Sec. 35-210 Low Impact Development and Natural Channel Design Protocol (LID/NCDP)

STATEMENT OF PURPOSE

The purpose of this voluntary section is to provide site design flexibility, development incentives, and strategies to implement Low Impact Development and Natural Channel Design Protocols. This section reduces the need for variances that would otherwise be required for applicants that voluntarily desire to implement LID/NCDP approaches within their site. This section also implements existing city policies which call for the use of LID/NCDP techniques, including but not limited to SA2020, Master Plan, and Complete Streets policies.

The LID/NCDP use pattern implements the following policies of the master plan:

Natural Resource Goals

Goal 1 Preserve the unique, rare, and significant features of San Antonio's natural environment

- *Sub-Policy 1.a.2. Water. Encourage the conservation of the City's surface and ground water resources through public education programs and information programs and protective regulations.*

- *Policy 1.b. Develop and implement a management plan for land use activities which include the best management practices, based on scientific study that will protect the recharge and drainage zones of the Edwards Aquifer from pollution.*

- *Sub-policy 1.b.3. Support new development designs that incorporate street, drainage and lot layouts which reduce storm runoff, pollutant loading, and the need for landscape irrigation.*

- *Sub-policy 1.b.4. Adopt urban drainage standards which reduce nonpoint source pollution and minimize downstream flooding.*

- *Sub-policy 1.b.10. Establish standards for vegetation clearing and maintenance.*

- *Sub-policy 1.b.11. Maximize open space and minimize impervious cover through all available means.*

- *Policy 1.c. Work with elected representatives, other governing bodies, and public interest groups to develop a comprehensive management plan for water resources including the development of additional sources of clean water for the San Antonio area.*

- *Policy 1.d. Encourage retention of the 100-year floodplains as natural drainage ways without permanent construction, unnecessary straightening, bank clearing or channeling.*

- *Sub-policy 1.d.1. Encourage the ecological management of floodplains and promote their use as open space, such as greenways, parks, wildlife habitat, and pedestrian-friendly linkage corridors.*

- *Sub-policy 1.d.2. Adopt strong storm water management practices throughout the drainage area which include site specific measures such as:*

  - *on-site storm water retention and detention;*
  - *reduction in impervious cover;*
  - *natural bank contouring;*
  - *floodplain preservation and buffering;*
  - *preservation of riparian habitat;*
  - *storm water harvesting sites for reuse purposes.*

Goal 2 Integrate environmental quality protection into all phases of local planning and policy implementation

- *Policy 2.a. Establish a strong natural resources protection policy for San Antonio.*

- *Sub-policy 2.a.1. Support the preservation and improvement of the current quality of San Antonio's air, land, and water resources and revise current City codes, regulations and practices to reflect this policy.*

- *Policy 2.d. Develop ordinances which preserve integrity of the natural settings of neighborhoods, communities, open spaces and parks, and develop clear procedures for their enforcement.*

Goal 3 Achieve a sustainable balance between the conservation, use and development of San Antonio's natural resources

- *Policy 3.a. Develop programs to attract environmentally sensitive industry to San Antonio and to encourage local industry to adopt water conserving and minimal impact technologies in their operations.*

- *Sub-policy 3.a.4. Provide incentives for companies to reduce water and energy consumption, and to reuse or recycle water.*

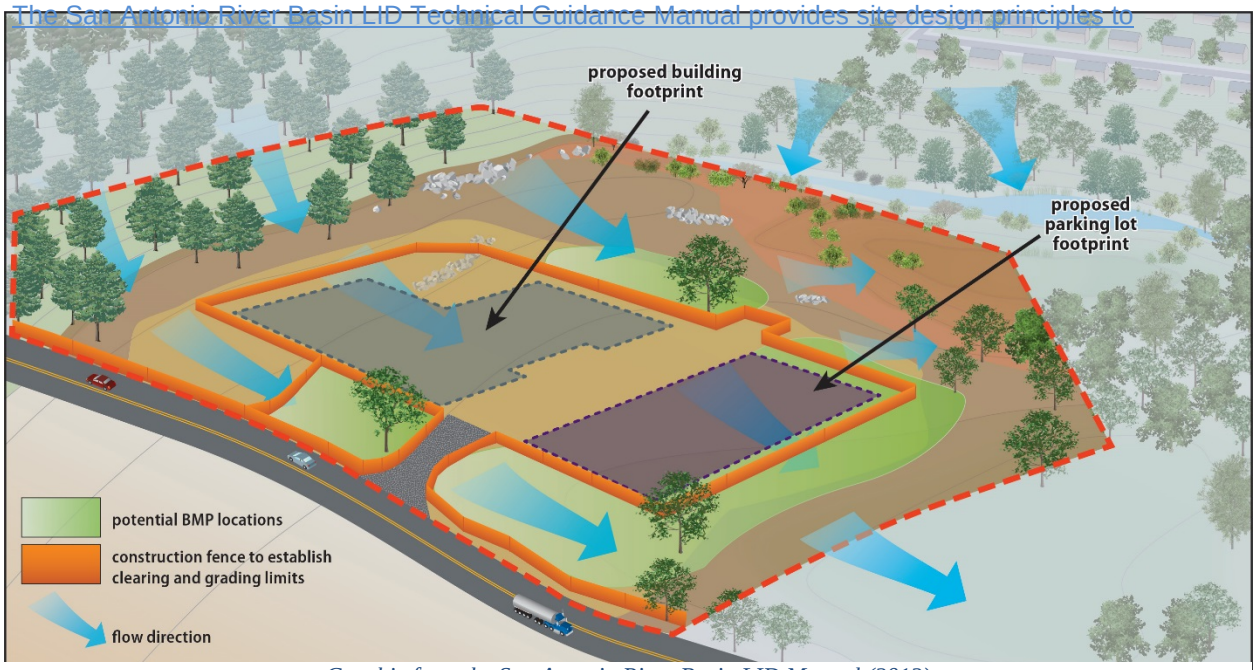
- *Policy 3.c. Develop incentive programs to reduce energy and water consumption.*

- *Sub-policy 3.c.6. Expand programs to encourage individuals and businesses to replace high water-using vegetation with water saving landscapes.*

PREAMBLE

LID/NCDP is a site assessment, site planning, and structural BMP design process that reduces impervious area and its effects. The process works to first identify then protect and preserve environmentally sensitive features; and uses both natural areas and engineered storm water controls that mimic natural functions, with a goal of replicating the predevelopment hydrology.

The San Antonio River Basin LID Technical Guidance Manual provides site design principles to



Graphic from the San Antonio River Basin LID Manual (2013)

identify protected areas and minimize impacts to existing vegetation, high value soils, geology, and habitat. For LID/NCDP planning, the team (owner, architect, engineer, etc.) begins the process with a site analysis to determine which protected features exist on the site and the optimal preservation or enhancement.

To encourage the use of LID/NCDP, this section provides a number of bonus credits toward meeting requirements of this chapter, including but not limited to landscaping, parkland, tree canopy, buffering, street trees, density, and storm water fee credit.

(a) **Applicability.**

The provisions of this section shall apply to any voluntary application meeting the requirements of subsections (b) through (o) of this section and which is designated as a "Low Impact Development and Natural Channel Design Protocol (LID/NCDP) Plan" by the applicant.

Within the city of San Antonio and its extraterritorial jurisdiction (ETJ), the LID/NCDP Plan shall be based on the San Antonio River Basin LID Technical Guidance Manual and/or the Natural Channel Design Protocol – San Antonio, Texas Region as amended.

The Unified Development Code continues to be applicable to issues not covered in this section, except where these would conflict with the LID/NCDP use pattern, in which case the conflict shall be resolved in favor of the LID/NCDP use pattern as long as the LID/NCDP does not create an adverse impact to adjacent property owners or drainage structures or interfere with public safety and emergency response.

(b) **Processing Procedures.**

(1) **Generally.**

A Low Impact Development and Natural Channel Design Protocol Plan is a voluntary Use Pattern application and may be processed as part of a plat, tree affidavit, tree permit, building permit, Master Development Plan, or other development review applications.

(2) **Incentives.**

An LID/NCDP plan shall be eligible for two types of incentives – credit/offset based and fee based – as approved by the Director of the Development Services department or the Director of Transportation & Capital Improvements or their respective designee.

A. **Credit and Offset Incentives**

The applicant managing a minimum of sixty (60) percent of the Water Quality Volume shall receive credit and offset incentives for LID/NCDP according to table 210-1.

Applicants using LID and NCDP practices and managing less than sixty (60) percent of the site Water Quality Volume shall be eligible to receive bonus credits/offsets 1 through 4 for individual BMPs..

Table 210-1

Credit/Offset	Multiplier
1. Stream Buffer or Stream Restoration to Parkland Acre	1.5
2. Stream Restoration to Tree Canopy	1.25
3. Linear Park to Parkland Acre	1.5
4. LID BMP to Tree Canopy	1.5
5. LID BMP to Streetscape Tree	1
6. LID BMP Landscape Elective Credit	Up to 25

	points
7. LID BMP Drainage Area to Parkland Acre	1.5
8. Density Bonus	10%

(i) Stream Buffer to Parkland Acre.

The applicant shall receive 1.5 parkland area credit acres for meeting the stream network buffering requirement in (i)(1)A.(iii) as long as the buffer area contains trail access; this credit may meet up to fifty (50) percent of the site's parkland requirements. Any stream network buffering area on the site which overlaps with a linear trail area shall receive 1.5 parkland area credit acres (i.e., there shall be no double counting of credits for overlapping areas).

(ii) Stream Restoration to Tree Canopy.

Streams that are restored and that establish a minimum 25-foot riparian vegetated buffer will be credited at 1.25 times the tree canopy and will receive 1.5 credit acres for parkland, up to fifty (50) percent of the site's parkland requirements.

(iii) Linear Park to Parkland Acre.

LID practices meeting a minimum of sixty (60) percent of the performance standard in subsection (g)(2) will receive 1.5 credit acres towards parkland requirements up to twenty (20) percent of the site's parkland requirements.

The parkland dimensional requirements in table 503-2 may be reduced up to ten (10) percent to accommodate use of LID BMPs.

Linear trails may receive 1.5 parkland credit acres up to fifty (50) percent of site's required parkland area, if such trails are connected to a portion of the development's remaining parkland area via a pedestrian way. Such linear trails may deviate up to ten (10) percent from dimension requirements in table 503-2 of this chapter.

(iv) LID BMP to Tree Canopy.

A canopy cover offset of 1.5 times the area of the vegetated LID BMP treatment area shall be provided where tree preservation is used in conjunction with LID practices. To receive 1.5 times credit, the landscape LID practice must be approved based on the standards of this section and chapter 35 Appendix H and must meet a minimum of sixty (60) percent of the performance standard in subsection (g)(2).

(v) LID BMP to Streetscape Tree.

Tree preservation in the right-of-way area is encouraged in LID/NCDP developments. As an alternative to the streetscaping requirements for new landscape trees in the right-of-way, up to twenty (20) percent of the new required -streetscaping trees may be offset by installing a vegetated LID storm water BMP if part of an approved LID/NCDP integrated storm water management plan, except in areas zoned as a corridor overlay district or form-based zoning district. A maintenance plan must be approved for the LID BMPs in the right-of-way.

(vi) LID BMP Landscape Elective Credit.

For an LID/NCDP Plan meeting a minimum of sixty (60) percent of performance standards in subsection (g)(2), areas with LID BMPs will receive up to 25 points for elective landscaping criteria of this chapter. Credit will be allocated according to the proportion of trees, small trees, large shrubs, and small to medium shrubs and native grass cover in the LID BMPs.

(vii) LID BMP Drainage Area to Parkland Acre.

Where LID practices such as bioretention areas, rain gardens, and swales are part of an approved LID/NCDP integrated storm water plan, the preserved pervious areas which drain to these practices and which serve multiple uses such as trails, open space, and recreation, shall be counted toward the site's required parkland requirements of this section and may be constructed in designated parkland area. This may meet up to sixty (60) percent of the site's parkland requirements.

