

TABLE 311-2 NONRESIDENTIAL USE MATRIX														
	PERMITTED USE	O-1 & O-1.5	O-2*	NC	C-1	C-2	C-3	D	L	I-1	I-2	ERZD	(LBCS Function)	
Recreation	Archery Range – Outdoor Permitted								S	P	<u>P</u>	P	5300	
Recreation	Archery Range – Indoor Only					P	P	P	P	<u>P</u>	<u>P</u>	P	5300	
Recreation	Athletic Fields, Indoor Only – Noncommercial	S	S <u>P</u>	S <u>P</u>	P	P	P	SP <u>P</u>	P	<u>P</u>		P	5370	
Recreation	Athletic Fields, Outdoor Permitted – Commercial	S	S <u>P</u>	<u>S</u>	<u>S</u>	S	P	SP <u>P</u>	P	<u>P</u>			5370	
Recreation	Fitness Center/Health Club, Gymnasium, Natatorium, Sport Court – Indoor Only		S <u>P</u>	P	P	P	P	P	P	P		P	5370	
Recreation	Fitness Center/Health Club, Gymnasium, Natatorium, Sport Court – Outdoor Uses Permitted		<u>P</u>	<u>S</u>	<u>S</u>	<u>S</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>		<u>P</u>	5370	
Recreation	Gymnasium – Commercial					S	P	P	P	P		P		
Recreation	Gymnasium – Noncommercial				P	P	P	P	P	P	P	P		
Recreation	Park – Public or Private	P	P	P	P	P	P	P	SP <u>P</u>	SP <u>P</u>	SP <u>P</u>	P	5500	
Recreation	Recreational Facility – Community Wide					P	P	P				P		
Recreation	Recreational Facility – Neighborhood (see Definition in Appendix A)			P	P	P	P					P	5370	
Recreation	Rifle and Pistol Gun Range – Indoor Only						S	S	S <u>P</u>	S <u>P</u>	P	S <u>P</u>	5300	
Recreation	Rifle and Pistol Gun Range – Outdoor Permitted								<u>S</u>	<u>S</u>	S	S	5300	
Recreation	Tennis, Racquetball, Handball, Volleyball Or Basketball (Outside Courts Permitted)		P		S	S	P	P	P			P		
Recreation	Tennis, Racquetball, Handball, Volleyball Or Basketball (Outside Courts Not Permitted)		P		S	P	P	P	P			P	5370	

TABLE 311-2a NONRESIDENTIAL USE MATRIX

	PERMITTED USE	Urban		Rural		Farm			Mixed Industrial				
		UD Major Node	UD Minor Node	RD Major Node	RD Minor Node	FR Ag Commercial	VILLAGE CENTER FR/FR Minor Node	MI - 1	MI-1 Minor Node	VILLAGE CENTER - MI	MI - 2	MI-2 Minor Node	VILLAGE CENTER - M2
Recreation	Archery Range – Outdoor <u>Permitted</u>					P	P	P			<u>P</u>		
Recreation	Archery Range – Indoor <u>Only</u>	P		P		<u>P</u>	<u>P</u>	P	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>
Recreation	Athletic Fields – Noncommercial	P	S	P	S	P	P	P	S			S	
Recreation	Athletic Fields – Commercial	P	S	P	S			P	S			S	
Recreation	Fitness Center/Health Club, <u>Gymnasium, Natatorium, Sport Court – Indoor Only</u>	P	P	P	P		P		P	P		P	P
Recreation	Gymnasium – Commercial	P		P				P					
<u>Recreation</u>	<u>Fitness Center/Health Club, Gymnasium, Natatorium, Sport Court – Outdoor Uses Permitted</u>	<u>P</u>	<u>S</u>	<u>P</u>	<u>S</u>		<u>P</u>		<u>P</u>	<u>S</u>		<u>P</u>	<u>S</u>
Recreation	Gymnasium	P		P				P					
Recreation	Park – Public <u>or Private</u>	P	P	P	P	P	P	S <u>P</u>	P	P	S <u>P</u>	P	P
Recreation	Recreational Facility – Private Community Wide	P		P									
Recreation	Recreational Facility – Private Neighborhood	P	P	P	P								
Recreation	Recreational Facility – Public Community Wide	P		P									
Recreation	Recreational Facility – Public Neighborhood	P	P	P	P								
<u>Recreation</u>	<u>Recreational Facility – Neighborhood (see Definition in Appendix A)</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>						
Recreation	Rifle and Pistol Gun Range – Indoor <u>Only</u>					P	P	P			P		
Recreation	Rifle and Pistol Gun Range – Outdoor Permitted					S		S			S		
Recreation	Tennis, Racquetball Or Handball, Noncommercial (Outside Courts Permitted)	P	S	P	S	P	P	P	S			S	
Recreation	Tennis, Racquetball Or Handball, Commercial (Outside Courts Not Permitted)	P	S	P	S			P	S			S	
Recreation	Tennis, Racquetball Or Handball, Commercial (Outside Courts	S	S	S	S			P	S			S	

	Permitted)														
Recreation	Tennis, Racquetball Or Handball, Noncommercial (Outside Courts Not Permitted)	P	S	P	S					P	S				S

* * * * *

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

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

* * * * *

Athletic field. ~~Within the context of section 35-523 athletic field means an on-site~~ A sports playing field used primarily for organized sports, such as baseball, football, or soccer, for public or private schools, parks, or youth or other amateur athletic associations or for use as a sports playing field off site for a public or private school in association with youth sports. Athletic field shall not include such uses as sport courts or professional sports stadiums.

Gymnasium. A place, hall, building for gymnastics. A gymnasium may include trampoline equipment, or a fully enclosed trampoline park.

Natorium. A place, hall, building in which a swimming pool as a primary use is located.

Gun Range. Any land or structure where there are facilities of any sort for the firing of handguns, rifles, or other firearms.

Stadium. A commercial structure with tiers of seats rising around a field or court, intended to be used primarily for the viewing of athletic events. Sports arena may also be used for entertainment and other public gathering purposes, such as conventions, circuses, or concerts.

* * * * *

TABLE 311-1 RESIDENTIAL USE MATRIX																				
PERMITTED USE	RP	RE	R-20	NP-15	NP-10	NP-8	R-6	RM-6	R-5	RM-5	R-4	RM-4	MF-18	MF-25	MF-33	MF-40	MF-50 & MF-65	ERZD	LBCS FUNCTION	LCBS STRUCTURE
Dwelling (loft and/or ARH)													P	P	P	P	P	P		
Dwelling – Multi-Family (40 Units/Acre Maximum)																P	P	P S	1000	
Dwelling – Multi-Family (50 Units/Acre Maximum)																	P	P S	1000	

* * * * *

TABLE 311-2 NONRESIDENTIAL USE MATRIX

	PERMITTED USE	O-1 & O-1.5	O-2	NC	C-1	C-2	C-3	D	L	I-1	I-2	ERZD	(LBCS Function)
Alcohol	Alcohol – Nightclub Without Cover Charge 3 or More Days Per Week						P	P	P			<u>P</u>	2540
Alcohol	Alcohol – Nightclub With Cover Charge 3 or More Days Per Week						S	P				<u>P</u>	2540
Alcohol	Alcohol – Microbrewery/ Microdistillery						P	P	P	P		S	3110
Alcohol	Winery With Bottling						P		P			<u>P</u>	
Auto	Auto And Light Truck Auction								S	P		P <u>S</u>	2110
Dwelling	Dwelling – Attached Apartments/Condominiums							P				<u>P</u>	
Dwelling	Loft (see definition of Dwelling, Loft 35-A101)	S	S		P	P	P	P	S	S		<u>P</u>	
Industrial	Welding Shop - Limited To Three Employees And Screening Of Outside Storage In "C-3"						S		S	P	P	P <u>S</u>	2100
Manufacturing	Bulk Plant Or Terminal (Includes Bulk Storage of Petro Chemicals)										S	<u>N/A</u>	
Manufacturing	Electroplating										P	S <u>N/A</u>	3400
Recreation	Athletic Fields – Commercial	S	S			S	P	S	P			<u>P</u>	
Service	Electric Repair - Heavy Equipment								P	P		P <u>S</u>	7330
Service	Electric Repair - Light Equipment						S		P	P		P <u>S</u>	7330

Sec. 35-673. - Site Design Standards.

* * * * *

(c) **Topography and Drainage.** The natural contours of occasional hillsides and riverbanks contribute to the distinct character of the San Antonio River and shall be considered in site designs for new development. Site plans shall minimize the need for cut and fill. It should be considered as an opportunity for positive enhancements through the creative use of terraces and retaining walls.

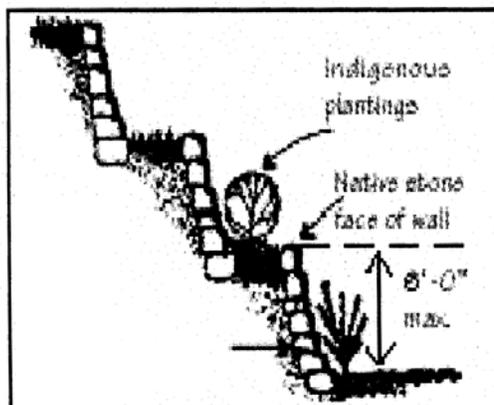
(1) **Visual Impacts of Cut and Fill.** Divide a grade change of more than ten (10) vertical feet into a series of benches and terraces. Terrace steep slopes following site contours. When creating site benches, using sloped "transitional areas" as part of the required landscaping is appropriate.

(2) **Minimize the Potential for Erosion at the Riverbank.** Grade slopes at a stable angle not to exceed four to one (4:1) and provide plant material that will stabilize the soil such as vigorous ground covers, vines or turf planting that are native and noninvasive species as found on the permissible plant list maintained by the parks and recreation department. Use of stabilizing materials such as geo-web or geo-grid is permitted as long as plant material is used to conceal the grid.

Use of terraced walls is permitted when there is a slope of more than four to one (4:1).

(3) **Retaining Walls.** Limit the height of a retaining wall to less than six (6) feet. If the retaining wall must exceed six (6) feet, a series of six-foot terrace walls is acceptable. Walls at dams and locks are excluded from this requirement. If in the opinion of the historic preservation officer a higher wall is consistent with the adopted conceptual plan of the river, a higher wall (not to exceed twelve (12) feet) is allowed. Materials used for the walls may include limestone, stucco, brick, clay, tile, timber, or textured concrete. (see Figure 673-2)

FIGURE 673-2



(4) **Enhance or Incorporate Acequias Into The Landscape Design and Drainage Scheme of the Site.** Where archeological evidence indicates a site contains or has contained a Spanish colonial acequia, incorporate the original path of the acequia as a natural drainageway or a landscape feature of the site by including it as part of the open space plan, and a feature of the landscape design.

