

**ECONOMIC AND
DEMOGRAPHIC
FUTURES:
1980-2000**

**Salt Lake County
Water Quality &
Water Pollution
Control**

ERRATA

- A. The preliminary 1980 Census population estimates indicate the following figures for Salt Lake County Municipalities. These figures are subject to revision, and in-total represent a -3% deviation with the figures presented in this report.

Salt Lake City	159,759
South Salt Lake City	6,903
Murray	25,168
Midvale	9,431
Sandy	49,114
Draper	5,491
Bluffdale	Not Collated
Riverton	6,780
South Jordan	7,052
West Jordan	23,157
West Valley	Not Collated
Alta	169
Unincorporated Area	309,262
Salt Lake County-Wide	602,286

- B. Table 14A (page 58) should be substituted for the following insert, which includes employment data for the South Valley Facility Area.

Table 14A
DISTRIBUTION OF EMPLOYMENT
BY 201 FACILITY AREAS

Facility Area	1980	%	1990	%	2000	%
Salt Lake City	196,519	65	212,263	56	262,867	54
Central Valley	76,163	25	120,928	32	164,473	34
South Valley	22,051	7	25,133	7	34,544	7
Magna	8,470	3	18,617	5	28,858	5
Total	303,203	100	377,041	100	490,742	100

- C. Census tract/traffic zone map is included in the back pocket folder for your convenience.

SALT LAKE COUNTY DIVISION OF WATER
QUALITY & WATER POLLUTION CONTROL

ECONOMIC & DEMOGRAPHIC FUTURES 1980-2000

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Special acknowledgement is appropriate for the efforts of the Community Planning Policy Committee which provided continual guidance to the Water Quality staff over a six month period; in addition to Jean Watanbe, Office of the State Planning Coordinator, Brad Barber and Greg Selby formerly with the Wasatch Front Regional Council, Jerry Barnes and Dick McNeely of the Salt Lake County Planning office. Without the special effort devoted by these individuals, this report could not have been made possible.

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I. INTRODUCTION

This document is the first revision of five year population projection updates required under Section 208 of the Federal Clean Water Act. The first report, Economic and Demographic Futures: 1975-1995, was initiated at the beginning of the Salt Lake County 208 Water Quality Project (sponsored by the Salt Lake County Council of Governments) in 1975, and was published in 1977. That report covered projections for the 1975-1995 twenty year planning period. This update will revise the planning period to 1980-2000 with appropriate changes in population projections generated five years ago.

The scope of this publication covers a population projection process encompassing four units of governmental analysis: The State, Regional, County, and Local levels. Although the Federal Government through the Environmental Protection Agency (EPA) and the Bureau of Economic Analysis (BEA), is the primary initiator of this process, their role and participation is to a large degree governed by the state effort (to be discussed in Section II).

The projections which appear in this report are gauged from estimates of economic activity expected to occur within the state-as-a-whole. These state-wide estimates - or alternative futures - are divided into multi-county planning areas. Multi-county planning entities - in this case Wasatch Front Regional Council - in turn divide the estimates into respective counties. It therefore becomes the job of the county to divide a county-wide total projection into local geographic locations. (See Figure 1.)

The Salt Lake County Community Planning Policy Committee, working in cooperation with the Salt Lake County Division of Water Quality and

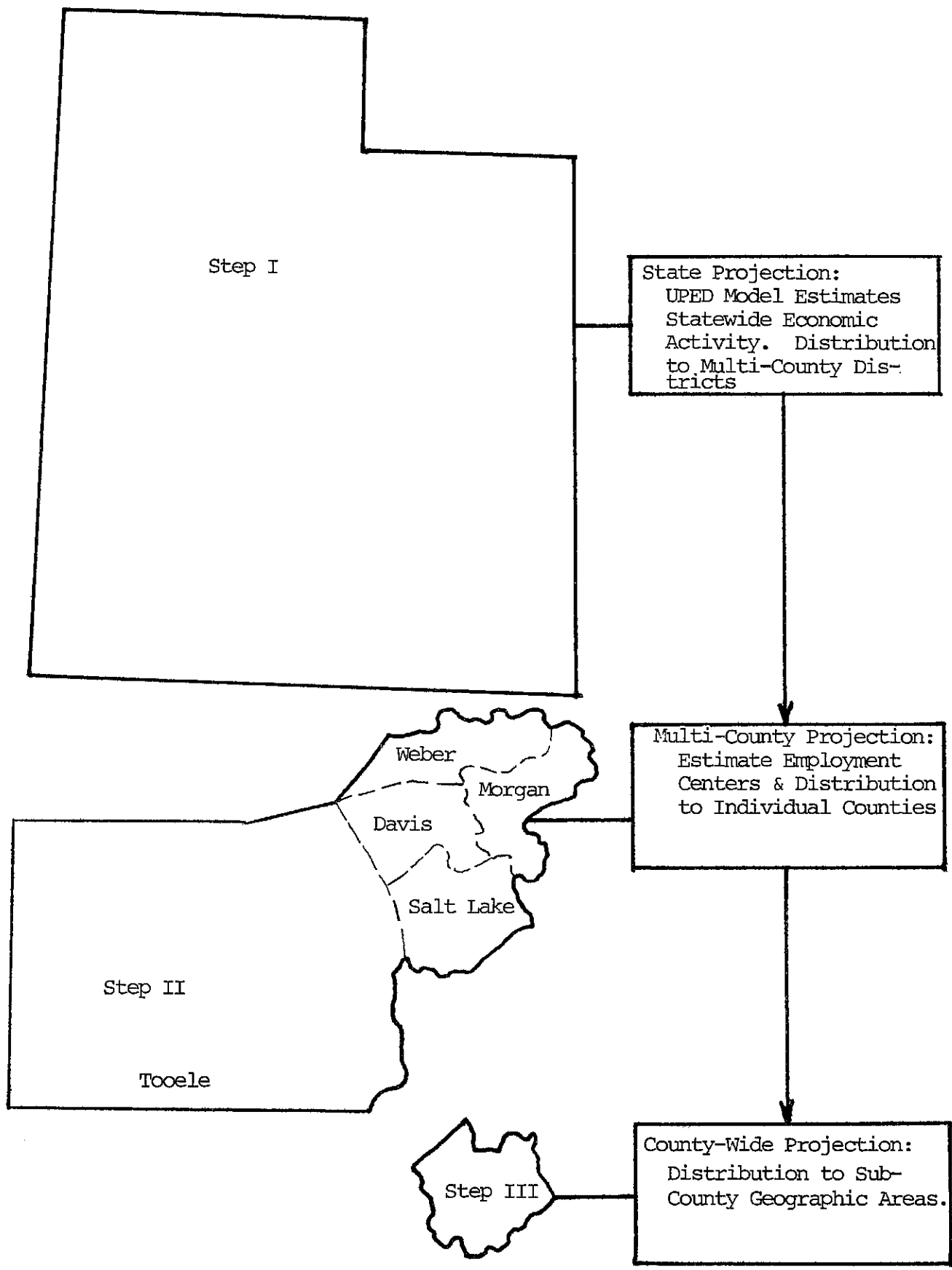


Figure 1. The Three-Tier Process of Population Distribution.

Wasatch Front Regional Council, was given the task of inter-county population distribution. This task was achieved by the Committee through the definition of controlling assumptions about growth patterns, family size, employment, density, transportation effects, and local market trends. The Water Quality staff, with great assistance from Wasatch Front staff, qualified and quantified these assumptions through the use of a computer.

The Community Planning Policy Committee also provided the main avenue for public participation. Table "A" below indicates the frequency, agendas/content, and attendance of the meetings held during development of the projections. The participation by municipalities was generally high, with those cities having the greatest populations showing the greatest level of participation.

Table A. Summary of Population Projection
Public Participation

	ATTENDANCE																
	Salt Lake County	Salt Lake City	South Salt Lake	Murray	Midvale	Sandy	Draper	Bluffdale	Riverton	South Jordan	West Jordan	Alta	State	WFRC	Press	Citizen's Committee	Public Interest
1979																	
April 9: Announcement of 1980 update and need for local input.		x				x	x		x								
Oct. 17: Initial orientation - OSPC, WFRC. Discussion on methodology for distribution & development of assumptions. Establish Time-schedule for publication.	x	x				x	x		x		x		x	x			
Oct. 31: Workshop on development of controlling assumptions for distribution or disaggregation.	x	x	x			x	x		x		x			x	x		
Nov. 14: Refinement of assumptions; discussion of variables (density, family size, rates of growth, projection areas); WFRC computer model factors.	x	x	x			x	x		x					x	x		
Dec. 4: Arrival at preliminary county-wide projection totals; preliminary distribution by census tracts; specific census tract discussion and review.	x	x				x	x		x		x	x		x			x
1980																	
Jan. 9: Distribution of Draft Population Report, Economic Demographic Futures - 1980-2000; Solicitation for comments; discussion on updating 1977 figures to 1980. (Those not in attendance were mailed draft copies).	x	x	x			x					x			x	x		
Feb. 13: Discussion on economic growth in specific census tracts; refinement of assumptions further; second solicitation for comments; need to further develop projections for Town of Alta.						x	x		x		x	x					
Feb. 20: Subcommittee conference on adjustment of specific municipal projections disputed. Negotiation on municipal totals.	x	x						x	x		x						
Mar. 12: No Population Project Discussion. Proceeded with County planning of updating 1980 base data.	x			x		x					x					x	
Apr. 9: No Population Projection Discussion. Continued work of 1980 data update. Initiated re-write of draft report.	x	x	x			x	x		x								
May 14: Completion of Committee work on Population Projections; question regarding EPA denial of State request for variance on revised population projections.	x	x	x			x	x		x							x	
May 28: Final conference on population projection adjustments. No attendance. (Sandy City made arrangements for separate consultation.)																	

The primary unit of analysis used for the initial and secondary distributions was the census tract. Tracts were then subsequently sub-divided into their respective traffic zones. The traffic zone represents the basis unit by which population definition within numerous other boundaries is made. This updated report will, for example, provide updated population projection estimates within:

- 1) Sub-basin Drainage Areas. As opposed to "208 Statistical Areas" published in the first report.
- 2) Regional 201 Facility Boundaries. As opposed to Sewage Collection Districts.
- 3) Municipal Boundaries.

The report is divided into three parts which are intended to thoroughly describe the factors evaluated in the projection process. Part one describes the initiation of the population estimation process utilizing the "Utah Process Economic and Demographic Impact Model" (UPED). Part two discusses the regional distribution of multi-county totals within respective counties, and part three contains the local distribution process together with the figures and tables which are the main interest of most readers.

It is appropriate once again to emphasize that these population projections are estimates. They utilize trends and data which are as volatile and dynamic as the business world itself. Yet there is a fair consensus among most scholars and researchers of population estimation that the economic approach provides the "best guess." It is also appropriate to emphasize that the projections have been updated to assist primarily local, state, and federal agencies in the planning and design of wastewater treatment facilities. Local input has never before been attained in the county-wide population estimating process to the level provided in this report, and it is intended that each five-year update can improve on public participation and input.

We have taken extra care to provide adequate background material so that readers can better understand the numbers which

interest them, and how the numbers fluctuate.

The numbers can be expected to fluctuate as employment and economic models improve. Projection for Salt Lake County is conservative in the face of increased defense spending of which the State of Utah has been in the past a fortunate recipient. Indirect economic impacts are difficult to anticipate, but it is likely that they will make their presence known within the next decade.

**II. THE STATE OF UTAH PROJECTION:
UPED And Multi-County Distribution**

The process used to generate initial population projection for the State of Utah, the role of these projections relating to Federal government policy, and the distribution of state projections to sub-state planning areas, are the subjects to be discussed here. This section forms the framework in which all growth in each county of the state should properly be discussed, since economic interdependency is a marked feature of any group of organizations, whether public or private. The role of the State of Utah in National economic interdependencies should also become clearer to the reader.

DESCRIPTION OF THE UTAH PROCESS ECONOMIC AND DEMOGRAPHIC IMPACT MODEL (UPED)¹

The source of the following discussion is the memorandum issued by the Utah State Planning Coordinator's office entitled, "Request to EPA for a Variance in Population Projections", dated October 3, 1979. The text of this memorandum includes Appendix A, A Description of the Utah Process Economic and Demographic Impact Model. Major portions are extracted in their entirety, while the remainder of the description is largely paraphrased. One reference is used to document the entire discussion.

The UPED model is a simulation of anticipated economic impacts which occur from the input, or creation, of various jobs and demographic behavior in a geographic area. The inputs include:

- o Labor force participation
- o Multiple job holding
- o Employment producing export goods and services
- o Employment producing local consumption of goods and services

Projected outputs include:

- o Employment by industry
- o Labor force by age and sex

- o Population by age and sex
- o Households by age and sex
- o and school age population by grade level and sex

The UPED model provides numerous opportunities for evaluating specific impacts resulting from changes in employment-related factors:

The model is a systems simulation model in that its equational structure (reflecting assumptions of economic and demographic behavior and structure) attempts to capture the complex causal interconnections between the size and composition of population and the level and composition of employment in an area. The model is an impact model in that its logical structure of the implementing computer program permits the introduction of any number of alternative assumptions concerning future economic and/or demographic developments. For example, these alternatives may represent the occurrence or non-occurrence of a major economic development or the continuation or decline of a current major industry. The model then calculates the difference made by such an event as compared to the case where the event is assumed not to occur. This difference is defined as the impact of the event. Similarly, demographic parameters could be varied to reflect, for example, assumed future increases or decreases in natality behavior and the model would produce projected variables resulting from such a change.

The strength of UPED is its ability to produce specific alternative scenarios based on economic shifts and changes, rather than just providing a "best guess." It admits that certainty is not a feature of economics and population projections, yet provides for estimating probable extreme impacts of growth within a given area. It is designed and utilized as a tool for contingency planning as well as providing "best guess" capability at any one point in time. The establishment of the "best guess" baseline projection does have its uses:

- 1) "First, it provides the most likely projection of the future situation based on the behavioral changes and economic development assumed most likely to occur."
- 2) "It serves as a standard of comparison against which alternative future projections can be compared."

Specific labor market areas, such as the Wasatch Front, can be predicted to gain or lose population depending on measures of employment affected by growth or decline in economic activity:

The underlying theoretical precept of UPED is the well established economic base concept which holds that, for all but the largest (national-continental) regions, one of the primary determinants of the level of economic activity, and consequently of population size, is the amount of goods and services produced for export to other areas. According to the economic base concept, variations of basic (export) sector employment produce variations in the number of households deriving their income from these sectors. These variations, in turn, produce variations in demand for goods and services produced locally for local consumption. (These local production-local consumption activities are referred to variously as non-basic, service, residentiary, or population dependent sectors.) "First round" variations in population dependent sectors subsequently produce further variations in population and in household incomes. These generate further second, third, etc., round responses so that finally a given projected initial change in basic sector employment will produce a "multipliered" change in population dependent and local employment as well as in population.

UPED adds to this basic concept the three-component cohort survival population projection method which considers birth, death, and migration. In this manner, present population size and composition is related to population which is dependent on employment opportunities. Thus the total population is the sum of both non-employment related, and employment - or migration - related persons. The model manipulates the status or movement of these two factors in order to arrive at final population numbers.

The weakness of UPED is its inability to capture multiplier effects from newly created jobs and the income generated by those jobs. Dollars invested from new income are multiplied by a factor of four through reinvestment by banks and other lending institutions. New jobs produce demands for other jobs which provide goods or services. The central administrative support necessary to service one employee in a decentralized location tends to be higher. An example is the Armed Forces, where fifteen

support personnel behind the lines are necessary to support one infantry man at the front lines. The same condition exists with large-scale employment in the energy-production field: The functions of mining or synfuels manufacturing at a remote "boom town" location produces a multiplicity of support functions at a central "home office." It is difficult to assign multiplier factors for general employment sectors, but UPED will probably develop this capability in the future. Meanwhile, it is possible that UPED could substantially underestimate projected employment.

Figure 2, a General Flow Chart of the model, summarizes the input-output effects utilized to determine adjustments within a labor market area. Changes in the size or composition of population within the labor-market area, as well as the level of services relative to the rest of the nation, both influence the job opportunities:

The labor force is derived by applying projected age, sex, and ethnic group-specific labor force participation rates to the projected population. Population dependent job opportunities are projected as dependent upon (1) the size and composition of the population, (2) the area's projected per capita local production-local consumption relative to that of the nation, and (3) projections of national residentiary employment by sector and of national population by cohort.

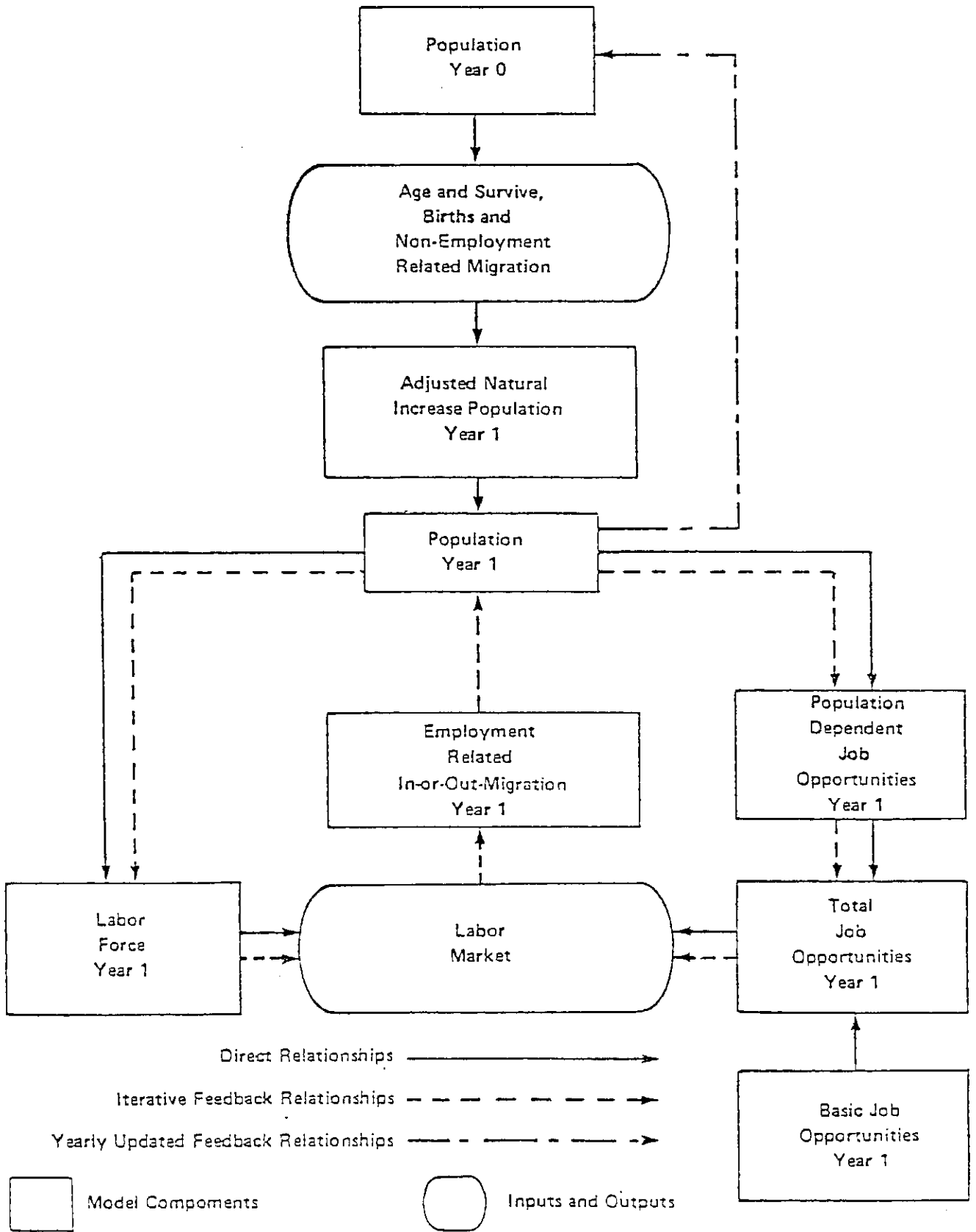


Figure 2. General Flow Chart UPED Model.

Basic employment demand within a labor-market area is "modeled" or manipulated by computer to determine the impacts resulting from construction and operation of a power plant, missile-defense complex, oil-shale operation, or other economic event. The total population, derived from these modeled job opportunities, increases or decreases based on the demand for and supply of labor generated by any one event:

Initial values for both the supply of and demand for labor are introduced into the Labor Market component of the model where they are used to calculate the projected unemployment rate as an index of the area's economic opportunities. This rate is compared against a parametrically established "normal" range of unemployment rates. If it is higher than the upper bound of the range--the out-migration triggering rate--this is taken to indicate inadequate opportunities for the natural increase population, and Employment Related Out-Migration at Year 1 is projected. Alternatively, if it is below the lower bound--the in-migration triggering rate--usually high prosperity is indicated and Employment Related In-Migration at Year 1 is projected.

