Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City, Metro Manila

EIGHTEENTH CONGRESS
Second Regular Session

HOUSE BILL NO. 7783

Introduced by Representatives Manuel Luis T. Lopez, Rolando M. Valeriano, Edgar R. Erice, Eric M. Martinez, Precious Hipolito Castelo, Aloysia T. Lim, Weslie T. Gatchalian, John Marvin "Yul Servo" C. Nieto, Strike B. Revilla, Edward Vera Perez Maceda, John Reynald M. Tiangco, Rozzano Rufino B. Biazon, Anthony Peter "Onyx" D. Crisologo, Alfred D. Vargas, Virgilio S. Lacson, Luis N. Campos Jr., Allan Benedict S. Reyes, Stella Luz A. Quimbo, Aurelio "Dong" D. Gonzales Jr., Cristal L. Bagatsing, Josephine Veronique R. Lacson-Noel, Carlos Isagani T. Zarate, Jose "Bonito" C. Singson Jr., Jose Christopher Y. Belmonte, Rosanna "Ria" V. Vergara, Manuel Jose "Mannix" M. Dalipe and Lord Allan Jay Q. Velasco

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AN ACT
MANDATING THE ESTABLISHMENT, MANAGEMENT, MAINTENANCE, AND REGULATION OF A RAINWATER HARVESTING FACILITY IN ALL NEW INSTITUTIONAL, COMMERCIAL, INDUSTRIAL, AND RESIDENTIAL DEVELOPMENT PROJECTS IN METRO MANILA

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

SECTION 1. ***Short Title.*** This Act shall be known as the "Rainwater Harvesting Facility Act."

SEC. 2. ***Declaration of Policy.*** It is declared a policy of the State to protect the right of the people to a balanced and healthful ecology and advance the health and welfare of its citizens in accordance with the rhythm and harmony of nature. Pursuant thereto, the government and all its instrumentalities shall systematically integrate the concept of climate change in the various phases of policy formulation and development planning, in drawing up and implementing poverty reduction strategies and innovations that provide beneficial effects to the greatest number of people with the least cost and negative externalities.

In this light, and given the demands of a growing population, the State shall adopt measures and strategies in order to efficiently conserve water and help attain water security. Among other strategies on water conservation, rainwater harvesting facilities shall be established not only to conserve the supply of potable faucet water but also to prevent flooding in communities that sometimes result into devastating effects to human life and property. Both the public and private sectors are urged to actively participate in flood mitigating efforts and initiatives of the government.

The State recognizes Metro Manila as one of the densest areas in the country. To mitigate the adverse effects of continuing growth in population and human settlements, the State shall ensure that Metro Manila local governments are capacitated to respond to threats wrought by natural calamities and disasters such as massive flooding. Towards this end, the State shall mandate the construction of rainwater harvesting facilities in all new public and private commercial, institutional, industrial, and residential developments in Metro Manila which will serve as a pilot area from which other similar areas can learn.

Pursuant thereto, owners and developers of all new public and private realty development projects in Metro Manila requiring the issuance of building permits are mandated to design and construct a rainwater harvesting facility to prevent or delay the release of rainwater and runoff water into the public drainage systems, creeks, and natural waterways.

SEC. 3. *Purpose.* This Act seeks to establish minimum rainwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public against the ill effects of floods on one hand, and water shortage on the other. This Act pursues the following objectives:

a. Reduction of flooding, siltation, increases in stream temperature and stream bank erosion, and maintain the integrity of stream channel by regulating the accumulation of rainwater runoff in any proposed and existing commercial, institutional, industrial, and residential developments; in order to
b. Prevention of the degradation of water quality by averting non-point source pollution caused by rainwater runoff developments;
c. Regulation of the annual volume of surface water runoff from any specific site during and following a development so as not to exceed the pre-development hydrologic regime in an area; and
d. Establishment of standards for rainwater management control to ensure that these and the facilities thus built are properly complied with and do not pose without a threat to public safety.

