Land Use Allocation Documentation Report
Anchorage 2020 Land Use Assumptions

Prepared by:

Municipality of Anchorage

Transportation Planning Division

and

HDR Alaska, Inc.

October 7, 2002

Table of Contents

Appendix A – Redevelopable Land Inventory - Methodology

1.0   Introduction

1.1   Purpose of This Report

The key tool used to predict how Anchorage's transportation system will perform in the future is the Anchorage Transportation Demand Model. The transportation demand model is a computer program designed to simulate travel by comparing the demand for transportation (the need to travel) to the supply (the available transportation network). The demand for transportation is primarily based on socio-economic measures such as the number and distribution of population and employment. Future transportation demand is therefore based on existing as well as future land use development. The model utilizes land use information to estimate the number and destination of future trips to simulate traffic volumes on area roadways. (The model also estimates the number of transit, carpool, walk, and bicycle trips using this information.)

Changes in the amount and distribution of population and employment can have a significant impact on future traffic projections. As a result, it is important to update the transportation demand model's land use assumptions whenever major land use changes can be reasonably anticipated. Moreover, Federal Highway Administration Metropolitan planning regulations require Metropolitan Planning Organizations (MPOs), such as AMATS, to utilize the latest planning assumptions in their transportation demand models. The recently adopted 2020 Anchorage Bowl Comprehensive Plan is expected to implement such a change in land use patterns.

Previously, the Anchorage Transportation Demand Model utilized what was called the existing trends scenario of future land use development. The assumptions contained in this scenario were essentially an extrapolation of existing development trends based on current zoning and existing densities. The 2020 Anchorage Bowl Comprehensive Plan, however, recommends changes to the existing trends toward a more compact, mixed-use development. As a result, many of the land use assumptions utilized in the existing trend scenario needed to be re-examined and revised to reflect the new policies and objectives of the 2020 Anchorage Bowl Comprehensive Plan. This report documents those changes and how they were incorporated in the Anchorage Transportation Demand Model.

1.2   Document Overview

This section provides an overview of this document.

Chapter 2.0 presents information on the Municipality of Anchorage Land Use Allocation Model. The land use allocation model (using a Microsoft Excel spreadsheet platform) projects the density and distribution of future population, household, and employment by sector (retail, professional services, health, education, other services, and industrial). Output from the land use allocation model is used as the primary input for the transportation demand model. The land use allocation model uses a two phase process to step down the regional growth projections developed by the Institute of Social

and Economic Research (ISER) to the Traffic Analysis Zone estimates usable by the transportation demand model.

Chapter 3.0 presents information on the ISER regional population and employment projections. These projections are used as areawide control totals of future population and employment growth. These control totals are then distributed in a subsequent step throughout the Municipality of Anchorage using a land use allocation model developed specifically for the Municipality of Anchorage. It should be noted that the areawide (regional) control totals remain constant regardless of whether or not the existing trends or Anchorage 2020 assumptions are used.

Chapter 4.0 discusses the Anchorage 2020 land use policies and objectives and how they were used by the Anchorage Land Use Allocation Model to revise the distribution of population and employment to the traffic analysis zones. This section also documents the assumptions associated with converting the general policy guidance of Anchorage 2020 into specific land use assumptions.

Chapter 5.0 summarizes shifts in the land use patterns as a result of the implementation of Anchorage 2020.

Chapter 6.0 includes a reference section.

2.0   Anchorage Land Use Allocation Model

Socio-economic measures such as population and employment are the basis for estimating the demand for travel. There are well-defined relationships between land use development and travel demand generation. KJSA, with assistance from Municipality staff, developed a land use allocation model (using a Microsoft Excel spreadsheet platform) to project the density and distribution of future population, household, and employment by sector (retail, professional services, health, education, other services, and industrial). The following outlines the methodology and major factors used by the model to distribute population and employment to the traffic analysis zones (the primary building blocks of the transportation demand model.

2.1   Regional Growth

The land use allocation model utilizes the 2001 Institute of Social and Economic Research Population and Employment Projections as the basis of its regional projections of population and employment increases. This widely accepted econometric model is used by many governmental and private entities as a planning tool. The ISER projections are developed for the Anchorage Borough as well as the Mat-Su Valley. Low, Base and High cases are developed which reflect a range of economic assumptions. The Base case is used in the Anchorage Land Use Allocation Model since by definition, it is the most likely to occur. Section 3 summarizes the actual population and employment projections contained in the ISER report and compares it to the assumptions used in Anchorage 2020.

2.2   Traffic Analysis Zone Growth

The regional household and employment totals are used to control the allocation to individual parcels in the spreadsheet models. Once growth is allocated to individual parcels it is aggregated to the Traffic Analysis Zone level in order to incorporate it into the trip generation sub model of the transportation planning model. The allocation of growth to individual parcels is based on five broad categories of data:

- the availability of the parcel for development or redevelopment
- the suitability of the land for development
- the type and amount of development allowed under zoning ordinances
- the accessibility of the location of the parcel
- growth in the pipeline

2.2.1   Availability

A parcel may be "available" for growth if it is vacant or if it is underutilized. (Note: The vacant land use inventory has recently been updated through use of the Municipality of Anchorage building permit database to reflect development activities through June 2002.) Underutilized parcels generally consists of large lots with a single family house on it. Although not technically vacant they are included in the developable land supply since they are likely to be resubdivided into smaller lots sometime in the future.

In the past, land use projections used in the Anchorage Transportation Model relied primarily on vacant land inventories. This methodology is perfectly acceptable when there is an abundant supply of vacant land available for development. However, as Anchorage 2020 points out "vacant land can only meet part of the forecasted housing demand". According to the Plan, the balance will be met through redevelopment. Moreover, Anchorage 2020 adopted strategies designed to promote the creation of more intensely developed town centers, major employment centers, redevelopment areas, and transit supportive development corridors in already developed areas. It is assumed that some redevelopment will be required in order to fulfill these objectives.

Refinements to the land use allocation model were recently completed in the summer of 2002, which added redevelopable parcels to the vacant land inventory. The refinement involved the addition of redevelopable parcels to the land use availability database, which previously only included vacant and underutilized land. (Note: redevelopable parcels are distinguished from the underutilized parcels by their smaller size.) The incorporation of redevelopable land represents an important enhancement to the land use allocation model. Appendix A outlines the methodology used to identify redevelopable parcels.

2.2.2 Suitability for Development

Available land varies in its suitability for development due to environmental constraints as follows.

- Wetlands
- Slope
- Alpine
- Avalanche
- Floodplain/Floodway
- Seismic

These categories were used to develop an overall suitability index for each parcel, where each parcel was identified as unsuitable for development, marginally suitable or suitable. For example, parcels containing Class A wetlands were identified as unsuitable for development and were not included in the supple of available vacant land. Parcels containing Class B wetlands were not taken out of the supply of available land but their development potential was reduced compared to parcels deemed suitable for development.

2.2.3 Zoning

Zoning district designations, by law, control how much and what type of development can occur on each parcel in terms of dwelling units per acre for residential use and type of development and density for commercial use. The Anchorage Land Use Allocation Model uses the Municipal Tile 21 zoning code as the basis for determining future land use and densities. Two steps were used to apply the zoning assumptions to the land use availability dataset. First, existing development densities were calculated for each zoning district by traffic analysis zone. Second, existing densities were adjusted where needed by Municipality of Anchorage planning staff based on professional judgment.

The existing trends scenario relied exclusively on this zoning based methodology. The new Anchorage 2020 scenario applies this methodology to areas outside of the Land Use Policy Elements (i.e., major employment centers, town centers, redevelopment areas, and transit supportive corridors but utilizes a different set of assumptions (based on Anchorage 2020 objectives) to replace the existing zoning density assumptions.

2.3 Accessibility

Accessibility factors represent the tendency for new development to occur near existing activities and where the transportation system is (or will be) adequate. These factors are calculated as functions of existing population and employment, and measures of travel time. A zone-to-zone travel time matrix and the Gamma function parameters from the HBW trip distribution model are used to derive a friction factor matrix.

To allocate household growth, the friction factors are multiplied by the HBW attractions of the destination zone and totaled by the origin zone to represent the origin zone's aggregate accessibility to employment.   Similarly, the accessibility factor for employment growth is calculated from the sum of the productions and attractions * f-factor values, summed by the destination zone. Finally, the resulting accessibility measures are divided by the maximum accessibility to yield accessibility factors that range from zero to one. The accessibility factor calculations are as follows:

used to allocate population is calculated as follows:

$PopAcc = \Sigma_{OrigTAZ} [HBW \ Prop * HBW \ Attr] / Max(PopAcc)$

$EmpAcc == \Sigma_{DestTAZ} [HBW \ Prop * (TotalProd + TotalAttr)] / Max(EmpAcc)$

Where:

PopAcc = accessibility factor for allocating population and household growth

EmpAcc = accessibility factor for allocating employment growth

HBW Prop = TAZ-to-TAZ home-based work friction factors, or propensities, from the distribution model

HBW Attr = home-based-work attractions at the destination TAZ

Total Prod, Total Attr = Total productions and attractions at the destination TAZ

2.4 Pipeline Development

The model explicitly incorporates development that is known or reasonably believed to occur. This includes:

- growth that has already occurred since 1994 (base year model conditions)
- development that is already permitted
- major subdivision plats with known buildout schedules such as Southport
- the draft Muldoon Town Center Plan
- master plans from major generators such as universities and hospitals.