(5) **Design of Stormwater Management Facilities to be a Landscape Amenity.** Where above ground stormwater management facilities are required, such facilities shall be multi-purpose amenities. For example, water quality features can be included as part of the site landscaping and detention facilities can be included as part of a hardscape patio. Using an open concrete basin as a detention pond is prohibited. (see Figure 673-3)

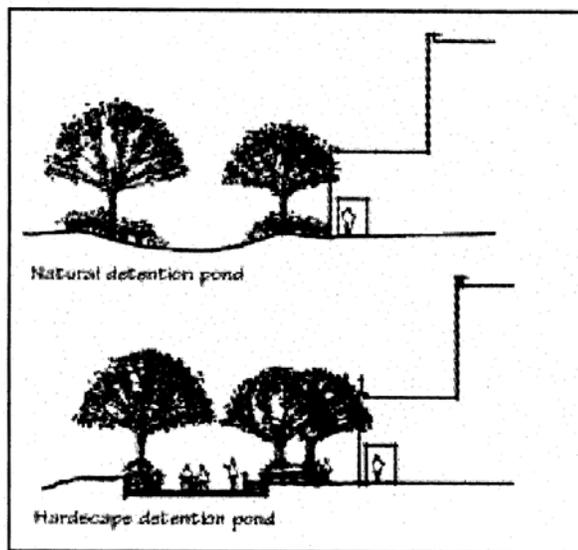


Figure 673-3

(6) **Walls and Fences at Detention Areas.**

A. When the topography of the site exceeds a four to one (4:1) slope and it becomes necessary to use a masonry wall as part of the detention area, use a textured surface and incorporate plant materials, from the plant list maintained by the parks department, that will drape over the edge to soften the appearance of the structure.

B. The use of solid board or chain link fence with or without slats is prohibited. A welded wire, tubular steel, wrought iron or garden loop is permitted.

(7) **Roof Drainage into the River.**

A. All roof drainage and other run-off drainage shall conform to public works department standards so that they drain into sewer and storm drains rather than the river. Drainage of this type shall not be piped into

the river unless the outlet is below the normal waterline of the river at normal flow rates.

B. All downspouts or gutters draining water from roofs or parapets shall be extended underground under walks and patios to the San Antonio River's edge or stormwater detention facility so that such drainage will not erode or otherwise damage the Riverwalk, landscaping or river retaining walls.

C. All piping and air-conditioning wastewater systems shall be kept in good repair. Water to be drained purposely from these systems, after being tested and adjudged free from pollution, shall be drained in the same manner prescribed in subsection (7)A. above.

(8) San Antonio River Authority Coordination. Coordination with the San Antonio River Authority regarding access to the Museum Reach and Mission Reach parks along the San Antonio River, landscaping and maintenance boundaries, and storm water control measures is required for properties that fall within the RIO Overlay District as defined in UDC 35-338.

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

2
3 STATEMENT OF PURPOSE

4 Low Impact Development and Natural Channel Design Protocols (LID/NCDP) use high
5 quality green features that enhance the beauty of a development site and also protect water
6 quality, decrease downstream erosion, improve water conservation, and preserve natural areas.
7 LID/NCDP green features can be used for multiple purposes on site (e.g., landscaping,
8 buffering, parkland, irrigation) to achieve more effective and attractive site design. By
9 integrating storm water management to address multiple objectives, LID/NCDP will improve the
10 quality of life, community health and resilience, and safety of the Citizens of San Antonio.
11 Accordingly, the purpose of this section is to provide site design flexibility, development
12 incentives, and strategies to implement LID/NCDP. The specific purposes of this section are:

13 • To provide a voluntary permitting and regulatory basis for site design and development
14 which incorporates LID/NCDP.

15 • To protect and enhance property values by preserving and creating high quality green
16 features.

17 • To reduce impervious area its effects, and the costs associated with increased storm water
18 runoff and infrastructure.

19 • To protect and preserve environmentally sensitive features.

20 • To use both natural areas and engineered storm water controls that mimic natural
21 functions, with a goal of replicating the predevelopment hydrology, including groundwater
22 recharge.

23 • To more fully address the range of impacts caused by storm water runoff, including
24 increased overland pollution, channel erosion, nuisance flooding, and elevated stream
25 temperature caused by frequent, smaller storm events.

26 • To help address total maximum daily load requirements for existing impaired streams in
27 the city and prevent future degradation of streams.

28 • To implement existing city policies which call for the use of LID/NCDP techniques,
29 including but not limited to SA2020, Master Plan, and Complete Streets policies.

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

31 Natural Resource Goals

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

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

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

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

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

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

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

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

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

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

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

- 24 – on-site storm water retention and detention;
- 25 – reduction in impervious cover;
- 26 – natural bank contouring;
- 27 – floodplain preservation and buffering;
- 28 – preservation of riparian habitat;
- 29 – storm water harvesting sites for reuse purposes.

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

32 • Policy 2.a. Establish a strong natural resources protection policy for San Antonio.

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

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

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

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

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

11 • Policy 3.c. Develop incentive programs to reduce energy and water consumption.

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

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

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

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

- 26 (b) **Processing Procedures.**

27 (1) **Generally.** A Low Impact Development and Natural Channel Design Protocol Plan is a
 28 voluntary Use Pattern application and shall be processed as part of a plat, tree affidavit,
 29 tree permit building permit Master Plan Development, and other development review
 30 applications.

31 (2) **Incentives.** To encourage multifunctional LID best management practices (BMPs) such
 32 as tree and natural area preservation, bioretention areas, vegetated swales, planter boxes,
 33 permeable pavement, rainwater harvesting systems, and other approved LID BMPs, a
 34 LID/NCDP shall be eligible for the following incentives as approved by the Director of
 35 the Transportation and Capital Improvements Department or designee.

36 A. **Credit and Offset Incentives**

37 The applicant shall receive credits and offsets for LID/NCDP according to the following
 38 table:

39

1

Table 210-1

<u>Credit/Offset⁽¹⁾</u>	<u>Multiplie r</u>
<u>Stream Buffer or Stream Restoration to Parkland Acre⁽²⁾</u>	<u>1.5</u>
<u>LID BMP to Landscape Elective Credit</u>	<u>Up to 25 points</u>
<u>LID BMP to Tree Canopy⁽³⁾</u>	<u>1.5</u>
<u>Stream Restoration to Tree Canopy</u>	<u>1.25</u>
<u>LID BMP to Streetscape Tree⁽⁴⁾</u>	<u>1</u>
<u>Linear Park to Parkland Acre⁽⁵⁾</u>	<u>1.5</u>
<u>LID BMP Drainage Area to Parkland Acre⁽⁶⁾</u>	<u>1.5</u>
<u>Density Bonus⁽⁷⁾</u>	<u>10%</u>

- 2 (1) A minimum of 60 percent of the Water Quality Volume must be managed by LID BMPs to
3 be eligible for these credits and offsets. A single family residential lot, not part of a larger
4 development, is ineligible for the storm water fee and FILO fee discount; however a single-
5 family dwelling is eligible for the other incentives in this section, as applicable.
6 (2) May meet a maximum of 50 percent of the site's parkland requirement.
7 (3) For areas where tree canopy preservation is maintained in conjunction with LID practices,
8 the tree canopy offset is 1.5. See 210(k)(3).
9 (4) Up to 30 percent of new required landscaping trees in the Right-of-Way may be met by
10 installing a landscape LID storm water BMP if part of an approved storm water management
11 plan. See 210(k)(5).
12 (5) May meet a maximum of 50 percent of the site's parkland requirement. See 210(i).
13 (6) Includes only permeable area draining to the BMP. Must provide multiple uses such as
14 recreation and trails. May meet a maximum of 20 percent of the site's parkland requirement.
15 See 210(i).
16 (7) A LID/NCDP may increase by 10 percent density allowed in table 310-1 of this chapter. See
17 210(c)(1)

18

19 B. Fee Based Incentives

- 20 (i) Storm Water Fee Discount – The storm water fee discount available for
21 incorporating the use of LID/NCDP is specified in section 34-235.
22 (ii) Storm Water Fee In Lieu Of (FILO) Discount – Per Table 210-2 below, a
23 minimum credit of five (5) percent of the required FILO payment, based on
24 section 35-C109, may be designated for parcels that manage seventy (70) percent
25 of the Water Quality Volume or greater.
26 (iii) Permeable pavement shall not be counted as impervious cover if designed to
27 store the 2-year, 24-hour storm event as specified by Section 35-504 Storm water
28 Management.

(iv) Future modification or dissolution of an approved LID/NCDP integrated storm water plan or its associated operation and maintenance agreement may require reimbursement of any fee based incentives provided, and discontinuance of any ongoing fee based incentives per subsection (n)(6) (A) and (B),

(v)

Table 210-2

	<u>Percent of Water Quality Volume Managed⁽¹⁾</u>			
	<u>70%</u>	<u>80%</u>	<u>90%</u>	<u>100%</u>
<u>Credit/Offset</u>				
<u>FILO Fee Discount</u>				
<u>Meets LID Performance Standard</u>	<u>5%</u>	<u>10%</u>	<u>15%</u>	<u>20%</u>
<u>Meets Detention Requirements or Increases Channel Storage through NCDP</u>	<u>Cumulative Reduction in Flow Sliding Scale – see 210(j)(1)(B)</u>			

(1) Water Quality Volume is defined as the runoff volume resulting from the first 1.5 inches of rainfall falling 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 a LID/NCDP and be eligible for incentives in table 210-1 of this section, a minimum of sixty (60) percent of the required water quality volume resulting from the increase in impervious area for the site, including all of the parking and street areas, must be managed to meet the Performance Standards in (g)(2) below.

B. Concept Plan and Preliminary Plan Review and Preliminary Development Plan Review. The Development Services Plan Review Division and applicant may have a preliminary plan review (PPR) meeting on a concept plan for the post-construction storm water management system to be used in the proposed development project. For plat and Master Plan Development applications, the Land Development Division and applicant may have a Preliminary Development Plan Review (PDPR) meeting on such concept plan. The PPR and PDPR meetings should not be considered a detailed code review of plans. The purpose of the PPR and PDPR meeting is to discuss the post-construction storm water management measures necessary for the proposed project, as well as to discuss and assess constraints, opportunities, and potential approaches to storm water management designs before formal site design engineering is commenced. In advance of the meeting, the applicant should submit a Preliminary Plan Review or Preliminary Development Plan Review request form to the Development Services Department Plan Review Division or Land Development Division, as applicable.

Along with the PPR and PDPR request form, the applicant should submit a written or graphic concept plan of the post-construction storm water management system and

1 include: existing natural drainage areas and natural areas to be preserved and/or
2 enhanced; preliminary selection and location of proposed structural and non-
3 structural storm water controls, including LID and NCDP elements; location of
4 existing and proposed conveyance systems such as swales and storm drains; location
5 of floodplain/floodway limits; relationship of site to upstream and downstream
6 properties and drainage; and preliminary location of any proposed riparian area
7 modifications such as bridge or culvert crossings.

8 C. Owner's or their design team including engineer, architect and landscape architect are
9 encouraged to schedule a no cost preliminary LID/NCDP Review (PLR) by
10 submitting a PLR Request form to the stormwater unit at the San Antonio River
11 Authority. After a PLR is requested, the owner or design team shall provide the same
12 concept plan information requested for the PPR in (b)(4)B above. The PLR meeting
13 may only be scheduled before the site layout is performed for roads, lots, easements,
14 and before infrastructure alignments have been developed. The PLR meeting may be
15 attended by city of San Antonio Transportation and Capital Improvements staff.

