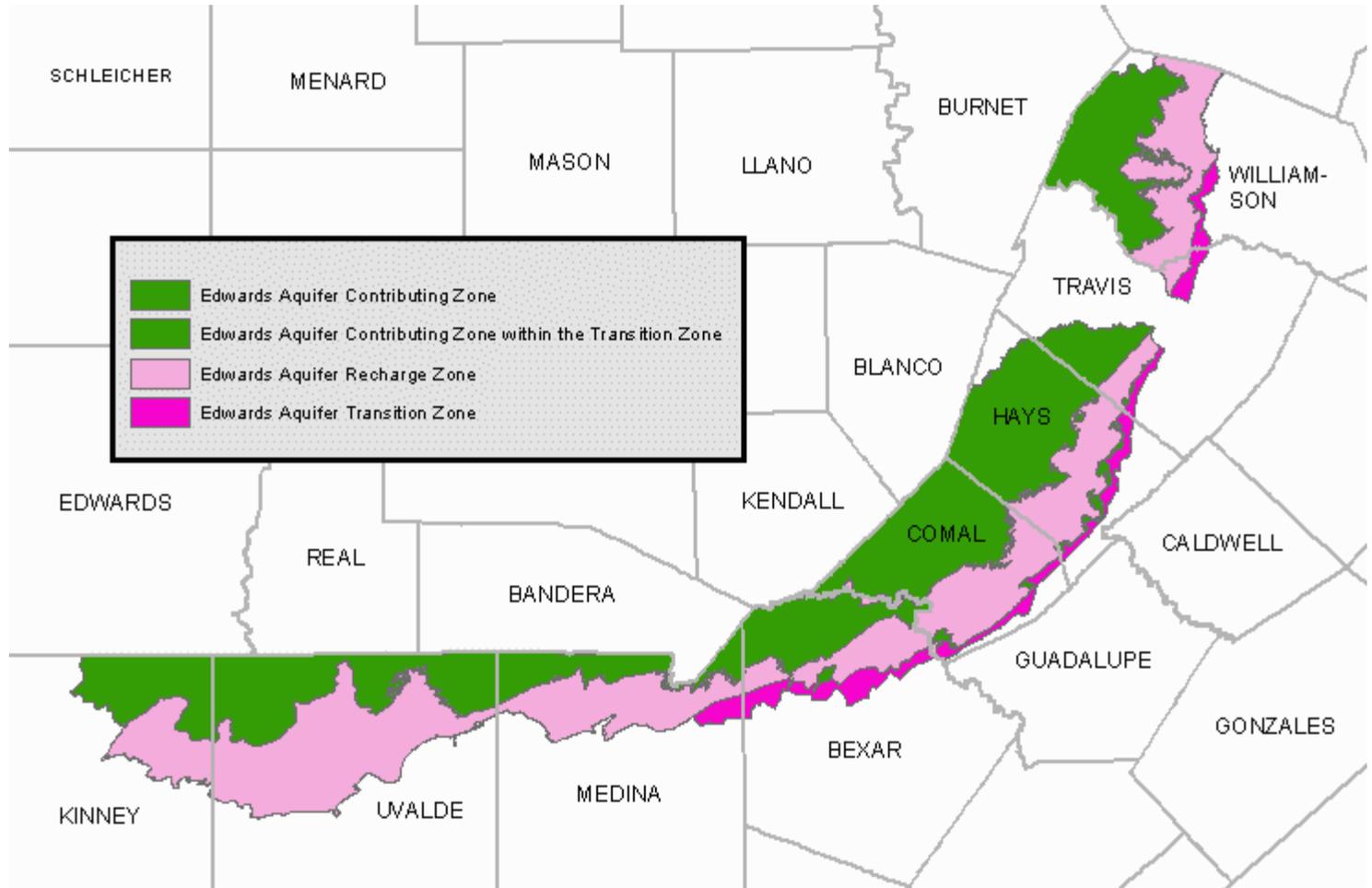


# Edwards Aquifer Recharge Zone - Chapter 213 Rules

## UTM Version



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The following text conforms with the hierarchy of data elements in the FGDC Content Standards for Digital Geospatial Metadata. This GIS layer supersedes all earlier versions of the Edwards Aquifer Recharge Zone Regulatory Boundary which may have been made by the Texas Commission on Environmental Quality (TCEQ).

## 1 IDENTIFICATION\_INFORMATION:

Citation:

Citation\_Information:

Originator: Texas Commission on Environmental Quality (TCEQ)

Publication\_Date: 20050901

Title: Edwards Aquifer Protection Program, Chapter 213 Rules - Recharge Zone, Transition Zone, Contributing Zone, and Contributing Zone Within the Transition Zone.

