

AN ORDINANCE 81491

AMENDING CHAPTER 34, ARTICLE VI, OF THE CITY CODE BY ADDING A NEW DIVISION 6 THEREUNDER ENTITLED "AQUIFER RECHARGE ZONE AND WATERSHED PROTECTION", CONTAINING NEW SECTIONS 34-900 THROUGH 34-999 REGULATING CERTAIN ACTIVITIES OVER THE EDWARDS AQUIFER RECHARGE ZONE IN ORDER TO PREVENT THE POLLUTION OF WATER RECHARGING THE AQUIFER WHILE ALLOWING REASONABLE LEVELS OF DEVELOPMENT IN THE REGULATED AREA; AUTHORIZING THE SAN ANTONIO WATER SYSTEM TO ENFORCE AND ADMINISTER THE PROVISIONS OF CHAPTER 34, ARTICLE VI, DIVISION 6; PROVIDING FOR COLLECTION OF CIVIL PENALTIES FOR VIOLATION THEREOF, DECLARING THE VIOLATION THEREOF TO BE A CRIMINAL MISDEMEANOR PUNISHABLE UPON CONVICTION BY A FINE NOT TO EXCEED \$2,000.00; MAKING ASSOCIATED AMENDMENTS TO CHAPTER 35 OF THE CITY CODE TO PROVIDE NOTIFICATION THEREIN OF THE NEW REGULATIONS, AND TO ESTABLISHING MAXIMUM PARKING REQUIREMENTS WITHIN THE RECHARGE ZONE; AND DIRECTING PUBLICATION OF THIS ORDINANCE AFTER PASSAGE.

\* \* \* \* \*

Whereas, the Edwards Underground Aquifer (the Aquifer) is the only source of potable water for the City of San Antonio, and the San Antonio City Council is obligated to preserve and protect the public health, safety, and welfare by preventing the pollution of and maintaining the quality of water entering, held within, and pumped from the Aquifer; and

Whereas, the City of San Antonio expressed its intent to achieve non-degradation of the water within the Aquifer in resolution No. 87-47-72, which adopted a resolution by the City Council Committee on the Aquifer establishing a policy concerning the protection of groundwater quality in the Aquifer and setting forth measures to implement the policy; and

Whereas, the City of San Antonio reaffirmed and clarified its intent to achieve non-degradation of the Aquifer in resolution No. 94-26-29, which adopted a report entitled "*The Edwards Aquifer: San Antonio Mandates for Water Quality Protection*" (the Mandates Report), developed by the City Council and others sitting as a Committee of the Whole on Water Quality, and which directed the implementation of 33 recommendations; and

Whereas, the Mayor's Water Quality Task Force was requested to study six of the 33 recommendations concerning development over the Aquifer recharge zone, and recommend regulations to govern such development in a manner consistent with the Mandates Report; and

Whereas, the Task Force has completed its work and has proposed regulations regarding activities within the Aquifer recharge and drainage zones which allow use and proper development of property in such areas while maintaining the Council's goal of protecting the public health, safety, and welfare by prohibiting and preventing degradation of the public's sole source of potable water; and

Whereas, the City Council hereby finds that unreasonably reducing the quality of water flowing over the Edwards Aquifer Recharge Zone constitutes a risk to the public health, safety and welfare; and

Whereas, the Water Quality Task Force has completed the work outlined in its "Terms of Reference" to develop implementation procedures and recommended ordinance provisions as mandated by the City Council Mandates Report, related to impervious cover and buffer areas to protect flood plains and significant recharge features; and

Whereas, the San Antonio Water System Board of Trustees has approved and adopted the recommendations of the Mayor's Water Quality Task Force and in furtherance thereof have passed Resolution No. 94-258, dated December 20, 1994, requesting the Council to consider, pass and approve this ordinance to amend, and modify Chapters 34 and 35 of the City Code, and adopt new regulations to be contained therein; NOW THEREFORE:

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

**SECTION 1.** Article VI of Chapter 34 of the San Antonio City Code is hereby amended by adding a new Division 6, entitled "Aquifer Recharge Zone and Watershed Protection". The new Division 6 shall contain new sections 34-900 thru 34-999 having the titles and containing the language set forth in the document attached hereto as "Appendix I", which is hereby adopted and approved as if fully set forth herein.

**SECTION 2.** The degradation of water, as that term is defined in the regulations attached hereto as Appendix I, is hereby found to constitute a public nuisance that endangers the public health, safety and welfare of the citizens of the City of San Antonio.

**SECTION 3.** Chapter 34, Article I, Division 8, Section 34-8.2 of of the San Antonio City Code, is hereby amended by adding the underlined text to, and deleting the lined-out text from, the existing language of that Section as follows:

**"Section 34-8.2 Funding Source**

Certain Divisions of Chapter 34, specifically Article V, Division 2, Industrial Waste and Pre-treatment, and Division 3, Liquid Waste Transportation and

Disposal Regulations, and Article VI, Division 2, Wells, ~~and~~ Division 4, Prohibited Discharges Into the Municipal Separate Storm Sewer System, and Division 6. Aquifer Recharge Zone and Watershed Protection, include sections imposing civil penalties in addition to criminal penalties. Civil penalties collected by the actions of SAWS and its attorneys pursuant to such sections shall be recorded in the Account created pursuant to Section 34-8.1 herein, unless expressly prohibited by law. Should any such civil penalties collected fail to be recorded in the Account, the SAWS personnel and attorneys responsible for the imposition and collection of such civil penalty shall be required to justify in writing to the President/CEO why such funds were not so recorded and shall state the disposition of same."

**SECTION 4.** Chapter 35, Article I, Division 1, Section 35-1006, of of the San Antonio City Code is hereby amended by adding a new subsection (c) to the existing Section as follows:

"(c) *Edwards Aquifer Recharge Zone and Watersheds.* Development occurring within the recharge zone, or watersheds draining into the recharge zone, of the Edwards Aquifer, to which this Chapter is applicable, must also comply with the regulations contained in Chapter 34, Article VI, Division 6, of this Code, to the extent such regulations are applicable."

**SECTION 5.** Chapter 35, Article III, Division 6, Subdivision A, Section 35-3100, of the San Antonio City Code is hereby amended by appending after the last sentence of the current section the following text:

"All land uses allowed within the ERZD by this subdivision must also conform to the requirements of Chapter 34, Article VI, Division 6, of this Code."