(viii) Density Bonus.

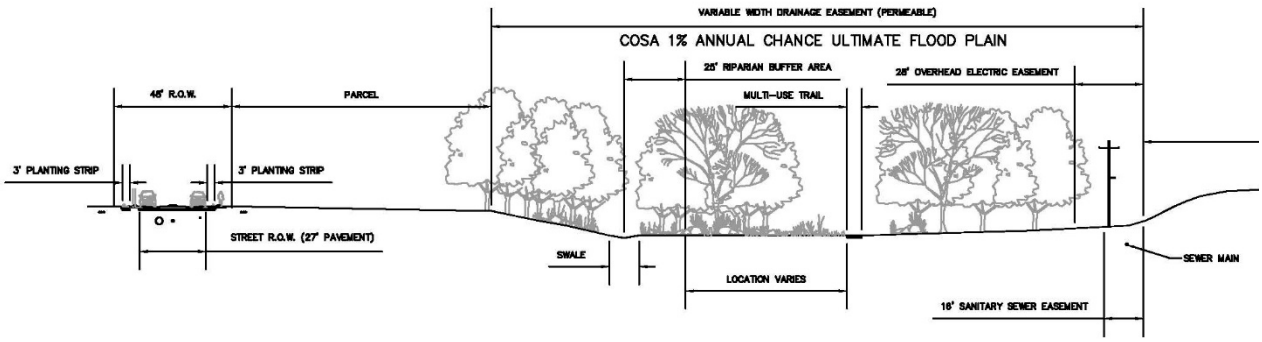
For an LID/NCDP Plan meeting a minimum of sixty (60) percent of performance standards in subsection (g)(2), the applicant may increase by ten (10) percent the density allowed in table 310-1 of this chapter.

(ix) Allowance for LID BMPs in Bufferyards.

For LID/NCDP, the city shall allow vegetated LID BMPs in buffer types A, B, and C. LID BMPs shall be allowed in the first ten (10) feet of bufferyards D, E and F, as measured from the interior of the site. The minimum plant materials required in table 510-2 shall be met in the overall bufferyard area.

(x) Allowance for LID BMPs in public Right-of-Way.

For an LID/NCDP Plan meeting a minimum of sixty (60) percent of performance standards in subsection (g)(2), LID/NCDP vegetated LID storm water management features may be located within the Right-of-Way medians, planting strips, curb extensions, or other permeable surface within the street Right-of-Way; permeable pavement may be used for sidewalks per (f)(6) below. The applicant may construct vegetated LID BMPs in the privately maintained area of the street right-of-way and receive LID performance standards and detention credits for such BMPs. For the latter, a sliding scale based on the cumulative reduction in flow for the Water Quality Storm, 2-year storm, 5-year storm, 25-year storm and 100-year storms will be applied. To receive a credit, the BMPs must be adjacent to the applicant's development property, must be privately maintained, and must have a long-term maintenance agreement.



(xi) Irrigation of LID BMPs.

Elimination of permanent irrigation systems is a cost-saving incentive available to property owners. LID BMPs that use native plants and meet a minimum of sixty (60) percent of the performance standard in subsection (g)(2) for the managed drainage area are not required to install a permanent irrigation system; however, an LID/NCDP BMP that does not install a permanent irrigation system shall provide a detailed alternative irrigation plan and schedule for the establishment and maintenance of the BMP vegetation. LID BMPs, with or without permanent irrigation systems, are subject to the general maintenance requirements of 35-511(c)(4). It is recommended that commercial

properties direct air conditioning condensate into BMPs for irrigation as needed and to meet the requirements in section 34-274.

B. **Fee Based Incentives**

The applicant managing a minimum of sixty (60) percent of the Water Quality Volume for the project site shall receive credit and offset incentives for LID/NCDP according to table 210-2.

Future modification or dissolution of an approved LID/NCDP integrated storm water plan or its associated operation and maintenance schedule may require reimbursement of any fee based incentives provided, and discontinuance of any ongoing fee based incentives per subsection (l)(2).

(i) Storm Water Fee Discount.

The storm water fee discount available for incorporating the use of LID/NCDP is specified in section 34-7.07.

(ii) Storm Water Fee In Lieu Of (FILO) Discount.

Per Table 210-2 below, a minimum credit of five (5) percent of the required FILO payment, based on section 35-C109, may be designated for parcels that manage sixty (60) percent of the Water Quality Volume or greater.

(iii) Permeable Pavement Impervious Cover Credit

Permeable pavement shall not be counted as impervious cover if designed to store the 2-year, 24-hour storm event as specified by Appendix H.

Table 210-2

	Percent of Water Quality Volume Managed[(1)]				
	60%	70%	80%	90%	100%
Credit/Offset					
FILO Fee Discount					
Meets LID Performance Standard	5%	10%	20%	25%	30%
Meets Detention Requirements or Increases Channel Storage through NCDP	Cumulative Reduction in Flow Sliding Scale – see 210(i)(1)(B)				

(1) Water Quality Volume is defined as the runoff volume resulting from the first 1.5 inches of rainfall falling in 24 hours on the developed portions of the site.

(3) **Variances.**

Within the incorporated areas of the city and the ETJ, variances shall be processed in accordance with section 35-483 of this chapter.

(4) **Application Requirements.**

A. Minimum Water Quality Volume Requirements.

In order to be considered an LID/NCDP plan and be eligible for incentives in table 210-2 of this section, a minimum of sixty (60) percent of the required water quality volume resulting from the increase in impervious area for the entire site, including all of the parking and street areas, must be managed to meet the Performance Standards in (g)(2) below.

Individual BMPs may receive credit according to table 210-1 as approved by the Director of Development Services or designee.

B. Preliminary Site Design Review Meeting.

The San Antonio River Authority is available free of charge to meet with Owner's or their design team including engineer, architect and landscape architect before, during or after the

Development Services Department's Preliminary Plan Review meeting or as needed any time during the development design process. The Preliminary LID/NCDP Site Design Review meeting may be conducted with or without City of San Antonio staff.

C. Requirements of an LID/NCDP Integrated Storm Water Plan.

The LID/NCDP integrated storm water plan required by this section shall contain architectural, landscape architecture and engineering drawings, maps, assumptions, calculations and narrative statements as needed to adequately describe the proposed development or redevelopment of the tract and the measures planned to comply with the LID/NCDP performance standards in subsection (g)(2) below. Plan content may vary to meet the needs of specific site requirements.

The plan must also meet the requirements of the current Storm Water Engineering Review Team checklist.

Guidelines for the LID/NCDP integrated storm water plan preparation may be obtained from the Director of the Transportation & Capital Improvements Department or designee or on the Transportation & Capital Improvements Department website. One copy of the approved LID/NCDP integrated storm water plan shall be kept on file at the job site.

D. Construction Standards.

All construction of LID and NCDP storm water management measures addressed by this section should conform to applicable best management practices outlined in two guidance documents: San Antonio River Basin LID Technical Guidance Manual and Natural Channel Design Protocol, San Antonio, Texas Region.

These guidance documents may be updated or revised periodically based on new information and new approved technologies. These sources are recommended for guidance for LID/NCDP applicants. Choice of specific LID and NCDP measures is at the option of the applicant.

E. Single Family Lots.

A single family residential lot, not part of a larger development, is eligible to submit a simplified storm water management plan. The simplified plan must include the following:

- A brief project summary including the location, description of existing property, and the proposed development;

- Calculations that show the development adheres to the LID performance standards in subsection (g)(2)

- An exhibit showing the site boundary, proposed locations of building, driveway, parking and other impervious area footprints.

The plan must show the proposed locations of storm water BMPs and the positive overflow pathways for storms exceeding the flow rate and volume managed by the BMPs.

F. Plat Note.

Developments with LID/NCDP shall have the following note placed on the plat (minor variations of this note may be accepted as approved by the Director of TCI:

The property owner has elected to provide Low Impact Development (LID) and/or Natural Channel Design (NCD) on Lot(s) XX, Block XX, NCB XXXXX. Building permits for this property shall be issued only in conjunction with necessary LID/NCDP approved by the City of San Antonio. The property may be eligible for credit and offset incentives and/or fee incentives when approved by the City of San Antonio. If the property owner elects not to provide LID and/or NCDP, the incentives may not be granted and the property shall conform to all applicable development standards of the Unified Development Code.

G. Restrictions on Property Usage.

Conservation areas and open space (floodplains, buffer zones, greenbelts, open space, park dedication, tree save areas, etc.) if applicable to a site, shall be provided according to platting and development requirements and procedures of this chapter. The location of all such designated natural areas, parkland, open space, etc. shall be described and delineated in the integrated storm water plan. Revisions to these areas after an LID/NCDP plan is approved will be subject to city review. Revisions may increase or decrease incentives, and the property shall conform to all applicable development standards of the Unified Development Code.

Land within the rights-of-way of below and above ground utilities or roads shall not count toward the site's buffer zone, open space, parkland or other conservation area requirements.

H. Deed Recordation Affidavit.

A deed recordation affidavit shall be required when LID/NCDP is proposed with a building or site work permit and the associated plat does not include the plat note from section 35-210(b)(4)(F). Once an LID/NCDP integrated storm water plan has been approved for the site, within sixty (60) days the applicant shall submit a deed recordation affidavit referencing the LID/NCDP integrated storm water plan, including a description of LID/NCDP components and the storm water plan's operation and maintenance agreement. Building permit approval may be withheld until the affidavit is reviewed and approved by the City of San Antonio. Certificate of occupancy may be withheld until proof of recordation of the affidavit is submitted to and accepted by the City of San Antonio.

The affidavit may be drafted such that modifications or removal of LID/NCDP components does not require revoking or vacating the deed recordation affidavit. However, those modifications to the LID/NCDP integrated storm water plan must be submitted to the city for review and approval, and may result in nullification or reimbursement of credits and/or incentives. The property shall conform to all applicable development standards of the Unified Development Code.

I. Improvement Security.

LID/NCDP storm water control measures shall be recognized similar to other site improvements (e.g. drainage infrastructure, streets, etc.). As such, a performance agreement, in the form of a financial security, shall be required and adhere to the procedures and the guarantees of performance specified in section 35-437 of this chapter.

J. Record Drawings and Final Approval.

Upon completion of an LID/NCDP BMP project, and before a temporary certificate of occupancy or field acceptance of public or private infrastructure improvements that are part of LID/NCDP integrated storm water plan shall be granted, the applicant shall conduct a post-construction site inspection and verify that the completed project is in accordance with the approved storm water plan and designs. Before a final certificate of occupancy, or release of the performance bond for construction of public or private infrastructure improvements, the designer of record shall submit actual record drawings for all structural storm water management facilities and flow paths after final construction is completed. See Section (k)(1) for detailed requirements of the record drawings.

(c) **Density.**

An LID/NCDP shall comply with the density standards of this chapter, except the density bonus allowed in section (b)(2)(A).

(d) **Traffic Impact Analysis.**

An LID/NCDP shall comply with the traffic impact analysis standards of this chapter.

(e) **Lot Layout.**

An LID/NCDP shall comply with the lot layout standards of this chapter except as follows:

(1) **Setback, Side Yard, and Rear Yard Incentives.**

In order to accommodate LID BMPs and optimize LID/NCDP site design, required setback, side yards, and rear yards in table 310-1 of this chapter may be reduced as long as such reductions meet fire code standards. The reductions may not compromise public safety such as the sight distance triangles defined in section 35- 506(d)(5) of this chapter.

(f) **Transportation.**

An LID/NCDP shall comply with the transportation standards of this chapter except as follows:

(1) **Minimum Pavement Width and Street Design.**

Applicants shall adhere to the Traditional Street Design Standards in section 35-506, tables 506-4 and 506-4A of this chapter.

(2) **Credit for LID Practices in the Street Right-of-Way.**

See credit allowed in section (b)(2)(A). Use of swales with curb is allowed by right in zones RP, RE, RD, and FR, and allowed with conditional approval in zones R-20, O-1, MI-1, and MI-2.

