

AN ORDINANCE **8671 1**

DECLARING THE DRAINAGE OF THE CITY TO BE A PUBLIC UTILITY; ADOPTING THE PROPOSED DRAINAGE REGULATIONS DEVELOPED BY THE DRAINAGE REGULATIONS COMMITTEE TO REQUIRE ON-SITE DETENTION OF STORMWATER AND ADDITIONAL REGULATION OF STORMWATER CONVEYANCE; ADOPTING A FEE-IN-LIEU OF ON-SITE DETENTION POND POLICY; AUTHORIZING THE FOLLOWING ONE TIME FEES (RESIDENTIAL - \$1,200.00, MULTI FAMILY - \$1,600.00 NON-RESIDENTIAL LESS THAN 65% IMPERVIOUS COVER \$2,600.00, GREATER THAN 65% IMPERVIOUS COVER - \$3,000.00 PER ACRE); APPROPRIATING \$100,000.00 FROM THE STORMWATER DRAINAGE UTILITY FUND TO PROVIDE FOR STAFFING AND ADMINISTRATIVE COSTS ASSOCIATED WITH THE PROGRAM DURING THE FISCAL YEAR 1997-98; AMENDING THE CITY CODE TO REFLECT SUCH CHANGES INCLUDING AMENDING THE UNIFIED DEVELOPMENT CODE AS FOLLOWS: 1) ARTICLE I, DIVISION 3, ADDING THE DEFINITIONS FOR "DRAINAGE SYSTEM," "STORMWATER DRAINAGE FEE," "SWALE," "WATERCOURSE," AND "WATER SHED" AND AMENDING THE DEFINITION OF FLOOD INSURANCE SITE MAP; 2) ARTICLE II, DIVISION 1, ADDING "DRAINAGE MASTER PLAN," AMENDING IMPACT FEES; AND AMENDING PRELIMINARY OVERALL DEVELOPMENT PLAN (POADP) INFORMATION REQUIREMENTS; AND 3) ARTICLE IV TO REFLECT NEW DRAINAGE REGULATIONS THAT REQUIRE ON-SITE STORMWATER DETENTION OR PAYMENT OF FEE-IN-LIEU OF DETENTION AND REQUIRING COMPLIANCE WITH ADDITIONAL REGULATIONS RELATED TO STORMWATER CONVEYANCE, TO BE EFFECTIVE OCTOBER 20, 1997.

(AMENDS CHAPTER 35 OF THE CITY CODE)

(AMENDS CHAPTER 34 OF THE CITY CODE)

WHEREAS, the City of San Antonio City Council in order to develop a strategy and methodology for improving the City's stormwater drainage system empowered the Drainage Regulation Committee as referenced in Section 35-4020 of the City Code as amended by this ordinance; and

WHEREAS, the Committee after meeting on a regular basis over numerous months developed significant revisions to the City's Unified Development Code to provide for the safe and environmentally sensitive conveyance of stormwater, including the requirement that new development provide for on-site detention of stormwater; and

WHEREAS, said revisions were reviewed by the Planning Commission at a public hearing and approved with the recommendation that developers be provided the option to contribute to the construction of a regional detention pond system in lieu of providing on-site detention; and

WHEREAS, said revisions were reviewed by City Council at a public meeting, and at that time City Council directed staff to provide for the adoption of provisions that would permit the payment of a fee-in-lieu of on-site detention; and

WHEREAS, staff working with the Planning Commission's Land Development Service Committee has recommended that a drainage utility be created in order to provide funding for the Regional Detention Pond System and Channel Improvement Program; **NOW THEREFORE**,

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF SAN ANTONIO:

SECTION 1. Chapter 34 (entitled "Water and Sewers") of the San Antonio City Code is hereby amended by adding a new Article VII, Sections 34-1101 through 34-1116, inclusive, (entitled "Drainage Utility") as is set forth in Appendix A of this ordinance and which is hereby adopted and approved as if fully set forth herein.

SECTION 2. Chapter 35, Exhibit B (entitled "Forms") is amended to include Section 35-B212, Form L (entitled "Regional Stormwater Management Participation Form") and Section 35-B213, Form M (entitled "City of San Antonio Drainage Department HEC Submittal Checklist") as is set forth in Appendix B of this Ordinance and which is adopted as if fully set forth herein.

SECTION 3. Chapter 35 Article I, Division 3, Section 35-1041 (entitled "Definitions") is hereby amended by adding the language that is underlined (added) to the existing text of said section as follows:

Sec. 35-1041. Definitions.

Drainage System: All streets, gutters, inlets, swales, storm sewers, channels, streams, or other pathways, either naturally occurring or man-made, which carry and convey stormwater during rainfall events.

Flood insurance rate map (FIRM): Means an official map of a community, on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to the community. The map is divided into zones which are used for setting rates of flood insurance. Insurance rates, the type of permit, and requirements of the permit will vary depending on the zone in which a property is located.

Regional Stormwater Improvements (RSI): means regional detention and retention ponds, watershed protection, land purchase, waterway enlargement, channelization, and improved conveyance structures.

Stormwater Drainage Fees: A method or mix of methods for providing adequate, stable and equitable funding for a comprehensive storm water or drainage program. The financing

mechanisms included in the method may include, but not be limited to, user fees, new development impact fees, or surcharges on other utility fees.

Swale: A low lying or depressed stretch of land without a defined channel or tributaries.

Watercourse: A natural or man-made channel through which stormwater flows.

Watershed: A region or area bounded peripherally by a summit or high boundary line and draining ultimately to a particular watercourse or body of water.

SECTION 4. Chapter 35 Article II, Division 1, (entitled “Master Plan Elements and Conformity”) is amended by adding Section 35-2039 (entitled “Drainage Master Plan”) and the language that follows:

Sec. 35-2039. Drainage Master Plans.

As the City continues to define and adopt drainage master plans for specific watersheds contained in whole or in part within the City limits and its ETJ, development will be required to conform to the elements of the plan for each particular watershed. The preservation of the inherent characteristics of natural drainage features and of the natural flood plain where practical is an adopted goal of each watershed drainage plan. The guidance for the drainage master plans was provided by the Drainage Regulation Review Committee in February 1996. The first two goals stated in the report are to "Ensure that stormwater management considers and provides reasonable safety from flood hazards for people and property" and to "Integrate stormwater management with natural resource enhancement and protection, compliance with environmental regulations and with creating appropriate development." The drainage master plans developed by the City for each watershed provide long-range guidance for managing the stormwater from existing and future land uses in the most efficient ways possible, with consideration for continued development, reduced flooding potential, adequate stormwater conveyance, increased aquifer recharge, water quality, habitat protection, and increased recreational opportunities.

SECTION 5. Chapter 35 Article II, Division 1, Section 35-2052 (entitled “Impact fees”) is hereby amended by adding the language that is underlined (added) to the existing text of said section as follows:

Sec. 35-2052. Impact fees.

(a) Impact fees for water and sanitary sewer capital facilities are established in Article V in accordance with the requirements of V.T.C.A., Local Government Code Chapter 395 which relates to the financing of capital improvements required by new development in political subdivisions. Chapter 395 specifically sets forth the process which political subdivisions must follow in order to impose legally authorized impact fees as a means to fund the costs of capital improvements necessitated by and attributable to new development. The city has followed that process in adopting Article V of this code. Impact fees for capital improvements related to drainage may be implemented on a watershed specific basis in conjunction with City Council adoption of individual watershed master drainage plans.

SECTION 6. Chapter 35 Article II, Division 2, Section 35-2075 (entitled “Information required”) is hereby amended by adding the language that is underlined (added) to the existing text of said section as follows:

Sec. 35-2075. Information required.

(i) One hundred-year flood plain limits as identified from the most current Flood Insurance Rate Maps published by the Federal Emergency Management Agency for the City of San Antonio and/or the applicable county. In cases where the one hundred-year flood plain for a particular watercourse is not shown on the published FIRM, a Professional Engineer shall develop a preliminary one-hundred year flood plain for each watercourse serving a watershed in excess of 100 acres.

SECTION 7. Chapter 35 Article IV, Division 2, Section 35-4011 (entitled “Development plats”) is hereby amended by adding the language that is underlined (added) to the existing text of said section as follows:

Sec. 35-4011. Development plats.

(b) The city adopts the following general plans, rules, and ordinances to govern development plats of land within the city and its extraterritorial jurisdiction to promote the health, safety, morals, and general welfare of the city and the sage orderly, and healthful development of the city.

- 1) the city’s master Plan, including all of its component plans
- 2) City Public Service’s plans and regulations pertaining to the extension of electric and gas service
- 3) San Antonio Water System’s Waterworks Master Plan.
- 4) the Unified Development Code (Chapter 35 of the City Code)
- 5) Any applicable watershed Master Drainage Plan adopted by the City.

SECTION 8. Chapter 35 Article IV, Division 3, is (entitled “Subdivision Design Standards”) is amended by adding Section 35-4020 (entitled “General Design Guidelines”) and the language that follows:

Sec. 35-4020. General Design Guidelines.

In May 1994, the San Antonio City Council appointed a Drainage Regulation Review Committee to make recommendations concerning the City’s management of stormwater drainage. The City recognizes that watercourses and their associated watersheds within the city of San Antonio’s jurisdiction represent significant and irreplaceable recreational and aesthetic resources and contribute to the economic and environmental health of the City. In addition, all of the watersheds within the City are vulnerable to concentrated surface water runoff, disturbance of wildlife habitat, nonpoint source pollution and sedimentation resulting from development activities and should be developed in a sensitive and innovative manner. In order to minimize the possibility of adverse impacts on both water quantity and water quality during development, the following general standards shall apply to all development:

(a) All land disturbing or land filling activities or soil storage shall be undertaken in a manner designed to minimize surface runoff, erosion and sedimentation, and to safeguard life, limb, property and the public welfare in accordance with the City of San Antonio clearing and grading ordinance. Innovative land management to reduce clearing and disruption of natural vegetation and soils is encouraged. Clearing of existing vegetation or any other development activities by the site owner or developer should be limited to those necessary for surveying or geological testing before release of a development plan or subdivision construction plans by the City. Site plans which incorporate natural floodplains and green belts into the overall development concept are strongly supported by the City.

(b) Innovative runoff management practices designed to meet Section 35-4029 of the UDC, enhance the recharge of groundwater, and maintain the function of critical environmental features are encouraged.

(c) Erosion and sedimentation controls in accordance with the specifications established by the Director of Public Works in compliance with the National Pollution Discharge Elimination System permitting requirements for the City are required.

(d) Projects shall not be considered complete until restoration has been made in accordance with NPDES requirements.

(e) Where possible, multiple uses of drainage facilities and open space shall be incorporated by the owner or developer of a new subdivision. Alternative uses such as public recreation, horse/bike/hiking trails, walking paths, nature preserves, wildlife habitat areas, etc. are encouraged subject to the approval of the Director of Public Works.

SECTION 9. Chapter 35 Article IV, Division 3, Section 35-4029 (entitled “Drainage facilities”) is hereby amended by adding the language that is underlined (added) and deleting the language that is stricken (~~deleted~~) to the existing text of said section as follows:

Sec. 35-4029. Drainage facilities.

~~Drainage facilities shall be provided and constructed as specified in Exhibit A included at the end of this chapter.~~

The recommendations contained in the report from the Drainage Regulation Review Committee have been incorporated into the following guidelines for the design and construction of drainage facilities within the City of San Antonio.

(a) The owner or developer of property to be developed shall be responsible for the conveyance of all stormwater flowing through the property. This responsibility includes the stormwater flowing onto the property by any other developed property as well as the drainage naturally flowing through the property by reason of topography. Future upstream development shall be accounted for by assuming ultimate development when sizing drainage systems as specified in Exhibit A, Division 4 of this chapter.

(b) New Development: Peak stormwater runoff rates from all new development shall be less than or equal to the peak runoff rates from the site’s predevelopment conditions for the 5-, 25- and 100-year design storm events, except as provided in Section e(3) which follows.

(c) Redevelopment: Peak stormwater runoff rates from an area of redevelopment due to zoning or replatting shall be less than or equal to the peak runoff rates produced by existing development conditions for the 5-, 25- and 100-year design storm events, except as provided in Section d (3) which follows.

(d) Stormwater Detention: Stormwater detention shall be required for all new developments or redevelopment of individual parcels of property to mitigate peak flowrates to predevelopment or existing development conditions as stated in (b) and (c) above.

(1) The maximum allowable outflow rate from the detention facility must be restricted to the flow rate from the undeveloped or existing development tract for the 5-, 25- and 100-year frequency. Best Management Practices shall be used in the design of detention facilities in accordance with Exhibit A, Division 4 of this chapter, and standards defined by the

Director of Public Works. The timing of the hydrograph released from the detention facility must be checked against the timing of the flowrate in the first open watercourse to prevent any increase in the peak flowrate in the receiving watercourse. For detention basins constructed in-line on an existing watercourse, the creation of the basin shall not increase flood elevations in the channel upstream of the new development boundaries

(2) On-site detention is required where regional detention facilities are not available. On-site detention facilities must be privately owned and should 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.

(3) General locations and sizes of regional detention facilities have been identified in the Master Drainage Plan for the major watersheds in the City's jurisdiction. The ownership of regional detention facilities may either be public or private. The creation of private regional detention facilities designed to service one or several developments is encouraged. In watersheds where public regional detention facilities exist, mitigation of increased stormwater runoff from new construction must be located in these facilities. In the design of drainage facilities for new development or redevelopment upstream of a regional detention facility, the Base Flood Elevation (BFE) in the receiving channel may not be increased between the development and the regional detention facility, unless the increased floodplain is contained within an easement or the receiving channel has sufficient capacity to contain the increased BFE within its banks. Temporary detention may be required for the development until sufficient capacity in the outfall channel is provided to accommodate increased flows. Maintenance of publicly owned facilities will be the responsibility of the City. Maintenance of private facilities is the responsibility of the property owner or the community association and must be specified in the maintenance schedule submitted to the City. A maintenance schedule for both publicly owned and privately owned facilities must be approved by the Director of Public Works prior to approval of construction drawings.

(4) Multi-Use Facilities are encouraged (e.g., enhance water quality, satisfy NPDES requirements, enhance ground water recharge, provide open space, provide recreation or other amenities, and/or provide habitat) and may be utilized on a case-by-case basis.

(5) The use of multi-use detention facilities to alleviate existing flooding problems, enhance and provide amenities for older neighborhoods, and support the revitalization of economically depressed areas is encouraged in public and private redevelopment initiatives.

(6) Stormwater retention with permanent wet pool or pumped detention systems will not be acceptable methods of stormwater mitigation unless the facility will remain privately owned, operated, and maintained. The City will approve the use of a pumped facility for private use under the following conditions:

- (a) A gravity system is not feasible from an engineering and economic standpoint.
- (b) At least two pumps are provided, each of which is sized to pump the design flowrate;
- (c) The selected design outflow rate must not aggravate downstream flooding.
- (d) Controls and pumps shall be designed to prevent unauthorized operation and vandalism.
- (e) Adequate assurance is provided that the system will be operated and maintained on a continuous basis.

(7) Stormwater detention facilities should be located in topographically depressed areas where possible. When necessary, dams may be constructed to detain flows. All proposed dams shall conform to the following items:

(a) All dams over six feet above existing natural ground shall be approved by the Dam Safety Team of the Texas Natural Resources Conservation Commission for safety. All other new dams shall be designed in accordance with acceptable design criteria as approved by the Director of Public Works, or his authorized representative.

(b) All hydrology and hydraulic properties of a dam will be reviewed by the Department of Public Works with regard to spillway design, freeboard hydraulics, backwater curves and downstream effects due to the dam site.

(c) The spillway section of any earthen dam with a height greater than six feet shall be large enough to pass a PMP (Probable Maximum Precipitation) flood, as defined by the NRCS, without overtopping the crest of the dam in accordance with TNRCC regulations.

(d) A 100 year frequency flood shall be routed through the proposed dam and all land subject to flooding shall be dedicated as drainage easement or right-of-way. An unobstructed 15-foot access easement around the periphery of the flooded area shall be dedicated as drainage easement for facilities which require regular mowing or other ongoing maintenance, at the discretion of the Director of Public Works. An unobstructed 15 ft. access right of way shall be established which connects the drainage easement adjacent to the dam structure to a road or alley.

(e) All spillway discharges shall be adequately routed to the centerline of the natural low below the dam site. The adequate routing of spillway discharges pertains to the hydraulic routing of the 100 year frequency flood for dedication of drainage easement limits. PMP flood routing or breaches will only be considered for safety considerations (that is, the placement of buildings and the setting of minimum floor slab elevations below the dams).

(f) Maintenance of all private dam structures shall be the responsibility of the current Owner, including periodic inspection and repair of any portion found sub-standard. Maintenance issues identified by the City or State during inspections shall be the responsibility of the current owner.

(g) Any proposed concrete dam structure need not have spillway capable of routing a PMP flood, however, it shall be shown to be structurally capable of withstanding any range of flood conditions with regard to possible failure due to sliding, overturning, and structural integrity, up to and including the PMP flood.

(h) Development below existing dams will take into account the original design conditions of the existing dam. Breachage checks will be required, dependant upon location of development with respect to dam site.

(e) Regional Stormwater Management Program. The Regional Stormwater Management Program provides for the administration, planning, design and construction of regional drainage improvements using fees (stormwater development fee) paid by the owners of proposed developments. Regional Stormwater Management uses a watershed-wide approach to analyze potential flooding problems, identify appropriate mitigation measures and select site locations and design criteria for Regional Stormwater Improvements (RSI). These improvements include regional detention and retention ponds, watershed protection, land purchase, waterway enlargement, channelization, and improved conveyance structures. The Regional Stormwater Management Program allows developers to voluntarily participate in

the program, with the approval of Director of the Department of Public Works, rather than constructing the on-site detention controls required by Subsection (b), (c) and (d) of this Section where the resulting use of the regional drainage improvements will produce no identifiable adverse impact to other properties due to the increased runoff from the proposed development.

The stormwater development fee in lieu of on-site detention must be paid prior to a plat being released for recordation by the City of San Antonio. The fee shall be determined in accordance with the provisions of Chapter 34 , Article VII of this Code.

(f) Streets. Streets may be designed to convey stormwater runoff in accordance with the design criteria established in Exhibit A, Division 4 of this chapter; however, all weather lanes on arterial and collector public streets shall be required to allow vehicular access.

(1) One lane in each direction on arterial streets shall remain free of water during a 25-year storm event. A maximum flow depth to the top of curb on a standard collector street section will be allowed during a 25-year storm event. An arterial street is a street so designated on the current major thoroughfare plan. A collector street is a street with a width of forty-four (44) feet or more and not shown as an arterial street on the current major thoroughfare plan. Design of streets shall consider public safety and limit potential conflicts between stormwater conveyance, traffic, parking, pedestrian access, ADA requirements, and bicycle traffic.

(2) Where streets cross existing or proposed watercourses, all weather crossings shall be required. Culverts or bridges shall be adequate to allow passage of the 25 year design storm, plus required freeboard, or the 100 year frequency design storm, whichever is greater. If the watercourse is designed for the 25 year frequency, the structure must pass this flow. In addition, calculations must be presented which show that the structure does not increase the 100 year flood plain elevations upstream or downstream of the crossing, unless the increase in the 100 year floodplain is contained within a drainage easement. In cases of streets crossing major creeks or rivers as defined by the City's Flood Plain Ordinance (Ord. No. 57969), the structure shall be designed to provide for the passage of the 100 year frequency storm event.

(3) Local street design shall consider the following in regard to street stormwater conveyance:

(a) Stormwater conveyance on local streets shall be designed to account for the cumulative impact of peak flows and runoff volumes on the local system as it progresses downgrade.

(b) A general note must be placed on the plat for residential lots which states that finished floor elevations must be a minimum of 8 inches above final adjacent grade. A grading plan, including slab elevations, shall be prepared which indicates a drainage plan for all lots in the subdivision. Grading plans must include specific paths for the direction of drainage flow away from the building pads on the lot.

(c) Curb cuts for driveways on all streets shall be designed for compatibility with the stormwater conveyance function of streets.

(d) Potential flooding problems or conflicts at the connection points where new or modified drainage systems (including streets, storm sewers, etc.) and the existing portions of the downstream street system and stormwater conveyance system shall be identified and resolved either in the design of the new or modified drainage system or in modifications to the existing system.

(g) Drainage Channels and Watercourses. This section addresses proposed improvements or modifications to drainage channels and watercourses required to convey stormwater runoff from or through the proposed development.

(1) Except as authorized by a development plan approved by the Director of Public Works or his designee, no person shall place or cause to be placed any obstruction of any kind in any watercourse within the city and its ETJ. The owner of any property within the city, through which any watercourse may pass, shall keep the watercourse free from any obstruction not authorized by a development plan.

(2) Modifications to existing watercourses or newly created open channels may be designed as earth, sodded or as concrete lined channels. Liners other than sodding or concrete which enhance the aesthetics or habitat value of the watercourse and which reduce future maintenance requirements are encouraged. Preliminary planning for the applicability of channel liners shall be reviewed with the Director of Public Works or his representative prior to the submittal of construction plans for approval. The proposed channel must be designed to convey the 25 year frequency storm with freeboard. In addition, alterations to major creeks as delineated in the City's Flood Plain Ordinance must be designed for the 100 year frequency storm event.

(3) Constructed channels or drainage improvements shall follow existing swales, or other low areas present in predevelopment areas where practical in order to minimize the cost of the improvement or modification and to allow for overland flow to follow its natural drainage pattern.

(4) The proposed channel modifications shall preserve the natural and traditional character of any existing watercourse and adjacent land to the greatest extent feasible and shall consider the natural movement and velocities of stormwater within the predevelopment watercourse.

(5) Planned multiple-use of a watercourse is encouraged (e.g. bike paths or greenbelt). If multiple use of the watercourse is to be incorporated, the maintenance of the amenities will be the responsibility of the community association or a public entity. These amenities would require special overlay easements for public or private use. Property will be dedicated to the City for drainage and specifically identified multi-use purposes.

(6) Design of new channels or alterations to existing channels shall consider future maintenance requirements. A maintenance schedule must be submitted to and approved by the Director of Public Works prior to approval of construction plans.

(h) Construction of habitable structures within the regulatory flood plain is not allowed. No development or other encroachment is allowed in a floodplain which will result in any increase in the base flood elevations within the flood plain during discharge of water of a base flood, unless the floodplain is contained within an easement. Where construction of roads, bridges or other nonhabitable structures in the floodplain is allowed by the Director of Public Works, a Professional Engineer registered in the State of Texas must provide an engineering analysis indicating that the foundation and structure will not cause any increase in the elevations of the base flood unless the floodplain is contained within an easement.

(i) Preservation of the natural floodplain and native vegetation contained therein is encouraged. Understory growth which impedes flow may be cleared within the banks of watercourses within the proposed development with Public Works approval but removal of large trees with diameters greater than eight inches is discouraged. Lower branches of large trees may be trimmed to provide a vertical clearance of eight feet. The alteration of natural vegetation or unique features within the floodplain of major watercourses shall comply with

the appropriate Master Drainage Plan for the watershed. Permanent alterations to natural vegetation must be included in the maintenance schedule submitted to the City.

(j) Diversion of stormwater away from the natural watercourse will not be allowed except within the boundaries of the property controlled by the Developer, provided that the diverted water is returned to the watercourse within which it would naturally have been flowing prior to leaving the Developer's property. An analysis of the timing of the diverted hydrograph on watersheds greater than 20 acres, as it reenters the receiving watercourse, must be performed to show that the peak flowrate in the receiving watercourse has not been increased as a result of the diversion.

(k) The proposed subdivision shall have at least one vehicular access above the regulatory flood plain of an existing dedicated street or roadway. All proposed subdivisions traversed by an area of floodplain where the "buildable" portion of the subdivision is severed by the flood plain, shall provide an adequate access to the "buildable" portion of every lot. An adequate access shall be as defined by Attachment "C" of the Flood Plain Ordinance (Ord. No. 57969).

(l) Submittal: To standardize the review process and minimize the time for approval by the City during review of the plat and construction drawings for a subdivision, a complete submittal regarding the analysis of existing drainage conditions and the design of modifications or new drainage facilities is necessary. The owner of the property to be developed is required by the Director of Public Works to provide, at the owners expense and as a condition of construction plan approval, a drainage report for the total development area to be ultimately constructed. The drainage report must include a letter signed and sealed by a Professional Engineer with text descriptions, exhibits, calculations and models. The drainage report will contain all of the necessary support data, methodologies used in calculations, and conclusions. A checklist is included in Exhibit B of this chapter that will be used by the City reviewer as a guide during the evaluation of all stormwater drainage reports submitted to the City. The purpose of the checklist is to expedite the review process for both the engineer and the City, and to aid the engineer in the preparation of reports for the City's review. The drainage report shall be submitted to the Director of Public Works prior to approval of any construction plans.

SECTION 10. Chapter 35 Article IV, Division 4, Subdivision A, Section 35-4119 (entitled "Street construction") is hereby amended by adding the language that is underlined (added) to the existing text of said section as follows:

Sec. 35-4119. Street construction.

(a) All streets shall be constructed, with respect to base, surfacing, curbs, and geometric design criteria in accordance with the standards and specifications described in Exhibit A, and shall be subject to inspection and approval by the Director of Public Works.

(b) Streets. Streets may be designed to convey stormwater runoff in accordance with the design criteria established in Exhibit A, Division 4 of this chapter; however, all weather lanes on arterial and collector public streets shall be required to allow vehicular access.

(1) One lane in each direction on arterial streets shall remain free of water during a 25-year storm event. A maximum flow depth to the top of curb on a standard collector street section will be allowed during a 25-year storm event. An arterial street is a street so designated on the current major thoroughfare plan. A collector street is any street with a width of forty-four (44) feet or more and not shown as an arterial street on the current major thoroughfare plan. Design of streets shall consider public safety and limit potential conflicts

between stormwater conveyance, traffic, parking, pedestrian access, ADA requirements, and bicycle traffic.

(2) Where streets cross existing or proposed watercourses, all weather crossings shall be required. Culverts or bridges shall be adequate to allow passage of the 25 year design storm, plus required freeboard, or the 100 year frequency design storm, whichever is greater. If the watercourse is designed for the 25 year frequency, the structure must pass this flow. In addition, calculations must be presented which show that the structure does not increase the 100-year flood plain elevations upstream or downstream of the crossing, unless the increase in the 100 year floodplain is contained within a drainage easement. In cases of streets crossing major creeks or rivers as defined by the City's Flood Plain Ordinance (Ord. No. 57969), the structure shall be designed to provide for the passage of the 100 year frequency storm event.

(3) Local street design shall consider the following in regard to street stormwater conveyance:

(a) Stormwater conveyance on local streets shall be designed to account for the cumulative impact of peak flows and runoff volumes on the local system as it progresses downgrade.

(b) A general note must be placed on the plat for residential lots which states that finished floor elevations must be a minimum of 8 inches above finished adjacent grade. A grading plan, including slab elevations, shall be prepared which indicates a drainage plan for all lots in the subdivision. Grading plans must include specific paths for the direction of drainage flow away from the building pads on the lot.

(c) Curb cuts for driveways on all streets shall be designed for compatibility with the stormwater conveyance function of streets.

(d) Potential flooding problems or conflicts at the connection points where new or modified drainage systems (including streets, storm sewers, etc.) and the existing portions of the downstream street system and stormwater conveyance system shall be identified and resolved either in the design of the new or modified drainage system or in modifications to the existing system.

SECTION 11. Chapter 35 Article IV, Division 5, Subdivision B, Section 35-4213 (entitled "Data required for letters of certification") is hereby amended by adding the language that is underlined (added) to the existing text of said section as follows:

Sec. 35-4213. Data required for letters of certification.

(a) To obtain the required letters of certification, an applicant for plat approval shall submit the following data to the certifying agencies/departments. All data shall be annotated with the plat number of the associated plat.

(b) To the director of public works:

(1) Streets, alleys, sidewalks, crosswalks and drainage structures. Three (3) copies of plans and profiles as specified by Exhibit A to these regulations. Also, if a proposed plat traverses or is contiguous with a state maintained facility, a permit from the State Department of Highways and public Transportation indicating approval of the proposed access point and right-of-way.

(2) Storm drainage.

a. Two (2) copies of the proposed plat showing two-foot contours in areas where the slope does not exceed five (5) percent and five-foot contours in areas where the slope exceeds five (5) percent. All street widths and grades shall be indicated on the plat, and runoff figures shall be indicated on the outlet and inlet side of all drainage ditches and storm sewers and at all points in the street at changes of grade or where the street enters another street or storm sewer or drainage ditch. Drainage easements shall be indicated.

b. A general location map of the subdivision showing the entire watershed. (A USGS quadrangle is satisfactory.)

c. Calculations showing the anticipated storm water flow including watershed area, percent runoff and time of concentration. The 100 year floodplain limits as identified for the most current FIRM published by FEMA for the City of San Antonio and/or the applicable county shall be shown on the proposed plan and submitted with the drainage report. In the case that the floodplain boundary for a watercourse is not shown on the FIRM, a Professional Engineer, using methodologies approved by the Director of Public Works, shall develop the 100 year flood plain limits for each watercourse serving a watershed in excess of 100 acres.

d. When a drainage channel, storm sewer or other drainage facility or other requirements are necessary, complete plans and specifications shall be submitted showing complete construction detail, including calculations showing the basis for design performed in accordance with Exhibit A and included in a Submittal Report as outlined in Section 35-4029 (l).

SECTION 12. Chapter 35 Article IV, Division 5, Subdivision B, Section 35-4218 (entitled “Standards for approval”) is hereby amended by adding the language that is underlined (added) to the existing text of said section as follows:

Sec. 35-4218. Standards for approval.

The planning commission shall approve a plat if it conforms to:

(a) The master plan of the city and its current and future streets, alleys, parks, playgrounds, and public utility facilities;

(b) The transportation plan and major thoroughfare plan for the extension of major thoroughfares, streets, and public highways within San Antonio and in its extraterritorial jurisdiction, taking into account access to and extension of sewer and water mains and the instrumentalities of public utilities;

(c) Any applicable watershed Master Drainage Plan adopted by the City.

(d) The rules and regulations contained within this chapter.

SECTION 13. Chapter 35 Article IV, Division 5, Subdivision B, Section 35-4284 (entitled “Drainage easements”) is hereby amended by adding the language that is underlined (added) and deleting the language that is stricken (~~deleted~~) to the existing text of said section as follows:

Sec. 35-4284. Drainage easements.

(a) Where a subdivision is traversed by a watercourse, drainageway, natural channel or stream, there shall be provided an easement or right-of-way conforming substantially to the limit of such watercourse, plus additional width to accommodate future needs. Such easement or right-of-way requirements shall be determined by the criteria set out in Exhibit A included at the end of this chapter. ~~Easements for earth channels shall extend a minimum of two (2) feet on one side and fifteen (15) feet (or seventeen (17) feet when utilities are installed) on the opposite side of the extreme limits of the channel, when such channel does not abut an alley or roadway.~~ If the easement contains utilities the easement or right-of-way shall be increased to 17 feet on that side of the channel, to provide access to the channel for maintenance purposes and to provide access to the utility companies. Such access areas shall slope towards the channel at a rate of not more than 1 inch per foot per foot in width. Earthen channels used for interceptor drains for intercepting sheet flow may be constructed without an access road if they comply with the design standards to interceptor drains. Where designed channel bottoms exceed 100 feet in width, the fifteen foot extra width shall be provided on both sides of the channel. A driveable access way shall be provided in flood plain easements for the length of the easement when regular maintenance of the floodplain is required.

Easements for natural watercourses shall be the 100 year floodplain or the 25 year plus freeboard whichever is greater. In floodplain areas where ongoing maintenance is required or the floodplain will be reserved for use by the public or neighborhood association, the drainage easements shall be maintained by the neighborhood association or a public entity and the property will be dedicated to the City as a multi-use drainage easement.

(b) An unobstructed access right of way connecting the drainage easement with an alley or roadway parallel to or near the easement shall be provided at a minimum spacing of one access right of way at approximately 1,000-foot intervals. The access right of way shall be a minimum of 15 feet in width and shall be maintained clear of obstructions that would limit vehicular access.

(c) In those cases where drainage easements cross lot and property lines, a statement shall be added to the plat that no fencing or structures that will interfere with adequate drainage flow will be allowed on or across such lines. Fencing will be allowed across drainage easements only in accordance with the following restrictions:

(1) Bottom of fence shall be a minimum of the flow depth, plus freeboard above design flow line of channel or drain.

(2) A hinged gate will be placed across the entire width of the drainage easement.

(d) Interceptor drainage easements and channels shall be provided where the drainage area to the back of platted lots exceeds one average residential lot depth. Interceptor drains shall be constructed prior to the issuing of building permits on any lot that would be affected by natural drainage being intercepted.

(e) All developments shall provide for adequate drainage and outfall easement at the lower end of the site into an existing street, alley, drainage easements or right-of-way, or to the centerline of an existing natural drain. Where proposed street, storm sewer, or open channel does not discharge into a natural low or into an existing adequate drainage easement within the property being developed, then facilities and drainage easements of adequate width to contain the design discharge shall be constructed and dedicated to the centerline of an existing natural low within the same watershed. However, where the natural low lies within the developer's property, the developer will be required only to plat an easement to the

centerline of the natural low, provided that the easement is adequate to accommodate the facilities that will be built in conjunction with the future development of that property.

SECTION 14. Chapter 35 Article IV, Division 7, Subdivision A, Section 35-4304 (entitled “Statement of Purpose”) is hereby amended by adding the language that is underlined (added) and deleting the language that is stricken (~~deleted~~) to the existing text of said section as follows:

35-4304. Statement of purpose.