These developments are incorporated explicitly or as changes in assumed densities for specific parcels.

3.0   Population, Housing, and Employment Forecast

The Anchorage Land Use Allocation Model begins with a projection of future population, employment, and housing growth. How much Anchorage is expected to grow will have a direct bearing on where and how we travel in the community. This section presents the forecast of future population, employment, and housing upon which the traffic model is based.

In 2001, the Anchorage Assembly approved Anchorage 2020—the comprehensive plan for the Anchorage Bowl. The comprehensive plan "provides a framework for decisions about land use and transportation, as well as public facilities, economic development, housing, and other public issues that are vital to a healthy and livable community" (Municipality of Anchorage February 2001, p. 3). Anchorage 2020 was based on forecasts performed by University of Alaska Anchorage Institute of Social and Economic Research (ISER) in 1999. ISER has recently, and significantly, changed its economic forecasts for Southcentral Alaska. As a result, the MOA decided that the traffic model should be updated to reflect the more recent 2001 ISER forecast. This section will outline what changes from the comprehensive plan assumptions have been made to reflect the differences between ISER's 1999 and more recent 2001 estimate of employment, population, and housing in the Anchorage area, as well as current information available from the Alaska Department of Labor (DOL).

3.1   Population

According to the Department of Community and Economic Development, the Census 2000 population in the Municipality of Anchorage was 260,283 people. Anchorage 2020 forecasts that in the base case, the population of the MOA would be 365,700 people in the year 2020. ISER's recent forecast, however, projects that the population will be 332,300 in that same year—about 9% less than previously forecast (see Table 1). The Alaska Department of Labor's estimates also indicate that population growth has slowed—it increased by a marginal 0.3% from 1999 to 2000 but had increased by 0.8% from 1998 to 1999 (DOL 1998 and 1999). Based on this information and the apparent recent slow-down of population growth in Anchorage (see Figure 1), the Anchorage 2020 forecast of population growth appears high and has been revised downward for the purposes of traffic forecasting to reflect recent trends.

Figure 1

Historical and Forecasted Population of the Municipality of Anchorage, 1990-2023
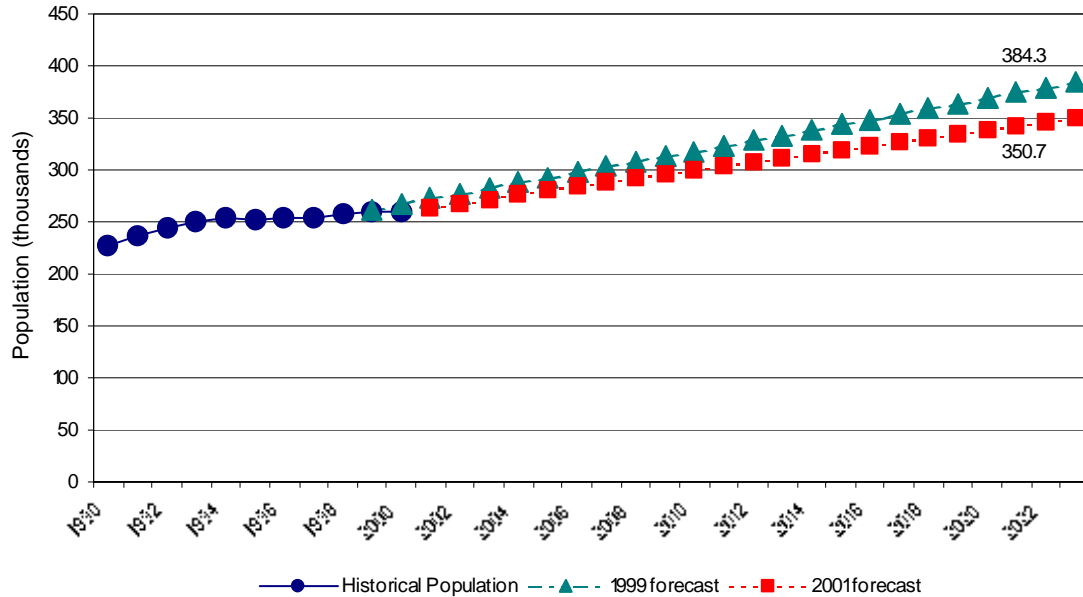
Source: Alaska Department of Labor and Workforce Development Research and Analysis Section, 2002 and ISER 1999 and 2001.
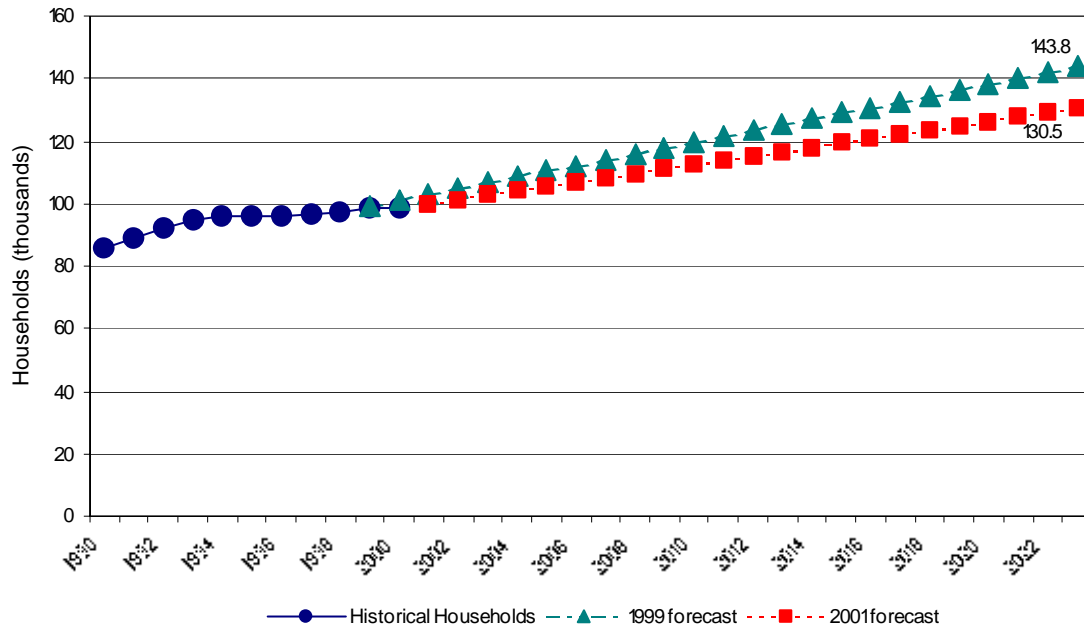
3.2 Households

*Anchorage 202*0 forecasts that in the base case, there would be 136,500 households (111,900 in the Anchorage Bowl) in the MOA in the year 2020. ISER's recent forecast, however, projects that the number will only be 122,300—about 10% less than its 1999 forecast (see Table 1). In addition, U.S. Census data indicates the number of people per household has been increasing—there were 2.60 people per household in 1990 and 2.67 per household in 2000. This could be due to Anchorage evolving into a more "permanent," less transient community—more families are settling down. If such a trend continues, the number of households may grow at a rate slightly slower than the rate of population growth. Figure 2 illustrates the calculated number of historical households and ISER's forecasted number of households from 1999 and 2001.

Based on this information and the apparent recent slow-down of population growth in Anchorage (see Figure 1), the Anchorage 2020 numbers for household growth appear high. For the purpose of traffic modeling, the MOA has revised the household estimate downward to reflect recent trends.

Figure 2

Calculated Historical and Forecasted Number of Households, 1990-2023

Source: Alaska Department of Labor and Workforce Development Research and Analysis Section, 2002 and UAA Institute of Social and Economic Research, 1999 and 2001.
Note: The 1990-2000 households were calculated by dividing the population by the average number of people per household from the 1990 and 2000 census (2.64).
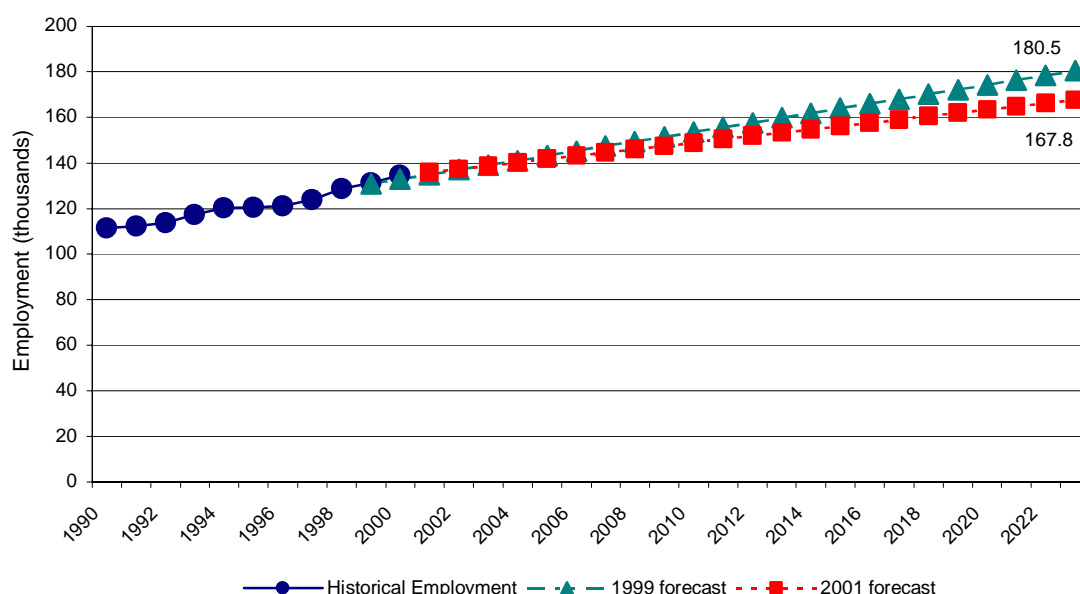
3.3 *Employment*