**SECTION 6.** Chapter 35, Article III, Division 6, Subdivision A, Section 35-3107, of of the San Antonio City Code is hereby amended by repealing existing Section 35-3107, and by adding a new Section 35-3107 entitled "*Aquifer Recharge Zone and Watershed Protection*". The new Section 35-3368 shall contain the following language:

"In addition to the requirements of this subdivision, all landuse or development occurring in the Edwards Aquifer recharge zone, or watersheds draining into the recharge zone, must comply with the regulations contained in Chapter 34, Article VI, Division 6 of this Code, to the extent applicable."

**SECTION 7.** Chapter 35, Article III, Division 9, Subdivision C, of of the San Antonio City Code is hereby amended by repealing existing Section 35-3368, and by adding a new Section 35-3368 entitled "*Maximum Requirements in Edwards Recharge Zone District (ERZD)*". The new Section 35-3368 shall contain the following language:

"(a) Unless as provided for in subsection (b) below, the maximum ratio of off-street parking for uses located within the ERZD shall be seven (7) parking spaces for each 1000 square feet of gross floor area (7/10 of one space per 100 square feet) for any use.

(b) In the event that the minimum off-street parking requirements under this subdivision require more than seven (7) parking spaces for each 1000 square feet of gross floor area for a use which is located within the ERZD, such minimum requirements shall be complied with, but may not be exceeded."

**SECTION 8.** Chapter 35, Article IV, Division 1, Section 35-4002, of of the San Antonio City Code is hereby amended by appending after the last sentence of the current section the following text:

"The subdivision of a tract of land located within the Edwards Aquifer Recharge Zone must also conform with the requirements of Chapter 34, Art. VI, Division 6, of this Code to the extent applicable."

**SECTION 9.** The Water Quality Task Force, having graciously completed its assigned responsibilities as an advisory body to the City Council of the City of San Antonio, is hereby dissolved, and its members released from service thereon.

**SECTION 10.** The recommendations of the Water Quality Task Force contained in the document attached hereto as "Appendix II", are hereby adopted for review as the position of the City of San Antonio. The City staff and the San Antonio Water System Board of Trustees are hereby directed to take all necessary actions to ensure that each of the recommendations identified in Appendix II are reviewed and final recommendation on the same are brought to City Council for consideration as soon as is practicable.

**SECTION 11.** The City Manager and staff shall coordinate funding of the programs and policies implemented herein with the San Antonio Water System in order to ensure that the requirements of this Ordinance are met, and that the burden of funding the same are appropriately distributed between the City and the San Antonio Water System. In this regard, the San Antonio Water System shall present any necessary rate increases required as a result hereof to the City Council as soon as the same are determined.

**SECTION 12.** Should any Article, Section, Part, Paragraph, Sentence, Phrase, Clause, or

Word of this Ordinance, or any appendix hereof, 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 13.** For purposes of this Ordinance and Appendix I attached hereto and adopted hereby, the quality of a representative sample of water is hereby found to be unreasonably reduced when such water is rendered harmful, detrimental, or injurious to humans, animal life, vegetation, or property or the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.


**SECTION 14:** The City Clerk for the City of San Antonio is hereby directed to publish notice of this Ordinance as required by the Charter of the City of San Antonio and the laws of the State of Texas.

**SECTION 15.** 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.

**SECTION 16.** The moratoriums enacted on September 8, 1994, and December 22, 1994, shall end on the effective date of this ordinance.

PASSED AND APPROVED this 12<sup>th</sup> day of January, 1995.

  
M A Y O R

ATTEST:   
City Clerk

APPROVED AS TO FORM:   
City Attorney

# **APPENDIX**

## **I**

## ARTICLE VI POLLUTION PREVENTION AND CONTROL

### DIVISION 6. AQUIFER RECHARGE ZONE AND WATERSHED PROTECTION

#### SUBDIVISION A. General

##### Sec. 34-901 Statement of Purpose

The City of San Antonio adopts a goal of nondegradation which maintains or improves the quality of water entering the Edwards Aquifer. Pollution prevention will be assured by requiring best management practices and development criteria for point and non-point sources, including an emphasis on passive measures, supplemented by the use of structural controls, where appropriate. Land uses which could adversely affect the water supply are prohibited, thereby preventing the risk of contaminants entering the water reservoir, and posing a risk to the public health. The City of San Antonio hereby adopts this policy of nondegradation to insure the preservation of a clean and safe drinking water supply, and has found, as a matter of legislative determination, that the implementation of the regulations contained in this Division will significantly move toward accomplishing this goal.

##### Sec. 34-902 Administration

The San Antonio Water System (SAWS) shall be responsible for the administration of this Division. The administrative official for the purpose of this Division shall be the President/CEO of SAWS, and his Vice-Presidents and Department Directors insofar as they may be charged by the President/CEO and/or the provisions of this Division with duties and responsibilities with reference thereto. Specifically, but without limitation, the Watershed Protection & Management Department of the San Antonio Water System shall ordinarily administer and enforce the provisions of this Division as directed by the President/CEO. The Planning Department, Public Works Department, and other appropriate departments of the City of San Antonio, and the San Antonio Water System shall coordinate respective activities and cooperate to provide efficient and effective administration and enforcement of this Division.

##### Sec. 34-903 Compliance and Violations

###### (a) Compliance.

All development located within the area defined as the Edwards Aquifer Recharge Zone over which the City of San Antonio may exercise its jurisdiction, including such areas: within the corporate limits of the City, within the extraterritorial jurisdiction of the City where applicable, and outside the territorial limits of the City and within Bexar County, as allowed by law, must comply with the provisions of this Division.

###### (b) Violations

Any act or omission contrary to the requirements or directives of this Division, or any breach of any duty imposed by this Division shall constitute a violation hereof.

##### Sec. 34-904 Abrogation and Greater Restrictions

This division is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where the language of this division conflicts with language used elsewhere in this code, that which imposes the more stringent restrictions shall prevail.

**Sec. 34-905 - 34-906. Reserved**

**Sec. 34-907 Interpretation**

In the interpretation and application of this division, all provisions contained herein shall be:

- (a) considered as minimum requirements;
- (b) liberally construed in favor of the governing body; and
- (c) deemed neither to limit nor repeal any other powers granted under State law.

**Sec. 34-908 Definitions**

For the purpose of this Division, the following terms shall be defined by meaning given each, as follows:

*Affiant:* The person, as that term is defined herein, which assumes financial and legal responsibility for the maintenance, operation, and effectiveness of structural controls, and the performance of required monitoring of surface water, related to a development for which an affidavit is filed pursuant to Section 34-911 of this Division.

*Best Management Practices (BMP):* An effective integration of stormwater management systems, with appropriate combinations of landscape conservation, enhancement, structural controls, impervious cover, schedules of activities, prohibitions of practices, maintenance procedures and other management practices which provide an optimum way to convey, store and release runoff, so as to reduce peak discharge, remove pollutants, and enhance the environment.