(3) **Curb and Edge Treatment.**

Where a portion of a project or public improvement has been designed specifically as an LID storm water management feature, saw tooth curb edge treatment is encouraged as part of LID/NCDP.

(4) **Separation of LID Practices and Utilities.**

For LID BMPs installed in the right-of-way, care must be taken to allow the co-placement and separation of utilities in such a way as to avoid utility damage during construction. The applicant may reference the street cross sections in the San Antonio River Basin LID Technical Guidance Manual for appropriate placement and installation of BMPs in the street right-of-way.

(5) **Use of Permeable Pavement for On-Street Parking.**

The applicant may reference the approved list of permeable pavement materials for on-street parking areas in the San Antonio River Basin LID Technical Guidance Manual, as may be updated periodically. Permeable pavement must meet the requirements of (b)(2)B.(iii) above to receive FILO credit.

(6) **Sidewalks.**

In order to reduce effective impervious area, an approved permeable pavement may be used for sidewalks as long as the materials meet ADA requirements. The applicant shall adhere to the approved list of permeable pavement materials that may be used for sidewalk areas in the San Antonio River Basin LID Technical Guidance Manual as may be updated periodically.

(7) **Special Purpose Medians.**

Designers may incorporate BMPs into dividers constructed for aesthetic purposes such as at entrances for subdivisions and landscaping features. LID storm water BMPs shall be designed according to specifications in the San Antonio River Basin LID Guidance Manual. The minimum width for such special purpose dividers with LID BMPs shall be in accordance with section 506(n)(2) of this chapter. No vegetation shall be placed in the median that will obstruct the drivers' sight distance defined in section 35-506(d)(5) of this chapter.

(8) **Traffic Calming Devices.**

Traffic calming devices approved for use in LID/NCDP developments include curb bump outs with LID/BMPs or curb extensions with LID/BMPs as illustrated in the San Antonio River Basin LID Guidance Manual.

(g) **Storm Water Management.**

An LID/NCDP application shall comply with the storm water management standards, Chapter 35, Appendix H, except as follows:

(1) **Integrated Storm Water Management.**

After accounting for storm water quality and volume credits from Environmentally Sensitive Site Design per subsection (i), Natural Resource Protection and Tree Preservation, applicants shall use LID structural BMPs or a combination of LID and conventional BMPs to meet the balance of LID Performance Standards required in (g)(2) below.

The applicant may choose the appropriate combination of Environmentally Sensitive Site Design techniques and LID structural BMPs to meet the LID performance standards. Approved LID structural BMPs, as well as design and maintenance guidance for each BMP, may be found in the San Antonio River Basin LID Technical Guidance Manual.

(2) **LID Performance Standards.**

A. Onsite Storm Water Management Framework.

Per subsection (b)(4)A, a minimum of sixty (60) percent of the water quality volume must be managed to be considered an LID/NCDP development. If less than one-hundred (100) percent of the water quality volume will be managed, the designer will give first priority to managing the runoff volume from all of the parking and street areas within the development limits. The water quality, volume, and flow rate LID performance standards below are presumed to be met if the storm water management system is sized and designed to manage a minimum of sixty (60) percent of the WQV using the guidance in the San Antonio River Basin LID Technical Guidance Manual.

B. Onsite Storm Water Management Criteria

For new development, a storm water management system with LID shall treat the Water Quality Volume (WQV) resulting from the first 1.5[1] inches of rainfall falling on the developed portions of the site in a 24-hour period.

Compliance with this WQV performance standard through a combination of infiltration, filtering, and settling is presumed to meet the following treatment levels: (i) maintaining groundwater recharge and protecting streams from increased erosion by reducing volume and flow rate to pre-development conditions for a 1.5 inch rainfall; (ii) removal of eighty percent (80%) of the average annual post development total suspended solids (TSS) load; and (iii) removal of sixty percent (60%) of the annual bacteria load. The applicant shall be eligible for incentives to treat storm water from the new development according to tables 210-1 and 210-2.

C. Definitions.

For the purposes of this section, development and redevelopment are as defined in section 35 Appendix H.

D. Redevelopment Standards.

A redevelopment site shall be subject to a reduced LID performance standard: the storm water management system will be sized and designed based on the runoff volume resulting [1]from the first 1.18 inches of rainfall in 24 hours from rebuilt areas and newly developed areas on the site. The applicant shall be eligible for incentives to treat storm water from the redevelopment site according to tables 210-1 and 210-2.

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[1] A 1.5" storm is equivalent to the 90th percentile storm calculated using the methodology developed by the EPA in report 841-B-09-001. The daily rainfall total for the period of record at the San Antonio International Airport was used to calculate the 90th and 85th percentile storms referenced in this section.

(3) **Special LID Requirements for Karst Areas Outside the Edwards Aquifer Recharge Zone.**

A. Mapping Requirements.

If applicable, the applicant shall identify and locate karst features and submit a map with the concept plan and storm water management plan for the proposed development project. The map shall display, according to the best information available, topographic and geologic information and features (including, but not limited to, faults and fractures along waterways and sinkholes), and proposed and existing stream buffer preservation areas.

Any existing karst swales, sinkholes, or solution features should be surveyed and indicated in the integrated storm water plan. Features collecting drainage for watersheds in excess of five thousand (5,000) square feet should be set aside with a buffer or reserve area as defined by RG-348A (Optional Enhanced Measures for the Protection of Water Quality in the Edwards Aquifer (Revised)) in the integrated storm water plan so that all future landowners are aware of the presence of solution features or sinkholes on their property.

(4) **Special LID BMP Requirements/Considerations for Historic Areas.**

A. Landscaping.

Removal of existing landscaping or sod areas and replacing them with vegetated LID BMPs is allowed where not removing character defining landscaping elements and with Historic Design Review Commission approval and a Certificate of Appropriateness.

B. Hardscaping.

Removal of existing hardscaping and replacing it with pervious pavement treatments is allowed where not removing character defining hardscaping elements.

(5) **Manufactured Products for Storm Water Management.**

In addition to the BMPs included in the San Antonio River Basin LID Technical Guidance Manual, several proprietary manufactured products have been adopted by the Texas Commission on Environmental Quality (TCEQ) to meet a minimum of eighty (80) percent TSS removal. These devices shall not be accepted to meet the volume reduction requirement of subsection (g)(2), but will be allowed for pre-treatment, filtering, trash removal and oil and grease removal as the first structural BMP in a treatment train. Devices that have not been approved by TCEQ may be acceptable to the Director of the Transportation & Capital Improvements Department or designee only if they meet the Technology Assessment Protocol - Ecology (TAPE) guidelines.

A. Pre-Treatment and Trash Removal Applications

B. Hydrodynamic Separators.

Hydrodynamic separators utilize cyclonic motion of storm water to physically remove sediments and floatable materials. They do not provide volume or rate reduction; therefore their most appropriate application is upstream of BMP practices that can provide these functions. Hydrodynamic separators are particularly well suited for providing pretreatment in areas of high sediment loading for BMPs whose primary function is filtration or infiltration, as they can reduce maintenance frequency and extend the life of the downstream BMP.

C. Screens and Trash Racks.

Screening devices that capture large floatable debris are recommended for all inlets that drain into preserved/restored streams or BMPs. These devices provide a single point for collection and disposal of trash that would otherwise be dispersed into natural areas.

D. Enhanced Filtration

(i) Cartridge Filters.

Cartridge filters that rely on structurally enclosed media to filter storm water and remove pollutants may be used in applications where LID structural BMPs described in the LID Design Manual are determined to be infeasible or not in the best interest of the city according to the Director of Transportation & Capital Improvements or designee. Cartridge filters shall not be used in areas with high sediment loading unless hydrodynamic separator pretreatment is installed. Cartridge filters may be used as part of a treatment train but do not retain the volume defined as the performance standard in subsection (g)(2).

(ii) High Rate Filter Media.

Customized high rate filter media may be utilized to meet partial water quality performance goals if LID BMPs designed using the San Antonio River Basin LID Technical Guidance Manual are infeasible or not in the best interest of the city according to the Director of Transportation & Capital Improvements or designee. High rate filter media applications may include tree boxes, tree filters, or any filter system that treats but does not retain the volume defined as the performance standard in subsection (g)(2). The WQV defined in section (g)(2) must pass through the high rate filter media and achieve the pollutant removal targets. Treating the WQV using high rate media does not equate to meeting the volume reduction requirement in subsection (g)(2).

(h) **Utilities.**

See utilities standards, section 35-507, of this chapter. Also see subsections (b)(4)D, Restrictions on Property Usage, and (f)(4), Separation of LID Practices and Utilities, above.

(i) **Natural Resource Protection and Tree Preservation.**

(1) **Environmentally Sensitive Site Design.**

A. Site Analysis.

For LID/NCDP, the design process begins with a site analysis to determine the degree to which the following features exist on the site and the feasibility of their preservation or enhancement:

(i) High Value Soils.

Preservation of high infiltration soils is encouraged. For the purposes of this section, high infiltration soils are defined as all soils with infiltration rates greater than one inch per hour.

(ii) Geomorphic Assessment.

The applicant shall perform a NCDP geomorphic assessment according to (i)(2) of this section.

(iii) Stream Network Buffering.

The stream buffer to parkland credit incentive is applicable to LID/NCDP plans that preserve the habitat and watershed management functions of riparian buffers To the extent that any of the following stream network elements exist on a site, at a minimum, the LID/NCDP shall preserve

1. A riparian buffer with a minimum average width of 25 feet from the top of bank for all Jurisdictional Waters of the U.S. and;

2. All of the floodway and flood fringe within the regulatory 100-year floodplain, as shown on official FEMA maps, and any Letter of Map Revision (LOMR);

3. A riparian buffer with minimum average width of fifty (50) feet from the edge of the regulatory 100-year floodplain as delineated on the official FEMA maps and any Letter of Map Revision (LOMR). To reduce fragmentation, no more than ten (10) percent of the buffer can be less than thirty-three (33) feet wide;

4. A riparian buffer with a minimum average width measured from the top of the bank and determined based on the slope of the streamside area in accordance with the table methodology found in section 34-913 of this code for all perennial streams or intermittent streams with a drainage area of greater than 100 acres. In all cases, a twenty-five (25)-foot-wide riparian buffer zone must be preserved. To reduce fragmentation, no more than ten (10) percent of the buffer can be less than thirty-three (33) feet wide;

5. A riparian buffer with minimum average width of fifty (50) feet from the top of bank of any perennial, intermittent streams with a drainage area of less than one-hundred (100) acres or ephemeral streams draining more than forty (40) acres. In all cases, a twenty-five (25)-foot-wide riparian buffer zone must be preserved. To reduce fragmentation, no more than ten (10) percent of the buffer can be less than thirty-three (33) feet wide;

6. All areas within twenty five (25) feet of the top of bank of any ephemeral stream draining less than forty (40) acres; and

7. The applicable stream buffer requirements of this chapter's Tree Preservation and Floodplain requirements, or applicable recharge protection provisions in section 34-920 Recharge Feature Protection and Buffer Zone, whichever is most stringent.

(iv) Slopes.

Slopes greater than 15% percent should be evaluated for erodibility using the Natural Resources Conservation Service erodibility index.

B. Offsetting Storm Water Detention, Water Quality, and Volume Requirements.

Environmentally Sensitive Site Design practices that manage the increased runoff due to development may be evaluated using standard hydrologic approaches required for the LID/NCDP integrated storm water plan. Environmentally Sensitive Design site practices shall also be credited toward meeting the site's LID Performance Standard.

C. Establish Clearing, Grading and Stockpiling Limits.

Grading plans shall clearly identify limits of construction areas and include a 10-foot buffer between areas of disturbance and protected areas, BMPs or buildings and any environmentally sensitive area. Allowable stockpile areas shall be identified in areas that will be paved or disturbed during subsequent construction.

(2) **Natural Channel Design Protocol.**

A. Restorative Practices for Natural Channels.

All channels draining more than twenty (20) acres within an Environmentally Sensitive Site Design plan should be evaluated for

(i) Protection if the channel is stable and functioning properly, or

(ii) Restoration if the channel is unstable.