Several projections of in-migration (or out-migration) are necessary to adjust the unemployment rate. This "iterative process continues until the calculated unemployment rate is satisfactorily close to the relevant triggering rate at which time convergence is achieved and no further migration or employment changes are calculated."

The final employment, migration, and population outputs are used to derive households, labor force, and school age populations. This final number - or solution value - serves as the initial "population vector for the next projection year," or series.

STATE UPED PROJECTIONS AND THEIR RELATIONSHIP TO FEDERAL PROJECTIONS²

The federal government, through the Bureau of Economic Analysis (BEA), uses population projections to determine formulas and procedures for allocation of federal funds within various

administrative regions of the country. The Environmental Protection Agency (EPA) operates within 10 regions around the country, with Utah part of Region 8. Congress and EPA Washington allocate funds to regions based for the most part on population (the greatest good for the greatest number), and land area. Utah has suffered historically from federal funding policies because its population is small, yet the land area (particularly public lands) is large.

A recent problem has arisen where the population projections by BEA (utilized by EPA) are considered to be too low. The effect of inadequate projections by EPA would be a shortage of federal dollars available for Utah communities in meeting provisions of the 1977 Federal Water Pollution Control Act.

The State Planning Coordinator's office provided the following reasons why EPA population control estimates for Utah are believed to be too low:

- o The EPA projection for 1980 is lower than the 1978 population estimate for Utah. The difference created by the understatement is compounded in magnitude in projection years beyond 1980.
- o The EPA projections are a revision by BEA of their 1972 OBERS projections. The OBERS projections completely failed to capture Utah's population growth during the 1970's and fell much below current population estimates. The revision did not adequately compensate for this weakness.
- o The EPA projections are lower than projections which assume no net in-migration of population experienced by Utah during an earlier period reversed in the 1970's. Now, net in-migration is an increasingly significant component of population change.
- o Utah is participating in larger regional growth phenomenon and is experiencing a change in its relationship to the nation that has not been adequately captured in the EPA projections.

- o The problem of making projections for the nation to be disaggregated to the state level is quite different than one of making a state projection directly. This is particularly true for a state which represents a very small proportion of the U.S. population and economic activity. Though underlying concepts may be shared, the assumptions employed are different. National projections are made with the need to maintain consistency among states and to reflect the general character of the National. State projections attempt to capture and incorporate the unique characteristics of a state's population and economy.
- o EPA projections are based on the assumption that the completed fertility rate remains at replacement levels (2.1) after 1980. Utah has significantly higher fertility rates than the Nation.
- o The determination of basic employment is made using systematic techniques at the National level; however, at the state level these can result in an arbitrary classification of some industrial sectors. The result is an inaccurate description of Utah's economic structure.

It is expected that the Utah proposal to EPA will meet with success, due mainly to the overwhelming amount of technical adjustments and errors in federal projection procedures. A comparison of the projections for Utah is summarized in Table 1 and Figure 3.

DISTRIBUTION OF THE UPED BASELINE PROJECTION TO MULTI-COUNTY PLANNING AREAS³

The disaggregation of statewide projections to multi-county planning districts (MCD) assumes that labor market and employment composition are parallel to district boundaries. The similarities of employment, land use, and demographic characteristics of communities along the Wasatch Front are substantial, but the UPED process "utilizes area specific data in making critical assumptions about employment and demographic characteristics.

Area specific data evaluated in the disaggregation process for each MCD include:

- 1) County level employment data. The total work force in a county and the distribution of work force by basic employment categories.
- 2) Market thresholds. A particular market for goods or services operates within a discernible radius in a geographic area.
- 3) Local labor force participation rates. The proportion of male and female workers in the total job force or within certain employment sectors. This factor may have an inverse effect on in-migration such that the potential number of jobs stimulating in-migration would be filled by present labor resources. Where local labor force participation levels become saturated, and supply of jobs is high, demand for the jobs may be met by increased in-migration.
- 4) Rates of growth in employment sectors. Such rates are influenced by aging of the resident population to employable levels (over 16), higher fertility rates, together with increased female labor force participation.
- 5) Rates of in-migration.

The Wasatch Front MCD, comprised by Salt Lake, Tooele, Davis and Morgan Counties, "have been experiencing very rapid rates of growth in employment since 1971."

The non-agriculture wage and salary employment from 1971-1977 increased at an annual rate of about 5% (with the exception of 1974 which reflected the impact of the national recession); from 1977 to 1978 this rate of growth jumped to 7%. The average annual growth rates for population from 1971-1977 was 2% and the 1977 to 1978 rate was 3.6%. In comparison the labor force estimates reflect an annual rate of growth of 3.8% from 1971 to 1977 and a 5.8% rate from 1977 to 1978.

Having evaluated trends involving the analytical factors discussed previously, the UPED model produced baseline projections for each MCD. These baseline figures are represented in Table 1.

The reader should note that Table 1 includes an "Alternative Future Population Projection" for the Uintah Basin MCD (comprised by Daggett, Duchesne and Uintah Counties), with the anticipation

TABLE 1
COMPARISON OF POPULATION PROJECTIONS AND ESTIMATES FOR UTAH
(000's)

A. Projections						B. Current Estimates ^a		
I. Utah Process Economic and Demographic Impact Projections (UPED) produced by the Utah State Planning Coordinator's Office						I. Utah Population Work Committee Estimates		
<u>1978</u>	<u>1980</u>	<u>1980</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
1,329.0	1,424.7	1,750.5	1,956.1	2,117.3	2,268.4	1,232	1,270	1,316
II. EPA Population Projections ¹						II. U.S. Bureau of Census Estimates ⁵		
<u>1978</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>			<u>1976</u>	<u>1977</u>	<u>1978</u>
1,245	1,277	1,379	1,482	1,688		1,232	1,270	1,307
III. 1972 OBERS Projections (Series E) ²								
<u>1980</u>	<u>1985</u>	<u>1990</u>						
1,160	1,232	1,309	1,412					
IV. U.S. Bureau of the Census ³ Illustrative Projections of State Populations Series II-C: No Interstate Migration Assumption from Census								
<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>					
1,308.7	1,434.7	1,557.4	1,671.7	1,780				

SOURCES:

1. Bureau of Economic Analysis, "Population, Personal Income and Earnings by State: Projections to 2000," Oct. 1977.
2. 1972 OBERS Projections, Series E Population, Vol. 1, U.S. Water Resources Council, April 1974.
3. Bureau of the Census, Illustrative Projections of State Populations by Age, Race and Sex: 1975 to 2000, Current Population Reports, P-25, No. 796, March 1979.
4. Utah Population Work Committee, "1978 Population Estimates for Utah," Utah Economic and Business Review, Vol. 30, No. 12, December 1978, Bureau of Economic and Business Research, University of Utah, Salt Lake City, Utah.
5. Bureau of the Census, Population Estimates, Current Population Reports, P-26, No. 78-44, August 1979.

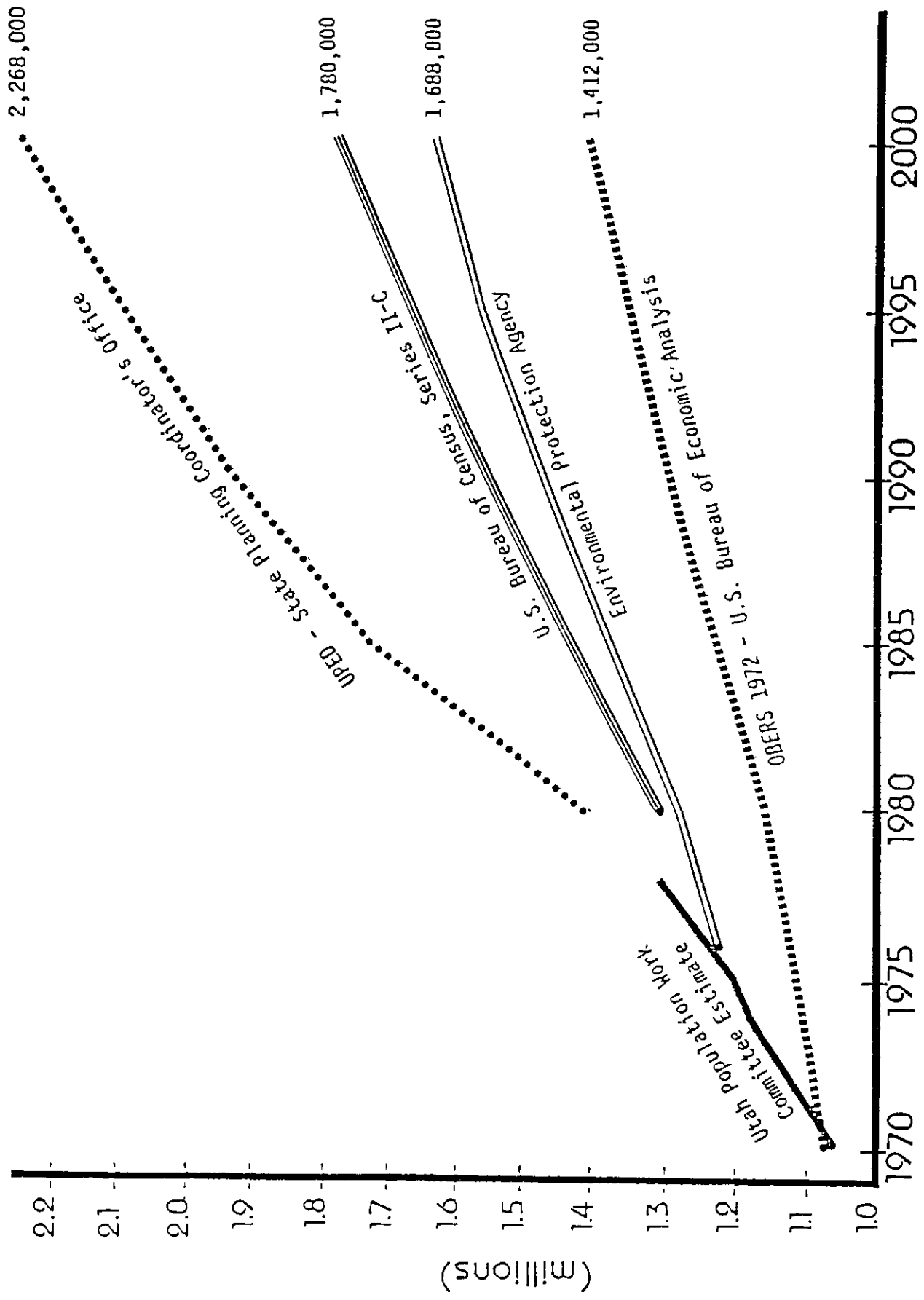


Figure 3. Utah Current Population Projections.

of substantial employment increase resulting from oil shale, tar sands, and other related synthetic fuels industrial growth. Therefore, the dynamic process of adjustment of population projection through the establishment of contingencies or alternative futures, can be used to predict both primary and secondary effects of projected employment stimulation anywhere in the state, at any one point in time.

UTAH GROWTH: A REGIONAL ANOMALY⁴

Argument regarding the nature and extent of growth in the State of Utah is widespread among both pro-growth and anti-growth factions. Many trends projected for the national economy show downward movement while Utah and other intermountain states continue to show relative economic strength.

First Security Corporation, a leading intermountain lending institution, has compiled an "Index of Leading Indicators" which demonstrates that Utah's economy continues to be relatively strong compared to that of the nation-as-a-whole. Although the analytical factors employed by First Security do not duplicate or correlate precisely with the national indicators, they do provide a reasonable basis for measurement of local/regional economic health.

In summary, the factors utilized by the private sector in measuring the level of projected lending risk include the following:

- 1) New direct consumer loans.
- 2) Delinquency rates on all consumer loans.
- 3) New permits: Non-residential construction value.
- 4) New residential permits.
- 5) New automobile sales.

⁴Dr. Kelly Matthews, "Index of Leading Indicators" and personal consultation. First Security Corporation. SLC February, 1980.

- 6) Average weekly hours of manufacturing.
- 7) Manufacturing layoff rate.
- 8) Number of new corporations registered by Secretary of State.
- 9) New non-farm job placements.
- 10) Net change in commercial and industrial loans.

The local index of leading indicators demonstrates the relative strength of the Utah economy compared to the nation. (Figure 3A). Granted there are limitations in comparing local factors to national factors, but the local index does recognize trends which are useful in mortgage loan decision-making. Some discontinuities in the index chart deserve further discussion, in terms of probable direct and indirect impact factors on the regional economy:

Direct Effects

- o The departure between national and local growth trends in 1973 and 1974 may be explained by the composition of the index. Yet unemployment in Utah still remained lower than nationally.
- o The strong demand for borrowing locally has been sustained for the last six years, while nationally borrowing fell off substantially (prior to tightening of prime lending rates by the Federal Reserve Board).
- o The national effects of automobile industry layoffs and cutbacks were greatly cyclical, i.e., greater rise and fall; Utah industry was much less so, thus providing more employment stability.
- o The construction industry in Utah outpaced the nation due to:
 - Availability of construction loans
 - Availability of resources at lower cost
 - Availability of local land resource values highly competitive in relation to national

land values (although the consumption for land is now slowing due to decreased "cheap" land supply).

Indirect Effects

- o Regional spillover occurred from the Denver area energy market.
- o Non-cyclical defense technology industries overcome the more cyclical national industries.
- o Greater levels of imported capital have occurred in Utah due to mortgage and construction dollar availability.
- o Non-residential construction infrastructure replaced the formerly strong residential infrastructure. Large outside corporations maintained the local construction economy with the downtown Salt Lake City office building boom. (This infrastructure will also help maintain a strong downtown employment base over the long-term).

The conclusion of this discussion is directed toward a comparison between Figure 3 and Figure 3A. Current population projections for the State of Utah forecast sustained growth with relative stability in the local index of leading indicators. The current projections do not, however, reflect new economic indicators (or alternative futures) which entail increased defense spending and energy development in areas other than the Uintah Basin. The present economic forecast for the State of Utah is thus conservative, and could change dramatically with federal initiatives particularly aimed at defense and energy development.

The discussion must now shift to another level of analysis - from the Wasatch Front population totals, to individual county totals.

First Security '80 Predictions

Economy to Drop Below '78, '79 Levels

Utah's economy in 1980 will slip below the growth rate of the past two years, according to First Security Corp.'s quarterly "Newsletter."

It said, however, that despite economic problems in the national and international economies, Utah would be generally insulated.

The newsletter, edited by Dr. Kelly Mathews, First Security vice president and chief economist, said 1980 population in Utah should top a 3 percent gain.

Some 27,000 new jobs, a gain of 4.9 percent, are expected to be created. Rate of unemployment will probably go modestly higher, between 5 to 5.5 percent.

New jobs in manufacturing will increase 5.25 percent by 4,500. Mining jobs will be up 7.25 percent by 1,300. Construction employment will remain flat.

Residential construction will remain sharply under that for year-ago levels. The number of permits are expected to

be off 7 to 10 percent.

Nonresidential or commercial construction still remains a positive factor in 1980, it said.

Year-end mortgage rates in the Salt Lake area averaged 12 to 12.5 percent while rates of mortgage financing from the secondary market remain near 13 percent.

It is unlikely, said Newsletter, there will be a significant drop in rates during the first half.

Consumer spending will remain sluggish in the first half because of debt repayment and rising energy costs.

Retail sales will be up 9 to 10 percent, but less than the annual rate of inflation.

The U.S. economy will be characterized by inflation, recession and politics, said Newsletter.

It said that as a result of the December OPEC price increase, crude oil prices will likely go up another 40 to 50 percent in 1980.

The impact of these, combined with rising labor costs and declining domestic productivity, will likely keep inflation at 12 percent during the first half of 1980.

Limited by weakness of the dollar and continued inflation, the Federal Reserve will have no flexibility to influence interest rates downward as the national economy weakens in the first quarter of the election year.

Short-term interest rates may actually edge higher while long-term rates are expected to remain near present levels.

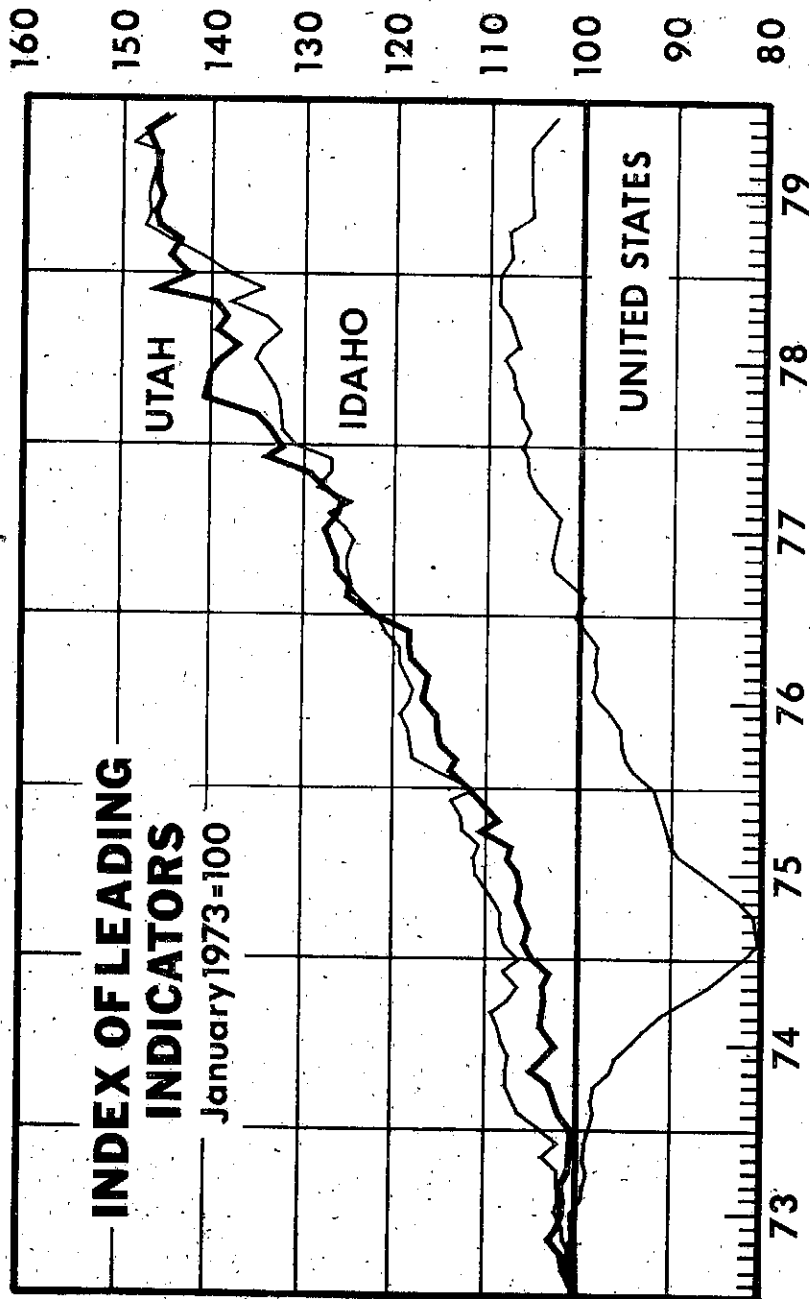


FIGURE 3A.

LOCAL INDEX OF LEADING INDICATORS

Source: Economic Graphics, First Security Corporation.

TABLE 2
 UTAH BASELINE POPULATION PROJECTIONS
 BY MULTI-COUNTY PLANNING DISTRICT (MCD)

	<u>1978</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
1. Bear River	87,500	94,800	115,300	127,100	136,300	144,000
2. Wasatch Front	854,800	916,400	1,134,100	1,273,200	1,384,000	1,488,800
3. Mountainlands	206,600	219,500	264,500	295,500	322,800	355,900
4. Six County	46,200	49,500	63,600	71,300	76,500	81,400
5. Five County	49,000	52,900	63,800	71,900	78,700	81,100
6. Uintah Basin	32,300	33,400	35,800	36,600	35,100	32,900
7. Southeastern	52,500	58,200	73,400	80,500	83,900	84,300
STATE TOTAL	1,329,000	1,424,700	1,750,500	1,956,100	2,117,300	2,268,400

ALTERNATIVE FUTURE POPULATION PROJECTION

	<u>1978</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Uintah Basin MCD	32,300	34,000	41,600	54,100	49,900	48,600
"Alternative Future"						
STATE TOTAL	1,329,000	1,425,200	1,756,300	1,973,600	2,132,100	2,284,100

**III. THE WASATCH FRONT PROJECTION:
Individual County Distribution**

Three trends were identified by the staff of the Wasatch Front Regional Council which serve as subjects for comparison and analysis for MCD disaggregation:⁴

1. Adopted Population Proportions. These proportions are essentially the same as those appearing in the first edition of Economic and Demographic Futures - 1975-1995.
2. Surveillance Trends. Based on local land use surveillance data generated by individual cities and counties and compiled by Wasatch Front Regional Council. Basically an extrapolation method based on current building permit data.
3. Utah Population Work Committee Trends. Also an extrapolation of present building permit data.