Anchorage 2020 forecasts that in the base case, there will be an employment level of 172,900 jobs (158,600 in the Anchorage Bowl) in the MOA in the year 2020. ISER's more recent forecast, however, projects that the number will only be 160,300 jobs—roughly 7% less than its 1999 estimate (see Table 1). Anchorage 2020 was based on ISER's 1999 forecast, which estimated that the MOA would add 41,400 jobs by 2020. ISER's 2001 forecast, however, estimated the MOA would add only 28,800 jobs—a 30% reduction in the number of jobs to be added. For historic comparison, the Alaska Department of Labor reported a gain of 20,900 jobs in Anchorage between 1990 and 2000. The overall economy is different from what it was a year ago—the job growth rate has slowed recently. Employment growth will be slow and steady in the near future and will be in part dependent upon the growth of tourism (and therefore the trade and services sectors).

Based on this information and the apparent recent slow-down of employment growth (see Figure 3), the Anchorage 2020 numbers for employment growth appear high. The MOA has decided to use the slightly revised downward employment projection in its traffic model to reflect more recent trends.

Figure 3

Historical and Forecasted Employment in the Municipality of Anchorage, 1990-2023

Source: Alaska Department of Labor and Workforce Development Research and Analysis Section, 2002 and UAA Institute of Social and Economic Research, 1999 and 2001.

3.4 Population/Employment Forecast Summary

Table 1 compares ISER's 1999 and 2001 (most recent) base case employment/population/households forecasts for Anchorage by the year 2020. The difference in the two forecasts reflects economic and demographic conditions that have caused ISER to reduce its forecasts from the numbers originally use in Anchorage 2020 from 1999.

Table 1

Summary of Differences in Demographic Forecasts

	2000 Actual	1999 ISER Forecast—2020	2001 ISER Forecast—2020	Actual Change in Forecasts[1]	Percent Change in Forecasts[1]
Population	260,000	365,700	332,300	-33,400	-9.1%
Households	94,800	136,500	122,300	-14,200	-10.4%
Wage and Salary Employment	131,500	172,900	160,300	-12,600	-7.3%

Source: ISER 2001, MOA February 2001

Note: [1] Calculated by HDR Alaska based on the data sources listed.

4.0   Anchorage 2020 Policies and Objectives

4.1   Overview

Allocating regional forecast such as ISER's, requires the use of numerous assumptions regarding the distribution of population and employment. Anchorage 2020 provides the official policy framework for guiding growth and development within the Anchorage Bowl. The document's Land Use Policy Map "sets the direction for the preferred form of long-term growth and development in the Anchorage Bowl" (MOA February 2001, p. 50). See Figure 4. The map identifies locations in Anchorage where major new urban elements would be located—providing policy guidance on the distribution and density of housing and employment. Where that growth will occur will influence how we travel and in turn that will affect traffic conditions, transit ridership, and biking and walking trips. The following identifies the primary policy elements contained in Anchorage 2020 that are expected to substantially affect the distribution and density of future growth in the Anchorage Bowl:

  ➢ *Employment Centers* are focal points for the highest concentrations of employment (primarily office employment). The distribution of employment centers will affects travel patterns because employment should become more concentrated in certain areas of the community.

  ➢ *Town Centers* are the focus of community activity for smaller subareas of Anchorage and should include a mix of retail, public facilities, and residential areas supported by transit and a high quality pedestrian environment. These policy areas affect travel patterns by providing medium to high residential densities in proximity to services and transit. Such development patterns should have a positive affect on transit ridership and encourage more walking and biking trips than our current development patterns.

  ➢ *Transit-Supportive Development Corridors* tie major elements of the Land Use Policy map together and link town centers to employment centers—these policy areas have a distinct affect on travel patterns because they are linking residential areas with employment at densities that support transit ridership.

  ➢ *Redevelopment/Mixed Use Areas* are areas that have been identified near all major employment centers; the goal is to have medium to high residential densities in these areas so that people live closer to where they work (p.51)

Each of these new urban elements has implications for land use, residential and employment densities, and in turn will affect traffic patterns and travel behavior. These polices are intended to work together to encourage a community that is more connected and that supports a wider range of travel choices.

Anchorage 2020 was intended to be a blueprint to guide development in the Anchorage Bowl over the next 20 years. Although it includes some specific land use policies and action strategies, the Plan is general in nature. A lot of work remains to be done in order to implement the Plan, e.g., ordinances need to be revised, zoning designations changed,

and sub-area plans adopted. The following chapter documents how the general policies and strategies contained in Anchorage 2020 were converted into a land use database that could be used for transportation modeling purposes. It should be noted, however, that there are several implementation plans which have either been proposed by private developers or have been initiated by the Municipality of Anchorage which provide useful details about how Anchorage 2020 might ultimately be implemented (at least with respect to Town Centers). The Muldoon Town Center Plan was unveiled by Koonce, Pfeffer, Bettis shortly after the adoption of Anchorage 2020. This Plan may provide the most realistic look at the market for Town Center type of development. The Community Planning Department of the Municipality of Anchorage has recently completed draft reports for two Town Centers (Abbott Road and Northway Mall. While these Plans have yet to be adopted, they provide the best guidance for making assumptions about how these town centers will develop. They may also provide useful prototypes for making assumptions about how other town centers might develop. As new implementing plans are adopted which provide more detail as to how Employment Centers, Town Centers, Transit Supportive Development Corridors, and Redevelopment Area are to be developed, the assumptions contained in this report will be revised.

Figure 4

Anchorage 2020 Land Use Policy Map
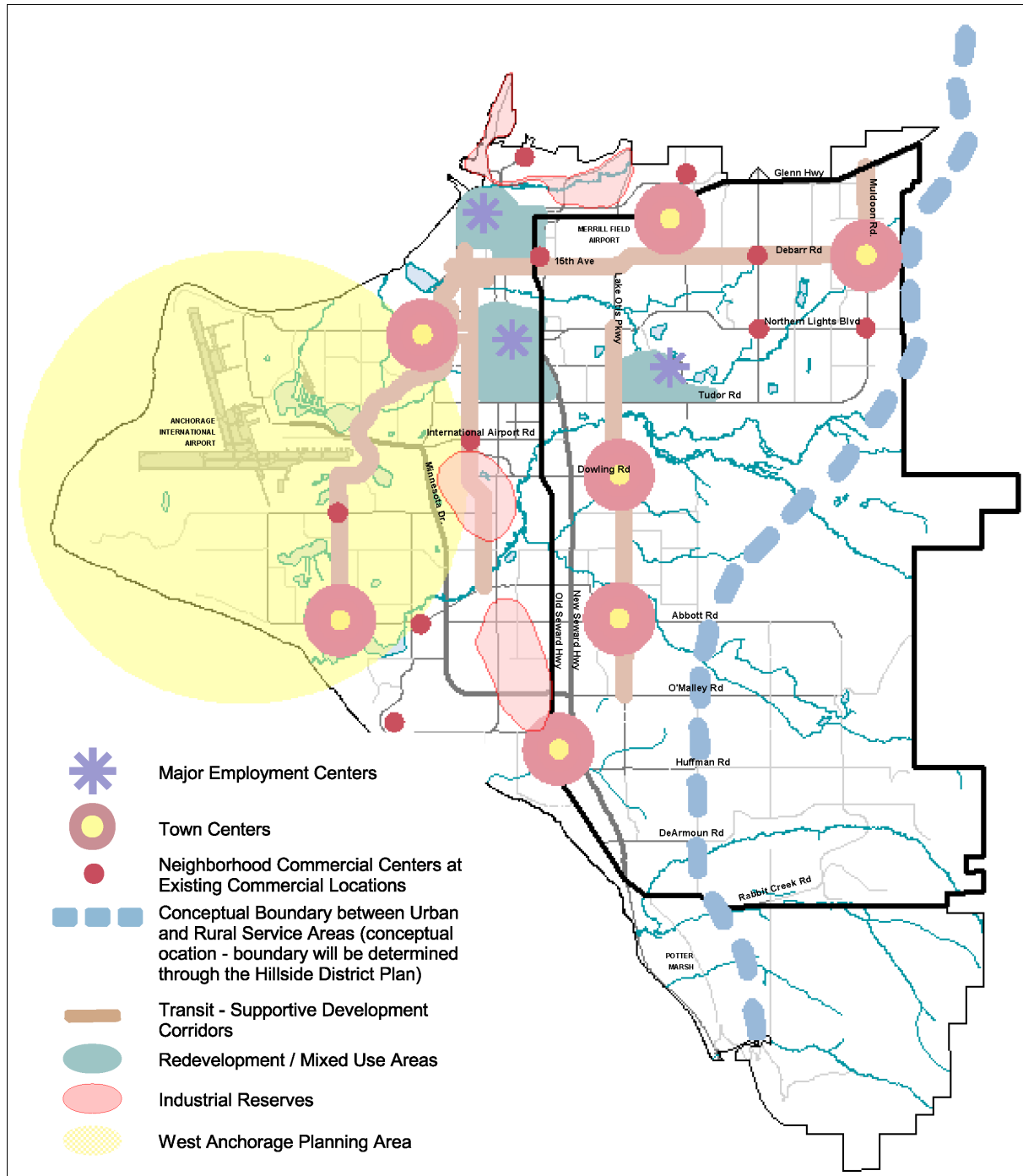
The following sections present an overview of the policy guidance from Anchorage 2020 and document the assumptions and interpretations applied to the Anchorage Transportation Demand Model.

