

**EXISTING CONDITIONS ANALYSIS AND
BASELINE PROJECTIONS FOR THE TOMORROW PLAN**

To

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From

GRUEN GRUEN + ASSOCIATES

Urban Economists, Market Strategists & Land Use/Public Policy Analysts

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CHAPTER I

INTRODUCTION, METHODOLOGY AND PRINCIPAL FINDINGS

INTRODUCTION AND PURPOSE

Many variables affect the timing and magnitude of urban development, including economic, social, political, technological, and financial factors. Development outcomes of any large area over a long period, such as the approximately 40-year span envisioned for The Tomorrow Plan, are inherently uncertain. Such uncertainty, however, does not negate the need to prepare long-range projections and useful information required to conduct the planning necessary to accommodate growth and change in an environmentally and economically sound and sustainable manner.

The research and analysis summarized in this report prepared by Gruen Gruen + Associates (“GG+A”) provides an information base about population, housing, employment, land use/real estate market conditions and trends, and the potential demand for additional office, industrial, retail and housing uses for and within The Tomorrow Plan Planning Area (TTP Planning Area). The projections of potential future population and employment and demand for building space are intended to present a baseline, or “status quo,” scenario and provide a framework for the identification of policies encouraging the efficient and sustainable use of land and other urban and environmental resources, while maintaining high quality infrastructure and public services and improving economic and quality of life opportunities as well as upward mobility pathways within the TTP Planning Area described below (see Map I-2).

The projection methods presented in this report allow for internally consistent and comprehensive testing of the consequences of alternative employment growth scenarios, given additional information that may become available about local land use policies, land holding capacity, existing and future transportation networks and commuter patterns and other factors influencing the scale, mix, and locations of future development and land use change. Thus, the models used to project future baseline conditions under the status quo provide the flexibility to realistically test a range of potential alternative development outcomes. As future scenarios begin to be considered, the baseline projections can provide a point of comparison from which to consider and draw conclusions regarding public policy and investment alternatives, and the extent to which they may influence or facilitate more (or less) sustainable patterns of development and growth.

METHODOLOGY AND WORK COMPLETED

In order to prepare an analysis of existing conditions and develop the baseline projections and strategy framework for the preparation of The Tomorrow Plan, GG+A performed the following principle tasks:

1. Data collection and analysis of relevant demographic, housing, and labor force characteristics;
2. Data collection and analysis of employment change and shifts in the make-up of the economic base over time and between areas within the region, and review of secondary economic forecasts in order to: (a) derive a profile of the economic structure and



employment base of the TTP Planning Area; and (b) prepare forecasts of employment growth by economic sector and subarea within the TTP Planning Area;

3. Analysis of retailing conditions to: (a) provide an information base on retail sales' activity; (b) identify the degree to which retailers and commercial businesses within subareas of the TTP Planning Area are capturing more or less sales than would be expected to be supported by local expenditure potential or retail demand; and estimate the demand for future retail space; and,
4. Interviews with knowledgeable members of the local land use/real estate community, community and economic development professionals and other knowledgeable municipal representatives, and analysis of land use/real estate market data to help define appropriate subareas for which to evaluate existing conditions and prepare baseline projections of population, housing, and the demand for nonresidential space.

The methodology for the baseline employment projection reflects the assumption that locational patterns and mixes of employment and economic activity within the region will remain relatively stable over time. Thus, for example, the Des Moines Central Business District (CBD) is assumed to retain its relative strength and agglomerative advantages for financial activities and government activities, even though growth also will occur outside the CBD, including in currently relatively small, emerging activity centers such as Ankeny. The effects of altering this assumption can be tested and illustrated in the consideration of alternative futures.¹

