

IX

# Interim Population, Employment and Land Use Projections



## for the San Antonio Areawide Waste Treatment Management Plan

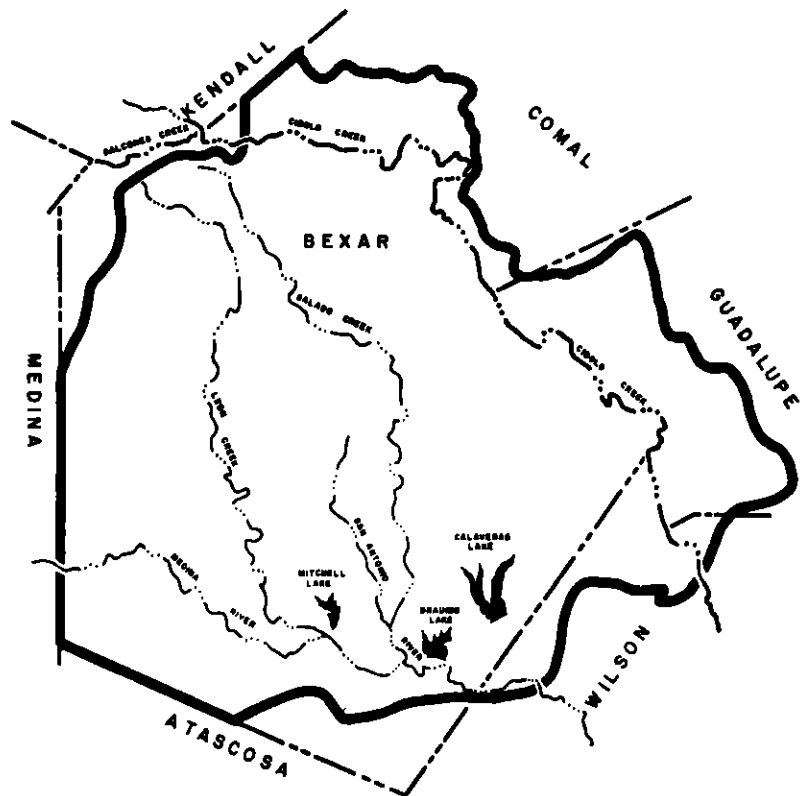
'208' Planning for Swimmable, Fishable Waters



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## Introduction

In order to determine future needs for sewerage service and nonpoint source control strategies and to develop cost-effective techniques of meeting these needs, it is necessary to determine what the probable future distribution of people and land use activities will be. This report represents the present best estimate of where people and activities can be expected to be found in the future. If actual development in the future is at variance with the projections in this report, the plan will be adjusted to accommodate actual growth. In no event should the distributions of either people or land use activities which appear in this report be considered to be requirements of the plan or a necessary element in the achievement of water quality objectives. No assessment has been made at the time of the preparation of this report which indicates that other development patterns are not equally compatible with the attainment of water quality objectives.

Existing and projected land use maps, along with the full technical document from which the material in this brochure has been taken, are available for review at the AACOG offices.

*The preparation of this brochure was financed through a grant from the U.S. Environmental Protection Agency under Section 208 of the Federal Water Pollution Control Act, 1972, as amended.*

# Water Quality Related Issues

For the purposes of 208 planning, the location of housing density on a map proves essential in order to develop alternatives for wastewater treatment management. Primarily, for collection and conveyance system alternatives, it is necessary to geographically locate anticipated new housing units. In addition, population growth estimates are a basis for estimating future waste loads and flows; therefore, the 208 planning process is the first step in guiding the future development of 201 facilities plans for municipal wastewater treatment facilities.

As population increases, the number of employers and the number of people employed in the AACOG 208 area will increase. Industrial allocation is important in developing wasteload projections because consideration must be given in determining the level of treatment necessary to adequately handle the increased sanitary sewage flows. Therefore, the number of people and where they are employed have a direct effect on the quality of water in our study area.