~~— It is the purpose of this division to promote the public health, safety, and general welfare and to minimize public harm and private losses in special flood hazard areas with provisions designed:~~

The purpose of this division is to provide land use controls necessary to qualify the City for flood insurance under requirements of the National Flood Insurance Act of 1968 with provisions designed:

- (a) To protect human life and property exposed to the hazards of flooding;
- (b) To avoid increasing flood levels or flood hazards or creating new flood hazards areas;
- (c) To minimize public and private property losses due to flooding;
- (d) To preserve the natural floodplains where at all possible;
- ~~(b)~~(e) To ensure that potential property owners are notified if property is in a special flood hazard area;
- ~~(e)~~(f) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- ~~(d)~~(g) To minimize prolonged business interruptions;
- ~~(e)~~(h) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in special flood hazard areas;
- ~~(f)~~(i) To minimize expenditure of future public money for costly flood control projects; and
- ~~(g)~~(j) To help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize future flood blight areas.

SECTION 15. Chapter 35 Article IV, Division 7, Subdivision A, Section 35-4305 (entitled “Methods of reducing flood losses”) is hereby amended by adding the language that is underlined (added) and deleting the language that is stricken (~~deleted~~) to the existing text of said section as follows:

Sec. 35-4305. Methods of reducing flood losses.

In order to accomplish its purposes, this division uses the following methods:

- (a) Restricts or prohibits uses that are dangerous to health, safety or property in times of flood, or cause ~~excessive~~ increases in flood heights or velocities;
- (b) Requires that uses vulnerable to floods, including public facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (c) Controls, ~~in the sense of providing authoritative guidance,~~ the alteration of natural flood plains, their protective barriers and stream channels;
- (d) Prevents the construction of barriers which will divert flood waters and subject other lands to greater flood hazards;
- (e) Controls, ~~in the sense of providing authoritative guidance,~~ development which would cause greater erosion or potential flood damage such as grading, dredging, excavation, and filling.

SECTION 16. Chapter 35 Article IV, Division 7, Subdivision A, Section 35-4308 (entitled "Basis for establishing the areas of special flood hazards") is hereby amended by adding the language that is underlined (added) and deleting the language that is stricken (~~deleted~~) to the existing text of said section as follows:

Sec. 35-4308. Basis for establishing the areas of special flood hazards.

The areas of special flood hazard identified by the Federal Emergency Management Agency in a scientific and engineering report entitled "The Flood Insurance Study for the City of San Antonio, Texas", ~~dated December 15, 1983,~~ updated periodically by the Federal Emergency Management Agency, together with the accompanying Flood Insurance Rate Maps and Flood Hazard Boundary--Floodway Maps and any revisions thereto, are hereby adopted by reference and declared to be a part of these regulations. The areas of special flood hazard identified by the Federal Emergency Management Agency on its Flood Insurance Rate Maps (FIRM), ~~Community Panel Number 480045 0001 0059, dated December 15, 1983~~ currently published for the City of San Antonio and surrounding counties shall be used as the controlling study for the base flood (100-year frequency flood) within the city limits of San Antonio and its ETJ. Similar studies done by FEMA shall also be used for control in the city of San Antonio's area of extraterritorial jurisdiction, along with the flood plain information reports prepared by the United States Corps of Engineers, and the United States Geological Survey, Water Resources Division District Office, Austin, Texas, 1:24,000 U.S.G.S. quadrangle maps as prepared for the Federal Emergency Management Agency or the latest revisions thereof. These reports and maps are available for inspection by the public in the office of the city drainage engineer. Information and studies sanctioned and adopted by City Council subsequent to publication of the Flood Insurance Study and associated FIRM which update the base flood elevations, flood plain boundaries or flows shall also be used for control.

SECTION 17. Chapter 35 Article IV, Division 7, Subdivision B, Section 35-4322 (entitled "Duties and responsibilities of flood plain administrator") is hereby amended by adding the language that is underlined (added) and deleting the language that is stricken (~~deleted~~) to the existing text of said section as follows:

Sec. 35-4322. Duties and responsibilities of flood plain administrator.

Duties and responsibilities of the city flood plain administrator shall include, but not be limited to:

(a) Maintain and hold open for public inspection all record pertaining to the provisions of these regulations;

(b) Review, approve or deny all applications for development permits required by section 35-4331 of this chapter;

(c) Review permits for proposed development to assure that all necessary permits have been obtained from these federal, state or local governmental agencies from which prior approval is required;

(d) Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Director of Public Works shall make the necessary interpretation;

(e) Notify adjacent communities ~~and the Texas Water Commission~~ prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.

(f) Assure that maintenance is provided within the altered or relocated portion of a watercourse so that the flood carrying capacity is not diminished, where appropriate easements are provided;

(g) When base flood elevation data for various flood prone areas has not been provided in accordance with section 35-4308, the director of public works shall obtain, review, and reasonably utilize any base flood elevation data available from a federal, state or other source, in order to administer the provisions of this division.

(h) Construction of habitable structures within the regulatory floodplain (base flood) is not allowed unless the flood plain is revised with a flood plain permit. No new construction, substantial improvements, or other development (including cut and/or fill) shall be permitted within zones A and A0-A30 on the community's flood insurance rate maps unless it is first demonstrated by engineering data submitted by the applicant's engineer in accordance with the various requirements and procedures as set forth in this division that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood at any point within the community.

SECTION 18. Chapter 35 Article IV, Division 7, Subdivision B, is amended by adding Section 35-4323 (entitled "enforcement") add adding text of said section as follows:

Sec. 35-4323. Enforcement.

If any person violates any provisions of these regulations, the Director of Public Works shall notify the City Attorney and direct him to take whatever action is necessary to remedy the violation, including but not limited to, filing suit to enjoin the violation and submitting a request to FEMA for denial of flood insurance.

SECTION 19. Chapter 35 Article IV, Division 7, Subdivision C Section 35-4331 (entitled “requirement”) is hereby amended by adding the language that is underlined (added) and deleting the language that is stricken (~~deleted~~) to the existing text of said section as follows:

Sec. 35-4331. Requirement.

~~—A flood plain development permit shall be required for all land development in any area of special flood hazard to ensure conformance with the provisions of this division.~~

Construction of habitable structures within the regulatory floodplain (100-year frequency floodplain) is not allowed. No development or other encroachment is allowed in a floodplain which will result in any increase in the base flood elevations within the floodplain during discharge of water of a base flood unless the floodplain is contained within an easement. Where construction of structures in a floodplain is allowed by the Director of Public Works, a floodplain development permit shall be required to ensure conformance with the provisions of this division. In addition, all land development in any area of special flood hazard shall be required to have a floodplain development permit.

SECTION 20. Chapter 35 Article IV, Division 7, Subdivision D Section 35-4342 (entitled “Specific standards”) is hereby amended by adding the language that is underlined (added) and deleting the language that is stricken (~~deleted~~) to the existing text of said section as follows:

Sec. 35-4342. Specific standards.

In all areas of special flood hazards where base flood elevation data has been provided in accordance with these regulations, the following provisions are required:

~~(a) Residential construction. New construction or substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to one (1) foot above the base flood elevation. A registered professional civil engineer, registered architect, or registered public surveyor shall submit a certification to the director of public works that the standard of this subsection is satisfied. Floodproofing will not be allowed as a substitute for the lowest floor, including basement, being elevated one (1) foot above the base flood elevation.~~

(a) Residential construction. Construction of habitable structures within the regulatory floodplain (base flood) is not allowed unless the flood plain is revised with a flood plain permit.

SECTION 21. Chapter 35, Exhibit A, Division 4 (entitled “Storm Drainage”), Sec. 35-A401 through Sec. 35-A405, inclusive, of the San Antonio City Code is hereby amended by adding the language that is underlined (added) and deleting the language that is stricken (~~deleted~~) to the existing text of such Sections and is set forth in Appendix C of this ordinance and which is hereby adopted and approved as if fully set forth herein.

SECTION 22. Chapter 35, Exhibits, Exhibit A, Division 6 of the City of San Antonio City Code is hereby amended by deleting the existing Figure VI and Figure X and adding new Figure VI, Figure X, Figure XIV, and Figure XV as set forth in Appendix D of this ordinance and which are hereby adopted and approved as if fully set forth herein.

SECTION 23. Attachment I is authorized for adoption into fiscal year 1997/1998 annual budget in Fund 29-023 (Stormwater Operating Fund) in Project 29-023001 (Drainage Detention

Project). The personnel complement and budget appropriations, for the Department of Public Works, contained therein is authorized.

SECTION 24. A report shall be made to City Council on an annual basis detailing the revenue and expenditure from the stormwater development fees collected and expended for the Regional Stormwater Management Program.

SECTION 25. Should any Article, Section, Part, Paragraph, Sentence, Phrase, Clause, or Word of this ordinance, or any appendix thereof, for any reason be held illegal, inoperative, or invalid, or if any exception to or limitation upon any general provision herein contained be held to be unconstitutional or invalid or ineffective, the remainder shall, nevertheless, stand effective and valid as if it had been enacted and ordained without the portion held to be unconstitutional or invalid or ineffective.

SECTION 26. It is officially found, determined, and declared that the meeting at which this ordinance is adopted was open to the public and public notice of the time, place, and subject matter of the public business to be considered at such meeting, including this ordinance, was given, all as required by Texas Revised Civil Statutes Annotated as amended Title 5, Chapter 532, Government Code. It is further found that provisions of this ordinance are intended to protect the public health, safety, welfare, and, that a public hearing was held prior to the adoption of this ordinance as required by V.T.C.A., Local Government Code Section 212.003.

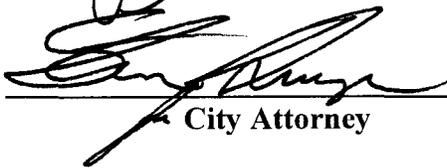
SECTION 27. The publishers of the City Code and the Unified Development Code are authorized to amend said Codes to reflect the changes adopted herein.

SECTION 28. This ordinance shall become effective October 20, 1997.

PASSED AND APPROVED this the 25 th day of September, 1997.


M A Y O R
Howard W. Peak

ATTEST: 
City Clerk

APPROVED AS TO FORM: 
City Attorney

97-40

PUBLIC HEARING & ORDINANCE

DRAINAGE REGULATIONS (UDC)

ALAMODOME
ARTS & CULTURAL AFFAIRS
ASSET MANAGEMENT
AVIATION
BUDGET & MANAGEMENT ANALYSIS
BUILDING INSPECTIONS
HOUSE NUMBERING
CITY ATTORNEY
1 MUNICIPAL COURT
REAL ESTATE (FASSENDGE)
REAL ESTATE (WOOD)
RISK MANAGEMENT
CITY MANAGER
SPECIAL PROJECTS - FRANCES GONZALES
CITY PUBLIC SERVICE - GENERAL MANAGER
CITY PUBLIC SERVICE - MAPS AND RECORDS
CODE COMPLIANCE
1 COMMERCIAL RECORDER
COMMUNITY INITIATIVES
COMMUNITY RELATIONS
PUBLIC INFORMATION
CONVENTION AND VISITORS BUREAU
CONVENTION CENTER EXPANSION OFFICE
CONVENTION FACILITIES
ECONOMIC DEVELOPMENT
FINANCE - DIRECTOR
FINANCE - ASSESSOR
FINANCE - CONTROLLER
FINANCE - GRANTS
FINANCE - TREASURY
FIRE DEPARTMENT
HOUSING AND COMMUNITY DEVELOPMENT
HUMAN RESOURCES (PERSONNEL)
INFORMATION SERVICES
INTERGOVERNMENTAL RELATIONS
INTERNAL REVIEW
INTERNATIONAL AFFAIRS
LIBRARY
METROPOLITAN HEALTH DISTRICT
1 MUNICIPAL CODE CORPORATION
1 MUNICIPAL COURT
PARKS AND RECREATION
MARKET SQUARE
1 PLANNING DEPARTMENT
DISABILITY ACCESS OFFICE
LAND DEVELOPMENT SERVICES
1 POLICE DEPARTMENT
GROUND TRANSPORTATION
1 PUBLIC WORKS DIRECTOR
CAPITAL PROJECTS
CENTRAL MAPPING
1 ENGINEERING
PARKING DIVISION
REAL ESTATE DIVISION
SOLID WASTE
TRAFFIC ENGINEERING
PURCHASING AND GENERAL SERVICES
SAN ANTONIO WATER SYSTEMS (SAWS)
VIA
YOUTH INITIATIVES

AGENDA ITEM NUMBER: 7

DATE: SEP 25 1997

MOTION: *Pharmacy* brener

ORDINANCE NUMBER: 86711

RESOLUTION NUMBER: _____

ZONING CASE NUMBER: _____

TRAVEL AUTHORIZATION: _____

NAME	ROLL	AYE	NAY
ROGER FLORES, II District 1		<i>check</i>	
MARIO SALAS District 2		✓	
DEBRA GUERRERO District 3		✓	
RAUL PRADO District 4		✓	
RICK VASQUEZ District 5		✓	
JOSE MENENDEZ District 6		✓	
ED GARZA District 7		✓	
ROBERT MARBUT District 8		<i>check</i>	
TIM BANNWOLF District 9		✓	
JEFF S. WEBSTER District 10		✓	
HOWARD W. PEAK Mayor		✓	

AMENDS *CHAP* NO. 35 OF CITY CODE

AMENDS *CHAP* NO. 34 OF CITY CODE

FILE "CHAPTER 35"

97-40

Appendix A

Article VII Drainage Utility

34-1101 Declaring the drainage of the City to be a public utility

City Council hereby: adopts Texas Local Government Code Chapter 402 Subchapter C (entitled "Municipal Drainage Utility Systems"); declares the drainage of the city to be a public utility, to be known as the City of San Antonio Drainage Utility; and dedicates to the drainage utility all city owned property, real and personal, facilities, materials and supplies constituting the city's drainage system as constituted on the effective date of this division and as may be acquired in the future, to be used for the purpose of the drainage utility.

34-1102 Establishment and Revision to Drainage Utility Service Area

- (a) Pursuant to the authority granted by Texas Local Government Code § 402.044(8)(B) the drainage service area includes all land within the municipal boundaries and unincorporated extraterritorial jurisdiction of the City.
- (b) The drainage utility district area may be extended by future city council action to the extent and in a manner authorized by state law.

34-1103 Establishment and Revision of Drainage Charges

The City Council hereby establishes drainage charges to be paid by users of benefited property in the service area of the Drainage Utility. The determination of the schedule of drainage charges is deemed nondiscriminatory, reasonable and equitable to provide regional detention and retention ponds, watershed protection, land purchase, waterway enlargement, channelization, improved conveyance structures and administration of the Drainage Utility. The schedule of authorized drainage charges is as follows:

- (a) Stormwater development fee. The stormwater development fee is a one time drainage charge assessed against developers who elect to have their property served by the Drainage Utility pursuant to Sec. 35-4029(e) of this code.

- (1) The stormwater development fee shall be determined by acreage and property use according to the following fee schedule:

One-family (unattached) and two family (duplex) developments

\$1,200.00 per acre or \$750.00 per lot, whichever is less

Residential development - other than one-family and two-family

\$1,600.00 per acre

Non-residential (less than 65% impervious cover)

\$2,600.00 per acre

Non-residential (65% or more impervious cover)

\$3,000.00 per acre

- (2) The stormwater development fee shall not be assessed against drainage easements or rights of usage (if either is in a pervious condition) or permanent detention facilities

(3) As part of the drainage report, required in Sec. 35-4029(1) of this code, the developer shall provide notice of intent to be serviced by the Drainage Utility District by filing a participation form as provided in Chapter 35 Exhibit B of this code.

(b) Stormwater drainage service fee: The stormwater drainage service fee shall be billed and collected as prescribed in Sec. 34-235 of this Code.

34-1104 through 34-1110 reserved

34-1111 Drainage Utility Fund

(a) A separate fund shall be created, effective as of the effective date of this chapter, known as the Drainage Utility Fund, for the purpose of identifying and controlling all revenues and expenses attributable to the Drainage Utility. All drainage charges collected by the City, except the stormwater drainage service fee, after the effective date of this chapter, and other monies City Council may wish to designate for this fund, shall be deposited in the Drainage Utility Fund. Such utility revenues shall be used for the purposes of administration, studies, engineering, construction, reconstruction and other reasonable and customary charges associated with the operation of the Drainage Utility. The stormwater drainage service fee shall be deposited as prescribed in Sec. 34-235 of this Code.

(b) Stormwater development fees shall be used specifically for the Regional Storm Water Management Program as authorized in Sec. 35-4029(e) of this code. These funds shall be recorded and accounted for in a manner that insures that said funds are expended solely for expenses accrued by the Regional Stormwater Management Program. The balance of funds on deposit in the account at the end of any fiscal year shall remain in the account and not be absorbed into the general fund.

34-1112 through 34-1115 reserved

34-1116 Administration; Rules and Regulations

(a) The Director of the Department of Public Works shall be responsible for the administration of this division. The Director shall develop necessary rules, regulations and procedures necessary for the administration of the chapter including a methodology for considering variances.

(b) The Director of Public Works shall develop a procedure to provide for appeals of drainage charge disputes. The procedure shall provide for a prompt hearing before and decision by the Director.

(c) The decision of the Director may be appealed to City Council. Any appeal to City Council shall be in writing and received within 15 days after the date of the Director's decision. The City Clerk shall upon receipt place the appeal on the next available City Council agenda.

**REGIONAL STORMWATER
MANAGEMENT PARTICIPATION FORM**

DATE: _____

NAME OF SITE: _____

ADDRESS OF SITE: _____

WATERSHED: _____

TYPE OF DEVELOPMENT: _____

ACREAGE OF PARTICIPATION: _____

OWNER-DEVELOPER: _____

ENGINEER/CONTACT: _____

FIRM: _____ PHONE: _____

POADP FILE NUMBER: _____

PLAT NO. _____

COST PER ACRE: _____

TOTAL COST: _____

I am the owner(s), or an agent of the owner, authorized to execute this acknowledgment, of the above described property. It is acknowledged that the proposed development of the property will impact the above noted watershed and that said development falls under the provisions of Ordinance No. _____ passed and approved the _____ day of _____, 1997. Further, it is acknowledged that I have elected to pay a stormwater development fee, in the applicable amount as set out in the current fee schedule, in lieu of constructing on-site facilities.

OWNER

It is acknowledged that the stormwater development fee for development of property, as described above, is hereby accepted. It is further acknowledged that said fee shall be placed into the Regional Stormwater Management Program account and shall be used solely in the manner prescribed in Ordinance No. _____ passed and approved the _____ day of _____, 1997.

CITY

CITY OF SAN ANTONIO DRAINAGE DEPARTMENT
HEC-2 SUBMITTAL CHECKLIST

Project _____
Engineer _____
Stream _____ Date _____

The purpose of this checklist is to aid the engineer in the preparation of HEC-2 studies and reports and to expedite the City of San Antonio's review procedure.

Submission Package

- _____ Signed, sealed, and dated by a engineer certified to practice in the State of Texas
- _____ Signed checklist
- _____ 3-1/2" diskette with all input files
- _____ Copy of condensed printouts

Narrative

- _____ Table of Contents
- _____ Abstract or executive summary
- _____ Introduction
 - _____ project description and history
 - _____ location
 - _____ scope and objective of analysis
 - _____ previous and related studies that may effect this analysis
- _____ Methodology
 - _____ sources of discharges
 - _____ bridge routines
 - _____ base or effective models (mention source)
 - _____ revised-base model
 - _____ proposed model
- _____ Summary, conclusions, and recommendations
 - _____ water surface elevation impacts

Tables

- _____ Water surface comparison table at each cross section
- _____ Floodway table
- _____ Cross section numbering table (if stationing changes)

Exhibits

- _____ Vicinity Map
- _____ Plan view of project reach
- _____ Water surface profiles for design storm
- _____ Channel cross sections
- _____ Bridge cross sections
- _____ Plan view of bridge
- _____ Photographs (if available)

Appendices

- _____ Pertinent correspondence (meeting notes, etc...)
- _____ Survey and /or Certified "As-Built" information for all revisions to base model
- _____ Sample calculations

Name of Submitter

Date

PE Registration Number

ATTACHMENT 1
DRAINAGE SUBDIVISION CHECKLIST

INCLUDED IN
SUBMITTAL

- _____ 1. U.S.G.S. Quadrangle map showing overall drainage areas, runoff coefficients, time of concentration, intensity and Q's.

- _____ 2. Subdivision Master Drainage Plan with overall interior drainage area of subdivision showing drainage areas, time of concentration runoff coefficients, intensities, and Q's for the street and alley flows and also channel and underground system design.

- _____ 3. Subdivision plat showing interior drainage areas, time of concentration, runoff coefficients, intensities, Q's for street and alley flows and also channel and underground system design.

- _____ 4. DRAINAGE CALCULATIONS REQUIRED FOR:
 - _____ A. Open channel design
 - _____ B. Underground systems
 - _____ C. Box culverts
 - _____ D. Pipe culverts
 - _____ E. Hydraulic jump
 - _____ F. Super elevation in channel bends
 - _____ G. Retard spacing
 - _____ H. Backwater curves with cross sections
 - _____ I. Drawdown curves with cross sections
 - _____ J. Energy dissipators
 - _____ K. Hydraulic grade lines of pipes
 - _____ L. (1) Inlets on grades
(2) Inlets in sump

 - _____ M. Drop curb openings
 - _____ N. Sidewalk culverts
 - _____ O. AR2/3 calculations with cross sections
 - _____ P. Weir formulase structures:

- _____ Q. Orifice formulas
- _____ R. Grade to drain channels
- _____ S. Upstream pickup and flared section
- _____ T. Downstream Backwater Control and Flare to match downstream condition

- _____ U. Show required free board
- _____ V. Improper "N" value
- _____ W. Improper velocity used
- _____ X. Improper easement width
- _____ Y. Show access road on each sodded channel
- _____ Z. Improper runoff coefficient used
- _____ A-A. Improper time of concentration used
- _____ B-B. Improper Q's used
- _____ C-C. Steel calculations for box culvert
- _____ D-D. Street Q's for 5 yr. (30' street) and 25 yr. (greater than 44' street) frequency showing street capacities are correct based on Figure IX in Subdivision Regulations.

- _____ 5. Subdivision Plat showing all interior drainage easements, outfall drainage easements, U.S.G.S. contour map and all other necessary drainage information.

- _____ A. Show outfall drainage easements to the centerline of existing natural low.
- _____ B. Show finished fill contours
- _____ C. Show interceptor drainage easements

- _____ 6. TYPICAL DETAILS ON PLANS REQUIRED FOR:
- _____ A. Box culvert with headwalls or wingwalls
- _____ B. Pipe culverts with headwalls or wingwalls
- _____ C. Culvert headwalls shown with proper safety measures.
- _____ D. Drop curb openings

- _____ E. (1) Inlets on grade
- _____ (2) Inlets on sump

- _____ F. Drop structures
- _____ G. Retards
- _____ H. Sidewalks over drains
- _____ I. Guard post installations
- _____ J. Guard rail on structures
- _____ K. Header curb
- _____ L. Energy dissipators
- _____ M. Junction boxes
- _____ N. Concrete lined channels with free board
- _____ O. Earth sodded channels with free board
- _____ P. Other concrete structures:

- _____ Q. Grade to drain sections
- _____ R. Transition sections
- _____ S. Fencing for vertical wall channels greater than 2'
deep

- _____ T. Other: _____

- _____ U. Side slope
- _____ V. Note: Adjacent lots shall be graded to provide
access and drainage to adjacent street and drainage
systems.

- _____ 7. Complete street plans and profiles
- _____ 8. Complete drainage plan and profile including the
following requirements:
 - _____ A. Proposed flowline slopes with grades and elevations
shown every 50' in profile.
 - _____ B. Proposed top of channel profile
 - _____ C. Existing ground right and left profile at property
line

- _____ D. Finished fill profiles
- _____ E. Locations and size of culverts
- _____ F. Drop structures
- _____ G. Retards
- _____ H. Grade to drain profiles
- _____ I. Flowline elevations at every 50' station and at each structure and change in grade
- _____ J. Junction boxes
- _____ K. Channel plan views
- _____ L. Channel sections
- _____ M. Pipes with hydraulic grade lines on profile
- _____ N. Cross sections of existing natural channels or lows which are not to be improved, but left in natural state and dedicated to high water calculated
- _____ O. Angles, bearings, distances, etc., for structures, channels, etc.
- _____ P. Lot grading layout drains
- _____ Q. Culvert structural details
- _____ 9. Unit and Storm Hydrographs for major streams (Over 2,000 acres
- _____ 10. Drainage easements to the centerline of natural low
- _____ 11. Cost Estimate
- _____ 12. Engineer's Seal
- _____ 13. Other

EXHIBIT A

Sec. 35-A401. Design criteria.

~~— (a) Method of computing runoff. The basis of computing runoff shall be the rational formula or some other method provided it is acceptable to the director of public works.~~

~~— (b) Run off calculations. Run off rates shall be computed at not less than the following:~~

Table IX. Average Runoff Percentage				
Character of Area	Slope			
	Up to 1%	Over 1% Up to 3%	Over 3% Up to 5%	Flow Over 5%
Business or commercial areas (90% or more impervious)	95	96	97	97
Densely developed areas (80% to 90% impervious)	85	88	91	95
Closely built residential areas and school sites	75	77	80	84
Undeveloped areas	68	70	72	75
Average residential areas	65	67	69	72

Table IX.
Average Runoff Percentage

Character of Area	Slope			
	Up to 1%	Over 1% Up to 3%	Over 3% Up to 5%	Flow Over 5%
Business or commercial areas (90% or more impervious)	95	96	97	97
Densely developed areas (80% to 90% impervious)	85	88	91	95
Closely built residential areas and school sites	75	77	80	84
Undeveloped areas	68	70	72	75
<u>Cultivated</u>	<u>35</u>	<u>60</u>	<u>80</u>	<u>90</u>
Average residential areas	65	67	69	72

(3) For drainage areas 640 acres or greater, the unit hydrograph method shall be used by determining the SCS Curve Number (CN) directly from soil types and using the impervious cover parameter (RIMP in the HEC-1 model) to represent variations in land use. The SCS Curve Numbers adopted for use by the City of San Antonio are shown in Table X.

Table X.
SCS Curve Numbers by Soil Type

<u>Hydrologic Soil Group</u>	<u>SCS Curve Number</u>
A	<u>25</u>
B	<u>55</u>
C	<u>70</u>
D	<u>77</u>

The percent impervious cover for typical land use types in San Antonio are presented in Table XI. The SCS standard 24-hour rainfall distribution shall be applied for runoff calculations. Rainfall intensities as adopted for the City of San Antonio are given in Table XII and on Figure X. The lag value for a subarea shall be calculated by taking the length of the longest channel and dividing it by the average velocity in the channel (typically 2 feet per second to 8 feet per second).

(c) Kinematic wave method - for channel reaches where inflow from overbank runoff or multiple point sources (Example: storm sewer outfalls) is significant and where hydrograph attenuation is insignificant.

Channel routing methodologies currently being applied in the existing HEC-1 model of the watershed should not be replaced with a different methodology without approval from the Director of Public Works. Manning's roughness coefficients ("n" values) for use in routing methods or in hydraulic calculations discussed in (a) (4) above shall be consistent with the values listed in Table XIII.

Table XIII.
Manning's Roughness Coefficient

<u>Channel Description</u>	<u>Mannings "n" Value</u>
<u>Concrete Lined Channel</u>	<u>0.015</u>
<u>Grass Lined Channel with regular maintenance</u>	<u>0.035</u>
<u>Grass Lined Channel without recent maintenance</u>	<u>0.050</u>
<u>Vegetated Channel with trees, little or no underbrush</u>	<u>0.055</u>
<u>Natural Channel with trees, moderate underbrush</u>	<u>0.075</u>
<u>Natural Channel with trees, dense underbrush</u>	<u>0.090</u>
<u>Overbank Description</u>	
<u>Pasture</u>	<u>0.050 - 0.055</u>
<u>Trees, little or no underbrush, scattered structures</u>	<u>0.060 - 0.075</u>
<u>Dense vegetation, multiple fences and structures</u>	<u>0.075 - 0.090</u>

(c) Runoff rates shall be computed on the basis of ultimate development of the entire watershed to the proposed development. The determination of ultimate development shall be based on consideration of the requirements of detention for new development inside the City of San Antonio and the possible lack of detention requirements for new development not within the City of San Antonio's corporate limits. Areas included within parks, green belts or regulatory flood plains shall be considered to remain undeveloped. For determination of time of concentration.

(10) A computer diskette of all existing and proposed condition HEC-1 and HEC-2 models used in analysis.

A checklist for the submittal package is included as Attachment 1. A checklist for the preparation of a HEC-2 model is included as Attachment 2.

(Ord. No. 65513, § 2(f), 8-13-87)

Sec. 35-A402. Streets.

(a) Streets may be used for storm water drainage only if the calculated storm water flow does not exceed the flows outlined in Figure IX or the velocity does not exceed ten (10) feet per second. Local streets shall be designed on a basis of a five (5) year frequency, ~~all other streets on a ten (10) year frequency.~~ One lane in each direction on arterial streets shall remain free of water during a 25-year storm event. A maximum flow depth to the top of curb on a standard collection street section will be allowed during a 25-year storm event. Where streets are not capable of carrying storm waters as outlined above, drainage channels or storm sewers shall be provided. Street width shall not be widened beyond the width as determined by the street classification for drainage purposes.

(b) Where storm sewers are required, design shall be based on a twenty-five (25) year frequency, and the entire twenty-five (25) year discharge shall be picked up ~~at the point where the street can no longer handle the runoff flowing curb full. No allowance shall be made for overruns or partial street flows combined with storm sewer flows at initial pickup point.~~ by the inlet. Inlets and underground systems shall be designed on a twenty-five (25) year frequency; street discharges, after initial pickup, may be based upon street classification for frequency required. Partial flow past the inlet will be allowed when the capacity of all downstream street systems can accommodate the flow.

(Ord. No. 65513, § 2(f), 8-13-87)

(f) Easements or rights-of-way for concrete lined channels shall extend a minimum of two (2) feet on both sides of the extreme limits of the channel. "Extreme limits" of the channel shall mean the side slope intercept with the natural ground or proposed finished ground elevation.

(g) A minimum N value of roughness coefficient of 0.015 shall be used for a wood float type surface finish. This N value is as used in Manning's formula.

(Ord. No. 65513, § 2(f), 8-13-87; Ord. No. 73398, § 1(Att. B), 3-28-91)

Sec. 35-A405. Velocity control.

(a) The following velocity chart shall be used for scour protection and to determine the type of drain which shall be used. Concrete lined channels may also be used at velocities less than eight (8) feet per second if so desired by the engineer.