*Center line:* The center line of the waterway refers to existing topographically defined channels. If not readily discernible, the center line shall be determined by, the "low flow line" whenever possible; otherwise by the center line of the two-year floodplain.

*Commercial development:* Any lot, parcel, or tract, not to be used as single or multi-family residential, recreational, open space or agricultural.

*Degradation:* Pollution of a representative sample of water which unreasonably reduces the quality of such water. The quality of a representative sample of water is unreasonably reduced when such water is rendered harmful, detrimental, or injurious to humans, animal life, vegetation, or property or the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

*Detention:* The temporary storage of storm runoff, which is used to control the peak discharge rates, and which provides gravity settling of pollutants.

*Detention time:* The amount of time a parcel of water actually is present in a stormwater basin.. Theoretical detention time for a runoff event is the average time a parcels of water reside in the basin over the period of release from the BMP.

*Development.* Buildings, roads and other structures; construction; and excavation, dredging, grading, filling and clearing or removing vegetation associated with residential, recreational, commercial, industrial or institutional construction.

*Edwards Aquifer Recharge Zone (EARZ).* 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).

*Filtration Basin:* Filtration basins are secondary treatment structures that follow sedimentation basins and release storm water runoff through a filter media to remove additional pollutants.

*First flush:* At least the first one-half inch of runoff from a storm event which flushes off and contains a disproportionately large loading of the accumulated pollutants from impervious and non-impervious surfaces.

*Floodplain Buffer Zone:* Lands and waters as defined in Section 34-913.

*Floodplain Preservation Area:* Lands and waters as established in Section 34-912(a).

*Ground Water:* Any water percolating below the surface of the ground.

*Impervious cover:* Roads, parking areas, buildings, pools, patios, sheds, driveways, private sidewalks, and other impermeable construction covering the natural land surface; this shall include, but not limited to, all streets and pavement within the subdivision. "Percent impervious cover" is calculated as the area of impervious cover within a lot, tract, or parcel or within the total site being developed, divided by the total area within the perimeter of such lot, tract, parcel or development. Vegetated water quality basins, vegetated swales, other vegetated conveyances for overland drainage, and public sidewalks shall not be calculated as impervious cover.

*Intermediate floodplain:* Any channel, creek, stream, branch, or watercourse for surface water drainage that drains an area greater than three hundred twenty (320) acres but less than six hundred forty (640) acres.

*Major floodplain:* Any channel, creek, stream, branch or watercourse for surface water drainage that drains six hundred forty (640) acres or more.

*Minor floodplain:* Any channel, creek, stream, branch, or watercourse for surface water drainage that drains an area greater than one hundred (100) acres but less than three hundred twenty (320) acres.

*Non-Degradation:* The proper use of BMP's and pollution prevention criteria in activity so as to prevent Degradation as defined herein.

*Overland flow:* Stormwater runoff that is not confined by any natural or man-made channel such as a creek, drainage ditch, storm sewer, or the like.

*Peak-shaving:* Controlling post-development peak discharge rates to pre-development levels by providing temporary detention in a BMP.

*Person:* Any natural person, corporation, partnership, joint venture, association (including home owner's or neighborhood associations), trust, or any other entity recognized by law.

*Pollutants:* Any element, chemical, compound, organism or material which alters the chemical, physical, biological, and or radiological integrity of water.

*Pollution:* The alteration of the physical, thermal, chemical or biological quality of, or the contamination of, any water.

*Sedimentation basins:* Sedimentation basins remove pollutants by creating conditions under which suspended solids can settle out of the water column.

*Streamflow*: Water flowing in a natural channel, above ground.

*Structural Controls*: A range of pollution prevention best management practices ranging from vegetated buffers to on-site runoff detention and treatment facilities.

*Swale*: A natural depression or wide shallow ditch used to temporarily store, route, or filter runoff.

*Watershed Protection & Management Department (WPMD)*: The department within the San Antonio Water System (SAWS) designated to apply the provisions of this Section.

## **SUBDIVISION B. Violations and Enforcement**

### **Sec. 34-909 Violations, Defenses and Enforcement**

#### **(A) Violations**

In addition to the violations identified in Subdivision A of this Division, the following described individual acts or omissions shall constitute separate and actionable violations of this Division:

- (a) It shall be a violation of this Division for any person to recklessly, negligently, knowingly, or intentionally commit any act or allow any condition to exist which causes degradation of surface water which:
  - (1) is discharged from any development; and
  - (2) flows over an area within the EARZ.

*COMMENTARY: It is not the intent of this Division to place an unreasonable burden on any landowner or to require any person to treat degraded surface water which originates entirely outside their property. Also, these regulations are not intended to prohibit non-polluting discharges from fire hydrant flushing, fire fighting, uncontaminated groundwater, or potable water sources.*

#### **(B) Enforcement**

##### **(a) Granting of Enforcement Authority to SAWS**

1. The President/CEO of SAWS is hereby granted the authority to designate qualified SAWS personnel to enforce this Division in the manner and to the extent allowed by law.
2. The President/CEO is specifically granted the authority to designate qualified SAWS personnel to file notices of violations of this Division and to take all necessary actions to file complaints with the Municipal Prosecutor's Office of the City of San Antonio, or other prosecuting authority for violations of this Division.

##### **(b) Notice of Violation and Response.**

Pursuant to the responsibility established in Subsection (a) of this Section and Section 34-902, above, whenever the Watershed Protection & Management Department, believes that any person

has violated or is violating any provision of this Division, the Watershed Protection & Management Department may serve (either personally or by registered or certified mail) upon such person a written notice stating the nature of the alleged violation. The recipient of a violation notice issued under this Section must respond to the notice in writing to the Watershed Protection & Management Department within fifteen (15) working days from the receipt of such notice. Should the recipient of a violation notice fail to respond in writing to the Watershed Protection & Management Department within the initial fifteen (15) working day response period as required by this Section, the recipient of the notice shall be deemed to have admitted responsibility for the violation.

**(c) Requirements of Response to Notice of Violation**

The response to a violation notice shall be in writing, and shall, at a minimum, include the following information:

- (1) A statement as to which of the violation(s) are being admitted by the respondent;
- (2) A statement as to which of the violation(s) are being contested by the respondent; and,
- (3) The grounds on which the respondent denies responsibility for each contested violation.