As an area develops, the amount of wastewater requiring treatment increases in relation to the population level and to the needs of consuming industries. Continued and increasing economic development means continued and increasing utilization of the area resources, including the corresponding impacts on both land and water. Projected economic conditions for the AACOG area are based primarily on employment projections for major industrial categories.

It is necessary to project land uses in order to predict potential pollution sources and their magnitude. The population density (reflected as housing units), and how that population utilizes the land, basically determines the magnitude and location of water quality problems in our rivers and streams. The 208 process is not concerned with the fact that a gasoline station or an apartment complex is located on any specific parcel of land. Rather, it is concerned with the amount of sewage (a point source) or the type of runoff (a non-point source) that would be generated as a result of man's development of that parcel of land. This is the reason that housing unit density and type of land use are considered when gathering data for the 208 process. The relationship between factors relating to the number of people, their geographic location and use of land as well as the subsequent effect on our streams, is used in evaluating the effects of future land use. This approach will be used as a starting point in the defining of future pollution problems. This then will be the first approximation or "benchmark" for proposing solutions to improve the quality of the targeted streams in our 208 study area.

The protection and management of our area's waters is the goal of local governments involved in the AACOG 208 Areawide Waste Treatment Management Plan. In March of 1975, the Governor designated the Alamo Area Council of Governments as the agency responsible for 208 planning for the counties of Bexar, and parts of Comal, Guadalupe and Wilson. The goals and objectives developed in the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500) require a cooperative effort to clean up our rivers and streams at the local and state levels of government.

# Characteristics of the '208' Study Area

Approximately 95 percent of the AACOG planning area falls within the San Antonio Standard Metropolitan Statistical Area (SMSA) composed of Bexar, Comal and Guadalupe counties. The remainder of the area is located in Wilson County. The Bureau of the Census estimated the 1974 population of the San Antonio SMSA to be 981,566. The estimated 1975 population for the AACOG study area is 908,316. Most of the population is concentrated within the urbanized area of Bexar County. The 20 incorporated cities within Bexar County account for 846,042 people, approximately 93 percent of the total population and 1172.44 square miles of the study area.

The combined population of the four counties which encompass the 208 study area increased 20 percent in the 1960-1970 time period. The rate of growth decreased slightly to nine percent in the 1970-1975 period. The 208 study area population increased approximately eight percent from 1970 to 1975. This population growth results in a population density of 607.8 persons per square mile in 1975. The population density throughout the study area varies from a high of 3,074 for the City of San Antonio to less than 17 persons per square mile in the Comal County portion of the 208 area (see Table 1).

The major portion of the 208 planning area, both space and population-wise, is located within Bexar County. Seventy-eight percent (750,365.4 acres) of the total AACOG 208 study area acreage (956,464.2) lies within Bexar County. Approximately 94 percent of Bexar County's total area is included in the study area with only small zones in the extreme northwest and south excluded.

Because of its population growth and economic ties with Bexar County, Comal was designated as part of the San Antonio Metropolitan Statistical Area in 1973. The County has maintained a relatively rapid population growth rate for the past 24 years. The population increased 21 percent between 1950 and 1960, 22 percent from 1960 to 1970, and expanded another 23 percent in the next five year period, reaching an estimated total population of 29,787 in 1975<sup>1</sup> (see Table 1). A majority of Comal's population (1975 estimate - 20,519) resides in the City of New Braunfels, the county seat. The population in the remainder of the County is statistically considered rural although the growth is concentrated along the major transportation corridor, IH-35, and near recreation areas along the rivers and lakes.

Only a small portion of Comal County is included in the AACOG 208 study area. A narrow zone encompassing 94.13 acres along the south and southwest side of Comal County forms the northeastern boundary of the study area. The only incorporated Comal County city located within the study area is Garden Ridge, with an estimated population of 342 in 1975. The population density of the Comal County 208 area is 16.8 persons per square mile for the entire county. However, this small 208 portion of Comal County has registered approximately twice the population growth rate in the past five years as the county as a whole, 47 percent and 25 percent respectively. The 208 Comal County area grew from 1,077 persons in 1970 to an estimated 1,583 in 1975 (see Table 1).