Table XIXV. Velocity Control	
Velocity	Type Drain Required
1 to 6 fps	Earth
6 to 8 fps	Concrete retards required
8 fps and over	Concrete lining or drop structures required

Table XV.
Velocity Control

<u>Velocity</u> <u>(fps)</u>	<u>Type of Drain</u> <u>Required</u>	<u>Hydraulic</u> <u>Radius</u> <u>(ft.)</u>	<u>Correction</u> <u>Factor</u>	<u>Maximum</u> <u>Permissible</u> <u>Velocity</u> <u>(fps)</u>
1 to 6	Earth (Maximum Average Velocity = 6 fps)	0 - 1	0.8	5
		1 - 3	0.9	5.5
		3 - 5	1.05	6.3
		5 - 8	1.15	6.9
		8 - 10	1.225	7.35
		Over 10	1.25	7.5
6 to 8	Concrete Retards	NA	NA	NA
≥ 8	Concrete Lining or Drop Structures	NA	NA	NA

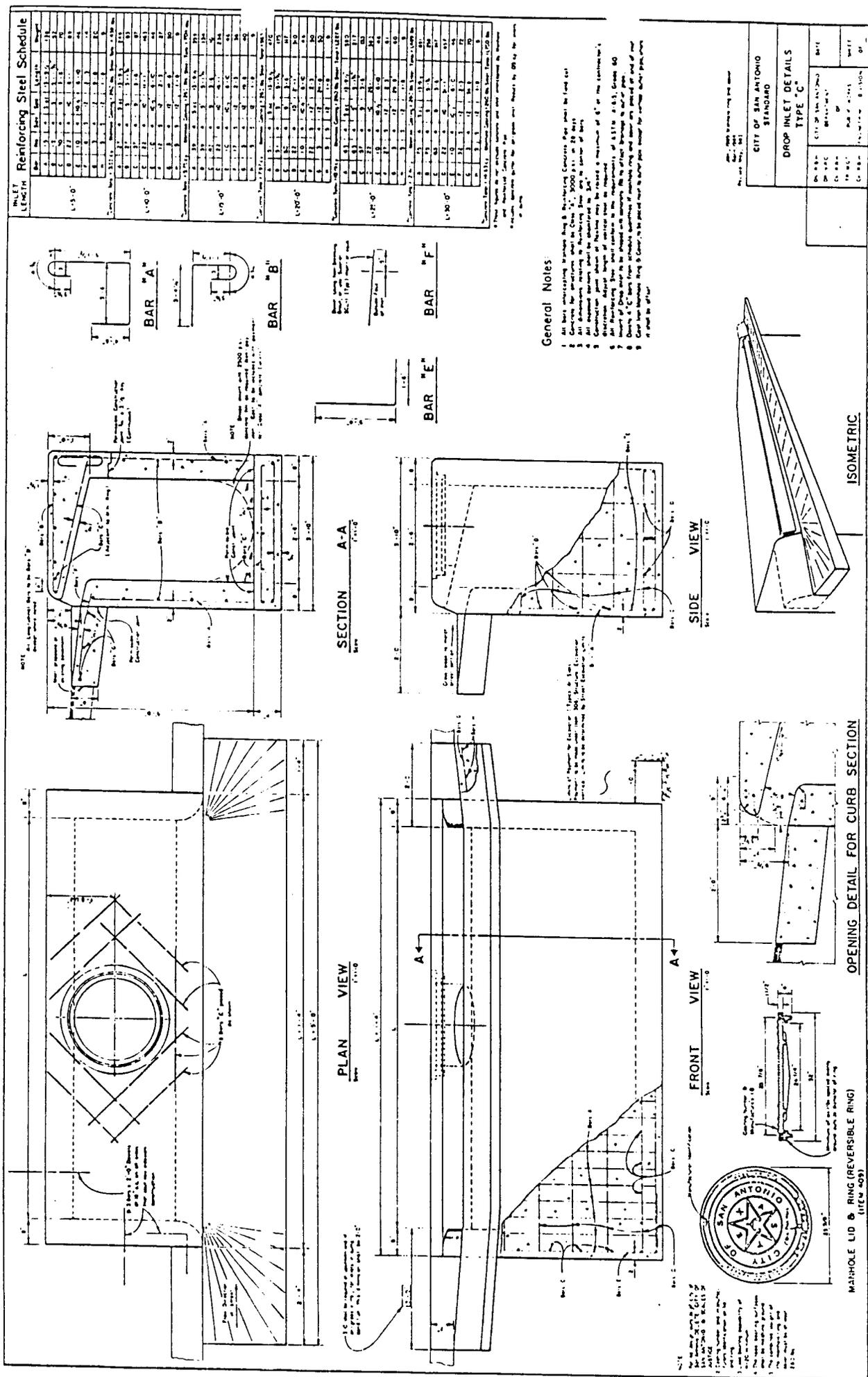


Figure VI

RAINFALL INTENSITIES FOR SAN ANTONIO, BEXAR COUNTY, TEXAS
 FOR VARIOUS FREQUENCIES AND DURATIONS
 CITY OF SAN ANTONIO, TEXAS JANUARY, 1997

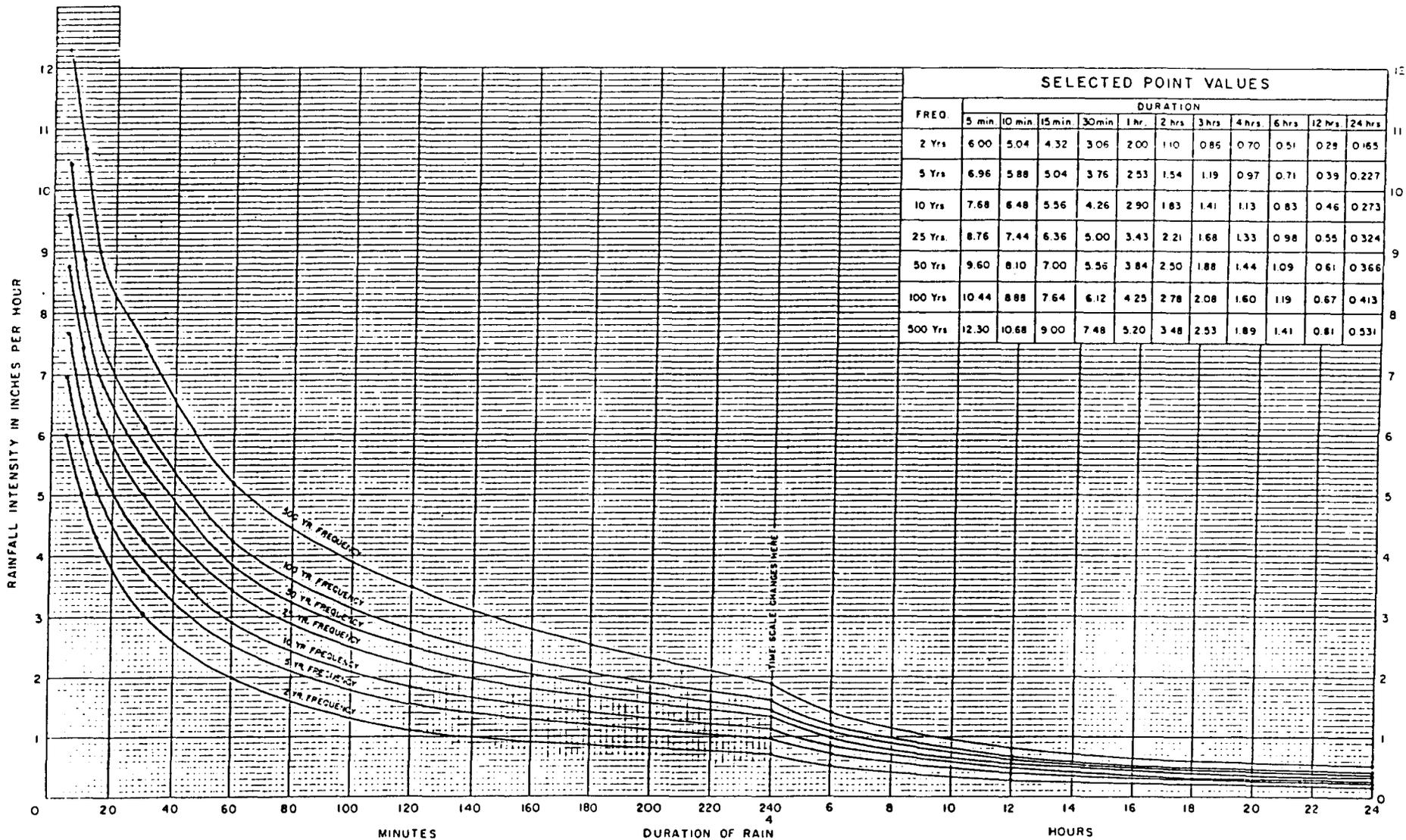


Figure X

U.S. GEO. SURVEY
 100 YR. FREQ. DISCHARGE VS. D.A.
 (EXISTING CONDITIONS)

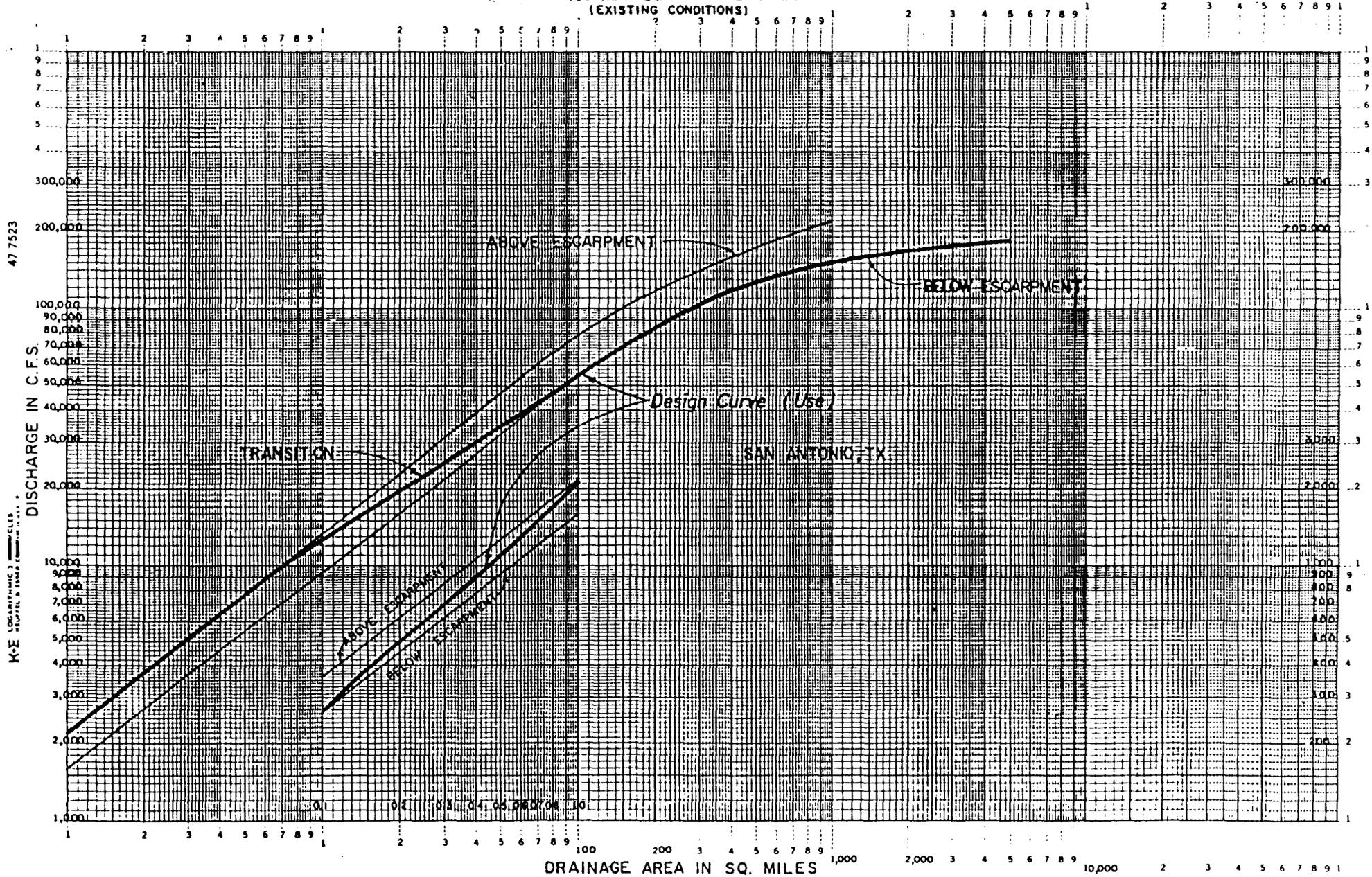
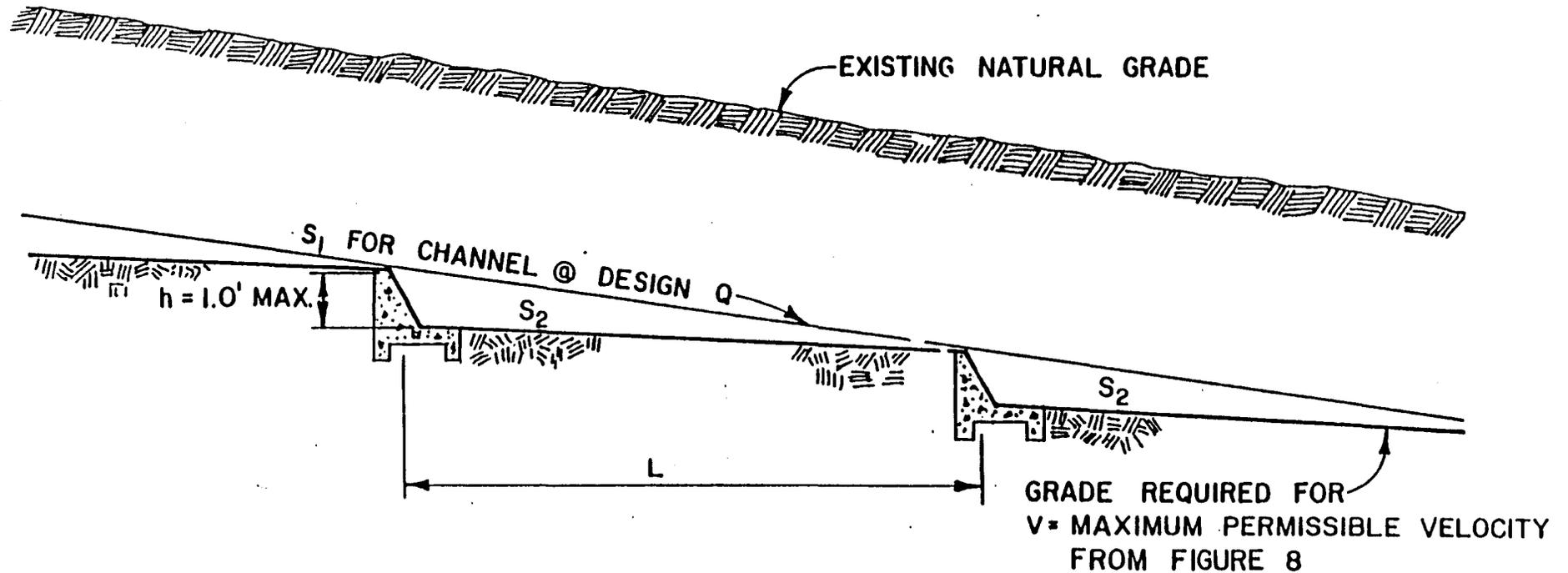


Figure XIV

RETARD SPACING CRITERIA



VELOCITY @ S₁

- 5 - 8 f.p.s. - retards required
- 8 or more - riprap channel required

$$S_2 = \frac{(nv)^2}{(1.486 R^{2/3})^2}$$

V = Maximum permissible Velocity from Fig. 8

NOTE:

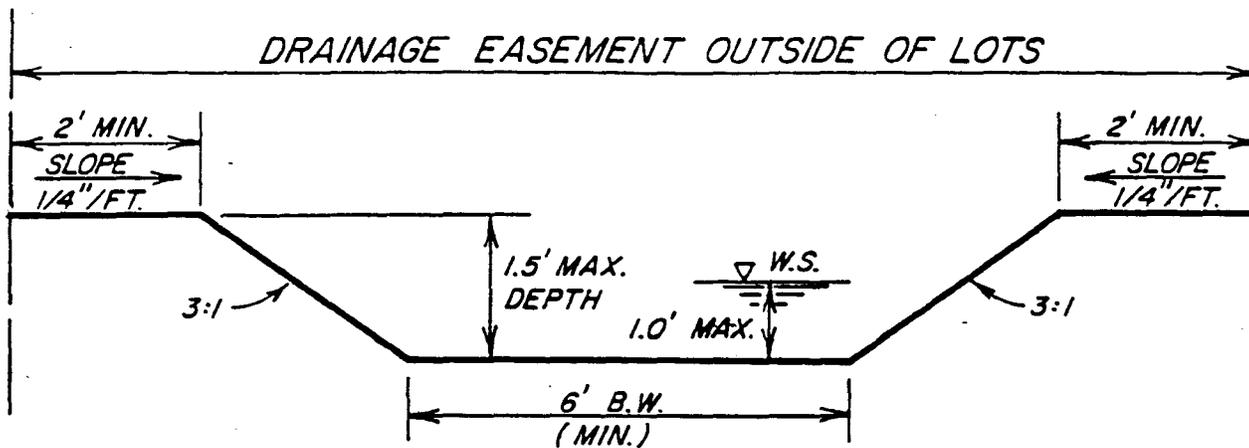
S₁ will be a grade that will approximately parallel the existing natural ground, so that cut section will remain constant.

$$\text{Spacing} = \frac{h}{S_1 - S_2}$$

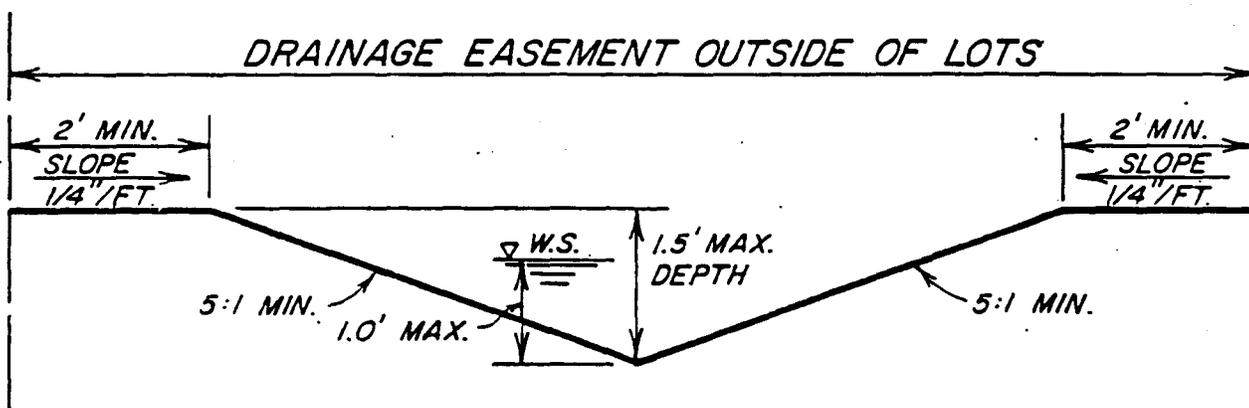
h = Vertical differential of flow lines at drop-structure or retard with maximum value of 1.0 foot.

Figure XV

SUBDIVISION STANDARD



TRAPEZOIDAL CHANNEL



"V"-SHAPED CHANNEL

NO RETARDS
VEL. CONTROL

STANDARDS FOR
INTERCEPTOR DRAINS
FOR INTERCEPTING SHEET FLOW
(WITHOUT ACCESS EASEMENT REQ'D).

Figure XVI

ATTACHMENT I

ESTIMATED REVENUES & EXPENDITURES FOR DRAINAGE DETENTION FEES
For the Period October 20, 1997 through September 30, 1998

FUND: 29 PROJECT: 0230XX (New Project)

Estimated Revenue

<u>Index Code</u>		<u>Est Revenue</u>
	Residential fee - Drainage detention fee	\$1,440,000
	Multi-Family fee - Drainage detention fee	\$480,000
	Commercial fee - Less than or equal 65% i.c.	\$390,000
	Commercial fee - Over 65% i.c.	\$2,250,000
	TOTAL REVENUE	<u>\$4,560,000</u>

Estimated Expenditures

ACTIVITY: 230411 (new activity)
TITLE: STORMWATER ADMINISTRATION & ENGINEERING

<u>Index Code</u>	<u>Object Code</u>		<u>Est Expend</u>
01-010	Salaries		\$34,104
01-011	Overtime		\$0
01-030	Retirement - Social Security		\$2,609
01-040	Retirement - TMRS		\$3,434
01-050	Flexible Benefits		\$3,408
01-051	Life Insurance		\$55
01-060	Worker's Compensation		\$0
	sub-total		\$43,610
02-110	Communications		\$1,250
02-113	Mail & Parcel Post		\$490
02-121	Inter-Fund Rent of City Rolling Equipment		\$1,500
02-143	Maint & Repair - Automotive		\$100
02-160	Fees to Contractor		\$100
02-161	Temporary Services		\$11,640
02-181	Binding Printing & Reproduction		\$500
	sub-total		\$15,580
03-210	Office Supplies		\$1,200
03-222	Motor Fuel		\$600
03-232	Tools & Accessories		\$1,110
03-241	Maint & Repair Automotive Materials		\$100
	sub-total		\$3,010
05-360	Computer Equipment (2 computers & printers)		\$9,000
05-372	Mach & Eqpt - Automotive (2 sedans)		\$27,600
05-375	Furniture & Fixtures (2 desk chair filecabinet)		\$1,200
	sub-total		\$37,800
	TOTAL EXPENDITURES		<u>\$100,000</u>
	ESTIMATED BALANCE (9/30/98)		<u>\$4,460,000</u>

CITY OF SAN ANTONIO
Interdepartmental Correspondence Sheet

TO: Mayor and City Council through the City Manager

FROM: John L. German, P.E., Director of Public Works

COPIES TO: J. Rolando Bono; Terry Brechtel; Nora Chavez; Frank Garza; file

SUBJECT: **PUBLIC HEARING AND ADOPTION OF PROPOSED DRAINAGE
REGULATIONS AND FEE-IN-LIEU OF ON-SITE DETENTION
POND POLICY**

DATE: Sept. 19, 1997

SUMMARY AND RECOMMENDATIONS:

This ordinance adopts revisions to the Unified Development Code Article 35 known as the "Proposed Drainage Regulations" and summarized in a document developed by the Drainage Regulations Committee; authorizes adoption of the Fee-In-Lieu of On-Site Detention Pond Policy; establishes a Regional Detention Pond System and Channel Improvements Program (the Program) and sets fees within the framework of the Stormwater Drainage Utility Fund to cover the cost of building these improvements; and appropriates \$100,000 from the Stormwater Drainage Utility Fund to provide for staffing and administrative costs associated with the Program during FY 1997-98.

This Ordinance will be considered during a Public Hearing on Thursday September 25, 1997 at 4:30 p.m. Following the Public Hearing, the Council will consider adoption. If approved, the effective date of the Ordinance is October 20, 1997. It will be applicable to all final plats and all commercial building permits on that date.

This Ordinance is recommended by the staff. In addition, the Proposed Drainage Regulations were developed by the Drainage Regulations Committee over a three year period, and are recommended by the Committee. The Planning Commission and its Land Development Services Committee have reviewed all elements of this Ordinance, and they recommend approval. Numerous neighborhood groups, development representatives, and engineers have reviewed the proposed Drainage Regulations and are supportive. This Ordinance also brings the City in compliance with state laws regarding stormwater management.

BACKGROUND:

In May, 1997, the Proposed Drainage Regulations were presented to the City Council and the Planning Commission. No opposition was noted. Following the presentation, both the Council and the Commission indicated support for the regulations, but asked for 60-90 day delay to consider an issue raised by the Real Estate Council. The development community asked that a fee system be designed to allow land owners, developers, and builders to pay a fee-in-lieu of

building an on-site detention pond, providing that there would be no adverse flooding downstream and that a regional detention pond system be constructed with the fees generated. Such a program was developed, reviewed by the development community and neighborhood groups, and is recommended for adoption by the Planning Commission.

The essential ingredients of the Fee-In-Lieu of On-site Detention Pond Policy (“the Policy”) include the following (copy attached):

- A. Program Description and Background
- B. Recommended Fee System
- C. Projected Annual Revenues
- D. Pay-As-You Go Financing vs. Bond Financing
- E. Stormwater Drainage Utility Fund
- F. Management and Reporting Requirements
- G. Proposed Regional Detention Pond System & Channel Improvements Program

The proposed one time fees to be paid at the time of final plat or commercial building permit are as follows:

<u>Type Development</u>	<u>Fee Per Acre</u>
Residential acreage	\$ 1200
Multi-family	1600
Commercial, Office and Industrial	
Greater than 65% impervious cover	3000
Less than or equal to 65% impervious cover	2600

FINANCIAL ANALYSIS

With the adoption of the Fee-in-Lieu of On-Site Detention Ponds Policy, a revenue stream of about \$4.6 million annually is generated. This will allow up to \$55 million in drainage improvements. Operating and administrative costs are estimated to be \$100,000 annually.

The cost impact to new developments is estimated to be \$1200 per acre for residential development or about \$300 per housing unit for a typical single family housing project (four units per acre). The cost for commercial property will be up \$3000 per acre or \$.07 per square foot. This is about a 3.5% increase on the typical commercial tracts valued at \$2.00 per square foot.

The benefits far outweigh the cost impacts. Downstream flooding will be mitigated and creeks protected in the future. Over half of the improvements needed to resolve flooding problems identified in the three major watersheds will be financed and constructed. (See table on next page). Further, the City will be in compliance with state laws governing stormwater management.

The Regional Detention Pond System and Channel Improvements Program includes the following projects at the costs noted:

<u>WATERSHED</u>	<u>LOCATION/TYPE PROJECT</u>	<u>COST</u>
Leon Creek	Five Regional Ponds	\$25.0 M*
	Government Canyon Detention Pond	1.9 M
	Leon Creek at Heath Rd Channel	4.0 M
	Huebner Creek Channel near Hollyhock	0.5 M
	Culebra Creek Channel near Loop 1604	0.6 M
	Helotes Creek Channel near Loop 1604	1.0 M
	French Creek Channel	0.5 M
	Subtotal	<u>\$33.5 M</u>
Upper Olmos Creek	Vulcan Quarry Detention Pond	2.6 M*
	Shavano Park Detention Pond	4.0 M*
	Lockhill Selma- George Rd Channel	3.0 M
	West Branch Channel	1.5 M
	West Avenue at Loop 410 Improvements	0.5 M
	Subtotal	<u>\$11.6 M</u>
Salado Creek	Dam 15 R at McAllister Park	1.5 M*
	Beitel Creek north of Loop 410 Channel	1.3 M
	Wheatley Heights Levee	1.0 M
	Beitel Creek at Austin Highway and Perrin Beitel Channel	1.0 M
	Holbrook Road Channel	2.0 M
	West Avenue at N. Loop Area Improvements	3.1 M
	Subtotal	<u>\$9.9 M</u>
TOTAL COST		\$55.0 M

*Regional Detention Ponds (\$35 million). Other channel improvement projects total \$20 million.

These improvements will be implemented over a 10-15 year period using the fees paid in lieu of constructing an on-site detention pond. The Public Works Department will manage the planning, design, construction, and maintenance of these improvements.

The management of this program will rest with the Public Works Department. The Director will designate the Assistant Streets and Drainage Manager as the Program Manager. This position is currently vacant. In addition, a Senior Engineer position and a Senior Engineering Technician position will be added to the FY 1997-98 City Budget for the Stormwater Drainage Utility to manage and operate the Program. The cost of these two positions for six months and the necessary vehicles and equipment is \$100,000. That is allocated as follows:

Personnel

One Sr. Engineer and One Sr. Engineering Tech.
for six months plus benefits \$ 55,250

Vehicles - two sedans \$ 30,000

Equipment - desks, chairs, computers \$ 14,750

Total \$100,000

POLICY ANALYSIS

The adoption of the Proposed Drainage Regulations and the Fee-in-Lieu of On-Site Detention Pond Policy will ensure that the City complies with state laws governing stormwater management; will provide a financing mechanism to implement \$55 million in drainage improvements over the next 10-15 years; and eventually resolve all of the major flooding problems identified in the three watershed studies (Leon, Upper Olmos Creek, and Salado Creek). There is no direct cost to current citizens or taxpayers, rather the expense is borne by the owners, developers, and builders of new developments.

Of the \$100 million in needed drainage improvements identified in the three watershed studies, only \$45 million remains unfunded. Included in this category are low water crossings needing bridges or culverts and property buyouts. Other funding must be sought for these purposes. TxDOT and MPO will provide much of this funding.

The Proposed Drainage Regulations will accomplish the following:

- Construction of on-site detention ponds (or payment of a fee) as part of new developments.
- Protection of the 100-year flood plain.
- Preservation of natural creeks and stream beds.
- Ensuring new development occurs outside of flood plains.
- Construction of a Regional Detention Pond System and needed channel improvements.
- Avoidance of increased flooding in downstream areas as a result of new development upstream.
- Permit future development opportunity for linear parks and greenbelts with hike and bike trails and recreational facilities.
- Encourage the dedication of open space and conservation easements.
- Protect critical recharge features over the Edwards Aquifer.

COORDINATION

The Drainage Regulations have been coordinated with affected city departments, neighborhood groups, and development representatives. All of these entities are supportive of the proposed Ordinance and Fee-in-Lieu of On-Site Detention Ponds Policy.



John L. German, P.E.
DIRECTOR OF PUBLIC WORKS

APPROVED:



J. Rolando Bono
ASSISTANT CITY MANAGER

b.jgerman/DrgRegsPolicy

PROPOSED POLICY
FEE-IN-LIEU OF ON-SITE DETENTION PONDS

This policy sets out an option for developers, builders, and landowners to pay a fee in lieu of constructing a detention pond for stormwater management on an individual parcel of land or as part of a planned development. The policy is managed by the Public Works Department, and is applicable to all subdivisions and commercial building permits. The policy becomes effective on the passage of an ordinance by the City Council. This policy is to be considered at the same time as the proposed Drainage Regulations. Such a "fee-in-lieu" policy was proposed by the San Antonio Real Estate Council.

The fee revenues derived from the implementation of this policy will be used to finance the construction of a system of Regional Detention Ponds, and the channel improvements necessary to allow stormwater to reach the regional detention ponds without flooding homes or businesses downstream. The fees will be collected by the City, placed into a special revenue fund, and allocated by the City Council through the Annual Operating Budget or separate ordinance. The ponds will be built on a schedule that is consistent with the fee income, or the fee revenues will be used to pay the debt service on bonds sold to finance the improvements on an accelerated schedule.

The following provides the procedures for administering and implementing this policy.

BACKGROUND

The Proposed Drainage Regulations require a developer /builder /owner to provide an on-site detention pond to detain the increased stormwater runoff which occurs as a result of the proposed development. Landowners and developers requested that the City allow an exception to this requirement which would allow the developer/ builder /owner to pay a fee in lieu of constructing a detention pond on-site. The fees collected by the City would be utilized to construct a Regional Detention Pond System and Channel Improvement Program (the Program) that would solve many of the current flooding problems and also contain sufficient capacity to hold the increased runoff that would occur from those properties where an on-site detention pond was not built.

This is a viable option since the City has identified the need for several regional detention ponds and channel improvement projects in the three watershed studies recently completed for the Upper Olmos, Leon, and Salado Creek watersheds. Five regional pond locations were recommended for the Leon Creek watershed at a cost of \$25 million; two in the Upper Olmos Creek watershed at a cost of \$8.5 million; and one in the Salado Creek watershed at a cost of \$6.5 million. The latter is known as Dam 15R and will be constructed by the SARA near the southern boundary of McAllister Park, north of Starcrest Drive. The city will be required to participate at a cost of \$1.5 million. These regional detention pond projects will cost \$35 million.

The studies also identified thirteen (13) major channel improvement projects totaling \$20 million. If the City could raise enough revenue from fees to cover the costs of land and the design and construction of the eight detention facilities and thirteen channel projects, then the alternative that would allow the developer/ builder/ owner to pay a fee in lieu of constructing an on-site detention pond is feasible. This \$55 million program should be completed in ten to fifteen years.

Based upon information provided by the Planning Department, there are approximately 4000 acres of land platted in the San Antonio area each year. The following is a two year summary:

<u>TYPE DEVELOPMENT</u>	<u>1995</u>	<u>1996</u>	<u>TWO YEAR AVERAGE</u>
Residential	3,070	2074	2572
Commercial	1,352	1,891	1622
TOTALS	4, 422	3, 965	4194

If an average fee of \$2000 per acre were charged for those who chose not to construct a detention pond on-site, and if the owners of about 60% of the acreage platted chose to utilize the in lieu of payment, the projected revenues from the fees would be \$5.0 million. This increases to \$6.3 million if the owners of 75% of the property pay the fees. If the acreage platted is reduced to 3000 acres, and the owners of one-half the acreage pay the fees the total is \$3 million. Certainly, with the fairly strong economy, there appears to be sufficient subdivision activity and fee revenue from this approach to support a program to build the regional detention ponds and channel improvement projects cited above over a ten to fifteen year period. Since the proposed flood control improvements will solve most of the current flooding problems, this option should be considered.

RECOMMENDED FEE SYSTEM

After considerable analysis and discussion with interested parties, the proposed fee system is as follows:

Residential	\$1200 per acre
Multi-family	\$1600 per acre
Commercial/ Office/ Industrial:	
With 65% impervious cover or less	\$2600 per acre
With more than 65% impervious cover	\$3000 per acre

This recognizes the relative impact of the proposed development in generating additional runoff. For example, residential development usually results in an average of 40-50% of the lot being covered with roofs, driveways, sidewalks, patios, and other impervious surfaces. Commercial development tends to have an 80-90% impervious cover ratio, or almost twice that of residential development. Thus the approximate two-to-one ratio of the fees for commercial development(\$2600-3000) versus residential (\$1200-1600) seems appropriate. The level of the fee for multi-family development (\$1600) reflects a greater number of units per acre, but also a realization that most apartment developments incorporate open space and landscaping into their design. This at least partially offsets the increased number of units, but results in an impervious cover ratio slightly higher than residential development. Similarly, office development and other low density commercial or industrial development that is planned with a reduced impervious cover (less than 65%) should pay a lesser fee (\$2600 versus \$3000).

ESTIMATED REVENUES

It is estimated that these fees will generate approximately \$7.6 million annually if 100% of the developers took advantage of this option. This estimate is based upon the following allocation of acreage by category of development:

<u>TYPE DEVELOPMENT</u>	<u>ANNUAL ACREAGE</u>	<u>PROP. FEE</u>	<u>TOTAL</u>
Residential	2000	1200	\$2.4M
Multi-family	500	1600	\$0.8M
Commercial/ Office/Indus.			
With greater than 65%	1250	3000	\$3.75
With 65% or less	250	2600	\$0.65M
GRAND TOTALS	4000	1900*	\$7.6M
average Cost per Acre			

However, if less than 100 % of the property owners choose this option, the expected revenue would be reduced to those cited in the following table:

<u>UTILIZATION FACTOR</u>	<u>ANNUAL REVENUE</u>
67 %	\$5.0M
60%	\$4.6M
50 %	\$3.8M
33 %	\$2.5M

For the purpose of this analysis, it is estimated that the owners of 60% of the acreage platted will choose to pay a fee in lieu of constructing a detention pond on-site. Therefore, about \$4.6 million would be generated annually if this fee system were put into place. Should a greater percentage take advantage of the fee in lieu of construction, the Regional Detention System can be implemented on a faster schedule.

PAY-AS-YOU-GO VERSUS BOND FINANCING

This program assumes a pay-as-you-go system, meaning that the revenues derived in a given year would be used to build one or more regional ponds or a major channel improvement project in that same year. These projects would be built in order of priority established by the City Council. Since the ponds will cost \$4-5 million each, there would likely be one built each year over an seven year period.

The entire \$55 million system could be implemented much more quickly (five years), however, if the regional ponds could be financed through a bond election and the revenues used to pay the debt service. The revenue stream of about \$4.6 million per year could cover the debt service for at least \$45 million in bonds. The bond financing option would require either the sale of certificates of obligation, or holding a citywide election to gain approval of the voters for the sale of general obligation drainage bonds. Since scheduling a citywide bond election may take some time, the funding program for the regional detention system could begin on a pay-as-you-go method for two years, using the first \$10 million for the higher priority projects, and then be converted later to a bond program.

