ink, appearing to read 'Michael L. Romero', with a long horizontal line extending to the right.

MICHAEL L. ROMERO Ph.D.

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AN ACT

PROVIDING FOR A COMPREHENSIVE **NATIONAL FLOOD MANAGEMENT, EVACUATION AND RECOVERY PROTOCOL**, TO PROMOTE AND EXTEND LIFE-SAVING MECHANISMS, TO AUGMENT THE DEMANDS FOR SUPPORT, AND FOR OTHER PURPOSES

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

SECTION 1. DECLARATION OF POLICY – It is hereby a declared policy of the state to provide immediate response to restore life-saving services to affected populations following a declared flood-disaster.

SECTION 2. NATIONAL FLOOD CONTROL ACT – The state shall hereby create a **National Flood management, evacuation and recovery protocol** to expand and establish continuity to the aid and support provided in times of this flood-disaster.

SECTION 3. DETERMINING FACTORS AND CONDITIONS – Factors that may influence the size of the control operations to be conducted:

- a) Ecological and environmental extent of the damage;
- b) Preliminary estimate of death, injuries, and displaced persons;
- c) The reaction response capacity of key agencies; and
- d) The date and magnitude of the last flood that affected the country *(taking into account the cumulative effect of flooding on ability to respond)*.

Each Flood will be regarded as a separate event and hence be eligible for assistance, irrespective of whether it is issued for the same disaster-affected or in the same calendar year.

SECTION 4. FLOOD DAMAGE - is categorized in terms of structure damage and inundation damage. One of the countermeasures to prevent inundation is to increase the flow capacity of the river.

Although under the local funds, the flood control works by the **DPWH** are mostly intended to prevent scouring, their final targets are to prevent inundation. It is therefore essential for the **DPWH engineers** to understand flood control planning which includes

- (1) the determination of the design discharge and
- (2) the river improvement plan such as alignment, depth, height and width of the water area of the river and others.

SECTION 5. CALCULATION - converting rainfall to discharge and water level analysis are essential techniques for flood control planning. Thus far, there is no **comprehensive guideline** for such planning. Therefore, there is an urgent need for a comprehensive **Flood Control Planning**

SECTION 6. TRANSITORY PROVISION – Existing industries, businesses and offices affected by the implementation of this Act shall be given

six **(6)** months transitory period from the effectivity of the **IRR** or such other period as may be determined, to comply with the requirements of this Act.

SECTION 7. IMPLEMENTING RULES AND REGULATIONS. –

The departments and agencies charged with carrying out the provisions of this Act shall, within sixty **(60)** days after the effectivity of this Act, formulate the necessary rules and regulations for its effective implementation.

Section 8. FLOOD CONTROL TO ECONOMIC RECOVERY

- aims to achieve the following:

- build a dam in the upper Marikina River catchment area.
- eliminate long-term flooding in the flood plain of Laguna de Bay.
- modernize Metro Manila's pumping stations.
- improve flood forecasting and early warning systems.
- improve institutional arrangements for better flood management.

SECTION 9. COMPUTATION OF DISCHARGE - when there is no hydrological information in the target area, the importance of river segments in planning, river channel routing, computation of flow capacity of rivers, the appropriate types of structures on specific conditions, the alignment of structures, and others.

SECTION 10. SUPPLEMENTAL VOLUMES COVERING THE SPECIFIC DISCHARGE CURVE - the *rainfall intensity duration frequency curve* and the isohyet of probable 1-day rainfall and the corresponding specific coefficients are included to help the engineers establish the design discharge. Thus, the discharge in any river in the country can be established where there is no rainfall gauge or there is lack of data using the methods discussed in this manual.

The newly formulated *Rainfall Intensity Duration Frequency Curves* were revised from previous ones, which were attached to the “*Technical Standards and Guidelines for Planning and Design, March 2002*” by the strict selection of appropriate data.