Geospatial\_Data\_Presentation\_Form: vector digital data

Publication\_Information:

Publication\_Place: Austin, Texas

Publisher: TCEQ

#### Description:

##### Abstract:

This dataset represents the geographic areas identified in TCEQ rules as being subject to regulation under the Edwards Aquifer Protection Program. The coverage was derived from existing official hard copy maps, containing regulatory boundaries based on previous geologic interpretation of the Edwards Aquifer Recharge, Transition, Contributing and Contributing Within the Transition zones, as defined in 30 TAC 213. This dataset contains lines, area features and zone types attributes extended to all 90 USGS 7.5-minute maps under TCEQ rules.

Effective September 1, 2005, amended 30 TAC 213 changes the designation of portions of four areas in northern Hays and southern Travis Counties. The commission adopts changes from transition zone to contributing zone within the transition zone, from transition zone to recharge zone and from recharge zone to transition zone. These changes were made to regulatory zone boundaries on the Oak Hill 7.5 Minute Quadrangle, the Mountain City 7.5 Minute Quadrangle, and the Buda 7.5 Minute Quadrangle.

Also effective September 1, 2005, with this amendment, the commission is adopting changes from transition zone to recharge zone, and contributing zone within the transition zone; in southern Hays and Comal Counties for areas along the eastern boundary of the recharge zone in the vicinity of the Blanco River, the City of San Marcos, the City of New Braunfels, the community of Hunter and the community of Garden Ridge. Changes are depicted on the Mountain City 7.5 Minute Quadrangle; on the San Marcos North 7.5 Minute Quadrangle; on the San Marcos South 7.5 Minute Quadrangle; on the Hunter 7.5 Minute Quadrangle; and on the Bat Cave 7.5 Minute Quadrangle.

The commission also adopted changes along the western boundary of the recharge zone in southern Hays and Comal Counties. Effective September 1, 2005, areas are changed from contributing zone to recharge zone in the Guadalupe River basin, and other areas in the Guadalupe River basin, and near Wimberley are changed from recharge zone to contributing zone. These changes occur on the Smithson Valley, Sattler, Devil's Backbone and Wimberley 7.5 Minute Quadrangles. Another area near Hays City was changed to recharge zone from contributing zone, and is changed accordingly in the Driftwood 7.5 Minute Quadrangle.

##### Purpose:

This dataset provides TCEQ regional office and public with information on Edwards Aquifer Protection areas and types, including changes made to the boundaries by the most recent rules revisions, according to 30 TAC Ch. 213 (1999). This coverage is to facilitate the eventual replacement of the hard copy maps, historically used to identify the geographic location of Edwards Aquifer Protection Program regulated areas. The coverage includes regulatory boundary data located on the following USGS 7.5 minute quadrangle maps:

Quad Name    Counties on Quad

Anhalt        Comal, Kendall

Austin East   Travis

Austin West   Travis

Bat Cave      Comal, Bexar

Bee Cave	Travis
Bergheim	Comal, Kendall, Bexar
Bertram	Burnet, Williamson
Boerne	Kendall
Brackettville NE	Kinney
Buda	Hays, Travis
Bull Waterhole	Kinney, Edwards
Bulverde	Bexar, Comal
Camp Bullis	Bexar, Comal
Castle Hills	Bexar
Chalk Bluff	Uvalde
Cobbs Cavern	Williamson
Comanche Waterhole	Uvalde, Medina
Concan	Uvalde
Deep Creek	Uvalde
Devil's Backbone	Comal, Hays
Ding Dong	Williamson, Bell, Burnet
Driftwood	Hays
Dripping Springs	Hays, Travis
Elm Mountain	Kinney
Fischer	Comal, Blanco
Flatrock Crossing	Uvalde, Medina, Bandera
Florence	Williamson
Georgetown	Williamson
Hammett's Crossing	Hays, Travis, Blanco
Helotes	Bexar
Henly	Hays, Blanco
Hunter	Comal, Hays
Hutto	Williamson
Jack Mountain	Bexar, Medina, Kendall, Bandera
Jarrell	Williamson, Bell
Jollyville	Travis, Williamson
Kickapoo	Kinney, Edwards