RECOMMENDED REGIONAL DETENTION PONDS AND CHANNEL IMPROVEMENTS

The recommended ponds and channel improvement projects are as follows:

REGIONAL DETENTION PONDS AND CHANNEL IMPROVEMENT PROJECTS

<u>WATERSHED</u>	<u>LOCATION/TYPE PROJECT</u>	<u>COST</u>
Leon Creek	Five Regional Ponds	\$25.0 M*
	Government Canyon Detention Pond	1.9 M
	Leon Creek at Heath Rd Channel	4.0 M
	Huebner Creek Channel near Hollyhock	0.5 M
	Culebra Creek Channel near Loop 1604	0.6 M
	Helotes Creek Channel near Loop 1604	1.0 M
	French Creek Channel	<u>0.5 M</u>
	Subtotal	\$33.5 M
Upper Olmos Creek	Vulcan Quarry Detention Pond	2.6 M*
	Shavano Park Detention Pond	4.0 M*
	Lockhill Selma- George Rd Channel	3.0 M
	West Branch Channel	1.5 M
	West Avenue at Loop 410 Improvements	<u>0.5 M</u>
	Subtotal	\$11.6 M
Salado Creek	Dam 15 R at McAllister Park	1.5 M*
	Beitel Creek north of Loop 410 Channel	1.3 M
	Wheatley Heights Levee	1.0 M
	Beitel Creek at Austin Highway and Perrin Beitel Channel	1.0 M
	Holbrook Road Channel	2.0 M
	West Avenue at N. Loop Area Improvements	<u>3.1 M</u>
	Subtotal	\$9.9 M
TOTAL COST		\$55.0 M

*Regional Detention Ponds (\$35 million). Other channel improvement projects total \$20 million.

STORMWATER FEES

The City currently has a system of stormwater fees that has been structured on the basis of the runoff characteristics of each type of developed property. It is proposed that the fee in lieu of constructing a detention pond on-site would be set up as a Regional Detention Pond System connection fee. This envisions that the fee would allow the landowner/ developer/ builder to substitute some of the capacity of the Regional Detention Pond System for constructing a pond on-site. The City would then build the System to meet the needs as defined in the three watershed studies. The fees would be pledged for the construction of the regional ponds and other required drainage channel projects. The

fee revenues could not be used for other purposes, unless all needed ponds and channel improvement projects had been built and totally paid for. These fees would not be classified as impact fees.

There would be no impact on the existing City property owners who are paying the monthly Stormwater Fee. The current fee would remain the same. It is \$1.99 per month for a residential unit, and increases to as much as \$75 per month for commercial property.

STORMWATER DRAINAGE UTILITY FUND

It is proposed that a separate Stormwater Drainage Utility fund be set up to manage all stormwater fees collected by the City in the FY 1997-98 Operating Budget. The City would also track expenditures of all such funds through this same drainage utility fund. Funds set aside for construction of regional detention ponds would be allocated on an as-needed basis to each specific capital improvement project. The Public Works Department would both manage the drainage utility fund and supervise the planning, design, construction, operation, and maintenance of the regional detention ponds. For those facilities or improvements located outside the City limits, the City would coordinate with the County Engineer's Office during the planning, design, and construction of the improvements.

MANAGEMENT AND REPORTING

On an annual basis as part of the City's budget process, the Public Works Department, in collaboration with the Budget and Management Analysis and the Finance Departments, will prepare an annual report outlining the revenues, expenditures, and capital projects completed during the year. If any fee increases are required, they must be presented to the Planning Commission for review, and a recommendation must be made to the City Manager. The City Manager shall evaluate the financial condition of the Stormwater Drainage Utility Fund and the progress of the Public Works Department, and make recommendations to the City Council for review, approval, and adoption of such fee adjustments and any needed changes to the program. The City Council will ensure that the fees collected are being properly allocated to the construction of the Regional Detention Pond System and channel improvements.

STAFF RECOMMENDATION

The staff of the Public Works Department recommends adoption of this proposed policy. The policy has been reviewed by the City Attorney's Office, and revisions made based upon that review. An Economic Development Action Team meeting is scheduled for September 15, 1997, wherein the Assistant City Manager, City Manager, and other executives will review and evaluate this proposed policy.

APPROVAL PROCESS

The Land Development Services Committee of the Planning Commission has considered this proposed policy and has stated its support for the concepts and fee schedule presented in the policy. This policy was presented to the Planning Commission on September 10, 1997 and was recommended to the Council for approval. The City Council will consider this policy in "A" Session on September 25, 1997. A public hearing is planned at 4:30 PM on that date. Input from all interested parties will be received at that time. If approved, the effective date is set for October 20, 1997.

feenlieu.pol/jg

Article VII Drainage Utility

34-1001 Declaring the drainage of the City to be a public utility

City Council hereby: adopts Texas Local Government Code Chapter 402 Subchapter C (entitled "Municipal Drainage Utility Systems"); declares the drainage of the city to be a public utility, to be known as the City of San Antonio Drainage Utility; and dedicates to the drainage utility all city owned property, real and personal, facilities, materials and supplies constituting the city's drainage system as constituted on the effective date of this division and as may be acquired in the future, to be used for the purpose of the drainage utility.

34-1002 Establishment and Revision to Drainage Utility Service Area

- (a) Pursuant to the authority granted by Texas Local Government Code § 402.044(8)(B) the drainage service area includes all land within the municipal boundaries and unincorporated extraterritorial jurisdiction of the City.
- (b) The drainage utility district area may be extended by future city council action to the extent and in a manner authorized by state law.

34-1003 Establishment and Revision of Drainage Charges

The City Council hereby establishes drainage charges to be paid by users of benefited property in the service area of the Drainage Utility. The determination of the schedule of drainage charges is deemed nondiscriminatory, reasonable and equitable to provide regional detention and retention ponds, watershed protection, land purchase, waterway enlargement, channelization, improved conveyance structures and administration of the Drainage Utility. The schedule of authorized drainage charges is as follows:

- (a) Stormwater development fee. The stormwater development fee is a one time drainage charge assessed against developers who elect to have their property served by the Drainage Utility pursuant to Sec. 35-4029(a) of this code.

- (1) The stormwater development fee shall be determined by acreage and property use according to the following fee schedule:

One-family (unattached) and two family (duplex) developments

\$1,200.00 per acre or \$750.00 per lot, whichever is less

Residential development - other than one-family and two-family

\$1,600.00 per acre

Non-residential (less than 65% impervious cover)

\$2,600.00 per acre

Non-residential (65% or more impervious cover)

\$3,000.00 per acre

- (2) The stormwater development fee shall not be assessed against drainage easements or rights of usage (if either is in a pervious condition) or permanent detention facilities

(3) As part of the drainage report, required in Sec. 35-4029(1) of this code, the developer shall provide notice of intent to be serviced by the Drainage Utility District by filing a participation form as provided in Sec. 35-B101 of this code.

(b) Stormwater drainage service fee: The stormwater drainage service fee shall be billed and collected as prescribed in Sec. 34-235 of this Code.

34-1004 through 34-1010 reserved

34-1011 Drainage Utility Fund

(a) A separate fund shall be created, effective as of the effective date of this chapter, known as the Drainage Utility Fund, for the purpose of identifying and controlling all revenues and expenses attributable to the Drainage Utility. All drainage charges collected by the City after the effective date of this chapter, and other monies City Council may wish to designate for this fund, shall be deposited in the Drainage Utility Fund. Such utility revenues shall be used for the purposes of administration, studies, engineering, construction, reconstruction and other reasonable and customary charges associated with the operation of the Drainage Utility.

(b) Stormwater development fees shall be used specifically for the Regional Storm Water Management Program as authorized in Sec. 35-4029(e) of this code. These funds shall be recorded and accounted for in a manner that insures that said funds are expended solely for expenses accrued by the Regional Stormwater Management Program. The balance of funds on deposit in the account at the end of any fiscal year shall remain in the account and not be absorbed into the general fund.

34-1012 through 34-1015 reserved

34-1016 Administration; Rules and Regulations

(a) The Director of the Department of Public Works shall be responsible for the administration of this division. The Director shall develop necessary rules, regulations and procedures necessary for the administration of the chapter including a methodology for considering variances.

(b) The Director of Public Works shall develop a procedure to provide for appeals of drainage charge disputes. The procedure shall provide for a prompt hearing before and decision by the Director.

(c) The decision of the Director may be appealed to City Council. Any appeal to City Council shall be in writing and received within 15 days after the date of the Director's decision. The City Clerk shall upon receipt place the appeal on the next available City Council agenda.

Sec. 35-1041 (Definitions)

Add: Regional Stormwater Improvements (RSI)

Regional detention and retention ponds, watershed protection, land purchase, waterway enlargement, channelization, and improved conveyance structures.

Sec. 35-4029(e) Regional Stormwater Management Program

The Regional Stormwater Management Program provides for the administration, planning, design and construction of regional drainage improvements using fees (stormwater development fee) paid by the owners of proposed developments. Regional Stormwater Management uses a watershed-wide approach to analyze potential flooding problems, identify appropriate mitigation measures and select site locations and design criteria for Regional Stormwater Improvements (RSI). These improvements include regional detention and retention ponds, watershed protection, land purchase, waterway enlargement, channelization, and improved conveyance structures. The Regional Stormwater Management Program allows developers to voluntarily participate in the program rather than constructing the on-site detention controls required by Subsection (b), (c) and (d) of this Section where the resulting use of the regional drainage improvements will produce no identifiable adverse impact to other properties due to the increased runoff from the proposed development.

The stormwater development fee in lieu of on-site detention must be paid prior to a plat being released for recordation by the City of San Antonio. The fee shall be determined in accordance with the provisions of Chapter 34 , Article VII of this Code.

"B" SESSION
ITEM NO. A

CITY OF SAN ANTONIO
Interdepartmental Correspondence Sheet

TO: Mayor and City Council through the City Manager

FROM: John L. German, P.E., Director of Public Works

COPIES TO: file

SUBJECT: **ENHANCEMENTS TO SAN ANTONIO'S STORMWATER
MANAGEMENT SYSTEM**

DATE: May 12, 1997

At the "B" Session on May 15, 1997, the Public Works Department staff will brief the City Council about revisions to the Unified Development code (U.D.C.) that are needed to enhance San Antonio's Stormwater Management System. These revisions have been thoroughly reviewed by the Drainage Regulations Committee and a group of consulting engineers who are members of the Texas Society of Professional Engineers (TSPE). This group known as TSPE-PEPP is involved in over 75% of all drainage engineering work performed in the San Antonio area.

The Drainage Regulations Committee was appointed by the City Council in May, 1994, and has been working for over three years to find ways to reduce flooding and enhance the City's stormwater management system. The Committee accomplished its work in conjunction with City staff, the drainage study consultants, and representatives of a variety of local agencies including, SARA, SAWS, TxDOT, Bexar County, and the Edwards Underground Water District. City Departments included Public Works, Planning, and Legal. Mr. John Kight, Drainage Studies Project Manager, provided staff support, along with Bob Ashcroft who acted as facilitator for the Committee.

Initially, the Committee spent eighteen months developing Goals and Objectives for the City's Stormwater Management System. These goals and objectives are set out in a document entitled "Recommendations for Improving Management of San Antonio's Stormwater Drainage System", which is attached. The background about the Committee and its membership are cited in the document. Councilmember Howard Peak served as its Chairman, while Councilmember Bob Ross was Vice-Chair.

The Committee's guiding principles are cited on page 1 of the document. Four examples are as follows:

1. Stormwater management is a community-wide effort, and benefit.
2. Upstream development without proper control impacts downstream water flows.
6. Floodplains and stormwater can be resources.
9. Each watershed is a unique system.

The Goals for Managing Stormwater Drainage are listed on pages 2 and 3 of the document. Beside each goal is a cross reference to the changes needed in the U.D.C. to meet or satisfy that goal. For example, Goal G is "Manage Stormwater to coordinate water quantity with water quality." Revisions that implement this goal are found in Chapter 35, Section 4020.

In addition to goals, the Committee's Recommendations establish a policy framework to manage the City's Stormwater Program. Eleven (11) subject areas are addressed, including:

I. Use of streets as part of the Drainage System.

Perhaps unknown to most San Antonio residents, city streets are designed to operate like drainage channels in a 100-year storm. The streets will carry runoff to a depth of seven (7) inches at the curb. The Drainage Regulations Committee recommends the continuation of this practice with one exception. The exception is that one lane in each direction on new arterial streets must remain free of floodwaters in the 25-year storm. This will ensure that all weather roads are available to the public in the future.

II. Stormwater Detention

This section requires that a developer, builder, or owner be responsible for any additional runoff which occurs as a result of a new development, by providing stormwater detention ponds on the property to retard the flow of the increased runoff and keep runoff rates the same as currently exists. This will ensure that no increased flooding occurs downstream of any new development. Current regulations do not have such requirements, and are in conflict with state law. The proposed revisions also stipulate how the stormwater detention ponds will be designed, operated, and maintained.

Developers will have an option to pay impact fees in order to participate in regional detention ponds rather than construct a pond on their property.

III. Use of Watercourses and Drainage Channels.

This section limits modifications and improvements to watercourses, such as creeks, and encourages the preservation of natural floodplains. Rather than dredging and lining channels to speed the runoff through a subdivision, creeks would be left in their current natural condition and become an asset for the neighborhood. Trees and wooded areas will be provided, as will open space. There will also be an opportunity to create walkways and linear trail systems. Development would not be allowed in the 100-year floodplains as defined by the floodplain maps included in each of the three watershed studies.

IV. Integrity of the Ground Surface

This section would minimize site clearance and maintain vegetative cover to improve water quality. This is particularly beneficial in the Salado Creek Watershed.

V. Stormwater Design Flexibility

The Committee drafted the revisions in the U.D.C. to be as specific as possible, but to allow the owner and consulting engineers, some flexibility in design, thereby stimulating creative ways to manage stormwater, preserve natural waterways, and construct livable environments. Staff operating policies will be written to accomplish this objective.

VI. Standard, Guidelines, and Methodologies

The review process must be structured to be fair and equitable to all; be consistent; and be timely in its execution. Exhibit "A" in Chapter 35 of the U.D.C. has been revised to assist in this process, and to define design criteria.

VII. Floodplain Management

This section requires the protection and preservation of floodplains, and sets out standards for maintenance and use of the floodplains. Streets are to be designed to minimize crossings of creeks and/or parallel the creeks. The three drainage studies conducted in the Leon, Salado, and Upper Olmos Creek Watersheds establish 100-year floodplains along all major creeks. These floodplain maps are the basis for all future floodplain management programs. These maps will also be adopted by the Federal Emergency Management Agency (FEMA), and used as the basis for the Flood Insurance Program.

VIII. Integrated Resource Management

This section develops policies which maximize the benefits of stormwater resources, including detention ponds and natural creeks, and minimizes the environmental impact of new development on such resources. Flood control will occur without detrimental effects on the natural ecosystem. Joint use of facilities for water quality, open space, and recreational purposes is also promoted.

IX. Maintenance

Maintenance of the stormwater system is critical. The City's stormwater fees provide a financial resource to ensure that maintenance is accomplished. This section stipulates development standards that facilitate maintenance, and allow for ease in mowing drainage ROW, or clearing low level vegetation in natural creeks. Developers, builders, and owners must maintain detention ponds on private property, whereas the City will develop and maintain regional detention facilities and natural floodplains which are dedicated as ROW. Maintenance schedules are required prior to approval of private facilities. Erosion control is also encouraged. Where practicable, public facilities will be used as open space and for parks and recreational facilities.

X. Area wide Management and Finance

All drainage improvements should be accomplished in a cost effective manner, minimizing the impact on financial resources, and reducing flooding to the maximum extent possible. Multiple use of facilities ensures that many benefit from the expenditure of public funds. Parks and Recreation, SAWS, and Public Works must work together to bring about facilities that are effective, useful, and protect the City's natural resources. The quality of water in the Edwards Aquifer is also of utmost importance. Stormwater fees will continue to be a resource for this program.

XI. Enforcement

Protecting 100-year floodplains from illegal dumping activities is critical. Enforcement activities of the Public Works Department and the City Attorney's office must be stepped up, using the City's police powers to bring about removal of illegal fill or buildings that encroach into the floodplains. Maintenance schedules provided by private developments must also be enforced. Illegal operation of vehicles in waterways must also be curbed, to protect the natural environment.

PROPOSED REVISIONS TO THE U.D.C.:

The final document identifies each of the proposed revisions to the U.D.C. beginning with Chapter 35, Section 35-1041 and proceeding through Chapter 35, Section 35-4342. Revisions to Exhibit "A" of Chapter 35 are also included. These revisions have been thoroughly reviewed by the Committee, the Consulting engineers, and the staff. They are now being proposed for adoption by the City Council.

These revisions implement the goals, objectives, and strategies identified in the Committee's "Recommendations" document. Considerable time was expended by the Committee to review the precise wording, intent, and impact of each one of the proposed revisions.

SCHEDULE:

The schedule for review is as follows:

Planning Commission - Municipal Plaza Council Chambers
Wednesday, May 14, 1997 at 2:00 PM

Council "B" Session - Municipal Plaza "B" Room
Thursday, May 15, 1997 at 3:00 AM

Council "A" Session - Municipal Plaza Council Chambers
Thursday, May 29, 1997 at 3:00 PM

Sec. 35-1041. Definitions.

For the purposes of this chapter, the following terms, phrases, words and their derivations shall have the meaning given in this section.

Accessory use or building: A subordinate use or building customarily incident to and located on the same lot with the main use or building.

Adult bookstore: A business enterprise which has a substantial or significant portion of its stock in trade in, or which has as its main purpose the offering for sale of books, magazines, pamphlets, pictures, drawings, photographs, motion picture films or sound recordings, or printed, visual or audio material of any kind, which are characterized by their emphasis on the description or depiction of specified anatomical areas or specified sexual activities; or a business establishment which offers for sale books, magazines, pamphlets, pictures, drawings, photographs, motion picture films, or sound recordings, or printed, visual or audio material of any kind, which entire business establishment, because of the depiction or description of specified anatomical areas or specified sexual activities in the materials offered for sale, is restricted to adults, or is advertised or promoted as being restricted to adults.

Adult entertainment establishment: A place of business where live entertainment is provided for patrons, or a portion of a business set aside for providing live entertainment to patrons, in which a significant portion of the entertainment is characterized by an emphasis on the exhibition, depiction, or description of specified anatomical areas or specified sexual activities; or a place where entertainment is provided to patrons wherein, because of the exhibition of specified anatomical areas or specified sexual activities, admittance is limited to adults, or admittance is advertised or promoted as being restricted to adults.

Adult motion picture theater: A business place where motion pictures are shown to paying customers when such place is used for presenting material having as its dominant theme, or distinguished or characterized by, an emphasis on the depiction or description of specified anatomical areas or specified sexual activities for observation by patrons, and where admittance to such showings is totally limited to adults.

Airport: Any area of land or water, whether of public or private ownership, designed and set aside for the landing and taking-off of aircraft, including all contiguous property thereto which is held or used for airport purposes.

Airport hazard: Any structure or tree or use of land which obstructs the air space required for the flight of aircraft or which obstructs or interferes with the control of tracking and/or data acquisition in the handling, taking-off or flight at any airport, or at any installation or facility relating to flight and tracking and/or data acquisition of flight craft, hazardous, interfering with or obstructing such landing, taking-off or flight of aircraft or which is hazardous to or interferes with tracking and/or data acquisition pertaining to flight and flight vehicles.

Airport hazard area: Any area of land or water upon which an airport hazard might be established if not prevented as provided in this article, and for the purposes hereof, is that area underlying or within the lateral limits of the imaginary surfaces which are within the controlled area of these regulations.

Airport hazard zoning maps: The set of seventeen (17) film positive overlay maps prepared by Henry Bain Engineers, Inc. These maps are intended to be used by being overlaid on the most current United States Geological Survey topographic maps of the seven and one-half (7 1/2) minutes of latitude and longitude quadrangle series, 1:24,000 scale. The overlay maps are to [be] used with the following USGS quadrangle maps, which are identified on each of the overlay maps.

Sheet 1 Camp Bullis
Sheet 2 Bulverde
Sheet 3 Bat Cave
Sheet 4 Helotes
Sheet 5 Castle Hills
Sheet 6 Longhorn
Sheet 7 Schertz
Sheet 8 Marion
Sheet 9 Culebra
Sheet 10 San Antonio West
Sheet 11 San Antonio East
Sheet 12 Martinez
Sheet 13 Saint Hedwig
Sheet 14 Macdona
Sheet 15 Terrell Wells
Sheet 16 Southton
Sheet 17 Elmendorf

The overlay maps are adopted and made a part of these regulations.

Alley: A minor public right-of-way not intended to provide the primary means of access to the abutting lots, which is used for vehicular service access to the back or sides of properties otherwise abutting on a public street.

Alteration, as applied to a building or structure: A change or rearrangement in the structural parts or an enlargement, whether by extending on a side or by increasing in height, or the moving from one (1) location or position to another.

Amusement and recreation uses: Establishments primarily engaged in providing amusement or entertainment for a fee or admission charge. These include dance halls and party houses; studios; theaters and cinemas; musical entertainment; bowling alleys; billiards and pool establishments; racetracks; sports arenas, rings, ballfields, and courts; swimming pools; carnivals and circuses; fairgrounds; stadiums; expositions and amusement parks; skating rinks; golf courses; horse shows; arenas, and stables; coin-operated devices and game parlors.

Animal clinic: A facility for the prevention, treatment, minor surgery, cure, or alleviation of disease and/or injury in small domestic animals, with all care conducted within a completely enclosed building, provided that noise or odors created by activities within the building are not perceptible beyond the property line, and that no animals are kept outside the building at any time. Overnight boarding of animals is permitted unless expressly prohibited by the zoning district regulations.

Animal hospital: A facility for the prevention, treatment, surgery, cure, or alleviation of disease and/or injury in small or large animals. Overnight and outside boarding of animals are permitted.

Antenna: Any system of electrical conductors used for the transmission and/or reception of electromagnetic waves.

Antenna support structure: Any structure, mast, pole, tripod, or tower used for supporting an antenna or antennas.

Antique: An objet d'art or household furnishing which was not mass-produced, and was characteristic of a specific period in a specific country.

Apartment: See Dwelling, Multifamily.

Apothecary: One who prepares and sells drugs and medicines; pharmacist.

Appeal: An appeal to the board of adjustment where it is alleged that there is error in any order, requirement, decision, or determination made by an administrative official in the enforcement in the zoning article of this chapter.

Approach-departure path: A path for flight in a plane leading outward and upward from the end of the take-off and landing area, under which adequate areas should be located to permit a safe landing in the event of a malfunction.

Area of shallow flooding: Means a designated AO, AH, or VO Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths from one (1) to three (3) feet, where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Area of special flood hazard is the land in the flood plain within a community subject to a one percent or greater chance of flooding in any given year. (100-Year Frequency Flood) The area may be designated as Zone A on the Flood Hazard Boundary Map. After detailed rate making has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zones A, AO, AH, A1-99, VO, or V1-30.

Art gallery or museum: A corporation, organized for purposes of maintaining collection of books and art works bequeathed to it and maintaining public art gallery on premises devised to it.

Base flood means the flood having a one percent chance of being equalled or exceeded in any given year. (100-Year Frequency Flood)

Bed and breakfast establishment: An establishment which supplies temporary accommodations to overnight guests for a fee.

Boarding house: A building other than a hotel where lodging is provided for definite periods for compensation pursuant to previous arrangements.

Building: A structure designed, built or occupied as a shelter or roofed enclosure for persons, animals or property. For the purpose of this definition, "roof" shall include an awning or other similar coverings, whether or not permanent in nature.

Building setback line. See Setback line.

Bufferyard: A unit of yard together with enough planting to eliminate or minimize potential negative impacts such as dirt, litter, noise, glare of lights, signs and unsightly buildings between different land use intensity classes.

Bulk plant or terminal: A facility where flammable or combustible liquids are received by tank vessel, pipelines, tank car or tank vehicle and are stored or blended in bulk for the purpose of distributing such liquids by tank vessel, pipeline, tank car, tank vehicle, portable tank or container.

Business park. A planned development with a common theme and name intended to be used primarily for office, showroom, service, warehouse, and/or distribution purposes.

Business services: Establishments primarily engaged in rendering services to business establishments on a fee or contract basis, such as advertising and mailing, building maintenance, employment service, management and consulting services, protective services, equipment rental and leasing, commercial research, development and testing, and photo finishing.

Caliper: The minimum diameter of a tree measured six (6) inches above the ground for trees up to and including four (4) inches in diameter and twelve (12) inches above the ground for trees having a larger diameter.

Carport: Space for the housing or storage of motor vehicles and enclosed on not more than two (2) sides by walls.

Car wash, automatic. A structure where chair, conveyors, blowers, steam cleaners or other mechanical devices are used for the purpose of washing motor vehicles and where the operation is generally performed by an attendant.

Car wash, self-service. A structure where washing, drying and polishing of vehicles is generally on a self-service basis without the use of chain conveyors, blowers, steam-cleaning, or other mechanical devices.

Certificate of occupancy. A paper to be issued certifying that the premises complied with all the provisions of the ordinance [chapter].

Child-care facility: A facility that provides care, training, education, custody, treatment, or supervision for a child who is not related by blood, marriage, or adoption to the owner or operator of the facility, for all or part of the twenty-four-hour day, whether or not the facility is operated for profit or charges for the services it offers.

Child-care institution (basic): A child-care facility licensed by the Texas Department of Human Services which provides care for more than twelve (12) children for twenty-four (24) hours a day. A basic child-care institution does not include a twenty-four-hour-a-day program offered by a specialized child-care institution.

Child-care institution (specialized): A child-care facility licensed by the Texas Department of Human Services which provides specialized care for more than twelve (12) children for twenty-four

(24) hours a day. Specialized child-care institutions include residential treatment centers, emergency shelters, halfway houses, therapeutic camps, and institutions serving mentally retarded children as classified and regulated by the Texas Department of Human Services.

Clinic, dental or medical: A building in which ten (10) or more physicians and/or dentists or their allied professional assistants carry on their profession; or a building which contains one (1) or more physicians, dentists and their assistants and a laboratory and/or an apothecary limited to the sale of pharmaceutical and medical supplies. A clinic shall not include in-patient care or operating rooms for major surgery.

Club: A group of people organized for a common purpose to pursue common goals, interests or activities and usually characterized by certain membership qualifications, payment of fees and dues, regular meetings, and a constitution and by-laws.

Clubhouse. A building or portion thereof, and related facilities used by a club, fraternal organization, or a membership organization.

Collector street. See Street, collector.

Common area. A parcel or parcels of land, or an area of water, or a combination of land and water, and/or developed facilities and complimentary structures and improvements, including but not limited to areas for vehicular and pedestrian access and recreational facilities within the site.

Common worker: An individual who performs labor involving physical tasks that do not require a particular skill, training in a particular occupation, craft, or trade, or practical knowledge of the principles or processes of an art, science, craft, or trade.

Completely enclosed structure: See Structure, completely enclosed.

Contractor: Any person doing work within the building trades or construction professions, either licensed or unlicensed by the City of San Antonio.

Controlled area, airport: That area within which the provisions of these regulations are effective, and includes all airport hazard areas which are within the corporate limits of the city and the area outside the corporate limits of the city which is within a rectangle bounded by lines located one and five-tenths (1.5) statute miles, seven thousand nine hundred twenty (7,920) feet from the center line, and lines located five (5) statute miles, twenty-five thousand four hundred (25,400) feet,

from each end of the paved surfaces of each of the following runways: Runways 3/21, 12R30L and 12R/30L and 12L/30R at San Antonio International Airport; and Runways 9-27 and 14-32 at Stinson Municipal Airport.

Council: The city council of the City of San Antonio.

Crosswalk: That part of a street at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the street (public, private or safety lane) measured from the curbs, in the absence of curbs from the edges of the traversable roadway. Also a cross walk is any portion of a street (public, private or safety lane) at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the street surfaces.

Cultural facilities: Establishments such as museums, art galleries, botanical and zoological gar. dens, and other facilities of an historic, educational, or cultural interest.

Day-care center: A child-care facility that provides care for more than twelve (12) children under fourteen (14) years of age for less than twenty-four (24) hours a day.

Destination resort: Lodging accommodations and complementary recreational or entertainment facilities that are comprehensively planned and integrated in order to provide a variety of activities, services, and amenities that comprise a visitor attraction in and of themselves.

Detached structure: A structure having no party wall or common wall with another structure unless it is an accessory structure.

Developer. A person responsible for any undertaking that requires a zoning permit, special use permit, conditional use permit, etc.

Developer customer: Any applicant who requests sewer or water set-vice for a lot or lots which have been or will be subdivided or platted.

Development. Any manmade change to improved or unimproved real estate, including but not limited to, erecting buildings or other structures, mining, dredging, cutting, and/or filling, grading, paving, excavation or drilling operations, platting or replatting of subdivisions, creation or expansion of a mobile home/manufactured home or setting up a mobile home/manufactured home or any change in use of a structure from nonresidential to residential use.

Development plan. The proposal for development including such drawings, documents and other information necessary to illustrate completely the proposed development. The development plan shall specifically include such information as required by this chapter.

Disabled person. A person who has a physical or mental impairment, or both, that substantially limits one or more major life activities to include caring for oneself, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, or working.

Drainage System: All streets, gutters, inlets, swales, storm sewers, channels, streams, or other pathways, either naturally occurring or man-made, which carry and convey stormwater during rainfall events.

Driveway: That area not used for general circulation, providing access from a street to one (1) or more dwelling units.

Duplex: See Dwelling two-family.

Dwelling one family: A single structure occupied exclusively by not more than one (1) family.

Dwelling one-family attached. Two (2) or more dwelling units with common walls between the units.

Dwelling two-family (duplex): A detached house designed for and occupied exclusively as the residence of not more than two (2) families, each living as an independent housekeeping unit.

Dwelling two-family attached: Any two (2) dwelling units with a common wall between the units and under single ownership which may be attached by a common wall to the units.

Dwelling three-family (triplex): A detached house designed for and occupied exclusively as the residence of not more than three (3) families, each living as an independent housekeeping unit.

Dwelling four-family (quadraplex): A detached house with common walls between the units, designed for and occupied exclusively as the residence of not more than four (4) families, each living as an independent housekeeping unit.

Dwelling multifamily: A dwelling or group of dwellings on one (1) lot containing separate living units for five (5) or more families, but which may have joint services or facilities.

Dwelling single-family: See Dwelling one-family.

Dwelling unit: One (1) or more rooms providing complete living facilities for one (1) family, including kitchen facilities or equipment for cooking or provisions for the same, and including room or rooms for living, sleeping, bathing and eating.

Easement. A grant of one or more of the property rights by the property owner to and/or for the use by the public, a corporation, or another person or entity.

Easement, utility. An easement granted for installing and maintaining utilities, across, over or under land together with the right to enter thereon with machinery and other vehicles necessary for the maintenance of utilities.

Easement, vehicular nonaccess: An easement established on a lot for the purpose of prohibiting ingress and egress to vehicular traffic.

Edwards Recharge Zone: Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, and including the outcrops of other formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the offices of the Texas Natural Resource Conservation Commission (TNRCC) and the appropriate underground water district.

Edwards Transition Zone: Generally, that area where geologic formations crop out in proximity to and south and southeast of the recharge zone and where faults, fractures, and other geologic features present a possible avenue for recharge of surface water to the Edwards Aquifer, and including portions of the Del Rio Clay, Buda Limestone, Eagle Ford Group, Austin Chalk, Pecan Gap Chalk, and Anacacho Limestone. The transition zone is identified as that area designated as such on official maps in the offices of the Texas Natural Resource Conservation Commission (TNRCC) and appropriate underground water conservation districts.

Eminent domain: Inherent sovereign power claimed by the legislature of a state, for controlling private property for public uses.

Emergency, utility related: A break or leak in an underground utility line or a disruption in a utility service.

Emergency vehicle: Vehicle of the police or fire departments, ambulances, and vehicles conveying an airport official or airport employee in response to any emergency call.

Employment agency: An establishment whose business is to find jobs for people seeking them or to find people to fill jobs that are open.

Fabrication. Manufacturing, excluding the refining or other initial processing of basic raw materials such as metal ores, lumber or rubber. Fabrication relates to assembling, stamping, cutting or otherwise shaping the processed materials into useful objects.

Family: One or more persons occupying a dwelling living together as a separate housekeeping unit in one (1) or more rooms with complete living facilities, including kitchen facilities or equipment for cooking or provisions for the same, and including room or rooms for living, sleeping, bathing and eating.

Family home. A community-based residential home operated by; (a) The Texas Department of Mental Health and Mental Retardation; (b) a community center organized under Section 3.01, Texas Mental Health and Mental Retardation Act (Article 5547-203, Vernon's Texas Civil Statutes, which provides services to disabled persons; (c) a nonprofit corporation; or (d) an entity certified by the Texas Department of Human Resources as a provider under the intermediate care facilities for the mentally retarded program.

Flood or flooding: A general and temporary condition of partial or complete inundation of normally dry land areas from: (1) the overflow of inland or tidal waters; (2) the unusual and rapid accumulation or runoff of surface waters from any source.

Flood hazard boundary map (FHBM): An official map of a community, issued by the Federal Emergency Management Agency, where the areas within the boundaries of special flood hazards [have been designated as zone A.]

Flood insurance rate map (FIRM): Means an official map of a community, on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to the community. The map is divided into zones which are used for setting rates of flood insurance. Insurance rates, the type of permit, and requirements of the permit will vary depending on the zone in which a property is located.

Flood insurance study is the official report provided by the Federal Emergency Management Agency which contains flood profiles, the water surface elevation of the base flood, as well as the Flood Hazard Boundary--Floodway Map.