For the purposes of this section, channels should be evaluated using a Geomorphic Assessment as defined in the Natural Channel Design Protocol, San Antonio, Texas Region, as amended, to determine the degree of instability. See section (b)(2)(A) for bonus tree canopy and parkland credits for stream restoration.

B. Earthen engineered channel design to reduce erosion and maintenance.

Engineered channels that are necessary to convey local and or offsite flows shall be designed either as vegetated swales or as multi-stage flood control channels (see Natural Channel Design Protocol, San Antonio, Texas Region as amended).

C. Restoration credit for existing engineered channels.

Existing engineered channels that are armored using either concrete or rock rubble may be redesigned using NCDP. As part of an LID/NCDP integrated storm water plan, channels will be credited as flow reduction and water quality features based on scientifically-based benefits. Such benefits shall be documented in the LID/NCDP integrated storm water plan.

D. Design Protocols.

Recommended natural channel design protocols may be found in Natural Channel Design Protocol, San Antonio, Texas Region (2013), which may be updated from time to time.

(j) **Parking.**

An LID/NCDP shall comply with the parking standards of this chapter except as follows:

(1) **Parking Space.**

To minimize impervious area, use of minimum vehicle spaces allowed in tables 526-3a and 526-3b of this chapter is encouraged except where preservation of woodlands or significant stands of trees is desired; in such cases, per section 35-526(b)(6), the Director of the Transportation & Capital Improvements Department or designee may waive up to fifty (50) percent of the minimum parking spaces required by table 526-3. Permeable pavement is encouraged for vehicle spaces above the minimum requirement, and as stipulated in section (l)(3) below. Use of shared off-street parking facilities is encouraged, as practicable, according to section 35-526(g) of this chapter.

(2) **Dimensions.**

To reduce impervious area, an LID/NCDP may reduce parking dimensions using one of the following options.

A. Alternative Parking Dimensions.

Use of the parking space dimensions in table 210-3 below is allowed as an alternative to the requirements of Table 526-1 of this chapter.

Table 210-3

Angle	Width	Curb Length	1-way aisle	2-way aisle	Stall Depth
30 degrees	8′- 6″	17′	12′	NA	15′
45 degrees	8′- 6″	12′	12′	NA	17′
60 degrees	8′- 6″	9′- 9″	16′	20′	17′-6″
90 degrees	8′- 6″	8′- 6″	25′	25′	18′

B. Compact Parking Allowance.

Up to forty (40) percent of the required parking spaces may be designated for use by compact vehicles with minimum dimensions of eight (8) feet in width and sixteen (16) feet in length. Compact vehicle parking shall be identified by individually marking each parking space surface with lettering a minimum of six (6) inches in size.

(3) **Use of Permeable Pavement.**

Permeable pavements may be used in low-traffic portions of the off-street parking area, including all marked parking stalls and infrequently used fringe parking areas. The applicant may reference the approved list of permeable pavement materials that may be used for off-street parking areas in the San Antonio River Basin LID Technical Guidance Manual. Permeable pavement must meet the requirements of (b)(2)B.(iii) above to receive FILO credit.

(4) **Parking Area Landscaping, Buffering, and Shading.**

To encourage multifunctional LID BMPs and provide incentives for their use, bioretention areas, vegetated swales, planter boxes, rainwater harvesting systems, NCDP, and other vegetated BMPs may be used to meet parking area landscaping requirements in this chapter and may be constructed in designated landscape areas as part of an approved LID/NCDP integrated storm water management plan for the site. See Section 35-210(b)(2) above for allowable credits.

(k) **Construction Activities and Reporting Requirements.**

A Registered Design Professional in Responsible Charge (RDPiRC) or certified inspector, retained by the owner of the land, shall provide oversight of construction activities. An inspector (other than the RDPiRC) must be certified through the San Antonio River Basin Construction Inspector Certification program. The inspector and contractor shall work to avoid damage or alterations of the existing site conditions that could deteriorate or compromise the structural and non-structural LID BMPs.

The inspector may reference guidance and checklists from the BRWM Design and Construction Inspection of LID BMPs registration course. The LID/NCDP Plan shall adhere to Chapter 34 Storm Water Compliance for Construction Activity and reference the San Antonio River Basin LID Technical Guidance Manual for construction practices, including environmentally sensitive construction, construction sequencing, and inspections.

Inspections may also be conducted by city staff. However, those inspections will not waive any owner, contractor, or RDPiRC requirements or responsibilities.

(1) **Record Drawings and Final Agency Acceptance.**

Upon completion of a project, the applicant shall conduct a post-construction site inspection and verify that the completed project is in accordance with the approved storm water plan and designs. Before a final certificate of occupancy is issued, the designer of record shall submit the following items to the Transportation & Capital Improvements department for review and acceptance:

A. Record (as-built) drawings; and

B. Post-Construction Inspections Certification form which can be obtained from the Director of the Transportation & Capital Improvements Department or designee or on the Transportation & Capital Improvements Department website.

(l) **Maintenance.**

(1) **Maintenance Required.**

Structural storm water management practices must be privately owned and shall be maintained by the community association or property owner, unless the practices are part of a capital improvement project managed by a public agency. An operation and maintenance schedule shall be submitted to the Director of Transportation & Capital Improvements Department or designee prior to approval of construction plans.

(2) **Annual Maintenance Inspection Report.**

The person responsible for maintenance of any structural storm water management practice installed pursuant to this section shall submit to the Director of the Transportation & Capital Improvements Department or designee an annual inspection report from a registered design professional licensed by the State of Texas or a certified inspector. A single family residential lot, not in a subdivision, is not required to submit annual inspection reports.

(3) **Operation and Maintenance Compliance**

A. LID/NCDP Plan Three-Year Establishment Period

The standard establishment period for an LID/NCDP integrated storm water plan shall be three (3) years. It is recommended that the owner obtain a registered design professional licensed in the State of Texas or a certified inspector to perform at least quarterly inspections

of the structural storm water management practices during the first year after construction of the LID/NCDP improvements to promote proper establishment.

B. Dissolution of an LID/NCDP Plan.

If the applicant or owner wishes to dissolve the LID/NCDP integrated storm water plan or operation and maintenance schedule within the establishment period, the following conditions apply:

(i) The applicant or owner must notify the Director of Transportation & Capital Improvements Department or designee.

(ii) The applicant or owner must meet the requirements of Chapter 35, Appendix H Storm Water Management.

(iii) The applicant or owner must meet the parkland, landscaping, and tree preservation requirements of the ordinance in effect on the date when the city was notified of the desire to dissolve the plan and/or schedule.

(iv) The applicant or owner forfeits all ongoing fee-based incentives.

(v) The applicant or owner must reimburse to the city all fee-based incentives accrued to-date within thirty (30) days of receiving the assessment of incentives. If such assessment is not paid within thirty (30) days, the matter will be referred to the city attorney's office to enforce compliance.

If the owner fails to provide annual inspection reports during the establishment period, the City may elect to inspect the structural storm water management practices for proper maintenance and functionality. Failure to provide annual inspection reports and to maintain structural storm water management practices may result in forfeiture and/or reimbursement of incentives.

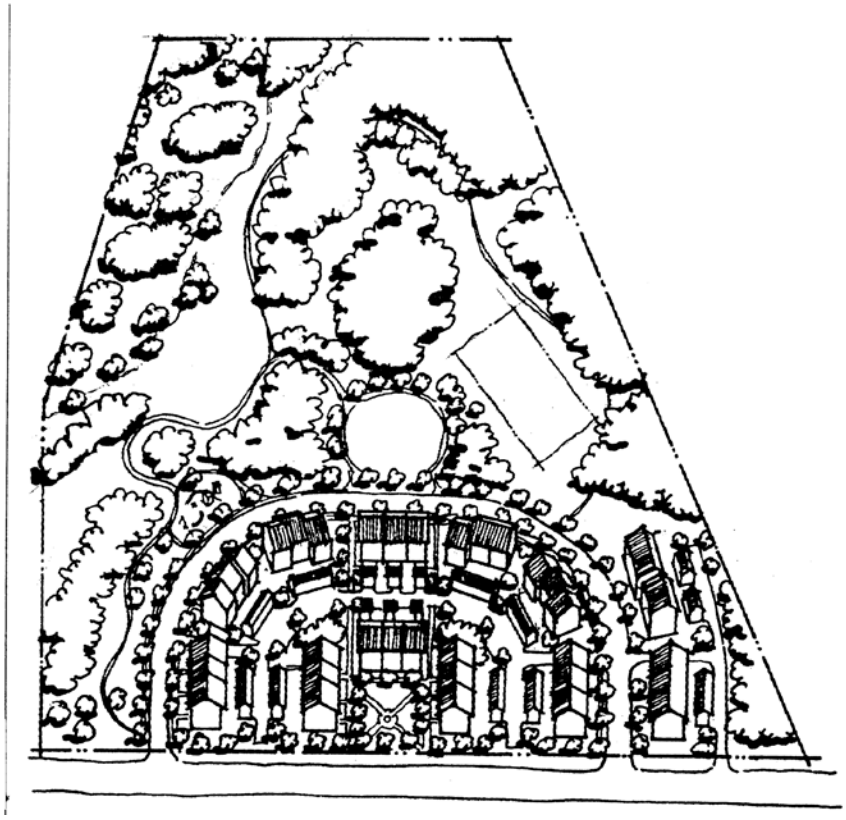
C. Modification of an LID/NCDP Plan

If the owner proposes to modify the LID/NCDP integrated storm water plan and/or maintenance agreement during or after the establishment period, the revised integrated storm water plan shall be submitted to and reviewed by the City of San Antonio Transportation & Capital Improvements department. The revised plan and any associated incentives shall be subject to the requirements of 35-210, Appendix H, and other pertinent sections of the UDC.

(m) **Compliance.**

Compliance with the requirements of this section shall be enforced through sections 35-490 through 35-492 of this chapter.

Sec. 35-203. - Conservation Subdivision.



STATEMENT OF PURPOSE

Conventional subdivisions typically produce little open space except floodplains and steep slopes. Common open space areas in conventional subdivisions is often unusable or is devoted only to specific purposes, such as golf courses. Most open space in conventional subdivisions is contained in private yards with no common access or maintenance. Further, private open space typically involves ~~involve~~ *lawns and landscaping which require heavy maintenance and water demands. Accordingly, the purpose of this section is to provide flexibility in site design in order to allow developers to preserve common open space and natural resources. The specific purposes of this section are:*

- *To protect the public health, safety and general welfare by avoiding surface and ground water pollution, contaminated runoff, air quality contamination, and urban heat islands which result from pavement and the clearing of natural vegetation.*

- *To protect and preserve natural resources such as wetlands, streams, lakes, steep slopes, woodlands, and water recharge areas.*

- *To reduce infrastructure and housing costs by reducing the engineering and construction costs produced by conventional subdivision design, which* generally *requires more pavement, wetland crossings, grading of trees and natural areas, and maintenance from lawn and landscaping maintenance.*

- *To protect property values by allowing open space design features which enhance the marketability of development.*

- *To provide design flexibility.*

• *To promote development* with ~~on soils which are most suitable for~~ *urban densities, while preserving soils that are primarily adaptable to other uses such as woodlands, wildlife habitat, and agricultural uses.*

The conservation subdivision use pattern implements the following policies of the master plan:

• ~~*Applicability*~~ *Natural Resources, Policy 1d:* ~~Policy 1d:~~ *Encourage retention of the 100-year floodplains as natural drainageways without permanent construction, unnecessary straightening, bank clearing or channeling.*

• *Natural Resources, Sub-Policy 1.1d: Encourage the ecological management of floodplains and promote their use as open space, such as greenways, parks, wildlife habitat, and pedestrian-friendly linkage corridors.*

~~Commentary: A conservation subdivision is distinguishable from a resource protection district. Resource protection districts are established in article III to protect agricultural operations and natural resource industries (see section 35-310.02). They are mapped districts within which uniform regulations governing use and density apply, and must be established through the legislative rezoning process (see section 35-421). A conservation subdivision is a form of development involving unique standards for lot layout which are designed to maximize the preservation of natural resources and open space. A conservation subdivision is established through the platting process. While a conservation subdivision may be platted within a resource protection district, the concepts are distinguishable.~~

(a) **Applicability.** A conservation subdivision may be permitted in ~~any zoning district excluding~~ the following: zoning districts: FR, RP, RE, R-20, RD, R-6, and G. ~~"D", "I-1", "I-2", "MXD", or "IDZ".~~ Within the ETJ, landowners have the option to develop consistent with the criteria of this ordinance according to 35-201(b)(2) of this chapter

(b) **Processing Procedures.**

(1) **Generally.** A conservation subdivision shall be processed in accordance with the subdivision procedures of this chapter. Variances shall be processed as set forth in subsections (2) and (3), below, except for applications within the Edwards Recharge Zone District (ERZD) or utility conversion districts.