4.2   Employment Centers

Trips to and from employment account for a substantial percentage of the trips made by Anchorage drivers during peak times. These trips are also characterized by morning and evening travel peaks, which contribute a large part of the congestion documented on Anchorage's road network. For these reasons, the distribution of future employment has major implications for travel demand. This section presents background information and assumptions used by the MOA for modeling the effect that Anchorage 2020 employment center policy areas will have on the distribution and density of future employment.

Anchorage 2020 identifies three specific areas of the Anchorage Bowl intended to provide for the highest concentration of employment (greater than 50 employees per acre).   As identified in Figure 4, the major employment centers are located in Downtown, Midtown, and the University-Medical District. These areas are intended to have appropriate infrastructure to support a mix of high-intensity land uses that will support a more balanced transportation system. Medium to high density residential developments are intended to surround these core employment centers, with higher density mixed-use development that includes residential uses. These areas should also have an emphasis on connectivity among the land uses to include and facilitate pedestrian and transit facilities along with traditional auto access (p. 51).

The most specific guidance from the plan can be found in Policy 23, which states:

> Major employment centers, shown on the Land Use Policy Map, exist at the Downtown, Midtown, and University/Medical areas. Characteristics of these centers are as follows:
>
> a) Concentrations of medium-to high-density office development with employment densities of more than 50 employees per acre;
> b) Promotion of compact, mixed use commercial/office development where businesses are close enough to walk between;
> c) New building oriented to the street with parking located in parking structures or to the side or behind buildings;
> d) Creation or enhancement of public focal points such as plazas or parks, including public art; Residential development as an ancillary use; and,
> e) A pedestrian-oriented environment including expanded sidewalks, crosswalks, street furniture, bus shelters, and landscaping. (MOA February 2001, p. 75)

4.2.1   Composition of Employment Growth

The challenge for forecasting land use in the major employment centers is to determine how much office growth could be expected to locate in these areas and at what densities they will develop (given the assumptions of Anchorage 2020). These forecasts will inevitably be constrained by the amount and composition of future employment growth. There is also the question as to whether or not there will there be enough office employment growth in the future to support the higher employment densities called for in Anchorage 2020? This section attempts to address this issue.

Table 2 shows the results of the 1996 "Anchorage Bowl Commercial and Industrial Land Use Study" undertaken by HDR on behalf of the Municipality of Anchorage. Based on this information, it appears that office employment is the only type of employment that is able to support densities greater than 50 employees per acre. (The overall Anchorage employment density is currently estimated to be about 20 employees per acre.) As a result, it appears that the future amount of office employment will, to a large degree, determine Anchorage's ability to successfully achieve the densities called for in the comprehensive plan. The question remains, How much office employment growth should the Municipality of Anchorage expect in the next 20 years? To answer this question, data on job distribution by category was gathered and analyzed.

Table 2

Employees per Acre, by Land Use Type, Anchorage Bowl, 1994

Land Use	Employees	Acres	Employees Per Acre
Retail	21,269	1,180	18
Services	19,898	684	29
Office	33,930	580	58.5
Industrial	14,624	2,272	6.4
Transportation	6,488	4,206	1.5
Other[1]	22,891	—	—
Total	**119,100**	—	—

Note: [1]Other mainly includes public sector employment.

Source: MOA 1996

As Table 3 shows, Anchorage's job gains between 1990 and 2000 were skewed toward service, retail, and transportation/communications/utilities employment (typically non-office employment). Government and mining employment (mainly energy industries like BP and ARCO which are largely office-type employment) lagged during that time period.

Table 3

Anchorage Wage & Salary Employment, 1990 & 2000

Industry	*1990*	*2000*	*Change*
Mining	5,355	3,016	-2,339
Construction	5,678	6,959	1,282
Manufacturing	2,308	2,234	-74
Transportation/Utilities/Communication	11,026	15,225	4,199
Wholesale	5,605	6,078	473
Retail	20,077	25,170	5,093
Finance/Insurance/Real Estate	5,682	6,789	1,107
Services	27,554	36,949	9,395
Agriculture/Forestry/Fishing	415	776	361
Non-Classified	105	50	-55
Government	26,179	27,655	1,476
Total	**109,983**	**130,901**	**20,918**

Source: Alaska Department of Labor May 2002.

The Alaska Department of Labor forecast (see Table 4) seems to reinforce the trend of the past 10 years. The short term statewide forecast anticipates that services, retail, and transportation/communications/utilities will be the main growth sectors, finance/insurance/real estate (an office-type employment sector), and manufacturing will grow slightly, and government and mining (largely office employment) will continue their decline.

Table 4

Statewide Employment Growth by Industry, 1998-2008

Industry	
Mining	-1,190
Construction	2,250
Manufacturing	420
Transportation/Utilities/Communication	8,300
Wholesale	1,450
Retail	8,600
Finance/Insurance/Real Estate	750
Services	25,750
Agriculture/Forestry/Fishing	240
Government	-550
Total	46,100

Source: Alaska Department of Labor May 2002.

Unfortunately, there is no official State of Alaska or other employment forecast by industry extending out 20 year which is the planning horizon used by the Anchorage Transportation Demand Model. When projecting employment composition 20 years in the future it may be worth keeping in mind the cyclical nature of the Anchorage office market. At the onset of the mid-1980s real estate recession, Anchorage had a very large surplus of commercial office space, due to the office construction boom of the late 1970s and early 1980s. Anchorage's four largest office buildings -- ARCO, Atwood, and Frontier (1983) and BP (1985) -- together added nearly 1.5 million square feet of office space. These buildings were built to house mainly energy industry and governmental office workers. Then, in the next 15 years, Anchorage's office-based employment stagnated, with the exception of professional and medical offices whose location preferences often did not well suit available commercial space. As a result, there was virtually no speculative commercial office building for 15 years.

Recently, there has been a spate of new office construction. Although office development is expected to continue, today's employment outlook and conservative economic outlook make it unlikely that Anchorage will see high-rise office development on a scale similar to the earlier era. Nevertheless, given the fact that government (a major user of office space) currently represents 23 percent of total employment in Anchorage, it seems unrealistic to assume that no additional government employment will occur over the next 20 years.

Therefore, for the purposes of this study, future employment growth by industry was estimated by averaging the percent share of future job growth of each industry group with the existing percentage share of each industry group. This tends to smooth out the growth rate of the fastest growing sectors such as services and bumps up the growth rate of the flat sectors such as government. The results of this methodology are shown in Table 5.

Table 5
Employment Share by Industry
2002-2023

Industry Group	Percent Share
Retail	17.5%
Services	48.0%
Mining	1.5%
Construction	3.25%
Manufacturing	1.0%
TCU	10.0%
Wholesale	2.6%
FIRE	3.2%
Government	12.35%
AFF	0.3%

In terms of location, much of the recent office development appears to be gravitating towards the midtown area in part due to the availability of vacant land and redevelopable land. The recent completion of the 212,000 square foot ASC building on the former Plaza 36 Mobile Home site (west of C Street and north of 40th Avenue is a recent example of new office development in the midtown area.

### 4.2.2 Existing Employment Densities

By analyzing existing employment densities it is possible to determine how close the Municipality of Anchorage is to achieving the employment densities objectives contained in Anchorage 2020. Figures 5 and 6 show the 1998 employment densities for the two of the three major employment centers of the Anchorage Bowl. The University/Medical District (including the UAA, Providence Hospital, and APU) is not included in the density maps since a substantial number of the trips are generated by students attending UAA which is not specifically addressed in Anchorage 2020. .

As these maps indicate downtown Anchorage is the only area of town that is currently achieving the Comprehensive Plan employment density objectives. In fact, most of downtown west of C Street and north of 9th Avenue greatly exceeds the 50 employees per acre threshold.

The Midtown employment center, on the other hand, is nowhere near as close to reaching the Comprehensive Plan objective of over 50 employees per acre. As of 1998,

only four Traffic Analysis Zones (TAZ) in Midtown contained employment densities greater than 50 employees per acre. (Note: TAZs are the basic building blocks of land use and trip data used by the Anchorage Transportation Demand Model.) These were primarily clustered around 40th and C Street and include the Frontier Building, Alaska USA, and the area centered on B Street, which contains several medium rise office buildings. The TAZ containing the Denali Towers, located east of Denali Street between Fireweed and Northern Lights Blvd. also exceeded 50 employees per acre.