The third county forming the San Antonio SMSA, Guadalupe, has exhibited the slowest growth rate of the three counties. Guadalupe County increased its population 16 percent in the 1960's as compared to 22 percent for Comal and 21 percent for Bexar during the same period. Like Comal County, Guadalupe showed an increased rate of growth for the past five years while Bexar's has slowed significantly. During the period 1970-1975, the population of Guadalupe County increased by 15 percent to an estimated 38,717 (see Tables 1 and 2). More than 40 percent of the county population is located in the City of Seguin, the county seat, with an estimated 16,968 residents in 1974; however, this city does not fall within the 208 study area.

Less than one-quarter of Guadalupe's total area is included in the AACOG 208 study area. A strip 6-10 miles wide along the west side of Guadalupe County forms the northeastern boundary of the 208 area. Within this 152.85 square mile portion of Guadalupe County, there were an estimated 11,072 persons in 1975 (see Table 1)<sup>1</sup>. The incorporated cities of Cibolo, Marion and Schertz

TABLE 1  
POPULATION DENSITY BY "208" COUNTY, 1970-1975

Area	Total Area		Population			
	Acres	Square Miles	1970		1975	
			Total	Sq.Mile	Total	Sq.Mile
<u>Bexar</u>						
County	797,440	1,246	830,460	666.5	896,785	719.8
208 Area	750,365.4	1,172.44	828,480	706.6	894,145	763.4
<u>Comal</u>						
County	362,880	567	24,165	42.6	29,787	52.5
208 Area	60,240.4	94.13	1,077	11.4	1,583	16.8
<u>Guadalupe</u>						
County	457,024	714	33,554	47.0	38,717	54.2
208 Area	97,817.8	152.85	8,988	38.8	11,072	72.4
<u>Wilson</u>						
County	513,344	802	13,041	16.3	13,966	17.4
208 Area	48,040.6	75.06	1,151	15.3	1,516	20.2
<u>TOTAL</u>						
4 Counties	2,130,688	3,329	901,220	270.7	979,255	294.2
208 Area	956,464.2	1,494.48	839,696	561.8	908,316	607.8

Source: (1) Alamo Area Council of Governments, working paper Task 2.31, "Population, Employment and Land Use for the 208 Area," July, 1977.  
(2) Bureau of Census, 1970 Census of Population.

(populations 945, 739 and 6,490 respectively) are located in the 208 region. The cities of Cibolo and Schertz share boundaries with Bexar County and are situated in the rapidly growing area along IH-35 and adjacent to Randolph Air Force Base. Cibolo has more than doubled its population since 1970, registering 945 citizens in 1975, while the population of Schertz has increased approximately 60 percent, from 4,061 in 1970 to 6,490 in 1975 (see Table 1). The portion of Guadalupe County within the study area has exhibited a much greater growth from 1970 to 1975 (23 percent) than has the entire county (15 percent). The population density for this portion of Guadalupe County has increased from 58.8 persons per square mile in 1970 to 72.4 persons per square mile in 1975 (see Table 1).

A predominantly rural county, Wilson borders Bexar County on the southeast. Only one of its four incorporated cities exceeds the 2,500 inhabitants required to be statistically classified as urban population; however, this city is not located within the AACOG 208 study area. With an estimated total population of 13,966 in 1975, Wilson County has a 17.4 persons per square mile population density.<sup>1</sup> The county registered a loss in population in each of the three decades preceding 1970; however, this trend has recently been reversed. Wilson County population increased seven percent of 925 persons during the 1970-1975 period.