16 D. Requirements of a LID/NCDP Integrated Storm Water Plan. The LID/NCDP
17 integrated storm water plan required by this section shall contain architectural,
18 landscape architecture and engineering drawings, maps, assumptions, calculations
19 and narrative statements as needed to adequately describe the proposed development
20 or redevelopment of the tract and the measures planned to comply with the
21 LID/NCDP performance standards in subsection (g)(2) below. The plan must also
22 meet the requirements of the current Storm Water Engineering Review Team
23 checklist. Plan content may vary to meet the needs of specific site requirements.
24 Guidelines for the LID/NCDP integrated storm water plan preparation may be
25 obtained from the Director of the Transportation and Capital Improvements
26 Department or designee or on the Transportation and Capital Improvements
27 Department website. One copy of the approved LID/NCDP integrated storm water
28 plan shall be kept on file at the job site.

29 All construction of LID and NCDP storm water management measures addressed by
30 this section should conform to applicable best management practices outlined in two
31 guidance documents: San Antonio River Basin LID Technical Guidance Manual and
32 Natural Channel Design Protocol, San Antonio, Texas Region. These guidance
33 documents may be updated or revised periodically based on new information and new
34 approved technologies. These sources are recommended for guidance for LID/NCDP
35 applicants. Choice of specific LID and NCDP measures is at the option of the
36 applicant.

37 A single family residential lot, not part of a larger development, is exempt from the
38 full LID/NCDP integrated storm water plan requirements in this section. However, a
39 plan for a single family residential lot must be provided and include the following: a
40 brief project summary including the location, description of existing property, and the
41 proposed development; calculations that show the development adheres to the LID
42 performance standards in subsection (g)(2); and an exhibit showing the site boundary,
43 proposed locations of building, driveway, parking and other impervious area
44 footprints. The plan must show the proposed locations of storm water BMPs and the

1 positive overflow pathways for storms exceeding the flow rate and volume managed
2 by the BMPs.

- 3 E. Restrictions on Property Usage. Dedications to preserve conservation areas and open
4 space (floodplains, buffer zones, greenbelts, open space, park dedication, tree save
5 areas, etc.) if applicable to a site, shall be platted according to existing platting
6 requirements and procedures of this chapter. The location of all such designated
7 natural areas and parkland shall be referenced on the final plat. The plat and the
8 LID/NCDP integrated storm water plan shall be referenced in the city's approved
9 LID/NCDP deed recordation affidavit, which along with the legal description, shall
10 be recorded with the county clerk upon final plat approval.

11 Land within the rights-of-way of below and above ground utilities or roads shall not
12 count toward the site's buffer zone, open space, parkland or other conservation area
13 requirements. The following guidelines are recommended for minimizing disturbance
14 of conservation and open space area:

- 15 – Coordinate in the placement of public and private utilities lines to minimize site
16 disturbance;
17 – Use site fingerprinting to identify appropriate buildable areas in locating utilities,
18 roads, and trails;
19 – To the extent feasible, co-locate utilities and trails in designated pathways;
20 – For utilities parallel to streams, locate utilities as far from the stream as possible;
21 and
22 – If crossing a stream, construct utility lines so as to minimize impacts to the stream
23 banks and streambed.

24 Once a LID/NCDP integrated storm water plan has been approved for the site, within
25 sixty (60) days the applicant shall submit a deed recordation affidavit referencing the
26 LID/NCDP integrated storm water plan, including a description of all of the structural
27 engineered BMPs, designated conservation areas and other non-structural BMPs used
28 to meet the LID performance standards, along with the LID/NCDP storm water plan's
29 operation and maintenance agreement. If the owner intends to modify the recorded
30 LID/NCDP, a LID/NCDP integrated storm water plan modification must be
31 submitted to the city for review and approval, and the conditions of subsection (n)(6)
32 shall apply. Depending on the nature of the plan modification, the owner may also be
33 subject to replatting the parcel.

- 34 F. Improvement Security

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

- 39 G. Record Drawings and Final Approval. Upon completion of a LID/NCDP BMP
40 project, and before a temporary certificate of occupancy or field acceptance of public
41 or private infrastructure improvements that are part of LID/NCDP integrated storm
42 water plan shall be granted, the applicant shall conduct a post-construction site
43 inspection and verify that the completed project is in accordance with the approved

1 storm water plan and designs. Before a final certificate of occupancy, or release of the
2 performance bond for construction of public or private infrastructure improvements,
3 the designer of record shall submit actual record drawings for all structural storm
4 water management facilities and flow paths after final construction is completed. See
5 Section (m)(4) for detailed requirements of the record drawings.

6
7 (c) **Density.** A LID/NCDP shall comply with the density standards of this chapter, except as
8 follows:

9 (1) **Density Incentives.** To reduce impervious area, optimize LID/NCDP site design, and
10 provide incentives for LID/NCDP, a LID/NCDP may increase by ten (10) percent the
11 density allowed in table 310-1 of this chapter.

12 (d) **Traffic Impact Analysis.** A LID/NCDP shall comply with the traffic impact analysis
13 standards of this chapter.

14 (e) **Lot Layout.** A LID/NCDP shall comply with the lot layout standards of this chapter except
15 as follows:

16 (1) **Setback, Side Yard, and Rear Yard Incentives.** In order to accommodate LID BMPs
17 and optimize LID/NCDP site design, required setback, side yards, and rear yards in table
18 310-1 of this chapter may be reduced as long as such reductions meet fire code standards.
19 The reductions may not compromise public safety such as the sight distance triangles
20 defined in section 35- 506(d)(5) of this chapter.

21 (f) **Transportation.**

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

24 (1) **Minimum Pavement Width and Street Design.** Applicants shall adhere to the
25 Traditional Street Design Standards in section 35-506, tables 506-4 and 506-4A of this
26 chapter.

27 (2) **Credit for LID Practices in the Street Right-of-Way.** Vegetated LID storm water
28 management features may be located within the Right-of-Way medians, planting strips,
29 curb extensions, or other permeable surface within the street Right-of-Way; permeable
30 pavement may be used for sidewalks per (f)(6) below. The applicant may construct
31 vegetated LID BMPs in the privately maintained area of the street right-of-way and
32 receive LID performance standards and detention credits for such BMPs. For the latter, a
33 sliding scale based on the cumulative reduction in flow for the Water Quality Storm, 2-
34 year storm, 5-year storm, 25-year storm and 100-year storms will be applied. To receive
35 a credit, the BMPs must be adjacent to the applicant's development property, must be
36 privately maintained, and must have a long-term maintenance agreement. Use of swales
37 with curb is allowed by right in zones RP, RE, RD, and FR, and allowed with
38 conditional approval in zones R20, O-1, MI-1, and MI-2.

39 (3) **Curb and Edge Treatment.** Where a portion of a project or public improvement has
40 been designed specifically as a LID storm water management feature, saw tooth curb
41 edge treatment is encouraged as part of LID/NCDP.

- 1 (4) **Separation of LID Practices and Utilities.** For LID BMPs installed in the right-of-way,
2 care must be taken to allow the co-placement and separation of utilities in such a way as
3 to avoid utility damage during construction. The applicant shall adhere to the street cross
4 sections in the San Antonio River Basin LID Technical Guidance Manual for
5 appropriate placement and installation of BMPs in the street right-of-way.
- 6 (5) **Use of Permeable Pavement for On-Street Parking.** The applicant shall adhere to the
7 approved list of permeable pavement materials that may be used for on-street parking
8 areas in the San Antonio River Basin LID Technical Guidance Manual, as may be
9 updated periodically.
- 10 (6) **Sidewalks.** In order to reduce effective impervious area, an approved permeable
11 pavement may be used for sidewalks as long as the materials meet ADA requirements.
12 The applicant shall adhere to the approved list of permeable pavement materials that
13 may be used for sidewalk areas in the San Antonio River Basin LID Technical Guidance
14 Manual as may be updated periodically.
- 15 (7) **Special Purpose Medians.** Designers are encouraged to incorporate BMPs into dividers
16 constructed for aesthetic purposes such as at entrances for subdivisions and landscaping
17 features. LID storm water BMPs shall be designed according to specifications in the San
18 Antonio River Basin LID Guidance Manual. The minimum width for such special
19 purpose dividers with LID BMPs shall be in accordance with section 506(n)(2) of this
20 chapter. No vegetation shall be placed in the median that will obstruct the drivers' sight
21 distance defined in section 35-506(d)(5) of this chapter.
- 22 (8) **Traffic Calming Devices.** Traffic calming devices approved for use in LID/NCDP
23 developments include curb bump outs with LID/BMPs or curb extensions with LID
24 BMPs. Such LID BMPs shall be designed according to the San Antonio River Basin
25 LID Guidance Manual.
- 26 (g) **Storm Water Management.** A LID/NCDP application shall comply with the storm water
27 management standards, section 35-504, of this chapter except as follows.
- 28 (1) **Integrated Storm Water Management.** After accounting for storm water quality and
29 volume credits from Environmentally Sensitive Site Design per subsection (j), Natural
30 Resource Protection and Tree Preservation, applicants shall use LID structural BMPs or a
31 combination of LID and conventional BMPs to meet the balance of LID Performance
32 Standards required in (g)(2) below. Depending on what is appropriate for the site, the
33 applicant may choose the combination of Environmentally Sensitive Site Design
34 techniques and LID structural BMPs to meet the LID performance standards. Approved
35 LID structural BMPs, as well as design and maintenance guidance for each BMP, may be
36 found in the San Antonio River Basin LID Technical Guidance Manual.
- 37 (2) **LID Performance Standards.**
- 38 A. **For the purposes of this section,**
- 39 (i) **Development - buildings, roads and other structures; construction; and excavation,**
40 **dredging, grading, filling and clearing or removing vegetation associated with**
41 **residential, recreational, commercial, industrial or institutional construction, which**
42 **increases impervious area and the storm water runoff rate, volume, and pollutant**
43 **loading compared to pre-development conditions.**

- 1 (ii) Redevelopment - any rebuilding and development on a site that has an existing
2 developed use or on a vacant urban infill site that has no existing developed use, but
3 was previously developed.
- 4
- 5 B. For new development, the Water Quality Volume (WQV) shall be defined as the
6 runoff volume resulting from the first 1.5¹ inches of rainfall falling on the developed
7 portions of the site. The storm water management system shall be designed to remove
8 eighty (80) percent of the average annual post development total suspended solids
9 (TSS) load and sixty (60) percent of the annual bacteria load through a combination
10 of infiltration, filtering, and settling. To maintain groundwater recharge and protect
11 streams from increased erosion, the system must also reduce the volume and flow rate
12 to pre-development conditions using a combination of storage, infiltration, and
13 evapotranspiration and, if necessary, onsite reuse.
- 14 C. Per subsection (b)(4)A, a minimum of sixty (60) percent of the water quality volume
15 must be managed to be considered a LID/NCDP development. If less than one-
16 hundred (100) percent of the water quality volume will be managed, the designer will
17 give first priority to managing the runoff volume from all of the parking and street
18 areas within the development area. The water quality, volume, and flow rate LID
19 performance standards above are presumed to be met if the storm water management
20 system is sized and designed to manage a minimum of sixty (60) percent of the WQV
21 using the guidance in the San Antonio River Basin LID Technical Guidance Manual.
- 22 D. A redevelopment site shall be subject to a reduced LID performance standard: the
23 storm water management system will be sized and designed based on the runoff
24 volume resulting from the first 1.181 inches of rainfall from rebuilt areas and newly
25 developed areas on the site. The applicant shall be eligible for incentives to treat
26 storm water from the redevelopment site according to the table 210-1 and 210-2.
- 27 (3) **Special LID Requirements for Karst Areas Outside the Edwards Aquifer Recharge**
28 **Zone.**
- 29 A. Mapping Requirements. The applicant shall identify and locate karst features and
30 submit a map with the concept plan and storm water management plan for the
31 proposed development project. The map shall display, according to the best
32 information available, topographic and geologic information and features (including,
33 but not limited to, faults and fractures along waterways and sinkholes), and proposed
34 and existing stream buffer preservation areas.
- 35 B. Easement Requirements. Any existing karst swales, sinkholes, or solution features
36 should be surveyed and permanently recorded on the plat or deed. Features collecting
37 drainage for watersheds in excess of five thousand (5,000) square feet should be set
38 aside in an easement with a buffer or reserve area on the development plats so that all

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.