(2) **Variances—Incorporated Areas.** Within the incorporated areas of the city:

A. A variance to the requirements of subsection (c) shall be processed in accordance with section 35-482, Zoning Variances, of this chapter.

B. A variance to the requirements of subsections (b) and (d) through ~~(n)~~(o) shall be processed in accordance with section 35-483, Subdivision Variances, of this chapter.

(3) **Variances—Extraterritorial Jurisdiction.** Within the ETJ, variances shall be processed in accordance with section 35-483, Subdivision Variances, of this chapter.

(4) Adjusted tract acreage or developable area shall be calculated by deducting the Conservation Area from the total tract acreage. Per Table 203-1, the by-right density allowed on the total tract shall be allowed on the adjusted tract acreage along with the density bonus allowance for the Conservation Area. The minimum Conservation Area shall be no less than 40% of the total tract area.

(c) **Size and Location of Site.**

(1) A ~~There is no~~ minimum ~~or maximum~~ size of 20 acres is required for a conservation subdivision. Should a parcel not be large enough to comply ~~provided, however, that the minimum open space requirements may limit the availability of this option for some landowners. Parcels which cannot demonstrate compliance~~ with the minimum open space standards on-site~~,~~ a Conservation Area on an adjoining parcel may be dedicated ~~shall dedicate~~ and maintained provided that it is connected to the ~~maintain an open space system~~ Conservation Area on the parcel being developed. The Conservation Area open space dedication and management requirements in section 35-203(j) also apply to the~~which is connected to an~~ open space on the adjoining property. ~~system on an adjacent site in accordance with the parks and open space standards of this chapter.~~

(2) Platted lots ~~located within subdivisions and planned unit developments (PUDs)~~ shall be located outside of the Conservation Area, which is protected from development. At least 60 percent of the Conservation Area shall be contiguous. For the purposes of this section, contiguous includes any Conservation Area areas bisected by a local street provided that a pedestrian crosswalk provides access to the Conservation Area on both sides of the street and the right-of-way area is not included in the calculation of minimum Conservation Area required. ~~primary and secondary conservation areas, which together constitute the total required open space. Both primary and secondary conservation areas shall be placed in undivided preserves, although the primary and secondary conservation areas are not required to be contiguous.~~

(3) Where feasible, the Conservation Area should adjoin any neighboring areas of Conservation Area, other protected areas and non-protected natural areas.

(d) **Uses and Density.**

(1) Permitted uses shall be governed by the applicable zoning district regulations, ~~and~~ the density provisions of Table 310-1 and the requirements of any applicable Master Development Plan.

(2) The minimum lot size requirements of the zoning district ~~design regulations~~ (section 35-310) shall not apply to a conservation subdivision.

(3) Flag lot restrictions (section 35-515(h)) shall not apply to a conservation subdivision.

(4) Within the city limits, density allowances applicable on the adjusted tract acreage are detailed in Table 203-1.

(5) ~~(3) In order to provide undivided open space in order to provide direct views and access, not less than twenty (20) percent of the lots within a conservation subdivision shall abut a primary or secondary conservation area.~~ Direct pedestrian access to the ~~open space~~ Conservation Area from all lots not adjoining the ~~open space~~ Conservation Area shall be provided through a continuous system of sidewalks and trails. The provisions of this subsection shall not apply to prime farmland or historic, archaeological or cultural features listed on city landmark registries, as they are vulnerable to trampling damage and disturbance.

Table 203-1

	RP	FR	RE / RD	R-20	R-6 / G
Density based on total tract area without allowance	1 dwelling per 10 acres	1 dwelling per 25 acres	1 dwelling per acre	2 dwellings per acre	7 dwellings per acre
Example per 100 acres	10 dwellings per 100 acres	4 dwellings per 100 acres	100 dwellings per 100 acres	200 dwellings per 100 acres	700 dwellings per 100 acres
Density based on total tract area with allowance at 40% or more conserved	.25 dwellings per acre	.5 dwellings per acre	1.4 dwellings per acre	2.8 dwellings per acre	7.5 dwellings per acre
Example per 100 acres	25 dwellings per 100 acres	50 dwellings per 100 acres	140 dwellings per 100 acres	280 dwellings per 100 acres	750 dwellings per 100 acres
Density based on total tract area with allowance at 50% or more conserved	0.5 dwellings per acre	0.75 dwellings per acre	2 dwellings per acre	3 dwellings per acre	8 dwellings per acre
Example per 100 acres	50 dwellings per 100 acres	75 dwellings per 100 acres	200 dwellings per 100 acres	300 dwellings per 100 acres	800 dwellings per 100 acres

(e) **Traffic Impact Analysis.** A conservation subdivision shall comply with the traffic impact analysis standards of this chapter.

(f) **Lot Layout.**

(1) **Alternative Lot Figurations.**

A. A conservation subdivision shall comply with the lot layout standards of this chapter, except as otherwise provided herein.

B. Lots within a conservation subdivision shall not be subject to the minimum frontage or minimum lot width requirements of the dimensional matrix (article III, Table 301-1).

C. The required Conservation Area must be directly accessible to the largest practicable number of dwelling units within the development. Non-adjoining lots must be provided with safe, convenient access to a Conservation Area.

~~C. Lots within one hundred (100) feet of a primary or secondary conservation area shall front on a conservation access street. Lots shall not front on a collector or higher order street.~~

D. No lot can be farther than a ¼-mile radius from the Conservation Area. This radius is measured in a straight line from the residential lot line, without regard for street, sidewalk or trail connections, to the nearest point of a Conservation Area.

E. Access to the Conservation Area must be provided either by an abutting street or easement not less than 20 feet in width.

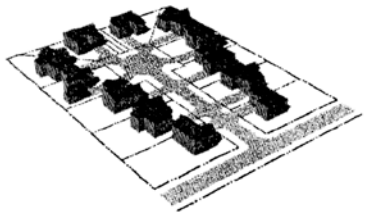
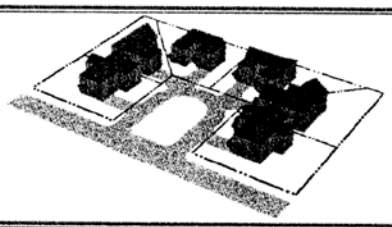
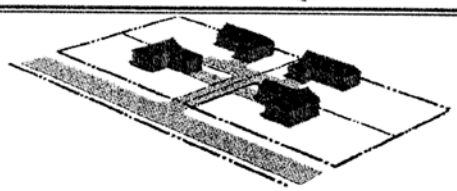
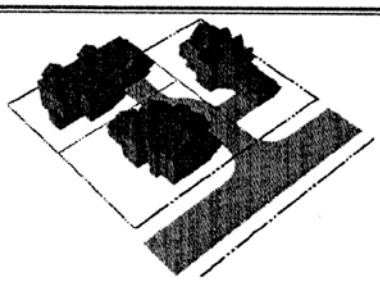
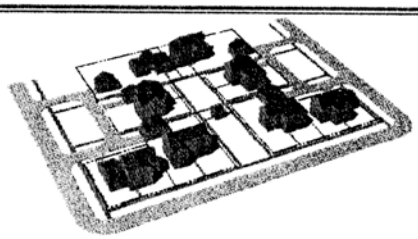
F.~~D.~~ Lots may be arranged in any of the patterns set forth in Table 204-1, as defined in the lot layout standards. In Table 203-2~~1~~, an "asterisk" indicates that the lot configuration described in column (A) is permitted in the applicable zoning district (columns (B) through (C)), while a dash ("—") indicates that the lot configuration is not permitted.

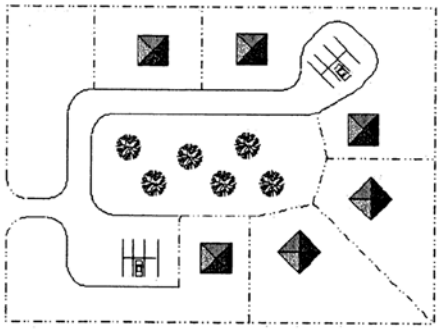
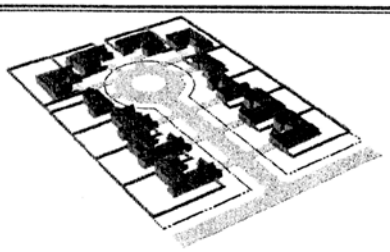
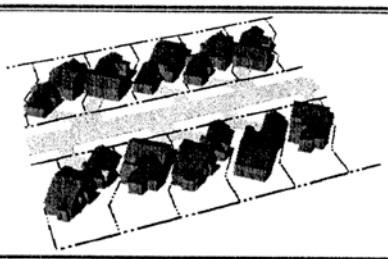
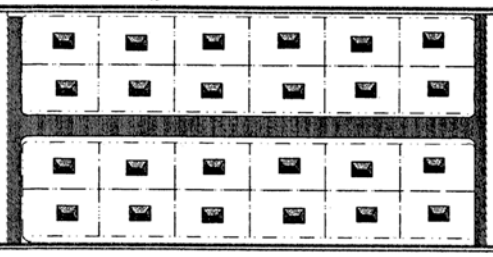
Table 203-2 ~~1~~

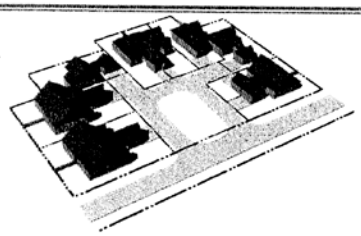
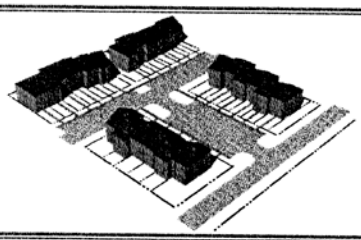
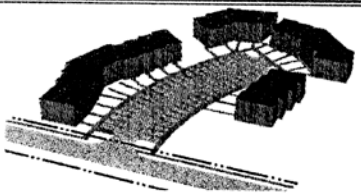
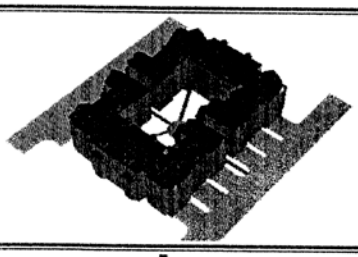
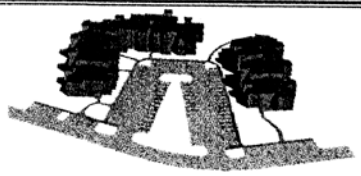
(A)	**(B)**	**(C)**
Lot Configuration	RP, RE,R-20, RD, FR	R-6, G ~~R-6, R-5, RM-6, RM-5, R-4, RM-4~~
Single-Family Detached Homes	*	*
Detached Eyebrow Homes	*	*
Attached Eyebrow Homes	—	*
Detached Patio Homes	*	*
Detached Homes with Shared Driveways	*	*
Detached Homes with Shared Courtyards	*	*
Detached Homes with Commons	*	*
Detached Patio Homes	*	*
Detached "Z" Lot Homes	*	*
Detached Wide-Shallow Lot Homes	*	*
Attached Homes with Private Parking Courts	—	*