Figure 5
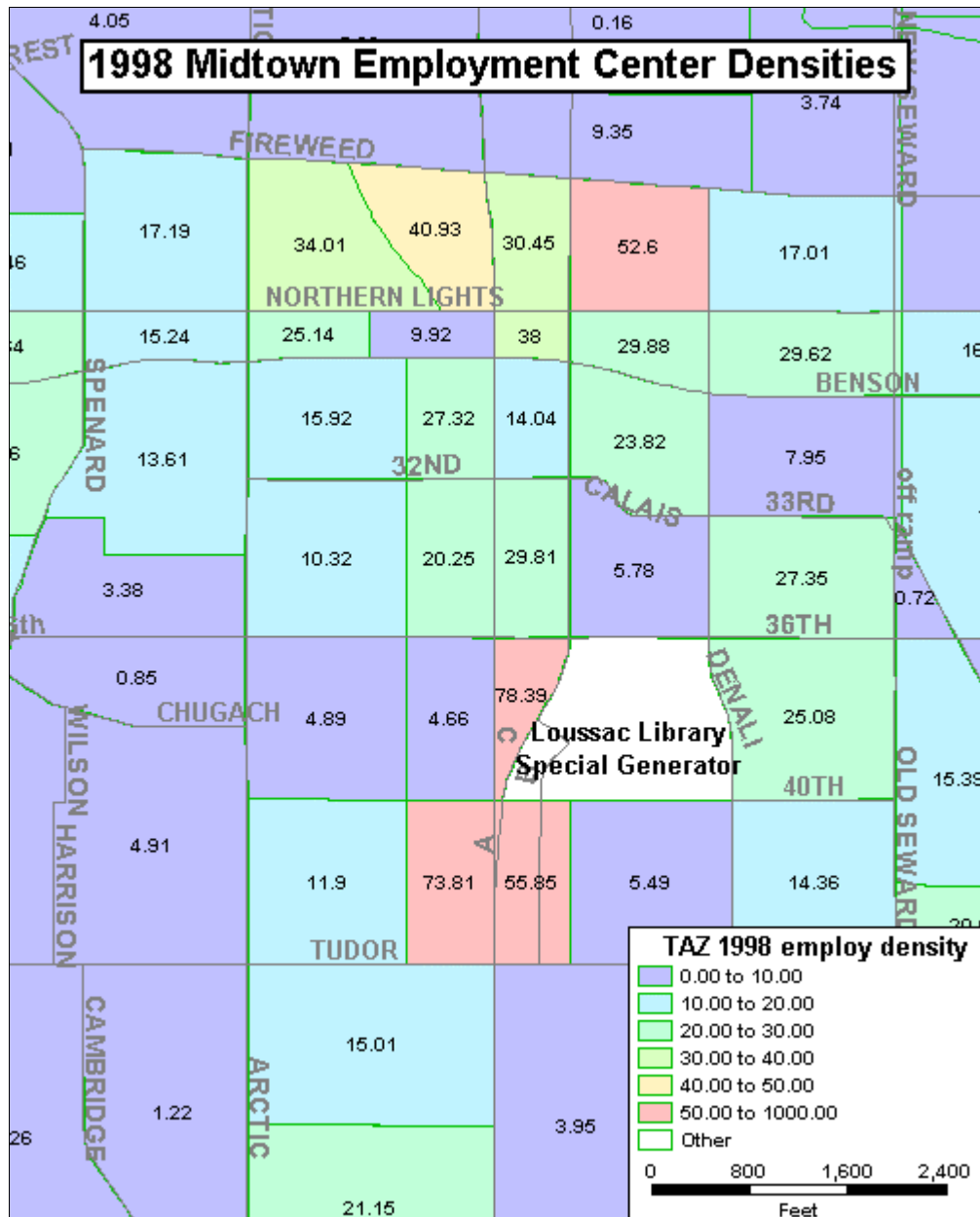
Figure 6

4.2.3 Future Projected Employment Densities

Figures 7 and 8 show the results of using the above described assumptions in the land use allocation model. As figure 7 reveals, downtown employment densities are expected to continue to increase (albeit slowly) over the next 20 years primarily due to redevelopment activities.   The downtown still contains numerous parking lots and underdeveloped lots, which are expected to provide attractive development opportunities

over the next 20 years as land becomes scarcer in the Anchorage Bowl. A recent example of this type of redevelopment involves the new 20-story Marriott Hotel, which was built on a parking lot at the southeast corner of I Street and 7th Avenue. The 20-year projection for downtown assumed that the same employment densities would occur as in the past.

Employment center densities greater than 50 employees per acre are not attainable for every traffic analysis zone identified throughout the entire Midtown employment centers. This density is not attainable because there is simply not enough office employment forecast to occur in these traffic analysis zones to achieve 50 employees per acre.

Nevertheless, the midtown major employment area is expected to achieve substantial employment density gains over the next 20 years with the following three subareas expected to reach the 50 employees per acre threshold:

- the area west of C Street and north of 40th Avenue where the new ASRC headquarters building has recently been built,
- the area north of Northern Lights Blvd. and between the Seward Highway and Arctic Blvd. where there is a substantial amount of redevelopable land
- the area east of Denali Street between 36th and Northern Lights Blvd.

In summary, the composition and density of forecast employment growth will make it more difficult, but not impossible, to achieve the employment densities proposed for employment centers in Anchorage 2020. Progress toward that goal will require that office, retail, and service employment be funneled into narrowly drawn development districts and multi-story mixed use buildings, with parking structures and heavier transit use to support more intense mixed uses.
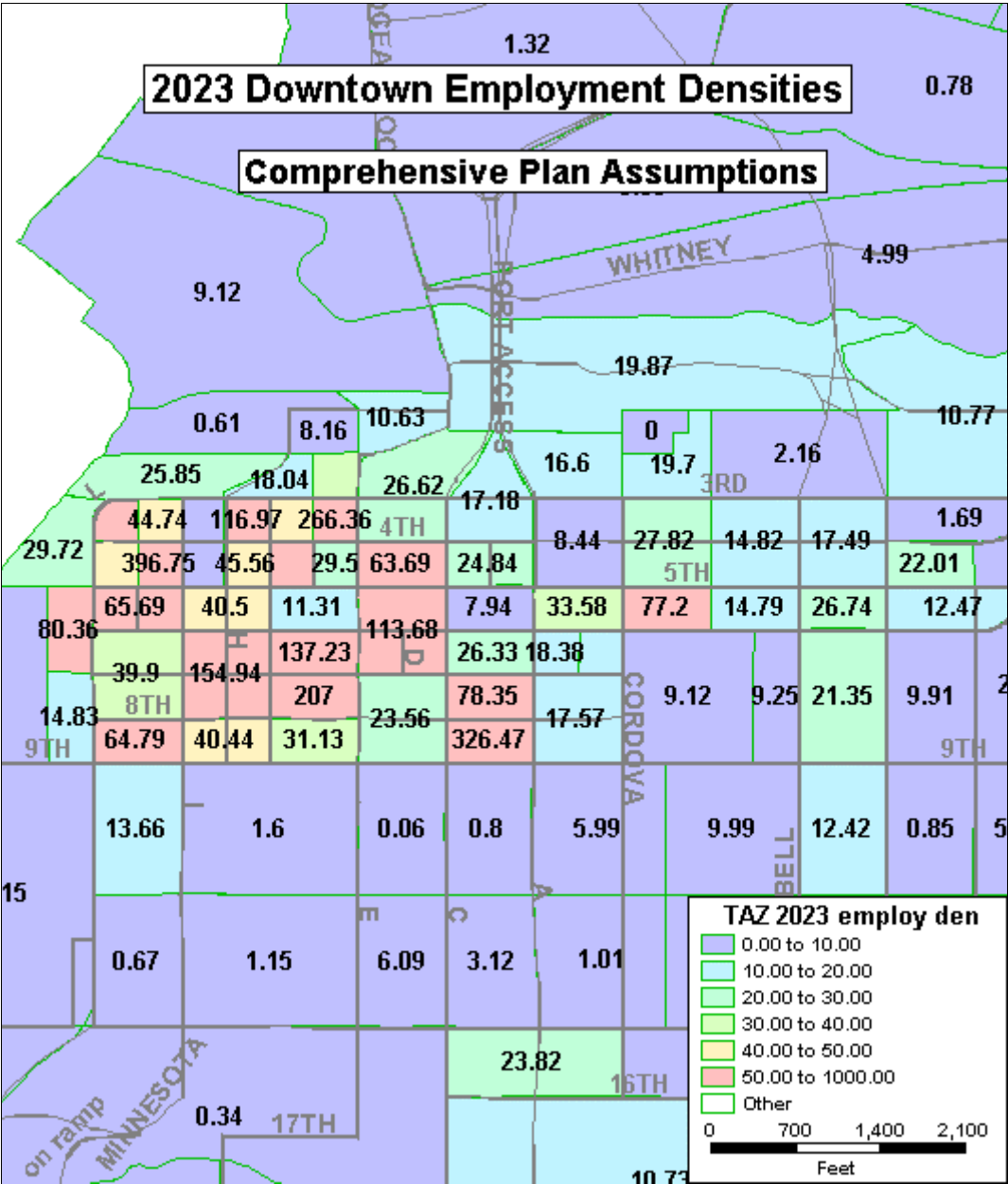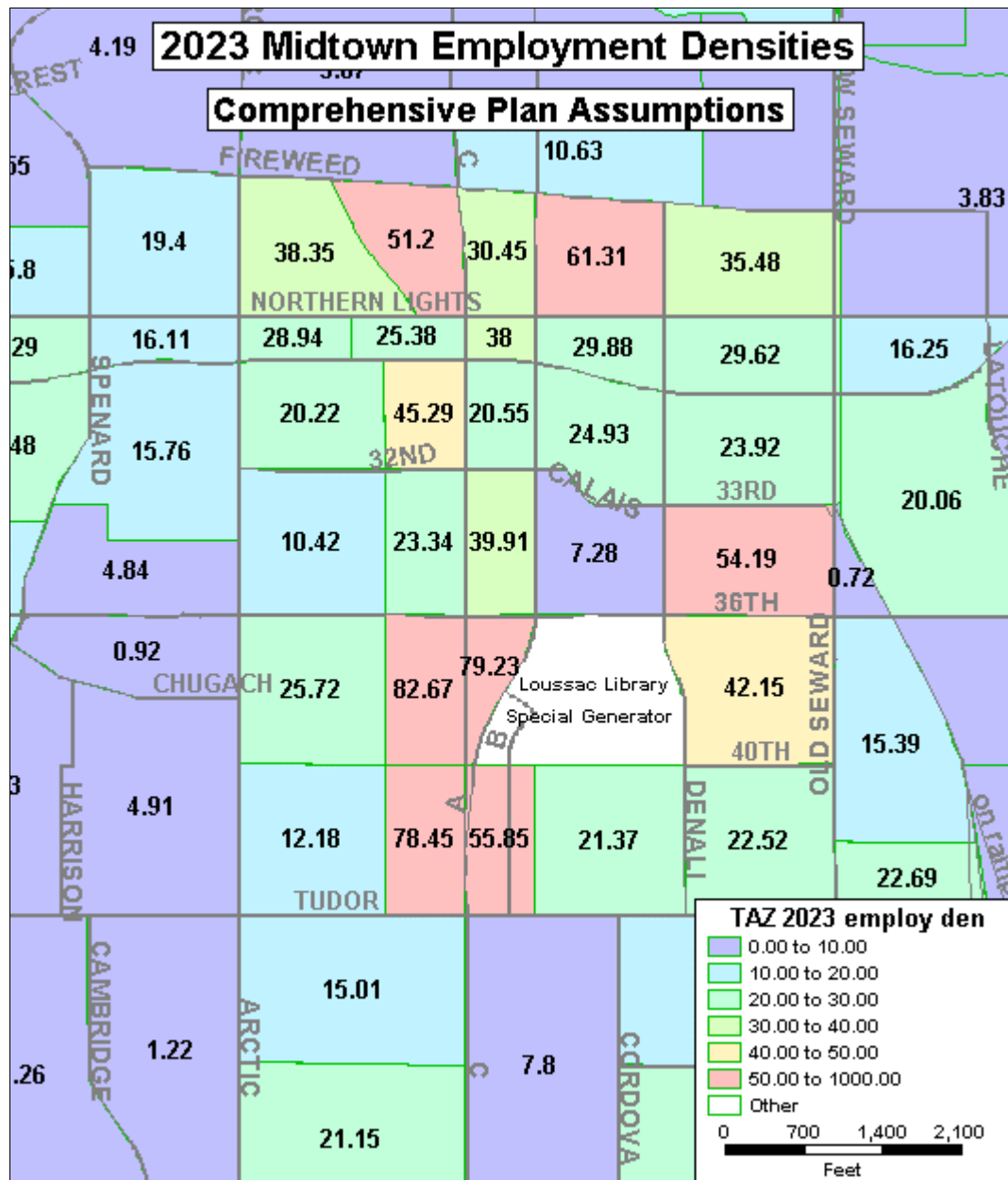
Figure 7