1 future landowners are aware of the presence of solution features or sinkholes on their
2 property.

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

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

8 B. Hardscaping: Removal of existing hardscaping and replacing it with pervious
9 pavement treatments is allowed where not removing character defining hardscaping
10 elements.

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

21 A. Pre-Treatment and Trash Removal Applications

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

30 (ii) Screens and Trash Racks. Screening devices that capture large floatable debris
31 are recommended for all inlets that drain into preserved/restored streams or
32 BMPs. These devices provide a single point for collection and disposal of trash
33 that would otherwise be dispersed into natural areas.

34 B. Enhanced Filtration

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

- 1 (ii) High Rate Filter Media. Customized high rate filter media may be utilized to
2 meet partial water quality performance goals if LID BMPs designed using the
3 San Antonio River Basin LID Technical Guidance Manual are infeasible or not
4 in the best interest of the city according to the Director of Transportation and
5 Capital Improvements or designee. High rate filter media applications may
6 include tree boxes, tree filters, or any filter system that treats but does not retain
7 the volume defined as the performance standard in subsection (g)(2). The WQV
8 defined in section (g)(2) must pass through the high rate filter media and achieve
9 the pollutant removal targets. Treating the WQV using high rate media does not
10 equate to meeting the volume reduction requirement in subsection (g)(2).
- 11 (h) Utilities. See utilities standards, section 35-507, of this chapter. Also see subsections
12 (b)(4)D, Restrictions on Property Usage, and (f)(4), Separation of LID Practices and Utilities,
13 above.
- 14 (i) Parks and Open Space. Where LID practices such as bioretention areas, rain gardens, and
15 swales are part of an approved LID/NCDP integrated storm water plan, the non-impervious
16 areas which drain to these practices and which serve multiple uses such as trails, open space,
17 and recreation, shall be counted toward the site's required parkland requirements of this
18 section and may be constructed in designated parkland area. LID practices meeting a
19 minimum of sixty (60) percent of the performance standard in subsection (g)(2) will receive
20 1.5 credit acres towards parkland requirements up to twenty (20) percent of the site's
21 parkland requirements. The parkland dimensional requirements in table 503-2 may be
22 reduced up to ten (10) percent to accommodate use of LID BMPs. For sites with LID BMPs
23 meeting a minimum of sixty (60) percent of the performance standard in subsection (g)(2)
24 linear trails may receive 1.5 parkland credit acres up to fifty (50) percent of site's required
25 parkland area, if such trails are connected to a portion of the development's remaining
26 parkland area via a pedestrian way. Such linear trails may deviate up to ten (10) percent from
27 dimension requirements in table 503-2 of this chapter.
- 28 (j) Natural Resource Protection and Tree Preservation.
- 29 (1) Environmentally Sensitive Site Design.
- 30 A. For LID/NCDP, the applicant shall begin the design process with a site analysis to
31 determine the degree to which the following features exist on the site and the
32 feasibility of their preservation or enhancement:
- 33 (i) High Value Soils. Preservation of high infiltration soils is encouraged. For the
34 purposes of this ordinance, high infiltration soils are defined as all soils with
35 infiltration rates greater than one inch per hour.
- 36 (ii) Trees. At a minimum meet the current tree preservation requirements of section
37 35-523 of this chapter. Also see subsection (k) below.
- 38 (iii) The applicant shall perform a NCDP geomorphic assessment according to (j)(2)
39 of this section.
- 40 (iv) Stream Network Buffering. To the extent that any of the following stream
41 network elements exist on a site, at a minimum, the LID/NCDP shall preserve

- 1 1. A riparian buffer with a minimum average width of 25 feet from the top of
2 bank for all Jurisdictional Waters of the U.S. and;
- 3 2. All of the floodway and flood fringe within the regulatory 100-year
4 floodplain, as shown on official FEMA maps, and any Letter of Map
5 Revision (LOMR);
- 6 3. A riparian buffer with minimum average width of fifty (50) feet from the
7 edge of the regulatory 100-year floodplain as delineated on the official
8 FEMA maps and any Letter of Map Revision (LOMR). To reduce
9 fragmentation, no more than ten (10) percent of the buffer can be less than
10 thirty-three (33) feet wide;
- 11 4. A riparian buffer with a minimum average width measured from the top of
12 the bank and determined based on the slope of the streamside area in
13 accordance with the table methodology found in section 34-913 of this code
14 for all perennial streams or intermittent streams with a drainage area of
15 greater than 100 acres. In all cases, a twenty-five (25)-foot-wide riparian
16 buffer zone must be preserved. To reduce fragmentation, no more than ten
17 (10) percent of the buffer can be less than thirty-three (33) feet wide;
- 18 5. A riparian buffer with minimum average width of fifty (50) feet from the top
19 of bank of any perennial, intermittent streams with a drainage area of less
20 than one-hundred (100) acres or ephemeral streams draining more than forty
21 (40) acres. In all cases, a twenty-five (25)-foot-wide riparian buffer zone
22 must be preserved. To reduce fragmentation, no more than ten (10) percent of
23 the buffer can be less than thirty-three (33) feet wide;
- 24 6. All areas within twenty five (25) feet of the top of bank of any ephemeral
25 stream draining less than forty (40) acres; and
- 26 7. The applicable stream buffer requirements of this chapter's Tree Preservation
27 and Floodplain requirements, or applicable recharge protection provisions in
28 section 34-920 Recharge Feature Protection and Buffer Zone, whichever is
29 most stringent.

30 For sites meeting a minimum of sixty (60) percent of the performance standard
31 in subsection (g)(2), the applicant shall receive 1.5 parkland area credit acres for
32 meeting the stream network buffering requirement as long as the buffer area
33 contains trail access; this credit may meet up to fifty (50) percent of the site's
34 parkland requirements. Any stream network buffering area on the site which
35 overlaps with a linear trail area shall receive 1.5 parkland area credit acres (i.e.,
36 there shall be no double counting of credits for overlapping areas).

- 37 (v) Wetlands. Wetlands shall be preserved according to existing federal, state, and
38 local regulations.
- 39 (vi) Habitats of Threatened and Endangered Species. Habitats of threatened and
40 endangered species shall be preserved according to existing federal, state, and
41 local regulations.

1 (vii) Steep Slopes. At a minimum, meet the steep slope protection requirements in the
2 Tree Preservation section 35-523 of this chapter. Steep slopes are defined by
3 section 35-523 as including any slope exceeding twenty percent or one-foot
4 vertical for every five feet horizontal. Slopes greater than 15% percent should be
5 evaluated for erodibility using the Natural Resources Conservation Service
6 erodibility index.

7 (viii) Karst, cracks, and caves. At a minimum meet TCEQ protection requirements for
8 the Edwards Aquifer Recharge Zone and (g)(3) of this section.

9 (ix) Other unique historical or environmental features. Such features shall be
10 presented to the city on a case-by-case basis for evaluation of tree canopy area
11 credit of up to 1.5 times the acreage of dedication.

12 B. Offsetting Storm Water Detention, Water Quality, and Volume Requirements.
13 Environmentally Sensitive Site Design practices that manage the increased runoff
14 due to development may be evaluated using standard hydrologic approaches required
15 for the LID/NCDP integrated storm water plan. Environmentally Sensitive Design
16 site practices shall also be credited toward meeting the site's LID Performance
17 Standard.

18 (i) Minimize cutting and/or filling. Minimize cutting and/or filling alongside roads
19 and within residential areas. Except where otherwise required in other zoning
20 districts or use pattern areas, when cutting is required (i.e., roadsides, around
21 building footprints), use structural controls (retaining walls, stacked stone, etc.)
22 to create slopes. Reduced cutting minimizes alteration of natural drainage and
23 reduces clearing of native vegetation and compaction of soils. In fill areas that
24 require structural controls, underground storage can be used to reduce or
25 eliminate detention ponds or provide capture and reuse volume to meet the LID
26 performance standards. Maintain natural drainage divides and drainage channels;
27 avoid crossing or filling drainage channels or disturbing riparian zones.

28 (ii) Design grading and minimize land disturbance to encourage sheet flow and
29 lengthen storm water flow paths through vegetated areas.

30 (iii) Place streets/roads as close to existing grade as possible.

31 C. Establish clearing, grading and stockpiling limits. The San Antonio River Basin LID
32 Technical Guidance Manual provides site design principles to identify protected
33 areas and minimize impacts to existing vegetation and soils. Grading plans shall
34 clearly identify limits of construction areas and include a 10-foot buffer between
35 areas of disturbance and protected areas, BMPs or building and any environmentally
36 sensitive area as identified in subsection (j)(1)A. Allowable stockpile areas shall be
37 identified in areas that will be paved or disturbed during subsequent construction
38 (See Construction Sequencing, subsection (m)(2)).

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

40 A. Restorative practices for natural channels. All channels draining more than twenty
41 (20) acres within an Environmentally Sensitive Site Design plan should be evaluated
42 for

- 1 (i) Protection if the channel is stable and functioning properly, or
2 (ii) Restoration if the channel is unstable.

3 For the purposes of this section, channels should be evaluated using a
4 Geomorphic Assessment as defined in the Natural Channel Design Protocol, San
5 Antonio, Texas Region, as amended, to determine the degree of instability.
6 Streams that are restored and that establish a minimum 25-foot riparian vegetated
7 buffer will be credited at 1.25 times the tree canopy and will receive 1.5 credit
8 acres for parkland, up to fifty (50) percent of the site's parkland requirements.

9 B. Earthen engineered channel design to reduce erosion and maintenance. Engineered
10 channels that are necessary to convey local and or offsite flows shall be designed
11 either as vegetated swales or as multi-stage flood control channels (see Natural
12 Channel Design Protocol, San Antonio, Texas Region as amended). Vegetated
13 channels that incorporate natural linear flood storage may be credited toward
14 detention requirements to the degree that they reduce flood flows but may not be
15 credited towards buffering, tree canopy or park requirements. Detention credits will
16 be based on standard flood routing engineering methods for storm water
17 management in section 35-504 of this chapter or the San Antonio River Basin
18 Regional Modeling Standards for Hydrology and Hydraulic Modeling.

19 C. Restoration credit for existing engineered channels. Existing engineered channels
20 that are armored using either concrete or rock rubble may be redesigned using
21 NCDP to increase open space, reduce maintenance cost, and decrease stand-alone
22 detention requirements. Existing earthen channels that are unstable may be
23 redesigned to incorporate vegetation, channel forms and reduced shear stress to
24 improve water quality and reduce flooding. Restoration typically will create wider
25 floodplains, more green space and enhanced riparian zones which may be credited
26 toward the tree preservation and parkland requirements of this chapter. As part of a
27 LID/NCDP integrated storm water plan, channels will be credited as flow reduction
28 and water quality features based on scientifically-based benefits. Such benefits shall
29 be documented in the LID/NCDP integrated storm water plan.