SEC. 4. *Definition of Terms.* As used in this Act:

a. *Applicant* – refers to a property owner or agent who has filed an application for a rainwater management permit;

b. *Building* – refers to any structure built for the support, shelter, or enclosure of person, animals, chattels, or moveable property of any kind and which is permanently affixed to the land;

c. *Building Official* – refers to a local building official as appointed or designated pursuant to Presidential Decree (PD) 1096, or the *National Building Code of the Philippines (NBCP)*;

c. *Building Official* – refers to a local building official as appointed or designated pursuant to Presidential Decree (PD) 1096, or the *National Building Code of the Philippines (NBCP)*;

d. *Certificate of Occupancy* – refers to a permit issued by the Zoning Officer indicating that the use of the building or land is in conformity with the Zoning Ordinance or that there has been a legal variance therefrom;

e. *Channel* – refers to a natural or artificial watercourse with definite bed and banks that conducts flowing water continuously or periodically;

f. *Contour interval* – refers to the vertical distance between the elevations represented by adjacent contour lines on a map;

g. *Contour line* – refers to a line on a map or chart connecting all points of the same elevation or depth in a particular area;

h. Detention – refers to a rainwater management practice of temporarily storing rainwater runoff to control the peak discharge rate and to likewise induce settling of pollutants through gravity;

i. *Developer* – refers to a person or entity who undertakes land disturbance or land development activities; a developer may only be contracted to develop and may or may not be the owner of the development, such as a building structure being built;

j. *Development* – refers to any man-made change to improved or unimproved real estate, including buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operation;

k. *Flood frequency* – refers to a record of past flood events or occurrences that yield flood data estimates used principally to compare expected changes in flood damages with the economic and social costs or benefits guiding a contemplated action;

l. *Hydrologic regime* – refers to the quantity and dynamics of water flow or the variations in the state and characteristics of a water body depending on location and time of the year, which may occur in regular patterns;

m. *Infiltration* – refers to the process of percolating or gradually filtering rainwater into the subsoil;

n. *Infiltration facility* – refers to any structure or device designed to infiltrate water to the subsurface. These facilities may be above ground or below ground;

o. *Land disturbance* – refers to any activity which changes the volume or peak flow discharge rate of rainfall from the land surface. This may include grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity which bares soil or rock or involves the diversion or piping of any natural or man-made watercourse;

p. *Landowner* – refers to the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights over the land;

q. *Off-Site facility* – refers to a rainwater management installation located outside the subject property boundary described in the permit application for land development activity;

r. *On-Site facility* – refers to a rainwater management measure located within the subject property boundary described in the permit application for land development activity;

s. *Rainwater Design Manual* – refers to the Planning and Design Manual for the Control of Erosion, Sediment, and Rainwater of the Department of Public Works and Highways;

t. *Rainwater management* – refers to the use of structural or non-structural practices that are designed to reduce rainwater runoff pollutant loads, discharge volumes, and peak flow discharge rates;

u. *Rainwater retrofit* – refers to a rainwater management practice designed for an existing development site that had not implemented rainwater management measures, or had previously implemented measures that were inadequate to meet the rainwater management requirements of the site;

v. *Rainwater runoff* – refers to water flow on the surface of the ground, resulting from precipitation;

w. *Rainwater treatment* – refers to a process by which collected rainwater is filtered or cleaned through either structural or nonstructural means to prevent or reduce point source or nonpoint source pollution inputs to rainwater runoff and water bodies, as well as to upgrade rainwater for re-use;

x. *Rainwater Harvesting Facility* – refers to a flood control structure such as a vertical detention tank, horizontal water tank, open retarding basin, and multi-water catchment area, or an on-site regulation pond used to prevent or delay the release of rainwater into the public drainage system;

y. *Return period* – refers to the average length of time in years for a rain-related natural disaster of given magnitude to be equaled or exceeded by the length of time that a rainwater-related disaster may probably recur;

z. *Recharge* – refers to the replenishment of underground water reserves;

aa. *Redevelopment* – refers to any construction, alteration or improvement exceeding one hundred (100) square meters in high density areas where existing land use is for commercial, industrial, institutional, or multi-family residential purposes;

bb. Stop Work Order – refers to an issuance by the Building Official that requires the discontinuance or stoppage, in part or whole, of the construction activity in a site due to a violation of the law;

cc. *Watercourse* – refers to a permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface.