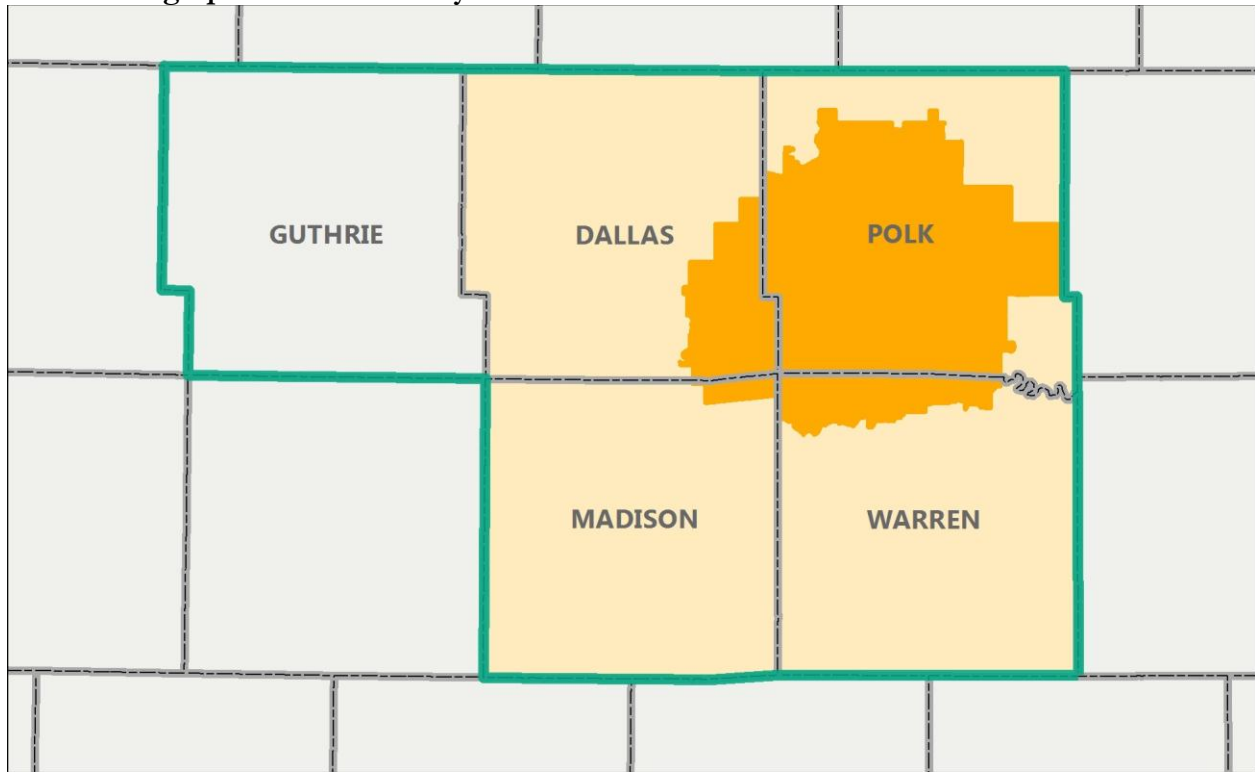
Geographic Areas of Study

Given limitations related to the availability of historical data at varying geographies, and in order to provide maximum insight, trends and existing conditions described in this report relate to several geographic areas. The largest geography for which data is presented is the Des Moines-West Des Moines Metropolitan Statistical Area (Des Moines MSA). Demographic trends and conditions are reviewed at a regional level consisting of the four-county region of Polk County, Dallas County, Madison County, and Warren County, referred to as *Greater Des Moines*. As depicted below in Map I-2, the TTP Planning Area includes portions of each of these counties.





¹ For example, although recent trends would suggest the CBD has experienced a relative decline in the share of total regional employment and development, over a longer horizon (since 1970), the CBD has experienced substantial employment growth and development. The City of Des Moines has made significant investments in infrastructure, public amenities, and business retention and recruitment. Demographic trends related to the growth of aging and smaller household sizes and recent growth in the multi-family housing stock in conjunction with other enhancements to the CBD suggest the CBD could become a more desirable residential location. Employers in the CBD will benefit from this growing source of labor but also benefit from the CBD's centrality and accessibility to not only the Western Suburbs but also from sources of labor within the City and locations to its east. The baseline projections are predicated on the assumption that the CBD, and each other subarea, will maintain their relative shares of regional employment. More important, however, this assumption is intended to set the stage for discussions with The Tomorrow Plan stakeholders on how, if at all, the regional plan and associated land use policies can realistically influence the distribution of employment growth and associated commercial and industrial development within the region, and maintenance of the position of the CBD as a major employment and activity center within the TTP Planning Area.



AP I-1: Geographic Areas of Study



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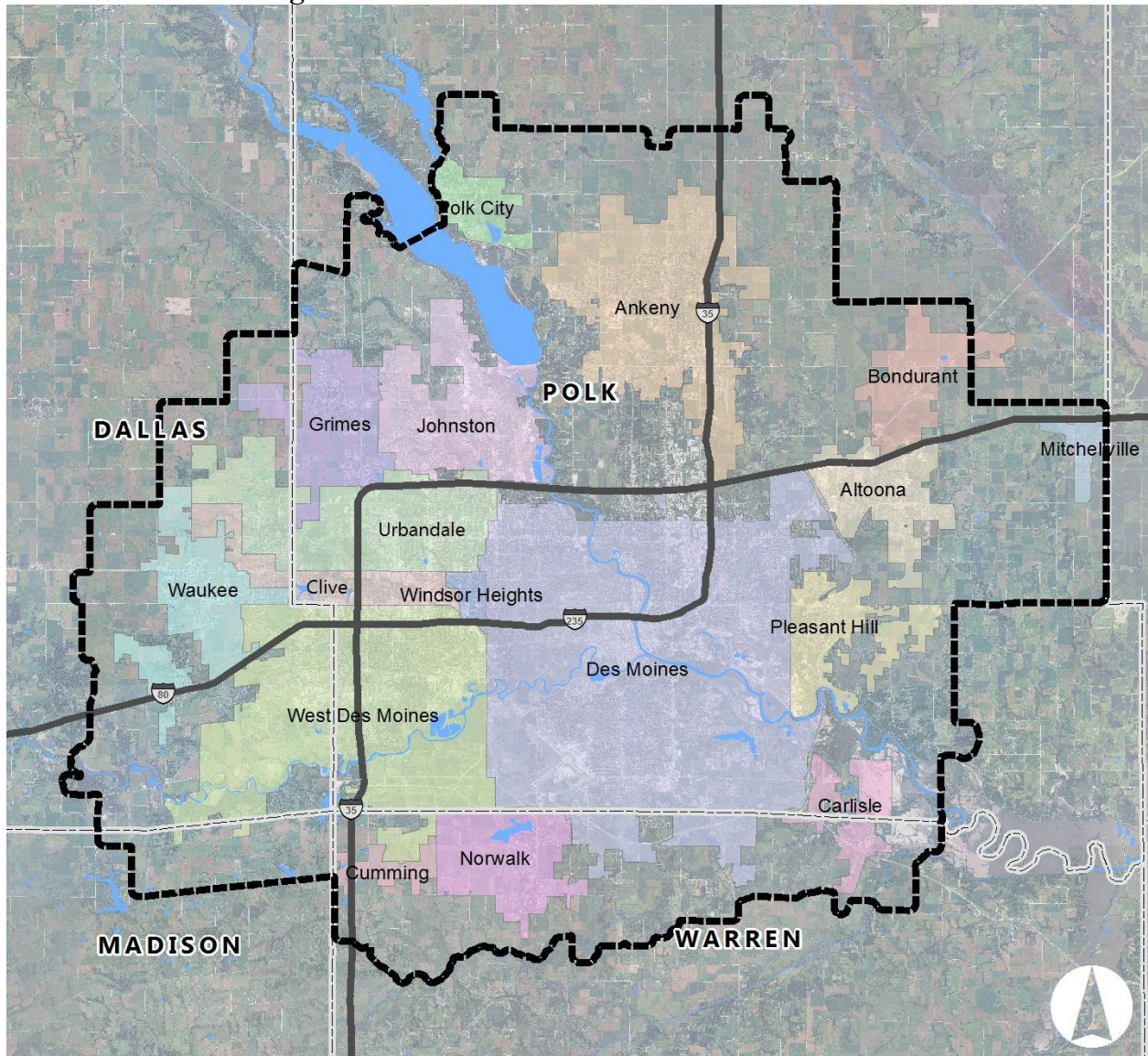
-  Des Moines MSA
-  Greater Des Moines
-  TTP Planning Area
-  Counties