Less than ten percent (48,040.6 acres) of the Wilson County total acreage is included in the AACOG 208 study area. Included in this small northwest segment of the county is the City of La Vernia with an estimated population of 774 residents in 1975. As have other small cities located near the urbanized area of Bexar County, La Vernia has experienced rapid growth in the past five years. The population has increased 82 percent from its 1970 population of 425 to 774 in 1975. This increase of 349 persons constitutes almost the entire population change of 365 inhabitants during the 1970-1975 period in the AACOG 208 region of Wilson County. With more than half of Wilson's 208 area population residing in La Vernia, the remaining area is quite sparsely settled. The Wilson 208 segment has a population density of 20.2 persons per square mile as compared to a 607.8 persons per square mile density for the entire AACOG 208 study area (see Table 1).

TABLE 2  
POPULATION ESTIMATES FOR "208" AREA COUNTIES

County	1970	1975	1983	1990	1995
BEXAR	828,480	894,145	998,851	1,087,417	1,141,856
COMAL	1,077	1,583	2,584	3,499	4,971
GUADALUPE	8,988	11,072	19,998	27,695	33,336
WILSON	1,151	1,516	2,162	2,745	3,113
TOTAL "208" AREA	839,696	908,316	1,023,595	1,121,256	1,182,276

Source: AACOG, Working Paper, "Population-Related Projections for '208' Wastewater Treatment Management Planning," Regional Analysis, July, 1976.

# Population Projections

When the 208 effort was initiated, it was determined that any projection used should be compatible with the City of San Antonio and subarea cities. In July, 1976, AACOG developed a working paper entitled "Population Related Projections for 208 Areawide Waste Treatment Management Planning."<sup>5</sup>

Population estimates and projections for cities within the 208 study area were developed using a variety of methods. Background information was gathered from mayors, city managers, 701 comprehensive master plans, planning departments, city engineers and historical census data. Since background data for the cities were of varying quality, an individualized method was chosen for each city which made use of the best available data for that city.

The methods used fell broadly into two classes. For cities from which there was no other information available, the AACOG three-point linear projection method based on current residential electrical connections was used. These figures were modified by population holding capacity of the city based on vacant, developable land when this information was pertinent and available. For cities that provided population information, either current or projected, this data was utilized to develop projections for the "208" forecast years (1983, 1990 and 1995).

The following is an example of input data:

Converse: 1973 and 1974 population figures were obtained from Amy Voges, City Secretary, in the Spring of 1976. The figures were obtained from a household survey done in those two years by off-duty policemen in Converse. These two numbers with the 1970 value of 1,383 were used in a linear regression by AACOG to produce values for 1975, 1980, 1990 and 2000. These figures were produced for another planning program in the fall of 1973. When it became clear that "208" needed different years, a parabolic regression was done on the projected figures as well as the 1970 and 1973 Census figures to interpolate the needed years. The 208 cities' populations are summarized in Tables 3 and 4.

AACOG, at the direction of the Areawide Planning Advisory Committee on January 24, 1977, requested that every city within the 208 study area convert population projections to housing units and disaggregate projected housing units geographically and chronologically by planning horizon years 1985, 1990 and 1995. A meeting was held March 8, 1977 to explain to the cities the need for housing distributions. Each city was given their city's population projections from 1970-1995, existing land use map, and an extra map to distribute housing units. The cities were asked to distribute housing units according to their goals, objectives, economic development, master plans, existing plats and city ordinances. As a result, most cities responded by correcting city boundaries, existing land use, and projected housing units for 1985, 1990 and 1995. AACOG was responsible for generating the distributions for cities not responding. Each city utilized existing 701 comprehensive master plans, availability of land, utility services and city building permits in distributing their new projected housing units. In July, 1977, AACOG received approval of population projections and housing unit distributions for each city. City officials were asked to sign off on their city projections.