Figure 8

4.3 Town Centers

Development of town centers will promote mixed use, higher density development, and alternative transportation modes, such as public transit and pedestrian connections throughout the town center. Anchorage 2020 has identified seven areas as sites for development of town centers (Abbott, Dowling, Muldoon, Northway, Spenard, Sand

Lake, and Huffman). There are currently three town center plans (Northway, Abbott, and Muldoon) being developed from the seven identified in the comprehensive plan. Each of the town centers will be designed to promote new ways of thinking about the land use and function of an area. Anchorage 2020 defines a town center as a place:

> designed to function as a focal point for community activities for seven discrete areas of the Bowl. They are intended to be located 2 to 4 miles apart, with each encompassing an area that services 30,000 to 40,000 people. Town centers are generally one-half to one mile in diameter. Their core is to be a mix of community servicing retail, public services, and public/civic facilities, including and/or surrounded by medium to high-density residential development. Necessary to their design is an efficient pedestrian access network connecting the core uses, residential neighborhoods, and transit facilities. Most town centers shown on the Land Use Policy Map already have various elements of this concept. (p. 53).

The town center concept as it evolves will give people the option to live near their workplace or to transit serving their workplace, and has the potential to reduce per capita vehicle miles traveled. The most specific policy guidance for determining future land use can be found in Policy 24. It states:

> Town centers are designated on the Land Use Policy Map in seven areas of the Bowl. Other areas may become Town Centers. Development of Town Center strategies shall provide direction for the design and construction of public improvements and to provide guidance and incentives for private investment. Existing and new centers shall be characterized by the following:
>
> a) Generally ½ to 1 mile in diameter;
>
> b) A commercial core consisting of a range of commercial retail/services and public facilities that serve the surrounding neighborhoods. The configuration of shops in the core area is oriented to the street with parking behind the building when possible;
>
> c) Public facilities including but not limited to indoor recreational facilities, parks, branch libraries, ice skating arenas, schools, post office, and transit facilities;
>
> d) Medium- to high-density residential development in and surrounding the core, consisting of a combination of duplexes, townhouses, and apartment buildings with overall density targets of 12-40 dwelling units per acre;
>
> e) An enhanced pedestrian environment with good connections with and between the core and surrounding residential development; and
>
> *f)* Distinctive public spaces and public art that create a sense of place.(p. 76)

In an attempt to model the changes in land use that such a policy is intended to bring about, the following assumptions about town centers were made in the land use allocation model:

➢ The Town Center Plan for Muldoon, as proposed by Koonce, Pfeffer, Bettis in Sept. 2002, would be implemented. According to the draft Master Plan, approximately 1200 housing units would be developed over a 10-year period. The development would also include about 98,000 SF of retail space and 65,000 SF of office space.

➢ The draft Abbott and Northway Town Center Plans prepared by Lennertz Coyle & Associates for the Municipality of Anchorage would be implemented. The proposed housing densities in the Northway Town Center range from 4-8 DU/Acre in the Neighborhood Residential zone located in the existing Penland mobile home park to 10-20 DU/Acre in the Town Center General zone west of Northway Drive. The proposed housing densities in the Abbott Town Center range from 8-12 DU/Acre in the Neighborhood General zone to 10-20 DU/Acre in the Town Center General zone. In general the housing densities of the purely residential portions of the town centers achieve a density greater than the 12 DU/Acre called for in the Anchorage 2020. The housing densities in the mixed-use areas (housing and retail mix) are around 10 DU/Acre.

➢ Densities in the remaining four town centers (Spenard, Jewel Lake, Huffman, and Dowling) were assumed to be similar to those that are being proposed in the planned town centers.

➢ Commercial development in town centers will be primarily retail with a limited amount of service development occurring. Commercial density in town centers are assumed to be similar to that which is typically found in commercial areas outside of the CBD.

➢ Mixed-use areas in town centers are assumed to contain both retail and housing with retail being developed at its full intensity (as if it was a stand alone development) and residential being at half its standard density (typically 8 to 10 dwelling units/acre).

Table 6 shows the projected increase in employment and housing that is expected to occur in each of the town centers as a result of the implementation of Anchorage 2020.

Table 6
Town Center Development

	Employment Increase 2002-2023	*Housing Increase 2002-2023*	*Housing Increase 1998-2002*
Muldoon TC	609	1287	114
Northway TC	722	167	22
Dowling TC	295	498	472
Abbott TC	813	645	62
Huffman TC	280	34	148
Jewel Lake TC	246	230	130
Spenard TC	583	790	39

Overall during the next 20 years the seven town centers in the Anchorage Bowl are expected to attract an additional 3,550 jobs and 3,650 housing units. From Table 6 it appears that the town centers with the biggest opportunity for housing growth are Muldoon, Spenard, and Abbott. Huffman, Jewel Lake, and Dowling have experienced a substantial housing increase over the last four years. In the case of Huffman, most of the developable vacant land has been recently developed as housing and the opportunity for future housing development appears to be limited.

Depending on the market, town centers have the potential to capture a substantial percentage of the housing market in Anchorage. If the predictions in Table 6 materialize, town centers could account for almost 18% of the total housing market in the Anchorage Bowl. This would be a substantial change from the past few decades where most of the new housing development occurred on the periphery of the Anchorage Bowl where vacant land was plentiful.