Caverns	
Knippa	Uvalde
Lacoste NE	Medina, Bexar
Laguna	Uvalde, Kinney
Lake Creek	Uvalde, Real
Leander	Williamson, Travis
Leander NE	Williamson
Liberty Hill	Williamson, Burnet
Longhorn	Bexar
Mager's Crossing	Uvalde, Real
Mahomet	Williamson, Burnet
Medina Lake	Medina, Bandera
Montell	Uvalde, Kinney, Edwards, Real
Mountain City	Hays
Mustang Valley	Medina
Mustang Waterhole	Uvalde, Kinney
Nameless	Travis, Williamson
New Braunfels East	Comal, Guadalupe
New Braunfels West	Comal, Guadalupe
Oak Hill	Travis, Hays
Payton	Hays, Comal, Blanco
Pflugerville West	Travis, Williamson
Pinto Mountain	Kinney
Quihi	Medina
Reagan Wells	Uvalde, Real
Riomedina	Medina
Rough Hollow	Hays, Comal
Round Rock	Williamson
Sabinal NE	Medina
Salmon	Kinney

Peak	
San Geronimo	Medina, Bexar, Bandera
San Marcos North	Hays, Caldwell
San Marcos South	Hays, Caldwell, Guadalupe
Sattler	Comal
Schertz	Bexar, Comal, Guadalupe
Sevenmile Hill	Uvalde
Shingle Hills	Travis, Hays
Signal Hill	Hays, Travis
Silver Lake	Kinney, Edwards
Smithson Valley	Comal
Spring Branch	Comal, Blanco, Kendall
Sycamore Mountain	Uvalde
Texas Mountain	Medina, Bandera
Timber Creek	Medina, Bandera
Travis Peak	Travis, Williamson, Blanco
Trio	Uvalde
Turkey Mountain	Kinney
Twin Hollow	Medina, Bandera
Utopia	Uvalde, Bandera, Real
Van Raub Weir	Bexar, Kendall, Williamson
Wimberley	Hays, Comal
Yeager Creek	Blanco, Hays
Youngsport	Williamson, Bell

#### Qualifications:

On the southern edge of the Camp Bullis 7.5 minute quadrangle, there is a small polygon formed by a line around Laurin Hill, Bush Hill, and the quadrangle boundary. This polygon was inadvertently left in after changes

to the Edwards Aquifer Recharge Zone boundary were made to the adjoining Castle Hills quadrangle. Also, in the vicinity of Cibolo Creek, the line for the Recharge Zone boundary does not match the line on the Bergheim 7.5-minute quadrangle.

On Austin West 7.5-minute quadrangle, the south line of the Recharge Zone does not match with the line on the Oak Hill 7.5-minute quadrangle.

On Bergheim 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the Camp Bullis 7.5-minute quadrangle in the vicinity of Cibolo Creek.

On Brackettville NE 7.5-minute quadrangle, the line of the Recharge Zone in the southeast corner does not match with the line on the Elm Mountain 7.5-minute quadrangle.

On Comanche Waterhole 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the Sabinal NE 7.5-minute quadrangle.

On Elm Mountain 7.5-minute quadrangle, the line of the Recharge Zone in the northeast corner does not match with the line on the Brackettville NE 7.5-minute quadrangle.

On Florence 7.5-minute quadrangle, the digitized line of the Contributing Zone deviates from the county line on the DRG. In this case, the digitized line is believed to be correct due to conflicting locations of the county line on the adjacent Ding Dong 7.5-minute quadrangle which was photo-revised later than Florence or Mahomet.

On Longhorn 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the Schertz 7.5-minute quadrangle.

On Oak Hill 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the Austin West 7.5-minute quadrangle.

On Mahomet 7.5-minute quadrangle, the digitized line of the Contributing Zone deviates from the county line on the DRG. In this case, the digitized line is believed to be correct due to conflicting locations of the county line on the adjacent Ding Dong 7.5-minute quadrangle which was photo-revised later than Florence or Mahomet.

On Quihi 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the Riomedina 7.5-minute quadrangle.

On Riomedina 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the Quihi 7.5-minute quadrangle.

On Sabinal NE 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the Comanche Waterhole 7.5-minute quadrangle.

On San Marcos North 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the Wimberley 7.5-minute quadrangle.

On Schertz 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the Longhorn 7.5-minute quadrangle.

On Wimberley 7.5-minute quadrangle, the line of the Recharge Zone does not match with the line on the San Marcos North 7.5-minute quadrangle.

On this coverage, polygons and lines that are known to be incorrect or mismatched must remain until the rules are amended, and all discrepancies are resolved.