0 5 10 20 Miles



The TTP Planning Area includes 17 incorporated municipalities, in addition to unincorporated portions of each of the four counties.

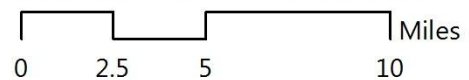


MAP I-2: TTP Planning Area



LEGEND

-  TTP Planning Area
-  Counties

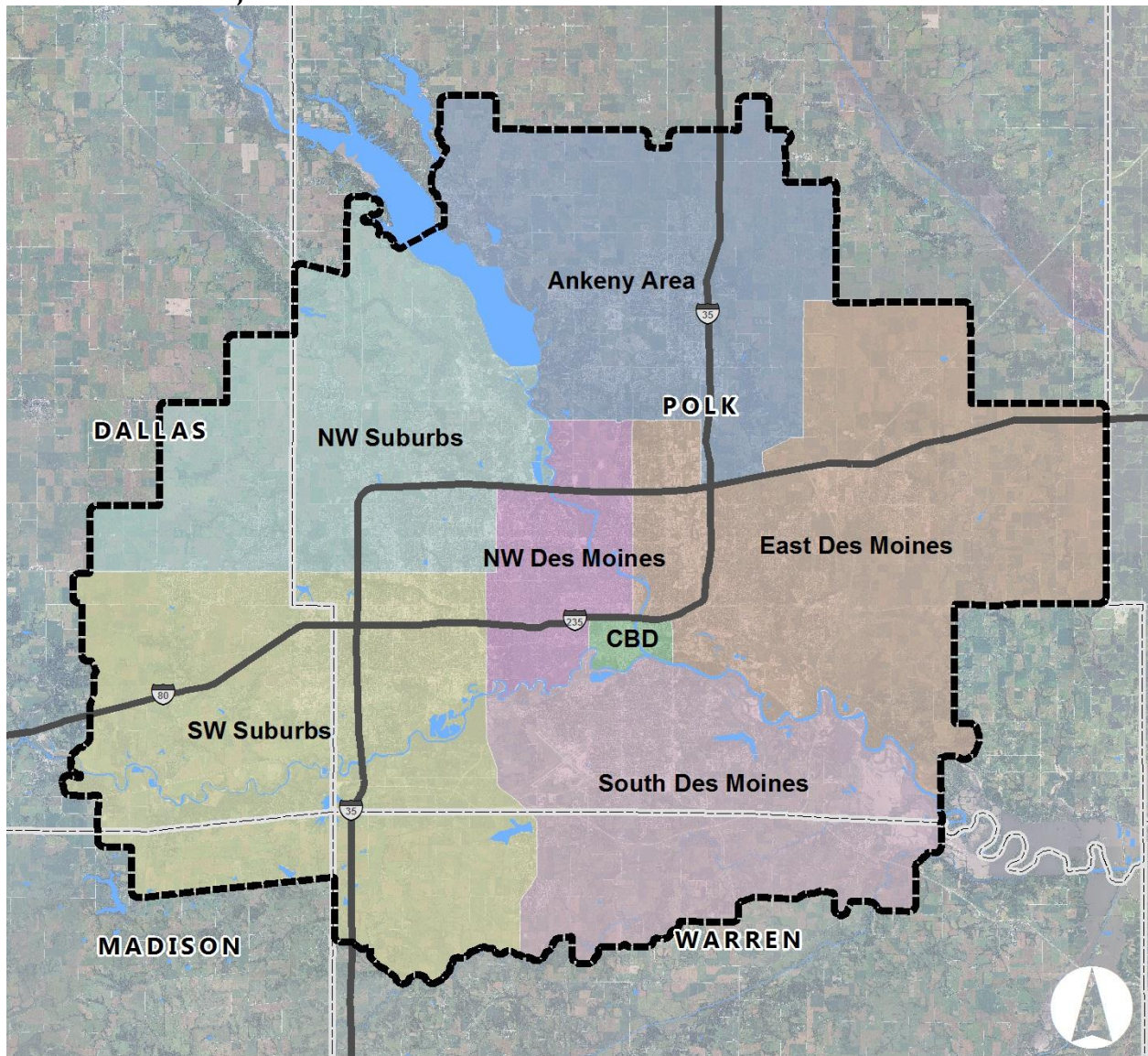


To prepare baseline projections at a smaller sub-regional level, GG+A defined subareas based on our interviews with members of the real estate and community development/economic development communities, consideration of symbolic and physical boundaries, analysis of real estate supply data and development trends, and a review of the subareas previously developed by the MPO for travel-demand modeling purposes. Map I-3 below summarizes the subarea geography employed for the baseline projections. The baseline projections are allocated to seven subareas, including:





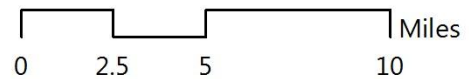
1. Ankeny Area;
2. East Des Moines;
3. Central Business District;
4. South Des Moines;
5. Southwest Suburbs;
6. Northwest Des Moines; and
7. Northwest Suburbs.

MAP I-3: TTP Projection Subareas



LEGEND

-  TTP Planning Area
-  Counties



REPORT ORGANIZATION

Chapter II describes the economic structure of the Greater Des Moines Region and historical employment trends by economic sector. Long-term forecasts of employment prepared by the Iowa Department of Transportation and employment forecasts prepared for the Des Moines Area MPO Horizon Year 2035 Metropolitan Transportation Plan are reviewed.

Chapter III describes long term population, household, and housing unit trends and conditions within the Greater Des Moines region and its individual counties and communities.

Chapter IV presents information on the jobs-housing relationships within the region, labor force characteristics and trends, and commutation patterns, educational attainment of the labor force, and home values of communities within the region.

Chapter V presents an analysis of retail sales trends and an identification of areas within the region capturing or leaking retail sales dollars. A summary of the primary retail space supply and an estimate of space demand in terms of supportable square feet of space is provided.

Chapter VI describes the primary office and industrial market areas within the Greater Des Moines region and related space development trends.

Chapter VII presents the employment forecast by economic sector and geographic subarea within the TTP Planning Area from 2011 to 2050.

Chapter VIII presents forecast population, households, and housing units by geographic subarea within the TTP Planning Area from 2011 to 2050.

Chapter IX presents the number of forecast additional jobs by type of space, geographic subarea, and net additional space demand in terms of square feet of space by geographic subarea and type of building space from 2011 to 2050 within the TTP Planning Area.

PRINCIPAL FINDINGS

The Importance of Financial Activities to the Regional Economy

- Not only do financial activities represent the largest source of employment at 16 percent of total employment, financial activities generate an even higher share of regional income (24 percent), and account for nearly one-half of all economic activity within the Greater Des Moines metropolitan area.
- Over the prior decade, regional domestic output related to financial activities grew considerably faster than other sectors of the economy, especially between 2002 and 2007 when real gross metropolitan product in the financial activities sector grew by more than 60 percent.



Employment Trends

- Between 1990 and 2010, total employment in the Des Moines MSA grew by 34 percent, increasing from 235,700 jobs to 315,100 jobs. The average annual growth rate over the last 20 years has been 1.5 percent. The fastest growing sectors have included professional and business activities and financial activities. The average annual growth rates associated with these two sectors has approximated nearly three percent.
- Polk County comprises approximately 85 percent of the regional employment base, with 2010 non-farm employment estimated at just fewer than 266,000 jobs. The Polk County base has, however, experienced relatively limited growth over the past decade, adding only 2,600 jobs between 2000 and 2010. Net job gains in the region have occurred to the west in Dallas County, which accounted for approximately 75 percent of regional employment growth over the 2000 to 2010 period.
- Within the TTP Planning Area, the northwest side of Des Moines, portions of West Des Moines, Clive, and Urbandale (generally delineated by I-80/I-35 on the north and the Polk County line to the west), and the Central Business District of Des Moines presently contain about 60 percent of all jobs.

Population, Household, and Housing Trends

- Between 1960 and 2010, Greater Des Moines grew in population by over 235,000 people, increasing from nearly 323,600 persons to nearly 558,700 persons. On an average annual basis, the growth rate was 1.1 percent.
- The Greater Des Moines region grew by nearly 61,000 households, or 1.6 percent annually, between 1990 and 2010.
- Overall, the region's average household size has remained stable at about 2.50 persons. Polk County has the smallest average household size of 2.48 persons, while Dallas County contains the largest household size of 2.60 persons.
- The TTP Planning Area currently contains a population of approximately 479,000. Since 1990, the population has increased by approximately 138,000, or 40 percent. This equates to an average annual growth rate of 1.7 percent. The number of households increased by 54,600, or at an average annual growth rate of 1.7 percent, from about 134,100 households in 1990 to 188,700 households in 2010.
- The creation of new housing occurred most rapidly over the prior decade of the 2000's, during which the regional housing supply increased by approximately 49,000 units at an annual rate of 2.4 percent. The housing stock of Dallas County and the western suburbs of Des Moines grew at an annual rate of 5.1 percent, with an average of nearly 1,110 units added each year.
- For the period 1990 to 2010, the numbers of households formed within the region increased by 60,909, while the supply of housing units increased by 68,504. The supply of housing



stock exceeds the amount of occupied housing by seven percent. By not reducing supply below an equilibrium level with demand, through the planning or regulatory process, and, therefore, causing prices to increase, a competitive housing market in the greater Des Moines region has been created.