Flood plain. All area of special flood hazard within the jurisdiction of the City of San Antonio and where applicable in its area of extraterritorial jurisdiction.

Floodway. The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without increasing the water surface elevation.

Floor area: The sum of the gross horizontal areas of all floors of a structure, including interior balconies and mezzanines, measured from the exterior face of exterior walls, or from the centerline of a wall separating two (2) structures. The floor area shall include the area of roofed porches having more than one (1) wall and of accessory structures on the same lot. Stairwells and elevator shafts shall be excluded.

Floor area ratio: The ratio of the total building floor area in square feet to the total land area in square feet.

Foster family home: A child-care facility certified or licensed by the Texas Department of Human Services which provides care twenty-four (24) hours a day for not more than six (6) children.

Foster group home: A child-care facility licensed by the Texas Department of Human Services which provides care twenty-four (24) hours a day for seven (7) to twelve (12) children.

Fraternal organization: A group of people formally organized for a common interest, usually cultural, religious or entertainment, with regular meetings, rituals, and formal written membership requirements.

Front yard: An area extending the full width of a lot between the front lot line and the nearest principal structure.

Garage, private. A building or part thereof accessory to a main building and providing for the storage of automobiles and in which no occupation or business for profit is carried on, enclosed on all four (4) sides, and pierced only by windows and customary doors.

Green space: Land shown on an urban corridor site plan which may be improved or maintained in a natural state and which is reserved for preservation, recreation, or landscaping.

Group day-care home: A child-care facility that provides care for seven (7) to twelve (12) children under fourteen (14) years of age for less than twenty-four (24) hours a day.

Half story: An uppermost story usually lighted by dormer windows, in which a sloping roof replaces the upper part of the front wall.

Head shop. Any retail establishment having a substantial or significant portion of its stock in trade in or which has as its main purpose the offering for sale paraphernalia or items designed or marketed for use with illegal cannabis or drugs.

Height, building: The vertical dimension measured from the average elevation of the finished lot grade at the front of the building to the highest point of ceiling of the top story in the case of a flat roof; to the decline of a mansard roof; and to the average height between the plate and ridge of a gable, hip or gambrel roof.

Height limit: The elevation in feet above mean sea level, the projection above which a proposed structure or tree would not be granted a permit under this chapter, except as otherwise provided in this chapter.

Heliport. That area used by helicopters or other steep gradient aircraft for take-offs and landings. Such area may include passenger, cargo, maintenance and overhaul facilities, plus fueling service, storage space, tie-down area, hangars and other accessory buildings and open spaces.

Helistop. That area used by helicopters or other steep gradient aircraft for the purpose of takeoffs and landings. Such area may be used for the pickup or discharge of passengers and cargo, storage space, and tie-down area, but shall not include maintenance, overhaul, or fueling services and facilities.

Highest adjacent grade: The highest natural elevation of the ground surface, prior to construction, next to the proposed walls of a structure.

Home occupation: Any activity carried out for gain by a resident conducted as an accessory use in the resident's dwelling unit.

Hospital: An institution providing health services, primarily for in-patients, and medical or surgical care of the sick or injured, including as an integral part of the institution, such related facilities as laboratories, out-patient departments, training facilities, central service facilities and staff offices.

ATTACHMENT(S)
ITEM NO 7

CITY OF SAN ANTONIO

**REVISIONS TO THE
UNIFIED DEVELOPMENT CODE
CHAPTER 35 OF THE CITY CODE
(1995 EDITION)**

SUBMITTED BY:

THE DRAINAGE REGULATIONS REVIEW COMMITTEE

MAY 12, 1997

Prepared By:

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Project No. 67187

May, 1997

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- I. Executive Summary**
- II. Drainage Regulations Review Committee Recommendations**
- III. Revisions to Unified Development Code, Chapter 35,
Subdivision Regulations**

EXECUTIVE SUMMARY

The Drainage Regulations Review Committee was created by the City Council in May, 1994, at the request of Councilman Howard Peak. He was concerned about the existing drainage problems, and expressed a need to develop regulations, policies and methods to prevent future flooding problems from occurring.

The Committee was initiated at the same time that the three watershed studies began. The goal was to develop standards for new development that would minimize flooding problems in the future.

The Committee has been chaired by Councilman Howard Peak with Councilman Bob Ross as Co-Chairman represented a broad base of community interest which included neighborhood groups, builders, developers, engineers, environmentalist and open space participants. Members of the Committee were Charlie Conner, Mike Cude, P.E., Norman Dugas, Mike Gonzales, June Kachtik, Dan Kossl and Larry DeMartino.

From May 1994 to February 1996 the Committee had thirty-three (33) two-hour work sessions discussing flooding and drainage issues. The Draft Report issued in February 1996 entitled "Recommendation For Improving Management of San Antonio's Stormwater Drainage System" was the culmination of intensive discussions which resulted in the development of principles, goals and policies aimed at changing the existing drainage design regulations and procedures now in place. The goals, as defined in the report, were the basis for these proposed revisions to Chapter 35 of the Unified Development Code (U.D.C.) which determines how new development is accomplished.

The following Significant Community Goals were incorporated into the proposed revisions to the U.D.C.;

- ◇ Identification and preservation of the existing natural floodplains to be used for multiple purposes.
- ◇ Minimizing future flooding through the use of stormwater detention facilities.
- ◇ Enhancing public safety through revised street drainage design guidelines.
- ◇ Revising drainage design and review guidelines to expedite development of drainage projects within the City and the ETJ.
- ◇ Coordination of water quality and water quantity issues.

These revisions to the Unified Development Code, when approved, will bring the City in line with State Law and provide pertinent guidelines which will address future drainage and flooding issues. Not only will the results from these changes protect the health, welfare and safety of the Citizens of San Antonio, they will reduce the economic impact and losses due to flooding. These changes will positively benefit the community and its quality of life.

The three watershed studies identified over \$100 million in drainage improvements that are required over the next 5-20 years. These projects will be implemented by the City or some other public agency, and the cost will be borne by the general public through taxes and fees. The proposed revisions to the U.D.C. will ensure that new developments do not create any new drainage or flooding problems, while at the same time not compounding existing flooding situations.

**RECOMMENDATIONS FOR
IMPROVING MANAGEMENT OF
SAN ANTONIO'S STORMWATER
DRAINAGE SYSTEM**

**DRAINAGE REGULATION
REVIEW COMMITTEE**

DRAFT REPORT

**February, 1996
(Revised May 12, 1997)**

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DRAINAGE REGULATION REVIEW COMMITTEE

Howard Peak, Chair

Bob Ross, Vice Chair

Charlie Conner
Mike Cude
Norman Dugas

Larry De Martino
Mike Gonzales
June Kachtik

Dan Kossl

INTRODUCTION

During May, 1994, the San Antonio City Council appointed a Drainage Regulation Review Committee to make recommendations about improving how San Antonio should manage its stormwater drainage. The committee was asked to focus on stormwater quantity, i.e., flooding and drainage. There are other efforts underway which focus on stormwater quality.

The committee held thirty-three (33) 2-hour work sessions over a period of eighteen (18) months. All committee meetings were open to the public. The committee held a public hearing during February, 1995, to solicit ideas from area citizens.

This document presents the results of the committee's work by providing recommendations for improving the management of stormwater drainage in the San Antonio area.

Once the community and the City Council have reviewed and approved these recommendations, additional work must be undertaken in order to change existing regulations, procedures and practices to reflect the principles, goals and policy framework contained in this report.

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GUIDING PRINCIPLES FOR MANAGING STORMWATER DRAINAGE

1. Stormwater management is a community-wide effort and benefit.
2. Upstream development without proper control impacts downstream water flows.
3. Flooding is a problem when it adversely affects human and human settlement, the natural system or the flood control system.
4. The urban environment and each watershed within it form a single, interacting system. Actions have consequences.
5. Floodplain and stormwater management are matters of time and space allocation. Water requires space and must be contained and/or conveyed, in either appropriate or inappropriate places.
6. Floodplains and stormwater can be resources.
7. Changes in the natural balance require compensation.
8. Stormwater management is a part of growth management.
9. Each watershed is a unique system.

<u>PRINCIPLE-</u>	A fundamental truth or doctrine. That which constitutes the essence of a body or its constituent parts. That which pertains to the theoretical part of science.
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GOALS FOR MANAGING STORMWATER DRAINAGE

- 35-2039
35-4029 A. Ensure that stormwater management considers and provides reasonable safety from flood hazards for people and property.
- 35-2039
35-4020
35-4029 B. Integrate stormwater management with natural resource enhancement and protection, compliance with environmental regulations and with creating appropriate development.
- 35-4029 C. Prohibit inappropriate land use and encourage appropriate land use within floodplains.
- 35-2039
35-4029 D. Manage stormwater to make the drainage system work more efficiently.
- 35-4020
35-4029 E. Manage stormwater to minimize maintenance costs.
- CSA Internal Policy F. Manage stormwater by promoting collaboration among all political jurisdictions affected by the hydrologic system.
- 35-4020 G. Manage stormwater to coordinate water quantity with water quality.
- 35-4020
35-4029 H. Manage stormwater to increase recharge to aquifers.
- 35-4029 I. Monitor and maintain stormwater drainage system.
- 35-2039
35-2052 J. Ensure that the cost of managing stormwater is borne equitably.
- 35-2039
35-4029 K. Require development to be responsible for the affect and cost of managing the incremental quantity of stormwater attributable to it.
- 35-4029 L. Actively encourage flexibility in planning, design and

management of stormwater.

- 35-4020 M. Manage stormwater by employing non-structural approaches
35-4029 whenever possible and practical.
- 35-4029 N. Consider the appearance of drainage system facilities as they may
affect property values and the quality of the surrounding area.
- 35-2039 O. Employ stormwater management practices which enhance the
35-4029 productive use and enjoyment of all property.
- 35-4029 P. Ensure that the drainage system's capacity is adequate to meet
demand.
- CSA Internal Q. Complete the unfinished portions and upgrade the substandard
Policy portions of the stormwater drainage system.
- 35-2039 R. Prioritize public drainage projects to achieve the community's
goals for stormwater management.
- 35-2039 S. Employ a decision-making process which includes and balances
the requirements of the entire drainage system with the interests
of the local area.
- 35-4029 T. Employ drainage system improvements as a tool or incentive to
assist in neighborhood stabilization or revitalization.
- 35-4029 U. Integrate road and bridge building activities to create
35-4119 opportunities to solve drainage problems, especially localized
ones.
- CSA Internal V. Uniformly apply to all parties, public and private, the goals,
Policy regulations and practices of stormwater management.
- 35-4323 W. Strengthen enforcement to remove and to correct illegal
modifications to drainage facilities and floodplains.

POLICY FRAMEWORK

The following pages lay out a policy framework based on the guiding principles and the goals as well as the committee's investigation of the community's past and current stormwater regulations and management practices.

The intent of this policy framework is to add specificity to the twenty-three (23) goals and thus provide a basis for making the necessary changes to the City's stormwater regulations, procedures and management practices.

This section is divided into eleven (11) subject areas which collectively address the committee's recommendations for improving management of the stormwater drainage system in the San Antonio area.

I. USE OF STREETS AS PART OF THE DRAINAGE SYSTEM

- 35-4029.f
35-4119.b
1. Continue to Use Streets for Stormwater Conveyance.
- 35-4029.f.1
35-4119.b.1
- a. Require an all-weather lane for collector streets and for major thoroughfares. The storm frequency criteria which all-weather lanes must meet to remain open is:
- 10-year storm for new construction.
 - 25-year storm for publicly financed reconstruction.
- 35-4029.f.3
35-4119.b.3
- b. For local streets:
- Review area flow plans to identify and deal with stormwater impacts/problems on local streets downgrade.
 - Check ground floor elevation of structures downgrade from streets for potential stormwater impacts.
 - Check curb cuts for drives to determine impact on the stormwater conveyance function of streets.
- 35-4029.f.3
35-4119.b.3
- c. Assess the impacts of the portions of the stormwater conveyance system which deliver water to streets, including portions of the system which connect the street to other drainage ways. These “transition points” need to be recognized as critical parts of the system.
- CSA Internal
Policy
- d. Review and revise, as necessary, the inspection process to ensure proper installation of all portions of the stormwater conveyance system, especially as they relate to streets.
- 35-4101
2. Develop planning and design standards which ensure public safety while maximizing efficiency among the functional uses of streets (i.e., traffic, parking, access, stormwater conveyance and stormwater quality).

3. Provide for planning and design flexibility on a case-by-case basis:

- | | | |
|-------------------------------|----|--|
| Design Manual | a. | Establish and use performance standards. |
| 35-4029.f | b. | Fit performance standards to the various classes of streets (i.e., local, collector and major thoroughfares). |
| 35-4029.f
35-4119.b | c. | Focus on non-local streets, specifically collector streets and major thoroughfares. |
| 35-4101 | d. | Plan and design with, not against, regional physiography, local topography, areawide population density, etc. |
| 35-4029.f.3
35-4119.b.3 | e. | Recognize and consider the impacts of rezoning and re-development of property on the ability of streets to convey stormwater. |
| 35-4113 | f. | Use flexible right-of-way standards. |
| 35-4029 | g. | Consider and design for maintenance activities, costs and requirements. |
| 35-4029.f.1
35-4119.b.1 | h. | Design to protect the public's safety, particularly to limit hazards, liability and conflicts between stormwater and traffic. |
| 35-4102
35-4029
35-4119 | i. | Consider street pattern and layout as well as the design of specific street sections/segments (i.e., crowns, curbs, lanes, ditches, guardrails, cross-streets, all-weather lanes, overflow, etc.). |
| 35-4029
35-4119 | j. | Move toward uniformity by reviewing and revising the current differences in standards between reconstruction and new construction of streets. |

- 35-4029.f.3
35-4119.b.3 k. Consider and address the cumulative affects of stormwater conveyance on the street system.
- 35-4029.f
35-4119.b l. Relate and interrelate a street's conveyance of stormwater to the rest of the drainage system.
- 35-4029.f.1
35-4119.b.1 m. Consider and plan for pedestrians. for ADA requirements, and for bicycles.
- 35-4119 n. Minimize or eliminate the typical post-construction problems associated with streets, such as standing water, etc.
- CSA Internal Policy o. Develop a workable accountability system to oversee the design and construction of streets and thus ensure that performance standards work.

II. STORMWATER DETENTION

- 35-4029
a,b,c,d,e Basic Policy: Require that development or redevelopment on individual parcels of property be responsible for any additional off-site floodwater than the amount attributable to the parcel's condition before development or redevelopment and after. This policy refers to controlling peak discharge, and specifically to stormwater quantity, velocity and direction.
- 35-4029.e 1. Provide for the use of stormwater detention on individual sites as well as areawide or regionally.
- 35-4029.e a. Develop a regional detention management system which incorporates both a macro and a micro strategy for stormwater management:
 - Micro: deal with individual parcels of property

- Macro: deal with major drainageways and floodplains (i.e., watersheds, or subwatersheds)
- Base the management system on information developed from watershed studies.

35-2039
35-4029.e

b. Consider on-site, areawide and regional detention:

- On-site refers to management of stormwater on individual parcels of property or within master planned areas.
- Compare systems for on-site detention with those for areawide or regional detention (i.e., costs and benefits associated with construction, maintenance, financing, multi-use, when and how to develop, etc.)

35-2039
35-4029.e

c. For areawide or regional detention:

- Control peak discharges so that watershed levels are not exceeded.
- Consider intergovernmental aspects, especially cooperation.
- Look at San Antonio River Authority/Soil Conservation Service efforts on the Upper Salado Creek as a model.
- Consider the cumulative impacts of stormwater release.
- Consider the impacts on downstream floodplains.
- Relate regional detention to stormwater master plans for various watersheds.
- Specifically consider how to deal with intervening property owners, i.e., those between a development site and the regional detention basis.

- 35-4020.b
35-4029.e
2. Provide for planning and design flexibility, i.e., for Best Management Practices (BMPs) to encourage detention.
- 35-4020.c
35-4029.e.5
- a. Encourage detention which is multi-purpose (i.e., enhances water quality, ties in with NPDES, enhances ground water recharge, provides open space, provides recreation or other on-site amenities, provides habitat, etc.).
- 35-4020.b
35-4029.e
- b. Encourage water use/reuse opportunities which may involve both detention and retention facilities.
- Manage retained stormwater to ensure public health and safety.
- 35-4029.e
- c. Consider detention as an additional tool to manage stormwater.
- 35-4029.e.6
- d. Use detention as a tool, in older neighborhoods or in developed areas, to offset the adverse drainage impacts of new development.
- 35-4029.e
- e. In using detention, specifically consider:
- Cost-benefit analysis.
 - Legal issues.
 - Maintenance issues.
 - Safety and public health issues.
 - Property rights issues.
 - Issues related to “ultimate development”.
 - Joint public-private opportunities.
 - Issues related to possible “threshold requirements” for detention.

III. USE OF WATERCOURSES AND DRAINAGE CHANNELS

- 35-4029.g 1. Limit modification or improvement to watercourses in order to retain the natural movement of stormwater within a watercourse.
- 35-4029.g.2 a. Recognize that some limited modification to watercourses may assist the natural flow and storage of stormwater.
- 35-4029.g.3 b. Consider the existing condition of the watercourse.
- 35-4029.g.2 c. Recognize that there are differences between major and minor watercourses. Define these differences and establish separate and higher standards for major watercourses.
- 35-4029.g 2. Use remediation of watercourses where it is appropriate to do so.
- 35-4029.g a. Remediation activities must be sensitive to the natural features of watercourses and should be used on a case-by-case basis.
- 35-4029.i
- 35-4029.g.1 b. Remediate existing watercourses where problems exist with respect to aesthetics, safety, public health and maintenance.
- 35-4029.g.1 c. Remove existing incursion within watercourses rather than adapting watercourses to the incursions.
- 35-4029.g.5 3. Operate with a clear commitment to maintenance which employs an on-going and systematic program for maintaining watercourses.
- 35-4029.g.6
- CSA Internal Policy a. Coordinate water quality programs with watercourse maintenance.

- 35-4029.g.5 4. Maximize multiple and appropriate use of watercourses.
- 35-4029.g.5 a. The more use which is made of watercourses, the higher
35-4029.g.6 the need/commitment to maintain them.
- 35-4029.g.4 b. Achieve a situation where you cannot visually discern the
35-4029.g.5 difference between the appearance of watercourses and that of parks.
- 35-4029.g.6 5. Provide access to watercourses and drainage channels for
35-4284 maintenance and for appropriate public use.
- 35-4029.g a. Develop public use strategies which take into account
neighbors, public safety, privacy, property rights, etc.
- Public use should be thought of broadly, i.e., beyond limited recreational activities.
- CSA Internal b. Manage and rehabilitate man-made channels, with specific
Policy consideration for aesthetics, recreation, stormwater conveyance, etc.

IV. INTEGRITY OF THE GROUND SURFACE

- 35-4020.a.b 1. Encourage maintaining the integrity of natural landforms to:
35-4029.g.3 enhance the productive use and enjoyment of property; serve a
35-4029.g.4 useful drainage purpose; sustain and enhance the natural drainage
35-4029.i process; and, help improve water quality.
- 35-4020.a a. Minimize site clearance.
35-4029.i
- 35-4020.a b. Maintain vegetative cover.
35-4029.i
- 35-4020.b c. Consider a broad range of design/management practices.

- 35-4029.g.1 2. Consider remediation of landforms, for improved drainage management, as part of redevelopment planning.

V. STORMWATER DESIGN FLEXIBILITY

- 35-4029 1. Encourage planning and design flexibility which allows creativity in arriving at a design and in adapting to site and area conditions.

- 35-4029 2. Rethink the existing planning/design process (i.e., how design is actually done) for stormwater management in order to encourage creativity and flexibility.
35-4213

- 35-4029.1 a. Encourage and formalize interaction and exchange of information between the designer and the reviewing officials.

- 35-4029.1 b. Educate and involve all actors (i.e., designers, developers, city staff, citizens, etc.) in rethinking, redoing and using a more effective design process.

- CSA Internal Policy 3. Rethink how the City of San Antonio does planning and design for its stormwater projects.

- CSA Internal Policy a. The City of San Antonio and other government entities should model how to be creative in design. They should produce exemplary drainage projects which serve as models of creativity. Public projects should inspire!

- 35-4029.1 4. Improve design review/approval process.

- 35-4029.1 a. Change the bureaucratic process to encourage creativity and flexibility in design and planning. Improve the process without adding time.

- | | | |
|---------------------|----|--|
| 35-4029.1 | b. | Consider using a pre-programming phase in the design review/approval process. |
| Design Manual | c. | Use performance standards to encourage design creativity and to protect public safety and property. |
| CSA Internal Policy | d. | Operate with adequate and qualified professional staff: <ul style="list-style-type: none"> - Employ a multidisciplinary staff. - Have a staff capable of working with performance standards. |
| 35-4029.1 | e. | Make the review/approval process more supportive, more responsive and more efficient in order to promote/encourage creativity in planning/design. |
| CSA Internal Policy | f. | Have the ability to encourage and improve upon design solutions which are workable and haven't been used in the local area. |
| | g. | The private sector, especially design/planning professionals, has a responsibility to help make a new system/process work (i.e., by being supportive, by educating their members, etc.). |

VI. STANDARDS, GUIDELINES AND METHODOLOGIES

- | | | |
|--------------------------------|----|--|
| 35-A401
CSA Internal Policy | 1. | The system and process for stormwater design review and approval must operate with consistency in using guidelines, standards and methods. |
| CSA Internal Policy | a. | The system/process must treat all equally and fairly. |
| CSA Internal Policy | b. | There must be consistent application by city staff. |

- 35-A401
Design Manual
- 35-A401
Design Manual
- 35-A401
Design Manual
- 35-A401
- 35-4029
Design Manual
- 35-4029
35-A401
- c. Guidelines, standards and methods should not inhibit creativity or design flexibility.
 - d. The system must be maintained and remain stable over time.
 - e. The system must be understandable/transparent to users.
2. Establish and consistently apply a reliable method for calculating stormwater runoff. This standard calculation is a key operating condition.
 3. Use performance standards and base them on sound principles.
 4. Review and modify, as appropriate, the City of San Antonio's existing regulations and procedures.
 - a. Ensure consistency amount the provisions of the city code and applications among the various implementing entities.
 - b. Eliminate provisions and procedures which adversely impact or inhibit design creativity.
 - c. Procedures should minimize the potential for arbitrary application.
 - d. Look at and use appropriate models from other jurisdictions around the United States.
 - e. Promote and work toward a uniform system for the region.

- 35-4322
35-4341.h
5. Recognize and comply with those state and federal laws which affect stormwater management and over which we have no control.

VII. FLOODPLAIN MANAGEMENT

1. Develop and use floodplain management practices which:
- 35-4029
35-4304
- a. Preserve floodplains.
- 35-4029
35-4304
- b. Minimize encroachment.
- 35-4029
- c. Maintain the natural state as much as possible.
- 35-4029
- d. Preserve amenities within floodplains.
- 35-4322.e
35-4341.h
- e. Comply with applicable federal and state laws.
- 35-4304.e
- f. Inform the public of floodplain location and the risks/hazards associated with them.
- 35-4029
35-4304
- g. Promote restoration of the natural floodplain system.
- 35-4029
2. Carefully balance management and preservation of floodplains with design flexibility for stormwater.
- 35-4029
35-4119
3. Look holistically, consider many perspectives and the entire system, at development planning vis-a-vis floodplain management.
- 35-4029.f
35-4119.b
4. Plan the street and road system with consideration for floodplains.

- 35-4323 5. Ensure that the city and the county enforce floodplain regulations.
- 35-2039 6. Consider previous development's impact (i.e., from improvements, alterations, obstructions, etc.) when changing floodplain delineation.
- 35-4029 7. Specifically consider any affected, unique landform when managing floodplains.

VIII. INTEGRATED RESOURCE MANAGEMENT

- 35-4020 1. Develop planning and management processes which recognize the multiple use and benefits of stormwater resources; which emphasize on-site and environmentally sensitive management; which encourage new institutional roles and new tools to bring about a broader perspective in managing stormwater; and which provide reliable long term services and facilities at the lowest reasonable cost while maximizing benefits.
- 35-4029
- 35-4029.e.5 a. In planning, design, and management consider and incorporate open space, hike/bike trails, recreation facilities, water quality, reuse/recharge opportunities, etc.
- 35-4029.g.5
- 35-4020 b. Consider resource sustainability.
- 35-4020 c. Develop resources and facilities which create and/or add value.
- CSA Internal Policy d. Coordinate all of the City of San Antonio's stormwater management operations and collaborate with San Antonio Water System, City Public Service, San Antonio River Authority, Bexar County, and others.
- CSA Internal Policy e. Establish and operate mechanisms for communication and cooperation among all actors and jurisdictions.
- 35-4020 f. Pool money and take advantage of multiple funding sources

in order to plan/design/manage stormwater systems cooperatively.

CSA Internal Policy

- g. Creatively look at new sets of agreements and ways of operating, especially among public entities, public-private relationships, neighborhood and community organizations, etc.

IX. MAINTENANCE

35-4284
35-4029

- 1. Protect our current and future investment in the stormwater drainage system by actively managing maintenance.

CSA Internal Policy

- a. Use planning and management activities to protect the infrastructure investment and to determine how best to allocate and spend maintenance funds.

CSA Internal Policy

- b. Look at other communities and models for guidance and ideas about managing our maintenance.

CSA Internal Policy

- c. Continuously and routinely perform preventative maintenance.

CSA Internal Policy

- d. Identify and resolve existing or potentially conflicting drainage maintenance practices.

CSA Internal Policy

- e. Commit the funds necessary to perform adequate and continuous maintenance.

35-4029
35-4284

- f. Design for and develop easy-to-use maintenance activities.

35-4029
35-4284

- g. Provide protection for maintenance activities and features during any construction.

CSA Internal Policy

- h. Develop procedures to warrant performance of the maintenance function of facilities.

- 35-4029 2. All drainage projects should have a maintenance analysis performed and the results used in planning and design.
- 35-4029 3. Develop and use performance standards for ensuring adequate, Design Manual on-going maintenance of the drainage system.
- CSA Internal 4. Consider employing incentives to encourage cooperation and Policy innovative maintenance methods.
- CSA Internal 5. Relate coordinated maintenance to Integrated Resource Policy Management activities.
- 35-4020.a,c 6. Ensure procedures for the proper installation and operation of erosion control measures by all construction activities in order to protect the drainage system.
- 35-4029 7. Develop procedures to protect the public from responsibility/ 35-4284 liability for failure of privately constructed drainage facilities.
- CSA Internal 8. Operate a program to continuously monitor the performance of Policy the management of maintenance.
- CSA Internal 9. Think of maintenance as a broad management function, not as a Policy narrow or limited activity.

X. AREAWIDE MANAGEMENT AND FINANCE

- 35-2039 1. Explore and pursue the creation of areawide institutional 35-2052 arrangements for collaborative management and financing of stormwater and its associated facilities.

- 35-2039
 - a. Manage stormwater on an areawide basis to achieve maximum effectiveness and benefit.
 - Use watersheds as the basic unit for areawide management activities.
 - Explore the scope of and methods for areawide management programs.
- CSA Internal Policy
 - b. Develop and use processes which are open to all parties on a continuous basis, and in which consensus decisions are made by those most affected.
- 35-2052
CSA Internal Policy
 - c. Research and employ all practical funds and funding mechanisms, both public and private, legally authorized, in order to finance the efficient management of stormwater throughout the area.
- 35-2052
 - d. Use cost-benefit analysis, which considers a broad range of impacts, costs, and benefits, to help determine acceptable areawide management options.

XI. ENFORCEMENT

- 35-4323
 - 1. Develop and maintain an adequately funded, effective, comprehensive, and continuing enforcement program which recognizes the essential role of enforcement in the management of stormwater.
 - a. Use all possible police powers to aggressively enforce stormwater regulations and practices.
 - b. Simplify the process for reporting and responding to violations, so that a single phone call will allow reporting of violations directly to appropriate enforcement officials.
- CSA Internal Policy
- 35-4302
CSA Internal Policy

- 35-4323 c. Identify and use the most effective penalties or sanctions for violations.
- 35-4322.f d. Enforce maintenance.
- 35-4029 e. Ensure adequate and continuous maintenance of small drainage features on private property.
- 35-4322.e f. Ensure enforcement of applicable federal and state laws.
- 35-4341.h
- CSA Internal Policy g. Ensure that publicly funded projects adhere to enforcement provisions and procedures.
- CSA Internal Policy h. Educate enforcement and judicial officials about the severity of the enforcement problem and the need for enforcement.
- CSA Internal Policy 2. Work closely and actively with citizens, other governmental entities, and with private organizations to achieve enforcement goals.
- CSA Internal Policy a. Investigate and establish programs which will encourage and allow citizen groups and others to voluntarily assist in enforcement activities, especially those relating to reporting.
- 35-4029 3. Enforce stormwater management practices and regulations within floodplains.
- 35-4331
- CSA Legal
- 35-4029.g a. Stop unauthorized dumping in floodplain, especially those
- 35-4305 which are wide or broad.
- 35-4332.a
- 35-4341.g

- | | | |
|-------------------------------------|----|--|
| CSA Legal | b. | Aggressively control illegal vehicular traffic in floodplains which causes erosion and “rutting”. |
| 35-4322.a | c. | Provide information to educate citizens about regulation and the permitted or prohibited activities within floodplains. |
| 35-4331 | d. | Ensure proper permits are obtained and adhered to for floodplain use (i.e., use-on-site certification). |
| 35-4305.d
35-4332.a
35-4341.g | 4. | Prevent excavation fill from adversely affecting watercourses and floodplains. |
| CSA Internal Policy | a. | Develop effective processes to track the disposal of fill from major excavation projects, i.e., ensure a documented “paper trail”. |
| CSA Internal Policy | b. | Continue to allow flexibility in finding acceptable sites for excavation fill. |
| CSA Internal Policy | c. | Consider establishing a “site locator system” which would maintain a registry of acceptable sites for excavation fill. |
| CSA Internal Policy | d. | Develop remedial actions/processes to deal with existing problems. |

GLOSSARY

ADA	Americans with Disabilities Act
Best Management Practices (BMP)s	Management practices or techniques used to guide design and construction of development or infrastructure improvements. Often organized into a list of practices, from which those practices most suited to a specific site can be chosen to halt or offset anticipated problems.
Collector Street	A street for traffic moving between major thoroughfares (arterials) and local streets, generally providing direct access to properties.
Cost-Benefit Analysis	A comparison of anticipated benefits derived from a particular project with anticipated costs over the estimated life span of the project.
Detention	The temporary storage and controlled release of stormwater runoff.
Drainage Channel	A human-made surface conveyance facility along which stormwater moves to drain an area.
Flood, 100-Year	A flood that has a 1.0% or greater chance of recurring in any given year or a flood of a magnitude equalled or exceeded once in 100 years on average over a significantly long period.
Floodplain	For a given flood event, that area of land adjoining a watercourse which will be covered temporarily by water.
Goal	A broad statement of philosophy. An ideal future end which is a general expression of community values.

Implementation Measure	An action, procedure, program or technique that carries out policy.
Incentive	Method by which government can influence decisions made by the private sector.
Integrated Resource Management	A comprehensive, non-traditional approach to consider a wide range of interconnected issues that affect stormwater management. Encompasses a variety of techniques for determining the appropriate mix of resources, for assessing potential consequences, and for judging the value of trade-offs among strategies.
Local Street	A street designed to provide vehicular access to abutting property and to discourage through traffic.
Major Thoroughfares Arterials)	A major street carrying traffic from local and collector streets to an from freeways and other major streets, with controlled intersections and generally providing direct access to properties.
NPDES	National Pollutant Discharge Elimination System. A permitting system devised by the United States Environmental Protection Agency to administer water quality provisions of the federal Clean Water Act.
Peak Discharge	The maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.
Performance Standards	Minimum requirements or maximum allowance limits on the effects or characteristics of an activity.
Policy	A specific statement that guides decision-making. A policy is based on goals as well as the analysis of data and information.

Remediation	Activities or processes which correct past problems or counter the negative effects of past activities.
Retention	The holding of stormwater in a basin without release except by means of evaporation or infiltration.
Review/Approval Process	Procedures established by government to judge and approve proposals for development activities.
Right-of-Way (R.O.W.)	A strip of land upon which roadways and drainage ways are constructed. The term R.O.W. refers to the land itself.
Standard	A rule or measure establishing a level of quality or quantity that must be complied with or satisfied. Standards define the abstract terms of goals and policies with defined specifications.
Stormwater Master Plan	A stormwater management plan prepared for an individual watershed. In San Antonio, stormwater master plans are currently being prepared for Leon, Salado and Upper Olmos Creeks.
Stormwater Runoff	Stormwater from a storm event running off the surface of a drainage area during and immediately following a period of rainfall.
Watercourse	The natural flow path along which stormwater moves to drain an area.
Water Quality Programs	Local efforts to control water pollution primarily based on requirements to the federal Clean Water Act.
Watershed	The physical area from which water drains into a watercourse, creek or river.

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**REVISIONS TO THE UNIFIED DEVELOPMENT CODE
CHAPTER 35 OF THE CITY CODE
(1995 EDITION)**

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The following sections of the 1995 Edition of the Unified Development Code have been altered, added or revised by the Drainage Regulations Review Committee and are included herein:

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35-2052	Impact Fees
35-2075	Information Required
35-4011	Development Plats
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Attachment 1	Drainage Subdivision Checklist
Attachment 2	HEC-2 Submittal Checklist

Lot depth: The mean horizontal distance between the front and rear lot lines.

Lot reversed corner. A corner lot, the rear of which abuts upon the side of another lot whether across an alley or not.

Lowest floor: The lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage, in an area other than a basement area, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable nonelevation design requirements of these regulations.