SEC. 5. ***Rainwater Harvesting Facility Requirement.*** A project owner or developer of a new commercial, institutional, industrial, and residential development project in Metro Manila, with a building footprint area of at least one hundred (100) square meters that requires the issuance of building permit, shall reserve, develop, and maintain a rainwater harvesting facility with a minimum storage tank size in cubic meters calculated by dividing the building footprint area by 75.*

The owner or developer of an ongoing development project in Metro Manila, that has no existing provision for rainwater harvesting shall build a facility within a period of three (3) years from the effectivity of this Act, or suffer the penalty imposed in Section 13 hereof.

When additions, alterations, conversions, and renovations of an existing building constructed after the effectivity of this Act fit within the minimum building footprint, the whole building shall be subject to the applicable provisions of this Act.

To conserve potable water, rainwater collected by a harvesting facility may be used for non-potable and suitable purposes, such as gardening and air-cooling processes, provided through a distinct and separate piping system from the potable water supply system. The landowner or developer may opt to utilize a system or technology that can recycle collected rainwater for potable uses such as bathing, dishwashing, or cooking, provided it meets the water quality standard of any government water agency or duly accredited water testing center.

SEC. 6. ***Requirements for Rainwater Management Plan.*** All project owners or developers of proposed commercial, industrial, and residential development or any residential multi-dwelling units of more than One Thousand square meters (1,000sqm) land area must submit a Rainwater Management Plan (RMP) as part of the site development application and approval process.

The RMP shall include the following information:

a. Description of existing conditions in the location of the development site:
   i. Topographic map with 1.0 meter minimum contours line or an appropriate contour interval of the land proposed for development or redevelopment;
   ii. Location of natural waterways including banks and centerline of streams and channels;

* standard indicated in Paragraph c.i of Section 11.2.1 of the Philippine Green Building Code, 2015.

iii. Normal shoreline, coastlines, outline of lakes, natural depressions and ponds, including drainage flow lines; and
iv. Quantification of flows (discharge and volume) in its natural condition.

b. Proposed Site Development Plan (SDP) in an appropriate scale and size showing the following:
i. Retention/detention basins and lines of inflow and outflow;
ii. Location, size, and slope of rainwater conduits and drainage swales;
iii. Rain, sanitary, and combined sewer and outfalls; and
iv. Delineation of upstream and downstream drainage features and watersheds which might be affected by the development; and
v. Other environmental features including limits of wetland areas, green buffers, planting strips, and any designated natural areas for rainwater management.

c. Description of the Proposed Rainwater Management System (RMS) to safely and completely manage rainwater runoff onsite or offsite, help maintain the natural hydrologic cycle and condition of flow in a locality, and reduce the risk of downstream flooding.

The proposed RMS shall be accompanied by hydrologic and hydraulic calculations to adequately demonstrate the effectiveness of the RMP. It shall be designed to meet the desired flood frequency which is designated to a particular drainage structure as stated in the Design Manual of the DPWH: *Provided*, That a 25-year flood frequency or higher may be required for major rivers and waterways, subject to the design criteria in Section 9 of this Act.

The RMP shall be accompanied by relevant information such as rainfall data in a locality, maps, and other descriptive material to include the following:

a. The extent of catchment and drainage channels on site, and direction of the flow of the channels including the final outfall of the discharge from the site;

b. Hydrologic and hydraulic design calculations for the pre-development and post development conditions of a rainwater management system as required under Section 9 hereof. The calculations for determining peak flows include a description of storm frequency, intensity, duration, time of concentration, soil curve number or runoff coefficients, peak runoff rates and total runoff volumes, infiltration rates, culvert capacities, flow velocities, data on the increase in rate and volume of runoff for the design storm; and

c. Technical specifications of the proposed RMS, including a description of proposed rainwater conveyance practices on-site, existing off-site rainwater conveyance systems including receiving streams, channels, and outfall and inlet locations, and elevations of locations and high-water elevations.

SEC. 7. ***Chemicals, Effluents, and other Contaminants.*** Prior to the issuance of a building permit for their development or re-development, all industrial plants and estates shall

secure the appropriate certification from the Department of Environment and Natural Resources (DENR) that all chemicals used in their operations, their by-products, effluents, and other operational discharges do not contain harmful contaminants that can be washed by or into the rainwater.