- The number of housing units within the TTP Planning Area increased at a slightly higher rate of 1.8 percent, from 141,000 units to 202,000 units. The housing vacancy rate increased to 6.6 percent by 2010.
- The City of Des Moines remains the largest community in the region, accounting for 42 percent of the TTP Planning Area population and 43 percent of households. Growth within the City of Des Moines over the past 20 years has occurred at a rate of less than one-half percent per year, so just eight percent of the increase in total population is attributable to the population increase within Des Moines. West Des Moines and Ankeny grew by nearly 52,000 persons from 1990 to 2010 accounting for 40 percent of total population growth. Urbandale comprised another 10 percent of the population growth, increasing by nearly 16,000 persons.
- Approximately 61 percent of all housing units added over the prior two decades were located in four communities: West Des Moines, Ankeny, Urbandale, and Des Moines.

Jobs-Housing Relationships

- Between 1990 and 2000, the region added 65,000 jobs and approximately 28,000 housing units. This equated to approximately 2.3 additional jobs for each additional housing unit supplied. During the 1990s, the regional jobs-to-housing balance increased from 1.38 in 1990 to 1.46 in 2000. From 2000 to 2010, 24,000 jobs were added while approximately 41,000 housing units were added, producing a decline in the jobs-housing ratio to 1.31.
- The jobs-housing balance in Polk County consistently declined between 2000 and 2010, decreasing from approximately 1.7 jobs per housing unit in 2000 to approximately 1.45 jobs per housing unit by 2010. The jobs-housing balance in Dallas County increased significantly during the early 2000s; between 2002 and 2007, the jobs-to-housing ratio increased from 0.75 to 1.3.
- The current jobs-to-housing ratio for the TTP Planning Area approximates 1.5. With the exception of the Central Business District, the current jobs-housing balance in each of the subareas ranges from approximately 0.9 to 1.7.

Commute Sheds and Commute Times

- The collective labor shed served by employers located in the TTP Planning Area extends beyond its boundary. The TTP Planning Area contains approximately 60,000 more jobs than resident labor force members. Approximately 20 percent of labor is imported.
- Within the TTP Planning Area, the CBD, Southwest Suburbs, and Northwest Suburbs import labor.



- Commute times have remained relatively stable over the past 20 years in the TTP Planning Area, although lengthening slightly. The preponderance of resident workers – 77 percent – spend fewer than 25 minutes commuting to work.

Educational Attainment

- The TTP Planning Area contains a well-educated workforce. Approximately 35 percent of the adult population has attained a bachelor's or advanced college degree (up from approximately 24 percent in 1990).
- Several suburban communities in particular contain even better educated workforces. Approximately 50 percent of the adult population residing in West Des Moines, Clive, Urbandale, Ankeny, and Waukee holds a bachelor's or advanced college degree.

Housing Affordability

- Not once in the past 30 years have median home prices in Des Moines escalated above three times (300 percent) the area median household income.
- More than three-quarters, or approximately 76 percent, of Des Moines households that own housing spend less than 30 percent of their annual income on housing and related expenses, including property taxes, insurance, and utilities. Approximately 54 percent of renter households spend less than 30 percent of their annual income on rent and utilities.
- Compared to the United States, the Greater Des Moines region continues to provide more affordable housing opportunities. Local housing costs relative to household income have not increased significantly over time.

Retail Sales Trends

- In 1998, the City of Des Moines accounted for the majority of retail sales in the region at approximately 71 percent. With the shifts in population and household growth primarily to suburban communities, retail space and sales growth have followed suit. The proportion of the region's retail sales captured by the City of Des Moines declined to less than 50 percent by 2010. The City of West Des Moines' proportion of the region's total sales increased from nearly 13 percent in 1998 to almost 20 percent in 2010.
- In 2000, Des Moines and West Des Moines had the two highest per capita retail sales bases at \$27,086 and \$24,239, respectively. Clive had the third highest per capita retail sales at \$23,815. Communities whose retail sales growth outpaced population growth had increasing per capita sales. Conversely, communities whose retail sales growth was slower than population growth had declining per capita sales. Des Moines had slow population growth and declining retail sales since 2000, so the per capita sales decreased by approximately 40 percent, from \$27,086 in 2000 to \$15,889 in 2010. Conversely, West Des Moines experienced faster increasing retail sales than resident population growth, resulting in an increase in per capita sales of \$3,019, a 12.5 percent increase.



- Sales within West Des Moines are approximately 63 percent higher than expenditure potential of residents alone would support. The City of Des Moines also attracts more sales than would be expected from internal purchasing power of residents alone. Sales within the City of Des Moines are approximately 58 percent higher than the spending power its resident base is estimated to support. Clive generates an estimated sales surplus of approximately 52 percent of its retail sales base. Ankeny and Urbandale also generate sales surplus at rates of 40 percent and 35 percent, respectively.
- The Des Moines region includes four regional malls containing over 3,940,000 square feet with a vacancy rate of nine percent, up from less than four percent in 2000.
- While the vacancy rate of the 910,000-square-foot Valley West Mall located in West Des Moines has increased to eight percent from nearly zero percent, interviews suggest the Valley West Mall will remain viable over the long run.
- The 1,163,000-square-foot Merle Hay Mall, located in Northwest Des Moines, has been affected by the opening of the 979,000-square-foot Jordan Creek Mall in West Des Moines and changes in the demographic make-up of its trade area.
- The 891,000-square-foot Southridge Mall located on the southeast side of Des Moines, had been affected by demographic and consumer shopping pattern shifts prior to the opening of the Jordan Creek Mall. The opening of Jordan Creek Mall and completion of the Highway 5 bypass, which links the south side of Des Moines to the Jordan Creek area, accelerated the competitive impacts to the Southridge Mall. The area around the Southridge Mall will need to be planned to adapt obsolete and excess retail uses to alternative uses.²
- The Western Suburbs, primarily West Des Moines, experienced 60 percent of the recent retail growth, and, at 8.5 million square feet of space, accounts for 53 percent of the total inventory. Jordan Creek Mall accounts for nearly one million square feet of the growth in retail space.
- At least in the near to medium term, limited additional retail development will occur due to high vacancy rates and reduced rents in the neighborhood and community center retail inventory.

