PRELIMINARY POTENTIAL DRAFT -

- **Sec. 130-356. – Ponds, Lakes and dams.**

(a)

All existing dams located on a property to be developed shall meet the criteria listed below and current TCEQ dam safety standards. If necessary, the property owner or developer shall upgrade existing dams to meet the criteria listed below and current TCEQ dam safety standards.

(b)

In the event that a property owner or developer desires to modify an existing pond or lake or desires to impound stormwater by filling or constructing an aboveground dam, thereby creating a lake, pond, lagoon, or basin as part of the planned development of that property, the criteria listed below shall be met before city approval of the impoundment can be given. Ponds or lakes created by excavation of a channel area without erecting a dam above natural ground elevation or in-stream low water check dams are also subject to the criteria listed below, with the exception of spillway capacity requirements. The director of engineering has the final authority to determine the design criteria for a proposed dam, check dam, or excavated lake. The requirements of the state must also be met for the construction of dams, lakes, and other impoundments.

(c)

The design criteria for a dam are dependent on the size and hazard classification of the dam. The size and hazard classification will be based on the recommended guidelines adopted by the Texas Commission on Environmental Quality (TCEQ) under V.T.C.A., Water Code § 12.052, which provides for the safe construction, maintenance, repair, and removal of dams located in the state, and will be determined by the director of engineering based on information furnished by the owner. The following criteria will be used to classify a dam:

(1)

Size. The classification for size is based on the height of the dam and storage capacity, whichever gives the larger size category. The term "height" is defined as the distance between the top of the dam and the existing streambed at the downstream toe. The term "storage" is defined as the maximum water volume impounded at the top of the dam.

(2)

Hazard classification. The hazard classification for a dam is a measure of the potential loss of life, property damage, and/or economic impact of the area downstream of the dam in the event of a failure or malfunction of the dam and/or any appurtenant structures.

(3)

Spillway design flood.

a.

The classification of a dam based on the above criteria will be used to determine the spillway design flood (SDF). The total capacity of a dam structure, including principal and emergency spillways, shall be adequate to pass the SDF without exceeding the top of dam elevation. The SDFs for various dam classifications are shown in the engineering design manual.

b.

In all cases, the minimum principal spillway design capacity is the total 100-year inflow design flood assuming fully developed upstream conditions.

c.

In all cases, a dam breach analysis shall be required to determine the proper hazard classification of the structure. A dam breach analysis is required to determine the downstream consequences of a failure for all dams over six feet in height. If the consequences of a breach failure are determined to pose a significant threat to life or properties, the spillway design flood will be equal to the probable maximum flood (PMF). All dams shall be constructed with a minimum freeboard of two feet above the SDF elevation except in the case of dam designed to pass the PMF, which will have top of dam set at the maximum water surface achieved by the passage of the PMF. See section 130-357 for NRCS dam requirements.

(d)

Maintenance and liability criteria.

(1)

The owner or developer shall retain their private ownership of the constructed lake, pond, lagoon, or basin and shall assume full responsibility for the protection of the general public from any health or safety hazards related to the lake, pond, lagoon, or basin constructed. For NRCS assisted watershed dams, the land and lakes are in private ownership, with operation and maintenance of the dam and its appurtenances provided by the city, the private property owner, or by the county and the County Soil and Water Conservation District. While the lake shall remain privately maintained, the city shall accept structural maintenance of the dam and its appurtenances after rehabilitation of the structure to meet current standards has been completed.

(2)

The owner or developer shall assume full responsibility for the maintenance of the lake, pond, lagoon, or basin constructed. The owner or developer shall keep the director of engineering advised of the currently responsible agent for this maintenance.

(3) Property owners are responsible and liable for the removal of excessive sediment accumulations within ponds or lakes on their property. For ponds and lakes with a normal water surface within 200 feet of a residential property,

sediment/bottom deposits shall be removed to prevent water degradation or excessive vegetative growth, including harmful algae, when sediment occupies more than one third the designed vertical depth in any given one-acre section of a pond or lake (or the entire pond if it is less than one acre), measured from a minimum of 6 sediment measuring points per surface acre.

Pond or lake owners shall annually monitor sediment levels. When sediment exceeds the above cited depths, the owners shall submit a plan to the city for removal of the sediments. If the original lake depth is unknown, then a minimum pond depth of 5 feet shall be required, except for a 5' safety ledge and 20 additional feet from the edge of the pond. The sediment removal plan shall be submitted within nine months after sediment levels exceed the levels cited herein. If the initial sediment removal plan is deemed inadequate by the city engineer, additional submittals shall be received by the city within one month of receiving comments from the city on an unacceptable submittal. If, on the second submittal the plan does not meet the requirements of this section, citations shall be issued for each day there is a violation of this section.

After the plan has been approved by the city engineer, the implementation and completion schedule shall in no case exceed 5 years in duration. NRCS-assisted structures constructed under PL-534 or PL-566 authority are designed to retain sediment and are excluded from the sediment removal requirement.

(4)

The developer shall develop and submit an Emergency Action Plan (EAP) for any dam associated with the above as required by TCEQ. A copy of the EAP shall also be provided to the director of engineering.

(4) Aeration for new and existing ponds, lakes and wet bottom storm water facilities. Where deemed necessary by a professional engineer, new and existing water bodies shall include aeration devices manufactured for the purpose of adding dissolved oxygen, circulation, and creating convection currents. The type, number, size and location of the aerator(s) shall be determined by a licensed professional engineer and shall serve the entire water body. Aquatic specialists should also be consulted in situations where water quality problems persist. Aerators and wiring shall be disconnected from its power source and inspected at least once every twelve months, and repairs shall be made as necessary. Aerators shall operate a minimum of 12 hours per day and shall be repaired and operating within 4 weeks.

(Ord. No. 2014-09-063, § 2, 9-2-2014; Ord. No. 2017-05-049, § 17, 5-2-2017; Ord. No. 2018-04-029, § 6, 4-3-2018)