**(d) Grant of Authority to Pursue Legal Remedies**

The SAWS Legal Department is hereby granted the authority to seek legal and/or equitable remedies for violations of this Division, including the filing of criminal charges. For the purpose of enforcing this Division the SAWS's Environmental Counsel shall represent the City of San Antonio in civil enforcement actions, by and through the San Antonio Water System, and is hereby authorized to seek legal and/or equitable remedies against any person which is reasonably believed to be violating or have violated this Division. A legal proceeding prosecuted under this division does not constitute a waiver by the San Antonio Water System of any right the City of San Antonio may have to join in a legal action originating from an alternative source of law. The San Antonio Water System may commence such actions for appropriate legal and/or equitable relief in courts having proper jurisdiction and may seek civil penalties and any other legal or equitable relief available under common law. Chapter 54 of the Texas Local Government Code, or any other applicable local, state, or federal code or statute.

**(e) Penalties**

**(1) Criminal** - A conviction for violation of this Division shall constitute a class C misdemeanor. A person convicted of a violation of this division shall be fined a minimum amount of not less than \$200.00 per violation and a maximum amount of not more than \$2000.00 per violation. Each violation of a particular section of this division shall constitute a separate offense, and each day an offense continues shall be considered a new violation for purposes of enforcing this division.

**(2) Civil** - A civil penalty in an amount not to exceed \$1,000.00 per violation of this division may be imposed. However, a civil penalty in an amount not to exceed \$5,000.00 per violation may be imposed for violations which cause pollution of waters flowing into a channel, stream or other conveyance which drains into or is a part of the stormwater sewer system owned or controlled by the City of San Antonio. Each violation of a particular section of this division shall constitute a separate offense, and each day such an offense continues shall be considered a new violation for purposes of assessing civil penalties and enforcing this division.

**(f) Authority of City Attorney to Enforce.**

The grant of the authority set out this Section shall in no way diminish the authority and responsibility of the office of the City Attorney to insure that this Division is properly and diligently enforced, to prosecute violations of this Division, and to defend the legality of this Division if challenged.

**SUBDIVISION C. Letter of Certification**

**Sec. 34-910. Letter of Certification required.**

No development shall be undertaken on any land, tract, parcel, or lot which is within the boundaries of the Edwards Aquifer Recharge Zone and which is subject to regulation by this Division unless and until a Letter of Certification is issued by the Watershed Protection & Management Departments of the San Antonio Water System to the owner or developer of such property. A Letter of Certification issued under this Division shall expire if not utilized within three years from the date the Letter of Certification was issued.

**Sec. 34-911. Application for Letter of Certification; Contents**

Application for a Letter of Certification required under Section 34-910 shall be submitted to the Watershed Protection & Management Department and shall be accompanied by a site development plan. The application and site development plan shall contain the following information unless the Watershed Protection & Management Department determines that, due to the scope and nature of the proposed development, some of the information is unnecessary:

- (a) The date, scale, north point, and key plan showing the location of the tract on which the development is to take place.
- (b) The existing boundary lines and acreage of the tract on which the development is to take place, and the common boundary lines and names of the owners of adjacent properties.
- (c) Identification of all Floodplain Preservation Areas, floodplain buffer zones, significant recharge features and buffer zones, and all such other areas with restrictions as required by this article.
- (d) A detailed erosion/sedimentation control plan and construction sequencing plan required by Section 34-975.
- (e) A detailed drainage plan and street layout that comply with the requirements of this division.
- (f) Engineering drawings showing compliance with the applicable requirements of this division for control strategies on development.
- (g) A report, site plan, and other relevant information addressing the Best Management Practices as required by Sections 34-965 through 34-975.
- (h) A topographic map, drawn to a scale of one hundred (100) feet to one inch, or in an appropriate scale. The map should display, according to the best information available, topographic information and features (including, but not limited to, faults and fractures along waterways and sinkholes), and the floodplain preservation areas.

- (i) The location, type of use, and total percentage of proposed and existing impervious cover on the site, in conformance with this Division.
- (j) Location of all temporary and permanent runoff detention basins, constructed and altered waterways and other physical facilities to be installed to comply with the terms of this division.
- (k) An affidavit from the appropriate affiant showing accepting legal and financial responsibility for structural controls, maintenance cost, monitoring, and remediation..
- (l) Final plans for underground utility installation shall be submitted with the site development plan and shall show minimum construction corridor widths.
- (m) Location of all monitoring stations, sample points or other significant devices used in measuring or assuring water quality.
- (n) Any baseline data from surface water samples required to be taken or maintained under regulations established by the San Antonio Water System.
- (o) A maintenance plan which provides the proposed schedule and details of maintenance which will be performed to ensure the proper operation and effectiveness of all control structures.
- (p) Special notes or attachments as may be required by other Sections of this Division.

The site plan required by this Section shall be sealed by a registered engineer and by a registered landscape architect with regard to elements of the plan within their respective disciplines. In the event a site plan is amended by an applicant, the above requirements, (a) through (p) on the original plan, must be updated to the extent they are affected by the amendment.

#### **SUBDIVISION D. Pollution Prevention Criteria**

##### **Sec. 34-912. Floodplain Preservation Area**

##### **(a) Floodplain Preservation Area Definition**

(1) Minor, intermediate and major floodplain shall be designated for any channel, creek, stream, branch, or watercourse within the Edwards Aquifer Recharge Zone having a watershed greater than 100 acres. Minor, intermediate and major floodplain shall be defined as follows:

<u>Floodplain</u>	<u>Drainage Area (acres)</u>
<b>Minor</b>	<b>100-320</b>
<b>Intermediate</b>	<b>320-640</b>
<b>Major</b>	<b>over 640</b>

- (2) The floodplain delineation shall be based on a 100 year frequency, a channel in its unaltered state, and shall assume conditions consistent with the City of San Antonio floodplain regulations contained in Chapter 35 of this Code. Where such floodplains are not designated on maps of the City of San Antonio, mapping showing such flood plain features shall be submitted as an element of the requirements of Section 34-911 hereof.

**(b) Allowable Activities in Floodplain Preservation Areas:**

The Floodplain Preservation Area shall remain free of all construction activity, development, and alterations except for the following:

- (1) Arterial, collector and residential street crossings only as provided below:
  - a. A major floodplain may be crossed by arterial streets that are identified on the City of San Antonio Major Thoroughfare Plan as approved by City Council; provided however, that the arterial street is constructed in accordance with standards provided for in Section 34-965.
  - b. An intermediate floodplain may be crossed by arterial and collector streets, provided, however, that the arterial or collector streets are constructed in accordance with standards provided for in Section 34-965.
  - c. A minor floodplain may be crossed by arterial, collector, or local residential streets, provided however, that such streets are constructed in accordance with standards provided for in Section 34-965.
- ~~(2) Utilities as provided by subsection (c) below.~~
- (3) Fences that do not obstruct flood flows.
- (4) Public and private parks and open space, with development in the parks and open space limited to trails and facilities (other than stables and corrals for animals) for hiking, jogging, non-motorized biking, and nature walks.
- (5) Water quality or flood control systems with minimum disruption.
- (6) Where a floodplain has been altered by a manmade activity such as a highway, railroad etc. then the floodplain can be remediated to its natural limits.
- (7) Public projects that are for the public benefit such as projects to enhance recharge, provide flood prevention, and other capital improvements are exempt from these requirements.