Office Space Market Conditions and Trends

- The total office space inventory of Greater Des Moines increased by 35 percent, or 7.3 million square feet of space, between 2000 and 2011, from over 21 million square feet to over 28 million square feet of space.

² “Big Changes at Southridge Mall include \$6 million sports complex, new retail area”, Des Moines Register, December 8, 2011



- The addition of 5.1 million square feet of space in the Western Suburbs accounted for 70 percent of the total increase in office space supply. As a result, the inventory of the Western Suburbs is now greater than the inventory in the Des Moines CBD.
- While the office space inventory increased by 7.3 million square feet of space from 2000 through 2011, the increase in the amount of occupied space within the Greater Des Moines office market was less at over 5.0 million square feet of space.
- The Western Suburbs accounted for the vast majority (nearly 82 percent) of total office space absorption in Greater Des Moines over the past decade.
- The overall office vacancy rate increased from 5.2 percent in 2000 to nearly 12 percent in 2011. About 3.3 million square feet of office space is currently vacant throughout Greater Des Moines. The inventory of office space in the Central Business District has experienced a considerable increase in vacancy rates.
- Major financial and insurance service firms and the spillover activity and demands they help generate, would be difficult to replace were they to relocate or downsize their office presence in the Central Business District or West Des Moines.
- New entities from outside the region rarely enter the office market.
- West Des Moines has become a preferred office location due to more convenient, “free” on-site parking, ease of access, and a newer and broader amenity package (especially the one offered by the Jordan Creek Mall).
- Limited potential speculative multi-tenant office space development will occur in the near to medium term due to low rents and the excess supply of office space relative to demand.
- Two existing primary submarkets (West Des Moines and the Des Moines Central Business District) are likely to remain the dominant office space submarkets into the foreseeable future.

Industrial Space Market Conditions and Trends

- The total industrial market comprises 48.7 million square feet of space. Since 2000, the industrial space inventory has increased by 6.0 million square feet of space, or about 14 percent. The largest increase of 3.2 million square feet of space occurred in the Western Suburbs, which have about 14.9 million square feet of space, about 31 percent of the inventory (compared to 27 percent of the total inventory in 2000). About 77 percent of the warehouse and manufacturing space developed in the Western Suburbs has been built since 1970. The Northeast Des Moines subarea contains 18.9 million square feet of space, or 39 percent of the total inventory (compared to 38 percent in 2000). About 52 percent of the warehouse and manufacturing space developed in the Northeast Des Moines subarea has been constructed since 1970.



- The highest growth in occupied space occurred in the Western Suburbs at 2.5 million square feet, while the Northeast Des Moines submarket absorbed 1.9 million square feet of industrial space.
- While the primary well-established industrial submarkets are likely to remain viable and the dominant locations for at least the near and medium term, Ankeny could emerge over the long run as a third major source of supply (at the northeast side of I-80 and I-35).

Baseline Employment Projection for TTP Planning Area

- As summarized in Table I-1, total non-farm employment in the TTP Planning Area is projected to grow annually by 0.84 percent, increasing by 113,305 jobs between 2011 and 2050. Total jobs are forecast to increase from the current level of 295,000 to just over 408,000 jobs by 2050.

Industry Sector	2011 #	2020 #	2050 #	Total Growth #	Forecast Growth Rate %
Natural Resources and Construction	21,754	25,416	33,332	11,578	1.10
Manufacturing	18,431	17,441	15,947	-2,484	-0.37
Wholesale Trade	11,047	11,332	11,825	778	0.17
Retail Trade	34,941	37,909	43,563	8,622	0.57
Transportation and Utilities	9,564	9,368	9,055	-509	-0.14
Information	7,310	6,886	6,251	-1,059	-0.40
Financial Activities	39,961	47,341	63,679	23,718	1.20
Professional and Business Services	29,209	36,421	53,845	24,636	1.58
Educational and Health Services	58,499	67,857	87,840	29,341	1.05
Leisure and Hospitality	29,983	33,260	39,744	9,761	0.73
Other Services	13,564	14,568	16,447	2,883	0.50
Government	20,744	22,794	26,784	6,040	0.66
Total Non-Farm	295,007	330,592	408,312	113,305	0.84

Sources: REMI, Inc.; Gruen Gruen + Associates.

- The proportion of employment each economic sector is forecast to comprise of total employment is summarized in Table I-2:



Industry Sector	2011 #	2020 #	2050 #	Shift in Proportion %
Natural Resources and Construction	7.37	7.69	8.16	0.79
Manufacturing	6.25	5.28	3.91	-2.34
Wholesale Trade	3.74	3.43	2.90	-0.85
Retail Trade	11.84	11.47	10.67	-1.18
Transportation and Utilities	3.24	2.83	2.22	-1.02
Information	2.48	2.08	1.53	-0.95
Financial Activities	13.55	14.32	15.60	2.05
Professional and Business Services	9.90	11.02	13.19	3.29
Educational and Health Services	19.83	20.53	21.51	1.68
Leisure and Hospitality	10.16	10.06	9.73	-0.43
Other Services	4.60	4.41	4.03	-0.57
Government	7.03	6.89	6.56	-0.47
Total Non-Farm	100.00	100.00	100.00	0.00
Sources: REMI, Inc.; Gruen Gruen + Associates.				