The type of roofing must also be identified and assessed if used for collecting rainwater as some roofing materials may seep chemicals that can cause adverse effects if ingested, used in irrigation, fishponds, groundwater recharge, among others.

SEC. 8. ***Utilization of Rainwater.*** Rainwater shall be harvested for the following uses:

a. Rainwater for urban irrigation – Due to the high cost of Class A water, its use for yard irrigation shall be minimized if not prohibited and instead, water for irrigation shall come from the rainwater detention system.

   Rainwater as source for urban irrigation or watering of lawns shall be indicated in all development plans. Treated grey water from effluent of treatment facility may be a secondary source of water for urban irrigation.

b. Rainwater for groundwater recharge - The RMS is intended mainly to ensure natural balance of the hydrologic cycle by allowing rainwater to recharge the groundwater table that sustains the yield and production of deep wells. Groundwater table recharging may be in the form of the following management systems:
   i. Lagoon or retention pond that allows for natural seepage to the ground water aquifer;
   ii. Swales and depression storage;
   iii. Porous or paver blocks on some developed areas;
   iv. Retention channels

   The sizes and dimensions of any of the above facilities shall be dependent on the rainfall intensity and the size of the development.

c. Rainwater for firefighting - Rainwater may substitute or augment the firefighting requirement, subject to health and corrosion standards. A separate storage tank for fire water reserve shall be constructed. Other laws concerning the requirement of water for firefighting shall be considered.

d. Rainwater for construction - Simple filtration systems and other applicable methods to remove suspended solids and other coarse materials may be employed to improve water quality and avert adverse effects to construction equipment and the environment.

e. Rainwater for other non-potable water supply - Rainwater shall be subjected to primary and secondary treatment to make it a viable secondary source for the following purposes:
   i. Washing of cars, floor yards;

ii. Flushing of toilet (water quality should meet certain standard to avoid discoloration of fixtures); and

iii. Fish ponds, aquarium and the like.

f. Rainwater for potable uses - To make it potable, rainwater may be collected, processed, subjected to filtering innovations or technological interventions, and used for drinking, cooking, dishwashing, and bathing, subject to water standards.

Potable water quality shall at all times comply with the requirements and standards of the Philippine National Standard for Drinking Water (PNSDW).

g. Rainwater for ecological requirements - Seasonal fluctuation of rainfall affects the rain flora and fauna of waterways. Rainwater runoff shall therefore be managed properly to allow steady release of water to waterways, thus, ensuring the continued supply of water.

SEC. 9. *Preparation of the Rainwater Design Manual.* The Department of Public Works and Highways (DPWH) shall prepare the Rainwater Design Manual (RDM) which must provide, among others, information on the following: (1) conveyance system of the rainwater harvesting facility, (2) make of the rainwater retention facility, (3) management of rainwater discharge to control flooding, (4) protection of the local water bodies from pollution through rainwater discharge treatment, (5) dike or bank protection for water bodies receiving rainwater discharge, and (6) utilization options for collected rainwater.

The RDM shall contain the following guidelines:

a. All sites shall establish a rainwater management system to control the peak flow rates of rainwater discharge and to allow the RMS facility to treat collected rainwater for both water quality and quantity. Peak post-construction rainwater runoff should not exceed peak pre-construction rainwater runoff from the site to the greatest extent possible;

b. All rainwater runoff generated from any development shall not discharge untreated rainwater directly into a jurisdictional wetland or local water body without adequate treatment;

c. A structural and non-structural Rainwater Treatment System (RTS) shall be designed to treat the first 20 millimeters of rainwater runoff. Thus, for every one (1) hectare of new development, a 200 cubic meter detention or retention tank shall be constructed to minimize flooding and improve water quality. Sanitary wastewater treatment facilities shall be designed and installed to comply with existing health regulations and the effluent standard of the DENR;

d. Untreated sanitary waste shall not be discharged to waterways and land surface without proper treatment and shall not come in contact with rainwater runoff. The discharge of treated effluent to water bodies shall be in accordance with the river classification. For unclassified rivers and water courses, effluents should