**(c) Permitted Utility/Construction**

- (1) All underground utilities, other than wastewater, shall be located outside the Floodplain Preservation Area, except for crossings (which should incorporate shared trenching where practical), and shall comply with the provisions of Chapter 35 of this Code (UDC).
- (2) At the time of site development plan review, the director of the Watershed Protection & Management Department shall make a report to the director of wastewater management on any significant environmental impact, with an emphasis on protecting potential recharge, and possible alternatives related to wastewater line locations in the Floodplain Preservation Area. Construction within the ordinary high water mark is discouraged unless approved by the San Antonio Water System upon consideration of reports by the Watershed Protection & Management Department.

**Sec. 34-913. Floodplain Buffer Zone.**

- (a) Floodplain buffer zones (FBZ) shall be established parallel to all Floodplain Preservation Areas. The outer perimeter of each FBZ shall extend outward from the outer boundaries of the Floodplain Preservation Area, based

on the appropriate slope, in accordance with the following table:

<b>%Slope</b>	<b>0-2.5</b>	<b>&gt;2.5-5.0</b>	<b>&gt;5.0-7.5</b>	<b>&gt;7.5-10.0</b>	<b>&gt;10.0-12.5</b>	<b>&gt;12.5</b>
<b>Buffer Width (ft)</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>	<b>100</b>

The appropriate slope will be determined by taking the average slope of the first 50ft. of buffer width from the floodplain preservation area. In no case shall the length over which the average is determined exceed 300 feet; and, in no event shall the buffer zone exceed the extent of the watershed.

- (b) No impervious cover will be allowed in the buffer zones except as outlined in Subsection (c) below.
- (c) Construction activities in the buffer zones shall be restricted to the activities allowed in Section 34-912.

**Sec. 34-914. Drainage Area**

- (a) The Floodplain Preservation area shall be extended to the EARZ drainage area in the Extra-Territorial Jurisdiction (ETJ). This floodplain preservation area will be applied to creeks with watersheds greater than 300 acres and the allowable activities will be as described in Section 34-912 (b) Allowable Activities in Floodplain Preservation Area.
- (b) The Floodplain Buffer Zone shall be required adjacent to the Floodplain Preservation area using the buffer width formula established in this Division. The maximum impervious cover in the Drainage Area Buffer Zone shall be 10%. This requirement is considered to be more flexible in the drainage area than in the Recharge Zone.
- (c) The regulations contained in this Section shall not apply to any activity allowed by a floodplain development permit issued before the effective date of this Division, or for which application was made before the effective date of this Division.

**Secs. 34-915 - 34-919. Reserved**

**Sec. 34-920. Recharge Feature Protection and Buffer Zone.**

Within the Edwards Aquifer Recharge Zone, the applicant shall identify potential recharge features on the development plan which provide a conduit from the earth's surface to subsurface water.

**(a) Significant Recharge Features.**

- (1) Sealing of significant recharge features shall be prohibited.

**(b) Significant Recharge Feature Buffer Zone.**

- (1) A buffer area will be placed surrounding "significant" recharge features which will be maintained in a natural condition. The width of the buffer area shall be based on the requirements of Section 34-913, based on measurements from the outer perimeter of the recharge feature, according to the following chart:

<b>%Slope</b>	<b>0-2.5</b>	<b>&gt;2.5-5.0</b>	<b>&gt;5.0-7.5</b>	<b>&gt;7.5-10.0</b>	<b>&gt;10.0-12.5</b>	<b>&gt;12.5</b>
<b>Buffer Width (ft)</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>	<b>100</b>

- (2) "Significant" features are those defined as "high concern features" by present TNRCC regulations.

**(c) Additional Recharge Feature Protection.**

SAWS shall require the identification of significant recharge features and shall prescribe protective measures deemed reasonable and necessary to eliminate the entry of pollutants into subsurface water through such recharge features. Whether on or off-site, protective measures include but are not limited to: 1) additional buffer zones covered with grass or other appropriate vegetation. 2) installation of diversion methods or structures outside the buffer zone, 3) termination of the point source activity which creates the pollution hazard, and 4) removal of substances and objects from the recharge feature. The protective measures prescribed together with the date by which such measures must be completed shall be set forth in writing and sent to the landowner(s) involved by certified mail, return receipt requested. The landowner shall take the corrective and protective actions prescribed by SAWS.

**Secs. 34-921 - 34-924. Reserved.**

**Sec. 34-925. Pollution Prevention Criteria**

For the purpose of regulating activities within the areas regulated by this Division, while acknowledging and respecting the interests of property owners, properties in the area affected by this Division shall be classified according to the following three Categories:

**CATEGORY 1:** Any property which prior to the effective date of this Division was the subject of a valid permit as defined in Section 481.142 of the Texas Government Code, and to which Sections 481.141 et seq. of said Code apply. This shall include, but is not limited to, any of the following:

- (a) a POADP; or
- (b) a Plat or Plat application

**CATEGORY 2:** Any property which is located within the corporate limits of the City of San Antonio, that is not in Category 1;

**CATEGORY 3:** All property located within the Edwards Aquifer Recharge Zone which is within the extraterritorial jurisdiction of the City of San Antonio, and which does not meet the requirements of Category 1 or Category 2, above.

**Sec. 34-926. Pollution Prevention Criteria in Category 1.**

- (a) Unless otherwise specified in this Division, the development criteria and regulations of the City of San Antonio which were in effect at the time the original application for the permit was filed pursuant to, and as defined by Section 481.141 et. seq. of the Government Code, shall govern the development of that property classified as Category 1 because of the filing of said application.
- (b) Property, which satisfies the Category 1 requirements of Section 34-925 because it was the subject of an application submitted or action taken before the effective date of this Division, will be automatically placed in its appropriate Category after the application or action expires pursuant to the laws in effect at the time the application was submitted or the action was taken.
- (c) To the extent allowed by law, if the valid permit, as defined by section 481.142 of the Texas Government Code, which caused the property to be placed in Category 1 is substantially altered then the Category 1 status of such property, or portion thereof, affected by the following action(s) shall be lost, unless such property is in Category

1 by reason of another valid permit, and the property shall be appropriately categorized pursuant to Section 34-925.