4.4   Transit Development Corridors

This section defines the policies that pertain to the development of transit supportive development corridors.   Anchorage 2020 designated five "Transit Supportive Development Corridors". The intent of Transit Supportive Development Corridors is to create an adequate level of transit supportive residential density within walking distance to transit, to create a more conducive walking environment along those corridors, and then to increase the frequency of service along those routes.

The five Transit Supportive Development Corridors include:

➢ Jewel Lake Rd/Spenard Rd., between Dimond Blvd and 15th Avenue

➢ Arctic Blvd., between Dimond Blvd. and 5th Avenue

➢ Lake Otis Parkway, between O'Malley Rd. and Northern Lights Blvd.

➢ Muldoon Rd, between Glenn Highway and DeBarr Rd.

➢ DeBarr Rd/15th Avenue between Muldoon Rd and Spenard Rd.

Anchorage 2020 is quite specific in guiding future residential density in transit supportive development corridors. The plan states in Policy 9 that "new residential development located within ¼ mile of the major street at the center of a Transit-Supportive Development Corridor shall achieve an overall average of equal to or greater than 8 dwelling units per acre. Individual lot densities shall be further defined through development of implementation strategies" (p.72). The plan expands on the nature of these policy areas in Policy #34, which states:

➢ Average residential densities equal to or greater than 8 du (dwelling unit)/acre occur within up to ¼ mile of the major street at the center of the corridor.

➢ New commercial development within these corridors is oriented to the street with parking on the side or rear of the building when possible.

➢ A goal for bus service within these corridors is 15-minute headways during peak hours and 30-minute headways during non-peak periods.

➢ A pedestrian-oriented environment is created, including expanded sidewalks, crosswalks, street furniture, bus shelters, and landscaping.

➢ Additional traffic lanes are not considered along these corridors unless there is no feasible alternative to solve a significant congestion problem. (p. 79)

To refine the policy guidance in Anchorage 2020 into the land use allocation model, the following assumptions were made about these corridors:

➢ Vacant and redevelopable residential property in areas along transit routes will experience increases in density to 2/3 allowed by current zoning within ¼ mile along the centerline. Past trends have typically resulted in density well below that allowed by zoning. The comprehensive plan outlines a number of strategies for achieving the density increases.

➢ To increase density above that envisioned under current zoning, it was assumed that vacant R-1 and R-2A properties would be developed at R-3 allowed densities. Readers should be cautioned that there are a number of other ways (aside from rezoning) that similar densities could be achieved. Rezoning is not being proposed, but rather, was a convenient means of achieving the increased density within the land use allocation model.

The results of these assumptions are showed in Table 7. Within the next 20 years, the land use allocation model predicts that three of the transit supportive development

corridors will come very close to achieving the 8 du/acre threshold called for in Anchorage 2020. When all of the potentially developable land is developed, all of the corridors will either exceed or come close to the threshold.

Table 7
Transit Corridor Densities
Gross Density (DU/Acre)

Transit Corridor	*1998 Density*	*2023 Model Density*	*Potential Build out Density*
Lake Otis	3.19	5.31	7.6
Arctic	4.86	6.6	7.9
Jewel Lake-Spenard	5.85	7.5	8.7
Muldoon-DeBarr	5.4	7.46	9.0

4.5 Redevelopment Areas

Anchorage 2020 calls for infill (building on unused parcels in developed areas) and redevelopment (replacing or renovating obsolete buildings) as a means of adapting to changing housing demands, to revitalize older neighborhoods, to better use public infrastructure, and creating more housing closer to places of employment. Anchorage 2020 addresses infill and redevelopment areas stating:

➢ Neighborhoods and subareas in and around downtown/Midtown and the University-Medical District are targeted for public/private reinvestment.

➢ Design standards address architectural compatibility and the impacts of higher densities. (p. 52)

The comprehensive plan does not specifically provide density goals for redevelopment areas. However, it is clear that the overall objective of the plan is to increase housing density close to the major employment centers. The Plan states (see page 51) that residential development near major employment centers will be at medium and high densities to enable people to live close to work. To refine the policy guidance in Anchorage 2020 into the traffic model to predict the most likely future conditions, the following assumptions were made about these corridors:

➢ Vacant and redevelopable residential property in redevelopment areas will experience increases in density to 2/3 allowed by current zoning districts. Past trends have typically resulted in density well below that allowed by zoning. The comprehensive plan outlines a number of strategies for achieving the density increases.

> ➤ To increase density above that envisioned under current zoning, it was assumed that vacant R-1 and R-2A properties would be developed at R-3 allowed densities. Readers should be cautioned that there are a number of other ways (aside from rezoning) that similar densities could be achieved.   Rezoning is not being proposed, but rather, was a convenient means of achieving the increased density within the land use allocation model.

Table 8 shows what the projected increase in housing would be in 2023 with the implementation of the above described policies. Due to the existence of a substantial amount of redevelopable R-3 and R-4 zoned land near the downtown major employment area, nearly 1,200 new housing units are expected to be built in the neighborhoods surrounding the downtown by 2023.   The small size of the University/Medical redevelopment area limits the potential for new housing near this major employment center.

Table 8

Redevelopable Areas

Forecasted Housing Increases

1998 – 2023

Development Area	*New Housing Units*
Downtown	1181
Midtown	914
University/Medical District	608

5.0   Summary of Housing Allocations

Implementation of Anchorage 2020 is expected to shift both housing and employment. While Figure 7 and 8 shows some shift in employment towards the midtown major employment area, the shift will be much more dramatic with respect to housing. Figure 9 shows the difference between the housing distribution under the existing trends scenario and Anchorage 2020.   As can be seen, there is a definite shift away form south Anchorage and the Hillside towards more central portions of the Anchorage Bowl, particularly near major employment centers, town centers and along transit corridors.

Figure 9
Housing Allocation Shift
Difference between Anchorage 2020 and Existing Trends Assumptions
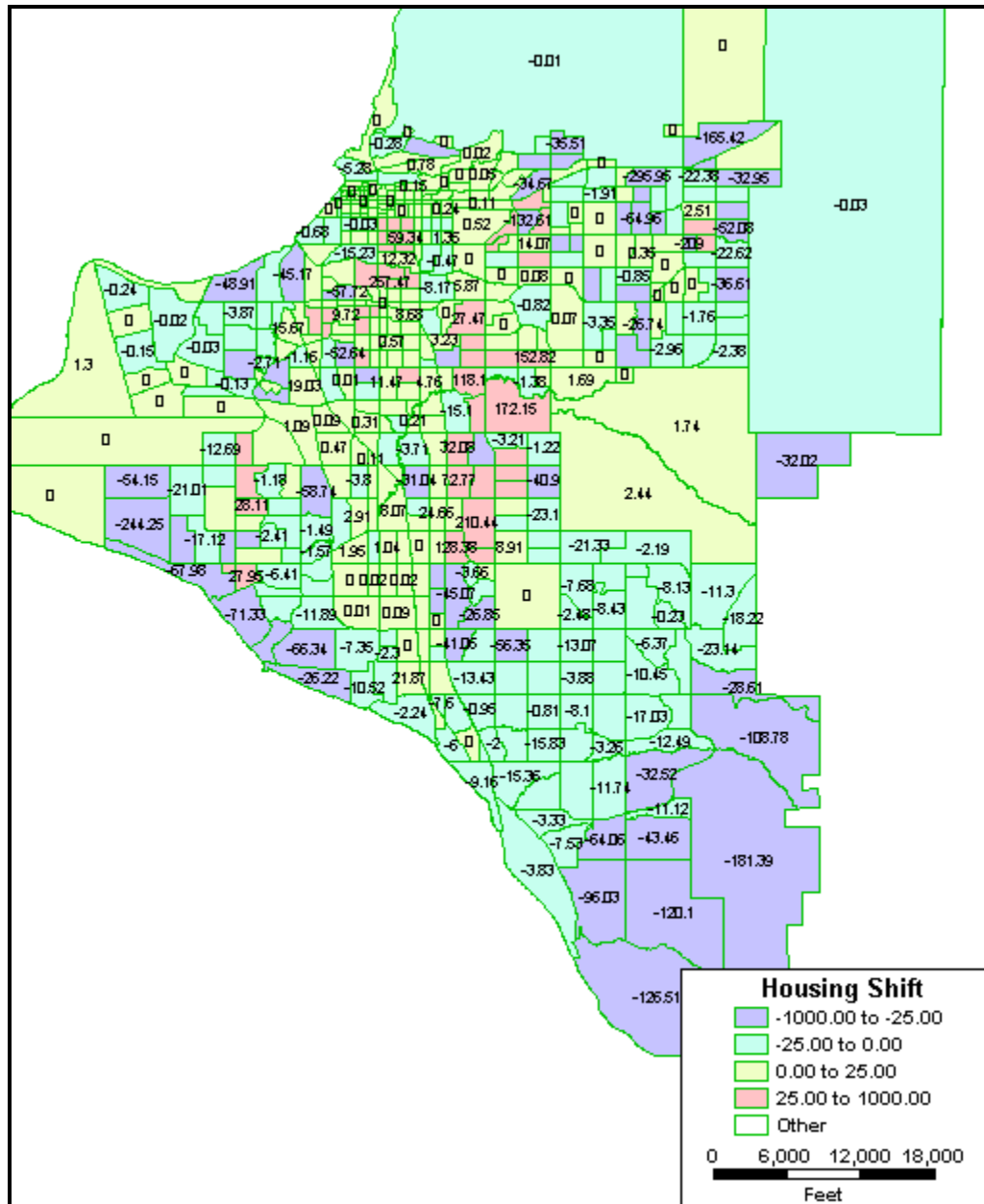
6.0   References

Alaska Department of Labor (DOL). August 2002. Alaska Economic Trends. < http://www.labor.state.ak.us/trends/trends.htm> August 2002.