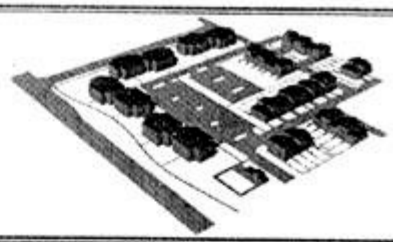
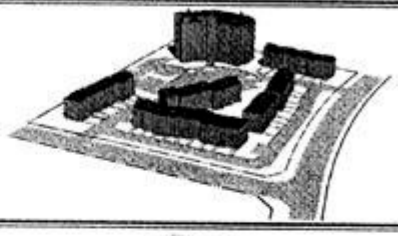
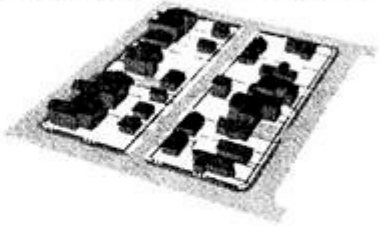
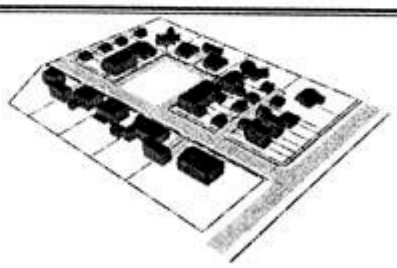
Attached Homes with Automobile Courtyards	—	*
Attached Homes with Park Circle	—	*
Attached Homes with Private Parking Courts	—	*
Stacked Quadrangle Homes	—	*
Stacked and Attached Homes with Parking Courts	—	*
Single-Family Attached and Multi-Family Stacked Homes with Park Square	—	*
Single-Family Attached Homes with Mid-Rise Cluster	—	*
Single-Family Detached and Attached Homes in a Traditional Block	—	*
Traditional Neighborhood Cluster Street	—	*

(2) **Definition and Alternative Development Standards.** The alternative lot configurations described in subsection (1) hereto shall have the meanings assigned below. Permissible deviations from the dimensional standards set forth in section 35-310 of this chapter are set below for some alternative lot configurations:

Single-Family Detached Homes (see Definitions) A One-Family Dwelling that is not attached to any other Dwelling by any means and is surrounded by open space or yards.	
Detached "Eyebrow" Homes This configuration is an alternative to the cul-de-sac scheme in that homes are grouped around a common green area with two access points.	
Detached Homes With Shared Driveways This pattern permits the grouping of not more than four (4) homes on a shared driveway not exceeding fifty (50) feet in length. A Driveway is a private passageway for vehicles which leads directly to a residential garage.	
Detached Homes With Shared Courtyards A Courtyard is an open area adjacent to, or part of, a civic building or facility. Courtyards function as gathering places and may incorporate a variety of non-permanent activities such as vendors and display stands. See parks and open space standards, § 35-503, Table 503-2, of this chapter for standards applicable to Courtyards.	
Detached Homes With Commons This approach to clustering emphasizes open space by orienting the front doors of houses to a formal common area. The common area may include a Greenway, Close, Playground, Green, Park, or Parkway as set forth in the parks and open space standards (see § 35-503, Table 503-2).	

Cottage Homes Cottage homes are small homes built around common, private open space, typically on smaller tracts. Cottage homes must conform to the requirements of § 35-373(d) of this chapter.	
Detached Patio Homes or Garden Homes A Patio Home or Garden Home is a single-family residential structure of one or two (2) stories which is constructed in such a manner that one, but not both, of the side exterior walls is constructed along one of the side property lines of each lot. The side setback shall be waived on one side property line.	
Detached "Z" Lot Homes Detached "Z" lot homes are aligned along the diagonal axis of the lot, either perpendicular to the Street or at an angle (see Illustration). The minimum side setback requirements shall not apply.	
Detached Wide-Shallow Lot Homes A wide-shallow lot has a frontage and lot width which exceeds its depth. The rear setback shall be waived for wide-shallow lot configurations.	

Attached "Eyebrow" Homes An Eyebrow Street includes Dwellings fronting a street which surrounds a Close. * The eyebrow street configuration may be used for duplexes or triplexes. * The Close shall include a landscaped island or a natural area which contains the same planting density as a Type "N" Buffer (see § 35-510 of this chapter)	
Attached Homes With Private Parking Courts This configuration involves townhouse groups with not more that six to eight units in a row.	
Attached Homes With Automobile Courtyard, Attached Homes With Park Circle, and Attached Homes with Private Parking Courts (see Illustration) A variation of the private courtyard scheme, this pattern provides a turnaround circle with a small park or open space area. The common area for the Automobile Courtyard configuration contains parking.	
Stacked Quadrangle Homes Quadrangles are Multi-Family Dwellings with at least two (2) stories and arranged in a continuous, rectangular form with an inner courtyard.	
Angled Stacked and Attached Homes With Parking Courts Angled Stacked and Attached Homes are Multifamily Dwellings with at least two (2) stories in height and aligned with a horizontal curve or "L" configuration. The Dwellings shall contain porches facing a walkway, courtyard with parking, or common Open Space.	

Single-Family Attached and Multifamily Stacked Homes With Park Square This configuration involves a combination of Single-Family Dwellings, Duplexes, Rowhouses, or Multi-family Dwellings facing a Square, Green, or plaza.	
Single-Family Attached Homes With Mid-Rise Cluster This configuration includes a mix of townhouses with not more than one (1) apartment per block. The apartment frontage shall not exceed two-hundred (200) feet.	
Single-Family Detached and Attached Homes in Traditional Neighborhood Block This option includes a mix of single-family detached dwellings and townhouses or rowhouses fronting local streets with a connectivity ratio (see § 35-506(d)) of not less than 2.0. * Access shall be from a rear alley. * While Conservation Subdivisions are not subject to the Connectivity Standards, this form of development may be used as an option. If the application includes a Traditional Neighborhood Block, the applicant shall be subject to the Connectivity Standards.	
Traditional Neighborhood Cluster Street This option includes a mix of single-family detached dwellings and townhouses or rowhouses fronting local streets with a connectivity ratio (see § 35-506(d)) of not less than 2.0. * At least fifty percent (50%) of the blocks shall contain an Eyebrow Street with a Close. ** * While Conservation Subdivisions are not subject to the Connectivity Standards, this form of development may be used as an option. If the application includes a Traditional Neighborhood Cluster Street, the applicant shall be subject to the Connectivity Standards. ** The Close shall include a landscaped island or a natural area which contains the same planting density as a Type "N" Buffer (see § 35-510 of this chapter)	

Graphics (excluding cottages and wide-shallow lots) above by LDR International. See National Association of Home Builders, *Site Planning & Community Design for Great Neighborhoods* (1993). Graphics for cottages and wide-shallow lots by Freilich, Leitner & Carlisle.

(g) **Transportation.**

(1) A conservation subdivision shall comply with the transportation standards of this chapter, unless otherwise provided, and the provisions of this subsection. The design of local streets shall comply with the access to subdivision street standards ~~for conservation access streets~~, as set forth in subsection 35-506(d), Table 506-3. The connectivity index for internal streets (subsection 35-506 (e)) shall not apply to local streets within a conservation subdivision.

(2) The conservation subdivision shall include a pedestrian circulation system designed to assure that pedestrians can walk safely and easily on the site, between properties and activities or special features within the neighborhood Conservation Area system, by complying with the standards set forth herein. All sidewalks shall connect with other sidewalks or with trails, which in turn shall connect to potential areas qualifying as ~~primary or secondary~~ Conservation Area on adjoining undeveloped parcels or with existing open space on adjoining developed parcels, where applicable.

(3) Streets shall not cross wetlands or existing slopes ~~exceeding~~ equal to or greater than ~~fifteen~~ twenty (~~15~~20) percent. Precautions should be taken on existing slopes fifteen (15) to twenty (20) percent to avoid erosion during construction and after construction is completed.

(h) **Stormwater Management.** A conservation subdivision shall comply with the stormwater management standards, section 35-504 of this chapter.

(i) **Utilities.**

(1) A conservation subdivision shall comply with the utilities standards, section 35-507 of this chapter, except as provided in subsection (2), below.

(2) Where permitted by TCEQ ~~Bexar County~~, a conservation subdivision may use a cluster system, as defined in 30 TAC § 331 ~~285.2~~ (which is hereby incorporated by this reference), to dispose of on-site wastewater. The cluster system shall comply with the requirements of 30 TAC § 331 ~~285.6~~, which is hereby incorporated by this reference. The drainfield or absorption area for the cluster system may be located in a Conservation Area ~~primary conservation area or secondary conservation area~~, so long as the location is permitted by the Texas Commission on Environmental Quality "TCEQ" (30 TAC chapter 331~~285~~), the city department of health (chapter 34, article V, division 2 of the city code) within the incorporated areas of the city, ~~or the applicable Bexar County septic regulations in the extraterritorial jurisdiction,~~ and complies with the following to the extent permitted by state law and the applicable city or county regulations:

A. The absorption field is an underground drainage field or area ~~an absorption field~~ for spray application ~~irrigation~~ purposes for a ~~land treatment~~ disposal system; or

B. The absorption field is a mound system (as defined in 30 TAC § 285.2) which is limited to not more than ten (10) percent of the ~~required minimum open space~~ Conservation Area.

(j) **Conservation Area**.

(1) Preservation of Conservation Area. ~~(j) **Parks and Open Space.**~~ The minimum percentage of land that shall be designated as permanent Conservation Area, not to be further subdivided, and protected in perpetuity through at least one of the following legally binding instruments: ~~through a conservation easement held by the city or by a land trust or conservancy,~~ shall be as specified herein. ~~Open space shall be comprised of two (2) types of land: "primary conservation areas" and "secondary conservation areas." All lands within both primary and secondary conservation areas are required to be protected by a permanent conservation easement, prohibiting further development, and setting other standards safeguarding the site's special resources from negative changes.~~

A. Fee simple dedication through a deed in perpetuity to a state, county, municipality, or local public agency for the purposes of resource conservation and protection. No dedication of Conservation Area to the city or county shall be effective, unless the city determines, it is sole discretion that ownership of the Conservation Area is in the city's best interest, in which case acceptance of such dedication must be made in accordance with such legal documents, conditions, and procedures as approved by the city.

B. Held in common ownership as undivided proportionate interests by the members of a mandatory homeowners or condominium association. Each member shall share equitably the costs of maintaining, insuring and operating conservation land, and shall be responsible for the implementation of the land management plan. If a mandatory homeowners or condominium association will own the Conservation Area, the following provisions, at a minimum shall be included in the bylaws or covenants:

(i) lien right for maintenance expenses and tax obligations;

(ii) responsibility for the insurance and taxes on the Conservation Area;

(iii) automatic compulsory membership in the association of all lot purchasers and their successors;

(iv) a fair and uniform method of assessment and collection/payment for dues, maintenance, and related costs;

(v) conditions and timing of transferring control of the association from the developer to the lot owners;

(vi) equal access and right of use to all Conservation Area for all property owners;

(vii) perpetual and continued maintenance liability for the Conservation Area;

(viii) filing of all required covenants, declarations and restrictions with the county clerk;

(ix) provision for transfer of ownership to a qualified conservation organization in case of the property owners' association dissolving;

(x) notice of the city's third party right to enforce its ordinance within the Conservation Area.

C. A permanent conservation easement in favor of either:

(i) a land trust or similar conservation-oriented non-profit organization with legal authority to accept such easements in accordance with the State of Texas Natural Resources Code Section 183 - Conservation Easements. The organization shall be bona fide and in perpetual existence and the conveyance instruments shall contain an appropriate provision for retransfer in the event the organization becomes unable to carry out its functions; or

(ii) a governmental entity with an interest in pursuing goals compatible with the purposes of this ordinance. If the entity accepting the easement is not the city, then a third right of enforcement favoring the city shall be included in the easement; or

D. A permanent restrictive covenant for conservation purposes in favor of a governmental entity.

The Conservation Area shall be delineated on the plat as "Conservation Area" along with a plat note: "in accordance with Section 35-203 - Conservation Subdivision." The instrument for permanent protection shall include clear restrictions on the use of the Conservation Area. These restrictions shall include all restrictions contained in this section, as well as any further restrictions the Applicant chooses to place on the use of the Conservation Area. The restrictions shall be reviewed for consistency with city policy and best management practices for natural and cultural resource protection, and administratively approved by the city attorney. The instrument shall be recorded at the county and the volume and page number shall be noted on the subdivision plat.