In applying this provision "substantially altered" shall be considered as any of the following actions if done through the initiative of the property owner or the property owner's agent, unless it is shown that the substantial alteration(s) do not increase the potential for degradation as that term is defined herein:

1. Change in arterial or collector roadways;
  2. Change in land use;
  3. Change in drainage plan;
  4. Change in projected gross impervious cover; or
  5. Change in land use intensity.
- (d) A developer may voluntarily go to Category 2 or 3 as appropriate, with the ability to transfer platting fees to the new Category 2 or 3 development.
- (e) If property is classified as Category 1 under Section 34-925, then the San Antonio Water System shall, when commenting to TNRCC regarding an application for a water pollution abatement plan (WPAP), recommend that the WPAP include, at a minimum, the elements contained in Section 34-911 of this Division.

**Secs. 34-927 - 34-929. Reserved.**

#### **34-930. Pollution Prevention Criteria in Category 2**

The following criteria and restrictions shall apply to all regulated activity on property categorized as Category 2 by Section 34-925 of this Division:

**(a) Single-Family Residential**

The projected impervious cover for all single-family residential development of Category 2 property shall not exceed a maximum of 30% gross impervious cover.

**(b) Multi-Family Residential**

The projected impervious cover for multi-family residential development of Category 2 property shall not exceed a maximum of 50% gross impervious cover.

**(c) Commercial**

The projected impervious cover for commercial development of Category 2 property shall not exceed a maximum of 65% gross impervious cover.

**(d) Special Conditions**

Development activities regulated by this section shall be subject to the following special conditions:

- (1) Within a multi-use project, impervious cover limits may be exceeded in a given area if compensated for in another area which is within the same overall project

and which is dedicated on a simultaneous basis.

- (2) The allowable impervious cover in this section does not override requirements for significant recharge feature protection buffer zones or flood plain preservation areas and buffer zones.
- (3) Additional control strategies as described in Subdivision E. are required on all multi-family and commercial development.
- (4) Non-Structural Best Management Practices as described in Subdivision E. are required for all single family developments
- (5) Must be designed to prevent degradation.

**(e) Monitoring**

Monitoring of runoff for pollutant concentrations and loadings shall be required, according to standards established by the SAWS pursuant to its stormwater program and/or NPDES permit process, including but not limited to, baseline assessments, appropriate pollution prevention design, performance inspections, and non-degradation requirements. The monitoring methods, protocol and expense will be determined by SAWS at the time of permit review and approval. Expenses for monitoring will be the responsibility of the affiant.

**(f) Major Intersection Nodes (node)**

For the purpose of this Section a *node* shall mean a rectangular area centered on a major intersection, and having boundaries based on a linear distance from the outer limits of the right of ways (ROW) of the intersecting streets, roads, of highways (*nodal distance*). The length and width of the node is equal to the ultimate rights-of-way width of the street plus the nodal distance on each side of the street ROW, as determined by the Watershed Protection & Management Department and the City of San Antonio. Percentages of impervious cover in Major Intersection Nodes may exceed the limits imposed elsewhere in this Division, but shall be limited as follows:

<u>TYPE OF INTERSECTION</u>	<u>NODAL DISTANCE</u>	<u>COMMERCIAL IMPERVIOUS COVERAGE</u>
Hwy - Hwy Intersection	2500'	80% Maximum
Hwy - Arterial Intersection	1000'	75%Maximum

Secs. 34-931 - 34-934. Reserved.

**34-935. Pollution Prevention Criteria in Category 3**

The following criteria and restrictions shall apply to all regulated activity on properties categorized as Category 3 by Section 34-925 of this Division:

**(a) Single-Family Residential**

The projected impervious cover for all single-family residential development of Category 3 property shall not exceed a maximum of 15% gross impervious cover, or the maximum impervious cover specified in accordance with Subsection (d) of this Section.

**(b) Multi-Family Residential**

The projected impervious cover for multi-family residential development of Category 3 property shall not exceed a maximum of 15 % gross impervious cover, or the maximum impervious cover specified in accordance with Subsection (d) of this Section.

**(c) Commercial -**

The projected impervious cover for commercial development of Category 3 property shall not exceed a maximum of 15% gross impervious cover, or the maximum impervious cover specified in accordance with Subsection (d) of this Section.

**(d) Additional Impervious Cover**

The maximum impervious cover requirements of sub-section (a), (b), and (c) above shall apply unless the property owner or his agent provides clear and convincing evidence, which at a minimum shall consist of engineering documents submitted under the seal of a registered engineer, that the proposed impervious cover in excess of 15 % gross will not cause degradation as defined herein.

**(e) Multi-use Project**

Within a multi-use project, impervious cover limits may be exceeded in a given area if compensated for in another area of the overall project if dedicated on a simultaneous basis.

**Secs. 34-936 - 34-944. Reserved.**

**Sec. 34-945. Multi-Category Developments.**

Impervious cover allowances for development identified in Sections 34-925 thru 34-935 above, shall be prorated according to the categories within those areas when multi-category development is proposed.

**Secs. 34-946 - 34-959. Reserved.**

**SUBDIVISION E. Additional Control Strategies**

**Sec. 34-960 Detention, Sedimentation and Filtration for Water Quality Control.**

(a) All multi-family and commercial developments of land with projected impervious cover exceeding fifteen (15) percent shall comply with the provisions of this division.

(b) All multi-family and commercial development shall install detention, sedimentation and filtration basins in accordance with technical guidelines acceptable to SAWS, and which include at least the following design and control features:

(1) At a minimum, the water quality basins and drainage into the basins shall be designed to capture and isolate at least the first ½" of runoff. All subsequent runoff in excess of the design capacity of the

basins shall bypass the basins and remain segregated from the contained runoff waters including those waters in a peak shaving basin if required.

- (2) Input to and release from water quality basins shall utilize vegetated swales and/or overland flow dispersion measures where possible.

- (c) No infiltration trenches will be allowed on the Edwards Aquifer recharge zone.

**Secs. 34-961 - 34-964. Reserved.**

**Sec. 34-965. Street improvements.**

(a) All roadway projects with anticipated, or actual Average Daily Traffic (ADT) volumes in excess of 1,500 vehicles per day shall be required to design, construct, operate, and maintain sedimentation and filtration basins to capture and treat the first flush runoff from the roadway. In addition, all roadway projects with anticipated or actual ADT volumes in excess of 30,000 vehicles per day shall be required to design, construct, operate, and maintain hazardous materials traps (HMT's) that will capture, contain and isolate a hazardous spill on the roadway facility. The minimum volume of the HMT's shall be 10,000 gallons and they shall contain a self-draining outlet and an emergency cut off to contain any spilled materials.