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

33 (3) Identifying locations for LID BMPs. After the applicant has determined the feasibility
34 of Environmentally Sensitive Site Design, the applicant shall determine lot layout,
35 transportation and street design, utilities, and parking as specified in subsections (e), (f),
36 (h), and (l) herein, identifying appropriate locations on site for incorporating structural
37 LID BMPs into the landscape, building, parking, and streetscape areas.

38 (k) Bufferyards, Landscaping, Streetscape, and Tree Preservation.

39 (1) Multi-functional LID BMPs. To encourage multifunctional LID BMPs and NCDP and
40 provide incentives for their use, bioretention areas, vegetated swales, planter boxes,
41 rainwater harvesting systems, NCDP, and other approved vegetated LID BMPs may be
42 used to meet landscaping, buffering, streetscape, and tree preservation required in this
43 chapter and may be constructed in designated landscape, buffering, streetscape, and tree

1 preservation areas if part of an approved LID/NCDP integrated storm water plan for the
2 site. The dimensional and plant standards for landscaping areas, landscape strips, and
3 walls in this chapter may accommodate LID and NCDP features if part of an approved
4 LID/NCDP integrated storm water plan for the site.

5 (2) **Irrigation of LID BMPs.** LID BMPs that use native plants and meet a minimum of sixty
6 (60) percent of the performance standard in subsection (g)(2) for the managed drainage
7 area are not required to install a permanent irrigation system; however, a LID/NCDP that
8 does not install a permanent irrigation system shall provide a detailed alternative
9 irrigation plan and schedule for the establishment and maintenance of the BMP
10 vegetation. LID BMPs, with or without permanent irrigation systems, are subject to the
11 general maintenance requirements of 35-511(c)(4). It is recommended that commercial
12 properties direct air conditioning condensate into BMPs for irrigation as needed and to
13 meet the requirements in section 34-274.

14
15 (3) **Landscape Elective Credit Incentive.** In accordance with section 35-523(i)(13), LID
16 areas may be used to comply with landscape requirements of section 35-511. For an
17 LID/NCDP Plan meeting a minimum of sixty (60) percent of performance standards in
18 subsection (g)(2), areas with LID BMPs will receive up to 25 points for elective
19 landscaping criteria of this chapter. Credit will be allocated according to the proportion
20 of trees, small trees, large shrubs, and small to medium shrubs and native grass cover in
21 the LID BMPs.

22 (4) **Tree Preservation Offset.** In accordance with 35-523 (i)(13), a canopy cover offset of
23 1.5 times the area of the vegetated LID BMP treatment area shall be provided where tree
24 preservation is used in conjunction with LID practices. To receive 1.5 times credit, the
25 landscape LID practice must be approved based on the standards of this section and
26 section 35-504 and must meet a minimum of sixty (60) percent of the performance
27 standard in subsection (g)(2).

28 (5) **Bufferyards Credit.** In accordance with 35-523 (i)(13), LID BMP areas may be used to
29 comply with bufferyard requirements of section 35-510. For LID/NCDP, the city shall
30 allow vegetated LID BMPs in buffer types A, B, and C. LID BMPs shall be allowed in
31 the first ten (10) feet of bufferyards D, E and F, as measured from the interior of the site.
32 The minimum plant materials required in table 510-2 shall be met in the overall
33 bufferyard area.

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

41 (l) **Parking.** A LID/NCDP shall comply with the parking standards of this chapter except as
42 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 and 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 (1)(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, a LID/NCDP may reduce parking dimensions using one of the following options.

A. 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

<u>Angle</u>	<u>Width</u>	<u>Curb Length</u>	<u>1-way aisle</u>	<u>2-way aisle</u>	<u>Stall Depth</u>
<u>30 degrees</u>	<u>8'- 6"</u>	<u>17'</u>	<u>12'</u>	<u>NA</u>	<u>15'</u>
<u>45 degrees</u>	<u>8'- 6"</u>	<u>12'</u>	<u>12'</u>	<u>NA</u>	<u>17'</u>
<u>60 degrees</u>	<u>8'- 6"</u>	<u>9'- 9"</u>	<u>16'</u>	<u>20'</u>	<u>17'-6"</u>
<u>90 degrees</u>	<u>8'- 6"</u>	<u>8'- 6"</u>	<u>25'</u>	<u>25'</u>	<u>18'</u>

B. 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.** To reduce effective impervious cover and protect shade trees, 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 shall adhere to 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.

(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 if part of an approved LID/NCDP integrated storm water management plan for the site. See Section 35-210(k) above for allowable credits.

(m) **Construction Activities and Reporting Requirements.** Construction of LID systems requires a high standard of care to avoid damage or alterations of the existing site conditions that could deteriorate or compromise the structural and non-structural LID BMPs. The

1 following provides guidance on factors to consider and plan for during site construction.
2 Additional guidance on construction practices is provided in the San Antonio River Basin
3 LID Technical Guidance Manual. The LID/NCDP Plan shall adhere to Chapter 34 Storm
4 Water Compliance for Construction Activity, except as follows:

5 **(1) Environmentally Sensitive Construction.**

- 6 A. The contractor shall minimize over excavation to reduce unnecessary stockpiling and
7 hauling of spoil material.
- 8 B. Top soil to be reused on site shall be stripped and stockpiled in an area identified on
9 the plans. Top soil shall not be mixed with rock, rubble, construction debris or spoil
10 materials.
- 11 C. Maintain a ten (10)-foot buffer between disturbance, LID BMPs or building and any
12 environmentally sensitive area as identified in subsection (j)(1).

13 **(2) Construction Sequencing.**

- 14 A. The contractor shall abide by the limits of disturbance shown on the site plan and may
15 not clear underbrush, store materials, or park equipment, construction vehicles, and
16 contractor vehicles outside of the construction limits identified on the plan.
17 Construction traffic (foot and/or vehicular traffic) must be kept off all protected areas
18 during and after construction.
- 19 B. The contractor shall place construction fencing at the limits of construction and
20 around the tree dripline of all preserve areas prior to beginning clearing operations.
21 The areas protected by construction fencing shall not be cleared, trenched, modified
22 or otherwise disturbed without written approval of the designer of record for the
23 LID/NCDP integrated storm water management plan. Field modifications to
24 construction fencing are not at the discretion of the contractor.
- 25 C. Locations identified on the plans as temporary sediment basins and overflow points
26 for temporary erosion control measures shall be constructed prior to mass clearing or
27 grading of the site.
- 28 D. Stockpiles shall be located only in areas designated on the site plan and surrounded
29 by sediment protection measures. Stockpiles not being actively worked shall be
30 covered with tarps or plastic sheeting to reduce erosion of fine particles that would
31 enter structural BMPs.
- 32 E. Pervious BMP areas shall be protected from compaction caused by construction
33 equipment. To that end, excavation should be performed from the center of the
34 pervious BMP area outward to the edges with equipment that can reach into the
35 excavation area. Bulldozers, loaders, bobcats and other excavation equipment that
36 cannot reach into the excavation shall not be used for the final three vertical feet.
37 Excavated materials must be placed away from and out of the limits of the pervious
38 areas. Materials must be stockpiled only in the areas identified on the plans.
- 39 F. Erosion control and site stabilization. In addition to meeting the requirements of
40 Chapter 34 Division 5 and 35-504 (e) of this chapter, the contributing drainage area
41 must be stabilized prior to directing water to the structural BMP. Structural BMPs and

1 environmentally sensitive areas should be fully protected from sediment intrusion by
2 approved erosion and sediment control systems as defined in section 34-806.

3 G. Temporary erosion control systems shall remain in place and be maintained until
4 construction is complete and accepted by the designer of record or city's inspector
5 and the contributing drainage area has been stabilized.

6 H. It is advisable to divert runoff from the first few run-off producing storms away from
7 pervious improvements to reduce the initial input of fines leftover from construction
8 activities and tracked on the impervious surfaces.

9 I. After structural BMPs are in place and temporary erosion controls are removed,
10 performance of the systems shall be observed by the Registered Design Professional
11 in Responsible Charge (RDPiRC) or certified inspector during and after storms
12 exceeding 0.5 inches to check that installed components are operating as designed.

13 (3) Construction Inspection

14 A. Critical inspection points and required documentation. Before, during, and after
15 construction, owners are required to check that the structural BMPs are constructed in
16 accordance with the plans and specifications. A pre-construction meeting(s) with the
17 owner, designer, inspector and contractor shall be performed prior to any work being
18 performed on site. The meetings should cover critical items and stages of construction
19 to ensure that the contractor's interpretation of the plans and specifications are
20 consistent with the designer's intent.

21 B. Material Submittals. The contractor shall provide the RDPiRC or certified inspector a
22 sample of all BMP media, liner, fabric, mulch, aggregate, or mix design. The
23 contractor may not order materials until the designer of record has approved said
24 material as meeting the project plans and specifications.

25 C. Verification of construction. An RDPiRC or certified inspector, retained by the owner
26 of the land, will provide observation of the monitoring, testing, and/or sampling of the
27 various construction activities for the LID system. In addition, the Owner will verify
28 that the sampling, monitoring, and testing for the major elements of the BMP
29 construction are in compliance with the established design requirements before the
30 next sequential item for construction is initiated.

31 D. Special Inspections. The RDPiRC or certified inspector shall check that excavation
32 limits and elevations and grades are consistent with the plans. Any deviations from
33 the plans must be approved in writing by the RDPiRC. The record drawing
34 construction phases listed below should be surveyed by a registered professional land
35 surveyor and submitted for entry to the local BMP maintenance tracking database (or
36 facility maintenance records).

37 (i) Final excavation depth is completed.

38 (ii) Structural components and subgrade complete installation.

39 (iii) Piping, underdrains, overflows and liners are installed.

40 (iv) Final grades are reached and inlet elevations are set.

- 1 E. Verification testing must be performed under direction of the RDPiRC or certified
2 inspector at the intervals and locations indicated in the specifications.
3 Nonconforming results must be brought to the designer's attention immediately. Test
4 locations should be selected by exercising professional judgment that the testing and
5 sampling represent the construction activity.
- 6 F. The RDPiRC or certified inspector shall observe and verify that the pretreatment
7 structures (if applicable) are installed and working appropriately.
- 8 G. The RDPiRC or certified inspector shall prepare a periodic report for each twenty-
9 five (25) percent of the construction period when materials or their placement are
10 being monitored, sampled, or tested.
- 11 (i) The RDPiRC or certified inspector shall prepare, sign and retain onsite a weekly
12 summary report until construction is complete. The periodic reports, test data,
13 photographic records, and test results will be included in the monthly summary
14 report. If the period of the completion is less than one month, the summary reports
15 will be prepared every other week.
- 16 (ii) Photographs shall be included in the monthly or bi-weekly summary report to
17 provide a visual record of work progress, testing activity, and construction work.
18 The photographs shall include:
- 19 1. General location, date and time of the photograph;
 - 20 2. Description of the item photographed;
 - 21 3. Direction of view (north, south, east, or west); and
 - 22 4. Name and initials of photographer.