Alaska Department of Labor (DOL). May 2002. Alaska Economic Trends. < http://www.labor.state.ak.us/trends/trends.htm> August 2002.

Alaska Department of Labor (DOL). 1999. Alaska Population Overview: 1999 Estimates. < http://www.labor.state.ak.us/research/pop/ca2.htm > August 2002.

Alaska Department of Labor. 1998. Alaska Population Overview: 1998 Estimates. < http://www.labor.state.ak.us/research/pop/ca1.htm > August 2002.

Municipality of Anchorage (MOA). February 20, 2001. "Anchorage 2020: Anchorage Bowl Comprehensive Plan."

Institute of Social and Economic Research. July 1999. "Economic Projections for Alaska and the Southern Railbelt 1999-2025."   Prepared for the Chugach Electric Association by Scott Goldsmith.

Institute of Social and Economic Research. October 2001. "Economic Projections for Alaska and the Southern Railbelt 2000-2005" Prepared for the Chugach Electric Association by Scott Goldsmith.

Municipality of Anchorage. 1996. "Anchorage Bowl Commercial and Industrial Land-Use Study." Prepared by HDR Alaska, Inc.

Appendix A
Redevelopable Land Use Inventory – Methodology

Redevelopable Land Inventory - Methodology

In the past, land use projections used in the Anchorage Transportation Model relied exclusively on vacant land inventories. This methodology is perfectly acceptable when there is an abundant supply of vacant land available for development. However, as Anchorage 2020 points out "vacant land can only meet part of the forecasted housing demand". According to the Plan, the balance will be met through redevelopment. Moreover, Anchorage 2020 adopted strategies designed to promote the creation of more intensely developed town centers, major employment centers, redevelopment areas, and transit supportive development corridors in already developed areas. It is assumed that some redevelopment will be required in order to fulfill these objectives.

The new policies and objectives of Anchorage 2020 required that the existing vacant land use database be supplemented with a new redevelopable land use inventory. At the present time the planning literature provides little guidance with respect to how to develop a redevelopable land use database. In designing the methodology, an attempt was made to utilize objective criteria as much as possible. However, given the data limitations, any methodology that is adopted would require some subjectivity.

The following is a brief description of the steps and major assumptions used in the study. It should be remembered that the primary purpose of this redevelopable land use study was to provide better information to be used as input into the transportation demand model. The model which estimates traffic volumes based on housing and employment densities will only forecast a change in traffic volumes if there is a significant increase in either the employment or housing densities. Therefore, the overriding principal used in the study was to identify those parcels in which there is a potential to significantly increase the density due to redevelopment. It should also be noted that this land use update was only completed for the Anchorage Bowl since this is the area affected by the Anchorage 2020 Plan.
.

1)   An initial list of potentially redevelopable parcels was developed using a criterion based on the appraised land value over total appraised property value (land plus buildings). Both 50% and 75% thresholds were tested. It was decided that 50% threshold should be used since it appeared to be the most conservative approach and was most likely to capture the majority of the redevelopable parcels than the 75% threshold. Thus, if the parcel scored higher than 50% then it was included in the list. (Source of Data: Municipality of Anchorage Property Appraisal CAMA files.)

2)   A map identifying the potentially redevelopable parcels was created. Based on a review of this map, it was apparent that some of the parcels identified using the criteria described in Step 1 were not likely candidates for redevelopment. For example, the Aurora Village (Carrs Store) located on the southwest corner of Northern Lights and Minnesota Blvd. was initially identified as redevelopable using the criteria of land to total value. However, this retail center appears to be a

thriving. Even if it were redeveloped it would probably be redeveloped as another retail business use with more or less the same intensity.

3) Based on the mapping results, it was decided that a field survey would be necessary in order to further refine the redevelopable land use inventory. A team of two planners conducted a field survey during the summer of 2001. Each of the potentially redevelopable parcels in the Anchorage Bowl was surveyed. Residential parcels, which met the following criteria, were retained in the redevelopable list.

- Single family and duplex houses located in multi-family zoning districts
- Mobile home parks located in multi-family zoning districts where it was determined that the redevelopable density would be higher than the existing density.

None of the potentially redevelopable multi-family housing in multi-family zoning districts was included in the redevelopable inventory since redevelopment would not increase the net density of the parcel.

All commercial parcels, which met the following criteria, were retained in the redevelopable list.

- Single family and duplex houses located in any commercial zoning district.
- Commercially developed lots with a minimum of investment and employment. For example, used car lots that contained a small sales office and may only have a few employees were considered to be redevelopable.

Less restrictive criteria were applied to commercial parcels located in major employment areas. This was due to the expectation that these areas would be redeveloped to a much higher density than other areas of town. Thus, if a retail strip commercial center met the land to total value criteria described above, then it was retained in the list of redevelopable parcels since it is probable that a significant number of employees would be added if it was redeveloped as office space. (Office employment densities are often more than twice the density as retail employment.)
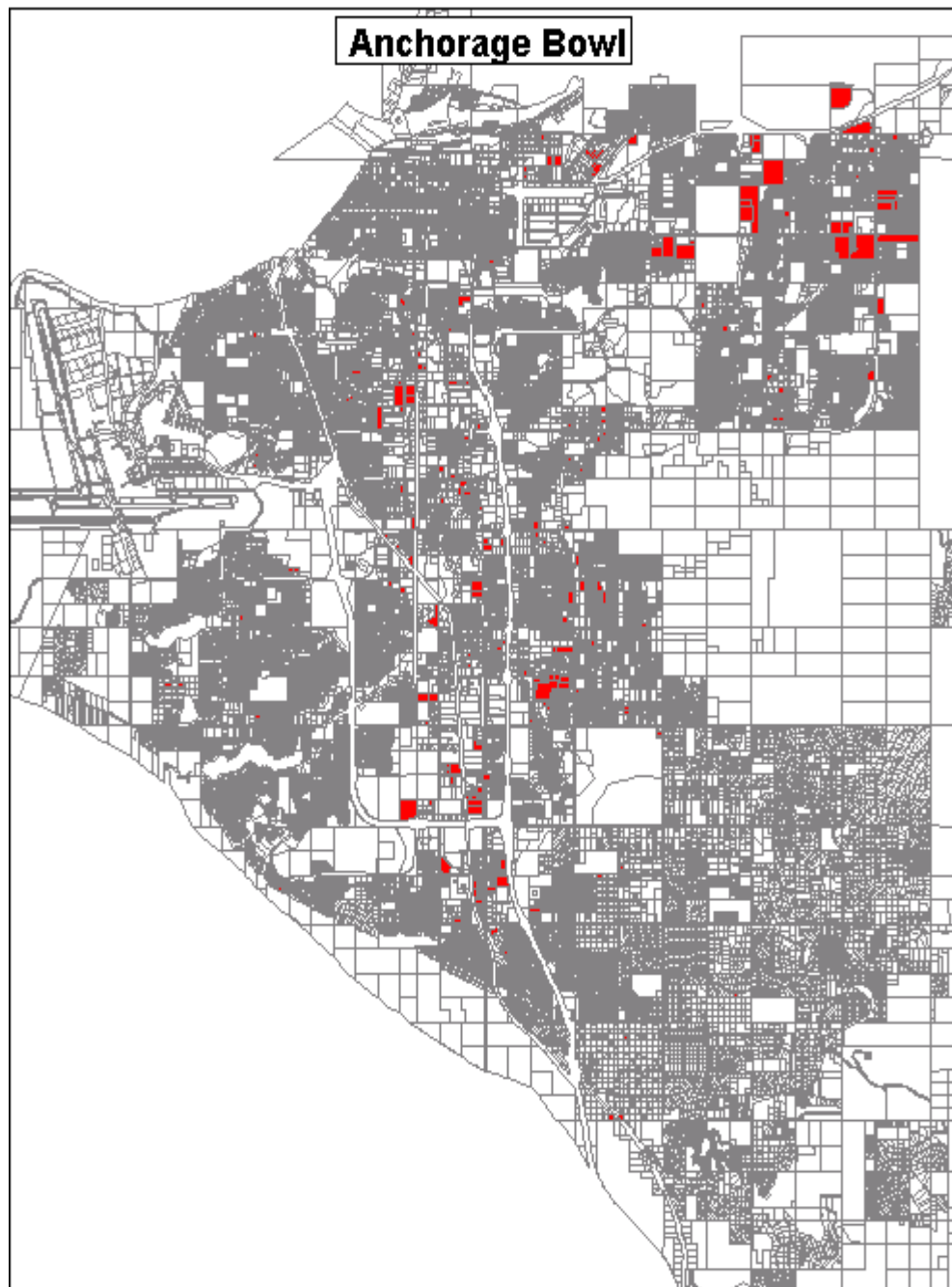
Figure A-1

Anchorage Bowl Redevelopable Lands

Figure A-2

Downtown Redevelopable Lands