Maintenance easement: An easement granted by the owner of a lot adjacent to a zero lot line development, exclusively for the purpose of allowing the occupant of a residence on the lot line access to the adjoining property in order to maintain that portion of his dwelling situated on the property line.

Major subdivisions: Any subdivision other than a minor subdivision.

Major thoroughfare plan: That part of the master plan designating the location, dimensions, and dedication requirements of expressways, primary arterials and secondary arterials.

Manufactured home or housing: A HUD-code manufactured home or a mobile home. Term collectively means and refers to both.

Manufactured home park: A plot or tract of land which is separated into two (2) or more spaces or lots which are rented or leased or offered for rent or lease to persons for the installation of manufactured homes for use and occupancy as residences; provided, that the lease or rental agreement is for a term of less than sixty (60) months and contains no purchase option.

Manufactured home park plan: .A complete and exact plan of the manufactured home park submitted to the planning commission for final approval and which, if approved, will be submitted to the director of building inspections for filing.

Manufactured home setback line. The line within a manufactured home site defining the minimum horizontal distance between a manufactured home and the adjacent street line.

Manufactured home site: A plot of ground within a manufactured home park which is designed for and designated as the location for only one manufactured home and not used for any other purposes whatsoever other than the customary accessory uses thereof.

or intended to be used primarily for the accommodation of automobile transients.

Nameplate: A sign not exceeding one (1) square foot in area indicating the name and/or address of a building or the name of an occupant thereof and/or the practice of a permitted occupation therein.

Nonconforming structure: Any existing structure which was erected according to all applicable city ordinances at the time, but which does not now comply with all the regulations applicable to the district in which the structure is located.

Nonconforming use is the use of an existing property or structure after the effective date of this chapter, which does not comply with the use regulations applicable to the district in which the property is located.

Nursery: Land or greenhouses used to raise flowers, shrubs, trees, grass, and other plants for sale.

Nursery school: A child-care facility offering a program for children between two (2) and seven (7) years of age for four (4) hours or less per day.

Objet d'art: Individual art pieces not mass-produced consisting of one (1) or more of the following: Paintings, drawings, etchings, sculptures ceramics, inlays, needlework, knitting, weaving, and/or craftwork; leather, wood, metal or glass.

Obstruction: Any structure, growth or other object, including a mobile object, that exceeds a limiting height established by federal regulations or by this chapter.

Office: A building used primarily for conducting the affairs of a business, profession, service, industry, or government, or like activity, that may include ancillary services for office workers such as a restaurant, coffee shop, newspaper or candy stand.

Off-site mains: Sewer or water mains totally outside of a subdivision.

On-site mains: Sewer or water mains totally within a subdivision, including mains lying along one (1) or more sides of a subdivision which serve such subdivision exclusively.

Overlay district: A zoning district established by this chapter prescribing regulations to be applied to a site in combination with a base zoning district.

Manufactured home stand: That part of a manufactured home site which has been reserved for the placement of the manufactured home, appurtenant structures, or additions.

Manufacturing: Operations required in the mechanical, biological, or chemical transformation of materials or substances into new products including the assembling of component parts, the manufacture of products, and the blending of materials such as lubricating oils, plastics, resins, or liquors. The term manufacturing covers all mechanical, biological, or chemical transformations, whether the new product is finished or semi-finished as raw materials is some other process.

Master plan. The comprehensive plan for the physical development of the city, as prescribed in Section 121 of the city charter and includes any unit or part of such plan separately adopted and any amendment to such plan or part thereof.

Membership organization. An organization operating on a membership basis with pre-established formal membership requirements and with the intent to promote the interests of its members. Such an organization includes trade associations, professional organizations, unions, and similar political and religious organizations.

Miniwarehouse: A storage enterprise dealing with the reception of goods of residential or commercial orientation which lie dormant over extended periods of time. Separate storage units are rented to individual customers who are entitled to exclusive and independent access to their respective units.

Minor subdivision: A subdivision involving four (4) or fewer lots fronting on an existing street that does not involve (i) the creation of any new streets, alleys or safety lanes; (ii) the extension of off-site utilities; or (iii) the installation of drainage improvements.

Mobile home: A structure that was constructed before June 15, 1976, transportable in one or more sections, which, in the traveling mode, is eight (8) body feet or more in width or forty (40) body feet or more in length, or, when erected on site, is three hundred twenty (320) or more square feet, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air-conditioning, and electrical systems.

Motel: A building or group of detached, semidetached or attached buildings on a lot containing guest dwellings each of which has a separate outside entrance leading directly to rooms for outside the building, with garage or parking space conveniently located with each unit, and which is designed, used

Processing and warehousing: The storage of materials in a warehouse or terminal and where such materials may be combined, broken down or aggregated for trans-shipment or storage purposes where the original material is not chemically or physically changed.

Public right-of-way: A strip of land acquired by reservation, dedication, forced dedication, prescription, or condemnation and used or intended to be used, wholly or in part, as a public street, alley, walkway, drain or public utility line.

Quadraplex: See Dwelling four-family.

Rear yard: An area extending the full width of lot between the rear lot line and the nearest principal structure.

Recreation facility, neighborhood: Those recreational facilities operated on a nonprofit basis to include a swimming pool, wading pool, tennis courts, badminton courts, play areas, clubhouse all to be used exclusively by and for the benefit of dwelling owners, tenants and their guests in certain defined adjoining areas.

Regional tourist entertainment facility: Buildings and structures, including fixed machinery and equipment, used in providing amusement/entertainment through the admission of the general public where the majority of users reside at least one hundred (100) miles from Bexar County and are likely to stay in the city for more than one (1) day.

Registered family home: A child-care facility that regularly provides care in the caretaker's own residence for not more than six (6) children under fourteen (14) years of age, excluding the caretaker's own children, and that provides care after school hours for not more than six (6) additional elementary school children, but the total number of children, including the caretaker's own, does not exceed twelve (12) at any given time.

Residential district: Any of the following zoning districts: A, B, C, D, R-A, R-1, R-2, R-2A, R-3, R-4, R-5, R-6, R-7, and R-8.

Restricted parking area: The area within the front yard of a lot within which the parking of oversized vehicles is regulated. This area extends to a depth of fifteen (15) feet from the street curb or, if there is no curb, from the edge of the roadway whether paved or unpaved.

Retail trade: Establishments engaged in selling goods or merchandise to the general public for personal or household consumption and rendering services incidental to the sale of such goods. Characteristics of retail trade establishments are: (1)

Outside storage: The keeping, in an unroofed area of any goods, junk, material, or merchandise in the same place for more than twenty-four (24) hours.

Oversized vehicle: A motor vehicle, trailer, or boat which by itself or together with other structure(s) or vehicle(s) attached to it exceeds twenty-four (24) feet in length, eight (8) feet in width or eight (8) feet in height, exclusive of appurtenances such as antennas, air conditioners, luggage racks, and mirrors.

Parking structure, commercial: An area or structure area used exclusively for the temporary storage of motor vehicles.

Parkway: The portion of the street right-of-way between the edge of the curb, or the edge of the roadway where no curb exists, and the property line.

Parsonage or parish house: A residence for a minister, priest or rabbi in connection with the operation of a church.

Peripheral areas: An obstruction-free area encompassing all sides of the actual touchdown and operation areas of a heliport or helistop.

Personal services: Establishments primarily engaged in providing services involving the care of a person or his or her apparel, such as laundry cleaning and garment services, garment pressing, linen supply, diaper service, coin-operated laundries, dry cleaning plants, carpet and upholstery cleaning, photographic studios, beauty shops, barber shops, shoe repair, hat cleaning, funeral services, reducing salons and health clubs, and clothing rental.

Physical or mental impairment: Orthopedic, visual, speech, or hearing impairments, Alzheimer's Disease, Pre-sterile Dementia, cerebral palsy, epilepsy, muscular dystrophy, multiple sclerosis, cancer, heart disease, diabetes, mental retardation, autism, or emotional illness.

Plat: A complete and exact map representing a tract of land, showing the boundaries and location of individual lots, easements, and streets which has been approved by the planning commission and recorded in the office of the county clerk. A plat includes a replat.

Private club: See Club.

full time by occupants of the principal residence.

Setback line: A line within a lot parallel to and measured from a corresponding lot line, establishing the minimum required yard and governing the placement of structures and uses on the lot.

Sexually oriented business includes any of the land uses defined as follows:

- (1) *Adult arcade* means any place to which the public is permitted or invited, wherein coin-operated or slug-operated or electronically, electrically, or mechanically controlled still or motion picture machines, projectors, or other image-producing devices are designed and maintained to show images to five (5) or fewer persons per machine or device at any one time, and where the images so displayed are distinguished or characterized by the depiction or description of specified sexual activities or specified anatomical areas.
- (2) *Adult bookstore, adult novelty store, or adult video store* means a business enterprise which has as a significant or substantial portion of its stock-in-trade or a significant or substantial portion of its revenues or devotes a significant or substantial portion of its interior floor space or advertising to the sale, rental or viewing for any form of consideration, of any one or more of the following to on-premises customers:
 - (a) Books, magazines, or sound recordings, or printed, visual or audio material of any kind which are characterized by their emphasis on the description or depiction of specified anatomical areas or specified sexual activities; or
 - (b) Non-contraceptive instruments, devices, toys, or paraphernalia designed for use in connection with specified sexual activities, books, magazines, pamphlets, pictures, drawings, photographs, motion picture films, or sound recordings, or printed, visual or audio material of any kind, which, because of the depiction or description of specified sexual activities in the materials offered for sale, is restricted to adults. Novelty items designed as sight gags, advertised as such and not designed or advertised for sexual activity, are not instruments or devices as defined and regulated herein.

the establishment is usually a place of business and is engaged in activity to attract the general public to buy; (2) the establishment buys and receives as well as sells merchandise; (3) the establishment may process some of the products, but such processing is incidental or subordinate to the selling activities; and (4) retail establishments sell to customers for their own personal or household use.

Right-of-way: An area or strip of land, either public or private, occupied or intended to be occupied by a street, walkway, railroad, utility line, drainage channel, or other similar uses.

Roadway paving width: The portion of a street available for vehicular traffic; where curbs are laid, the portion between the face of curbs.

Rooming house: See Boarding house.

Runway: A defined area on an airport prepared for landing and taking-off of aircraft along its length, and includes planned future paved runways and extensions of runways as shown on the official airport layout plan and on the airport hazard zoning maps of these regulations.

Safety lane: A designated area on an approved plat which has a primary purpose of providing access for safety vehicles.

San Antonio planning area: Bexar County and all land within the city's extraterritorial jurisdiction outside of Bexar County.

Sanitary landfill: A controlled area of land upon which solid waste is disposed of in accordance with standards, rules, or orders established by an administrative agency of the State of Texas.

Satellite dish antenna: A device incorporating a reflective surface that is solid, open mesh, or bar configured; is in the shape of a shallow dish, cone, or horn; and is to be used to transmit and/or receive electromagnetic waves between terrestrially and/or orbitally based uses.

School: (1) An institution or place for instruction or education, such as kindergarten, elementary, middle or junior high school, high school, college or university. (2) School, business or commercial trade: A business organized to operate for a profit, offering instruction and training in a trade, a service or art.

Servant's quarters: An accessory building or portion of a main building located on the same lot as the principal building, occupied only by such persons and their families as are employed

connection with, such treatment, manipulation, or service related thereto, exposes specified anatomical areas. The definition of a massage parlors shall not include the practice of massage in any licensed hospital, nor by a licensed massage therapist, hospital, licensed physicians, surgeons, chiropractor, osteopath, nurse, technician working under the supervision of a licensed physician, surgeon, chiropractor, or osteopath, nor by trainers of any amateur, semiprofessional or professional athlete or athletic team or school athletic program.

- (8) *Sexual encounter establishment* means any business or commercial establishment that, as one of its primary business purposes, offers for any form of consideration, a place where two or more persons may congregate, associate, or consort for the purpose of specified sexual activities or the exposure of specified anatomical areas when one or more of the persons is in a state of nudity or semi-nudity. The definition of sexual encounter establishment shall not include an establishment where a medical practitioner, psychologist, psychiatrist, or medical professional, licensed by the state engages in medically approved and recognized therapy or treatment.
- (9) *Nude modeling studio* means any place where a person who, for money or any form of consideration, appears in a state of nudity or displays specified anatomical areas, to be observed, sketched, drawn, painted, sculptured, photographed, or otherwise depicted by other persons. This definition shall not include nude modeling by an adult that occurs in conjunction with art classes of a university, college, or any art class supervised by an art instructor paid by an arts school.
- (10) *Nudity attraction establishment* means any place of business where nudity or semi-nudity is regularly or routinely advertised as a characteristic of the business or which regularly attracts patrons with nudity or semi-nudity.
- (11) *Escort agency* means a person or business association or other business entity which furnishes, offers to furnish, or advertises to furnish ``escorts'' as defined herein as one of its primary business purposes, for a fee, tip, or other consideration.

Additional definitions are as follows:

- (12) *Specified anatomical areas* means the human genitals, crevice of the buttocks, pubic region, anus, and the areola of the post puberty female breast.

- (3) *Adult entertainment establishment* means a nightclub, bar, restaurant ``bottle club,' ' ``mens club,' ' ``gentlemen's club,' ' ``cabaret' ' or similar place of business, or portion thereof where live entertainment is provided for patrons, whether or not alcoholic beverages are served which features as a significant portion of the entertainment an emphasis on the exhibition, depiction, or description of specified anatomical areas or specified sexual activities; or a place where entertainment is provided to patrons wherein, because of the nudity or semi-nudity of person(s) employed by or associated with the operation of the business, admittance is limited to adults, or admittance is advertised or promoted as being restricted to adults.
- (4) *Adult motel* means a motel, hotel or similar commercial establishment which: (a) offers public accommodations, in any form of consideration, which provides patrons with closed-circuit television transmission, films, motion pictures, video cassettes, slides, or other photography reproductions which are characterized by the depiction or description of specified sexual activities or specified anatomical areas, and (b) which advertises the availability of this sexually oriented type of material by means of a sign visible from the public right-of-way, or by means of any off-premises advertising, including, but not limited to, newspapers, magazines, pamphlets, leaflets, radio, or television.
- (5) *Adult motion picture theater* means a business place where one or more films, videos, slides, motion pictures, or similar photographic reproductions are shown that have as a dominant theme, or are distinguished by, an emphasis on the depiction or description of specified sexual activities for observation by patrons or guests, and where admittance to such showings are restricted to adults.
- (6) *Adult theater* means a theater, concert hall, auditorium, or similar commercial establishment which, for any form of consideration, regularly features employees, volunteer patrons, or independent contractors, who appear nude or semi-nude and/or engage in activity, or live performances which are characterized by exposure of specified anatomical areas or engagement in specified sexual activities.
- (7) *Massage parlor* means any place where, for any form of consideration or gratuity, massage, alcohol rub, administration of fomentation, electric or magnetic treatments, or any other treatment or manipulation of the human body which occurs as a part of, or in

- (13) *Specified sexual activity* means actual and simulated human genitals in a state of sexual stimulation or arousal, actual or simulated human masturbation, sexual intercourse, sodomy, fellatio, cunnilingus, fondling or other erotic touching of human genitals, pubic region, buttock or female breast, and excretory functions as part of or in connection with the above described activity.
- (14) *Nude or nudity or state of nudity* means a state of dress which fails to cover the human anus, genitals, pubic region, and the areola of the post puberty female breast.
- (15) *Semi-nude or semi-nudity or state of semi-nudity* means a state of dress which fails to fully opaquely cover the crevice of the human buttocks, genitals, pubic region, and the post puberty female breast areola.
- (16) *Escort* means a person who, for any form of consideration, agrees or offers to act as a companion or date for another person, and who also, for a consideration, models lingerie, performs a striptease, poses nude, or conducts escort services in a state of nudity or semi- nudity for the other person.
- (17) *Negative secondary effects* mean any one of the following conditions caused by geographic proximity to a sexually oriented business:
- (1) Depreciation in surrounding property values; and/or
 - (2) Violations of law not limited to but including: Indecent Exposure, Drug Use, Prostitution, Pandering, Exposing Minors to Harmful Materials, Possession and Distribution of Obscene Materials, Possession and Distribution of Controlled Substances, Public Intoxication, Disturbing the Peace, and/or
 - (3) Adverse impact upon the City of San Antonio as a family oriented vacation destination.

Shop: A use devoted primarily to the sale of a service or a product or products.

Shopping mall: An integrated grouping of commercial activity, primarily of a retail and personal service nature, in a single building complex having the individual establishments joined by a common covered pedestrian mall.

Side yard: An area extending the depth of a lot from the front yard to the rear yard between the side lot line and the nearest principal structure.

Sign: See Chapter 28, Signs and Billboards.

Single-family residential development: A development consisting of a lot or lots, containing only one dwelling unit. The dwelling unit may be detached or attached, townhouse, small lot, home, manufactured home, or mobile home.

Single-family dwelling: See Dwelling, one-family.

Small animal breeder: Any person or establishment that breeds and/or engages in the feeding or care of more than ten (10) adult animals other than fish that do not normally exceed five (5) pounds at maturity, including but not limited to, white rats, gerbils, guinea pigs, prairie dogs, gophers, chipmunks, frogs, lizards, the smaller nonpoisonous varieties of snakes, and non-poultry fowl such as parakeets, parrots, doves, pigeons, cockatiels, and canaries.

Small lot home: See Dwelling, small lot home.

Solid waste: Any garbage; refuse; sludge from a waste treatment plant, water supply treatment plant or air pollution control facility; and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations, and from community and institutional activities, but does not include: (1) solid or dissolved material in domestic sewage, or solid or dissolved material in irrigation return flows, or industrial discharges subject to regulation by permit issued pursuant to Chapter 26 of the Texas Water Code; (2) soil, dirt, rock, sand, and other natural or man-made inert solid materials used to fill land if the object of the fill is to make the land suitable for the construction of surface improvements; or (3) waste materials which result from activities associated with the exploration, development, or production of oil or gas and are subject to control by the Railroad Commission of Texas.

Solid waste facility: All continuous land and structures, other appurtenances, and improvements on the land, used for processing, storing, or disposing of solid waste or used for the purpose of processing, extracting, converting, or recovering energy or materials from solid waste. A facility may be publicly or privately owned and consist of several processing, storage, or disposal operational units; e.g., one or more landfills; surface impoundments, or combinations of them.

- (5) *Dead end*: A street with a single common ingress and egress.
- (6) *Elbow*: A turn in a minor street that includes extra pavement adequate for a turnaround.
- (7) *Eyebrow*: A paved area placed along the linear portion of a street which allow both unimpeded through and turnaround traffic movements.
- (8) *Intersection*: Where two (2) or more streets cross at grade.
- (9) *Local*: A street designed to provide vehicular access to abutting property and to discourage through traffic.
- (10) *Local "Type A"*: A street used for primary and secondary access to single-family detached residential units or duplex residential units where such residential units comprise seventy-five (75) percent of the abutting street frontage on both sides of a particular block.
- (11) *Local "Type B"*: A street used for primary and secondary access to all residential areas except those specified to be served by a "Type A" local street. Also, this street shall be used for secondary access and circulation to community facilities (schools, parks, etc.), and other traffic generators such as commercial and industrial areas.
- (12) *Marginal access*: The type of street which is used to provide direct access to abutting properties and protection from through traffic.
- (13) *Private*: Any street not dedicated to the public and to be maintained by a private entity.
- (14) *Stub*: A temporary portion of street not greater than one lot's length, allowed as a future connection to an adjacent subdivision or phase.

Structure: A combination of materials to form a construction for use, occupancy, or ornamentation whether installed on, above, or below the surface of land or water.

Subdivider: Any person, or their agent, having an interest in land that is the subject of an application for subdivision.

Subdivision: A division of any tract of land into two (2) or more parts for the purpose of laying out any subdivision of any tract of land or any addition to the city, or for laying out

Specified anatomical areas: Any showing of either the adult or minor human male or female genitals, anus or pubic area with less than a full opaque covering, or the showing of the post-puberty female areola with less than a full opaque covering.

Specified sexual activities: Acts of masturbation, sexual intercourse, homosexuality or lesbianism, sodomy, fellatio, sadomasochism, or physical contact with a person's own or another's specified anatomical areas.

Start of construction: The first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the state of excavation; or the placement of a manufactured home on a foundation.

Store: A use devoted exclusively to the retail sale of commodity or commodities.

Stormwater Drainage Fees: A method or mix of methods for providing adequate, stable and equitable funding for a comprehensive storm water or drainage program. The financing mechanisms included in the method may include, but not be limited to, user fees, new development impact fees, or surcharges on other utility fees.

Story: That part of a building between the surface of a floor and the ceiling immediately above.

Street:

- (1) *Generally:* Any vehicular way which: (1) is an existing state, county or municipal roadway; or (2) is shown upon a plat approved pursuant to law; or (3) is approved by other official action; and includes the land between the street lines, whether improved or unimproved.
- (2) *Arterial:* A street use primarily for fast or heavy traffic and designated in the major thoroughfare plan as a primary arterial street, secondary arterial street or express way.
- (3) *Collector:* A street which provides some access to abutting property and collects traffic from local streets and connects with the major system of arterial streets and highways.
- (4) *Cul-de-sac:* A street with a single common ingress and egress and with a turnaround at the end.

Triplex: See Dwelling three-family.

Underground storage tank: Any one or combination of underground storage tanks and any connecting underground pipes used to contain an accumulation of regulated substances, the volume of which, including the volume of the connecting underground pipes, is ten (10) percent or more below grade.

Underground storage tank system: An underground storage tank, all associated piping and ancillary equipment, spill and overflow prevention equipment, release detection equipment, corrosion protection system, secondary and tertiary containment equipment (as applicable), and all other related systems and equipment.

Use: The purpose for which land or structures thereon is designed, arranged or intended to be occupied or used, or for which it is occupied, maintained, rented or leased.

Utility, private or public: Any agency which under public franchise or ownership, or under certificate of convenience and necessity, provides the public with any general public service, including without limitation, sanitary sewer, gas, electricity, water, telephone, petroleum products, telegraph, heat, steam or chilled water, rail transportation, cable television, or other similar service.

Utility infrastructure: The basic facilities, equipment and installations of the city's utility system, including water, sewer, electric, gas, telephone and cable television.

Variance:

- (1) A request to the planning commission for permission to vary or depart from a requirement of articles II, IV, or V of this chapter where, due to special conditions, a literal enforcement of the requirement will result in an unnecessary hardship.
- (2) A request to the board of adjustment for permission to vary or depart from a requirement of article III of this chapter where, due to special conditions, a literal enforcement of the requirement will result in an unnecessary hardship.

Warehousing: See Processing and warehousing.

Watercourse: A natural or man-made channel through which stormwater flows.

suburban, building, or other lots, or streets, alleys, or parks or other portions intended for public use, or the use of purchasers or owners of lots fronting thereon or adjacent thereto. A subdivision includes a resubdivision (replat).

Substantial improvement means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure either (1) before the improvement or repair is started or (2) if the structure has been damaged and is being restored, before the damage occurred.

Swale: A low lying or depressed stretch of land without a defined channel or tributaries.

Tavern: Any use in which the primary purpose is the sale of alcoholic beverages for on-premises consumption which may or may not include dancing.

Temporary common worker employer: A person or agency that provides common worker employees to a third party user, that maintains a central location where common workers assemble and are dispatched to work, and that is required to obtain a license from the Texas Department of Licensing and Regulation.

Tertiary containment: A method by which a third level of containment is provided for underground storage tanks by means of a wall or barrier installed around a double-walled tank and piping system (or approved alternative) in a manner designed to prevent a release of the regulated substance from migrating beyond the tertiary wall or barrier before the release can be detected if a failure in the secondary containment level occurs.

Tertiary protection: A method by which a third level of protection is provided for underground storage tank systems by means of either 1) a physical level to be installed around a double-walled tank and piping system, designed to prevent a release of the regulated substance from migrating into the environment, should such a release go undetected at the secondary containment level; or 2) equivalent technology, which shall include: a. continuous electronic leak detection for the entire system at a centralized location, with dedicated personnel; b. site specific training; c. annual testing for system integrity; and d. reporting to the San Antonio Water System any release from the primary system.

Townhouse: A building that has one-family dwelling units erected in a row as a single building on adjoining lots, each being separated from the adjoining unit or units by a fire wall (to be constructed in accordance with city codes and ordinances), along the dividing lot line, and each such building being separated from any other building by space on all sides.

Watershed: A region or area bounded peripherally by a summit or high boundary line and draining ultimately to a particular watercourse or body of water.

Wheelchair ramp: A sloping concrete pad constructed at crosswalks to assist mobility-impaired citizens using the sidewalks and crosswalks.

Wholesale trade: Establishments or places of business primarily engaged in selling merchandise to retailers; to industrial, commercial, institutional, or professional business users; or to other wholesalers; or acting as agents or brokers and buying merchandise for, or selling merchandise to, such individuals or companies.

Yard: An area on a lot between the lot line and the nearest principal structure, unoccupied and unobstructed by any portion of a structure from the ground upward, except as otherwise provided in this chapter.

Zero lot line: The location of a building on a lot in such a manner that one (1) or more of the buildings sides rests directly on or immediately adjacent to the lot line.

(Ord. No. 65513, § 2(f), 8-13-87; Ord. No. 66329, Att. IV(1), 12-12-87; Ord. No. 67518, 7-21-88; Ord. No. 68978, § 1, 3-9-89; Ord. No. 68979, § 1, 3-9-89; Ord. No. 69554, § 1(1), 5-25-89; Ord. No. 69711, § 1, 6-22-89; Ord. No. 70078, Att. A, Att. B, 8-24-89; Ord. No. 71762, § I(Att. A), 6-21-90; Ord. No. 72220, § 1(Att. I, § 1), 9-6-90; Ord. No. 72724, § 2, 11-29-90; Ord. No. 73398, § 1(Att. A), 3-28-91; Ord. No. 74489, § 1(Att. I), 10-3-91; Ord. No. 74981, § 3(Att. A), 12-19-91; Ord. No. 76116, § 1(Att. I, § 10), 7-9-92; Ord. No. 76381, § 1(Att. I), 8-27-92; Ord. No. 80241, § 1(I), 5-26-94; Ord. No. 81147, § 1, 11-10-94; Ord. No. 82135, § 1, 4-27-95)

Sec. 35-2039. Drainage Master Plans.

As the City continues to define and adopt drainage master plans for specific watersheds contained in whole or in part within the City limits and its ETJ, development will be required to conform to the elements of the plan for each particular watershed. The preservation of the inherent characteristics of natural drainage features and of the natural flood plain where practical is an adopted goal of each watershed drainage plan. The guidance for the drainage master plans was provided by the Drainage Regulation Review Committee in February 1996. The first two goals stated in the report are to "Ensure that stormwater management considers and provides reasonable safety from flood hazards for people and property" and to "Integrate stormwater management with natural resource enhancement and protection, compliance with environmental regulations and with creating appropriate development." The drainage master plans developed by the City for each watershed provide long-range guidance for managing the stormwater from existing and future land uses in the most efficient ways possible, with consideration for continued development, reduced flooding potential, adequate stormwater conveyance, increased aquifer recharge, water quality, habitat protection, and increased recreational opportunities.

Sec. 35-2075. Information required.

The POADP, as a minimum, shall include the following information:

- (a) Perimeter property lines.
- (b) Name of the plan and the subdivisions.
- (c) Scale of map.
- (d) Proposed land uses by location, type, and acreage.
- (e) Existing and proposed circulation system of collector, arterial, and local type B streets (clearly identified), and their relationship to any adjacent major thoroughfares; and any proposed alternative pedestrian circulation system.
- (f) Contour lines at intervals no greater than ten (10) feet.
- (g) Ownership from title and/or city or county roads for adjacent properties and, if known, proposed development of such land.
- (h) Existing adjacent or perimeter streets (including right-of-way widths), intersections, and developments.
- (i) One hundred-year flood plain limits as identified from the most current Flood Insurance Rate Maps published by the Federal Emergency Management Agency for the City of San Antonio and/or the applicable county. In cases where the one hundred-year flood plain for a particular watercourse is not shown on the published FIRM, a Professional Engineer, shall develop a preliminary one-hundred year flood plain for each watercourse serving a watershed in excess of 100 acres.
- (j) Location map indicating the location and distance of the POADP in relation to adjacent streets and at least two (2) major thoroughfares.
- (k) Name and address of the developer.

(Ord. No. 65513, § 2(f), 8-13-87)

(e) To file a development plat, the applicant shall complete an application with the planning department and submit ten (10) copies of the development plat. The applicant shall pay the fee specified for a minor subdivision plat in Exhibit C.

(f) The planning department shall circulate the development plat to reviewing agencies and departments for identification of any rights-of-way and easements which may be required. If rights-of-way and/or easements are required, the applicant shall prepare instruments dedicating the rights-of-way/easements to the appropriate agencies and departments. The instruments shall be filed for record in the county deed records prior to approval of the development plat.

(g) New development may not begin on the property until all impact fees have been paid as required by Article V of this chapter and/or the San Antonio Water System's Regulations for Water Service and the development plat is approved by the city. The city shall endorse approval of a development plat filed with it if the plat conforms to:

(1) The general plans, rules, and ordinances of the city concerning its current and future streets, sidewalks, alleys, parks, playgrounds, and public utility facilities;

(2) The general plans, rules, and ordinances for the extension of the city or the extension, improvement, or widening of its roads, streets, and public highways within the municipality and in its extraterritorial jurisdiction, taking into account access to and extension of sewer and water mains and the instrumentalities of public utilities; and

(3) The general plans, rules, and ordinances adopted under subsection (b) above.

(h) The approval of a development plat is not considered an acceptance of any proposed dedication for public use or use by persons other than the owner of the property covered by the plat and does not impose on the city any duty regarding the maintenance or improvement of any purportedly dedicated parts until the city's governing body makes an actual appropriation of the dedicated parts by formal acceptance, entry, use, or improvement.

(i) The city, a county, or an official of another governmental entity may not issue a building permit or any other type of permit for development on lots or tracts subject to this section until a development plat is filed with and approved by the city.

(Ord. No. 80241, § 1(V), 5-26-94)

Sec. 35-4011. Development plats.

(a) The City of San Antonio hereby chooses to be covered by V.T.C.A., Local Government Code Chapter 212, Subchapter B, pertaining to development plats.

(b) The city adopts the following general plans, rules, and ordinances to govern development plats of land within the city and its extraterritorial jurisdiction to promote the health, safety, morals, and general welfare of the city and the safe, orderly, and healthful development of the city.

(1) The city's Master Plan, including all of its component plans.

(2) City Public Service's plans and regulations pertaining to the extension of electric and gas service.

(3) San Antonio Water System's Waterworks Master Plan.

(4) The Unified Development Code (Chapter 35 of the City Code).

(5) Any applicable watershed Master Drainage Plan adopted by the City.

(c) Any person who proposes the development of a tract of land located within the limits or in the extraterritorial jurisdiction of San Antonio must have a development plat of the tract prepared in accordance with this section unless the person is required or elects to file a subdivision plat or one of the plat exceptions specified in section 35-4005 applies.

(d) A development plat must be prepared and signed by a registered professional land surveyor as a boundary survey showing:

(1) Each existing or proposed building, structure, or improvement or proposed modification of the external configuration of the building, structure, or improvement involving a change of the building, structure, or improvements;

(2) Each easement and right-of-way within or abutting the boundary of the surveyed property; and

(3) The dimensions of each street, sidewalk, alley, square, park, or other part of the property intended to be dedicated to public use or for the use of purchasers or owners of lots fronting on or adjacent to the street, sidewalk, alley, square, park, or other part.

(4) A title clearly stating "Development Plat" at the top, the name of the property owner, and the signature and seal of the preparing surveyor.

Secs. 35-4019, ~~35-4020~~. Reserved.

Sec. 35-4020. General Design Guidelines.

In May 1994, the San Antonio City Council appointed a Drainage Regulation Review Committee to make recommendations concerning the City's management of stormwater drainage. The City recognizes that watercourses and their associated watersheds within the city of San Antonio's jurisdiction represent significant and irreplaceable recreational and aesthetic resources and contribute to the economic and environmental health of the City. In addition, all of the watersheds within the City are vulnerable to concentrated surface water runoff, disturbance of wildlife habitat, nonpoint source pollution and sedimentation resulting from development activities and should be developed in a sensitive and innovative manner. In order to minimize the possibility of adverse impacts on both water quantity and water quality during development, the following general standards shall apply to all development:

(a) All land disturbing or land filling activities or soil storage shall be undertaken in a manner designed to minimize surface runoff, erosion and sedimentation, and to safeguard life, limb, property and the public welfare in accordance with the City of San Antonio clearing and grading ordinance. Innovative land management to reduce clearing and disruption of natural vegetation and soils is encouraged. Clearing of existing vegetation or any other development activities by the site owner or developer should be limited to those necessary for surveying or geological testing before release of a development plan or subdivision construction plans by the City. Site plans which incorporate natural floodplains and green belts into the overall development concept are strongly supported by the City.

(b) Innovative runoff management practices designed to meet Section 35-4029 of the UDC, enhance the recharge of groundwater, and maintain the function of critical environmental features are encouraged.

(c) Erosion and sedimentation controls in accordance with the specifications established by the Director of Public Works in compliance with the National Pollution Discharge Elimination System permitting requirements for the City are required.

(d) Projects shall not be considered complete until restoration has been made in accordance with NPDES requirements.