23 **(4) Record Drawings and Final Agency Acceptance.**

- 24 A. Upon completion of a project, the applicant shall conduct a post-construction site
25 inspection and verify that the completed project is in accordance with the approved
26 storm water plan and designs. Before a final certificate of occupancy, the designer of
27 record shall submit record drawings for all structural storm water management
28 facilities and flow paths after final construction is completed.
- 29 B. Testing: The flow paths for structural BMPs managing storm water from streets or
30 parking lots shall be verified by releasing water from a water truck onto the pavement
31 and determining if water enters the structural BMPs as designed. Ten percent of the
32 water quality volume for the BMPs or 500 gallons for each BMP, whichever is
33 smaller, shall be used to perform the flow-path test. This process can also be
34 performed during a rain event of an intensity or duration that will verify the flow
35 paths and entrance into the structural BMPs as outlined above. As an alternative, the
36 owner may hire a registered professional surveyor to verify the flow paths of all
37 inlets, outlets, and impervious surfaces draining to a BMP. The surveyor must
38 provide the as-built information to the RDPiRC as part of the record drawings per
39 (m)(4)D below.
- 40 C. The applicant shall use the Post Construction Inspections Compliance form which can
41 be obtained from the Director of the Transportation and Capital Improvements

1 Department or designee or on the Transportation and Capital Improvements
2 Department website.

- 3 D. The record drawings shall show the final design specifications for all storm water
4 management facilities and the field locations, size, depth, and planted vegetation of
5 all facilities or practices, as installed. Record drawings shall also show final lines and
6 grades as measured by a registered professional land surveyor in (m)(3)D above. The
7 engineer of record for the storm water management facilities shall verify that the
8 record drawings of storm water facilities or practices substantially comply with the
9 approved LID/NCDP integrated storm water plan and the requirements of this
10 ordinance.
- 11 E. A final inspection of and written approval by the Director of the Transportation and
12 Capital Improvements Department or designee shall be performed before the record
13 drawings may be approved by the city.
- 14 F. The RDPiRC shall verify that construction was consistent with the plans by reviewing
15 inspection reports and the record drawing survey.
- 16 G. Construction Activity Operation and Maintenance. The contractor shall prepare and
17 submit an acceptance report to the owner. The acceptance report shall contain the
18 following:
- 19 (i) Material testing results;
 - 20 (ii) Record drawings including any deviations from or alterations to the original
21 plans;
 - 22 (iii) Weekly summary reports; and
 - 23 (iv) Documentation or certificates of contractor, subcontractor, supplier, or installer
24 warranties or guarantees.

25 (n) **Maintenance.**

- 26 (1) **Maintenance Required.** The owner of each private structural storm water management
27 practice installed pursuant to this ordinance shall maintain and operate it for a minimum
28 of ten (10) years from the date of as-built verification so as to preserve and continue its
29 function in controlling storm water quality and quantity at the degree of function for
30 which the BMP was designed.
- 31 (2) **Post Construction Observation.** The owner of a tract of land for which a LID/NCDP
32 plan has been approved, through their RDPiRC, certified inspector, or authorized
33 designee, shall perform at least quarterly inspections of the structural storm water
34 management practices during the first year after the construction of the LID/NCDP
35 improvements.
- 36 (3) **Annual Maintenance Inspection Report.** The person responsible for maintenance of
37 any structural storm water management practice installed pursuant to this ordinance shall
38 submit to the Director of the Transportation and Capital Improvements Department or
39 designee an inspection report from a registered design professional licensed by the State
40 of Texas for performing inspection services in their area of competence. The inspection
41 report shall contain all of the following:

- 1 – Name and address of the land owner or designee;
- 2 – The recorded book and page number of each lot of each structural storm water
- 3 management practice;
- 4 – A statement that an inspection was made of all structural storm water management
- 5 practices;
- 6 – The date the inspection was made;
- 7 – A statement that all inspected structural storm water management practices are
- 8 performing properly and are in compliance with the terms and conditions of the
- 9 approved maintenance agreement required by this ordinance; and
- 10 – The original signature and seal of a registered design professional licensed by the
- 11 State of Texas and competent to perform BMP inspections.

12 All inspection reports shall be documented on forms supplied by the Director of the
 13 Transportation and Capital Improvements Department or designee or on the
 14 Transportation and Capital Improvements Department website. An original inspection
 15 report shall be provided to Director of the Transportation and Capital Improvements
 16 Department or designee beginning one year from the date of the as-built verification and
 17 each year thereafter on or before the anniversary date of the as built verification.
 18 A single family residential lot, not in a subdivision, is not required to submit annual
 19 inspections reports.

- 20 (4) **Operation and Maintenance Agreement General.** Prior to the conveyance or transfer
 21 of any lot or building site to be served by a structural storm water management practice
 22 pursuant to this ordinance, and prior to the issuance of any permit for the development or
 23 redevelopment of a site requiring a structural storm water management practice pursuant
 24 to this ordinance, the applicant or owner of the site must execute an operation and
 25 maintenance agreement that shall be binding on all subsequent owners of the site,
 26 portions of the site, and lots or parcels served by the practices for a minimum of ten (10)
 27 years from the date of as-built verification. Until transference of all property, sites, or lots
 28 served by the structural storm water management practice, the original owner or applicant
 29 shall have primary responsibility for carrying out the provisions of the operation and
 30 maintenance agreement.

31 The operation and maintenance agreement shall require the owner or owners to maintain,
 32 repair, and if necessary, reconstruct the structural storm water management practice and
 33 shall state the terms, conditions, and schedule for maintenance. In addition, the operation
 34 and maintenance agreement shall grant to the city a right of entry in the event that the
 35 Director of the Transportation and Capital Improvements Department or designee has
 36 reason to believe it has become necessary to inspect, monitor, maintain, repair, or
 37 reconstruct the structural storm water management practice; however, in no case shall the
 38 right of entry, of itself, confer an obligation on the city to assume responsibility for the
 39 storm water management practice.

40 The operation and maintenance agreement must be approved by the Director of the
 41 Transportation and Capital Improvements Department or designee prior to permit
 42 approval; the applicant shall submit a deed recordation affidavit referencing the
 43 LID/NCDP integrated storm water plan's operation and maintenance agreement along
 44 with the LID/NCDP integrated storm water plan and a provide a copy to the Director of

1 the Transportation and Capital Improvements Department or designee within fourteen
2 (14) days following its recordation.

3 (5) **Special Operation and Maintenance Agreement for Homeowners' Associations or**
4 **Other Associations.** For all storm water management practices required pursuant to this
5 ordinance that are to be owned and maintained by a homeowners' association, property
6 association, or similar entity, the required operation and maintenance agreement shall be
7 referenced within the Restrictive Covenants of the HOA and include all of the following
8 provisions:

9 A. Acknowledgement that operation and maintenance agreements run with the land and
10 impose pro rata liability upon individual lot owners. The developer and association
11 agree that the operation and maintenance agreement runs with the land and shall be
12 binding upon themselves, their respective successors and assigns, including
13 individual lot owners within the Subdivision, for a minimum of ten (10) years from
14 the date of as-built verification. Any liability imposed against an individual
15 landowner shall be pro-rated on a per lot basis as determined by the fraction of total
16 lot(s) owned by the individual lot owner.

17 B. The Developer, Association, their respective successors and assigns, including
18 individual lot owners within the subdivision, agree to regularly and routinely inspect,
19 clean, and maintain the structural storm water management practices and otherwise
20 keep it in good repair, at their own cost and expense, in accordance with the
21 Operation & Maintenance Manual approved with the construction documents, for a
22 minimum of ten (10) years from the date of as-built verification.

23 C. The Developer, Association, their respective successors and assigns, including
24 individual lot owners within the subdivision, agree to repair or replace structural
25 storm water management practices within thirty (30) days of notification of
26 deficiency by the city.

27 D. The Developer, Association, their respective successors and assigns, including
28 individual lot owners within the subdivision, agree that in the case of failure to
29 correct deficiencies they will reimburse the city for its cost and expenses incurred in
30 the process of repairing any failed storm water management practices installed
31 pursuant to this agreement.

32 E. The Covenant of the Subdivision establishing the Association states that the
33 Association is obligated to inspect, clean, maintain, and repair the LID BMPs for a
34 minimum of ten (10) years from the date of as-built verification, the Association has
35 adopted the operation and maintenance agreement as an obligation of the
36 Association, and that a funding mechanism, such as an escrow account, is in place
37 whereby individual lot owners within the subdivision pay a regular fee to the
38 Association for the inspection, cleaning, maintenance, and repair of the storm water
39 management practice(s).

40 F. Upon the initial sale of any lot within the Subdivision and prior to closing on such
41 sale, the Developer shall give a copy of the operation and maintenance agreement to
42 the potential buyer.

1 **(6) Dissolution or Modification of the LID/NCDP Integrated Storm Water Plan and the**
2 **Operation and Maintenance Agreement**

3 A. Dissolution or Modification of the LID/NCDP Integrated Storm Water Management
4 Plan or Operation and Maintenance Agreement within the Minimum Ten-Year
5 Maintenance Period

6 (i) If the applicant or owner wishes to dissolve the LID/NCDP integrated storm
7 water plan or operation and maintenance agreement within the minimum ten (10)
8 year maintenance period, the following conditions apply:

- 9 – Dissolution of the LID/NCDP integrated storm water plan shall be defined as
10 meeting less than sixty (60) percent of the performance standard in
11 subsection (g)(2) and/or an associated operations and maintenance
12 agreement.
- 13 – The applicant or owner must notify the Director of Transportation and
14 Capital Improvements Department or designee of its desire to dissolve the
15 LID/NCDP integrated storm water plan or operation and maintenance
16 agreement.
- 17 – The applicant or owner must demonstrate no downstream impacts of the
18 modified storm water plan if the site received on-site detention credits; if
19 downstream impacts are projected to occur, the applicant or owner shall
20 abide by the applicable current local, state, or federal regulations to
21 implement controls to mitigate those impacts.
- 22 – The applicant or owner must meet the parkland, landscaping, and tree
23 preservation requirements of the ordinance in effect on the date when the city
24 was notified of the desire to dissolve the plan and/or agreement.
- 25 – The applicant or owner loses all ongoing fee-based incentives.
- 26 – The applicant or owner must reimburse to the city all fee-based incentives
27 accrued to-date, prorated based on the years of service of the BMPs. The
28 applicant or owner shall pay a minimum penalty of ten (10) percent of the
29 fee-based incentives accrued to date. The applicant must reimburse the city
30 within thirty (30) days of receiving the assessment of incentives and
31 penalties. If such assessment is not paid within thirty (30) days, the matter
32 will be referred to the city attorney's office to enforce compliance subject to
33 subsection (p).

34 (ii) If the applicant or owner discontinues the LID/NCDP integrated storm water
35 plan or maintenance responsibilities and does not petition the city for dissolution
36 of the plan or the operation and maintenance agreement, all of the above
37 conditions apply; in addition the owner shall be subject to a civil penalty per
38 subsection (p) below. The maximum civil penalty for a violation may be up to
39 the maximum allowed by law.

40 (iii) If the owner or applicant is proposing to modify the LID/NCDP integrated storm
41 water plan and/or operations and maintenance agreement in such a way as to
42 meet at least sixty (60) percent of the performance standard in subsection (g)(2),
43 the above conditions do not apply. However, a revised LID/NCDP integrated
44 storm water plan, record drawings, and deed recordation affidavit must be

1 submitted to the city and approved in accordance with subsections (b)(4)(D) and
2 (F) and (m)(4).