(b) All bridge structures with ADT in excess of 1,500 vehicles per day shall be prohibited from discharging directly to the Floodplain Preservation Area from the roadway surface. These bridges shall be designed to transport the stormwater off the bridge structure and into a sedimentation pond, filtration pond, or equivalent system as approved by SAWS as long as it provides equal water quality protection.

(c) Street maintenance projects that do not increase the impervious cover to beyond that of the original street shall be exempt from the provisions of this Section.

**Secs. 34-966 - 34-969. Reserved.**

**Sec. 34-970. Best Management Practices (BMP's)**

All development plans for single family residential development of Category 2 or 3 property, as identified in Section 34-925, which are submitted to the Watershed Protection & Management Department, as required by this Division, shall contain sufficient planned BMP features to allow for the proper conveyance, storage and release of runoff, to adequately reduce peak stormwater discharge, and remove pollutants in a manner and to a degree which is acceptable to the Watershed Protection & Management Department. BMP's are features which provide effective integration of stormwater management systems, with appropriate combinations of landscape conservation, enhancement, structural controls, schedules of activities, prohibitions of practices, maintenance procedures and other management practices which provide an optimum way to convey, store, treat and release runoff, so as to reduce peak discharge, remove pollutants, and enhance the environment. All development plans submitted shall, at a minimum, incorporate all of the following BMP's:

- (a) **Vegetative Buffer Zones**

Buffer zones are vegetated strips of land used for temporary or permanent water quality benefits. Buffer zones are used to decrease the velocity of storm water runoff, which in turn helps to prevent soil erosion. The buffer

zone can be an area of vegetation that is left undisturbed during construction, or it can be newly planted. Buffer zones may be used in addition to or as a substitute to other control strategies described in this Section. If vegetative buffer zones are used they shall be designed and reviewed in accordance with the standards established by the San Antonio Water System.

**(b) Water Conservation**

As part of the requirements for development, the applicant shall submit a Water Conservation Plan. Water conservation provides an alternative approach to the twin problems of increasing demand for water in a community and finding new water sources. The water conservation plan shall include as a minimum the following:

- (1) Identity of all water users;
- (2) Monitoring program to identify and repair leaks in water pipes;
- (3) Required installation of water efficient plumbing fixtures;
- (4) Description of a water efficient landscape program;

**(c) Integrated Pest Management Programs**

A pesticide and fertilizer management plan shall be submitted that provides general information regarding proper use, storage, and disposal of pesticide and fertilizers that are commonly available. In addition, the plan shall provide information regarding what types of pesticides and fertilizers are most likely to be used for the various types of development. The plan shall also delineate which types of pesticides and fertilizers should be avoided.

**Secs. 34-971 - 34-974. Reserved.**

**Sec. 34-975. Construction Sequencing and Erosion Controls.**

(a) A comprehensive and detailed erosion and sedimentation control plan and report shall be submitted with the application. The report shall specify maintenance of controls. All items noted in the erosion control and construction sequencing plans shall also be included in the final construction plans.

- (1) The report shall include the following items:
  - a. Construction sequencing as it relates to placement, maintenance, removal of temporary erosion controls, and restoration measures. The sequencing plan schedules these items in the overall scheme of development.
  - b. A list of such erosion controls and maintenance thereof.
  - c. Slope stabilization techniques to be employed.
  - d. Restoration plans including vegetative types.
- (2) The erosion control and construction sequencing plan shall include the following items:

- a. Location of temporary erosion controls with maintenance note. The plan shall show the physical details of the controls.
  - b. A construction sequencing list, including the timing of the use of various controls in relation to steps in the construction.
  - c. Restoration techniques and acceptability note.
- (b) The development shall comply with the erosion control and restoration measures Guidelines as identified by the San Antonio Water System.
- (c) The clearing of land shall conform to the following criteria:
- (1) No clear or rough-cutting shall be permitted prior to the issuance of a Letter of Certification by the Watershed Protection & Management Department. Limited clearing and rough-cutting for soil testing and surveying is allowed.
  - (2) No clearing or rough-cutting for purposes other than paragraph (1) above and construction of temporary erosion and sedimentation controls as per approved plans shall be permitted until these controls are in place.
  - (3) Clearing for the temporary storage of spoil or construction equipment, or for the permanent disposal of fill material or spoils, shall be so designated on the site plan.
  - (4) Vegetation within any Floodplain Preservation or Buffer, or Significant Recharge Buffer Area should not be disturbed except for purposes consistent with development activity permitted by Section 34-912.
  - (5) If an applicant does not comply fully with the approved construction sequencing and erosion control plan, the Watershed Protection & Management Department shall notify him in writing that the City may correct and revegetate the disturbed area at his expense, unless he does so within sixty (60) days after the date on the notice, or unless applicant provides erosion and sedimentation controls and the continuing maintenance thereof acceptable to the Watershed Protection & Management Department.
  - (6) The requirements of this Division shall not apply to ordinary vegetation management specifically regulated elsewhere by this code. This sub-section is not intended to provide a defense for or waiver of any other requirements of this code, including but not limited to those contained in Article V of Chapter 14.

Secs. 34-976 - 34-979. Reserved.

## **SUBDIVISION F. Variance and Appeal**

### **Section 34-980 Variance Procedure**

**(a) Variances.** Variances to the terms and requirements of Subdivisions A, C, D, or E, of this Division may be granted by the San Antonio Water System where a literal enforcement of the provisions of this Division will result in an unnecessary hardship. No variance may be granted unless:

- (i) Such variance will not be contrary to public interest;
- (ii) Such variance will not substantially or permanently injure the appropriate use of adjacent land which is regulated by this Division;
- (iii) Such variance will be in harmony with the spirit and purpose of this Division;
- (iv) The plight of the owner of the property for which the variance is sought is due to unique circumstances existing on the property, and the unique circumstances were not created by the owner of the property and are not merely financial, and are not due to or the result of general conditions of the Category or geographical area in which the property is classified or located;
- (v) The variance will not substantially weaken the general purposes of this Division or the regulations herein established for the regulated area of the recharge zone;
- (vi) The variance will not cause unreasonable disruption to the natural terrain;
- (vii) The variance granted is limited in scope of relief to only that which is necessary to relieve the hardship condition.

**(b) Request for variance.** A person who feels they qualify for a variance, under the conditions outlined in Subsection (a) above, from the literal application of this Division to their property may request a variance from such application of one or more of the provisions of this Division. All requests for variances shall be made in writing to the Watershed Protection & Management Department of the San Antonio Water System and shall include:

- (i) the subject of the requested variance, and
- (ii) the justification for granting a variance.