meet the Class C water category. To be discharged to an urban drainage system, effluents should meet the Class D water category. In all cases, the prescription provided by the DENR shall be followed;

e. To protect stream channels from degradation, the velocity of runoff water shall be limited to less than 1.0 m/s, otherwise, bank protection shall be provided;

f. Rainwater discharges to critical areas with sensitive resources (including shellfish beds, swimming areas, water supply reservoirs and groundwater recharge areas) may be subject to additional performance criteria and management restrictions;

g. Rainwater discharges from land uses or activities with higher potential pollutant loadings, known as "hotspots," must be in accordance with the specific structural and pollution prevention practices;

h. Rainwater storage and drainage systems must be secured from mosquito breeding and those of other similar insects that may endanger public health;

i. Prior to designing the RDM, an applicant for a building permit must consult with the Building Official to determine compliance with additional rainwater design requirements;

j. For existing development or developed areas, the rainwater management system requirement must be imposed on the following conditions:

   i. The owners of existing or old developments shall submit to the concerned building officials the technical design of existing rainwater management system to demonstrate its contribution to flood control and mitigation and the rainwater management program;
   ii. The total required storage volume of rainwater may be the cumulative volume stored from various sources such as cistern, lagoon onsite or offsite, and a depression storage; and
   iii. That at least 50% of the required volume shall be met within five (5) years from the effectivity of this Act.

The Department of Public Works and Highways, Department of Human Settlements and Urban Development (DHSUD), Department of Environment and Natural Resources, and local government units (LGUs) shall require the incorporation of a Rainwater Management System in the design of all new commercial, institutional, industrial, and residential development projects in Metro Manila. The LGUs shall ensure that these facilities are built during the construction phase of the projects.

In formulating the design manual, the DPWH shall consult the experts or the Department of Science and Technology (DOST) and DENR on requirements that entail scientific bases or study.

SEC. 10. ***Construction Inspection***

a. The applicant for a building permit must notify the concerned building official in advance before the commencement of construction;
b. All applicants for a building permit for commercial buildings and multi-family residential buildings over four (4) units are required to submit actual drawings of the rainwater management facilities located on-site after final construction. The rainwater facility plan must show the final design specification for all rainwater management facilities and must be certified by a licensed engineer. A final inspection of the rainwater facility is required before the release of any performance security, performance bond, or guaranty between the owner or developer and the contractor or builder;
c. The City or Municipal Engineer shall inspect all drainage facilities while under construction. When facilities are not constructed according to approved plans, the local government unit (LGU) shall require the project owner or developer to make the necessary corrections. All drainage facilities, whether or not these are owned by or assigned to the LGU, located on private property, shall be accessible at all times for inspection by the City or Municipal Engineer or other responsible public official;
d. The City or Municipal Engineer shall inspect all sanitary waste treatment facilities while under construction of building and upon completion to insure proper installation and connection to waste water collection systems when applicable. The City/Municipal Engineer shall ensure that sanitary waste treatment facilities are properly functioning before issuing the required certificate of occupancy.

Any contracted architect or civil engineer employed by the owner or developer to plan and supervise the construction of the facility shall not be precluded from inspecting the construction work to check and determine compliance with the plans and specifications of the building, pursuant to the provisions under Inspection and Supervision of Work or Section 308 of the National Building Code of the Philippines.

SEC. 11. ***Maintenance and Repair of Rainwater Facilities.*** The owner or developer is expected to perform regular maintenance and repair of the rainwater facility whenever necessary to make sure that this is in working condition, safe for public use and the environment. At the minimum, the following must be undertaken: (1) visual inspection and cleaning of the facility after major rain events, (2) regular clearing of all sediments, silts, and debris, (3) drainage clean-up, and (4) replacement of filters and insect screens as necessary.