Supplemental\_Information:

The purpose of the TCEQ Rule 30, Texas Administrative Code(TAC), Chapter 213 is to regulate activities having the potential for polluting the Edwards Aquifer and hydrologically connected surface streams in order to protect existing and potential uses of ground- water and maintain Texas Surface Water Quality Standards. The following definitions are founded under Chapter:

The Edwards Aquifer - portion of an arcuate belt of porous, waterbearing, predominantly carbonate rocks known as the Edwards (Balcones Fault Zone) Aquifer trending from west to east to north- east in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson Counties; and is composed of the Salmon Peak Limestone, McKnight Formation, West Nueces Formation, Devil's River Limestone, Person Formation, Kainer Formation, Edwards Group and Georgetown Formation. The permeable aquifer units generally overlie the less- permeable Glen Rose Formation to the south, overlie the less- permeable Comanche Peak and Walnut formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally. (30 TAC, § 213.3(8) )

Recharge Zone - area where the stratigraphic units constituting the Edwards Aquifer crop out, including the outcrops of geologic form- ations in proximity to the Edwards Aquifer where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge to surface waters into the Edwards Aquifer. ( 30 TAC, § 213.3(25) )

Transition Zone - 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, including portions of the Del Rio Clay, Buda Limestone, Eagle Ford Group, Austin Chalk, Pecan Gap Chalk, and Anacacho Limestone. ( 30 TAC, § 213.3(34) )

Contributing Zone - The area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer. The Contributing Zone is located upstream (upgradient) and generally north and northwest of the Recharge Zone for the following counties:

- (A) all areas within Kinney County, except the area within the watershed draining to Segment 2304 of the Rio Grande Basin;
- (B) all areas within Uvalde, Medina, Bexar, and Comal Counties;
- (C) all areas within Hays and Travis Counties, except the area within the watersheds draining to the Colorado River above a point 1.3 miles upstream from Tom Miller Dam, Lake Austin at the confluence of Barrow Brook Cove, Segment 1403 of the Colorado River Basin; and
- (D) all areas within Williamson County, except the area within the watersheds draining to the Lampasas River above the dam at Stillhouse Hollow reservoir, Segment 1216 of the Brazos River Basin. ( 30 TAC, § 213.22(2) )

Contributing Zone Within the Transition Zone - The area or watershed where runoff from precipitation flows downgradient to the Recharge Zone of the Edwards Aquifer. The Contributing Zone Within the Transition Zone is located downstream (downgradient) and generally south and southeast of the Recharge Zone and includes specifically those areas where stratigraphic units not included in the Edwards Aquifer crop out at topographically higher elevations and drain to stream courses where stratigraphic units of the Edwards Aquifer crop out and are mapped as Recharge Zone.( 30 TAC, § 213.22(3) )

Time\_Period\_of\_Content:

Time\_Period\_Information:

Range\_of\_Dates/Times:

Beginning\_Date: unknown

Ending\_Date: 20011102

Currentness\_Reference: ground condition

Status:  
Progress: Complete  
Maintenance\_and\_Update\_Frequency: As needed. All changes subject to TCEQ rules process.

Spatial\_Domain:  
Bounding\_Coordinates:

West\_Bounding\_Coordinate: -100.48034289  
East\_Bounding\_Coordinate: -97.59198748  
North\_Bounding\_Coordinate: 30.89581416  
South\_Bounding\_Coordinate: 29.26549189

Keywords:  
Theme:

Theme\_Keyword\_Thesaurus: none  
Theme\_Keyword: Edwards Aquifer, 30 TAC Chapter 213  
Theme\_Keyword: Edwards Aquifer  
Theme\_Keyword: Recharge Zone  
Theme\_Keyword: Transition Zone  
Theme\_Keyword: Contributing Zone  
Theme\_Keyword: Contributing Zone Within the Transition  
Theme\_Keyword: Code  
Theme\_Keyword: Type  
Theme\_Keyword: TCEQ\_Citation

Place:

Place\_Keyword\_Thesaurus:  
Place\_Keyword: TX

Access\_Constraints: This dataset belongs to TCEQ and is public information.

Use\_Constraints:  
This coverage was based on USGS 7.5-minute quadrangles, so should not be used at scales larger than 1:24,000. Portion of the Contributing Zone following the county boundary were updated "as is" using USGS Digital Raster Graphics (DRGs) published in 1996-1997. These coverages do not represent an actual "on the ground" survey, and is not intended to define a legal description of any county or property line.