TABLE 3

## "208" CITIES POPULATION PROJECTIONS

<u>Bexar County</u>						
<u>BEXAR</u>	<u>1970</u>	<u>1975</u>	<u>1983</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>
Alamo Heights	6,933	7,050	7,227	7,271	7,382	7,493
Balcones Heights	2,504	2,154	3,109	3,116	3,419	3,619
Castle Hills	5,311	5,436	5,600	5,600	5,600	5,600
China Grove	329	394	500	513	594	660
Converse	383	3,861	7,611	8,686	11,096	13,539
Elmendorf	400	448	514	518	573	614
Grey Forest	385	448	547	557	633	695
Hill Country Village	636	732	880	894	1,010	1,102
Hollywood Park	2,299	3,166	5,000	5,000	5,000	5,000
Kirby	2,558	3,800	5,604	5,894	7,183	8,310
Leon Valley	1,960	7,157	12,514	13,119	15,887	17,306
Live Oak	2,779	7,096	12,066	13,052	16,800	20,345
Olmos Park	2,250	2,449	2,449	2,449	2,449	2,449
San Antonio	654,153	772,719	884,119	906,906	964,705	1,019,804
Selma	207	2,012	4,871	6,596	7,378	9,167
Shavano Park	881	979	1,112	1,116	1,229	1,312
Somerset	861	1,005	1,233	1,257	1,433	1,575
Terrell Hills	5,225	5,290	5,290	5,290	5,290	5,290
Universal City	7,613	13,000	19,133	20,110	25,000	29,060
Windcrest	3,371	5,354	7,702	8,285	8,285	8,285
Sum of Cities	702,038	845,150	987,006	1,016,166	1,090,582	1,161,140
Rural Area	--	48,995	35,630	34,220	30,033	24,982
TOTAL 208 AREA OF BEXAR COUNTY	<u>828,480</u>	<u>894,145</u>	<u>1,022,636</u>	<u>1,050,386</u>	<u>1,120,615</u>	<u>1,186,122</u>

Source: (1) Population growth projections for cities within Bexar County portion of San Antonio "208" Study Area. Total population by planning horizon years.

TABLE 4

## "208" CITIES POPULATION PROJECTIONS

<u>Comal, Guadalupe and Wilson Counties</u>						
	<u>1970</u>	<u>1975</u>	<u>1983</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>
<u>COMAL</u>						
Garden Ridge	110	342	795	910	1,192	1,475
"208" Area of Comal County	1,077	1,583	2,584	2,840	3,499	3,971
<u>GUADALUPE</u>						
Cibolo	440	945		2,142	2,992	3,753
Marion	655	739		867	979	1,059
Schertz	4,061	6,490		14,405	21,880	25,165
Sum of Cities:	5,156	8,174		17,414	25,851	29,977
"208" Area of Guadalupe County	8,988	11,072	19,998	21,232	27,695	33,336
<u>WILSON</u>						
La Vernia	425	774	1,419	1,419	2,097	2,538
"208" Area of Wilson County	1,151	1,516	2,162	2,327	2,745	3,113

Source: (1) Population Growth Projections for cities within Comal, Guadalupe and Wilson Counties portion of San Antonio "208" Study Area. Total population by planning horizon years.

# Employment Projections

An economy may be considered to be a combination of the production and consumption activities of an area's individual, business establishments, and public and private organizations. An economic area may be considered as a region that has all the economic components, in varying proportions that are found in the national economy.<sup>1</sup> The area consists of an urban center and its surrounding territory, where economic activity is focused, directly or indirectly, on the activity of the center. The economic area combines the labor force's place of residence with its place of employment as closely as possible so that there is a minimum of commuting across area boundaries.

The economy must provide employment for the rapidly increasing labor force in order to sustain any increase in its citizen's standard of living. An examination of the distribution of employment among major industrial categories provides some insight into the changing requirements of the local economy.

As reflected in Tables 5 and 6, the total employment for the 208 study area for 1975 was 305,725 with a labor force of 372,213 of which 41,237 were military, 330,976 civilian labor force and 25,070 unemployed, for a 7.6 percent unemployment rate.