Table 3 summarizes the Comparative Disaggregations of Revised (August 31, 1979) UPED Population Projections. The first column, "Region Total", is the Wasatch Front baseline projection estimated by the UPED model. The remaining columns are estimates for each individual county as described by each of the three above stated trends.

Prior to discussing the contributing effects of population location within any one particular county, it is appropriate here to observe current inconsistencies in population baseline (here meaning 1980 baseline) data.

SALT LAKE COUNTY LAND USE SURVEILLANCE TRENDS

The Salt Lake County Planning Commission utilizes a process of updating land use surveillance through the collection of building permits from each incorporated municipality and from unincorporated county records. These data are compiled by the

TABLE 3.
COMPARATIVE DISAGGREGATIONS OF REVISED
AUGUST 31, 1979 UPED POPULATION PROJECTIONS

	Region Total	Davis	Morgan	Salt Lake	Tooele	Weber
<u>1980</u>						
Adopted Projections Proportions	916,000	139,000	5,800	587,000	27,900	157,000
Surveillance Trends	916,000	149,000	5,600	580,000	26,600	155,000
Population Work Committee Trends	916,000	142,000	5,600	590,000	26,600	152,000
<u>1985</u>						
Adopted Proj. Prop.	1,134,000	182,000	7,400	721,000	34,500	189,000
Surveillance	1,134,000	198,000	7,100	705,000	32,400	192,000
Work Comm.	1,134,000	183,000	7,100	730,000	32,400	182,000
<u>1990</u>						
Adopted Proj. Prop.	1,273,000	217,000	9,200	801,000	38,600	207,000
Surveillance	1,273,000	237,000	8,100	775,000	36,000	214,000
Work Comm.	1,273,000	212,000	8,100	819,000	36,000	198,000
<u>1995</u>						
Adopted Proj. Prop.	1,384,000	249,000	10,900	863,000	41,900	219,000
Surveillance	1,384,000	275,000	9,400	828,000	38,800	233,000
Work Comm.	1,384,000	236,000	9,400	889,000	38,800	210,000
<u>2000</u>						
Adopted Proj. Propl.	1,489,000	282,000	13,300	919,000	45,000	230,000
Surveillance	1,489,000	314,000	10,000	873,000	41,400	251,000
Work Comm.	1,489,000	260,000	10,000	956,000*	41,400	221,000

County figures may not add to regional total due to independent rounding.

*Preliminary figure later revised to 907,000.

county planning staff and sent to the Wasatch Front Regional Council where it is entered into the regional land use surveillance system.

Data compiled at the end of 1978 indicate the population of Salt Lake County on July, 1979 was approximately 607,000. Estimates of additional data up to July 1, 1980, show an increase to 620,000.⁵ The Salt Lake County data assumes typical densities within particular planning districts, which in turn are used to estimate population within 1) individual census tracts and 2) the county-as-a-whole. Figure 4 summarizes the permits issued for both multiple and single family units county-wide, since 1970.⁶

The county planning staff recognizes that since the permits were issued in 1978 approximately 2000 single family homes have not been occupied.⁷ Interest rate increases have been blamed for the temporary slump in execution of mortgage loans. But assuming that 2000 units remain vacant - or unsold - and utilizing an average family size of 3.06 throughout the county, only about 6000 people would remain unaccounted for in the mid '79 population estimation of 620,000. It would appear, therefore, that the land use surveillance estimate at the end of 1978 and the present estimate with a vacancy adjustment are conservative estimates of the population of Salt Lake County at the beginning of 1980. It is likely that all facts and data will not be known until publication of the 1980 census, due sometime in 1981.

ANALYTICAL FACTORS: LOCATED EMPLOYMENT/POPULATION

The distribution of population from multi-county to county planning areas involves the analysis of several interacting factors. Major analytical factors to consider include:

1. Labor Force Participation Rates. These indicate the percentage of the total population which is employed. The impacts of school age workers, in addition to female employees, both produce fluctuations in job markets.
2. Family or Household Size. The number of persons per household influences the income generation of the family, their mobility, their location, the kind of house in which they live, and the number of households generated.
3. Residential Density. The number of units within a neighborhood or the number of units per acre, is an indicator of family characteristics, as well as income, mobility, employment characteristics, in addition to transit habits and access to employment centers.
4. Employment Trends. Basic employment categories, i.e. government, construction, mining, etc., are evaluated not only in terms of how many people are employed in each category, but where they are employed as well.

A summary discussion of these factors will help the reader to understand how some counties - or geographic areas - create greater or lesser amounts of population attraction "gravity" over others.

o LABOR FORCE PARTICIPATION RATES

A factor all too often assumed to be constant in the estimation of employment is the rate at which "employable" persons participate in the job market. The variations in the job market from increased participation via "moonlighting" or having a second job results in only about 6% of the total (i.e. the ratio of actual job count to employed persons is 1.064).⁸

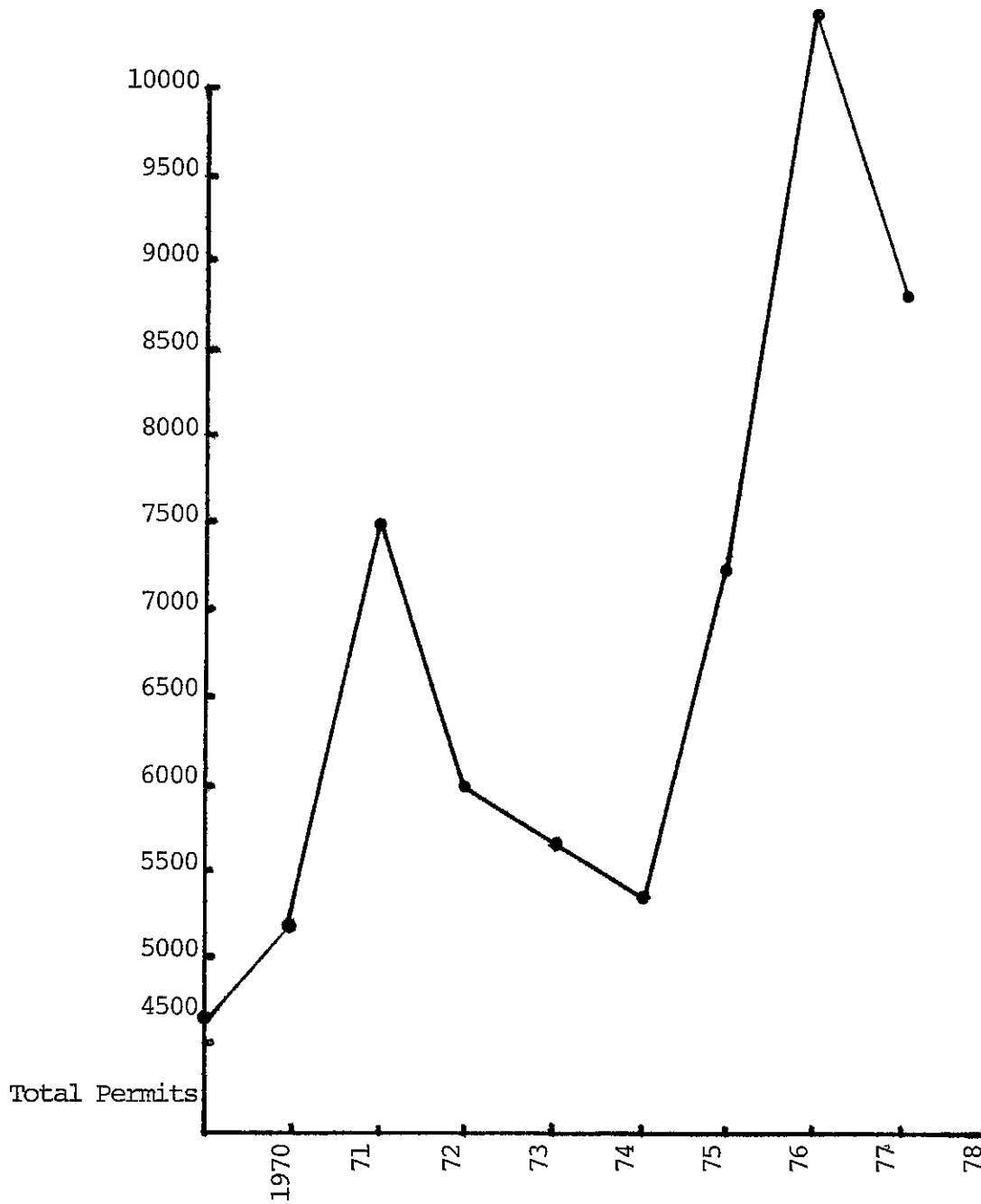


Figure 4. Summary of Total Residential Building Permits - County-Wide. 1970-78
 Source: Salt Lake County Planning Commission.

A larger impact on local job markets is likely to result from increased participation by women. The rapidly increasing cost of living, together with the steady advance of interest rates on mortgage loans, is producing an interest for full time employment by women that can change population estimates:

1. The increase of jobs locally could be met with higher participation rates from the resident female population. The net effect on immigration could be a decrease, though slight.
2. The decrease in in-migration could be affected in one of two ways
a. Decrease in total families, or
b. Decrease in total employable persons

In either case married in-migrants looking for employment can produce a more rapid saturation of the available job market due to the need for both household heads to work. The increase in labor force participation by women can thus be expected to produce decreases in total jobs available.

The conclusion from the 1975 projection is expected to have application for the 1980 projection:

"That the female composition of the labor force will be underestimated for the regional unity by proportions of up to nearly 3% by 1995", and possibly up to 6% in Salt Lake County.⁹

o HOUSEHOLD OR FAMILY SIZE

The number of persons per household varies throughout a specific geographic area and the average persons per household is an indicator of basic population density. For example, the estimated family or household size in the Wasatch Front multi-county district is 3.23 (persons per dwelling unit).¹⁰ Variation

in household size is significant because the number of dwelling units projected for an area, given a certain amount of population, is contingent on estimates of family size.

The table below demonstrates how family size is important in the estimation of dwelling units resulting from a base population of 1000 people in five areas of differing family size.

TABLE 4.
RELATIONSHIP BETWEEN FAMILY SIZE AND
POPULATION PROJECTIONS: ORIGIN OF DWELLING UNIT ESTIMATES

Projected Population	Average Persons Per Dwelling Unit	Projected Dwelling Units
1000	2.0	500
1000	2.5	400
1000	3.0	333
1000	3.5	286
1000	4.0	250

Household size relates directly to land absorption by new development. The higher the average persons per dwelling unit, the lower the amount of acreage anticipated to be consumed. A typical lot size for a single family unit in Salt Lake County is 10,000 square feet. Therefore, a neighborhood or community average of 2.5 persons per household would consume 92 acres, where a community with 3.5 persons per household would consume only 66 acres.

As discussed in the first edition of Economic & Demographic Futures, national household size is on the decline. Between 1960 and 1970, average family size slipped from 3.33 to 3.14, and the tendency is expected to continue given the existing downturn in

economic activity. The rate of decrease in the Wasatch Front Counties is anticipated to be slower than that of the nation, due to the predominance of larger families and the continued strength of the local economy. (See Figure 6).

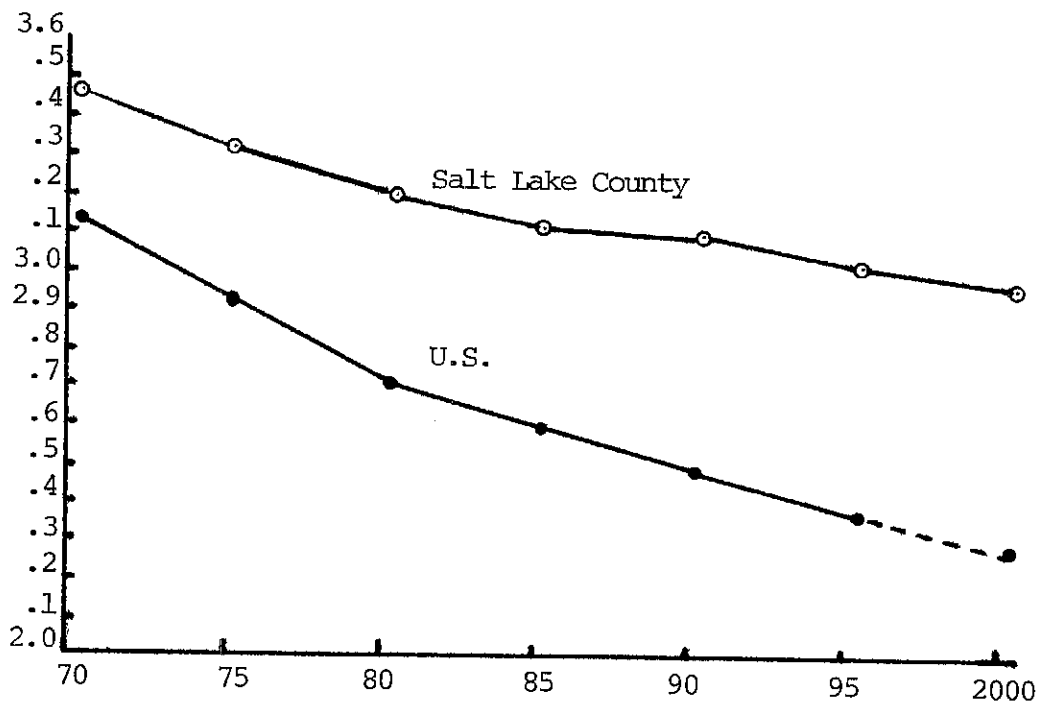


Figure 5. Family Size Trends Along the Wasatch Front Compared to National Trends.
 Source: Econ/Demo Futures: 75-95.

The conclusion of this discussion implies that given present demand for single family detached housing, suburban communities along the Wasatch Front will tend to develop at a higher initial density (but at a decreasing rate), with a sustained demand for

all types of governmental services, such as schools, water supply, sewer services, police and fire protection. Changes in the housing market, such as increasing demand for condominium or apartment-style housing, may further increase density, thus helping to alleviate demand for additional public expenditures. Average family size will continue to decrease.

o RESIDENTIAL DENSITY

The density of dwelling units per acre is an indication of present development patterns, land values, levels of service, and life-styles. Density is an important consideration in any discussion of land utilization, since the same baseline forecast can produce differing assumptions about land utilization patterns and intensities. Table 5 summarizes this point:

TABLE 5
THE RELATIONSHIP BETWEEN ACRES CONSUMED,
RESIDENTIAL DENSITY, AND POPULATION PROJECTIONS

Projected Population	Average Dwelling Units Per Acre (Assume 4.0 persons per household)	Acres Consumed
1000	4.0	62.5
1000	8.0	31.2
1000	10.0	25.0
1000	15.0	16.6
1000	20.0	12.5

Residential density along the Wasatch Front is summarized in Table 6.¹¹

TABLE 6
AVERAGE RESIDENTIAL DENSITIES IN FOUR MAJOR
WASATCH FRONT COMMUNITIES

	1970	1975	1976	Average
Ogden City	6.19	6.07	6.24	6.17
Davis County	4.54	4.65	4.58	4.59
Salt Lake City	8.71	9.32	9.33	9.12
Salt Lake County	4.00	4.51	4.53	4.35
Wasatch Front Av.	5.86	6.14	6.17	6.06

A mixture of low, medium, and high density residential accounts for the relative averages represented in Table 6. Low density residential is typically at 1-4 units per acre; medium density is represented at 5-10 units per acre; and high density usually is over 10 units per acre. Cities such as Ogden or Salt Lake characteristically have a greater proportion of high density housing units. This accounts for the higher average density shown for the two cities. Counties, though having a greater residential mix, produce lower densities due to the higher proportion of single family housing.

o EMPLOYMENT TRENDS

The location of basic job categories within a region also creates "gravity" for additional located population. The UPED Model considers the general location of employment centers and categories and uses these factors to accomplish regional distributions. The kinds of jobs found in any one county within a region will further guide detailed analysis of located employment down to the county level.

Data obtained from the Utah State Department of Employment Security divide approximately 374,000 jobs along the Wasatch Front into fifteen categories: Mining, Construction, Manufacturing (with durable and non-durable components), transportation, trade (with wholesale and retail components), finance (which includes insurance and real estate), Service, and Government (with federal, state, and local components). Agricultural employment is kept separate from the total number of jobs for reasons not clear - except that the very small percentage of agricultural jobs implies that they are insignificant. However, because of the national significance presently being placed on agricultural preservation in the county, agricultural employment will be discussed first separately, and then as part of the total.

Table 7 summarizes average non-agricultural employment along the Wasatch Front by category at the end of 1978.¹² Later data

will be available at about mid 1980. From this information, it is apparent that a hierarchy of employment trends along the Wasatch Front exists.

TABLE 7
LOCATED NON-AGRICULTURAL EMPLOYMENT
AS % OF TOTAL 1978

	Mining	Const.	Manuf.	Transp.	Trade	Finance	Service	Gov.	Total
Wasatch Front	3	6	14	7	25	5	17	23	100%
Morgan	1	8	29	3	28	4	5	22	.002%
Weber	1	6	13	6	24	4	16	30	12%
Davis	.0006	6	12	4	19	2	11	46	11%
Tooele	5	3	12	3	11	2	5	59	3%
Salt Lake	2	7	15	7	27	6	18	17	73%

The hierarchy of employment in the Wasatch Front can be enumerated as follows:

1. Trade. Consisting of both wholesale and retail components.
2. Government. Represented by employees from Federal, State and local levels.
3. Service.
4. Manufacturing. Including both durable and non-durable goods.
5. Transportation.
6. Construction.
7. Finance.
8. Mining.

The distribution of population from the Wasatch Front MCD to individual counties must consider not only the kinds of jobs predominating a market area (or in this case a specific county), but the propensity for people to travel across county boundaries to their jobs. Essentially, however, increases in basic employment categories can be assigned to those market areas possessing an already present and strong threshold for a particular group of goods or services unless specific changes or employment events can be documented.

Several theoretical examples are appropriate to demonstrate this point:

- a. The construction sector in Salt Lake County is expected to expand due to the construction of at least two new regional wastewater treatment facilities prior to 1990. This event creates gravity for an increased allocation of jobs in that sector over and above the norm.
- b. The transportation sector in all three Wasatch Front urban centers - Salt Lake, Davis, and Weber counties - can be expected to increase with federal incentives for mass transit and the economic incentive of high gasoline costs.
- c. The present effort at trimming budgets in the governmental sector may produce increases in the service sector as governmental employees shift to providing services through the private sector.
- d. The tightening of interest rates to slow inflation over a period of time may reduce growth in the finance sector. In fact, similar shifts from a weakened finance sector to a strong trade sector may be likely.

Changes in the national and localized regional economy can thus produce both "horizontal" shifts from one employment sector to another, as well as "vertical" shifts from one county (or market area) to another. For the most part, basic employment distributions are made assuming "typical" growth or normal increase

in hierarchical job categories, unless "atypical" conditions such as those discussed above can be factored and anticipated.

o ADJUSTED WASATCH FRONT EMPLOYMENT PROJECTIONS

Updated total employment projections were provided in Salt Lake County by Wasatch Front Regional Council. Figure 8 indicates that this adjusted total employment projection reduces the number of jobs anticipated in Salt Lake County only slightly from those published previously.

The regional employment projections were updated for 1995 and 2000, and projections for 1985 and 1990 were derived by the Division of Water Quality staff through extrapolation of a 2.6% annual employment growth rate (represented in the 95 and 2000 growth periods) backwards for the years 1985 and 1990. Thus the total employment projections shown on Table 8 for 1985 and 1990 were derived from updated projections for 1995 and 2000.

The regional employment projections were disaggregated to the county level by using the following procedures:¹³

1. Determination of regional basic/residentiary ratios for each major sector (10 sectors).

This was done for both the base year (1978) and the initial forecast year (1995). It was accomplished by adding basic and non-basic components for each of the 66 sectors from the UPED runs (August 31, 1979).

2. Application of regional basic/residentiary ratios to the current employment totals for each county.

E. S. data was used for county base data and some adjustments were made to make it consistent with UPED Regional base data. The result of this step was a current year basic and residentiary component for each of the ten major sectors for 1978 for each county.