- 3 (iv) If the owner or applicant is proposing a modification which is an enhancement of
4 the existing LID/NCDP integrated storm water plan and/or operations and
5 maintenance agreement, the Director of the Transportation and Capital
6 Improvements Department or designee shall determine if a revised LID/NCDP
7 integrated storm water plan, record drawings, and deed recordation affidavit
8 must be submitted to and approved by the city based on the type and degree of
9 modification proposed. Incentives corresponding to the modified LID/NCDP
10 integrated storm water plan will be effective at the time of the acceptance of the
11 enhanced LID/NCDP elements by the Director of Transportation and Capital
12 Improvements or designee.

13 B. Dissolution or Modification of the Operation and Maintenance Agreement after the
14 Minimum Ten-Year Maintenance Period.

- 15 (i) If the owner wishes to dissolve the operation and maintenance agreement after
16 the minimum ten (10)-year maintenance period, the following conditions apply:
- 17 – Dissolution of the operations and maintenance agreement shall be defined as
18 meeting less than sixty (60) percent of the performance standard in
19 subsection (g)(2) and/or an associated operations and maintenance
20 agreement.
 - 21 – The owner must notify the Director of Transportation and Capital
22 Improvements of its intent to dissolve the operation and maintenance
23 agreement.
 - 24 – The owner loses all ongoing fee-based incentives.
 - 25 – The owner must demonstrate no downstream impacts if the site received on-
26 site detention credits or provide mitigation in accordance with current local,
27 state, and federal regulations.
 - 28 – The applicant or owner must meet the parkland, landscaping, and tree
29 preservation requirements of the ordinance in effect on the date the city was
30 notified of intent to dissolve the plan and/or agreement.
- 31
- 32 (ii) If the owner discontinues maintenance responsibilities and does not notify the
33 city that it is dissolving the storm water plan or operation and maintenance
34 agreement, all of the above conditions apply; in addition the owner shall be
35 subject to a civil penalty per subsection (p) below. The maximum civil penalty
36 for a violation may be up to the maximum allowed by law.
- 37 (iii) If the owner or applicant is proposing a modification which meets at least sixty
38 (60) percent of the performance standard in subsection (g)(2) and/or is an
39 enhancement of the existing operations and maintenance agreement, the Director
40 of the Transportation and Capital Improvements Department or designee shall
41 determine if a revised LID/NCDP integrated storm water plan, record drawings,
42 and deed recordation affidavit must be submitted to and approved by the city
43 based on the type and degree of modification proposed. Incentives corresponding
44 to the modified LID/NCDP integrated storm water plan will be effective at the

1 time of the acceptance of the enhanced LID/NCDP elements by the Director of
2 Transportation and Capital Improvements or designee.

3
4 **(o) Post Construction Inspections.**

5 **(1) Inspections Prescribed by the Storm Water Operation and Maintenance Agreement.**

6 Inspections shall be conducted as prescribed by the storm water operation and
7 maintenance agreement. After the structural BMPs are established including the
8 vegetation establishment period, performance of the system should be observed by the
9 RDPIRC or a certified inspector during and after run-off producing storms to check that
10 installed components are operating as designed.

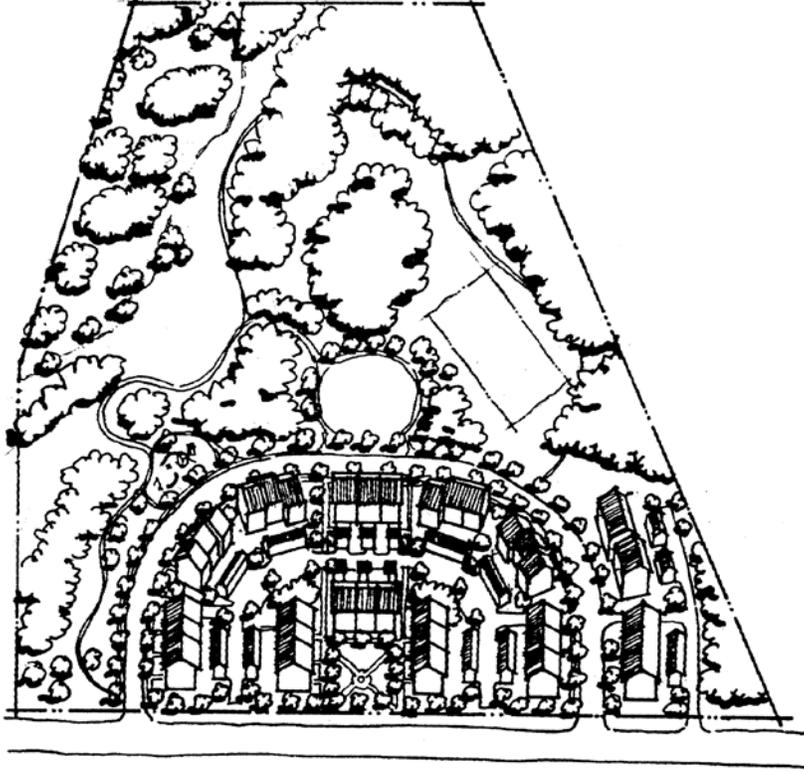
11 **(2) Additional Inspections by the City.** Inspections may be conducted by the city on a
12 reasonable basis, including but not limited to routine inspections; random inspections;
13 and inspections based on complaints or other notice of possible violations. Inspections
14 may include but are not limited to reviewing maintenance and repair records; sampling
15 discharges, surface water, groundwater, and water in LID BMPs according to the San
16 Antonio River Basin LID Guidance Manual and the operation and maintenance
17 agreement.

18 **(3) Right of Entry for Inspections.** When any new drainage control facility or LID BMP is
19 installed on private property, or when any new connection is made between private
20 property and a public drainage control system, the property owner shall grant to the city
21 the right to enter the property at reasonable times and in a reasonable manner for the
22 purpose of inspection. This includes the right to enter a property when the city has a
23 reasonable basis to believe that a violation of this ordinance is occurring or has occurred
24 in accordance with subsection (p) below.

25 **(p) Compliance.**

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

1 Sec. 35-203. - Conservation Subdivision.



2

3 *STATEMENT OF PURPOSE*

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

- 11 • *To protect the public health, safety and general welfare by avoiding surface and ground water pollution,*
12 *contaminated runoff, air quality contamination, and urban heat islands which result from pavement and the*
13 *clearing of natural vegetation.*
- 14 • *To protect and preserve natural resources such as wetlands, streams, lakes, steep slopes, woodlands, and*
15 *water recharge areas.*
- 16 • *To reduce infrastructure and housing costs by reducing the engineering and construction costs produced by*
17 *conventional subdivision design, which generally requires more pavement, wetland crossings, grading of trees*
18 *and natural areas, and maintenance from lawn and landscaping maintenance.*
- 19 • *To protect property values by allowing open space design features which enhance the marketability of*
20 *development.*
- 21 • *To provide design flexibility.*

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

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

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

- 7 • Natural Resources, Sub-Policy 1.Id: Encourage the ecological management of floodplains and promote their
8 use as open space, such as greenways, parks, wildlife habitat, and pedestrian-friendly linkage corridors.

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

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

21 (b) **Processing Procedures.**

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

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

26 A. A variance to the requirements of subsection (c) shall be processed in accordance with section 35-
27 482, Zoning Variances, of this chapter.

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

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

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

36
37 (c) **Size and Location of Site.**

- 38 (1) ~~A~~ There is no minimum ~~or maximum~~ size of 20 acres is required for a conservation subdivision. Should a
39 parcel not be large enough to comply provided, however, that the minimum open space requirements may
40 limit the availability of this option for some landowners. Parcels which cannot demonstrate compliance
41 with the minimum open space standards on-site, a Conservation Area on an adjoining parcel may be
42 dedicated shall dedicate and maintained provided that it is connected to the ~~maintain an open space~~
43 ~~system~~ Conservation Area on the parcel being developed. The Conservation Area open space dedication
44 and management requirements in section 35-203(j) also apply to the ~~which is connected to an~~ open space
45 on the adjoining property. system on an adjacent site in accordance with the parks and open space
46 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

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

- 1
- 2 (e) **Traffic Impact Analysis.** A conservation subdivision shall comply with the traffic impact analysis standards
- 3 of this chapter.
- 4 (f) **Lot Layout.**
- 5 (1) **Alternative Lot Figurations.**
- 6 A. A conservation subdivision shall comply with the lot layout standards of this chapter, except as
- 7 otherwise provided herein.
- 8 B. Lots within a conservation subdivision shall not be subject to the minimum frontage or minimum lot
- 9 width requirements of the dimensional matrix (article III, Table 301-1).
- 10 C. The required Conservation Area must be directly accessible to the largest practicable number of
- 11 dwelling units within the development. Non-adjoining lots must be provided with safe, convenient
- 12 access to a Conservation Area.
- 13 ~~C. Lots within one hundred (100) feet of a primary or secondary conservation area shall front on a~~
- 14 ~~conservation access street. Lots shall not front on a collector or higher order street.~~
- 15 D. No lot can be farther than a 1/4-mile radius from the Conservation Area. This radius is measured in a
- 16 straight line from the residential lot line, without regard for street, sidewalk or trail connections, to
- 17 the nearest point of a Conservation Area.
- 18 E. Access to the Conservation Area must be provided either by an abutting street or easement not less
- 19 than 20 feet in width.
- 20 ~~F.D.~~ Lots may be arranged in any of the patterns set forth in Table 204-1, as defined in the lot layout
- 21 standards. In Table 203-2, an "asterisk" indicates that the lot configuration described in column (A)
- 22 is permitted in the applicable zoning district (columns (B) through (C)), while a dash ("—")
- 23 indicates that the lot configuration is not permitted.

24 **Table 203-2**

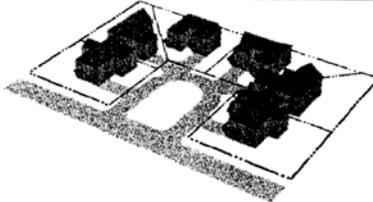
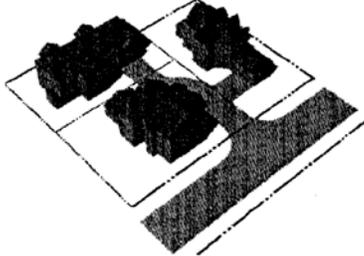
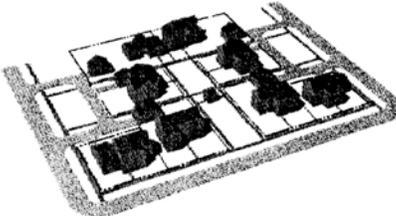
(A)	(B)	(C)
Lot Configuration	RP, RE,R-20, <u>RD</u> , <u>FR</u>	<u>R-6, G R-6, R-5,</u> <u>RM-6, RM-5,</u> <u>R-4, RM-4</u>
Single-Family Detached Homes	*	*
Detached Eyebrow Homes	*	*
Attached Eyebrow Homes	—	*
Detached Patio Homes	*	*
Detached Homes with Shared Driveways	*	*
Detached Homes with Shared Courtyards	*	*
Detached Homes with Commons	<u>*</u> <u>—</u>	*
Detached Patio Homes	<u>*</u> <u>—</u>	*
Detached "Z" Lot Homes	<u>*</u> <u>—</u>	*
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	—	*