TABLE 5

EMPLOYMENT PROJECTION TOTALS  
FOR THE 208 AREA

Employment Category	1975	1983	1990	1995
Labor Force	372213	447619	503680	535606
Military	41237	40000	40000	40000
Civilian L.F.	330976	407619	463680	495606
% Unemployed	7.6(Actual)	5%	5%	5%
No. Unemployed	25070	20381	23183	24780
Total Employed	305724	387238	440497	470826

Source: (11) Comprehensive Planning Department, CSA, Industrial Allocation Study in the 208 Area.

The job base will grow from 305,724 in 1975 to 470,826 in 1995, showing an increase of 165,102 employed persons in the 208 area.

Employment projections indicate the increased number of persons working while labor force projections indicate the number of persons capable of working. Industrial allocation is important in developing wasteload projections. It must be considered when determining the level of treatment necessary to adequately handle the increased sanitary sewage flows. Projected economic conditions for the AACOG area are based primarily on employment projections for major industrial categories (S.I.C.). (See Table 7.) These projections are dynamic. As public policies and other factors change, so do population, employment and land use projections.

TABLE 6  
EMPLOYMENT PROJECTIONS  
BY MAJOR S.I.C. CATEGORY

S.I.C. Code	Employment Category	1975	1983	1990	1995
07-09, (c)	Agriculture	5061	5152	4771	4549
10-14	Mining	1509	1256	907	742
15-17	Construction	17546	25497	29320	31718
(1)	Manufacturing	34938	49234	55545	60398
40-47	Transportation	7566	8736	9071	9326
48-49	Communication	5479	6247	7388	8027
50	Wholesale Trade	17493	22676	26234	28252
52-59	Retail Trade	55564	65887	75127	78282
60-67	Fin./Ins./R.E.	20247	25059	29334	31749
70-79	Bus & Per. Ser.	21999	28221	31509	33485
80-86, 89	Med. & Prof. Ser.	28096	39934	49209	54779
	Private Hsld.	10264	12546	13441	13905
91	Fed. Govt.	36712	41652	40595	39979
92-93	State & Local Government	43250	55145	68046	75635
TOTAL EMPLOYMENT		305724	387283	440497	470826

Source: (11) Comprehensive Planning Department, CSA, Industrial Allocation Study in the 208 Area.

TABLE 7

TWO DIGIT MANUFACTURING BREAKOUT

S.I.C. Code	MFG. CATEGORY	1975	1983	1990	1995
<u>DURABLE</u>					
19	Ordinances & Accessories	-0-	-0-	-0-	-0-
24	Lumber & Wood Products	793	1143	1259	1335
25	Furniture & Fixtures	683	1427	1619	1762
32	Stone, Clay, Glass Prod.	2295	3208	3561	3828
33	Primary Metal Ind.	863	1567	1899	2234
34	Fabricated Metal Prod.	2965	3904	4442	4818
35	Machinery Except Elec.	3514	4005	4637	5069
36	Elec. Machinery Equip.	266	538	743	1151
37	Transportation Equip.	2176	4114	5020	5652
38	Prof. & Scientific Goods	-0-	-0-	-0-	-0-
	Other Durable Goods	2259	2946	3670	3981
<u>Total Durable</u>		<u>15814</u>	<u>22852</u>	<u>26850</u>	<u>30568</u>
<u>NON-DURABLE MFG.</u>					
20	Food & Kindred Prod.	8356	10077	10218	10461
22	Textile Mill Products	2031	3295	4161	4781
23	Apparel & Other Finish Gds.	3718	6616	7459	8037
26	Paper & Allied Products	368	503	489	558
27	Pntg., Publishing & Allied Products	2931	4057	4451	4757
28	Chemicals & Allied Prod.	694	956	1050	1118
29	Petroleum, Refining & Rel.	368	228	218	216
30	Rubber & Misc. Plastic	5	2	2	2
31	Leather & Leather Prod.	415	449	482	484
	Other Non-Durable Goods	238	199	165	154
<u>Total Non-Durable</u>		<u>19124</u>	<u>26382</u>	<u>28695</u>	<u>29830</u>
<u>TOTAL MANUFACTURING</u>		<u>34938</u>	<u>49234</u>	<u>55545</u>	<u>60398</u>

Source: (11) Comprehensive Planning Department, CSA, Industrial Allocation Study in the 208 Area.