3. Determination of growth in basic employment by county for each sector.

First, the growth ratio for the basic components of each sector were determined. This was done by using the 1995 basic employment levels and the 1978 basic employment levels for each sector from the UPED runs which were calculated in Step 1. These regional basic growth rates by sector were applied to the base year basic employment by sector for each county in the region, resulting in projected basic employment.

4. Calculation of residentiary employment per capita ratios.

The future year UPED runs provide projections of residentiary employment by sector which were calculated in Step 1. The resulting region population projection from UPED were then used to determine the amount of residentiary employment per capita by sector. (It should be noted that UPED projects an increase in residentiary employment per capita over the 1978 level for most sectors.)

5. Deriving Projections of residentiary employment by sector.

The residentiary employment per capita ratios by sector calculated in Step 4, were applied to the county totals of projected population derived from the gravity approach. This residentiary employment was then added to the basic projections to determine total employment projections by sector for each county.

6. Extention of projections to the year 2000.

Once the 1995 projections were completed, the same process was used using 2,000 regional UPED projections and 2,000 preliminary disaggregated population projections to determine total employment projections by county and by sector.

CONCLUSIONS

The approach used has some advantages in that it is entirely consistent with UPED. County sector projections total to the regional sector projections as do the basic and residentiary portions of each sector.

The County proportions of total regional employment would change over a time by using this method and they could change in one or both of two ways, which are:

1. A county proportion could change because of basic employment growth. If a county has a sizeable portion of employment in a basic growth industry, then the proportion of total employment could be altered.
2. The County proportion of employment could change simply because of more people. If there is a change in the proportion of regional population residing in a particular county, (which is the case for Davis County) then the amount of residentiary employment in that county we also increase proportionately.

Thus inherent in the projections is the assumption that the residentiary employment (i.e. most services, most retail trade, etc.) will be located nearer the people, that is within the same county. This assumption is substantial by recent occurrences particularly within Davis County. Tables 9 and 8 display the 1995 and 2000 employment projections for the Wasatch Front counties.

TABLE 8
 WASATCH FRONT
 1995 EMPLOYMENT PROJECTIONS

	<u>Davis</u>	<u>Morgan</u>	<u>Salt Lake</u>	<u>Tooele</u>	<u>Weber</u>	<u>Regional Total</u>
Agriculture	530	130	990	140	530	2,320
Mining	190	20	6,670	220	200	7,300
Contract Construction	5,400	190	20,970	760	4,800	32,120
Manufacturing	11,700	700	70,000	2,400	11,800	96,600
Transportation, Communications & Public Utilities	5,100	160	27,950	800	5,500	39,510
Trade	23,700	870	99,800	3,430	22,100	149,900
Finance, Insurance, & Real Estate	4,750	190	24,900	740	5,000	35,580
Services	20,100	650	91,000	2,800	20,370	134,920
Government	30,400	700	71,000	5,480	19,500	127,080
Non-Agriculture Self Employment	<u>5,400</u>	<u>210</u>	<u>20,100</u>	<u>780</u>	<u>5,100</u>	<u>31,590</u>
TOTAL	107,270	3,820	433,380	17,550	94,900	656,920

TABLE 9
WASATCH FRONT
2000 EMPLOYMENT PROJECTIONS

	<u>Davis</u>	<u>Morgan</u>	<u>Salt Lake</u>	<u>Tooele</u>	<u>Weber</u>	<u>Regional Total</u>
Agriculture	610	150	1,060	170	600	2,590
Mining	210	10	7,180	230	200	7,830
Contract Construction	6,720	230	28,300	900	5,960	42,110
Manufacturing	13,000	620	76,800	2,470	13,100	105,990
Transportation, Communications & Public Utilities	5,710	180	32,200	850	6,080	45,020
Trade	23,800	910	108,000	3,600	23,400	161,710
Finance, Insurance, & Real Estate	5,380	200	27,300	800	5,340	39,020
Services	22,700	690	100,200	3,040	21,500	148,130
Government	39,900	770	87,400	6,790	24,200	159,060
Non-Agriculture Self Employment	<u>6,340</u>	<u>230</u>	<u>22,300</u>	<u>900</u>	<u>5,590</u>	<u>35,360</u>
TOTAL	126,370	3,990	490,740	19,750	105,970	746,820

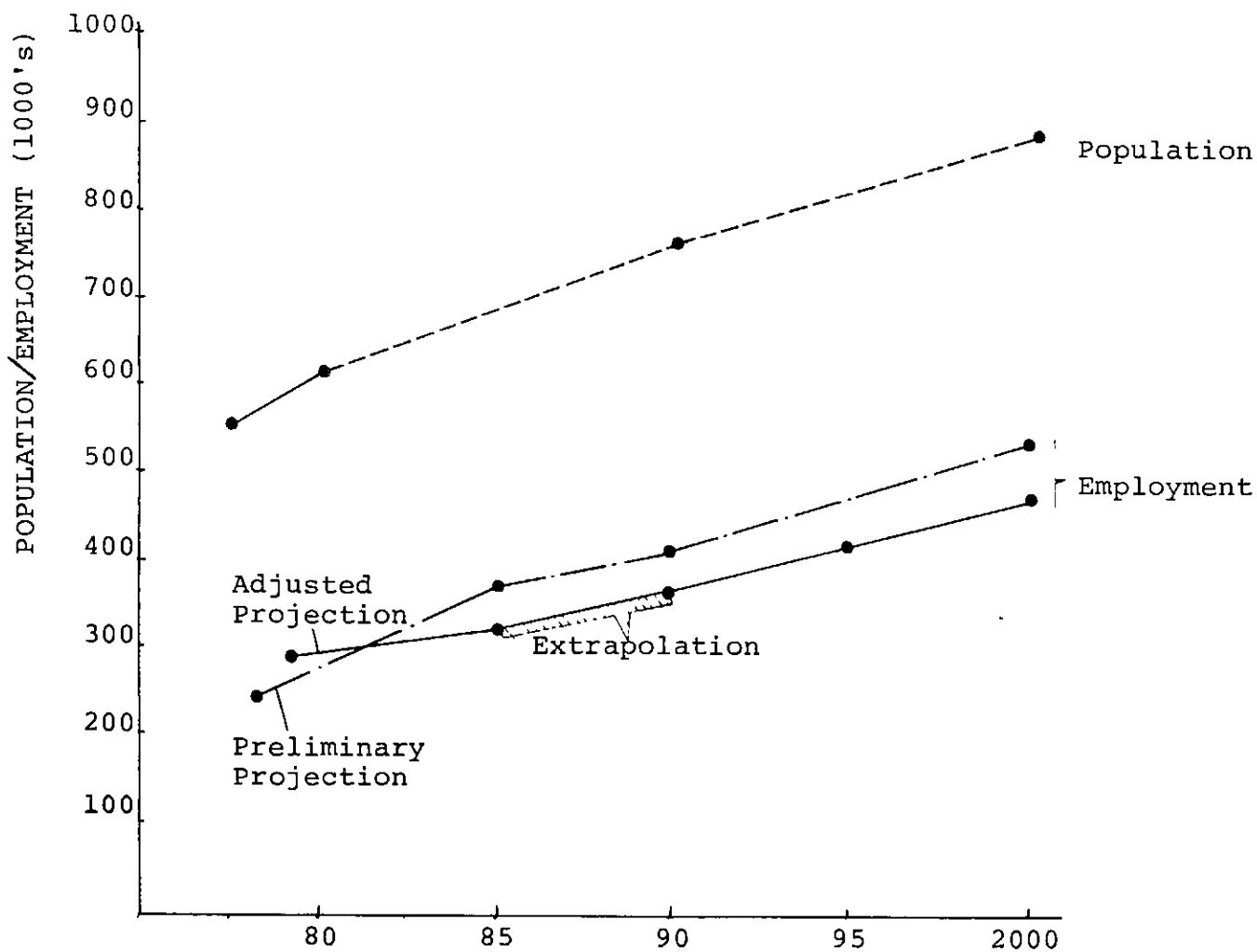


FIGURE 6. Relationship of Employment to Population: Adjusted Employment Projections

o AGRICULTURAL EMPLOYMENT

There is presently a growing interest nationally on the maintenance of the farming industry. The historically strong position of the United States in world food production, together with continued world food demand and the possibility of using farm exports as an economic device for neutralizing excess oil costs, all seem to focus attention on the rapid rate at which farmlands are being lost to urbanization.

Not only has the federal government mandated the identification and preservation of "environmentally significant" agricultural lands as part of its grant-in-aid program, but President Carter has directed the formation of a Cabinet-Level Task Force to investigate the problem of agricultural land preservation.

Agricultural employment has been thought to be of almost insignificant local value compared to total employment. The latest figures, however, are not surprising:

<u>Area</u>	<u>Ag. Jobs</u>	<u>% of Total Jobs in Each County</u>
State of Utah	18,001	
Wasatch Front	5,100	1%
Morgan County	300	23%
Tooele County	300	3%
Davis County	800	2%
Weber County	1,200	3%
<u>Salt Lake County</u>	<u>2,600</u>	1%

Note that Salt Lake County, normally thought of as only an urban area, maintains the highest level of agricultural employment along the Wasatch Front. The relative percentage or importance of agricultural employment in Salt Lake County, though only 1%, is overshadowed by the fact that agricultural production along the Wasatch Front is strongly sustained by the large agricultural employment base in Salt Lake County.

This seeming short-term concern for the local food production industry is likely to have long-term consequences and should not be ignored. Given successful attempts at maintaining farmland and providing proper incentives to making farming a more lucrative business, it is likely that a resurgence in the industry may occur by 1990.

The discussion now shifts to the process used in disaggregating the Salt Lake County year 2000 projection of 907,000 into geographic sub-areas.

**IV. THE SALT LAKE COUNTY PROJECTION:
Sub-County Geographic Distribution**

With the disaggregation of baseline projections from multi-county planning areas to individual counties, the stage is set for distribution of the county-wide total to geographic areas within county boundaries. Section IV will discuss the assumptions developed by county communities to guide the distribution; the comparison of 1975 assumptions to those of 1980; and will present the distribution of the county-wide projection by regional 201 facility areas, municipal boundaries, and sub-basin drainage areas. It should be mentioned that these distributions have been made by interpolation of traffic zone/census tract boundaries, which were used to make the initial distribution. Figure seven summarizes how this interpolation was carried out.

CONTROLLING ASSUMPTIONS OF THE COMMUNITY PLANNING
POLICY COMMITTEE

The first population projections developed under a 208 Water Quality Planning grant were done so under a consulting contract. The completion of Economic & Demographic Futures 1975-1995 was reviewed by an interim Land Use Technical Committee set up as an advisory group to the 208 Project. Assumptions governing growth distribution in the county were made by 208 staff and consultants, and many local communities disagreed with the projections. The Division of Water Quality determined that new controlling assumptions for population distribution should be made by the county communities themselves.

The task for developing these assumptions was undertaken by the Community Planning Policy Committee, one of nine advisory groups utilized by the Salt Lake County Division of Water Quality for policy and procedure review. Figure eight indicates the relationship of this particular committee to the others. It is

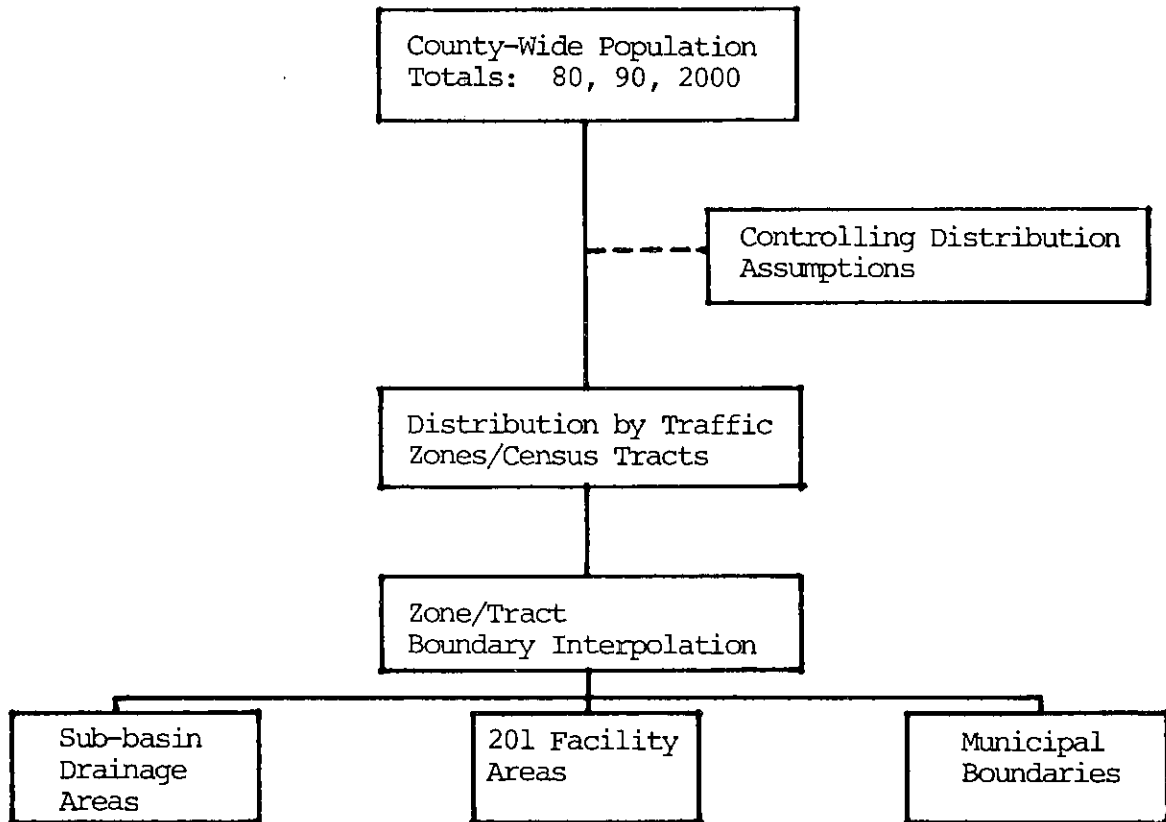


Figure 7. The County-Wide Disaggregation Process.

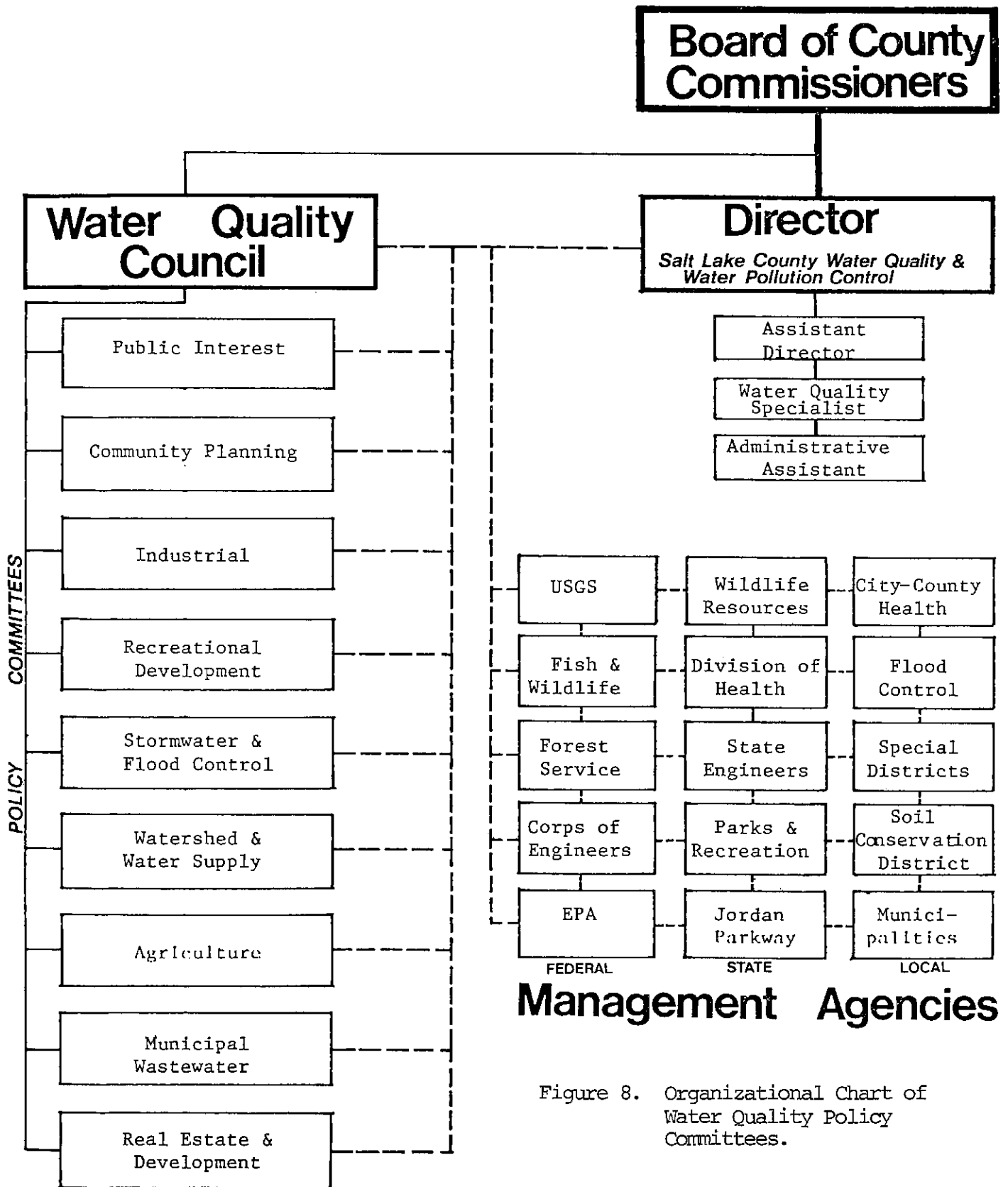


Figure 8. Organizational Chart of Water Quality Policy Committees.

stressed that review of projections and distribution of population begins with the Community Planning group, but proceeds with review by virtually every other policy committee.

Approximately five meetings of the Community Planning Committee were held during the population update process. Commencing in October, 1979, the committee, consisting of municipal planners and other technical personnel, was asked to develop assumptions which would be used to guide distribution of total county-wide population to geographic locations within the Salt Lake valley. The assumptions are summarized below:

- I. In-filling of growth at higher density is expected to occur. Both the redevelopment of older neighborhoods at higher density and the stabilization of viable lower density neighborhoods will contribute to this trend.
- II. Given inexpensive land and service costs, peripheral expansion will continue. The location of employment and higher transportation trends will influence the degree to which this occurs.
- III. The housing market will shift to older homes and conversion of apartments to condominium ownership will occur.
- IV. Increased transportation and energy costs will stimulate alteration of traditional transit and employment base patterns. The question of what percent employment will decentralize rather than maintain central location is raised here.

An analysis of these assumptions follows:

- o Assumption I - Infilling via Redevelopment & Stabilization. Salt Lake City and Salt Lake County housing needs surveys indicate a strong potential for rehabilitation and redevelopment of "downtown" housing units needing minor repairs and federal low cost loans continue to provide necessary assistance to facilitate these repairs.

Figure nine indicates the general location of those census tracts with the highest redevelopment potential. Included in these potential areas is the Salt Lake Avenues District which, since recent downzoning efforts, will maintain its integrity and produce additional investment in the up-grading of existing homes.¹⁶

o Assumption II - Peripheral Expansion Will Continue, Given Inexpensive Land and Service Costs.

The term "inexpensive" is most assuredly a relative one these days. The average cost of land and housing has doubled in the last decade. Local municipalities, forced into dependence on property tax revenues, have found that returns have not been adequate to operate and maintain public services in the black. Many cities have turned to special utility connection fees to replace financial deficits and have found the building industry prepared to legally challenge such allegedly discriminatory public policies. Citizens, in the face of higher taxes, demand reduction of taxload yet also demand present levels of service. And in south county areas over 2000 newly constructed single family dwellings sit vacant waiting for interest rates and mortgage policies to stabilize. It is difficult, if not impossible, to assess how long the demand for "peripheral" housing will remain depressed. The escalation of gasoline costs could prolong the pattern, but it is not likely to entirely bring it to a halt. The indications of Figures 4 and 5 tend to discredit such "short-term" observations of a possible housing depression, but the 8-10 year historical trends are themselves "short-term." The conclusion is that peripheral expansion will occur, but at a lesser rate than "in-fill." The larger percentage of growth is most likely to find the many advantages of "in-filling" more attractive than "leap-frogging," at least in the first ten year projection increment.