(e) Where possible, multiple uses of drainage facilities and open space shall be incorporated by the owner or developer of a new subdivision. Alternative uses such as public recreation, horse/bike/hiking trails, walking paths, nature preserves, wildlife habitat areas, etc. are encouraged subject to the approval of the Director of Public Works.

defined by the Director of Public Works. The timing of the hydrograph released from the detention facility must be checked against the timing of the flowrate in the first open watercourse to prevent any increase in the peak flowrate in the receiving watercourse. For detention basins constructed in-line on an existing watercourse, the creation of the basin shall not increase flood elevations in the channel upstream of the new development boundaries

(2) On-site detention is required where regional detention facilities are not available. On-site detention facilities must be privately owned and should 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.

(3) General locations and sizes of regional detention facilities have been identified in the Master Drainage Plan for the major watersheds in the City's jurisdiction. The ownership of regional detention facilities may either be public or private. The creation of private regional detention facilities designed to service one or several developments is encouraged. In watersheds where public regional detention facilities exist, mitigation of increased stormwater runoff from new construction must be located in these facilities. In the design of drainage facilities for new development or redevelopment upstream of a regional detention facility, the Base Flood Elevation (BFE) in the receiving channel may not be increased between the development and the regional detention facility, unless the increased floodplain is contained within an easement or the receiving channel has sufficient capacity to contain the increased BFE within its banks. Temporary detention may be required for the development until sufficient capacity in the outfall channel is provided to accommodate increased flows. Maintenance of publicly owned facilities will be the responsibility of the City. Maintenance of private facilities is the responsibility of the property owner or the community association and must be specified in the maintenance schedule submitted to the City. A maintenance schedule for both publicly owned and privately owned facilities must be approved by the Director of Public Works prior to approval of construction drawings.

(4) Stormwater drainage fees may be implemented by the City of San Antonio to finance regional detention facilities if the appropriate watershed Master Drainage Plan recommends that action.

Sec. 35-4029. Drainage facilities.

~~Drainage facilities shall be provided and constructed as specified in Exhibit A included at the end of this chapter.~~

The recommendations contained in the report from the Drainage Regulation Review Committee have been incorporated into the following guidelines for the design and construction of drainage facilities within the City of San Antonio.

(a) The owner or developer of property to be developed shall be responsible for the conveyance of all stormwater flowing through the property. This responsibility includes the stormwater flowing onto the property by any other developed property as well as the drainage naturally flowing through the property by reason of topography. Future upstream development shall be accounted for by assuming ultimate development when sizing drainage systems as specified in Exhibit A.

(b) New Development: Peak stormwater runoff rates from all new development shall be less than or equal to the peak runoff rates from the site's predevelopment conditions for the 5-, 25- and 100-year design storm events, except as provided in Section e(3) which follows.

(c) Redevelopment: Peak stormwater runoff rates from an area of redevelopment due to zoning or replatting shall be less than or equal to the peak runoff rates produced by existing development conditions for the 5-, 25- and 100-year design storm events, except as provided in Section e(3) which follows.

(d) For those developments which are immediately adjacent and discharge directly into the San Antonio River, Olmos Basin, Mitchell Lake, Braunig Lake, Calaveras Lake, or an existing dammed impoundment area, on-site detention is no required. For those developments which are immediately adjacent and discharge directly into a major creek, an analysis may be performed of the timing of discharge hydrograph in relation to the timing of the stream hydrograph. If the analysis shows that detention would cause the hydrographs to coincide, on-site detention is not required.

(e) Stormwater Detention: Stormwater detention shall be required for all new developments or redevelopment of individual parcels of property to mitigate peak flowrates to predevelopment or existing development conditions as stated in (b) and (c) above.

(1) The maximum allowable outflow rate from the detention facility must be restricted to the flow rate from the undeveloped or existing development tract for the 5-, 25- and 100-year frequency. Best Management Practices shall be used in the design of detention facilities in accordance with Exhibit A and standards

effects due to the dam site.

(c) The spillway section of any earthen dam with a height greater than six feet shall be large enough to pass a PMP (Probable Maximum Precipitation) flood, as defined by the NRCS, without overtopping the crest of the dam in accordance with TNRCC regulations.

(d) A 100 year frequency flood shall be routed through the proposed dam and all land subject to flooding shall be dedicated as drainage easement or right-of-way. An unobstructed 15-foot access easement around the periphery of the flooded area shall be dedicated as drainage easement for facilities which require regular mowing or other ongoing maintenance, at the discretion of the Director of Public Works. An unobstructed 15 ft. access right of way shall be established which connects the drainage easement adjacent to the dam structure to a road or alley.

(e) All spillway discharges shall be adequately routed to the centerline of the natural low below the dam site. The adequate routing of spillway discharges pertains to the hydraulic routing of the 100 year frequency flood for dedication of drainage easement limits. PMP flood routing or breaches will only be considered for safety considerations (that is, the placement of buildings and the setting of minimum floor slab elevations below the dams).

(f) Maintenance of all private dam structures shall be the responsibility of the current Owner, including periodic inspection and repair of any portion found sub-standard. Maintenance issues identified by the City or State during inspections shall be the responsibility of the current owner.

(g) Any proposed concrete dam structure need not have spillway capable of routing a PMP flood, however, it shall be shown to be structurally capable of withstanding any range of flood conditions with regard to possible failure due to sliding, overturning, and structural integrity, up to and including the PMP flood.

(h) Development below existing dams will take into account the original design conditions of the existing dam. Breachage checks will be required, dependant upon location of development with respect to dam site.

(5) Multi-Use Facilities are encouraged (e.g., enhance water quality, satisfy NPDES requirements, enhance ground water recharge, provide open space, provide recreation or other amenities, and/or provide habitat) and may be utilized on a case-by-case basis.

(6) The use of multi-use detention facilities to alleviate existing flooding problems, enhance and provide amenities for older neighborhoods, and support the revitalization of economically depressed areas is encouraged in public and private redevelopment initiatives.

(7) Stormwater retention with permanent wet pool or pumped detention systems will not be acceptable methods of stormwater mitigation unless the facility will remain privately owned, operated, and maintained. The City will approve the use of a pumped facility for private use under the following conditions:

(a) A gravity system is not feasible from an engineering and economic standpoint.

(b) At least two pumps are provided, each of which is sized to pump the design flowrate:

(c) The selected design outflow rate must not aggravate downstream flooding.

(d) Controls and pumps shall be designed to prevent unauthorized operation and vandalism.

(e) Adequate assurance is provided that the system will be operated and maintained on a continuous basis.

(8) Stormwater detention facilities should be located in topographically depressed areas where possible. When necessary, dams may be constructed to detain flows. All proposed dams shall conform to the following items:

(a) All dams over six feet above existing natural ground shall be approved by the Dam Safety Team of the Texas Natural Resources Conservation Commission for safety. All other new dams shall be designed in accordance with acceptable design criteria as approved by the Director of Public Works, or his authorized representative.

(b) All hydrology and hydraulic properties of a dam will be reviewed by the Department of Public Works with regard to spillway design, freeboard hydraulics, backwater curves and downstream

(c) Curb cuts for driveways on all streets shall be designed for compatibility with the stormwater conveyance function of streets.

(d) Potential flooding problems or conflicts at the connection points where new or modified drainage systems (including streets, storm sewers, etc.) and the existing portions of the downstream street system and stormwater conveyance system shall be identified and resolved either in the design of the new or modified drainage system or in modifications to the existing system.

(g) Drainage Channels and Watercourses. This section addresses proposed improvements or modifications to drainage channels and watercourses required to convey stormwater runoff from or through the proposed development.

(1) Except as authorized by a development plan approved by the Director of Public Works or his designee, no person shall place or cause to be placed any obstruction of any kind in any watercourse within the city and its ETJ. The owner of any property within the city, through which any watercourse may pass, shall keep the watercourse free from any obstruction not authorized by a development plan.

(2) Modifications to existing watercourses or newly created open channels may be designed as earth, sodded or as concrete lined channels. Liner's other than sodding or concrete which enhance the aesthetics or habitat value of the watercourse and which reduce future maintenance requirements are encouraged. Preliminary planning for the applicability of channel liners shall be reviewed with the Director of Public Works or his representative prior to the submittal of construction plans for approval. The proposed channel must be designed to convey the 25 year frequency storm with freeboard. In addition, alterations to major creeks as delineated in the City's Flood Plain Ordinance must be designed for the 100 year frequency storm event.

(3) Constructed channels or drainage improvements shall follow existing swales, or other low areas present in predevelopment areas where practical in order to minimize the cost of the improvement or modification and to allow for overland flow to follow its natural drainage pattern.

(4) The proposed channel modifications shall preserve the natural and traditional character of any existing watercourse and adjacent land to the greatest extent feasible and shall consider the natural movement and

(f) Streets. Streets may be designed to convey stormwater runoff in accordance with the design criteria established in Exhibit A; however, all weather lanes on arterial and collector public streets shall be required to allow vehicular access.

(1) One lane in each direction on arterial streets shall remain free of water during a 25-year storm event. A maximum flow depth to the top of curb on a standard collector street section will be allowed during a 25-year storm event. An arterial street is a street so designated on the current major thoroughfare plan. A collector street is a street with a width of forty-four (44) feet or more and not shown as an arterial street on the current major thoroughfare plan. Design of streets shall consider public safety and limit potential conflicts between stormwater conveyance, traffic, parking, pedestrian access, ADA requirements, and bicycle traffic.

(2) Where streets cross existing or proposed watercourses, all weather crossings shall be required. Culverts or bridges shall be adequate to allow passage of the 25 year design storm, plus required freeboard, or the 100 year frequency design storm, whichever is greater. If the watercourse is designed for the 25 year frequency, the structure must pass this flow. In addition, calculations must be presented which show that the structure does not increase the 100 year flood plain elevations upstream or downstream of the crossing, unless the increase in the 100 year floodplain is contained within a drainage easement. In cases of streets crossing major creeks or rivers as defined by the City's Flood Plain Ordinance (Ord. No. 57969), the structure shall be designed to provide for the passage of the 100 year frequency storm event.

(3) Local street design shall consider the following in regard to street stormwater conveyance:

(a) Stormwater conveyance on local streets shall be designed to account for the cumulative impact of peak flows and runoff volumes on the local system as it progresses downgrade.

(b) A general note must be placed on the plat for residential lots which states that finished floor elevations must be a minimum of 8 inches above final adjacent grade. A grading plan, including slab elevations, shall be prepared which indicates a drainage plan for all lots in the subdivision. Grading plans must include specific paths for the direction of drainage flow away from the building pads on the lot.

as a result of the diversion.

(k) The proposed subdivision shall have at least one vehicular access above the regulatory flood plain of an existing dedicated street or roadway. All proposed subdivisions traversed by an area of floodplain where the "buildable" portion of the subdivision is severed by the flood plain, shall provide an adequate access to the "buildable" portion of every lot. An adequate access shall be as defined by Attachment "C" of the Flood Plain Ordinance (Ord. No. 57969).

(l) Submittal: To standardize the review process and minimize the time for approval by the City during review of the plat and construction drawings for a subdivision, a complete submittal regarding the analysis of existing drainage conditions and the design of modifications or new drainage facilities is necessary. The owner of the property to be developed is required by the Director of Public Works to provide, at the owners expense and as a condition of construction plan approval, a drainage report for the total development area to be ultimately constructed. The drainage report must include a letter signed and sealed by a Professional Engineer with text descriptions, exhibits, calculations and models. The drainage report will contain all of the necessary support data, methodologies used in calculations, and conclusions. A checklist is included in Exhibit A that will be used by the City reviewer as a guide during the evaluation of all stormwater drainage reports submitted to the City. The purpose of the checklist is to expedite the review process for both the engineer and the City, and to aid the engineer in the preparation of reports for the City's review. The drainage report shall be submitted to the Director of Public Works prior to approval of any construction plans.

(Ord. No. 65513, § 2(f), 8-13-87)

velocities of stormwater within the predevelopment watercourse.

(5) Planned multiple-use of a watercourse is encouraged (e.g. bike paths or greenbelt). If multiple use of the watercourse is to be incorporated, the maintenance of the amenities will be the responsibility of the community association or a public entity. These amenities would require special overlay easements for public or private use. Property will be dedicated to the City for drainage and specifically identified multi-use purposes.

(6) Design of new channels or alterations to existing channels shall consider future maintenance requirements. A maintenance schedule must be submitted to and approved by the Director of Public Works prior to approval of construction plans.

(h) Construction of habitable structures within the regulatory flood plain is not allowed. No development or other encroachment is allowed in a floodplain which will result in any increase in the base flood elevations within the flood plain during discharge of water of a base flood, unless the floodplain is contained within an easement. Where construction of roads, bridges or other nonhabitable structures in the floodplain is allowed by the Director of Public Works, a Professional Engineer registered in the State of Texas must provide an engineering analysis indicating that the foundation and structure will not cause any increase in the elevations of the base flood unless the floodplain is contained within an easement.

(i) Preservation of the natural floodplain and native vegetation contained therein is encouraged. Understory growth which impedes flow may be cleared within the banks of watercourses within the proposed development with Public Works approval but removal of large trees with diameters greater than eight inches is discouraged. Lower branches of large trees may be trimmed to provide a vertical clearance of eight feet. The alteration of natural vegetation or unique features within the floodplain of major watercourses shall comply with the appropriate Master Drainage Plan for the watershed. Permanent alterations to natural vegetation must be included in the maintenance schedule submitted to the City.

(j) Diversion of stormwater away from the natural watercourse will not be allowed except within the boundaries of the property controlled by the Developer, provided that the diverted water is returned to the watercourse within which it would naturally have been flowing prior to leaving the Developer's property. An analysis of the timing of the diverted hydrograph on watersheds greater than 20 acres, as it reenters the receiving watercourse, must be performed to show that the peak flowrate in the receiving watercourse has not been increased

(b) A general note must be placed on the plat for residential lots which states that finished floor elevations must be a minimum of 8 inches above finished adjacent grade. A grading plan, including slab elevations, shall be prepared which indicates a drainage plan for all lots in the subdivision. Grading plans must include specific paths for the direction of drainage flow away from the building pads on the lot.

(c) Curb cuts for driveways on all streets shall be designed for compatibility with the stormwater conveyance function of streets.

(d) Potential flooding problems or conflicts at the connection points where new or modified drainage systems (including streets, storm sewers, etc.) and the existing portions of the downstream street system and stormwater conveyance system shall be identified and resolved either in the design of the new or modified drainage system or in modifications to the existing system.

(Ord. No. 65513, § 2(f), 8-13-87)

Sec. 35-4119. Street construction.

(a) All streets shall be constructed, with respect to base, surfacing, curbs, and geometric design criteria in accordance with the standards and specifications described in Exhibit A, and shall be subject to inspection and approval by the Director of Public Works.

(b) Streets. Streets may be designed to convey stormwater runoff in accordance with the design criteria established in Exhibit A; however, all weather lanes on arterial and collector public streets shall be required to allow vehicular access.

(1) One lane in each direction on arterial streets shall remain free of water during a 25-year storm event. A maximum flow depth to the top of curb on a standard collector street section will be allowed during a 25-year storm event. An arterial street is a street so designated on the current major thoroughfare plan. A collector street is any street with a width of forty-four (44) feet or more and not shown as an arterial street on the current major thoroughfare plan. Design of streets shall consider public safety and limit potential conflicts between stormwater conveyance, traffic, parking, pedestrian access, ADA requirements, and bicycle traffic.

(2) Where streets cross existing or proposed watercourses, all weather crossings shall be required. Culverts or bridges shall be adequate to allow passage of the 25 year design storm, plus required freeboard, or the 100 year frequency design storm, whichever is greater. If the watercourse is designed for the 25 year frequency, the structure must pass this flow. In addition, calculations must be presented which show that the structure does not increase the 100-year flood plain elevations upstream or downstream of the crossing, unless the increase in the 100 year floodplain is contained within a drainage easement. In cases of streets crossing major creeks or rivers as defined by the City's Flood Plain Ordinance (Ord. No. 57969), the structure shall be designed to provide for the passage of the 100 year frequency storm event.

(3) Local street design shall consider the following in regard to street stormwater conveyance:

(a) Stormwater conveyance on local streets shall be designed to account for the cumulative impact of peak flows and runoff volumes on the local system as it progresses downgrade.

d. When a drainage channel, storm sewer or other drainage facility or other requirements are necessary, complete plans and specifications shall be submitted showing complete construction detail, including calculations showing the basis for design performed in accordance with Exhibit A and included in a Submittal Report as outlined in Section 35-4029 (1).

e. When conditions upstream or downstream from a proposed channel or storm sewer do not permit maximum design flow, high water marks based on a twenty-five (25) year frequency shall be indicated based on existing conditions.

- (3) Utilities layout. Four (4) copies of the utilities layout showing proposed locations of utilities, streetlights, fire hydrants, neighborhood delivery and collection box units, and sidewalks shall be submitted.
- (4) Cost estimates. Three (3) copies of detailed cost estimates of all required improvements within the subdivision other than water, gas and electric lines.
- (5) Floodplain data and fees. Two (2) copies of all data, as specified by the latest requirements of the Federal Emergency Management Agency, to apply for a conditional letter of map revision and payment of the associated fees, when the proposed plat shall cause a change in the alignment, width, or elevation of a one hundred year floodplain identified on a flood insurance rate map.
- (6) Landfills. If the proposed plat is located over a landfill site, the following additional information shall be submitted.
 - a. Two (2) copies of the proposed plat showing two-foot contours in areas where the slope does not exceed five (5) percent and five-foot contours in areas where the slope exceeds five (5) percent, and delineating the limits of the landfill.
 - b. A narrative report prepared by a registered Professional Engineer which includes the following items:

Sec. 35-4213. Data required for letters of certification.

- (a) To obtain the required letters of certification, an applicant for plat approval shall submit the following data to the certifying agencies/departments. All data shall be annotated with the plat number of the associated plat.
- (b) To the director of public works:
 - (1) Streets, alleys, sidewalks, crosswalks and drainage structures. Three (3) copies of plans and profiles as specified by Exhibit A to these regulations. Also, if a proposed plat traverses or is contiguous with a state maintained facility, a permit from the State Department of Highways and public Transportation indicating approval of the proposed access point and right-of-way.
 - (2) Storm drainage.
 - a. Two (2) copies of the proposed plat showing two-foot contours in areas where the slope does not exceed five (5) percent and five-foot contours in areas where the slope exceeds five (5) percent. All street widths and grades shall be indicated on the plat, and runoff figures shall be indicated on the outlet and inlet side of all drainage ditches and storm sewers and at all points in the street at changes of grade or where the street enters another street or storm sewer or drainage ditch. Drainage easements shall be indicated.
 - b. A general location map of the subdivision showing the entire watershed. (A USGS quadrangle is satisfactory.)
 - c. Calculations showing the anticipated storm water flow including watershed area, percent runoff and time of concentration. The 100 year floodplain limits as identified for the most current FIRM published by FEMA for the City of San Antonio and/or the applicable county shall be shown on the proposed plan and submitted with the drainage report. In the case that the floodplain boundary for a watercourse is not shown on the FIRM, a Professional Engineer, using methodologies approved by the Director of Public Works, shall develop the 100 year flood plain limits for each watercourse serving a watershed in excess of 100 acres.

(3) When a separate sewer system is proposed or when connection of a separate system is proposed to a sewer system other than the system of the city, two (2) copies of plans and specifications bearing approval certification of the state department of health accompanied with a written approval by that state agency.

(4) When a separate sewage treatment facility is proposed other than a facility of the city or a modification of a treatment facility other than the city is required by agencies having jurisdiction, a copy of the discharge permit from each agency authorized to require and issue such permit.

(5) When a separate sewer system is proposed or when service is to be provided by a system other than the system of the city, a written statement from the owner and operator of the system certifying the owner's operational status, approving the proposed system or service, and certifying that operations and maintenance of the system will be in compliance with requirements of all regulatory agencies having jurisdiction.

(6) When a sewer system is proposed within the recharge zone of the Edwards Aquifer within the city or its extraterritorial jurisdiction, written approval or approvals for a sewage collection system water pollution abatement plan as required by the appropriate state agency having review and enforcement authority jurisdiction regarding the Texas Administrative Code, 31 TAC 313.1--313.27 or the latest revision thereof regulating such systems.

(7) When sewer service for the proposed plat is to be provided by septic tanks, written approval by the appropriate public agency having installation permit and operation control jurisdiction. Such written approval shall state that approval for septic tank systems for each proposed property is granted and installation permits will be issued upon request after plat recordation.

(d) San Antonio Water System (Water):

(1) *Utilities layout.* Two (2) copies of the utilities layout showing proposed locations of utilities, streetlights, fire hydrants, neighborhood delivery and collection box units, and sidewalks shall be submitted.

1. The name, address, and phone number of the property owner.

2. Description of the nature and size of the proposed development, including projected population.

3. The percent of impervious cover after development and certification site will have a positive surface drainage.

4. History and age of the landfill.

5. Site geology, including estimates of past and future ground settlement.

6. Description and depth of refuse fill.

7. Description of planned excavations, penetration of any landfill liner, and ultimate disposal site for excavated refuse.

8. Depth and movement of shallow ground water.

c. A soil gas survey for methane.

d. A slope stability analysis for all landfill embankments.

(c) San Antonio Water System (Wastewater):

(1) Two (2) copies of the proposed plat showing two-foot contours on sites where the average grade does not exceed five (5) percent, and five-foot contours on sites where the average grade exceeds five (5) percent, and the proposed location of all sewer lines.

(2) Two (2) copies of plans and profiles of the proposed sewer lines showing depths and grades of the lines in accordance with Exhibit A, and overall layout map, construction details, and other data as required by Division 6, Subdivision B of this article.

(2) *Street names.* A copy of the proposed plat showing the names of all public and private streets.

(Ord. No. 65513, § 2(f), 8-13-87; Ord. No. 66329, Att. I, 12-23-87; Ord. No. 72635, § 1 (Att. I), 11-15-90; Ord. No. 81013, §§ 1, 2, 10-20-94)

(2) *Cost estimates.* Two (2) copies of detailed cost estimates of all required water system improvements, including private water wells if applicable.

(3) *Water wells.* Evidence that all substandard or abandoned water wells located on the property have been properly plugged or a performance bond providing for such plugging to be posted with the city water board.

(4) *Separate water system.* When a separate water system is planned or when connection is proposed to a water system other than the city waterworks' board of trustees or the Bexar Metropolitan Water District, two (2) copies of the plans of the water system as approved by the state health department shall be submitted.

(5) *Water supply and distribution systems plans.* Plans and specifications for water supply and distribution systems for approval by the waterworks' board of trustees.

(6) When a new development is proposed within the recharge zone of the Edwards Aquifer within the city or its extraterritorial jurisdiction, all written approval or approvals as required by the appropriate state agency having review and enforcement authority jurisdiction, regarding the Texas Administrative Code, 31 TAC 313.1--313.27 or the latest revision thereof regulating such development.

(e) To city public service:

(1) *Gas and electric service.* A copy of proposed plat showing gas and electric easements to be dedicated and a copy of the proposed utilities layout showing locations of utilities, streetlights, fire hydrants, neighborhood delivery and collection box units, and sidewalks. Where a subdivision or a portion of a subdivision will be served by gas or electric companies other than city public service, CPS will forward such submittal to the appropriate company.

Sec. 35-4218. Standards for approval.

The planning commission shall approve a plat if it conforms to:

(a) The master plan of the city and its current and future streets, alleys, parks, playgrounds, and public utility facilities;

(b) The transportation plan and major thoroughfare plan for the extension of major thoroughfares, streets, and public highways within San Antonio and in its extraterritorial jurisdiction, taking into account access to and extension of sewer and water mains and the instrumentalities of public utilities;

(c) Any applicable watershed Master Drainage Plan adopted by the City.

(d) The rules and regulations contained within this chapter.

(2) A hinged gate will be placed across the entire width of the drainage easement.

(d) Interceptor drainage easements and channels shall be provided where the drainage area to the back of platted lots exceeds one average residential lot depth. Interceptor drains shall be constructed prior to the issuing of building permits on any lot that would be affected by natural drainage being intercepted.

(e) All developments shall provide for adequate drainage and outfall easement at the lower end of the site into an existing street, alley, drainage easements or right-of-way, or to the centerline of an existing natural drain. Where proposed street, storm sewer, or open channel does not discharge into a natural low or into an existing adequate drainage easement within the property being developed, then facilities and drainage easements of adequate width to contain the design discharge shall be constructed and dedicated to the centerline of an existing natural low within the same watershed. However, where the natural low lies within the developer's property, the developer will be required only to plat an easement to the centerline of the natural low, provided that the easement is adequate to accommodate the facilities that will be built in conjunction with the future development of that property.

(Ord. No. 65513, § 2(f), 8-13-87)

Sec. 35-4284. Drainage easements.

(a) Where a subdivision is traversed by a watercourse, drainageway, natural channel or stream, there shall be provided an easement or right-of-way conforming substantially to the limit of such watercourse, plus additional width to accommodate future needs. Such easement or right-of-way requirements shall be determined by the criteria set out in Exhibit A included at the end of this chapter. Easements for earth channels shall extend a minimum of two (2) feet on one side and fifteen (15) feet (or seventeen (17) feet when utilities are installed) on the opposite side of the extreme limits of the channel, when such channel does not abut an alley or roadway. If the easement contains utilities the easement or right-of-way shall be increased to 17 feet on that side of the channel, to provide access to the channel for maintenance purposes and to provide access to the utility companies. Such access areas shall slope towards the channel at a rate of not more than 1 inch per foot per foot in width. Earthen channels used for interceptor drains for intercepting sheet flow may be constructed without an access road if they comply with the design standards to interceptor drains. Where designed channel bottoms exceed 100 feet in width, the fifteen foot extra width shall be provided on both sides of the channel. A driveable access way shall be provided in flood plain easements for the length of the easement when regular maintenance of the floodplain is required.

Easements for natural watercourses shall be the 100 year floodplain or the 25 year plus freeboard whichever is greater. In floodplain areas where ongoing maintenance is required or the floodplain will be reserved for use by the public or neighborhood association, the drainage easements shall be maintained by the neighborhood association or a public entity and the property will be dedicated to the City as a multi-use drainage easement.

(b) An unobstructed access right of way connecting the drainage easement with an alley or roadway parallel to or near the easement shall be provided at a minimum spacing of one access right of way at approximately 1000-foot intervals. The access right of way shall be a minimum of 15 feet in width and shall be maintained clear of obstructions that would limit vehicular access.

(c) In those cases where drainage easements cross lot and property lines, a statement shall be added to the plat that no fencing or structures that will interfere with adequate drainage flow will be allowed on or across such lines. Fencing will be allowed across drainage easements only in accordance with the following restrictions:

(1) Bottom of fence shall be a minimum of the flow depth, plus freeboard above design flow line of channel or drain.

Sec. 35-4304. Statement of purpose.

~~It is the purpose of this division to promote the public health, safety, and general welfare and to minimize public harm and private losses in special flood hazard areas with provisions designed:~~

The purpose of this division is to provide land use controls necessary to qualify the City for flood insurance under requirements of the National Flood Insurance Act of 1968 with provisions designed:

(a) To protect human life and property exposed to the hazards of flooding;

(b) To avoid increasing flood levels or flood hazards or creating new flood hazards areas;

(c) To minimize public and private property losses due to flooding;

(d) To preserve the natural floodplains where at all possible;

~~(b)~~(e) To ensure that potential property owners are notified if property is in a special flood hazard area;

~~(c)~~(f) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

~~(d)~~(g) To minimize prolonged business interruptions;

~~(e)~~(h) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in special flood hazard areas;

~~(f)~~(i) To minimize expenditure of future public money for costly flood control projects; and

~~(g)~~(j) To help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize future flood blight areas.

(Ord. No. 65513, § 2(f), 8-13-87)

Sec. 35-4305. Methods of reducing flood losses.

In order to accomplish its purposes, this division uses the following methods:

(a) Restricts or prohibits uses that are dangerous to health, safety or property in times of flood, or cause ~~excessive~~ increases in flood heights or velocities;

(b) Requires that uses vulnerable to floods, including public facilities which serve such uses, be protected against flood damage at the time of initial construction;

(c) ~~Controls, in the sense of providing authoritative guidance,~~ the alteration of natural flood plains, their protective barriers and stream channels;

(d) Prevents the construction of barriers which will divert flood waters and subject other lands to greater flood hazards;

(e) ~~Controls, in the sense of providing authoritative guidance,~~ development which would cause greater erosion or potential flood damage such as grading, dredging, excavation, and filling.

(Ord. No. 65513, § 2(f), 8-13-87; Ord. No. 72635, § 1 (Att. I), 11-15-90)

Sec. 35-4308. Basis for establishing the areas of special flood hazards.

The areas of special flood hazard identified by the Federal Emergency Management Agency in a scientific and engineering report entitled "The Flood Insurance Study for the City of San Antonio, Texas", dated December 15, 1983, updated periodically by the Federal Emergency Management Agency, together with the accompanying Flood Insurance Rate Maps and Flood Hazard Boundary--Floodway Maps and any revisions thereto, are hereby adopted by reference and declared to be a part of these regulations. The areas of special flood hazard identified by the Federal Emergency Management Agency on its Flood Insurance Rate Maps (FIRM), Community Panel Number 480045-0001-0059, dated December 15, 1983 currently published for the City of San Antonio and surrounding counties shall be used as the controlling study for the base flood (100-year frequency flood) within the city limits of San Antonio and its ETJ. Similar studies done by FEMA shall also be used for control in the city of San Antonio's area of extraterritorial jurisdiction, along with the flood plain information reports prepared by the United States Corps of Engineers, and the United States Geological Survey, Water Resources Division District Office, Austin, Texas, 1:24,000 U.S.G.S. quadrangle maps as prepared for the Federal Emergency Management Agency or the latest revisions thereof. These reports and maps are available for inspection by the public in the office of the city drainage engineer. Information and studies sanctioned and adopted by City Council subsequent to publication of the Flood Insurance Study and associated FIRM which update the base flood elevations, flood plain boundaries or flows shall also be used for control.

(Ord. No. 65513, § 2(f), 8-13-87)

existing and anticipated development, will not increase the water surface elevation of the base flood at any point within the community.

(Ord. No. 65513, § 2(f), 8-13-87; Ord. No. 66329, Att. IV(3), 12-23-87; Ord. No. 72635, § 1 (Att. I), 11-15-90)

Sec. 35-4322. Duties and responsibilities of flood plain administrator.

Duties and responsibilities of the city flood plain administrator shall include, but not be limited to:

(a) Maintain and hold open for public inspection all record pertaining to the provisions of these regulations;

(b) Review, approve or deny all applications for development permits required by section 35-4331 of this chapter;

(c) Review permits for proposed development to assure that all necessary permits have been obtained from these federal, state or local governmental agencies from which prior approval is required;

(d) Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Director of Public Works shall make the necessary interpretation;

(e) Notify adjacent communities ~~and the Texas Water Commission~~ prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.

(f) Assure that maintenance is provided within the altered or relocated portion of a watercourse so that the flood carrying capacity is not diminished, where appropriate easements are provided;

(g) When base flood elevation data for various flood prone areas has not been provided in accordance with section 35-4308, the director of public works shall obtain, review, and reasonably utilize any base flood elevation data available from a federal, state or other source, in order to administer the provisions of this division.

(h) Construction of habitable structures within the regulatory floodplain (base flood) is not allowed unless the flood plain is revised with a flood plain permit. No new construction, substantial improvements, or other development (including cut and/or fill) shall be permitted within zones A and A0-A30 on the community's flood insurance rate maps unless it is first demonstrated by engineering data submitted by the applicant's engineer in accordance with the various requirements and procedures as set forth in this division that the cumulative effect of the proposed development, when combined with all other

Sec. 35-4323. Enforcement.

If any person violates any provisions of these regulations, the Director of Public Works shall notify the City Attorney and direct him to take whatever action is necessary to remedy the violation, including but not limited to, filing suit to enjoin the violation and submitting a request to FEMA for denial of flood insurance.

Sec. 35-4331. Requirement.

~~A flood plain development permit shall be required for all land development in any area of special flood hazard to ensure conformance with the provisions of this division.~~

Construction of habitable structures within the regulatory floodplain (100-year frequency floodplain) is not allowed. No development or other encroachment is allowed in a floodplain which will result in any increase in the base flood elevations within the floodplain during discharge of water of a base flood unless the floodplain is contained within an easement. Where construction of structures in a floodplain is allowed by the Director of Public Works, a floodplain development permit shall be required to ensure conformance with the provisions of this division. In addition, all land development in any area of special flood hazard shall be required to have a floodplain development permit.

(Ord. No. 65513, § 2(f), 8-13-87)

louvers, or other covering or devices provided that they permit the automatic entry and exit of floodwaters.

(3) Electrical heating, ventilation, plumbing and air-conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(4) A registered Professional Engineer or registered architect shall submit a certification to the director of public works that the standards of this subsection are satisfied. The certification shall include a statement to the effect that the engineer has developed and/or reviewed structural design, specifications, and plans for the construction and finds them to be in accordance with this subsection. The director of public works shall utilize the flood proofing regulations manual prepared by the United States Army Corps of Engineers as a guide in determining construction requirements.

(c) *Manufactured homes.*

(1) All manufactured homes shall be anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to the following (refer to FEMA Manual #85, Manufactured Home Installation in Flood Hazard Areas):

a. Over-the-top ties at each of the four (4) corners of the manufactured home with two (2) additional ties per side at intermediate locations. Manufactured homes more than fifty (50) feet long require one (1) additional tie per side.

b. Frame ties at each corner of the home with five (5) additional ties per side at intermediate points. Manufactured homes more than fifty (50) feet long require four (4) additional ties per side.

c. All components of the anchoring system shall be capable of carrying a force of four thousand eight hundred (4,800) pounds;

Sec. 35-4342. Specific standards.

