

Subdivision Ordinance No. 2007-56 Article 1

SECTION 04. Definitions

Development - buildings, roads and other structures; construction; and excavation, dredging, grading, filling and clearing or removing vegetation associated with residential, recreational, commercial, industrial or institutional construction, which increases impervious area and the storm water runoff rate, volume, and pollutant loading compared to pre-development conditions.

Redevelopment - any development on previously-developed land, other than rebuilding activity that results in no net increase in impervious area and provides equal or greater storm water control than the previous development.

Low Impact Development: LID is an approach to land development (or re-development) that works with nature to manage storm water as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat storm water as a resource rather than a waste product. Methods prescribed by the San Antonio River Authority (SARA) for Low Impact Development design may be incorporated into the development of a site. These methods are outlined in the SARA LID Technical Guidance Manual outlining standard practice for design and implementation. <https://www.sara-tx.org/lid-sustainability/lid-services/> (Ord. No. 2015-36, §1, 11-10-2015)

Stream: A natural water course - A natural intermittent or perennial stream flowing in a well-defined bed or channel; one formed by the natural flow of the water, as determined by the general surfaces or conformation of the surrounding country, as distinguished from an "artificial" water course, formed by the work of man, such as a ditch or canal. (Ord. No. 2012-04, §1, 4-24-2012)

Stream Bank: The portion of the channel which tends to restrict lateral movement of water. It often has a slope less than 90° and exhibits a distinct break in slope from the stream bottom. Also, a distinct change in the substrate materials or vegetation may delineate the bank. (Ord. No. 2012-04, §1, 4-24-2012)

Subdivision Ordinance No. 2007-56 Article 3

SECTION 06. Low Impact Development Facilities

3.06.001

Specific Intent.

It is the specific intent of this Section to:

- A. Value the design, function, appropriate application of LID features and BMPs either incorporated into areas of open space or constructed separately
- B. Design features in accordance with the LID Manual ~~and to reduce volume and flow rate to pre-development conditions. and with the intent to treat a minimum of seventy percent (70%) of the projected overall stormwater runoff~~
- C. For new development and redevelopment, a portion of the annual stormwater runoff volume shall be adequately treated prior to discharge from the site. This performance standard is presumed to be met if the stormwater quality management system is sized to treat the water quality treatment volume from the impervious and disturbed portions of the site. The water quality treatment volume is defined as
 - a. For new development, the runoff volume resulting from the first 1.66" of rainfall.
 - b. For redevelopment, the runoff volume resulting from the first 1.35" of rainfall.
- D. Adequate treatment of the water quality volume shall be defined as removal of 60% of the bacteria load and 80% of the calculated TSS particles.

- E. Consider the context and multiple functions that open spaces can serve to support development.
- F. Provide criteria for LID construction documents and engineering reports that meet the intent of the LID Manual.
- G. Manage stormwater runoff both at the source and at the surface using plants and soil to slow, filter, cleanse and infiltrate runoff. ~~by designing facilities that are simple, low cost and aesthetically enhance the community-~~

3.06.002

Obligations of Subdivider.

The subdivider shall install at his/her own cost and expense all of the improvements required by this ordinance. It shall be the subdividers responsibility to ensure that all improvements are constructed in accordance with this ordinance, ~~and the~~ LID Manual BMPs. The subdivider shall comply with all other provisions of this ordinance prior to acceptance of the subdivision by the City.

Subdivision Ordinance No. 2007-56 Article 6

SECTION 01 – General Requirements

6.01.002 Facilities Required.

The subdivider shall provide an adequate storm drainage system to protect each individual lot throughout the subdivision from flooding. These drainage facilities may consist of a combination of natural features, swales, watercourse improvements, bridges and culverts, enclosed storm sewers and other man-made improvements to ~~carry-off~~ mitigate increased stormwater within the subdivision. The drainage system shall use detention ponds, retention ponds and siltation ponds, individually or in concert, to control runoff and to protect upstream, downstream, and adjacent properties from any increase in flooding originating from the subdivision. The system shall be integrated with the overall drainage system of the city, and the design of the system must be approved by the City Manager in accordance with the requirements of this ordinance.