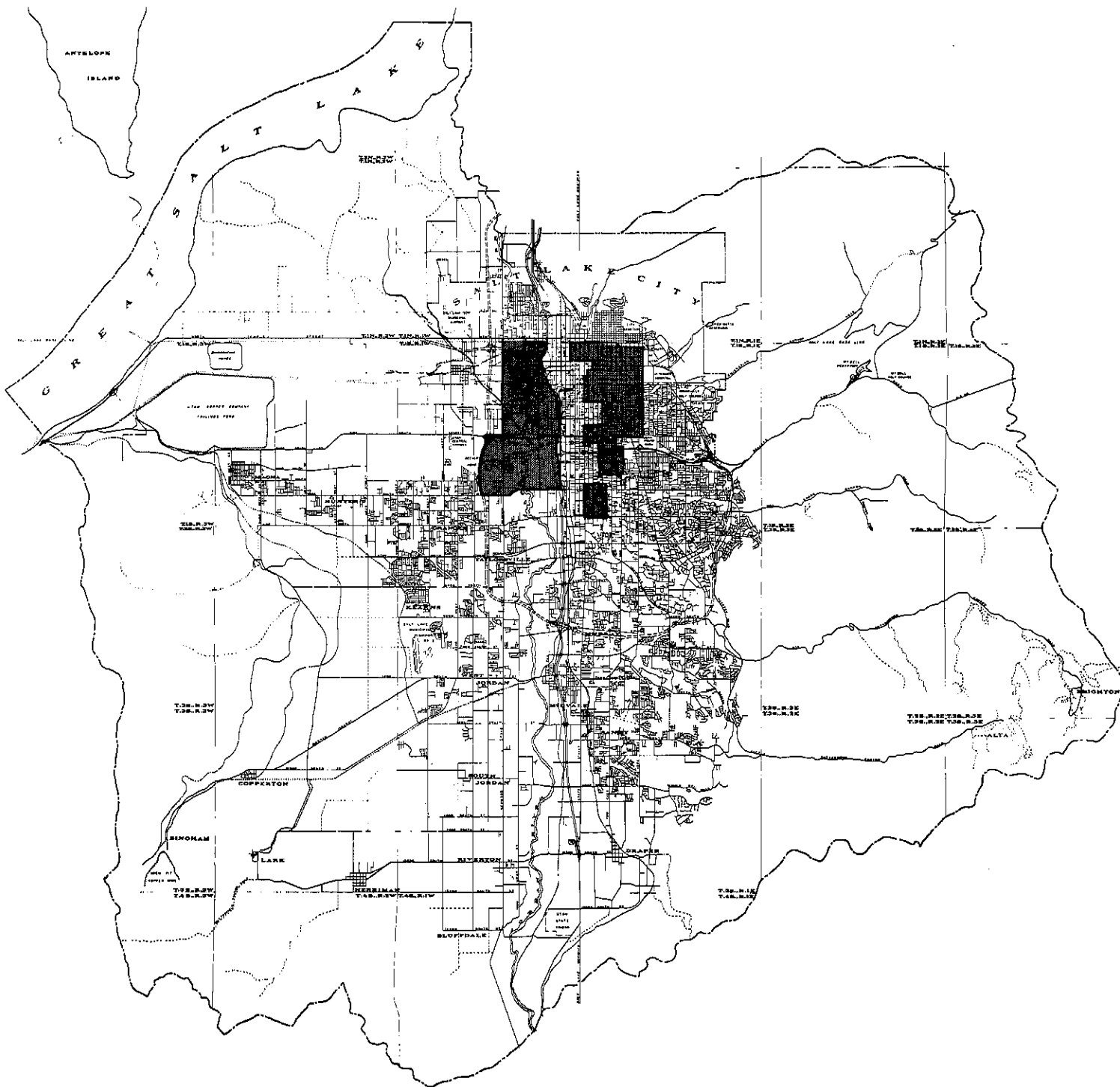


Figure 9. Location of County-Wide Census Tracts with Highest Residential Redevelopment Potential.

Source: Salt Lake City/County Housing Needs Survey 1979.

o Assumption III - The Housing Market Shift to Older Homes: Conversion of Apartments to Condominium Ownership.

The high costs of detached single family housing has forced many prospective home buyers into the condominium market. Yet construction costs of new condominium development has made many buyers in that market ineligible to afford mortgage loans. The answer has been conversion of existing rental facilities - both large homes and apartment buildings - to condominium ownership. The impacts of this trend, though initially attractive in terms of alleviating urban sprawl, are feared to displace many city dwellers wholly dependent on the rental market, such as the elderly and dependent mothers with children. One immediate impact of such a scenario is - once again - marked increases in public revenues to subsidize new public housing units. It is likely that expenditures of public revenue may shift from provision of expensive new "leap-frog development" services to expensive new downtown public housing facilities. The long term ramification of rental unit conversion to ownership in interior or "downtown" communities should be dealt with in more extensive detail than allowed here.

o Assumption IV - Transportation and Energy Costs: Effects on Located Employment.

The question of how major employers will react to increasing energy costs is one characterized by pure speculation. However, the probability of large-scale decentralization of large employment centers is not considered to be high in the 1980-2000 planning period:

1. The relative costs of new commercially industrial center construction are extensive, if not prohibitive, in peripheral locations where housing demand is depressed. (Salt

Lake City is building office space at an extraordinary rate, and "job density" is increasing in the downtown area.)

2. The costs of running a business in an existing employment center have been amortized over a longer period of time. Overhead is lower profit margin greater.
3. Transportation costs are advancing at an unprecedented rate. Those employment centers closest to central rail, air, and other urban transit modes will benefit more directly than those located peripherally.
4. The proportion of close-in housing is high enough to move substantial numbers of potential workers toward existing centers.

ADJUSTED SALT LAKE COUNTY EMPLOYMENT PROJECTION AND DISTRIBUTION.

Using adjusted County-wide employment projections (Section III), the distribution of total jobs (not by employment category) was made by proportionately increasing or decreasing census tract figures so that the sum of the tracts would equal the total adjusted projection. Therefore, the same assumptions for distribution of employment utilized for 1995 are relevant and applicable to those used for the year 2000. Those assumptions provided for higher rates of employment growth in the "downtown" or "central" business areas than those in the "Southern" or "peripheral" areas. Since employment location is a direct indicator of increases and decreases in daytime population (which influence sewage treatment plant loads), the terms "downtown" and "central" apply to the Salt Lake City and Central Valley facility areas respectively, while the terms "Southern" and "peripheral" apply to the South Valley and Magna facility areas respectively.

To illustrate this point, Table 10 shows current (1978) employment in Salt Lake County by work-site districts and major

TABLE 10
 EMPLOYMENT IN SALT LAKE COUNTY
 BY WORK-SITE DISTRICTS AND MAJOR INDUSTRIES

1978

Work-Site Districts	Total	Min.	Const.	Mfg.	Trans.	Trade	Fin.	Serv.	Public Admin.
Salt Lake County	294,838	7,145	21,237	38,760	22,619	74,988	18,448	63,351	48,290
Copperton	3,986	2,758	528	388	15	54	4	105	134
Draper	1,793	14	554	168	19	119	51	317	551
Magna	8,062	2,483	739	3,546	107	293	58	443	393
Midvale	6,302	24	688	411	195	2,231	236	1,127	1,390
Riverton	2,400	24	1,045	171	28	309	55	608	160
Sandy	10,533	33	2,621	2,482	292	1,481	296	1,043	2,285
West Jordan	4,748	4	1,276	1,461	19	505	105	856	522
Downtown	55,616	574	871	3,768	5,854	15,160	7,565	12,692	9,132
Central Business Dist*	19,650	385	99	1,451	1,897	5,817	4,691	4,270	1,040
East Side	14,070	155	123	346	183	3,814	1,632	6,774	1,043
Avenues	15,191	1	702	259	228	1,008	645	8,765	3,583
West Side	30,770	586	967	10,170	6,091	8,210	351	2,119	2,276
Southeast	4,457	21	148	83	23	1,300	495	2,132	255
Sugarhouse	10,696	28	620	582	670	3,971	898	2,935	992
Murray	18,631	41	1,840	2,506	668	6,994	1,127	4,196	1,259
East Bench	3,111	0	182	57	15	1,116	216	1,191	334
Olympus	4,584	0	399	28	11	1,434	683	1,077	952
Federal Way	14,228	86	273	242	0	46	75	882	12,624
South State	31,699	211	1,034	4,162	2,455	11,904	2,265	6,229	3,439
Rose Park	13,241	7	1,467	3,987	2,544	1,852	124	1,240	2,020
Holladay	10,297	16	939	128	79	3,789	693	3,569	1,084
Kearns	3,952	26	980	334	399	758	95	569	791
Granger	15,788	2	1,356	2,647	2,334	5,692	363	1,846	1,548
Hunter	4,379	0	749	657	81	1,088	94	1,218	492
Cottonwood	6,304	51	1,136	177	309	1,860	322	1,418	1,031

* South Temple to 400 South, West Temple to 200 East
 Source: Utah Department of Employment Security.

industries. Total 1978 and 2000 employment for Salt Lake County, if divided into the work-site districts and compiled into facility areas, would show the following percentages of existing and projected employment:

TABLE 11. Facility Area Employment

Facility Area	1978		2000	
	Existing Employment	%	Projected Employment	%
Salt Lake City	189,968	64%	262,867	53%
Central Valley	67,046	23%	167,473	34%
South Valley	29,762	10%	34,544	7%
Magna	8,062	3%	28,858	6%
Total	294,838	100%	490,742	100%

Table 12 displays the distribution of Salt Lake County Employment by census tract, for 1978, 1985, 1990, and 2000. The 1978 total (293,275) differs slightly from the Department of Employment Security total (294,838) by 1563 jobs (1%). This difference occurs as a result of computer rounding during redistribution of the 1978 total into census tracts. The difference is not statistically significant.

Census Tract	1978	1985	1990	2000	Census Tract	1978	1985	1990	2000
1.0	4914	6293	6974	8740	40.0	1106	1226	1379	1773
2.0	100	224	279	403	41.0	274	311	332	403
3.1	6163	5810	6398	7961	42.0	1268	1424	1484	1639
3.2	11610	11049	11451	13200	43.0	1115	1278	1414	1773
4.0	336	363	358	403	44.0	287	285	288	340
5.0	247	785	314	403	45.0	364	354	358	403
6.0	1557	1606	1763	2006	46.0	3569	3919	4347	5463
7.0	3062	2417	2453	2525	47.0	493	620	544	815
8.0	5236	4566	4626	4773	48.0	930	794	820	949
9.0	1249	863	890	949	49.0	680	906	1012	1290
10.0	2418	2512	2627	3072	101.0	1357	1338	1545	2042
11.0	1621	1562	1650	1979	102.0	898	1010	1100	1361
12.0	938	777	786	815	103.0	622	691	759	949
13.0	250	181	201	269	104.0	1749	1571	1641	1907
14.0	14264	18473	21104	27313	105.0	911	1001	1091	1361
15.0	2316	2193	2182	2382	106.0	575	768	908	1227
16.0	673	760	777	815	107.0	950	984	1187	1639
17.0	1757	1631	1676	1773	108.0	4028	4601	5158	6555
18.0	1282	1373	1519	1907	109.0	636	647	733	949
19.0	4218	4126	4312	5051	110.0	1916	1821	1990	2454
20.0	3668	2814	2854	2982	111.0	2060	2175	2505	3278
21.0	6190	6129	6302	6555	112.0	725	777	960	1361
22.0	29248	32604	35828	44382	113.0	1385	1234	1492	2042
23.0	5285	4040	4093	4209	114.0	1758	2080	2444	3278
24.0	10323	11248	12245	15018	115.0	13090	15857	17011	20480
25.0	6428	7622	8632	11060	116.0	9325	13855	17360	24582
26.0	2184	1977	2182	2731	117.0	2985	4617	4617	6278
27.0	2724	2452	2540	2731	118.0	3709	3709	3709	4916
28.0	5921	5827	6206	7415	119.0	3283	5176	5176	7101
29.0	12210	13104	14104	17068	120.0	2861	3272	3971	5463
30.0	854	889	925	1093	121.0	3125	4187	5211	7334
31.0	1136	880	908	949	122.0	2562	3263	4207	6107
32.0	1763	1597	1702	2042	123.0	5310	6595	7480	9618
33.0	2073	2175	2304	2731	124.0	3330	3600	4259	5731
34.0	955	967	1021	1227	125.0	2309	1865	2016	2454
35.0	335	449	489	609	126.0	5668	7165	8562	11606
36.0	123	138	157	197	127.0	1857	1588	1641	1907
37.0	211	190	192	197	128.0	3196	2218	2810	4021
38.0	441	423	436	466	129.0	4329	2667	3098	4092
39.0	519	604	655	815	130.0	2275	1053	1222	1639
					131.0	268	552	829	1361
					133.1	2935	5576	7419	11069
					133.2	3418	5507	7270	11082
					134.0	3069	3298	3980	5463
					135.1	4164	9288	13118	20453
					135.2	2709	3168	4032	5794
					135.3	922	1183	1588	2400
					136.0	578	570	637	815
					137.0	464	622	820	1227
					138.0	983	1899	2645	4093
					139.0	10606	22927	30679	47489
					Outside Urban Area				
						8541			
					TOTALS	293275	328025	377041	490742

TABLE 12. Located Employment in Salt Lake County by Census Tract: 1978, 1990, 2000.

Source: Wasatch Front Regional Council, State Department of Employment Security

DISTRIBUTION OF COUNTY-WIDE PROJECTION INTO MUNICIPAL, 201
FACILITY, AND SUB-BASIN DRAINAGE BOUNDARIES

The distribution of the population projections for Salt Lake County follows the same method employed in 1975, consolidating traffic zone projections into large geographic subdivision. This consolidation was carried out through the qualification and quantification of the controlling assumptions described previously.

The quantification of controlling assumptions were carried out by Wasatch Front Regional Council through the use of a computer model calibrated to be sensitive to the influencing factors - or inputs - most characteristic of development and settlement trends in Salt Lake County. All factors discussed in previous sections such as residential density, transportation to employment site, and family size were taken into account. The objective of the model is to determine those factors which produce "gravity" which will attract residential population distribution.

The principal assumptions, methodology, and calibration of the "gravity" model are summarized here:¹⁷

I. Principal Assumptions

- A. There exists a relationship between residential density and accessibility of major urban attractors.
- B. Residential redevelopment will occur at densities which reflect the relationship described in I.A.
- C. The future holding capacity of a census tract can be estimated given:
 1. Estimated developable areas
 2. Expected density

- D. The holding capacity of infill tracts will be reached within the projection period.
- E. Those tracts other than infill tracts will develop in proportion to their share of the total holding capacity of non-infill tracts.

II. Methodology

- A. The disaggregation area includes all of the SLATS area plus that portion of southwest Salt Lake valley external to SLATS.
- B. A computer model was developed, calibrated, and run to disaggregate the 1995 UPED projections. Those figures were extrapolated to 2000, consistent with a year 2000 control total.
- C. Older areas of Salt Lake City were treated specifically to account for future redevelopment and land use conversion.

III. Model Calibration

- A. A 1995 model calibration was selected because of the amount of previous work done on projections which were needed to input to the process.
- B. Control totals for 1995 and 2000 were derived by applying the same SLATS/OATS split to the three-county UPED total as was reflected in the previous set of regional population projections.
- C. Developable acres were estimated from the residential category of the "1995 Anticipated Land Use" map, which was assumed to represent a reasonable forecast of the extent of urban services in 1995.
- D. Tract level household size projections reflected in "Surveillance of Land Use and Socio-Economic Characteristics" were assumed to remain consistent relative to one another while being generally adjusted upward to average a county control size of 3.05 persons per household, which is consistent with the new UPED areawide projections.
- E. The existing residential density relationship was most closely approximated by a negative exponential estimating function. That function correlated

fairly closely with the actual distribution of cases in 1977 ($R = -.079974$, $R^2 = .63959$, level of significance = .00001).

Tables 13, 14, and 15 indicate the results of consolidating traffic zones into subject boundaries.

TABLE 13
DISTRIBUTION OF PROJECTIONS BY
SUB-BASIN DRAINAGE AREAS

	1980	1990	2000
CC - City Creek	2532	3357	3810
RB - Red Butte Creek	6918	7748	8582
EC - Emigration Creek	16,602	17,789	19,063
PL - Parleys Creek	35,250	36,920	38,892
MC - Millcreek	59,462	60,931	64,588
BC - Big Cottonwood Creek	39,541	44,128	49,364
LC - Little Cottonwood Creek	91,266	111,322	128,146
SE - Southeast	62,157	81,712	96,027
SL - Salt Lake City	101,446	120,662	135,539
NW - Northwest	160,864	210,640	245,438
KC - Kennecott	44	47	54
BW - Barney/Bingham	22,629	40,403	53,718
MB - Midas/Butterfield	9797	21,348	27,989
WA - Rose Creek	5835	14,345	19,233
SW - Southwest	5657	12,504	16,557
Total	620,000	783,856	907,000

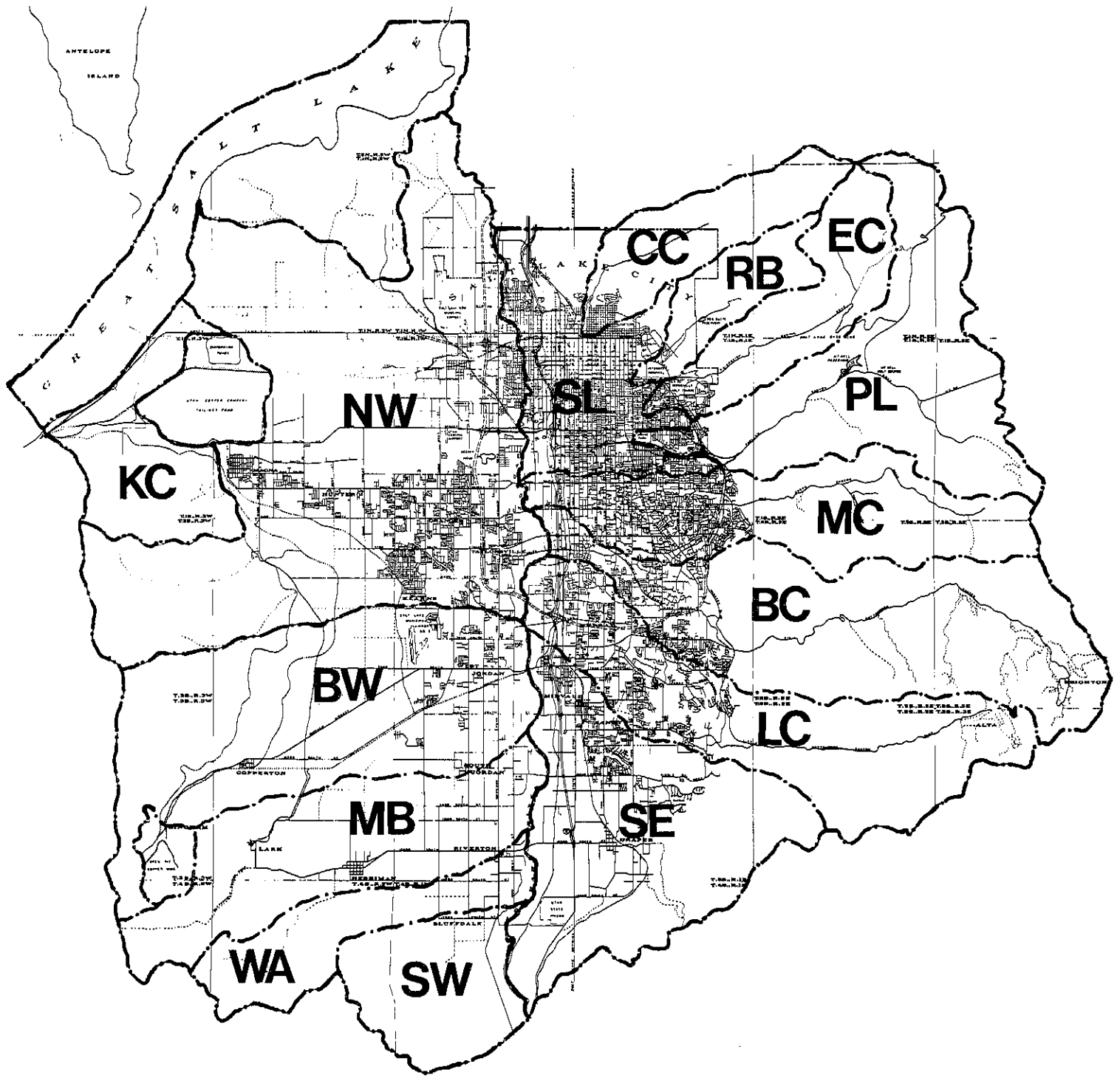


FIGURE 10.