Point\_of\_Contact:  
Contact\_Information:

Contact\_Organization\_Primary:

Contact\_Organization: TCEQ Groundwater Planning & Assessment Team  
Contact\_Person: Cary Betz

Contact\_Position: Geologist  
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State\_or\_Province: Texas  
Postal\_Code: 78711-3087

Country: U.S.A

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State\_or\_Province: Texas  
Postal\_Code: 78711-3087  
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Browse\_Graphic:

Browse\_Graphic\_File\_Name: <http://www.tceq.state.tx.us/assets/public/gis/metadata/images/edwards.gif>

Browse\_Graphic\_File\_Description: Edwards Aquifer Protection Program, 30 TAC, Chapter 213  
Browse\_Graphic\_File\_Type: GIF

Data\_Set\_Credit: This dataset was digitized by the University of Texas Bureau of Economic Geology staff under supervision of, Thomas A. Tremblay, GIS Research Associate.

Native\_Data\_Set\_Environment: UNIX, ARC/INFO version 8.0.1

## **2 DATA\_QUALITY\_INFORMATION:**

Attribute\_Accuracy:

Attribute\_Accuracy\_Report:

Attribute\_Accuracy\_Report: Attribute data have been reviewed and approved by the TCEQ Office of Environmental Policy, Planning and Assessment. Attribute information was computed electronically using internal software, then each polygon was manually assigned labels by TCEQ, as defined in TCEQ rules, 30 Texas Administrative Code, Chapter 213.

Logical\_Consistency\_Report:

Data are topologically correct with Arc Info 8.02. All intersecting arcs contain nodes and all polygons contain label points. Line segments were digitized from individual 7.5 minute USGS quadrangle maps and connected by chain-nodes along the border of each quadrangle. Coverage were appended and constructed with regions. Each polygon represents a closed geographic area identified by TCEQ. Label points were used to assigned all areas. Polygons were used to construct present topology.

Completeness\_Report: None

Positional\_Accuracy:

Horizontal\_Positional\_Accuracy:

Horizontal\_Positional\_Accuracy\_Report:

Accuracy of this dataset is based upon the scale of U.S.G.S. 1:24,000 quadrangle maps and digitized lines follow a marginal error of 40 feet.

Quantitative\_Horizontal\_Positional\_Accuracy\_Assessment:

Horizontal\_Positional\_Accuracy\_Value: 40 ft

Lineage:

The earliest regulatory maps for the Edwards Aquifer Recharge Zone accompanied Order No. 70-0731-12, approved and issued by the Texas Water Quality Board on 31 July, 1970. General Highway maps were used to graphically delineate "the Recharge Zone as the area along the northern boundary of the Edwards Underground Reservoir in Hays, Comal, Bexar, Medina, Uvalde and Kinney Counties in which most of the water which recharges the Edwards Underground Reservoir enter the Limestone Formation."

Texas Water Quality Board Order No. 74-0326-4, effective March 27, 1974, identifies the Recharge Zone "as that area where the Edwards and associated limestones crop out in Kinney, Uvalde, Medina, Bexar, Comal and Hays Counties, plus that area within the 100-year flood plain of Cibolo Creek where it begins at Herff Falls in Kendall County and downstream to the Edwards and associated limestones outcrop." Sometime between this board order, and Order No. 70-0731-12 which it superseded, work was completed on the initial sets of the "official" maps on USGS 7.5' topographic quadrangle sheets, as these "official" maps are referenced in Order No. 74-0326-4. Mapping was based on aerial photography, literature reviews and field ground-truthing, and established geologic formation contact boundaries between the Edwards and associated limestones and the underlying Glen Rose, Walnut and Comanche Peak formations and overlying Austin Chalk, Eagle Ford Group, Buda Limestone and Del Rio Clay.

The "official" maps, now under the jurisdiction of the Texas Water Commission, were altered to include a portion of northern Hays county for regulation, effective July 2, 1984, through changes to 31 Texas Administrative Code (TAC) 331. The definition of the Recharge Zone only changed with the deletion of Kendall County from the description in the order, and on the maps, the Recharge Zone was revised by deleting Kendall County, adding a portion of Hays County north of State Highway 150 and Kinney County west of U.S. 83.

Effective May 21, 1985, the Texas Water Commission adopted 31 TAC 313, entitled the "Edwards Aquifer". These rules described the Recharge Zone as "that area where the Edwards and associated limestones crop out in Kinney, Uvalde, Medina, Bexar, Comal, and Hays Counties and the outcrops of other formations in proximity to the Edwards limestone, where faulting and fracturing may allow recharge of the surface waters to the Edwards Aquifer, and the area in Uvalde County within 500 feet of the Nueces, Dry Frio, Frio and Sabinal Rivers downstream from the northern Uvalde County line to the Recharge Zone as otherwise defined." At this time a portion of Williamson County was added to the Recharge Zone, and the "Transition Zone" was established in Eastern Medina, Bexar, Comal and southern Hays Counties for regulation of Petroleum Storage Tanks. The Transition Zone is defined as "that portion of an arcuate belt of associated formations composed of the Austin Chalk, Eagle Ford Group, Buda Limestone and Del Rio Clay, in proximity to and generally overlying the Edwards and Associated Limestone." The Transition Zone was also specifically delineated on the official maps, and in some areas, surface features such as street or railroad rights-of-way were used to delimit the down-dip boundary of the Transition Zone.