# Existing and Projected Land Use

As stated earlier, the 208 process is not concerned with the fact that a gaso- line station or an apartment complex is located on any specific parcel of land. Rather, the major concern is the amount of sewage flow (point and nonpoint sources) and wasteload that would be generated as a result of man's develop- ment of that particular parcel of land. For example, once an area has developed, impermeable surfaces such as streets, sidewalks, shopping malls and parking lots are constructed. As a result of the new development, water runs off these sur- faces, collecting debris, including litter, grease from autos and leaves from yards.

These potential pollutants are carried into sewage collection systems or are discharged directly into our area's waters. Therefore, it is essential that a 208 study determine the number of people living in a general area and further- more, the manner in which the land is used.

TABLE 8

TOTAL ACREAGE IN THE 208 STUDY AREA/COUNTY

COUNTY	ACRES	SQ. MILES
Bexar County	750,365.4	1172.44
Comal County	60,240.4	94.13
Guadalupe County	97,817.8	152.85
Wilson County	48,040.6	75.06
TOTALS	956,464.2	1494.48

Source: (1) Working Paper, Task 2.31, Population, Employment and Land Use Projections in the 208 Study Area, July 6, 1977, Regional Analysis.

Once the geographical boundaries were established by the Governor, the boundary was broken down into study units. AACOG's consultant chose the subwatershed as the unit of analysis with approximately 487 subwatersheds composing the 208 study area. After geographical boundaries were established, AACOG's drafting depart- ment prepared existing land use maps from a 1970 map. These maps were corrected and updated to 1975 on a 1"=2000' scale. Input data was assimilated from existing

information, 701 master plans, field surveys and aerial photographic interpretations. The TWQB, in their efforts to standardize the land use mapping process for all 208 designated agencies, developed the following land use categories and color codes:

<u>Category</u>	<u>Color Code</u>
1. <u>Residential</u> (single family and multi-family),	Yellow
2. <u>Commercial</u> (retail sales and services, wholesale, office space, and shopping centers)	Red
3. <u>Industrial</u> (manufacturing)	Purple
4. <u>Open Space</u> (vacant land and parks inside and outside Loop 410)	White
5. <u>Mixed Urban</u> (hospitals, churches, streets, alleys, cemeteries, institutions, communications)	Light Purple
6. <u>Military</u> (military installations)	Gray
7. <u>Agricultural Cropland</u> (irrigated with crops)	Green
8. <u>Pastureland</u> (low grasses, irrigated with crops)	Light Green
9. <u>Rangeland</u> (nonirrigated with grazing)	Orange
10. <u>Water</u> (lakes, streams and water areas)	Blue

The Systems Analysis Program developed by C. Thomas Koch, Package I Contractor, utilizes a system of "planning grids" based on the Texas Plane Coordinate System of which the smallest unit is 2,000 ft. by 2,000 ft., 91.827 acre unit designated as a "small grid." This is the smallest unit of spatial measure utilized to accumulate and process demographic data. Within the System Analysis Program, data files DMP 001 and DMP 002 contain existing physical characteristics and demographics by small grid for each of 487 subwatersheds within the study area. The 92-acre small grid, 25 of which comprise a 2,295.68-acre "large grid" which measures 10,000 ft. by 10,000 ft. was selected because both the City Public Service Board and the City of San Antonio each owned utilities that furnish gas and electricity, and the City Water Board, which provides water service, use this system as a means of recording customers for their services. There are 10,419 of these "small grid" planning grids in the 208 area. This coordinate system of large grids and small grids based on the Texas Plane Coordinate System is sometimes known as the San Antonio Area Coordinate System (SAACS).