SUB-BASIN DRAINAGE AREAS IN SALT LAKE COUNTY

TABLE 14
 DISTRIBUTION OF POPULATION PROJECTIONS
 BY 201 FACILITY AREAS

FACILITY AREA	1980	1990	2000
Salt Lake City	171,754	211,018	235,125
Central Valley	324,563	380,847	419,570
South Valley	109,318	179,513	223,270
Magna	14,365	23,099	29,035
Total	620,000	783,856	907,000

TABLE 14A
 DISTRIBUTION OF EMPLOYMENT PROJECTIONS
 BY 201 FACILITY AREAS

FACILITY AREA	1980*	1990	2000
Salt Lake City	196,519	212,363	262,867
Central Valley	76,163	120,928	164,473
Magna	8,470	18,617	28,858
Total	303,203	377,041	490,741

* Adjusted from 1978 Totals

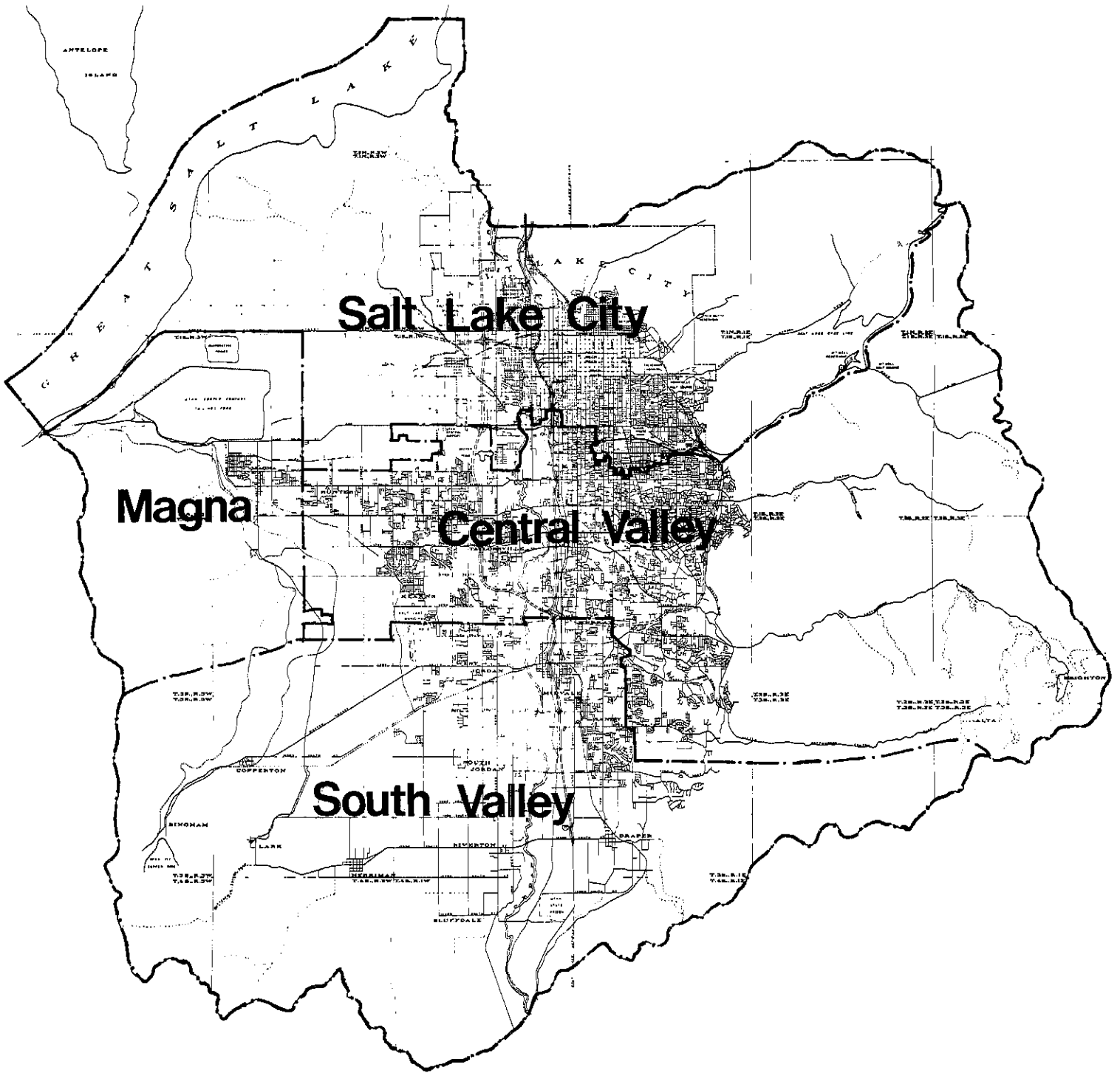


FIGURE 11.
201 FACILITY AREA BOUNDARIES

TABLE 15
DISTRIBUTION OF POPULATION PROJECTIONS
BY MUNICIPALITY

MUNICIPALITY	1980	1990	2000
Salt Lake City	166,175	200,432	222,299
South Salt Lake City	10,710	10,723	10,735
Murray	26,992	32,834	37,079
Midvale	9,123	9,301	9,695
Sandy	59,210	79,054	93,516
Draper	5,676	10,724	13,928
Bluffdale	1,096	1,685	2,123
Riverton	6,912	13,643	19,131
South Jordan	6,634	15,421	20,623
West Jordan	24,300	41,645	52,883
Alta	293	400	650
West Valley	81,905	106,154	116,492
Unincorporated	220,974	260,840	307,846
Total	620,000	783,856	907,000

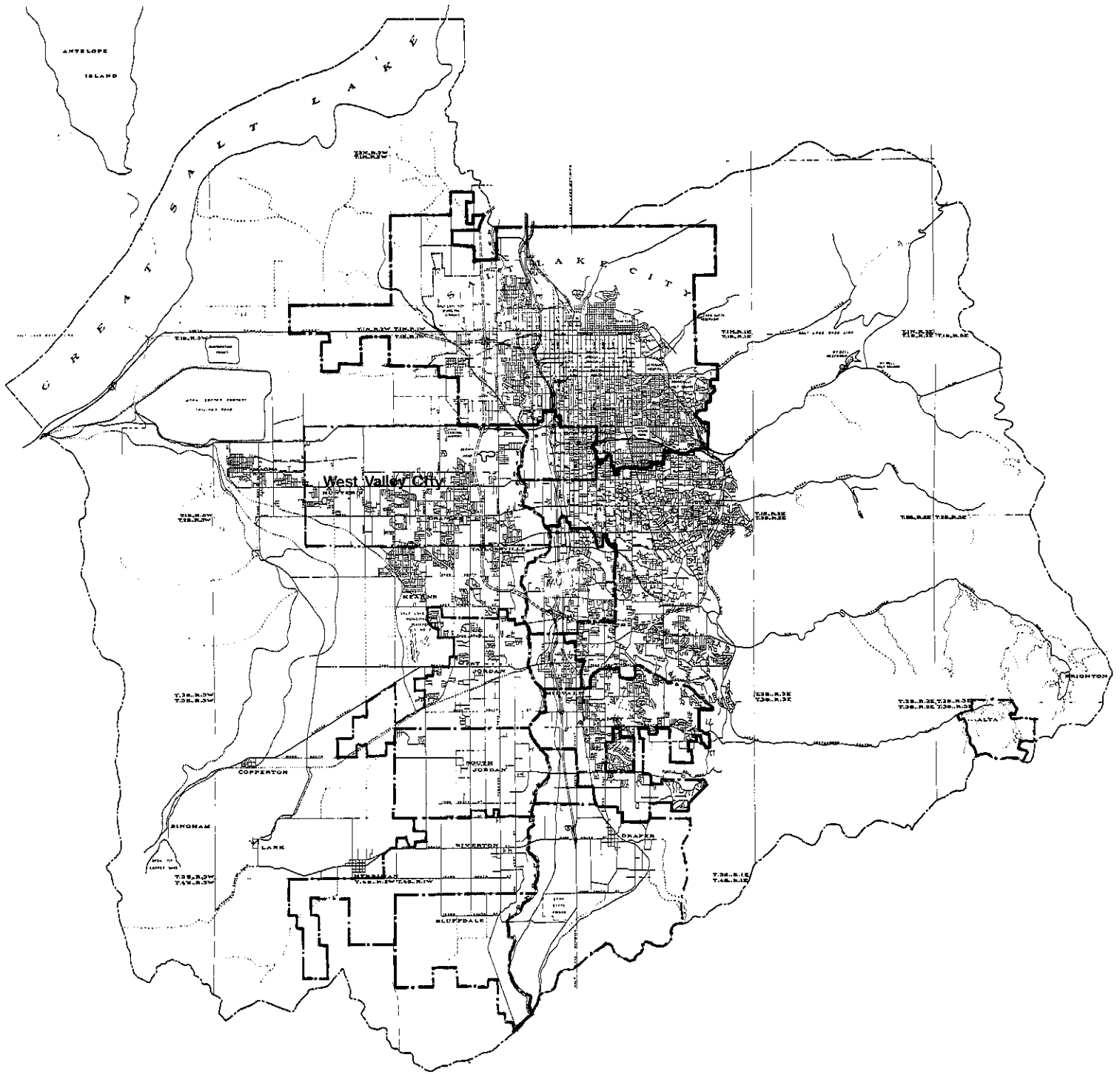


FIGURE 12.
EXISTING MUNICIPAL BOUNDARIES

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APPENDIX

APPENDIX I:

CENSUS TRACT/TRAFFIC ZONE DISTRIBUTION

Initial distribution of population projections for the year 2000 was made by Wasatch Front Regional Council utilizing the computer "gravity model" described in Section IV. This distribution was made using the controlling assumptions developed by the Community Planning Policy Committee, with no adjustments for particular traffic zone characteristics. The initial distribution began with 1977 population data contained in Wasatch Front surveillance reports and projected to 1995 and 2000.

Because of the need to develop decade-specific projections, the Division of Water Quality and Planning Commission staff had to update 1977 figures to arrive at a common 1980 population estimate, and also extrapolated 1995 projections back to 1990. The common 1980 "baseline" estimate was determined by the review of building permit and specific land use inventory data by the Salt Lake County Planning Division. The 1990 extrapolation was determined by regressing the 1995-2000 growth rate back five years.

Specific traffic zone adjustments were made by County Planning Commission staff based on site-specific knowledge and supporting data on conditions within each zone, together with individual consultation with municipal planners having more exact information on conditions within their respective jurisdictions.

The reasons for specific traffic zone changes are enumerated in Table A-1. Those changes recommended by municipal planners are included in Section IV Municipal Projections. In total, these adjustments to the traffic zone/census tract distributions are a refinement or qualification of the draft Wasatch Front computer disaggregation since they reflect greater sensitivity to local land use conditions.

Traffic Zone		Traffic Zone	
274	Available buildable land is limited and the density will not increase much. This situation will result in a decrease in the population due to the reducing family size.	481	The population in this area will not decrease as much as projected. It already has a low family size and will not go too much lower.
254	Very little vacant land for development. Density will not be greater than it is presently. The population will decrease due to reducing family size.	434	The population based on present trends and available ground will develop more than projected, despite the reducing family size, due to increased density of development.
273	Available land for development will develop at the present density. Due to the limited land and the decreasing family size, the population will decrease slightly.	435	The population based on present trends and a greater density in parts of the traffic zone will result in a larger population projection than projected, despite the reduced family size.
275	Available land for development will develop at the present density. Since available land is limited and the family size is reducing, the population will decrease.	482	The population in this traffic zone will remain fairly stable as the family size is already quite low and will possibly increase some as the affordability of single family homes decreases. (Note: Most of the dwelling units in the area are multi-family and mobile homes.)
302, 303, 312	The available land that develops will develop at the present densities, which are low. This situation will result in limited population growth due to decreasing family size.	483	The population in this traffic zone will decrease due to the elimination of a conversion of residential uses to commercial or industrial uses.
421	The available land for development will develop at about or below the present density and, therefore, the population will not increase as much as projected with the family size decreasing also.	445	The population in this traffic zone will increase more than projected due to increased density over present development. This will result due to the Regional Shopping Center that will develop at 10600 South and State.
294	The majority of the new development that will occur will develop at a greater density than the present development. This will result in a population increase, despite the reduced family size.	446	The population will increase slightly based on present trends, availability of land, and increased density rather than decrease, despite reduced family size.
305	There will be enough development at a density to result in a slight population increase, despite a reduced family size.	448	The projected decrease in this zone is too great. The population will decrease, due to limited area for development, but not as much as projected. The original projected population would reduce the family size to less than 2 in single family houses.
429	The density of new development will be about the same as it is presently and, therefore, will result in less population growth.	449, 455	Based on current trends and availability of land, these traffic zones will increase a little more than the original projection.
430	The limited available land for development will develop at about the same density as presently exists. This will result in a slight decrease in the population due to reduced family size.	458, 459, 461	These traffic zones will not likely grow as fast as projected, due to low density development and Draper's desire to maintain a rural type development and preserve agricultural land.
326, 327, 352, 353, 354, 355, 356, 357	The population in these traffic zones will decrease due to elimination of or conversion of residential uses to commercial or industrial uses.	496	The current trends in this area will increase the population more than projected, despite family size reduction.
411	The projection was too low based on available ground and the current trends of development in the traffic zone. Therefore, the projection was increased.	507	The population will not decrease at the State Prison unless they build another one in the Ogden area or they sentence more convicts to death and carry out the convictions.
413	There is sufficient land for additional residential development to result in an increasing population as most new development will not be at a greater density than the present development.	509, 510	The current trends will likely continue in these zones sufficiently to increase the population more than projected originally.
		407	The availability of land for residential development, current density and reduced family size will limit the growth in this traffic zone.

TABLE A-1. Traffic Zone Adjustments to the Initial Wasatch Front Regional Council Distribution

Traffic Zone		Traffic Zone	
431	The growth will not be as great as projected, due to current and projected industrial development. There will be as much development in the rest of Census Tract 131 as in this zone.	396	The population in this traffic zone will increase, not decrease as projected, because of increased density of development in some areas and the availability of land for residential development, despite the reduced family size.
330	Current trends in development and availability of land close in will result in greater residential growth than originally projected.	404	This traffic zone will decrease, due to limited land for future residential development and decreasing family size.
349	Availability of land and accessibility to employment centers will result in a greater population growth than projected, despite the reduced family size.	333	The population in this area will decrease. The 1977 total is in error, and what residential there is presently will eventually all but be phased out by commercial and industrial development and the reduced family size.
364	The current trends of development and availability of land close to commercial and industrial development will result in a greater population growth than projected.	334	The population growth will decrease, due to reduced family size and the land developing as commercial or industrial.
348	The population in this area will remain fairly stable, despite the reduced family size, because of increased density of development.	339	The population will not grow as much as projected, due to limited vacant land for residential development, the reduced family size, and the density of any redevelopment remaining basically the same as presently exists.
366	The population in this area will not decrease as much as projected, due to an increased density of development on the limited available land and less family size reduction than projected.	340	The population will not grow as much as projected, due to the density of development remaining basically the same, and the reduced family size.
367	The availability of land and development at current densities, or slightly less, would still result in more growth than projected, despite reduced family size. The family size is not likely to go too much lower than the current (1979) total of 3.19.	341	The availability of land will limit the population below the projected growth. Other factors limiting the growth are the density of development remaining basically the same, and the family size reducing.
342, 343	Current trends and proposals in development, availability of land, and access to employment centers will increase the projected population growth in these zones.	373	The population in this traffic zone will not grow as much as possible, due to too much of the available land west of 6400 West developing as industrial and commercial.
346	Current and approved construction, as well as fill in of subdivisions, will result in a slight increase over the projection for 1995, but due to limited available land, the population will be slightly lower than projected for 2000.		Note: Population growth considerations and projections need to be considered by Salt Lake City in the traffic zones in Census Tract 139 north of 2100 South.
368, 369, 370, 371	The population in these traffic zones will not reach the projected population, due to availability of land for residential development and current densities remaining fairly stable.		
397, 401, 402, 405, and area outside Traffic zones in CT 135.1	Development is currently or will soon be occurring in these traffic zones and will continue in the future, but not at as great a rate as initially.		
382, 383	These areas will remain fairly stable and growth slightly, due to increased density of development of available residential land.		
395	The population in this traffic zone will decrease due to very limited land for new development, reduced family size, and the current density remaining basically the same, even if there is substantial redevelopment.		

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
1.0 (Total)		1803	1914	2000
	46	11	9	7
	131	3	0	0
	140	0	50	96
	141	225	175	117
	142	13	14	14
148	615	360	219	
	151	933	1048	1086
	157	3	258	461
2.0		1007	1445	1657
	45	310	331	353
	47	697	1114	1304
3.1		4186	8437	10309
	134	42	20	0
	136	0	0	0
	137	25	140	224
	138	501	3461	4500
	139	293	400	451
	145	685	1116	1584
	154	2640	3300	3550
3.2		380	237	95
	170	55	32	14
	171	50	27	12
	173	155	109	38
	174	4	2	2
	175	86	50	22
	202	30	17	7
	203	0	0	0
	206	0	0	0
	207	0	0	0
4.0		3776	4000	4200
	143	1510	1583	1607
	144	2266	2417	2593
5.0		5571	6093	6465
	146	2396	2884	3161
	147	3175	3209	3304

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
6.0		4870	5530	6067
	152	2045	2359	2622
	153	974	1109	1320
	155	1023	953	840
	156	828	1109	1285
7.0		3203	3910	4292
	58	0	0	0
	149	1106	1315	1451
	150	2097	2595	2841
8.0		2085	3228	4011
	59	1188	1662	1944
	158	772	1424	1915
	159	8	40	63
	160	0	0	0
	161	117	102	89
9.0		1775	2894	3500
	44	1526	2598	3183
	51	249	296	317
10.0		3924	3821	3794
	48	824	775	743
	49	1727	1745	1779
	50	1373	1301	1272
11.0		6218	7324	8360
	56	1181	1386	1583
	57	1244	1482	1681
	60	2425	2865	3314
	61	1368	1591	1782
12.0		4785	4982	5150
	54	10	21	31
	55	1330	1344	1355
	62	1292	1454	1591
	63	1148	1156	1164
	64	1005	1007	1009
13.0	53	1446	1788	2024

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
14.0		4693	4816	5000
	52	2393	2235	2010
	77	1689	1925	2300
	78	611	656	690
	79	0	0	0
15.0		3204	4048	4699
	65	769	1145	1390
	66	737	935	1105
	75	993	1158	1297
	76	705	810	907
16.0		3440	4482	5116
	80	2167	2977	3458
	81	1273	1505	1658
17.0		3320	4749	5535
	67	1527	2223	2651
	74	1793	2526	2884
18.0		2978	4072	4646
	82	1110	1673	1909
	83	1858	2399	2737
19.0		2403	4180	4832
	68	1404	2431	2826
	73	999	1749	2006
20.0		3079	3876	4426
	84	838	1089	1257
	85	2241	2787	3169
21.0		1021	884	754
	69	540	454	382
	72	481	434	372
22.0		161	121	110
23.0		1778	3222	3780
	86	459	969	1263
	87	0	0	0
	89	1319	2253	2517

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
24.0		1088	981	673
	185	207	174	141
	186	44	42	28
	187	54	44	24
	188	631	599	397
	189	152	122	83
	190	0	0	0
25.0		913	2200	3000
26.0		3659	4278	4853
	168	695	1023	1203
	177	1464	1659	1839
	197	1500	1596	1811
27.0		5870	6698	7638
	169	117	34	0
	176	1937	2230	2550
	199	1820	2347	2779
	200	1996	2087	2309
28.0		8412	10080	11800
	196	421	537	620
	198	1094	1384	1659
	201	3785	4511	5154
	208	2355	2674	3116
	209	5	0	0
	210	589	781	1019
	211	163	193	232
	212	0	0	0
29.0		3848	4025	411
	191	77	125	167
	192	0	0	0
	193	38	32	29
	194	692	738	787
	195	192	245	273
	213	307	325	345
	214	308	275	240
	215	770	511	327
	216	693	431	250
	217	309	246	179
	218	462	1097	1514

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
30.0		2872	3286	3527
	90	1365	1536	1636
	91	1507	1750	1891
	92	0	0	0
31.0		4208	4707	5053
	110	1220	1536	1734
	111	1431	1692	1904
	112	1557	1479	1415
32.0		4662	5355	6113
	113	2051	2155	2430
	114	1399	1791	2076
	115	1212	1409	1607
33.0		3760	4533	5127
	116	1238	1460	1650
	117	1082	1342	1518
	118	163	219	245
	119	499	669	779
	120	778	843	935
34.0		4392	5129	5573
	107	1449	1677	1823
	108	1669	1883	2045
	109	1274	1569	1705
35.0		4507	5379	5765
	93	1757	2057	2175
	94	1623	1965	2115
	95	1127	1357	1475
36.0		2932	2854	2776
	96	1490	1454	1410
	97	1442	1400	1366
	225	396	495	574
	232	470	599	698
	233	87	127	150
	234	124	182	243
37.0		2708	2925	2995
	105	1192	1274	1309
	106	1516	1651	1686