(2) Ownership and Management of Conservation Area.

A. Ownership of Conservation Area. The applicant must identify the owner of the Conservation Area who is responsible for maintaining the Conservation Area and facilities located thereon. If a homeowners or condominium association is the owner, membership in the association shall be mandatory and automatic for all owners of the subdivision and their successors. If an association is the owner, it shall have lien authority to ensure the collection of dues from all members. The responsibility for maintaining the Conservation Area and any facilities located thereon shall be borne by the owner.

B. Management Plan. Applicant shall submit a plan for management of Conservation Area that:

(i) allocates responsibility and guidelines for the maintenance and operation of the areas and any facilities located thereon, including provisions for ongoing maintenance and for long-term capital improvements;

(ii) estimates the costs and staffing requirements needed for maintenance and operation of, and insurance for, the Conservation Area and outlines the means by which such funding will be obtained or provided;

(iii) provides that any changes to the plan be approved by the Director; and,

(iv) provides for enforcement of the plan. The owner will assure all costs of enforcing the plan. In the case of an association, the bylaws shall enable the association to place liens on the property for non-payment of assessments.

C. Management Plan Guidelines. The plan shall be developed with the advice and assistance of qualified environmental professionals, such as ecologists, biologists, geologists, archeologists, and historic preservation experts to provide for the long-term management of the Conservation Area. The plan shall identify goals and objectives for planned land management activities for the areas. The plan shall provide the following minimum requirements, in addition to those cited in 35-203(j)(2)B:

(i) Agricultural land. For all land within the Conservation Area to be maintained in agricultural use, the plan shall describe activities or practices that will be implemented which are consistent with United States Department of Agriculture National Conservation Practice Standards (Texas). The Plan shall address the current agricultural use and make provision for maintaining or enhancing future agricultural use.

(ii) Significant wildlife habitat areas. For all land within the Conservation Area considered significant wildlife habitat the plan shall describe activities or practices that address at least three of the following: habitat control, erosion control, predator control, providing supplemental supplies of water, providing supplemental supplies of food, providing shelter, making wildlife census counts for non-threatened or endangered species habitat (Guidelines for Qualification of Agricultural Land in Wildlife Management Use, Texas Comptroller of Public Accounts Publication No. 96-354) or as prescribed by a Texas Parks and Wildlife biologist for all endangered or threatened species habitat.

(iii) Wetlands, watershed, and aquifer recharge features. The plan shall identify the federal, state and locally regulated water resources and describe how permitting approaches, activities, or management practices will ensure compliance with regulations.

(iv) Historic, archeological or cultural features. The plan shall provide activities or practices which are consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Preservation, Rehabilitation, Restoration, Reconstruction) and the Texas Antiquities Code for sustaining federal, state and locally significant archeological sites and historic structures or properties and shall be coordinated with the Texas Historical Commission or any local county or city historical commissions or boards.

(v) Scenic views. The plan shall identify scenic viewing locations/areas and their associated views and propose guidelines to assure they do not become obstructed by development. The plan shall also describe management practices to maintain the scenic views including tree pruning and vegetation clearing.

(vi) Woodlands. The plan must identify resources to be conserved and a description of management activities based on the ecology of the woodlands, including but not limited to pruning, thinning, debris removal, pest and disease control, invasive species removal, and diversity of tree species (Reference: Forest Stewardship Council - U.S. Forest Standard v. 1.0).

(vii) Slopes. The plan must include a description of management activities based on the ecology of the steep slopes. All methods of erosion control may be considered, including seeding, mulching, revegetation or reforestation, erosion control blankets or wattles, or drainage dispersion using swales and dikes. Moderate slopes of fifteen (15) to twenty (20) percent should also be identified as sensitive development areas and precautions taken to avoid erosion during construction and after the development is completed.

(viii) Golf courses. Per 35-203(j)((3)(L), golf course fairways and greens are not considered passive recreation, however, areas within a golf course which are not fairways, greens or other actively managed areas of the golf course and meet the requirements for Conservation Areas outlined at section 35-203(j)(3) may be considered Conservation Area. However, if a golf course is planned for the subdivision, a Management Plan must identify management activities which will ensure that 50 percent of all irrigation water is recycled or municipal reclaimed water. In addition, the plan must describe management practices to promote environmentally responsible operation and maintenance of the golf course consistent with the US Golf Association guidance (Audubon International Environmental Management Practices for Golf Courses).

(ix) Stormwater management practices. The plan must address the activities necessary to properly operate and maintain all stormwater management practices utilized onsite, within the Conservation Areas or elsewhere. Requirements for these activities can be found at 35-210.

(x) Management area access roads. If any of the activities described in 35-203(j)(2)(C) require vehicular access, the Management Plan shall describe how unpaved access roads will be developed and maintained to minimize impacts.

D. Failure to Maintain. In the event the party responsible for maintenance of the Conservation Area fails to maintain all or any portion in reasonable order and condition, the city may enter the premises and take corrective action. The costs of such action shall be charged to the owner, Homeowner's Association, or to the individual property owners that make up the Homeowner's Association, and may include administrative costs and penalties. Such costs shall become a lien on all subdivision properties. The parks and open space standards relating to maintenance, subsection 35-503 (35-503(e), shall apply to a conservation subdivision. No other requirements of the parks and open space standards shall apply to a conservation subdivision.

(3) (1) Primary Conservation Area. A minimum of forty (40) thirty five (35) percent of the total tract area shall be designated as Conservation Area. The following areas qualify as Conservation Area, provided that the Stream Network Buffering described in (3) E.i. – iii. does not exceed fifty (50) percent of the Conservation Area: primary conservation areas. The following areas shall be designated as primary conservation areas

A. Wetlands;

B. Woodlands;

B. Woodlands as well as trees identified as necessary for preservation in the section 35-523.

C. Sensitive aquifer recharge features;

D. High infiltration or highly erodible soils as defined in section 35-210 (j)(1).

E. Stream Network Buffering:

D. (i) All of the floodway and flood fringe within the 100-year floodplain, as shown on official FEMA maps;

E. (ii) All areas within one hundred (100) feet of the edge of the 100-year floodplain as delineated on the official FEMA maps and any letter of map revision;

(iii) All areas designated as floodplain preservation areas or floodplain buffer zones at Sec. 34-912 or 34-913.

(iv) A buffer width a minimum average width measured from the top of bank of the stream and determined based on the slope of the streamside area in accordance with the table found in section 34-913 of this code for all perennial streams or intermittent streams with a drainage area of greater than 100 acres. In all cases, a twenty-five (25) feet wide streamside zone must be preserved. To reduce fragmentation, no more than 10 percent of the buffer can be less than thirty-three (33) feet wide;

(v) A buffer with minimum average width of fifty (50) feet from the top of bank of any perennial, intermittent streams with a drainage area of less than 100 acres or ephemeral streams draining more than 40 acres. In all cases, a twenty-five (25) feet wide streamside zone must be preserved and to reduce fragmentation, no more than 10 percent of the buffer can be less than thirty-three (33) feet wide;

(vi) All areas within twenty five (25) feet of the top of bank of any ephemeral stream draining less than 40 acres; or

~~F. All areas within one hundred (100) feet of the banks of any stream shown as a blue line on the USGS 1:24,000 (7.5 minute) scale topographic maps for Bexar County;~~

F.~~G.~~ ~~Steep s~~Slopes ~~(i.e., slopes~~ exceeding fifteen (15) ~~twenty five (25)~~ percent~~).~~ Fifty percent of the area conserved due to moderate slopes (15 – 20 percent) will count as Conservation Area.

G.~~I~~ Significant wildlife habitat areas that propagate a sustaining breeding, migrating or wintering population of indigenous wild animals, or state or federal threatened, protected and endangered plant or animal species.

~~H. Soils subject to slumping, as indicated on the medium intensity maps contained in the county soil survey published by the USDA Natural Resources Conservation Service; and~~

H.~~J.~~ Historic, archaeological or cultural features listed (or eligible to be listed) on national, state, or city registers or inventories.

I. Agricultural land, including farmland or ranchland that is currently and principally devoted to agricultural use to the degree of intensity typical for the area and has been used for agriculture for at least five of the preceding seven years;

J. Scenic views into the property from existing public roads, key access points, public amenities, and historic, archaeological or cultural features described in (3)(G).

K. Stormwater management features, including LID BMPs, stormwater ponds, and basins and the areas which drain to LID features, excluding impervious surfaces.

L. Up to five (5) percent of a Conservation Area or 5 acres (whichever is less) may be comprised of open air active recreation activities to include but not be limited to sports playing fields, tennis courts, swimming pools, fishing and boating piers, archery ranges, basketball courts, volley ball courts, picnic tables, barbeque grills, unpaved trails, exercise stations, kiosks or pavilions, and provided that such activities do not disturb historic, archaeological or cultural features listed (or eligible to be listed) on national, state, or city registers or inventories. Golf course greens and fairways are not approved alternative uses of Conservation Areas. The sites for these activities shall be designed in accordance with Table 503-4.

The Conservation Area ~~These sensitive lands~~ shall be deducted from the total parcel acreage to produce the "adjusted tract acreage". Per Table 203-1, the by-right density allowed on the total tract shall be allowed on the adjusted tract acreage along with the density bonus allowance for the Conservation Area. ~~on which density shall be based.~~ If the tract does not include sufficient areas to reach the minimum set-aside requirement established herein, additional areas not listed above shall be deducted from the total parcel acreage in order to meet the 40 percent preservation requirement, unless Conservation Area is dedicated on an adjoining parcel~~, all of the areas not qualifying as primary conservation areas shall be designated as "adjusted tract acreage."~~

(4) Alternative Uses of Conservation Areas.

A.~~(2)Secondary Conservation Areas. In addition to the primary conservation areas, at least fifteen (15) percent of the total tract area shall be designated and permanently protected as secondary conservation areas. Although the secondary conservation areas may comprise more than fifteen (15) percent of the remaining land on a development parcel (after primary conservation areas have been deducted), no applicant shall be required to designate more than fifty (50) percent of the remaining land as within a primary or secondary conservation area. Secondary conservation areas typically consist of upland forest, meadows, pastures, and farm fields, which are part of the~~

~~ecologically connected matrix of natural areas significant for wildlife habitat, water quality protection, and other reasons. Full density credit shall be allowed for land in this category so that their development potential is not reduced by this designation. Such density credit may be applied to other unconstrained parts of the site.~~

~~Secondary conservation areas may include all or part of the following kinds of resources:~~

~~A. Areas with highly permeable ("excessively drained") soil;~~

~~B. Significant wildlife habitat areas not designated as a primary conservation area;~~

~~C. Prime farmland;~~

~~D. Historic, archaeological or cultural features listed (or eligible to be listed) on national, state or city registers or inventories not designated as a primary conservation area; or~~

~~E. Scenic views into the property from existing public roads.~~

~~(3) Alternative Uses of Open Space.~~

~~A. The required open space may be used, without restriction, for underground drainage fields for individual or community septic systems, and for "spray fields" for spray irrigation purposes in a "land treatment" sewage disposal system. However, "mound" systems protruding above grade and aerated sewage treatment ponds shall be limited to no more than ten (10) percent of the required minimum open space.~~

~~B. Stormwater management ponds or basins may be included as part of the minimum required open space, as may~~ Land within the rights-of-way of below and above-ground utilities or ~~for underground pipelines. However, land within the rights-of-way~~ high-tension power lines may be located in the Conservation Area, but shall not be counted toward ~~included as comprising part of~~ the minimum required Conservation Area ~~open space.~~

(5) Prohibited Uses in Conservation Area.