6.01.003 Stormwater Management.

Stormwater management facilities shall be provided prior to site construction or clearing, where design is required at the time of platting.

~~A.~~ Stormwater management shall be designed and constructed to prevent adverse conditions from arising on property adjoining, upstream and downstream of the subdivision site. Adverse conditions include increases in peak flows, water surface elevations and flow velocity. The applicant shall provide a drainage report that shows mitigation of the impacts of development on the existing downstream drainage system. Mitigation may include detention, retention, infiltration, channel improvements, and other means acceptable to the City Manager. Stormwater Management facilities shall be designed to reduce post-development peak flow rates of discharge to pre-development rates for the 2, 5, 10, 25, 50 and 100 year storm events at all points of discharge. The drainage report shall also include an evaluation of immediately upstream and downstream conditions to confirm no adverse impact.

SECTION 03. Drainage Easements

6.03.004 Stream Setback

Stream setback is an area that extends horizontally landward a specified distance from the stream center line ~~each side~~ of a stream ~~bank~~.

(Ord. No. 2012-04, §1, 4-24-2012)

- a. Stream Setback Zone 1 is the streamside zone and is measured from the stream center line.
 - 1. The streamside zone is intended to protect the physical and ecological integrity of the stream.
 - 2. Vegetation must remain undisturbed to the maximum practical extent in this zone to assure proper functioning of this zone.
- b. Stream Setback Zone 2 is the outer setback zone and is measured from the outer edge of Stream Setback Zone 1 and extend horizontally the remaining distance of the setback.

1. The outer zone is intended to prevent encroachment into the streamside zone, and to provide distance between development activity and the streamside zone.

Drainage Area (Acres)	Setback Zone 1	Setback Zone 2	Total Setback Width (each side)
> 35 acres and less than 200 acres	20'	15'	35'
> 200 acres and less than 1500- acres	30'	20'	50'
> 1500 acres	50'	50'	100'
>25 acres and less than 128 acres	25' -> 35'	20'	45' -> 55'
>128 acres and less than 320 acres	40' -> 55'	30'	70' -> 85'
>320 acres and less than 640 acres	50' -> 70'	50'	100' -> 120'
>640 acres	75' -> 100'	50'	125' -> 150'

Or as shown on the City's stream setback map.

SECTION 05 – Flood Hazards 6.05.002 – Flood Plain Designations and General Restrictions

Local Flood Plains shall be designated as the area inundated by the 100-year flood for all watersheds draining 25 acres or more that do not have a regulatory floodplain and are defined as a stream per this ordinance (Article 1, Section 04). Base flood elevation data shall be generated for all local flood plains and submitted to the City of Boerne for review with any proposed development. Development is prohibited within the local flood plain, except where necessary roads, to provide for vehicular access to a portion of a subdivision.

Subdivision Ordinance No. 2007-56 Article 6 SECTION 06 – Protection of Surface Water Supplies

6.06.002 Water Supply Protection Zones.

Water Supply Protection Zones within the area draining into a lake which is used or intended to be used by the City as a surface reservoir for drinking water shall be defined as the Stream Setbacks established under Zoning Ordinance Article 1 Section 6. On all sides around the shores of any lake which is used or intended to be used by the City as a surface water reservoir, the buffer zone shall be a minimum of 200 feet.

~~There is hereby established a buffer zone, to be known as a "Water Supply Protection Zone," on both sides of every stream, watercourse or drainage channel which drains an area of 100 acres or more into a lake which is used or intended to be used by the City as a surface reservoir for drinking water, including the tributaries of such streams, watercourses and drainage channels which drain areas of 100 acres or more. This zone extends perpendicular to the main channel of a stream or watercourse in its natural state or perpendicular to the centerline of an improved stream, watercourse or drainage channel. The width of the zone shall be measured from the center of the main channel of a stream, watercourse or drainage channel under low flow conditions, and from the normal operating high water level of a lake. The outer perimeter of the zone shall be based on the average slope of the first 50 feet at the interior of the zone, according to the following table.~~