**(c) Burden.** The party requesting a variance has the burden of demonstrating that sufficient evidence exists for the granting of a variance to application of this Division, and the Watershed Protection & Management Department shall consider and provide a written response to all such requests for variances within twenty (20) working days from the date a valid request for variance is received. The Watershed Protection & Management Department shall serve its response by certified mail, return receipt requested, or by hand delivery.

**(d) If granted.** If a variance is granted as requested, or with modification, the recipient of the variance may develop their property according to all applicable provisions of this Division, to the extent such provisions have not been waived or modified by the variance, and according to the applicable provisions contained in Chapter 35 of this Code.

**(e) Term.** If a variance granted under this section shall have a term from the date of issuance, then any activity which would otherwise be prohibited by this division, except for the existence of such a variance, shall not be allowed to continue after the expiration of the specified term.

**(f) Appeal.** Any person who properly requests a variance pursuant to this section, and objects to the decision of the Watershed Management and Protection Department which denies all or part of the relief requested may appeal such denial to the President/ CEO of SAWS by filing a request for appeal within ten (10) working days from the date notice of denial is received by the requesting party. All such appeals shall be made in writing to the Office of the President/CEO of the San Antonio Water System and shall include, all pertinent information which the person requesting the appeal wishes to be considered. The President/CEO may require additional information from, or request a meeting with the person making the appeal. The written decision of the President/CEO, or authorized designee, on the appeal shall be rendered within fifteen (15) working days from the date the appeal is received by the President/CEO, and shall be delivered to the appealing party by certified mail, return receipt requested, or by hand delivery. If the

President/CEO, or authorized Designee fails to render an opinion on the appeal within the fifteen working day period, the relief requested in the appeal shall be considered to have been wholly denied.

**(g) City Council.** If the President/CEO of SAWS denies all or part of the relief requested in an appeal, the aggrieved party may make a final appeal to the San Antonio City Council by filing a notice of final appeal with the Office of the City Clerk for the City of San Antonio no later than the tenth day following the party's receipt of the written decision of the President/CEO from which the final appeal is brought, or the expiration of the 15 day period if no decision is rendered. A true and correct copy of the notice of final appeal must also be filed with the office of the President/CEO of SAWS which, upon receipt of such notice, shall immediately transfer copies of all documents and information relevant to the appeal to the Office of the City Clerk. The City Clerk shall schedule the hearing of the final appeal at the earliest regularly scheduled meeting of the City Council which will allow compliance with the requirements of the Texas Open Meetings Act. The decision of the City Council on the relief requested in a notice of final appeal from the application of this Division shall be considered final.

# **APPENDIX II**

## WATER QUALITY TASK FORCE RECOMMENDATIONS

**1. Notification and Education Program** - Alert landowners, potential buyers, appraisers, assessors and lessees of the risks inherent in certain land-use activities in the recharge zone. No activity, situation, structure or land use should be allowed which poses a threat to water quality and the public health, safety and welfare. Such conditions may arise from inadequate on-site sewage systems; inadequate sedimentation and erosion control measures; the absence or improper implementation of a spill containment plan for toxic and hazardous materials; the improper management of stormwater runoff; or any other situation found to pose a threat to water quality.

**2. Karst Assessment** - Perform an assessment of karst topography to investigate and identify subsurface voids, cavities, fractures or other discontinuities which could transmit pollutants to the Aquifer to pose environmental and public health concerns, or could result in sinkhole collapse. This assessment should clearly identify karst hazards and establish guidelines on the maintenance of the hydrology of the surface and subsurface, including nutrient management issues, sediment control, land use activity impacts, hazardous material storage and transportation, stormwater management controls, remediation issues, monitoring and reporting requirements and staff and enforcement requirements. The karst assessment would develop a user-friendly data base for identifying sensitive areas and karst hazards for use by developers in designing for pollution prevention and for the public in identifying areas in need of public acquisition, conservation easements, or other sensitive area protection strategy.

**3. Cumulative Impact Assessment**- Perform a Cumulative Impact Assessment. The Cumulative Impact Assessment is an investigation of impervious cover and pollutant loadings to date, the pollutant production for various land uses and the resultant annual pollution concentration in runoff during storm events, and the risk of access to the groundwater based on the characteristics of the land on which development has occurred or is proposed. The assessment should establish baselines for management of water quality on the recharge zone and upper watersheds. Additionally, the assessment should establish a method of basing further development approvals on overall cumulative impact on the Edwards Aquifer, risk to public health and safety and for fee and penalty assessments based on watershed impacts.

**4. Watershed Management Options** - Produce options for public management of pollution controls, including impervious cover and land use guidelines and criteria; cost-benefit analysis; public management costs and enforcement responsibilities,

staffing and budget requirements; costs, criteria and guidelines for nonstructural and structural alternatives; monitoring system and recommended enforcement assessments based on pollutant loading. Consider using impervious cover as foundation for NPDES rates to give incentive to reduce impervious cover over time.

**5. Recharge Zone Protection** - Establish a program for permanent protection of Recharge Zone in undeveloped state, through purchase, donation or conservation easement.

**6. Staff Geologist** - SAWS should hire a karst geologist, or other qualified professional, to review proposed development projects for accuracy and recommending corrective measures to promote pollution prevention.

**7. Hazardous Material Procedures** - The City should create a Hazardous Material Inventory and transportation route, Spill Response and Clean-Up program.

**8. State Coordination** - Immediately work with TNRCC to regulate the regional recharge Zone and Drainage Area based on non-degradation standards.

**9. Review** - Based on SAWS completion of the cumulative impact assessment, watershed management options and Karst data base, revisit impervious cover, structural controls, land transfer ratios and enforcement programs within 3 years.

**10. Plan Revision** - The WQTF recommends that the city revise the major thoroughfare plan and the Metropolitan Planning Organization Long Range Plan to reflect the changes required in this ordinance.

**11. Environmental Zones** - The WQTF recommends that the City obtain sponsorship and support for legislation establishing Environmental Zones or Land Bank Transfer Programs which provide incentives to property owners and developers to dedicate environmentally sensitive land within the Edwards Aquifer Recharge Zone.

**12. Planning Review** - City staff should review the plat application process and POADP performance conditions with regard to the impact of the new Chapter 34, Art. VI, Div. 6, regulations to determine if any changes in the process or conditions are needed, and brief Council within three months as to any necessary changes.

**13. Above Ground Storage Tanks (AST)** - Staff should consider proposing that AST's be made subject to an ongoing program of inspection and enforcement for pollution prevention similar to the program adopted by Council for UST's.