To arrive at the total number of acres of land use, the total number of grids is multiplied by 91.8, the number of acres which constitute the size of each grid.

The following is an example of existing land use sample calculations:

	<u>Total Grids</u>	<u>Total Acres</u>
Commercial	49	4,498.2
	49 x 91.8 acres =	4,498.2 acres
	4,498.2/640 acres =	703 sq. miles

Due to the fact that the City of San Antonio is currently developing a Land Use plan and the plan will be completed too late for the purposes of the 208 plan, AACOG, in consultation with the TWQB, has decided to use the existing land use as baseline data and simply urbanize grids according to future potential housing distribution.

This means that if a subwatershed is currently classified as pastureland and in the future becomes predominantly residential, that subwatershed will change from a pastureland category to residential. This convention fits well with the non-point source methodology being developed by AACOG's consultants. When the 208 plan is first amended, any adopted land use plan should be used to update the maps. Most of the cities in the northeast portion of the 208 Planning Area have provided future land use projections. Existing and projected land use maps have been printed and are available for review at the offices of AACOG.

Table 9

EXISTING LAND USE ACRES BY CATEGORY  
TOTAL 208 AREA

Land Use Category	Total Grids	Total Acres	Square Miles
Residential	1170	107,406.0	167.82
Mixed	133	12,209.4	19.08
Commercial	49	4,498.2	7.03
Military	552	50,673.2	79.18
Open Space	219	20,104.2	31.41
Parks	54	4,957.2	7.75
Cropland	1205	110,619.0	172.84
Pastureland	3014	276,685.2	432.3
Rangeland	3933	361,049.4	564.15
Water	90	8,262.0	12.91
 Total Urban	 1475	 135,405.0	 211.57
 Total 208 Area	 10419	 956,464.2	 1494.48

Source: (1) Working Paper, Task 2.31, Population, Employment and Land Use Projections in the 208 Study Area, July 6, 1977, Regional Analysis.

TABLE 10

PHYSICAL CHARACTERISTICS  
OF THE 17 STUDY AREAS, 1975

Study Area	Topography	Soil Group	Total Grids	1975 Urban Grids	Percent Urban	Urban Acres Total*
1. Calaveras	Flat to moderate	8	655	16	2.44	1468.8
2. Culebra	Rolling	5	567	11	1.94	1009.8
3. Elm Creek	Flat to moderate	8	448	4	0.89	367.2
4. Lower Cibolo	Flat to moderate	8	1009	1	0.10	91.8
5. Lower Leon	Flat to moderate	6	545	125	22.94	11475
6. Lower San Antonio	Flat	5,6,7,8	843	29	3.44	2662.2
7. Lower Salado	Flat to moderate	3,4	659	291	44.16	26713.8
8. Martinez	Flat	4,6	625	61	9.90	5599.8
9. Medina	Flat to moderate	5,6,8	663	12	1.81	1101.6
10. Medio	Flat	1,3,4	352	52	14.77	4773.6
11. Middle Cibolo	Moderate	5	396	34	8.59	3121.2
12. Mud	Rolling to hilly	1,3	360	5	1.39	459
13. Santa Clara	Moderate	--	435	5	1.15	459
14. Upper Cibolo	Hilly	1,5	943	9	0.95	826.2
15. Upper Leon	Hilly	1,2,5	522	43	8.24	3947.4
16. Upper San Antonio	Flat to moderate	3,5	876	706	80.59	64810.8
17. Upper Salado	Rolling to hilly	1,2	521	71	13.63	6517.8
TOTAL 208 AREA			10419	1475	14.17	135405

\* Grids x 91.8



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