Rule changes that became effective on March 21, 1990, included adding the Recharge Zone for Travis County, and adding the Transition Zone for northern Hays, Travis and Williamson Counties. Further, the Edwards Aquifer itself is identified as "that portion of an arcuate belt of porous, waterbearing, predominantly carbonate rocks known as the Edwards and Associated Limestones in the Balcones Fault Zone trending from west to east on northeast in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson counties; and composed of the Salmon Peak Limestone, McKnight Formation, West Nueces Formation, Kainer Formation, Edwards Formation and Georgetown Formation. The permeable aquifer units generally overlie the less Permeable Glen-Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally." The Transition Zone added the Pecan Gap Chalk and Anacacho Limestone to the description of formations that "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." 30 TAC 213 is adopted December 4, 1996 and becomes effective December 27, 1996, superceding all prior rules and orders. No changes to the boundaries or formation descriptions are made at this time.

30 TAC 213 is amended and a new Subchapter B is added. Rule becomes effective June 1, 1999, and defines the Contributing zone as "the area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer".... "The contributing zone is located upstream (upgradient) and generally north and northwest of the recharge zone for the following counties:

(A) all areas within Kinney County, except the area within the watershed draining to Segment 2304 of the Rio Grande Basin;

(B) all areas within Uvalde, Medina, Bexar, and Comal Counties;

(C) all areas within Hays and Travis Counties, except the area within the watersheds draining to the Colorado River above a point 1.3 miles upstream from Tom Miller Dam, Lake Austin at the confluence of Barrow Brook Cove, Segment 1403 of the Colorado River Basin; and

(D) all areas within Williamson County, except the area within the watersheds draining to the Lampasas River above the dam at Stillhouse Hollow reservoir, Segment 1216 of the Brazos River Basin."

Also defined is the Contributing Zone Within the Transition Zone as "the area or watershed where runoff from precipitation flows down- gradient to the recharge zone of the Edwards Aquifer. The contributing zone within the transition zone is depicted in detail on the official recharge and transition zones maps of the agency as provided for in §213.3(25) and (34) of this title (relating to Definitions), respectively. The contributing zone within the transition zone is located downstream (downgradient) and generally south and southeast of the recharge zone and includes specifically those areas where stratigraphic units not included in the Edwards Aquifer crop out at topographically higher elevations and drain to stream courses where stratigraphic units of the Edwards Aquifer crop out and are mapped as recharge zone."

The northern boundary of the Recharge Zone in Kinney, Medina and Uvalde Counties was changed on the "official" maps at this time to remove those portions of the outcrop of the Edwards and Associated Limestones that were determined to not be in significant hydrologic communication with the main body of the Edwards Aquifer Recharge Zone, based on mapping of the aquifer by the U. S. Geological Survey from 1994 to 1997.

Source\_Information:

Source\_Citation:

Citation\_Information:

Originator: U.S. Geological Survey (USGS)

Publication\_Date: Various, most recent includes 1996-97 DRGs

Title: USGS 7.5-minute topographic maps

Publication\_Information:

Publication\_Place: Washington, DC

Publisher: USGS

Source\_Scale\_Denominator: 24000

Type\_of\_Source\_Media: paper

Source\_Time\_Period\_of\_Content:

Source\_Currentness\_Reference: ground condition

Source\_Citation\_Abbreviation: USGS 7.5-minute quads

Source\_Contribution: Primary reference used to draw the TCEQ regulated areas of the Edwards Aquifer

Process\_Step: 1

Process\_Description:

In order to provide digital coverages for existing hardcopy maps, TCEQ contracted the Bureau of Economic Geology(BEG), to digitize the current Edwards Aquifer Recharge Zone regulatory areas and join it into one coverage. This two-phase process was done during fiscal Year 1999 (Williamson, Travis,

Hays and Comal counties), and 2000 (Bexar, Medina, Uvalde and Kinney counties). Here is the BEG process:

"The Edwards Rules map was captured from 74 mylar, paper blue-line, and original 7.5' USGS maps. Lines depicting the boundary of the recharge, contributing and transition zones of the Edwards Aquifer were tablet digitized from the original maps using the ArcEdit module of ArcInfo. All ticks and linear features from an individual map were captured during the initial digitizing session. The digitized coverages were transformed into either polyconic or stateplane (central or south central zones) projections. Transformation error reports for all coverages are recorded and supplied elsewhere within the project documentation. The 74 individual coverages were reprojected into UTM zone 14, appended, and processed into a single polygon coverage. Existing digital data provided by TCEQ for the Helotes and Castle Hills quadrangles were inserted into the final coverage. County boundaries for quadrangles containing the contributing zone boundary were appended to the final coverage.