A. Paved roads, parking lots and impervious surfaces, except as specifically authorized in 35-203(j)(4) above;

B. Exploration or extraction of minerals and hydrocarbons by any surface mining method or other method that may substantially impair or interfere with the values of the Conservation Area.

C. Other activities as determined by the Applicant and recorded on the legal instrument providing for permanent protection.

(6) ~~(4)~~ Connectivity. Conservation Areas, to the greatest extent feasible, ~~Passive open space~~ shall abut existing open space land or Conservation Areas established on adjacent parcels, including ~~passive~~ open space located in other subdivisions, public parks, or properties owned by or leased ~~eased~~ to private land conservation organizations.

(7) Required Parkland. The provisions of Section 35-503(b) shall not apply to conservation subdivisions.

(k) **Natural Resource Protection.** A conservation subdivision shall comply with the natural resource protection standards of this chapter. In addition, the conservation subdivision shall comply with the following standards:

(1) No ~~primary~~ Conservation Area shall be cleared, graded, filled, or subject to construction provided, however, that rights-of-way for trails (see transportation standards); any streets needed to provide access to the proposed subdivision; and water, sewer, electric, or cable lines may be cleared, or other activities specifically authorized in J(4) above. The width of rights-of-way for streets or trails shall be restricted to the minimum as designated in the transportation standards (subsection 35-506 (d)).

(2) No building footprint ~~lot~~ may be planned ~~platted within woodlands located~~ on highly erodible soils with slopes exceeding twenty (20) ~~ten (10)~~ percent.

(l) **Buffers,** Screening, **Landscaping,** and **Streetscape Planting** ~~and Tree Preservation~~**.** A conservation subdivision ~~within the incorporated areas of the city~~ shall comply with the landscaping, screening ~~and~~ buffering, and streetscape planting standards of this chapter, with the following exceptions:

(1) Local streets, lanes, alleys, and trails within a residential conservation subdivision shall be exempt from streetscape planting standards.

(2) Conservation Area shall not require irrigation; however, if irrigation is used, the system must comply with the irrigation standards of this chapter.

(m) **Parking.** In order to encourage design flexibility, to preserve open space, and to minimize impervious surfaces, a conservation subdivision shall not be subject to the minimum parking requirements of the parking standards (subsection 35-526(b)) of this chapter. A conservation subdivision shall be subject to the maximum parking requirements of the parking standards of this chapter.

(n) **Outdoor storage.** A conservation subdivision shall comply with the outdoor storage standards of this chapter.

(o) Application Requirements.

(1) Site Analysis Map Required. Concurrent with the submission of a master development plan or subdivision plat, an applicant shall prepare and submit a site analysis map. The purpose of the site analysis map is to ensure that the important baseline site features have been adequately identified prior to the creation of the site design, and that the proposed Conservation Area will meet the requirements of this article. The site analysis map shall include the following features:

A. Property boundaries;

B. All streams, rivers, lakes, wetlands and other hydrologic features;

C. Topographic contours of no less than 10-foot intervals in compliance with Sec. 35-B101 Table B101-1;

D. The planned location of protected Conservation Area.

E. Conservation Area labeled by criteria type identified with the advice and assistance of qualified environmental professionals, such as ecologists, biologists, geologists, archeologists, and historic preservation experts;

F. General vegetation characteristics;

G. General soil types;

H. Existing roads and structures; and,

I. Potential connections with existing greenspace and trails.

(2) Conservation Area Management Plan Required. A Conservation Area management plan shall be prepared and submitted prior to the issuance of a site clearance permit.

(3) Instrument of Permanent Protection Required. A copy of the recorded instrument of permanent protection, such as a conservation easement or permanent restrictive covenant, shall be placed on the Conservation Area prior to the issuance of a site clearance permit.

35-201. - Generally

Table 201-1: Use Patterns and Applicable Provisions of UDC

UDC Provision	Conventional Subdivision	Conservation Subdivision	Commercial Center	Office/Institutional Campus	Commercial Retrofit	Traditional Neighborhood Development	Transit-Oriented Development	Low Impact Development/Natural Channel Design Protocol
	35-202	35-203	35-204	35-205	35-206	35-207	35-208	35-209
Use Regulations (§ 35-311) [incorporated areas only]	Y	Y	P	P	N	N	Y	Y
Zoning District Design Regulations (§ 35-310) [incorporated areas only]	Y	P	N	N	N	N	N	P
Traffic Impact Analysis (§ 35-502	Y	Y	Y	Y	N	N	P	Y
Parks and Open Space Standards (§ 35-503	Y	P	N	P	N	P	N	P
Storm water Management (§ 35-504	Y	Y	Y	Y	P	Y	Y	Y
Transportation and Street Design (§ 35-506) - Generally	Y	Y	Y	Y	Y	Y	Y	P
Cross section and	Y	P	Y	Y	N	P	P	P

Construction Standards (§ 35-506(d))								
Connectivity (§ 35-506(e))	Y	N	Y	Y	Y	Y	Y	Y
Utilities (§ 35-507	Y	P	Y	Y	Y	Y	Y	Y
Impact Fees (§ 35-508	Y	Y	Y	Y	Y	Y	Y	P
Buffers (§ 35-510	Y	Y	Y	Y	N	P	N	P
Landscaping (§ 35-511	Y	Y	Y	Y	N	Y	Y	P
Streetscape Planting Standards (§ 35-512	Y	Y	Y	Y	Y	Y	P	P
Tree Preservation (§§ 35-513, 35-523	Y	N	Y	Y	N	Y	Y	P
Fences and Walls (§ 35-514	Y	Y	Y	Y	Y	N	N	Y
Lot Layout Regulations (§ 35-515	Y	P	P	Y	P	P	P	P
Setback and Frontage Regulations (§ 35-516	Y	P	P	Y	P	P	P	P
Building Height Regulations (§ 35-517	Y	Y	Y	Y	Y	Y	Y	P

Edwards Aquifer Recharge Protection (§ 35-521	Y	Y	Y	Y	Y	Y	Y	Y
Floodplain Development Standards (§ 35-504	Y	Y	Y	Y	Y	Y	Y	Y
Outdoor Storage Standards (§ 35-525	Y	Y	Y	Y	Y	Y	Y	P
Minimum Parking Standards (§ 35-526(b))	Y	N	Y	Y	N	N	P	P
Off-Street Truck Loading Requirements (§ 35-527	Y	Y	Y	Y	Y	Y	Y	Y

Notes to Table 201-1: "Y" means that the provision applies to the use pattern; "N" means that the provision does not apply to the use pattern; "P" means that the provision applies in part or applies differently to the use pattern. If an "N" is indicated alternative standards may be provided by this article.

Table 201-1 is provided for the convenience of the reader; if any provision of Table 201-1 conflicts with a provision of sections 35-202 to 35-208applicable to a use pattern, the latter provisions shall govern.

* * * * *

Sec. 35-504 Storm Water Management
* * * * *

(b) Storm Water Management Program

(1) Regional Storm Water Management Program (RSWMP)

A. The City of San Antonio has determined that regional storm water management is preferable to site specific storm water mitigation in mitigating

drainage and flooding impacts from large storm events (i.e. the 5-year, 10-year, 25-year and greater storm events). The regional storm water management program provides for the administration, planning, design, construction, and operational management of regional storm water facilities (RSWF) to address such drainage and flooding impacts. Regional storm water management uses a watershed-wide approach to analyze potential flooding problems, identify appropriate mitigation measures and select site locations and design criteria for RSWF. These RSWF include, but are not limited to, regional detention and retention ponds, watershed protection, land purchase, waterway protection ~~enlargement, channelization~~, and improved conveyance structures. The regional storm water management program allows developers to participate in the program rather than constructing the on-site detention controls required by this section, where the resulting use of a RSWF will not produce a significant adverse impact to other properties due to the increased runoff from the proposed development. The RSWMP used conjunctively with the LID/NCDP use pattern, section 35-210, can best address multiple impacts from the full range of storm events.

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(f) **Stormwater Detention and Other Stormwater Management Facilities.** For projects with an increased impervious area of greater than 0.1 acres that elect not to participate or are not eligible to participate in the regional stormwater management program as described in subsection 35-504(b)(1), then stormwater detention shall be required for all new developments or redevelopment of individual parcels of property to mitigate peak flow rates to predevelopment or existing development conditions as stated in subsections (b)(6) and (b)(7) of this section.

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(2) **On-Site Detention and Water Quality (including Low Impact Development Features).**

(i) Approximately 95 percent [The majority] of rainfall in San Antonio occurs in storm events less than the 5-year storm event. These storms have the greatest impact on water quality and channel erosion. The City of San Antonio has determined that the most effective way to address water quality and channel erosion impacts from storm water runoff in these smaller storms is through on-site Low Impact Development/Natural Channel Design Protocol (LID/NCDP) storm water management approaches found in section 35-210. The LID/NCDP use pattern, used conjunctively with the RSWMP can best address multiple impacts from the full range of storm events.

(ii) On-site storm water management features must be privately owned and shall be maintained by the community association or property owner. A maintenance schedule shall be submitted to the public works department and approved by the director of public works prior to approval of construction plans. The City of San Antonio will have the right to do periodic inspections of privately owned and maintained detention facilities to ensure that the maintenance schedule is being implemented.

(iii) Where a detention facility accepts flows from public facilities such as city rights-of-way the detention facility will be considered a detention facility serving a public purpose and will be dedicated to the city upon completion and a drainage easement will be dedicated to provide for access to the facility. When a regional detention facility accepts flow from an area exceeding three hundred (300) acres, the facility shall be considered serving a public purpose and shall be dedicated to the city

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Table 506-4 footnotes

Table 506-4 applies only to the following development options: Commercial Center (section 35-204); Commercial Retrofit (section 35-206), Traditional Neighborhood development (section 35-207), ~~and~~ Transit –oriented development; and Low Impact Development/Natural Channel Design Protocol (section 35-210).

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Section 35-523 - Tree Preservation

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(i) Tree Preservation Incentives. An individual may apply for, and subject to verification, shall receive incentives for tree preservation as follows:

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(13) Use of Landscaped Low Impact Development (LID) Practices. A canopy cover credit of one and one-half (1.5) times the existing canopy cover of trees shall be provided for areas where tree preservation is maintained in conjunction with LID practices such as the use of structured soils including infiltration trenches, bioswales, micro-bioretention areas and where such locations receive appropriate amounts of storm water runoff. To receive 1.5 times credit, the landscaped LID must be approved by application of section 35-210 and 35-504 standards. Such LID areas may also be used to comply with the buffer and/or landscape requirements of section 35-510 and section 35-511.

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35A-101. – Definitions and Rules of Interpretation.

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(b) **Definitions.** Words with specific defined meanings are as follows:

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Riparian Buffer. Vegetated areas, including buffer strips, adjacent to the stream bank that help to shade and partially protect a stream, creek or tributary from the impact of adjacent land uses. Riparian buffers act as a biofilters by reducing pollutant runoff, erosion, and sedimentation.

Effective Impervious Area. Impervious area in catchment that is directly connected to stream channels (i.e., precipitation falling on that area is effectively transported to the stream) (U.S. EPA)

Ephemeral stream. A stream or drain that flows only during and for short periods following precipitation and flows in low areas that has a well-defined channel.

Intermittent stream. A stream that flows only during wet periods of the year or thirty to ninety percent of the time, and flows in a continuous, well-defined channel.

Low impact development. A stormwater management and land development strategy that emphasizes
conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic
controls to more closely reflect pre-development hydrologic functions.

Natural channel design protocol. Restorative practices for natural channels, earthen engineered channels, and corrective actions for existing engineered channels designed to create stable stream conditions; improve or restore connections between streams and their floodplains; improve habitat; improve water quality; and provide storage within the floodplain to retain and attenuate flood flows.

Perennial stream. A stream that flows throughout a majority of the year or greater than ninety percent of the time, and flows in a well-defined channel.

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