In addition, the owner or developer shall comply with the following requirements:

a. All rainwater management facilities must undergo a yearly or regular inspection process at a frequency sufficient to determine the functioning ability of the conveyance system and any repair needs; this shall include inspection

prior to the beginning of the Typhoon Season or any forecasted major rains that may equal the design requirements, and after any major rain events;

b. All drainage and sanitary waste treatment facilities located on private property, whether dedicated to the LGU or not, shall be accessible at all times for inspection by the City/Municipal Engineer or other responsible public officials. especially when there is reason to suspect that a malfunction has resulted in rainwater runoff pollution by unsanitary wastes;

c. Depending on the type of facility, mosquito or insect screens must be replaced as necessary to avoid infestation or breeding ground for pathogens;

d. Parties responsible for the operation and maintenance of a rainwater management facility shall make and keep records of the installation, maintenance, and repairs, and shall retain these records for at least five years. These records shall be made available to the City or municipality during inspection of the facility and other reasonable times upon request;

e. The concerned Building Official shall notify the owner of a rainwater facility in writing that maintenance work is required on it. The owner will have sixty (60) days from the receipt thereof to ensure that the facility is in proper working condition.

SEC. 12. ***Reportorial Requirements.*** The DPWH shall require the owner or developer of all new commercial, institutional, industrial, and residential development projects to submit a compliance report within twelve (12) months from the date of the completion of the project.

The DPWH shall henceforth require the building owners covered under Sections 5 and 6 of this Act to submit an annual report of the performance of such rainwater retention facility which may include information on the total volume of retained rainwater and its utilization.

SEC. 13. ***Enforcement and Penalties***

a. Any person found to be in violation of any of the provisions of this Act shall be guilty of a misdemeanor and shall be penalized with a fine not to exceed Fifty Thousand Pesos (Php50,000.00) or imprisonment for no more than ninety (90) days, or both. A continuance of a violation without reasonable effort on the part of the violator to correct the same shall constitute a new and separate offense each day;

b. In the case of a partnership, association, corporation, or any juridical person, the penalty shall be imposed upon the president, treasurer, or any other officer or person responsible for the violation;

c. If the offender is a foreigner, the foreigner shall be deported immediately without further proceedings after payment of fine.

d. If the concerned Building Official shall find that any provision of this Act is violated, the person responsible for such violation shall be notified in writing, about the nature of the violation and the proper action necessary to correct it, such as the discontinuance of any construction on site.

SEC. 14. Incentives – Landowners or developers of existing structures built prior to the implementation of this Act who may opt to install a rainwater harvesting system or a rainwater retrofit in accordance with this law shall receive a realty tax incentive from the local government which may be in the form of a tax discount of not less than three percent (3%) per annum over and above the regular discount provided by the local government. An additional two percent (2%) tax discount per annum will be granted to those who will invest in any innovation or a technology that will recycle collected rainwater for potable uses within the standard prescribed by law.

SEC. 15. ***Obligation of the Regulatory Agencies.*** The DPWH, DENR, DOST, LGUs, their sub-agencies, and subsidiaries are mandated to provide full assistance to every project owner or developer covered in this Act in order that the requirements and standards prescribed herein may be properly executed in the design and construction of rainwater harvesting facilities. Agency assistance shall include proper advice, technical guidance, provision for needed data and facilitation of required documents. As much as practicable, all technical and documentation requirements must be at zero to minimal cost to the applicant project owner or developer who shall establish, manage, and maintain a rainwater harvesting facility.

SEC. 16. ***Implementing Rules and Regulations.*** Within sixty (60) days from the effectivity of this Act, the Secretary of Public Works and Highways shall, in coordination with the Secretary of the Interior and Local Government, Secretary of Environment and Natural Resources, Secretary of Human Settlements and Urban Development, and Secretary of Science and Technology, promulgate the rules and regulations for the effective implementation of this Act. The implementing rules and regulations shall include the standards and guidelines for the design, construction, installation, materials, site selection and planning, site-specific considerations, and maintenance of the rainwater harvesting facility.

SEC. 17. ***Separability Clause.*** If any provision or part of this Act is declared invalid or unconstitutional, the remaining parts or provisions not affected shall remain in full force and effect.

SEC. 18. ***Repealing Clause.*** All other laws, rules and regulations, orders, circulars, and other issuances or parts thereof, which are inconsistent with the provisions of this Act are hereby repealed or amended accordingly.

SEC. 19. ***Effectivity.*** This Act shall take effect fifteen (15) days after its publication in the *Official Gazette* or a newspaper of general circulation.

Approved,