6.06.007 Stormwater Treatment ~~Retention/Detention~~ in Zone Drainage Areas.

All stormwater management facilities in drainage basins above a City water supply reservoir shall be designed as Low Impact Development Facilities to treat 95 percent of the annual stormwater runoff volume as defined in Section 3.06.001 C. The water quality volume in Zone Drainage Areas is defined as the runoff resulting from the first 2.35" of rainfall. ~~at least the first one-half inch of rainfall runoff.~~ Any subsequent runoff in excess of the design capacity of the basins shall bypass the basins and remain segregated from the contained runoff waters including those waters in a detention basin if required. Input to and release from the ~~basins~~ BMPs required by this subsection for water quality protection shall be

designed according to the requirements in Section 3.06.001 and utilize vegetated swales and/or overland flow dispersion measures where possible before release into the reservoir or a contributing stream.

Code of Ordinances Chapter 9 – Flood Damage Prevention

Sec. 9-5, - Definitions

Development - buildings, roads and other structures; construction; and excavation, dredging, grading, filling and clearing or removing vegetation associated with residential, recreational, commercial, industrial or institutional construction, which increases impervious area and the storm water runoff rate, volume, and pollutant loading compared to pre-development conditions.

Local Flood Plains shall be designated as the area inundated by the 100-year flood (1% Annual Chance) for all watersheds draining 25 acres or more that do not have a FEMA regulatory floodplain and are defined as a stream per this ordinance (Section 9-5)

Redevelopment - any development on previously-developed land, other than rebuilding activity that results in no net increase in impervious area and provides equal or greater storm water control than the previous development.

Stream: A natural water course - A natural intermittent or perennial stream flowing in a well-defined bed or channel; one formed by the natural flow of the water, as determined by the general surfaces or conformation of the surrounding country, as distinguished from an "artificial" water course, formed by the work of man, such as a ditch or canal. (Ord. No. 2012-04, §1, 4-24-2012)

Sec. 9-6, - Lands to which the chapter applies.

The chapter shall apply to all areas of special flood hazard and local floodplain within the jurisdiction of Boerne.

Sec. 9-7, - Basis for establishing the areas of special flood hazard and local floodplain.

The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled, "The Flood Insurance Study (FIS) for City of Boerne, Texas, Kendall County," dated March of 1983, with accompanying flood insurance rate maps and/or flood boundary-floodway maps (FIRM and/or FBFM) dated September 1983, and any revisions thereto are hereby adopted by reference and declared to be a part of this chapter.

(Ref Subdivision Ordinance **Flood Hazards 6.05.002 – Flood Plain Designations and General Restrictions**) - Local Flood Plains shall be designated as the area inundated by the 100-year flood for all watersheds draining 25 acres or more that do not have a regulatory floodplain. Base flood elevation data shall be generated for all local flood plains and submitted to the City of Boerne for review with any proposed development. Development is prohibited within the local flood plain, except where necessary roads, to provide for vehicular access to a portion of a subdivision.

Sec. 9-42, - Duties and responsibilities of the floodplain administrator

(9) When a regulatory floodway has not been designated, the floodplain administrator must require that no new construction, substantial improvements, or other redevelopment or development (including fill) shall be permitted within local floodplains, Zones A1-30, and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when

combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood ~~more than one (1) foot~~ at any point within the community.

(10) Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Program regulations, a community may approve certain redevelopment in Zones A1-30, AE, AH, on the community's FIRM which increases the water surface elevation of the base flood ~~by more than one (1) foot~~, provided that the community first completes all of the provisions required by Section 65.12.

Sec. 9-68, - Standards for subdivision proposals.

(6) All subdivision proposals shall show the locations of all special flood hazard and local floodplains within the subject property. Should local floodplains not already be identified by the City, the developer shall develop and identify these, including Base Flood Elevations, with the subdivision proposal.

Sec. 9-70. – Floodplains and Floodways.

Special Flood Hazard Areas (Floodplains), Local Floodplains, and Floodways (L-located within areas of special flood hazard established in section 9-7) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles and erosion potential, the following provisions shall apply:

- (1) Encroachments are prohibited, including fill, new construction, substantial improvements and other development within the adopted regulatory floodplain, local floodplain, or floodway. unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.