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
38.0		2536	2773	2818
	121	1274	1385	1403
	122	1262	1388	1415
39.0		3846	4309	4539
	123	1309	1525	1625
	124	1231	1379	1452
	125	1306	1405	1462
40.0		3385	3445	3489
	102	1219	1353	1420
	103	1151	1071	1041
	104	1015	1021	1028
41.0		3162	3362	3528
	98	1596	1693	1776
	99	1566	1669	1753
42.0		7118	8093	8815
	100	2135	2779	3275
	101	2847	3340	3670
	127	1210	1099	1062
	128	926	875	808
43.0		3184	3493	3895
	126	1337	1473	1694
	129	955	1198	1385
	130	892	822	816
44.0	219	2133	2415	2614
45.0		1438	1580	1689
	220	1438	1580	1689
	221	0	0	0
	222	0	0	0
46.0		1238	1656	1977
	223	12	3	0
	224	149	250	312

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
47.0		5022	5233	5362
	235	552	587	606
	236	653	660	669
	249	2210	2346	2428
	251	1004	1033	1045
	252	603	607	614
48.0		5416	6002	6422
	245	433	482	530
	246	1083	1316	1458
	247	1138	1135	1132
	248	1787	2121	2361
	250	975	948	941
49.0		2585	3463	3953
	226	310	505	581
	231	414	551	629
	237	1008	1267	1447
	238	853	1140	1296
	243	0	0	0
101.0	Area Outside Traffic Zones	1225	1500	1800
101.0		12003	12629	13032
	256	2545	2636	2747
	274	5730	5306	5026
	314	473	681	826
	431	3000	3370	3690
	440	255	636	743
102.0		6006	5940	5814
	254	2709	2575	2367
	255	3297	3365	3447
103.0		5376	5631	5879
	253	2378	3365	3447
103.0		5376	5631	5879
	253	2378	2605	2823
	157	1558	1596	1661
	258	1460	1430	1395

Census Tract	Traffic Zone	Population- 1980	Population 1990	Population 2000
104.0		6410	6819	7411
	269	1395	1530	1673
	270	2650	2826	3062
	271	2365	2463	2676
105.0		6766	6753	6742
	272	2383	2477	2542
	273	4383	4276	4200
106.0		6503	6475	6458
	275	4506	4323	4269
	276	1997	2152	2189
107.0		7158	7627	8203
	277	2200	2306	2466
	278	2284	2424	2616
	279	2674	2897	3121
108.0		4290	4808	5406
	288	606	790	1052
	289	2075	2161	2290
	292	1572	1844	2064
	293	37	13	0
109.0		4800	5286	5626
	290	2874	3177	3391
	291	1926	2109	2235
110.0		7705	10021	12407
	302	1910	2040	2250
	303	1695	1780	2084
	312	944	1050	1145
	313	65	120	171
	419	301	600	983
	420	230	1103	1816
	421	2560	3328	3958
111.0		19063	19681	20435
	294	5460	5522	5684
	295	658	781	838
	300	3182	3201	3352
	301	1060	891	811
	304	1218	1284	1364

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000	
111.0 (Cont.)	305	1911	1950	1987	
	306	2899	3078	3254	
	311	2675	2974	3145	
112.0		6519	7692	8482	
	422	2830	2708	2614	
	423	224	396	510	
	428	3465	4588	5358	
113.0		15160	19378	20886	
	429	5960	8465	9420	
	430	6690	6535	6448	
	432	2510	4378	4948	
114.0		6289	6638	6882	
	227	190	205	213	
	228	553	570	591	
	229	405	424	440	
	230	605	631	653	
	239	760	815	846	
	240	690	745	778	
	241	1601	1680	1744	
	242	1485	1568	1617	
	115.0		1186	992	820
		326	96	77	65
327		20	15	10	
328		0	0	0	
352		60	45	15	
353		100	85	65	
354		385	350	320	
355		107	85	60	
356		8	0	0	
357		410	345	285	
116.0		2426	3306	3949	
	329	59	41	36	
	351	478	271	135	
	348	280	151	62	
	359	358	270	238	
	360	401	341	289	
	361	267	656	966	
	362	120	704	1182	
	385	113	681	1001	
	386	350	191	40	

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
117.0		7452	8113	8653
	261	875	975	1028
	262	829	864	920
	263	714	791	852
	264	1953	2165	2335
	265	1832	2003	2110
	266	1249	1315	1408
118.0		6949	7608	8402
	244	1418	1479	1558
	259	266	356	454
	260	657	804	995
	267	1546	1738	1960
	268	3062	3231	3435
119.0		12579	13315	14147
	280	2730	2516	2289
	281	1230	1287	1447
	282	2290	2167	2109
	283	3080	3310	3806
	285	1407	1422	1506
	286	573	790	868
	287	1269	1823	2122
120.0		6400	7538	8514
	284	1591	1731	1899
	296	2362	3000	3431
	297	889	997	1123
	299	848	1056	1209
	307	710	754	852
121.0		4384	6701	7657
	387	1003	950	906
	388	659	620	568
	389	1929	3762	4386
	411	793	1369	1797
122.0		8586	10078	11501
	412	2463	2337	2230
	413	3484	3606	3749
	414	1154	1135	1101
	415	192	404	591
	416	458	1165	1695
	417	835	1431	2135

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
123.0		7622	8517	9407
	298	2440	2253	2051
	308	1060	1829	2427
	309	4056	4380	4893
	310	66	55	36
124.0		9123	9301	9695
	463	1110	1273	1429
	464	0	0	0
	465	27	25	20
	466	190	249	296
	477	1383	1438	1621
	478	663	621	585
	479	1499	1515	1625
	480	427	561	658
	481	3824	3619	3461
125.0		10240	13356	16310
	424	2190	4050	5024
	425	1358	1538	1908
	426	3335	3600	4208
	427	3357	4168	5170
126.0		47895	60612	70993
	433	8535	10349	12993
	343	5825	6350	7044
	435	4330	5515	6536
	436	2570	3400	4214
	438	2794	4382	5397
	439	4342	5500	6215
	441	3715	4952	5799
	442	3775	5337	6533
	443	5371	5124	5085
	444	3350	3843	4244
	475	100	500	750
	476	855	1025	1132
	482	1586	1645	1688
	483	234	225	170
	484	445	1140	1480
	485	68	1325	1713
127.0	437	5555	6333	7041

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
128.0		21213	32667	39353
	445	826	1597	1931
	446	2030	2150	2231
	447	339	956	1234
	448	3109	2806	2480
	449	1655	2510	3042
	450	1424	2451	3205
	451	2026	2223	2549
	452	2640	4446	5119
	453	215	563	770
	454	51	1069	1391
	455	970	1651	2083
	456	301	563	770
	457	284	928	1194
	458	880	1250	1558
	459	680	1000	1422
	460	75	663	907
	461	978	1476	1942
	462	0	0	0
	494	402	438	510
	495	191	900	1256
	496	235	437	643
	505	346	450	550
	506	175	275	353
	507	756	825	875
	508	50	80	118
	509	279	480	595
	510	296	480	625
129.0		23897	40207	50471
	407	2325	2790	3006
	467	3955	6570	8090
	468	3221	4305	5530
	469	8067	10225	13518
	472	4440	8071	9831
	473	849	3676	4710
	474	1040	4570	5786
130.0		13546	30064	39754
	486	770	1800	2505
	487	519	1770	2386
	488	710	1150	1630
	489	1490	2050	2743
	490	730	2175	2822
	491	1275	2210	2972
	492	544	2180	2822
	493	596	2086	2743
	497	98	1034	1516

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
130.0 (Cont.)	498	490	1404	1909
	499	1700	2439	3120
	500	510	1781	2335
	501	725	1437	1948
	502	2401	3801	4770
	503	830	1573	2000
	504	158	1174	1533
131.0	Area Outside Traffic Zones	2075	11025	15375
131.0	471	2300	3843	5097
133.1		6444	8741	10383
	330	1603	1898	2260
	331	1211	1459	1665
	349	1275	1792	2200
	350	1025	1545	1763
	364	1330	2047	2495
133.2		15564	16529	17167
	347	3771	4672	4970
	348	3910	3888	3873
	365	33	75	99
	366	1270	1170	1091
	367	6580	6724	7134
134.0		27064	39239	46183
	342	452	1584	2088
	343	293	1557	2093
	344	700	2646	3352
	345	620	2646	3352
	346	5470	5671	6268
	368	6300	7967	9012
	369	4935	5811	6649
	370	3389	5311	6407
	371	4905	6046	6962
	135.1	Area Outside Traffic Zones	16	3500
135.1		37795	53851	62316
	375	0	0	0
	376	0	550	681
	377	120	4671	2461
	378	5233	5940	6700

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
135.1 (Cont.)	379	6190	6494	6754
	380	6770	7142	7539
	381	2900	4407	5235
	393	1570	2420	3350
	394	5794	6178	6492
	397	0	600	1000
	398	0	0	0
	399	0	0	0
	401	0	1605	2215
	402	600	2305	3172
	405	16	3025	3580
	406	6328	7279	7901
	408	1769	2000	2461
	418	505	2235	2775
	470	0	0	0
135.2		10340	10751	11565
	363	2080	2195	2397
	382	3302	3360	3433
	383	3903	3882	3845
	384	1055	1314	1890
135.3		9404	12170	14232
	390	3138	3472	3680
	391	2280	2865	3487
	392	2740	3204	3678
	409	966	1696	2064
	410	280	933	1323
136.0	395	6392	5698	5271
137.0	404	6920	6452	6088
138.0		10470	10923	11625
	396	8720	8550	8047
	403	1750	2373	3578
139.0		14890	26868	34641
	132	110	132	168
	133	0	141	202
	135	23	50	68
	172	6	557	1219
	204	51	75	101
	205	0	25	33
	315	71	2472	3429
	316	46	58	67

Census Tract	Traffic Zone	Population 1980	Population 1990	Population 2000
139.0 (Cont.)	317	0	0	0
	318	10	12	14
	319	0	0	0
	320	0	0	0
	321	0	0	0
	322	24	28	33
	323	0	0	0
	324	23	27	33
	325	88	124	168
	332	100	110	139
	333	15	12	10
	334	7	5	4
	335	105	135	167
	336	505	1816	2456
	337	648	2662	3600
	338	6	0	0
	339	3821	4057	4575
	340	3176	4808	6022
	341	3105	3376	3736
	372	2508	3940	5306
	373	404	2196	3024
	374	38	50	67
	400	0	0	0
	Overall County Totals	620000	783856	907000

APPENDIX II:

SUB-BASIN DRAINAGE AREAS

	1980	1990	2000
CC - City Creek	2532	3357	3810
RB - Red Butte Creek	6740	7647	8358
EC - Emigration Creek	16,067	17,587	18,615
PL - Parleys Creek	34,180	36,415	37,995
MC - Millcreek	57,679	60,123	63,019
BC - Big Cottonwood Creek	38,471	43,522	48,243
LC - Little Cottonwood Creek	88,592	109,908	124,784
SE - Southeast	60,374	80,702	93,561
SL - Salt Lake City	98,594	147	176
NW - Northwest	156,230	207,916	239,385
KC - Kennecott	44	47	54
BW - Barney/Bingham	22,094	39,898	52,373
MB - Midas/Butterfield	9,440	21,045	27,316
WA - Rose Creek	5,657	14,143	18,785
SW - Southwest	5,479	12,302	16,109
Total	602,173	773,759	884,583
"Real" Total	(620,000)	(783,856)	(907,000)
Difference*	-17,827	-10,097	-22,417
% Difference	(3%)	(1%)	(3%)

*Note: Differences due to rounding error in Traffic Zone consolidation/splitting.

DISAGGREGATION BY SUB-BASIN
DRAINAGE AREAS

Sub-basin Drainage Area	Traffic Zone	%	80	90	2000	
City Creek	045	20	62	66	71	
	047	50	139	223	261	
	058	30	0	0	0	
	044	70	1068	1819	2228	
	051	10	25	30	32	
	048	80	659	620	594	
	049	30	518	524	534	
	101	5	61	75	90	
	(outside TZ)					
	TOTAL			2532	3357	3810
Red Butte Creek	044	30	458	779	955	
	051	50	125	148	159	
	053	50	723	671	603	
	052	30	718	671	603	
	077	100	1689	1925	2300	
	078	100	611	656	690	
	079	100	0	0	0	
	094	20	325	393	423	
	095	50	564	679	738	
	096	50	745	727	705	
	097	50	721	700	683	
	101	5	61	75	90	
	(outside TZ)					
	TOTAL			6740	7647	8358
Emigration Creek	052	30	718	671	603	
	117	10	108	134	152	
	119	90	449	602	701	
	120	50	389	422	468	
	096	50	745	727	705	
	097	50	721	700	683	
	105	100	1192	1274	1309	
	106	100	1516	1651	1686	
	102	100	1219	1353	1420	
	103	100	1151	1071	1041	
	104	100	1015	1021	1028	
	098	100	1596	1693	1776	
	099	100	1566	1669	1753	
	100	100	2135	2779	3275	

Emigration	101	50	1424	1670	1835
Creek	Ct101	10	123	150	180
(Cont.)	(Outside				
	TZ)				
	TOTAL		16,067	17,587	18,615

Parleys	121	100	1274	1385	1403
Creek	122	100	1262	1388	1415
	123	100	1309	1525	1625
	124	100	1231	1379	1452
	125	100	1306	1405	1462
	101	50	1424	1670	1835
	127	50	605	550	531
	128	60	556	525	485
	126	100	1337	1478	1694
	129	100	955	1198	1385
	130	100	892	822	816
	219	100	2133	2415	2614
	256	50	1273	1318	1374
	220	100	1438	1580	1689
	221	100	0	0	0
	222	100	0	0	0
	234	70	87	127	170
	235	30	155	176	182
	249	100	2210	2346	2428
	251	100	1004	1033	1045
	252	100	603	607	614
	248	100	1787	2121	2361
	250	100	975	948	941
	127	50	605	550	531
	128	40	370	350	323
	256	50	1273	1318	1374
	253	100	2378	2605	2823
	254	100	2709	2575	2367
	257	100	1558	1596	1661
	258	100	1460	1430	1395
	TOTAL		34,180	36,415	37,995

Millcreek	243	100	0	0	0
	245	100	433	482	530
	246	100	1083	1316	1458
	247	100	1138	1135	1132
	256	50	1273	1318	1374
	274	50	2865	2653	2513
	269	100	1395	1530	1673
	270	100	2650	2826	3062
	271	100	2365	2463	2676
	272	100	2383	2477	2542
	273	100	4383	4276	4200
	275	100	4506	4323	4269

Millcreek	276	100	1997	2152	2189
(Cont.)	277	100	2200	2306	2466
	278	100	2284	2424	2616
	279	100	2674	2897	3121
	329	70	41	29	25
	358	100	280	151	62
	359	100	358	270	238
	360	70	281	239	202
	361	50	134	328	483
	362	50	60	352	591
	241	100	1601	1680	1744
	242	100	1485	1568	1617
	328	20	0	0	0
	356	100	8	0	0
	357	100	410	345	285
	261	100	875	975	1028
	262	100	829	864	920
	263	100	714	791	852
	264	100	1953	2165	2335
	265	100	1832	2003	2110
	266	100	1249	1315	1408
	244	100	1418	1479	1558
	259	100	266	356	454
	260	100	657	804	995
	267	100	1546	1738	1960
	268	100	3062	3231	3435
	280	80	2184	2013	1831
	281	60	738	772	868
	282	50	1145	1084	1055
	283	30	924	993	1142
TOTAL			57,679	60,123	63,019

Big Cotton-	274	50	2865	2653	2513
wood Creek	314	100	473	681	826
	431	10	600	674	738
	288	100	606	790	1052
	289	100	2075	2161	2290
	292	100	1572	1844	2064
	293	100	37	13	0
	290	100	2874	3177	3391
	291	100	1926	2109	2235
	302	100	1910	2040	2250
	303	100	1695	1780	2084
	312	90	850	945	1031
	313	100	65	120	171
	419	100	301	600	983
	420	100	230	1103	1816
	421	50	1280	1664	1979
	430	30	2007	1961	1934
	286	50	287	395	434
	294	100	5460	5522	5684

Big Cottonwood	295	100	658	781	838
Creek (Cont.)	304	100	1218	1284	1364
	280	20	546	503	458
	281	40	492	515	579
	282	50	1145	1084	1055
	283	70	2156	2317	2664
	285	100	1407	1422	1506
	286	50	287	395	434
	360	30	120	102	87
	361	50	134	328	483
	362	50	60	352	591
	385	100	113	681	1001
	386	100	350	191	40
	284	100	1591	1731	1899
	387	50	502	475	453
	389	30	579	1129	1316
	TOTAL		38,471	43,522	48,243

Little	431	80	345	2696	2952
Cottonwood	440	100	255	636	743
Creek	312	10	94	105	115
	421	50	1280	1664	1979
	300	100	3182	3201	3352
	301	100	1060	891	811
	305	100	1911	1950	1987
	306	100	2899	3078	3254
	311	100	2675	2974	3145
	422	100	2830	2708	2614
	423	100	224	396	510
	428	100	3465	4588	5358
	429	100	5960	8465	9420
	430	70	4683	4575	4513
	432	100	2510	4378	4948
	296	100	2362	3000	3431
	297	100	889	997	1123
	299	100	848	1056	1209
	307	100	710	754	852
	387	50	502	475	453
	388	100	659	620	568
	389	70	1350	2633	3070
	411	100	793	1369	1797
	412	100	2463	2337	2230
	413	100	3484	3606	3749
	414	100	1154	1135	1101
	415	100	192	404	591
	416	100	458	1165	1695
	417	100	835	1431	2135
	298	100	2440	2253	2051
	308	100	1060	1829	2427
	309	100	4056	4380	4893
	310	100	66	55	36

Little	463	50	555	637	715
Cottonwood	424	100	2190	4050	5024
Creek (Cont.)	425	100	3335	3600	4208
	426	100	3335	3600	4208
	427	90	3021	3751	4653
	433	100	8535	10,349	12,993
	434	100	5825	6350	7044
	435	50	2165	2758	3268
	436	10	257	430	421
	439	50	2171	2750	3108
	441	40	1486	1981	2320
TOTAL			88,592	109,908	124,784

Southeast	101	5	61	75	90
(Outside					
TZ)					
463	50	555	637	715	
464	100	0	0	0	
465	100	27	25	20	
266	100	190	249	296	
478	100	663	621	585	
497	100	1499	1515	1625	
480	100	427	561	658	
481	100	3824	3619	3461	
435	50	2165	2758	3268	
436	90	2313	3060	3793	
438	100	2794	4382	5397	
439	50	2171	2750	3108	
441	60	2229	2971	3479	
442	100	3775	5337	6533	
443	100	5371	5124	5085	
444	100	3350	3843	4244	
475	100	100	500	750	
476	100	855	1025	1132	
482	100	1586	1645	1688	
483	100	234	225	170	
484	100	445	1140	1480	
485	100	68	1325	1713	
437	100	5555	6333	7041	
445	100	826	1597	1931	
446	100	2030	2150	2231	
447	100	339	956	1234	
448	100	3109	2806	2480	
449	100	1655	2510	3042	
450	100	1424	2451	3205	
451	100	2026	2223	2549	
452	100	2640	4446	5119	
453	100	215	563	770	
454	100	51	1069	1391	
455	100	970	1651	2083	
456	100	301	563	770	

Southeast	457	100	284	928	1194
(Cont.)	458	100	880	1250	1558
	459	100	680	1000	1422
	460	100	75	663	907
	461	100	978	1476	1942
	462	100	0	0	0
	494	100	402	438	510
	495	100	191	900	1256
	496	100	235	437	643
	507	100	756	825	875
	508	100	50	80	118
TOTAL			60,374	80,702	93,561

Southwest	497	70	69	724	1061
	498	30	147	421	573
	501	50	363	719	974
	502	100	2401	3801	4770
	503	100	830	1573	2000
	131	20	415	2205	3075
(Outside TZ)					
	504	100	158	1174	1533
	505	100	346	450	550
	506	100	175	275	353
	509	100	279	480	595
	510	100	296	480	625
TOTAL			5479	12,302	16,109