Process\_Step: 2

Process\_Description:

The layer was built as a polygon coverage. Groundwater Planning and Assessment senior staff performed Quality Assurance/Control for all quadrangle maps digitized, with visual inspection, and comparison to source maps, of the entire extent of all line work. For the digitized lines, no deviations from the position of the source map lines were acceptable. Minor digitizing errors were edited by Groundwater Planning & Assessment Staff.

The Contributing Zone is listed in 30 TAC 213 as the area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer for Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson counties. Effectively, this sets the upgradient boundary of the Contributing Zone as the county line for all or a portion of those counties. During Quality Assurance/Control, staff observed discrepancies between the digitized county lines, and previously certified agency coverages. Staff discussed the potential source of the discrepancies with TCEQ, TxDOT and GLO staff and determined that for the purposes of these maps, the boundary of the Contributing Zone should be shown to be coincident with the county line as shown on the DRG images used as base maps for the digital coverage. An exception to this practice appears on the Mahomet and Florence 7.5-minute quadrangle maps where the county line is shown to be "indefinite" on the DRG. The alignment of the county line was instead based on the adjacent Ding Dong 7.5-minute quadrangle, which was photo-revised more recently than either Mahomet or Florence.

After the visual inspection of the line work, the attributes of the individual polygons was compared to data on the source maps, with respect to the zone type and rule citation. Once verified information was keyed to polygons' numeric code, then built as a polygon coverage.

Process\_Step: 3

Process\_Description:

All linework were edited for node dangles and arc intersect errors. The file was built as a polygon coverage and label points created. Polygon attributes were manually added.

Source\_Used\_Citation\_Abbreviation: USGS 7.5-minute quads and DRGs Process\_Date: 2001

Source\_Used\_Citation\_Abbreviation: USGS 7.5-minute quads Process\_Date: September 1997

Process\_Step: 4

Process\_Description:

Additional edits were made in ArcInfo 8 as outlined in the Abstract. The linework was exported to shapefile format and projected to both UTM NAD27 ZONE14 and TSMS.

Source\_Used\_Citation\_Abbreviation: USGS 7.5-minute quads and DRGs Process\_Date: 2001

Source\_Used\_Citation\_Abbreviation: USGS 7.5-minute quads Process\_Date: September 1997

### **3 SPATIAL\_DATA\_ORGANIZATION\_INFORMATION:**

Direct\_Spatial\_Reference\_Method: Vector

Point\_and\_Vector\_Object\_Information:

SDTS\_Terms\_Description:

SDTS\_Point\_and\_Vector\_Object\_Type: GT-polygon composed of chains

Point\_and\_Vector\_Object\_Count: 24

## **4 SPATIAL\_REFERENCE\_INFORMATION:**

Horizontal\_Coordinate\_System\_Definition:

Planar:

Grid\_Coordinate\_System:

Grid\_Coordinate\_System\_Name: Universal\_Transverse\_Mercator

UTM\_Zone\_Number: 14

Planar\_Coordinate\_Information:

Planar\_Coordinate\_Encoding\_Method: coordinate pair

Coordinate\_Representation:

Abscissa\_Resolution: 1.0

Ordinate\_Resolution: 1.0

Planar\_Distance\_Units: METERS

Geodetic\_Model:

Horizontal\_Datum\_Name: North American Datum of 1927

Ellipsoid\_Name: Clarke 1866

Semi-major\_Axis: 6378206.4

Denominator\_of\_Flattening\_Ratio: 294.98

## **5 ENTITY\_AND\_ATTRIBUTE\_INFORMATION:**

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: EDW\_TSMS.DBF

Entity\_Type\_Definition: ESRI Shapefile Format.