To facilitate the computation of the needed parameters in planning and design, the Manual on Runoff Computation with HEC-HMS (**Hydrological Engineering Center – Hydrologic Modeling System**) and the Manual on Non-Uniform Flow with HEC-RAS. (**Hydraulic Engineering Center – River Analysis System**) are included. HEC-HMS and HEC-RAS are programs developed by the **US Army Corps of Engineers**. This will guide the engineers to derive the **flow capacity** of the river as well as identify and determine the river stretch that needs flood control projects.

This manual and the supplements as references will guide the **DPWH** engineers on flood control planning.

SECTION 11. MANDATE OF THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS, DPWH, as the engineering arm of the government, is to plan, construct and maintain flood control facilities on major or principal river basins to mitigate the hazards and damages of flood disasters. Generally, flood control projects, which constitute about 10-15% of the total **DPWH budget**, are classified into the following:

- (1) Major Flood Control Projects.** These are projects along river basins funded by foreign assistance. The Planning Service undertakes identification and selection, the foreign consultants undertake the project studies, and the **Project Management Office (PMO)** supervises the implementation of these projects.
- (2) Small and Medium Scale Flood Control Projects.** These projects are along the principal or major river basins under

regular infrastructure funds or congressional initiative funds. The **Regional Offices (ROs)** and the **District Engineering Offices (DEOs)** plan and implement these projects.

- (3) **Emergency Flood Control Projects.** These projects are funded under the quick response funds of the Regional Disaster Coordinating Councils (**RDCCs**) planned and implemented by ROs and DEOs.

The **ROs** and **DEOs** tasked to implement small, medium and emergency flood control projects, sometimes implement projects which are ineffective or inappropriate due to improper or lack of planning. Flood control plans and programs are not properly prepared due to limited technical capabilities, unavailability or insufficient hydrological data and limited budget for the purpose.

SECTION 12. PREVAILING NEEDS - of the ROs and DEOs engineers, the coverage of the manual is carefully crafted to include the following topics:

- (1) Systematic explanation of flood control planning including design discharge establishment, alternative study of flood control measures and river improvement
- (2) Explanation of topography, climate, rivers in the Philippines and flood damage, which are basic information for river engineers
- (3) Graphical method to estimate the design discharge of the rivers in the Philippines
- (4) Graphical method to prepare probable design hyetograph, which is necessary for design discharge estimation by the runoff computation
- (5) Methods to formulate a river improvement plan by non-uniform flow computation.

Computations of *runoff discharge* and *non-uniform flow analysis* using calculators are quite cumbersome and tedious. By the use of computer

programs such as Hydrologic Modeling System (HEC-HMS) and Runoff Analysis System (HEC-RAS), calculations can be made easy and systematic.

SECTION 13. TOPOGRAPHIC MAPS - are indispensable tools to formulate flood control plans, thus, it is necessary for the ROs and DEOs to have maps within their jurisdiction.

The procedure in flood control planning is enumerated below:

- (1) Calculate the discharges corresponding to several flood frequency levels.
- (2) Calculate the existing river flow capacities on several control points.
- (3) Investigate the flood damage caused by past major floods and develop the relationship between flood discharge and flood damage.
- (4) Consider the possibilities of river improvement.
- (5) Determine the preliminary river improvement plan.
- (6) Evaluate the cost to be incurred in the preliminary river improvement plan.
- (7) If the preliminary river improvement planning is not realistic, repeat the procedure from step (3). In consideration of the small and medium scale flood control projects, economic evaluation is not discussed to Determine the most appropriate plan

SECTION 14. FUNDING FROM NATIONAL BUDGET - flood control projects would be funded under the **P6.352 trillion national budget, FY 2025** from the **Department of Budget and Management**.

SECTION 15. SUPERVISING AND ASSESSMENT CONCERNS. — the Department of Public Works and Highways (**DPWH**), and the Department of

Interior and Local Government (**DILG**) shall provide the necessary technical and financial assistance to ensure effective operations and build-up.

SECTION 16. IMPLEMENTING AGENCY. — the Department of Public Works and Highways (**DPWH**) and other subject matter experts.

SECTION 17. APPROPRIATION. — The amount necessary for the initial implementation to fund this act shall be charged under the Department of Public Works and Highways (**DPWH**).