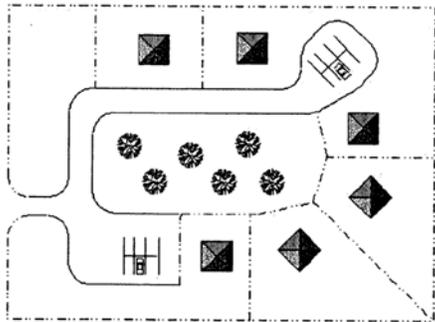
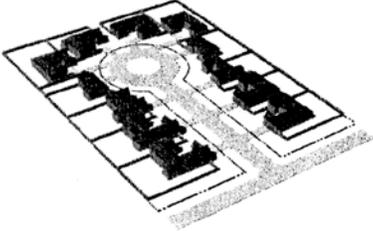
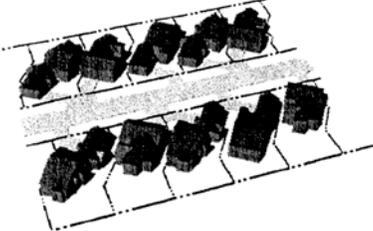
1

2
3
4
5

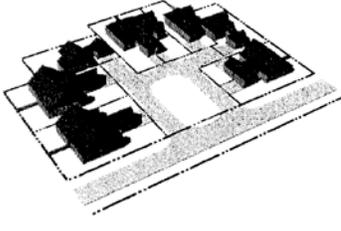
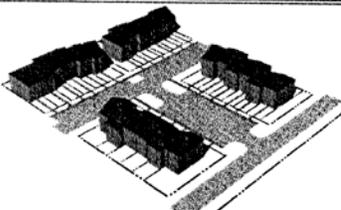
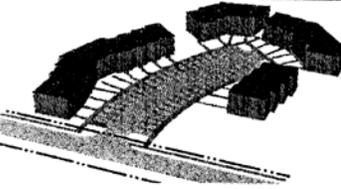
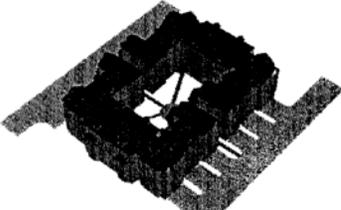
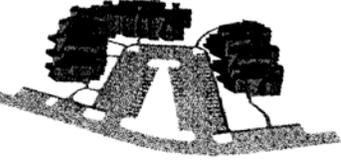
(2) **Definition and Alternative Development Standards.** The alternative lot configurations described in subsection (1) hereto shall have the meanings assigned below. Permissible deviations from the dimensional standards set forth in section 35-310 of this chapter are set below for some alternative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

<p>Single-Family Detached Homes (see Definitions)</p> <p>A One-Family Dwelling that is not attached to any other Dwelling by any means and is surrounded by open space or yards.</p>	
<p>Detached "Eyebrow" Homes</p> <p>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.</p>	
<p>Detached Homes With Shared Driveways</p> <p>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.</p>	
<p>Detached Homes With Shared Courtyards</p> <p>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.</p>	
<p>Detached Homes With Commons</p> <p>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).</p>	

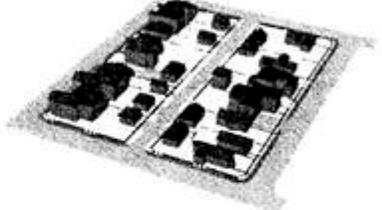
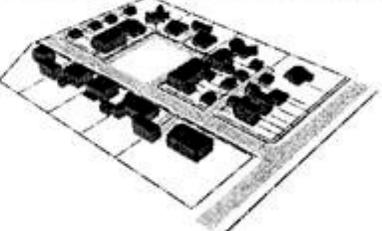
1
2
3

<p>Cottage Homes</p> <p>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.</p>	 A site plan diagram showing a cluster of small, square-shaped buildings arranged around a central open space. The buildings are connected by a winding path. There are also some larger, rectangular structures and a parking area on the right side.
<p>Detached Patio Homes or Garden Homes</p> <p>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.</p>	 An aerial view diagram of a residential development. The houses are arranged in a grid pattern, with a central circular driveway or common area. The houses are shown as dark, rectangular structures with some landscaping.
<p>Detached "Z" Lot Homes</p> <p>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.</p>	 An aerial view diagram showing houses arranged along a diagonal axis. The houses are shown as dark, rectangular structures, with some landscaping and a central path.
<p>Detached Wide-Shallow Lot Homes</p> <p>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.</p>	 A site plan diagram showing a grid of lots. The lots are arranged in two rows of six lots each. The lots are shown as small, rectangular structures with some landscaping.

1
2
3
4

<p>Attached "Eyebrow" Homes</p> <p>An Eyebrow Street includes Dwellings fronting a street which surrounds a Close. * The eyebrow street configuration may be used for duplexes or triplexes.</p> <p>* 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)</p>	
<p>Attached Homes With Private Parking Courts</p> <p>This configuration involves townhouse groups with not more that six to eight units in a row.</p>	
<p>Attached Homes With Automobile Courtyard, Attached Homes With Park Circle, and Attached Homes with Private Parking Courts (see Illustration)</p> <p>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.</p>	
<p>Stacked Quadrangle Homes</p> <p>Quadrangles are Multi-Family Dwellings with at least two (2) stories and arranged in a continuous, rectangular form with an inner courtyard.</p>	
<p>Angled Stacked and Attached Homes With Parking Courts</p> <p>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.</p>	

1
2
3

<p>Single-Family Attached and Multifamily Stacked Homes With Park Square</p> <p>This configuration involves a combination of Single-Family Dwellings, Duplexes, Rowhouses, or Multi-family Dwellings facing a Square, Green, or plaza.</p>	
<p>Single-Family Attached Homes With Mid-Rise Cluster</p> <p>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.</p>	
<p>Single-Family Detached and Attached Homes in Traditional Neighborhood Block</p> <p>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.</p> <p>* 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.</p>	
<p>Traditional Neighborhood Cluster Street</p> <p>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. **</p> <p>* 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.</p> <p>** 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)</p>	

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.

1
2
3
4
5
6
7

(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) 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 ~~331285~~), 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.

(i) 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, in its 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:

- 1 (i) lien right for maintenance expenses and tax obligations;
- 2 (ii) responsibility for the insurance and taxes on the Conservation Area;
- 3 (iii) automatic compulsory membership in the association of all lot purchasers and their
- 4 successors;
- 5 (iv) a fair and uniform method of assessment and collection/payment for dues, maintenance, and
- 6 related costs;
- 7 (v) conditions and timing of transferring control of the association from the developer to the lot
- 8 owners;
- 9 (vi) equal access and right of use to all Conservation Area for all property owners;
- 10 (vii) perpetual and continued maintenance liability for the Conservation Area;
- 11 (viii) filing of all required covenants, declarations and restrictions with the county clerk;
- 12 (ix) provision for transfer of ownership to a qualified conservation organization in case of the
- 13 property owners' association dissolving;
- 14 (x) notice of the city's third party right to enforce its ordinance within the Conservation Area.

15 C. A permanent conservation easement in favor of either:

- 16 (i) a land trust or similar conservation-oriented non-profit organization with legal authority to
- 17 accept such easements in accordance with the State of Texas Natural Resources Code Section
- 18 183 - Conservation Easements. The organization shall be bona fide and in perpetual existence
- 19 and the conveyance instruments shall contain an appropriate provision for retransfer in the
- 20 event the organization becomes unable to carry out its functions; or
- 21 (ii) a governmental entity with an interest in pursuing goals compatible with the purposes of this
- 22 ordinance. If the entity accepting the easement is not the city, then a third right of
- 23 enforcement favoring the city shall be included in the easement; or

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

25 The Conservation Area shall be delineated on the plat as "Conservation Area" along with a plat

26 note: "in accordance with Section 35-203 - Conservation Subdivision." The instrument for

27 permanent protection shall include clear restrictions on the use of the Conservation Area. These

28 restrictions shall include all restrictions contained in this section, as well as any further restrictions

29 the Applicant chooses to place on the use of the Conservation Area. The restrictions shall be

30 reviewed for consistency with city policy and best management practices for natural and cultural

31 resource protection, and administratively approved by the city attorney. The instrument shall be

32 recorded at the county and the volume and page number shall be noted on the subdivision plat.

33 (2) Ownership and Management of Conservation Area.

34 A. Ownership of Conservation Area. The applicant must identify the owner of the Conservation Area

35 who is responsible for maintaining the Conservation Area and facilities located thereon. If a

36 homeowners or condominium association is the owner, membership in the association shall be

37 mandatory and automatic for all owners of the subdivision and their successors. If an association is

38 the owner, it shall have lien authority to ensure the collection of dues from all members. The

39 responsibility for maintaining the Conservation Area and any facilities located thereon shall be

40 borne by the owner.

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

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

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

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

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

8 C. Management Plan Guidelines. The plan shall be developed with the advice and assistance of
9 qualified environmental professionals, such as ecologists, biologists, geologists, archeologists, and
10 historic preservation experts to provide for the long-term management of the Conservation Area.
11 The plan shall identify goals and objectives for planned land management activities for the areas.
12 The plan shall provide the following minimum requirements, in addition to those cited in 35-
13 203(j)(2)B:

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

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

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

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

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

40 (vi) Woodlands. The plan must identify resources to be conserved and a description of
41 management activities based on the ecology of the woodlands, including but not limited to
42 pruning, thinning, debris removal, pest and disease control, invasive species removal, and
43 diversity of tree species (Reference: Forest Stewardship Council - U.S. Forest Standard v.
44 1.0).

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

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

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

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

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

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

13 (o) Application Requirements.

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

19 A. Property boundaries;

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

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

23 D. The planned location of protected Conservation Area.

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

27 F. General vegetation characteristics;

28 G. General soil types;

29 H. Existing roads and structures; and,

30 I. Potential connections with existing greenspace and trails.

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

33 (3) Instrument of Permanent Protection Required. A copy of the recorded instrument of permanent
34 protection, such as a conservation easement or permanent restrictive covenant, shall be placed on the
35 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	<u>Y</u>
Utilities (§ 35-507)	Y	P	Y	Y	Y	Y	Y	<u>Y</u>
Impact Fees (§ 35-508)	Y	Y	Y	Y	Y	Y	Y	<u>P</u>
Buffers (§ 35-510)	Y	Y	Y	Y	N	P	N	<u>P</u>
Landscaping (§ 35-511)	Y	Y	Y	Y	N	Y	Y	<u>P</u>
Streetscape Planting Standards (§ 35-512)	Y	Y	Y	Y	Y	Y	P	<u>P</u>
Tree Preservation (§§ 35-513 , 35-523)	Y	N	Y	Y	N	Y	Y	<u>P</u>
Fences and Walls (§ 35-514)	Y	Y	Y	Y	Y	N	N	<u>Y</u>
Lot Layout Regulations (§ 35-515)	Y	P	P	Y	P	P	P	<u>P</u>
Setback and Frontage Regulations (§ 35-516)	Y	P	P	Y	P	P	P	<u>P</u>
Building Height Regulations (§ 35-517)	Y	Y	Y	Y	Y	Y	Y	<u>P</u>

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 35-208 applicable 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.

* * * * *

(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.

* * * * *

(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

* * * * *

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 \(section 35-210\)](#).

* * * * *

Section 35-523 - Tree Preservation

* * * * *

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

* * * * *

(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-bioretenion 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.

* * * * *

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

* * * * *

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

* * * * *

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.

* * * * *