Entity\_Type\_Definition\_Source: ARC/INFO

Attribute:

Attribute\_Label: AREA

Attribute\_Definition: Area of poly/region in sq coverage units

Attribute\_Definition\_Source: Computed

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 12161

Range\_Domain\_Maximum: 78512

Attribute:

Attribute\_Label: PERIMETER

Attribute\_Definition: Perimeter of poly/region in coverage units

Attribute\_Definition\_Source: Computed

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 1141  
Range\_Domain\_Maximum: 99707

Attribute:

Attribute\_Label: CODE  
Attribute\_Definition: polygon code assigned by the Bureau of Economic Geology (BEG)  
Attribute\_Definition\_Source: TCEQ Working Maps  
Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: 1  
Enumerated\_Domain\_Value\_Definition: Recharge Zone  
Enumerated\_Domain\_Value: 2  
Enumerated\_Domain\_Value\_Definition: Transition Zone  
Enumerated\_Domain\_Value: 3  
Enumerated\_Domain\_Value\_Definition: Contributing Zone

Attribute:

Attribute\_Label: TYPE  
Attribute\_Definition: This Sixty-five character field indicates the type Edwards Aquifer Zone under regulatory rules.  
Attribute\_Definition\_Source: TCEQ Edwards Aquifer Rules  
Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: Edwards Aquifer Recharge Zone  
Enumerated\_Domain\_Value\_Definition: Self-explanatory.  
Enumerated\_Domain\_Value: Edwards Aquifer Transition Zone  
Enumerated\_Domain\_Value\_Definition: Self-explanatory.  
Enumerated\_Domain\_Value: Edwards Aquifer Contributing Zone  
Enumerated\_Domain\_Value\_Definition: Self-explanatory.  
Enumerated\_Domain\_Value: Edwards Aquifer Contributing Zone within the Transition Zone  
Enumerated\_Domain\_Value\_Definition: Self-explanatory.

## **6 DISTRIBUTION\_INFORMATION:**

Distributor:

Contact\_Information:

Contact\_Organization\_Primary:

Contact\_Organization: TCEQ  
Contact\_Person: Greg Smithhart

Contact\_Address:

Address\_Type: Mailing Address  
Address: MC-197, P.O. Box 13087  
City: Austin

State\_or\_Province: TX  
Postal\_Code: 78711-3087  
Country: U.S.A.

Contact\_Address:

Address\_Type: Physical Address  
Address: Building A, 12100 Park 35 Circle  
City: Austin  
State\_or\_Province: Texas  
Postal\_Code: 78711-3087  
Country: U.S.A.

Contact\_Voice\_Telephone: (512) 239-0859  
Contact\_Facsimile\_Telephone: (512) 239-0888  
Contact\_Electronic\_Mail\_Address: gsmithha@tceq.state.tx.us  
Hours\_of\_Service: 8:00am - 5:00pm, Central

Resource\_Description: TCEQ Certified Map Layers

Distribution\_Liability: Although these data have been processed successfully on a computer system at the Texas Commission on Environmental Quality, no warranty expressed or implied is made by the TCEQ regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty.

Standard\_Order\_Process:

Digital\_Form:

Digital\_Transfer\_Information:

Format\_Name: ARCE

Digital\_Transfer\_Option:

Online\_Option:

Computer\_Contact\_Information: World Wide Web

Network\_Address: www.tceq.state.tx.us

Network\_Resource\_Name: <http://www.tceq.state.tx.us/gis>

Available\_Time\_Period: Immediate

## **7 METADATA\_REFERENCE\_INFORMATION:**

Metadata\_Date: 20050901

Metadata\_Review\_Date:

Metadata\_Future\_Review\_Date:

Metadata\_Contact:

Contact\_Information:

Contact\_Organization\_Primary:

Contact\_Organization: TCEQ  
Contact\_Person: Web/GIS Team

Contact\_Address:

Address\_Type: Mailing Address  
Address: MC-197, P.O. Box 13087  
City: Austin  
State\_or\_Province: Texas  
Postal\_Code: 78711-3087  
Country: U.S.A.

Contact\_Voice\_Telephone: (512) 239-0859  
Contact\_Facsimile\_Telephone: (512) 239-0888  
Contact\_Electronic\_Mail\_Address: gsmithha@tceq.state.tx.us  
Hours\_of\_Service: 8:00am - 5:00pm, Central

Metadata\_Standard\_Name: FGDC Content Standards for Digital Geospatial Metadata  
Metadata\_Standard\_Version: FGDC-STD-001-1998  
Metadata\_Time\_Convention: Local time  
Metadata\_Access\_Constraints: None  
Metadata\_Use\_Constraints: None

Metadata\_Extensions:

Online\_Linkage: <http://www.esri.com/metadata/esriprof80.html>



Profile\_Name: ESRI Metadata Profile