In all areas of special flood hazards where base flood elevation data has been provided in accordance with these regulations, the following provisions are required:

~~(a) Residential construction. New construction or substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to one (1) foot above the base flood elevation. A registered professional civil engineer, registered architect, or registered public surveyor shall submit a certification to the director of public works that the standard of this subsection is satisfied. Floodproofing will not be allowed as a substitute for the lowest floor, including basement, being elevated one (1) foot above the base flood elevation.~~

(a) Residential construction. Construction of habitable structures within the regulatory floodplain (base flood) is not allowed unless the flood plain is revised with a flood plain permit.

(b) Nonresidential construction.

(1) New construction or substantial improvements of any commercial, industrial or other nonresidential structure shall have either (a) the lowest floor, including basement, elevated to the level of base flood elevation, or (b) have the lowest floor, including basement, with attendant utility and sanitary facilities, be floodproofed so that below the base flood level and above the lowest floor, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.

(2) New construction and substantial improvements, with fully enclosed areas below the lowest floor (including basement) that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. A minimum of two (2) openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens,

(3) The placement of any manufactured home is prohibited except in an existing manufactured home park or subdivision.

(Ord. No. 65513, § 2(f), 8-13-87; Ord. No. 66329, Att. IV(6), 12-23-87)

d. Any additions to the manufactured home shall be similarly anchored.

(2) All manufactured homes to be placed or substantially improved within Zones A1-30, AH, and AE shall conform to the following criteria:

a. Stands or lots are elevated on compacted fill or on pilings so that the lowest floor of the mobile home will be one (1) foot above the base flood level. A registered professional civil engineer, registered architect, or registered public surveyor shall submit a certification to the director of public works that the standard of this paragraph complies with subsection (a).

b. Adequate surface drainage and access for a hauler are provided.

c. In the instance of elevation of pilings: (i) lots are large enough to permit steps, (ii) piling foundations are placed in stable soil no more than ten (10) feet apart, and (iii) reinforcement is provided for pilings more than six (6) feet above the ground level.

(d) *Floodways.* Located within the areas of special flood hazard are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles and erosion potential, the following provisions shall apply:

(1) Encroachments are prohibited, including fill, new construction, substantial improvements and other developments, unless certification by a registered Professional Engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels during occurrence of the base flood discharge.

(2) If subparagraph (1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this article.

Proposed Enhancements to San Antonio's Stormwater Management System

Presentation to the
City Council
September 25, 1997

1

Drainage Regulations Committee

- Appointed May, 1994
- Coordinated with watershed studies in Upper Olmos, Leon and Salado Creeks.

2

Drainage Regulations Committee Membership

- Howard Peak, Chair
- Bob Ross, Vice Chair

Charlie Conner
Mike Cude, P.E.
Norman Dugas
Larry DeMartino

Mike Gonzales
June Kachtik
Dan Kossl

3

Drainage Regulations Committee Support

- John Kight, P.E., Project Manager
- Bob Ashcroft, Facilitator
- Public Works Staff
- Rust-Lichliter Jameson
- Pape-Dawson
- Vickery & Associates
- SARA, SAWS, TxDOT, EAA
- Parks, Planning, Legal Departments

4

Drainage Regulations Committee Goal

- To propose improvements to the City's Stormwater Management System.

5

Community Goals

- A. Identify and preserve the existing natural floodplains as multi-use / multi-purpose areas.
- B. Control future flooding through the use of stormwater detention facilities.
- C. Enhance public safety through revised street drainage design guidelines.

6

Community Goals (continued)

- D. Update drainage design and review guidelines for development of drainage projects within the ETJ.
- E. Consider and coordinate water quality and water quantity issues.

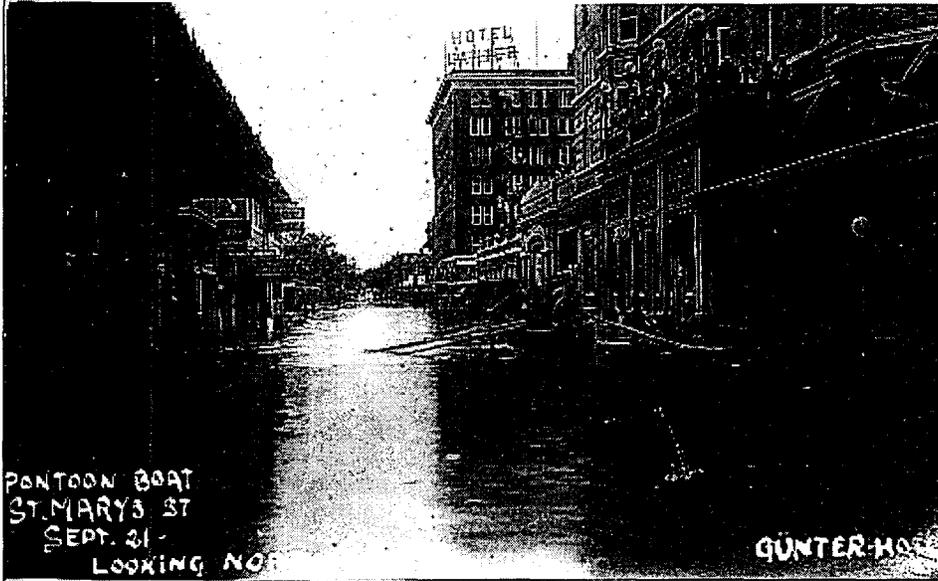
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Drainage Problems Identified

- Homes and businesses flooded due to upstream development.
- Arterials blocked at flooded low water crossings.
- Natural creeks were being channelized.

8

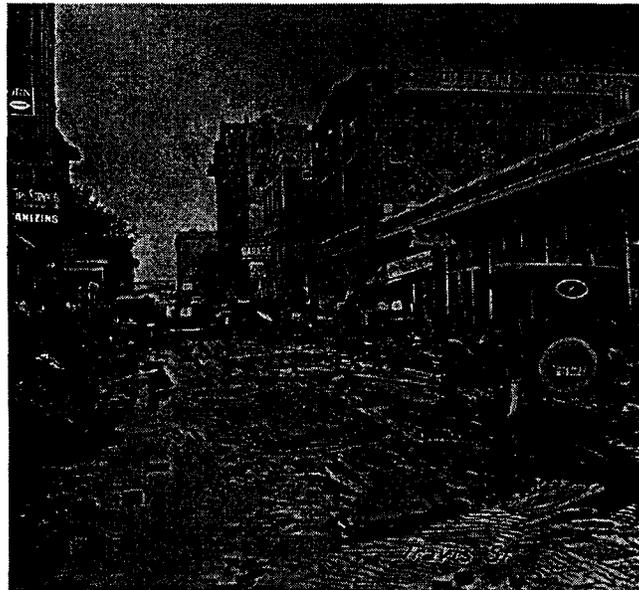
FLOOD OF SEPTEMBER 1921



ST. MARY'S ST. AT COMMERCE ST. LOOKING NORTH

9

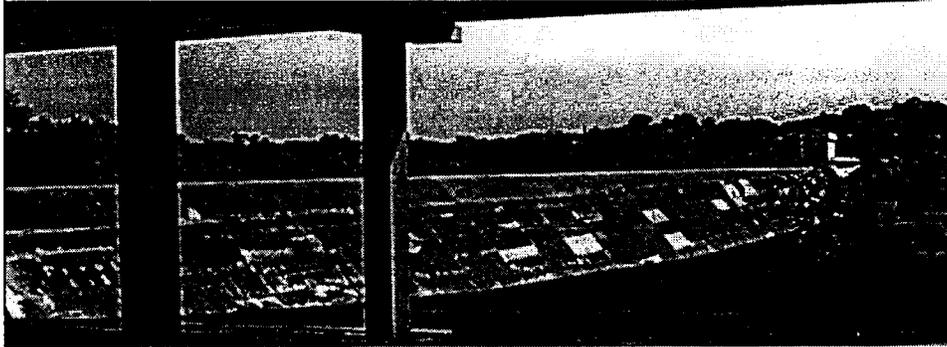
FLOOD OF SEPTEMBER 1921



TRAVIS STREET

10

OLMOS DAM



ORIGINALLY BUILT IN 1928 TO PREVENT FLOODING OF
DOWNTOWN SAN ANTONIO

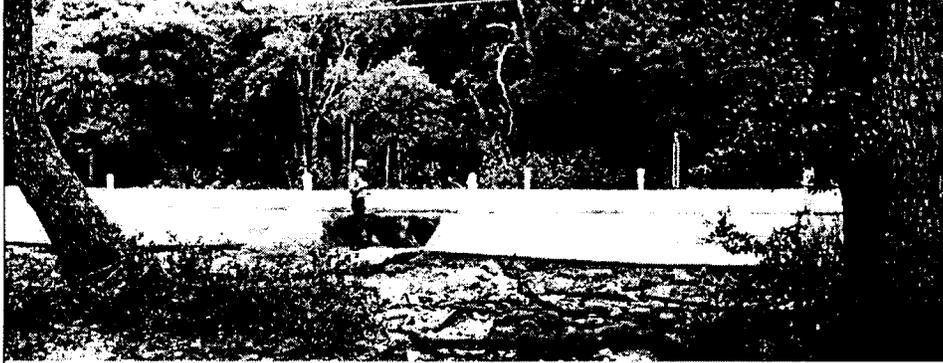
11

Drainage Problems Identified (continued)

- City investing millions to correct problems (over \$300 million in ten years)
- City in violation of State law.

12

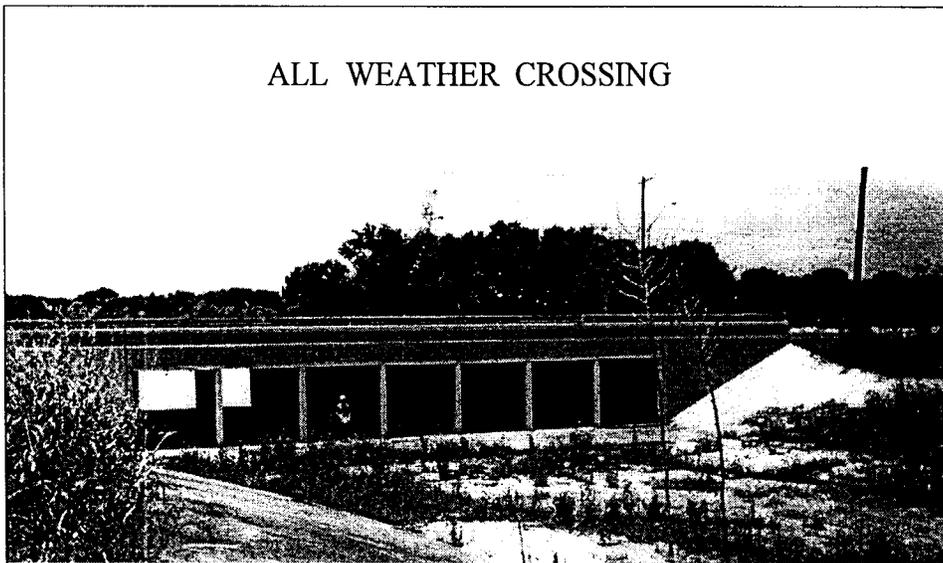
LOW WATER CROSSING



AT DREAMLAND DRIVE

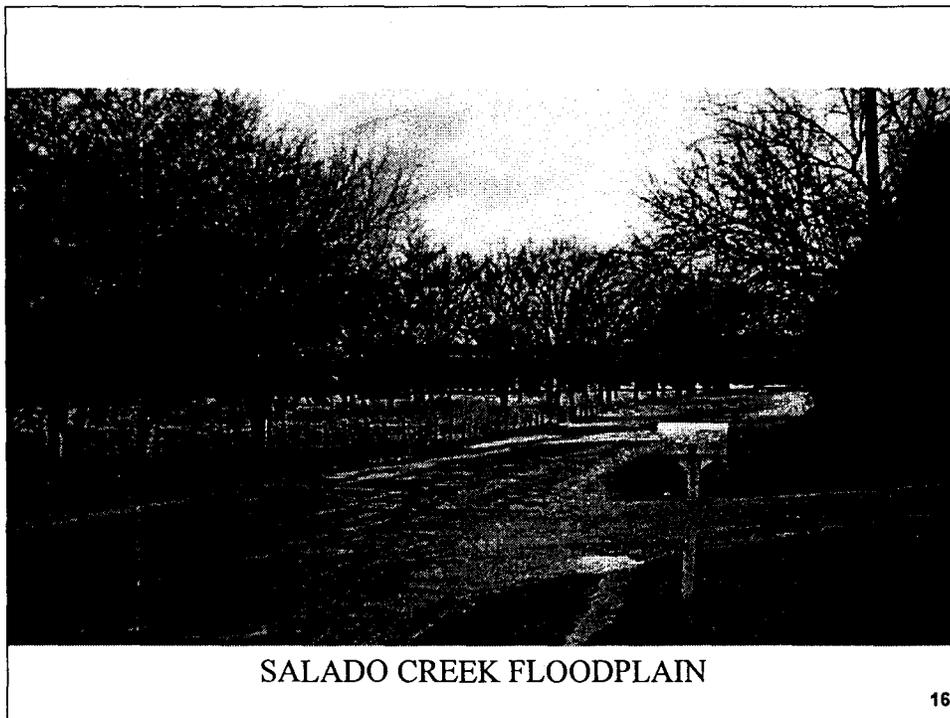
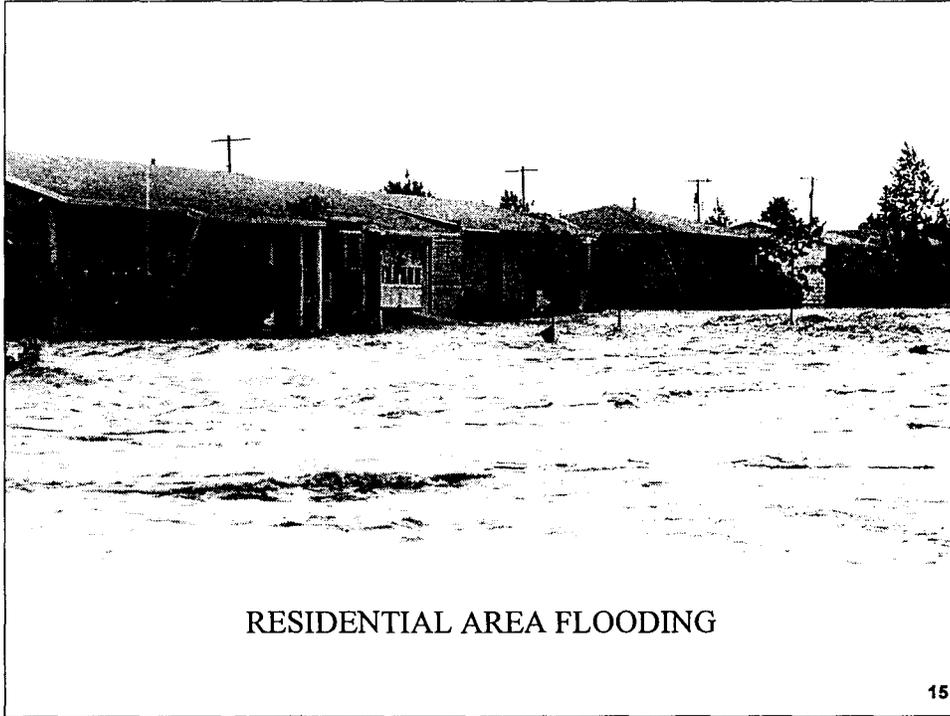
13

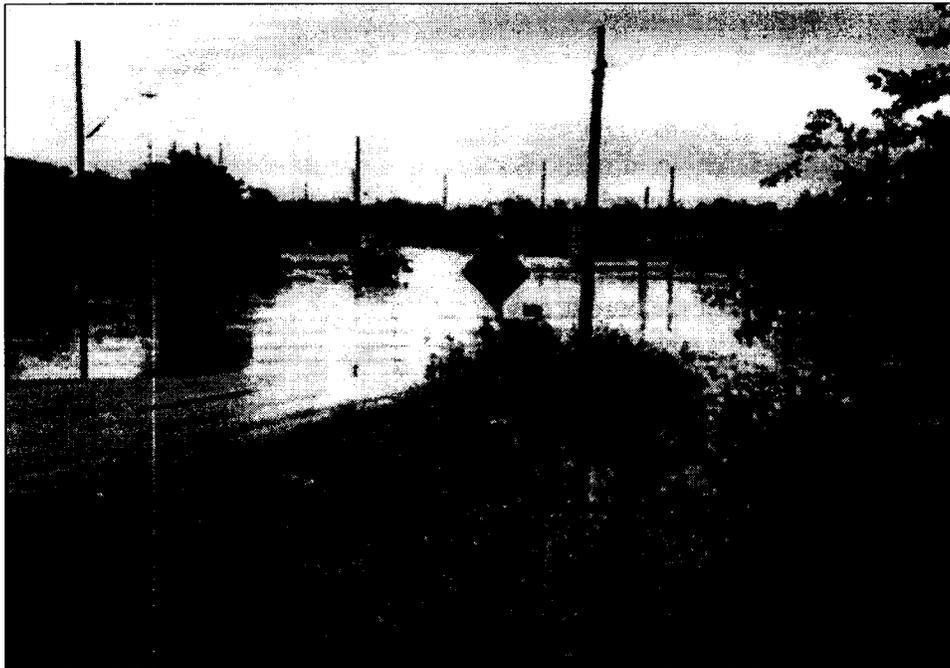
ALL WEATHER CROSSING



AT WURZBACH ROAD AND WEST OLMOS CREEK

14





JUNE 22, 1997 FLOODING

17

Drainage Regulations Committee Activities

- Established principles.
- Set goals.
- Developed enhanced programs in eleven (11) areas.
- Drafted Ordinance revisions; Chapter 35 - Unified Development Code (UDC).

18

Drainage Regulations Committee Activities (continued)

- Cross-referenced goals and objectives to Ordinance revisions.
- Reviewed intent, benefits and impacts of each Ordinance revision.
- Included TSPE-PEPP in review process.
- Modified Ordinance revisions and Exhibit “A” to make more workable.

19

Drainage Regulations Committee Activities (continued)

- Provided guidance to City regarding maintenance, design, construction standards and financing.
- Considered costs and benefits.

20

Drainage Committee Recommendations

- Principles.
- Goals.
- Policies and strategies in eleven (11) areas.

21

Drainage Committee Recommendations (continued)

- I. Use of Streets for Drainage
 - Continue using collector and local streets to carry stormwater runoff.
 - Keep one lane in each direction on arterials free of floodwaters (25 year storm).
 - Construct all weather creek crossings.

22



RESIDENTIAL STREET FLOODING

23

Drainage Committee Recommendations (continued)

II. Stormwater Detention

- Owner, developer, builder responsible for increased runoff.
- Detention ponds required unless regional ponds developed.
- Option to pay fees for access to regional ponds.

24



REGIONAL DETENTION POND

25



DRAINAGE IMPROVEMENTS ALTERNATIVE USE

26



DRAINAGE IMPROVEMENTS ALTERNATIVE USE

27

Drainage Committee Recommendations (continued)

III. Use of Watercourses

- Limits modifications to creeks.
- Encourages preservation of floodplains.
- Protects trees and wooded areas.
- Discourages channelization.

28



NATURAL CREEK WITH TRAIL

29

Drainage Committee Recommendations (continued)

IV. Integrity of Ground Surface

- Conform to existing landforms.
- Minimize clear cutting of sites.
- Retain existing vegetation (particularly Salado Creek).
- Treat creeks as assets.

30

Drainage Committee Recommendations (continued)

V. Stormwater Design Flexibility

- Allow owner and engineer flexibility to manage stormwater, preserve natural waterways and construct livable communities.
- Policies and procedures to allow timely review of engineering reports and plans.

31

Drainage Committee Recommendations (continued)

VI. Standards, Guidelines and Methodologies

- Specify design criteria.
- Modify Exhibit “A” to include details for design.

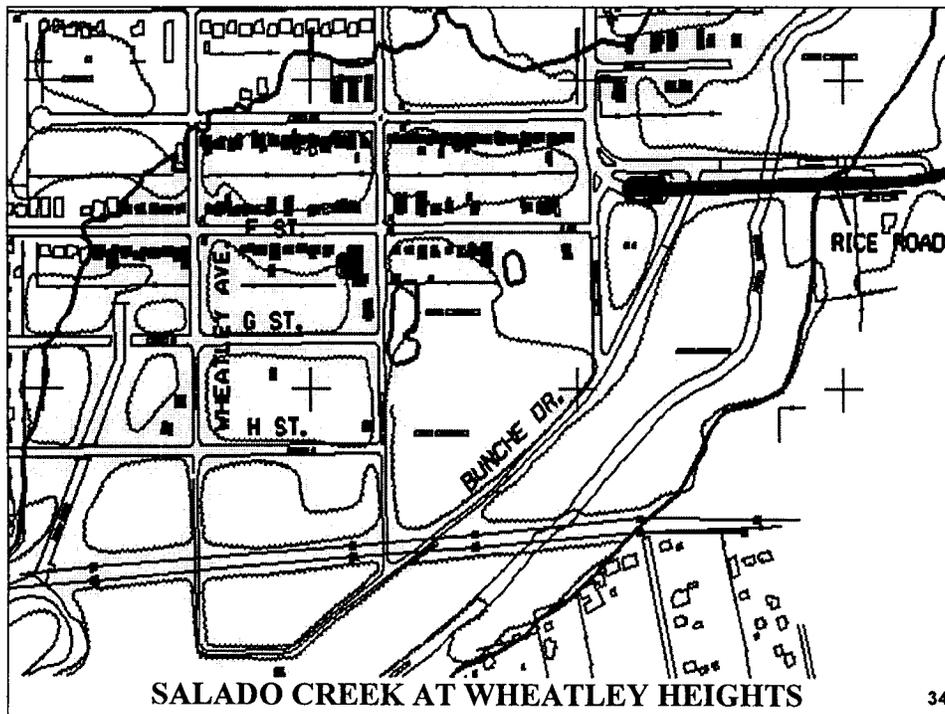
32

Drainage Committee Recommendations (continued)

VII. Floodplain Management

- Protect and preserve 100-year floodplains.
- Prohibit development in flood plains.
- Use floodplain maps in the three watershed studies as a guide.

33



34

Drainage Committee Recommendations *(continued)*

VIII. Integrated Resource Management

- Maximize benefits of floodplains and detention facilities.
- Encourage multiple uses such as open space, recreation, aquifer recharge and improved water quality.

35



HIKE & BIKE TRAIL NEXT TO CREEK

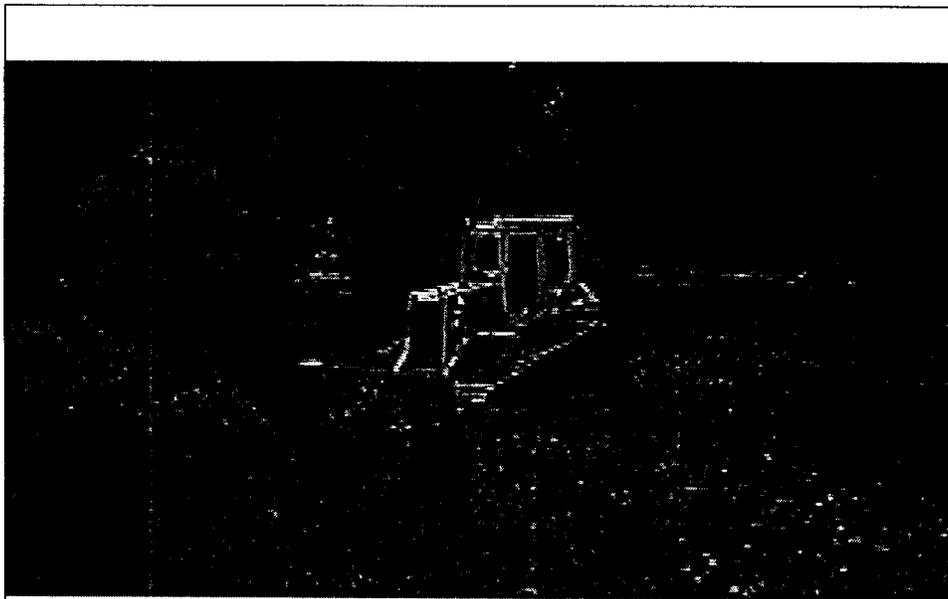
36

Drainage Committee Recommendations *(continued)*

IX. Maintenance

- Establish regular maintenance programs for creeks, floodplains, detention ponds.
- Develop standards that allow ease of access, mowing, tree trimming.

37



DOZER CLEARING CREEK BED

38

Drainage Committee Recommendations (continued)

X. Areawide Management and Finance

- Use stormwater fees to cover cost of maintenance.
- Use fees in lieu of constructing ponds for regional pond system.
- Consider funding needed improvements in three watersheds (\$101.7 million).
 - Upper Olmos Creek \$ 16.94 M
 - Leon Creek \$ 59.08 M
 - Salado Creek \$ 25.68 M

39

Drainage Committee Recommendations (continued)

XI. Enforcement

- Public Works and Legal to be aggressive in prosecuting those who fill creeks illegally.
- Ensure that private entities or associations maintain detention ponds.

40

Revisions to Unified Development Code

- Chapter 35.
- Related to land development.
- Consistent with goals and strategies.

41

Fee In-Lieu Policy

- Pay fees rather than build on-site ponds.
- Use fees to build regional ponds.
- Implement drainage improvements.

42

Proposed Fees

- Residential \$1,200 per Acre
- Multi-Family \$1,600 per Acre
- Commercial / Office / Industrial
 - 65% & under I.C. \$2,600 per Acre
 - Over 65% I.C. \$3,000 per Acre

43

Estimated Revenues

	<u>Acreage</u>	<u>Fee</u>	<u>Revenue</u>
• Residential	2,000	\$1,200	\$2.40 M
• Multi-Family	500	\$1,600	\$0.80 M
• Commercial			
– ≤65% ic	250	\$2,600	\$0.65 M
– >65% ic	1,250	\$3,000	\$3.75 M
TOTAL REVENUE			\$7.60 M

(Average cost / Acre = \$1,900)

(Total @ 60% utilization = \$4.6 M)

44

Proposed Regional Pond System

45

Timing

- Public Hearing - Sep 25, 1997
- Council Action - Sep 25, 1997
- Effective Date - Oct 20, 1997

46

Requested Actions

- **Adopt revisions to U.D.C. (Chapter 35) as proposed.**
- **Adopt Fee In-Lieu Policy.**
- **Create Stormwater Drainage Utility Fund.**
- **Authorize \$100,000 for Staffing.**

AN ORDINANCE



DECLARING THE DRAINAGE OF THE CITY TO BE A PUBLIC UTILITY; ADOPTING THE PROPOSED DRAINAGE REGULATIONS DEVELOPED BY THE DRAINAGE REGULATIONS COMMITTEE TO REQUIRE ON-SITE DETENTION OF STORMWATER AND ADDITIONAL REGULATION OF STORMWATER CONVEYANCE; ADOPTING A FEE-IN-LIEU OF ON-SITE DETENTION POND POLICY; AUTHORIZING THE FOLLOWING ONE TIME FEES (RESIDENTIAL - \$1,200.00, \$2,000.00, GREATER THAN 65% IMPERVIOUS COVER - \$3,000.00 PER ACRE); APPROPRIATING \$100,000.00 FROM THE STORMWATER DRAINAGE UTILITY FUND TO PROVIDE FOR STAFFING AND ADMINISTRATIVE COSTS ASSOCIATED WITH THE PROGRAM DURING THE FISCAL YEAR 1997-98; AMENDING THE CITY CODE TO REFLECT SUCH CHANGES INCLUDING AMENDING THE UNIFIED DEVELOPMENT CODE AS FOLLOWS: 1) ARTICLE I, DIVISION 3, ADDING THE DEFINITIONS FOR "DRAINAGE SYSTEM," "STORMWATER DRAINAGE FEE," "SWALE," "WATERCOURSE," AND "WATER SHED" AND AMENDING THE DEFINITION OF FLOOD INSURANCE SITE MAP; 2) ARTICLE II, DIVISION 1, ADDING "DRAINAGE MASTER PLAN," AMENDING IMPACT FEES; AND AMENDING PRELIMINARY OVERALL DEVELOPMENT PLAN (POADP) INFORMATION REQUIREMENTS; AND 3) ARTICLE IV TO REFLECT NEW DRAINAGE REGULATIONS THAT REQUIRE ON-SITE STORMWATER DETENTION OR PAYMENT OF FEE-IN-LIEU OF DETENTION AND REQUIRING COMPLIANCE WITH ADDITIONAL REGULATIONS RELATED TO STORMWATER CONVEYANCE, TO BE EFFECTIVE OCTOBER 20, 1997.

* * * * *

WHEREAS, the City of San Antonio City Council in order to develop a strategy and methodology for improving the City's stormwater drainage system empowered the Drainage Regulation Committee as referenced in Section 35-4020 of the City Code as amended by this ordinance; and

WHEREAS, the Committee after meeting on a regular basis over numerous months developed significant revisions to the City's Unified Development Code to provide for the safe and environmentally sensitive conveyance of stormwater, including the requirement that new development provide for on-site detention of stormwater; and



CITY OF SAN ANTONIO

OFFICE OF THE CITY CLERK

P O BOX 839966
SAN ANTONIO, TEXAS 78283-3966

October 17, 1997

Mr. A. Lawton Langford
Municipal Code Corporation
P.O. Box 2235
Tallahassee FL 32316-2235

Dear Mr. Langford:

Attached are two ordinances enacted by our City Council on September 25, 1997. Both ordinances 86711 and 86715 have attachments which should be included with the codification process.

Ordinance 86711 includes a number of graphs and charts which need to be reproduced and included in the codification process. I have taken the liberty of sending either original or clearer charts, for ease of reproduction. If you would, please, return these five originals to me, so that I in turn can return them to the Public Works Department files.

If there are any questions, please don't hesitate to contact me at (210) 207-7253.

A handwritten signature in black ink, appearing to read "Dick Porter".

DICK PORTER
Assistant City Clerk

Affidavit of Publisher

STATE OF TEXAS,

COUNTY OF BEXAR

CITY OF SAN ANTONIO

Before me, the undersigned authority, on this day Helen I. Lutz, who being by me duly sworn, says on oath of the Commercial Recorder, a newspaper of general circulation in San Antonio, in the State and County aforesaid, and that the Ordinance #86711 hereto attached has been published in this newspaper on the following days, to-wit: September 30,

Helen I. Lutz

Sworn to and subscribed before me this 30th day of September

ORDINANCE #86711
RETENTION OF STORMWATER AND ADDITIONAL REGULATION OF STORMWATER CONVEYANCE; ADOPTING A FEE-IN-LIEU OF ON-SITE DETENTION POND POLICY; AUTHORIZING THE FOLLOWING ONE TIME FEES (RESIDENTIAL-\$1,200.00, MULTI-FAMILY-\$1,600.00 NON-RESIDENTIAL LESS THAN 65% IMPERVIOUS COVER \$2,600.00, GREATER THAN 65% IMPERVIOUS COVER-\$3,000.00 PER ACRE); APPROPRIATING \$100,000.00 FROM THE STORMWATER DRAINAGE UTILITY FUND TO PROVIDE FOR STAFFING AND ADMINISTRATIVE COSTS ASSOCIATED WITH THE PROGRAM DURING THE FISCAL YEAR 1997-98; AMENDING THE CITY CODE TO REFLECT SUCH CHANGES INCLUDING AMENDING THE UNIFIED DEVELOPMENT CODE AS FOLLOWS: 1) ARTICLE 1, DIVISION 3, ADDING THE DEFINITIONS FOR "DRAINAGE SYSTEM," "STORMWATER DRAINAGE FEE," "SWALE," "WATERCOURSE," AND "WATER SHED" AND AMENDING THE DEFINITION OF FLOOD INSURANCE SITE MAP; 2) ARTICLE II, DIVISION 1, ADDING "DRAINAGE MASTER PLAN," AMENDING IMPACT FEES; AND AMENDING PRELIMINARY OVERALL DEVELOPMENT PLAN (POADP) INFORMATION REQUIREMENTS; AND 3) ARTICLE IV TO REFLECT NEW DRAINAGE REGULATIONS THAT REQUIRE ON-SITE STORMWATER DETENTION OR PAYMENT OF FEE-IN-LIEU OF DETENTION AND REQUIRING COMPLIANCE WITH ADDITIONAL REGULATIONS RELATED TO STORMWATER CONVEYANCE, TO BE EFFECTIVE OCTOBER 20, 1997.

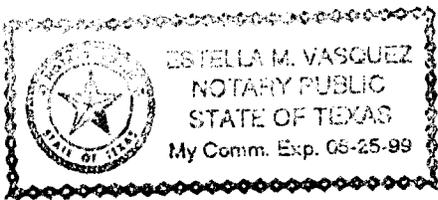
PASSED AND APPROVED this 25th day of September, 1997.

/s/HOWARD W. PEAK
Mayor

ATTEST

Estrella M. Vasquez

Notary Public in and for Bexar County, Texas



REGISTER HERE FOR DISCUSSION ON TIME CERTAIN
(TIME LIMIT: 5 MINUTES PER PERSON / 15 MINUTES PER ORGANIZATION)

(PLEASE PRINT)

NAME	ADDRESS OR ORGANIZATION	AGENDA ITEM(S)	AUDIOVISUAL ASSISTANCE REQUESTED
1. JACK W. DEVAUGHN Sr.	SEVENTH SIDE COMMUNITY	DRAINAGE ORDINANCE	
2. Gene Dawson Jr.	" "	DRAINAGE	
3. Charlie Connor	" "	Drainage -	
4. LARRY BECKMAN	OPEN SPACE ADVISORY BOARD	" "	
5. Candice Peace	247 County Blvd. 78215	7	<u>JMB</u>
6.			
7.			
8.			
9.		_____	
10.			
11.			
12.		_____	
13.			
14.			
15.			