The amount of five **(5) billion pesos (Php 5, 000,000,000.00)** necessary for the initial implementation to fund this act shall be charged under the Department of Public Works and Highways (**DPWH**).

Thereafter such amounts necessary for the successive and continuous implementation of this Act, including the operations maintenance of reserves shall be automatically appropriated in the **General Appropriations Act (GAA)**.

Thereafter, such amounts necessary for the implementation of this act shall be included in the annual **General Appropriations Act (GAA)**. The agencies concerned shall provide for the continued maintenance, operation, and management of all the facilities and equipment.

SECTION 18. CONTINUING APPROPRIATION. - The Department of Budget and Management (**DBM**) is hereby mandated to include annually in the next five **(5)** years, in the President's Program of expenditures for submission to Congress, and release, an amount not less than two **(2) billion pesos (Php 2, 000, 000, 000.00)** for the implementation of this Act.

The **(Flood Management, Evacuation and Recovery Plan)** shall be chargeable against funds for the purpose and other sources recommended by the **Department of Budget and Management (DBM)**.

The amount necessary for the initial implementation to fund this act shall be charged under the Department of Public Works and Highways **(DPWH)**.

Thereafter, appropriations for the **(Flood Management, Evacuation and Recovery Plan)**, shall be included in the budget proposals under the Annual **General Appropriations Act (GAA)**

The Department of Budget and Management **(DBM)** shall rationalize the existing organizational structure and staffing pattern of the **(DPWH)** in accordance with the prevailing provisions and relevant compensation and position classification laws, rules and regulations.

Thereafter, the amount needed for the continued implementation of the modernization program shall be included in the Annual **General Appropriations Act (GAA)**.

The Fund shall be administered by the **Secretary** of **DPWH** in accordance with existing government budgeting, accounting, and auditing rules and regulations.

SECTION 19. PERIODIC REPORTS - The **Secretary** of the **(DPWH)** shall submit periodic reports on its findings and make recommendations on actions to be taken by Congress and Senate and the appropriate department, and in order to carry out the objectives and mandates of this Act.

SECTION 20. AUTOMATIC REVIEW - Every three **(3)** years after the effectivity of this Act, an independent review panel composed of experts to be appointed by the **President** of the Republic shall review the policies and programs in the agriculture sector and shall make recommendations, based on its findings, to the President and to both Houses of Congress.

SECTION 21. IMPLEMENTING RULES AND REGULATIONS – The departments and agencies charged, to be led by the **Department of Public Works and Highways (DPWH)** with carrying out the provisions of this Act, shall within ninety (90) days after the effectivity of this Act, formulate the necessary rules and regulations for its effective implementation.

Hence, it is authorized to increase its manpower to meet such required and may continue to increase personnel per percentage rate increase of committed mandates annually or as the need arises.

SECTION 22. PERIOD OF IMPLEMENTATION – The modernization program under this Act shall be implemented for an initial period of three **(3)** years:

Provided, that payments for multi-year contract obligations incurred under this Act may extend beyond this period:

Provided, further, That the **(DPWH)** shall continue to develop, modernize and constantly update its operational capabilities to keep pace with best global practices.

SECTION 23. INCREASE OF PERSONNEL. – The **(DPWH)** shall maintain a sufficient staffing pattern.

Hence, it is authorized to increase its manpower to meet such required and may continue to increase personnel per percentage rate increase of committed mandates annually or as the need arises.

SECTION 24. REPEALING CLAUSE. – All laws, decrees, executive orders, rules and regulations, or parts thereof inconsistent with the provisions of this Act are hereby repealed or modified accordingly.

SECTION 25. SEPARABILITY CLAUSE. – If, for any reason, any section or provision of this Act is held unconstitutional or invalid, the other sections or provisions hereof shall not be affected thereby.

SECTION 26. EFFECTIVITY CLAUSE. – This Act shall take effect after fifteen (15) days from its publication in the Official Gazette or in at least two (2) national newspapers of general circulation, whichever comes earlier.

Approved,