Rose Creek	486	40	308	720	1002
	490	30	219	653	847
	491	50	638	1105	1486
	492	70	381	1526	1975
	493	100	596	2086	2743
	497	30	29	310	455
	498	70	343	983	1336
	499	100	1700	2439	3120
	500	100	510	1781	2335
	501	50	725	1437	1948
	131	10	208	1103	1538
(Outside TZ)					
TOTAL			5657	14,143	18,785

Midas- Butterfield	486	60	462	1080	1503
	487	100	519	1770	2386
	488	100	710	1150	1630
	489	100	1490	2050	2743
	490	70	511	1523	1975
	491	50	638	1105	1486

Midas-	492	30	163	654	847
Butterfield	471	50	1150	1922	2549
(Cont.)	472	60	2664	4843	5899
	473	60	509	2206	2826
	474	60	624	2742	3472
TOTAL			9440	21,045	27,316
Barneys-	407	100	2325	2790	3006
Bingham	467	100	3955	6570	8090
	468	100	3221	4305	5530
	469	100	8067	10,225	13,518
	471	50	1150	1922	2549
	472	40	1776	3228	3932
	473	40	340	1470	1884
	474	40	416	1828	2314
	470	100	0	0	0
	139	10	0	0	0
(Outside					
TZ)					
	131	40	830	4410	6150
(Outside					
TZ)					
	135.1	90	14	3150	5400
(Outside					
TZ)					
TOTAL			22,094	39,898	52,373
Kennecott	316	60	28	35	40
	317	100	0	0	0
	318	100	10	12	14
	319	100	0	0	0
	338	100	6	0	0
TOTAL			44	47	54
Northwest	134	50	21	10	0
	136	100	0	0	0
	137	100	25	140	224
	138	100	501	3461	4500
	139	100	293	400	451
	145	100	685	1116	1584
	154	100	2640	3300	3550
	170	100	55	32	14
	171	100	50	27	12
	173	100	155	109	38
	174	100	4	2	2
	175	100	86	50	22
	202	100	30	17	7
	203	100	0	0	0
	206	100	0	0	0

Northwest		207	100	0	0	0
(Cont.)		155	100	1023	953	840
		169	100	117	34	0
		176	100	1937	2230	2550
		199	100	1820	2347	2779
		200	100	1996	2087	2309
		201	100	3785	4511	5154
		208	100	2355	2674	3116
		209	100	5	0	0
		330	100	1603	1898	2260
		331	100	1211	1459	1665
		349	100	1275	1792	2200
		350	100	1025	1545	1763
C.T.	%	364	100	1330	2047	2495
133.2	100	347	100	3771	4672	4970
		348	100	3910	3888	3873
		365	100	33	75	99
		366	100	1270	1170	1091
134	100	367	100	27,064	39,239	46,183
		342	100			
		343	100			
		344	100			
		345	100			
		346	100			
		368	100			
		369	100			
		370	100			
		371	100			
		375	100	0	0	0
		376	100	0	550	681
		377	100	120	1671	2461
		378	100	5233	5940	6700
		379	100	6190	6494	6754
		380	100	6770	7142	7539
		381	100	2900	4407	5235
		393	100	1470	2420	3350
		394	100	5794	6178	6492
		397	100	0	600	1000
		398	100	0	0	0
		399	100	0	0	0
		401	100	0	1605	2215
		402	100	600	2305	3172
		405	100	16	3025	3580
		406	100	6328	7274	7901
		408	100	1769	2000	2461
		418	100	505	2235	2775
135.2	100			10,340	10,751	11,565
135.3	100			9404	12,170	14,232
136	100			6392	5698	5271
137	100			6920	6452	6088
138	100			10,470	10,923	11,625
		132	70	77	92	118

Northwest	133	100	0	141	202
(Cont.)	134	50	21	10	0
(CT) (%)	135	100	23	50	68
	172	100	6	557	1219
	204	100	51	75	101
	205	100	0	25	33
	315	100	71	2472	3429
	316	40	18	23	27
	320	100	0	0	0
	321	100	0	0	0
	322	100	24	28	33
	323	100	0	0	0
	324	100	34	27	33
	325	100	88	124	168
	332	100	100	110	139
	333	100	15	12	10
	334	100	7	5	4
	335	100	105	135	167
	336	100	505	1816	2456
	337	100	648	2662	3600
	339	100	3821	4057	4575
	340	100	3176	4808	6022
	341	100	3105	3376	3736
	372	100	2508	3940	5306
	373	100	404	2196	3024
	374	100	38	50	67
	400	100	0	0	0
TOTAL			156,230	207,916	239,385

Salt Lake City					
C.T.	%				
1	100		11	9	7
		045	80	248	265
		047	50	349	557
4	100		3776	4000	4200
5	100		5571	6093	6465
		152	100	2045	2359
		153	100	974	1109
		156	100	828	1109
		058	70	0	0
		149	100	1106	1315
		150	100	2097	2595
8	100		2085	3228	4011
		051	40	100	118
		048	20	165	155
		049	70	1209	1222
		050	100	1373	1301
11	100		6218	7324	8360
12	100		4785	4982	5150
		053	50	723	894
25	100		913	2200	3000

Salt Lake City

(Cont.)

(C.T.) (%)

15	100			3204	4048	4699
16	100			3440	4482	5116
17	100			3320	4749	5535
18	100			2978	4072	4646
19	100			2403	4180	4832
20	100			3079	3876	4426
21	100			1021	884	754
22	100			161	121	110
23	100			1778	3222	3780
24	100			1088	981	673
26	100			3659	4278	4853
		196	100	421	537	620
		198	100	1094	1384	1659
		210	100	589	781	1019
		211	100	163	193	232
		212	100	0	0	0
29	100			3848	4025	4111
30	100			2872	3286	3527
31	100			4208	4707	5053
32	100			4662	5355	6113
		116	100	1238	1460	1650
		117	90	974	1208	1366
		118	100	163	219	245
		119	10	50	67	78
		120	50	389	422	468
34	100			4392	5129	5573
		093	100	1757	2057	2175
		094	80	1298	1572	1692
		095	50	564	679	738
		223	100	12	3	0
		224	100	149	250	312
		225	100	396	495	574
		232	100	470	599	698
		233	100	87	127	150
		235	70	386	411	424
		236	100	653	660	669
		226	100	310	505	581
		231	100	414	551	629
		237	100	1008	1267	1447
		238	100	853	1140	1296
		227	100	190	205	213
		228	100	553	570	591
		229	100	405	424	440
		230	100	605	631	653
		239	100	760	815	846
		240	100	690	745	778
		326	100	96	77	65
		327	100	20	15	10
		328	80	0	0	0

Salt Lake City	352	100	60	45	15
(Cont.)	353	100	100	85	65
	354	100	385	350	320
	355	100	107	85	60
	329	30	18	12	11
	351	100	478	271	135
TOTAL			98,594	119,147	132,176

APPENDIX III:

DISAGGREGATION OF TRAFFIC ZONE PROJECTIONS
BY 201 FACILITY AREAS

<u>201</u> <u>Facility Areas</u>	<u>Census</u> <u>Tract</u>	<u>Traffic</u> <u>Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
Salt Lake City	1	All	1803	1914	2000
	2	All	1007	1445	1657
	3.1	All	4186	8437	10,309
	3.2	All	380	237	95
	4	All	3776	4000	4200
	5	All	5571	6093	6465
	6	All	4870	5530	6067
	7	All	3203	3910	4292
	8	All	2085	3228	4011
	9	All	1775	2899	3500
	10	All	3924	3821	3794
	11	All	6218	7324	8360
	12	All	4785	4982	5150
	13	All	1446	1788	2024
	14	All	4693	4816	5000
	15	All	3204	4048	4699
	16	All	3440	4482	5116
	17	All	3320	4749	5535
	18	All	2978	4072	4646
	19	All	2403	4180	4832
	20	All	3079	3876	4426
	21	All	1021	884	754
22	All	161	121	110	

<u>201 Facility Areas</u>	<u>Census Tract</u>	<u>Traffic Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
Salt Lake City (Cont.)	23	All	1778	3222	3780
	24	All	1088	981	673
	25	All	913	2200	3000
	26	All	3659	4278	4853
	27	All	5870	6698	7638
	28	All	8412	0080	11,800
	29	All	3848	4025	4111
	30	All	2872	3286	3527
	31	All	4208	4707	5053
	32	All	4662	5355	6113
	33	All	3760	4533	5127
	34	All	4392	5129	5573
	35	All	4507	5379	5765
	36	All	2932	2854	2776
	37	All	2708	2925	2995
	38	All	2536	2773	2818
	39	All	3846	4309	4539
	40	All	3385	3445	3489
	41	All	3162	3362	3528
	42	All	7118	8093	8815
	43	All	3184	3493	3895
	44	All	2133	2415	2614
	45	All	1438	1580	1689
	46	All	1238	1656	1977
	47	All	5022	5233	5362
	48	All	5416	6002	6422

<u>201</u> <u>Facility Areas</u>	<u>Census</u> <u>Tract</u>	<u>Traffic</u> <u>Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
Salt Lake City (Cont.)	49	243	0	0	0
		238	853	1140	1296
		237	1008	1267	1447
	115	All	1186	992	820
	133	330	1603	1898	2260
		331	1211	1459	1665
		350	1025	1545	1763
	134	342 ($\frac{1}{2}$)	226	792	1044
		343 ($\frac{1}{2}$)	147	779	1047
		344 ($\frac{1}{2}$)	350	323	1676
		345 ($\frac{1}{2}$)	310	323	1676
	139	132	110	132	168
		133	0	141	202
		135	23	59	68
		172	6	557	1219
		204	51	75	101
		205	0	25	33
		315	71	2472	3429
		321	0	0	0
		322	24	28	33
		323	0	0	0
		324	23	27	33
		334	7	5	4
		335	<u>105</u>	<u>135</u>	<u>167</u>
			171,754	211,018	235,125

<u>201 Facility Areas</u>	<u>Census Tract</u>	<u>Traffic Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
Magna Water & Sewer Improve- ment District	135.1	375	0	0	0
		399	0	0	0
	139	316	56	58	67
		317	0	0	0
		318	10	12	14
		320	0	0	0
		325	88	24	168
		319	0	0	0
	139	336	505	1816	2456
		337	648	2662	3600
		338	6	0	0
		339	3821	4057	4575
		340	3176	4808	6022
		341	3105	3376	3736
		372	2508	3940	5306
		373	404	2196	3024
		374	38	50	67
		375	0	0	0
		399	0	0	0
		<u>400</u>	<u>0</u>	<u>0</u>	<u>0</u>
			14,365	23,099	39,035
Central Valley	49	231	414	441	629
Water Recla- mation		226	320	505	581
	101	All	13,228	14,129	13,832
	102	All	6006	5940	5814
	103	All	5376	5631	5879
	104	All	6410	6819	7411
	105	All	6766	6753	6742
	106	All	6503	6475	6458

<u>201</u> <u>Facility Areas</u>	<u>Census</u> <u>Tract</u>	<u>Traffic</u> <u>Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
	107	All	7158	7627	8203
	108	All	4290	4808	5406
	109	All	4800	5286	5626
	110	All	7705	10,021	12,407
	111	All	19,063	19,681	20,435
	112	All	6519	7692	8482
	113	All	15,160	19,378	20,886
	114	All	6289	6638	6882
	116	All	2426	3306	3949
	117	All	7452	8113	8653
	118	All	6949	7608	8402
	119	All	12,579	13,315	14,147
	120	All	6400	7538	8514
	121	All	4384	6701	7657
	122	413	3484	3606	3749
		412	2463	2337	2230
		417	835	1431	2135
	123	All	7622	8517	9407
	126	433	8535	10,349	12,993
		434	5825	6350	7044
		439	4342	5500	6215
		441($\frac{1}{2}$)	1858	2476	2900
	126	442($\frac{1}{2}$)	1888	2669	3267
		438($\frac{1}{2}$)	1397	2191	1512
		435($\frac{1}{2}$)	2165	2758	3268
	129	407	2325	2790	3006
	133.1	349	1275	1792	2200
		364	1330	2047	2495

<u>201</u> <u>Facility Areas</u>	<u>Census</u> <u>Tract</u>	<u>Traffic</u> <u>Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
	133.2	All	15,564	16,529	17,167
	134	342($\frac{1}{2}$)	226	792	1044
		343($\frac{1}{2}$)	147	779	1047
		344($\frac{1}{2}$)	350	1323	1676
		345($\frac{1}{2}$)	310	1323	1676
		346	5470	5671	6268
		368	6300	7967	9012
		369	4935	5811	6649
		370	3389	5311	6407
		371	4905	6046	6962
	135.1	376	0	550	681
		377	120	1671	2461
		378	5233	5940	6700
		379	6190	6494	6754
		380	6770	7142	7539
		381	2900	4407	5235
		398	0	0	0
		397	0	600	1000
		394	5794	6178	6492
		393	1570	2420	3350
		401	0	1605	2215
		402	0	1605	2215
		405	16	3025	3580
		406	6328	7279	7901
		408	1769	2000	2461
		418	505	2235	2775
	135.2	All	10,340	10,751	11,565
	135.3	All	9404	12,170	13,232

<u>201</u> <u>Facility Areas</u>	<u>Census</u> <u>Tract</u>	<u>Traffic</u> <u>Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
	136	All	6392	5698	5271
	137	All	6920	6452	6088
	138	All	10,470	10,923	11,625
	139	332	100	110	139
		333	15	12	10
			<u>324,563</u>	<u>380,847</u>	<u>420,757</u>
South Valley	122	416	458	1165	1695
Water Recla-		415	192	404	591
mation Facility		414	1154	1135	1101
	124	All	9123	9301	9695
	125	All	10,240	13,356	16,310
	126	435($\frac{1}{2}$)	2165	2758	3268
		438($\frac{1}{2}$)	1397	2191	2699
		443	5371	5124	5085
		442($\frac{1}{2}$)	1888	2669	3267
		441($\frac{1}{2}$)	1858	2476	2900
		444	3350	3843	4244
		484	445	1140	1480
		485	68	1325	1713
		483	234	225	170
		475	100	500	750
		482	1586	1645	1688
		476	855	1025	1132
		436	2570	4382	5397
	127	All	5555	6333	7041
	128	All	21,213	32,667	39,353
	129	467	3955	6570	8090
		468	3221	4305	5530
		469	8067	10,225	13,518

<u>201</u> <u>Facility Areas</u>	<u>Census</u> <u>Tract</u>	<u>Traffic</u> <u>Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
		472	4440	8071	9831
		473	849	3676	4710
		474	1040	4570	5786
	130	All	13,549	30,064	39,754
	131	All	4375	14,868	20,472
	135.1	470	<u>16</u>	<u>3500</u>	<u>6000</u>
			109,318	179,513	223,270

APPENDIX IV:

DISAGGREGATION OF TRAFFIC ZONE PROJECTIONS
BY MUNICIPALITY

<u>Municipality</u>	<u>Census Tract</u>	<u>Traffic Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
Salt Lake City	1	All	1803	1914	2000
	2	All	1007	1445	1657
	3.1	All	4186	8437	10,309
	3.2	All	380	237	95
	4	All	3776	4000	4200
	5	All	5571	6093	6465
	6	All	4870	5530	6067
	7	All	3203	3910	4292
	8	All	2085	3228	4011
	9	All	1775	2899	3500
	10	All	3924	3821	3794
	11	All	6218	7324	8360
	12	All	4785	4982	5150
	13	All	1446	1788	2024
	14	All	4693	4816	5000
	15	All	3204	4048	4699
	16	All	3440	4482	5116
	17	All	3320	4749	5535
	18	All	2978	4072	4646
	19	All	2403	4180	4832
	20	All	3079	3876	4426
	21	All	1021	884	754
22	All	161	121	110	

<u>Municipality</u>	<u>Census Tract</u>	<u>Traffic Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
Salt Lake City (Cont.)	23	All	1778	3222	3780
	24	All	1088	981	673
	25	All	913	2200	3000
	26	All	3659	4278	4853
	27	All	5870	6698	7638
	28	All	8412	0080	11,800
	29	All	3848	4025	4111
	30	All	2872	3286	3527
	31	All	4208	4707	5053
	32	All	4662	5355	6113
	33	All	3760	4533	5127
	34	All	4392	5129	5573
	35	All	4507	5379	5765
	36	All	2932	2854	2776
	37	All	2708	2925	2995
	38	All	2536	2773	2818
	39	All	3846	4309	4539
	40	All	3385	3445	3489
	41	All	3162	3362	3528
	42	All	7118	8093	8815
	43	All	3184	3493	3895
	44	All	2133	2415	2614
	45	All	1438	1580	1689
	46	All	1238	1656	1977
	47	All	5022	5233	5362
	48	All	5416	6002	6422
	49	All	2585	3463	3953

<u>Municipality</u>	<u>Census Tract</u>	<u>Traffic Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
	139	132	110	132	168
		133	0	141	202
		135	23	59	68
		172	6	557	1219
		315($\frac{1}{2}$)	36	1236	1715
			166,175	200,432	222,299
South Salt Lake City	28	212	0	0	0
	114	All	6289	6638	6882
	115	All	1186	992	820
	117	261	875	975	1028
		262	829	864	920
		263	714	791	852
	116	329	59	41	36
		351	478	271	135
		358	280	151	62
			10710	10723	10735
Murray	120	All	6400	7538	8514
	121	All	4384	6701	7657
	122	All	8586	10078	11501
	123	All	7622	8517	9407
			26992	32834	37079
Midvale	124	All	9123	9301	9695
West Jordan	129	467	2855	4730	5825
		468	3221	4305	5530
		469	8067	10225	13518
		471	2300	3843	5097
		472	4440	8071	9831
		473	849	3676	4710

<u>Municipality</u>	<u>Census Tract</u>	<u>Traffic Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
West Jordan (Cont.)		474	1040	4570	5786
	135.1	406	1428	1674	1817
	131		<u>100</u>	<u>551</u>	<u>769</u>
			24300	41645	52883
South Jordan	130	486	770	1800	2505
		487	519	1770	2386
		488	710	1150	1630
		489	1490	2050	2743
		490	730	2175	2822
		491	1275	2210	2972
		492	544	2180	2822
		493	<u>596</u>	<u>2086</u>	<u>2743</u>
			6634	15421	20623
	Riverton	130	500	510	781
499			1700	2439	3120
498			490	1404	1909
497			98	1034	1516
504			158	1174	1533
503			830	1573	2000
502			2401	3801	4770
501			<u>725</u>	<u>1437</u>	<u>1948</u>
		6912	14643	19131	
	131	Part Of			
Draper	128	453	215	563	770
		454	51	1069	1391
		455	970	1651	2083
		456	301	563	770
		457	284	928	1194

<u>Municipality</u>	<u>Census Tract</u>	<u>Traffic Zones</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>	
Draper (Cont.)		494($\frac{1}{2}$)	201	219	255	
		496	235	437	643	
		458	880	1250	1558	
		459	680	1000	1422	
		460	75	663	907	
		461	978	1476	1942	
		462	0	0	0	
		507	756	825	875	
		508	50	80	118	
				<u>5676</u>	<u>10724</u>	<u>13928</u>
Bluffdale	128	505	346	450	550	
		506	175	275	353	
		509	279	480	595	
		510	296	480	625	
			<u>1096</u>	<u>1685</u>	<u>2123</u>	
	131	Part Of				
Sandy	128	446	2030	2150	2231	
		449	1655	2510	3042	
		450	1424	2451	3205	
		451	2026	2223	2549	
		452	2640	4446	5119	
		495	191	900	1256	
		445	826	1597	1931	
		447	339	956	1234	
		126	All	42524	55488	65908
			(Excluding TZ443)			
127	All	<u>5555</u>	<u>6333</u>	<u>7041</u>		
		59,210	79,054	93,516		

<u>Municipality</u>	<u>Census</u>	<u>Traffic</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
	<u>Tract</u>	<u>Zones</u>			
West Valley	133.1	330	1603	1898	2260
		331	1211	1459	1665
		349	1275	1792	2200
		350	1025	1545	1763
		364	1330	2047	2495
	133.2	347	3771	4672	4970
		348	3910	3888	3873
		365	33	75	99
		366	1270	1170	1091
		367	6580	6724	7134
	134	342	452	1584	2088
		343	293	1557	2093
		344	700	2646	3352
		345	620	2646	3352
		346	5470	5671	6268
		368	6300	7967	9012
		369	4935	5811	6649
		370	3389	5311	6407
		371	4905	6046	6962
		135.1	376	0	550
	377		120	4671	2461
	378		5233	5940	6700
	379		6190	6494	6754
	380		6770	7142	7539
	135.2	381	2900	4407	5235
		382	3302	3360	3433
		383	3903	3882	3845
384		1055	1314	1890	
390		3138	3472	3680	
West Valley (Cont.)	139	332	110	132	168
		333	0	141	202
		334	7	5	4
		335	105	135	167
			<u>81,905</u>	<u>106,154</u>	<u>116,492</u>