- The Southwest Suburbs and the Des Moines Central Business District make up the largest shares of the existing employment base at 22.4 percent and 20.5 percent, respectively. East Des Moines and the Northwest Suburbs make up the third and fourth largest shares of the TTP Planning Area at approximately 13 to 14 percent each. Northwest Des Moines, South Des Moines, and the Ankeny area make up the smallest shares of existing employment at approximately 12 percent or less for each subarea.



- Table I-3 presents the baseline projection of additional employment by economic sector and subarea in the TTP Planning Area between 2011 and 2050:

Industry Sector	Subarea							
	Ankeny Area 1 #	East Des Moines 2 #	Des Moines CBD 3 #	South Des Moines 4 #	SW Suburbs 5 #	NW Des Moines 6 #	NW Suburbs 7 #	Total #
Natural Resources and Construction	881	2,066	648	2,540	2,167	673	2,604	11,578
Manufacturing	-406	-877	-111	-203	-368	-117	-402	-2,484
Wholesale Trade	75	285	46	67	84	30	191	778
Retail Trade	949	1,109	334	674	3,257	1,065	1,234	8,622
Transportation and Utilities	-31	-138	-40	-54	-167	-17	-61	-509
Information	-27	-31	-362	-78	-260	-121	-181	-1,059
Financial Activities	632	824	9,568	929	7,844	919	3,001	23,718
Professional and Business Services	1,115	2,217	5,740	3,676	7,185	1,945	2,759	24,636
Educational and Health Services	1,908	2,969	5,979	1,724	5,386	8,135	3,239	29,341
Leisure and Hospitality	685	2,129	1,215	907	2,534	1,013	1,278	9,761
Other Services	242	460	303	570	535	385	388	2,883
Government	252	405	3,828	330	309	352	564	6,040
Total	6,276	11,418	27,149	11,084	28,505	14,260	14,613	113,305

Source: Gruen Gruen + Associates



Baseline Population, Household, and Housing Units Projection for TTP Planning Area

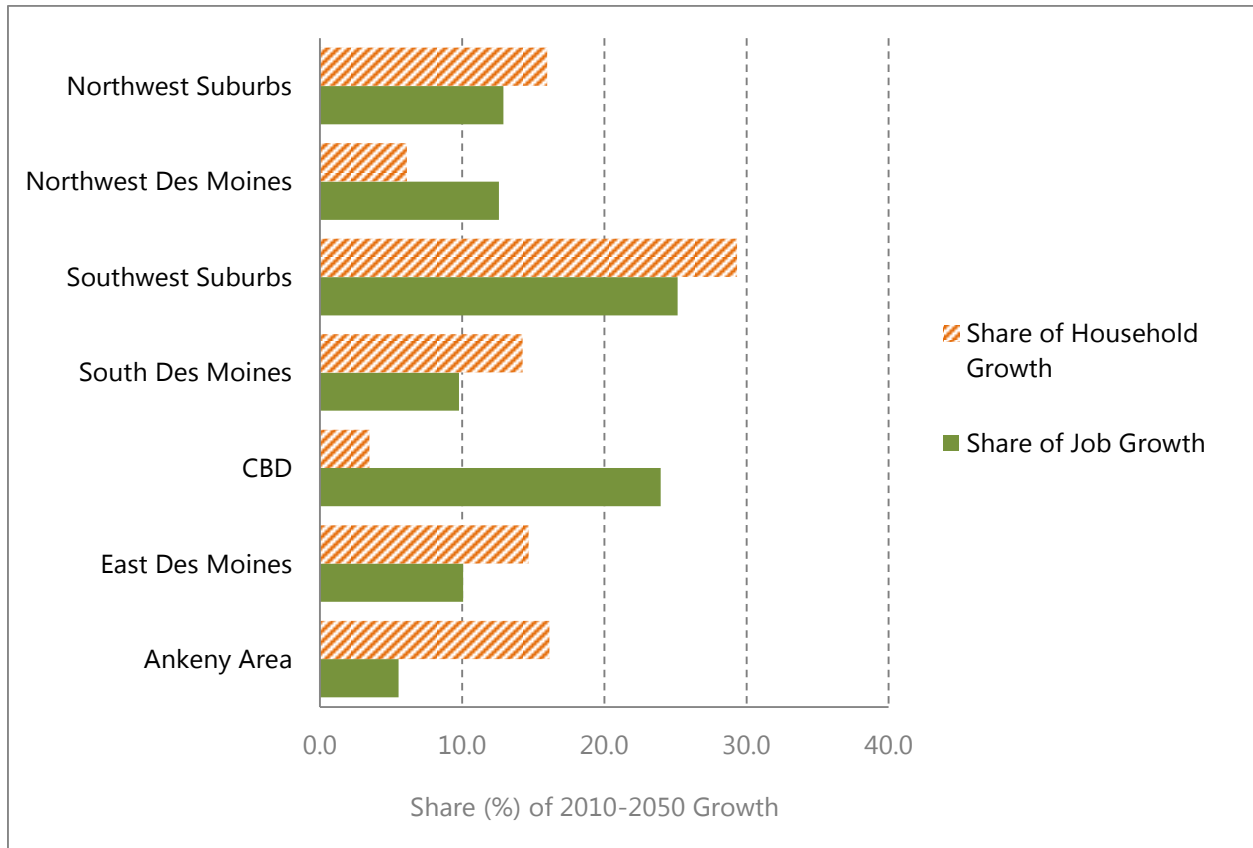
- Table I-4 presents the baseline projection of population, households, and housing units by subarea between 2010 and 2050:

	Ankeny Area 1 #	East Des Moines 2 #	Des Moines CBD 3 #	South Des Moines 4 #	SW Suburbs 5 #	NW Des Moines 6 #	Northwest Suburbs 7 #	TTP Total #
Population:								
2010	55,488	96,430	7,435	73,333	95,772	78,815	72,025	479,298
2020	66,625	109,169	8,975	84,625	115,308	83,825	84,300	552,827
2050	92,496	145,740	12,116	115,909	163,322	98,333	117,496	745,413
<i>Growth 2010-2050</i>	<i>37,008</i>	<i>49,310</i>	<i>4,681</i>	<i>42,576</i>	<i>67,550</i>	<i>19,518</i>	<i>45,471</i>	<i>266,115</i>
Households:								
2010	21,091	35,724	4,118	28,197	39,286	32,537	27,758	188,711
2020	26,325	40,485	5,250	32,819	48,795	34,519	32,937	221,131
2050	38,761	51,798	7,940	43,801	71,391	39,229	45,245	298,165
<i>Growth 2010-2050</i>	<i>17,670</i>	<i>16,074</i>	<i>3,822</i>	<i>15,604</i>	<i>32,105</i>	<i>6,692</i>	<i>17,487</i>	<i>109,454</i>
Housing Units:								
2010	22,102	38,259	4,877	30,259	42,000	35,530	29,006	202,033
2020	27,064	42,773	5,950	34,641	51,015	37,409	33,916	232,769
2050	40,155	54,682	8,782	46,201	74,800	42,367	46,871	313,858
<i>Growth 2010-2050</i>	<i>18,053</i>	<i>16,423</i>	<i>3,905</i>	<i>15,942</i>	<i>32,800</i>	<i>6,837</i>	<i>17,865</i>	<i>111,825</i>

Source: Gruen Gruen + Associates.

- While the Southwest Suburbs are projected to gain a significant share of the job growth, under the baseline scenario, they are also expected to gain the largest share of population and household growth; the Southwest Suburbs are projected to capture 29 percent of household growth. The Ankeny Area and Northwest Suburbs are each projected to capture approximately 16 percent of household growth.





**Baseline Building Space Demand Associated
With Employment Projection for TTP Planning Area**

- Table I-5 presents the baseline projection of employment growth for the TTP Planning Area by subarea and type of space:



TABLE I-5

Forecast Jobs Added by Subarea and Type of Space: 2011-2050

Type of Space	Ankeny Area 1 #	East Des Moines 2 #	CBD 3 #	South Des Moines 4 #	SW Suburbs 5 #	NW Des Moines 6 #	NW Suburbs 7 #	Total TTP #
Office	2,716	4,719	20,635	5,286	16,921	7,089	7,568	64,934
Manufacturing	-393	-848	-102	-167	-337	-107	-365	-2,319
Warehouse/Flex	550	1,098	970	984	1,863	900	1,026	7,392
Retail ¹	1,539	2,555	1,306	1,603	5,317	1,994	2,322	16,635
Other ²	1,863	3,894	4,340	3,378	4,741	4,385	4,062	26,663
Total	6,276	11,418	27,149	11,084	28,505	14,260	14,613	113,305

¹ Includes hospitality-related activities (restaurants, hotels, etc).
² Primarily includes workers that can be expected to occupy institutional-type land uses (schools, hospitals, etc) but also includes those which typically do not require physical building space (such as construction workers).

Source: Gruen Gruen + Associates

- Table I-6 presents the baseline forecast of additional building space demand by subarea and type of space associated with the projected employment growth for the TTP Planning Area:

TABLE I-6

Net Additional Space Demand by Subarea and Type of Space: 2011-2050

Type of Space	Ankeny Area 1 #	East Des Moines 2 #	CBD 3 #	South Des Moines 4 #	SW Suburbs 5 #	NW Des Moines 6 #	NW Suburbs 7 #	Total TTP #
Office	387,000	691,000	2,019,000	823,000	2,204,000	1,004,000	905,000	8,033,000
Manufacturing	35,000	58,000	-45,000	-68,000	-30,000	-11,000	-33,000	-94,000
Warehouse/Flex	1,031,000	1,517,000	1,062,000	1,711,000	3,165,000	1,486,000	1,797,000	11,769,000
Retail	742,000	1,197,000	651,000	476,000	2,268,000	958,000	1,006,000	7,298,000
Total ²	2,195,000	3,463,000	3,687,000	2,942,000	7,607,000	3,437,000	3,675,000	27,006,000

¹ Figures are rounded to nearest thousand square feet. Net space demand accounts for a five percent (5%) frictional vacancy rate and currently vacant space.
² Does not include other types of building space (e.g. civic, institutional uses).

Source: Gruen Gruen + Associates

- For the entire TTP Planning Area, forecast net additional office space demand totals just over 8 million square feet over the 2011 to 2050 period.



- Net forecast office space demand in the CBD is projected to total just over 2 million square feet, while net office space demand in the Southwest Suburbs totals approximately 2.2 million square feet. Net office space demand in the Northwest Suburbs and Northwest Des Moines subareas is collectively projected at 1.9 million square feet.
- Net additional demand for warehouse/flex space is projected to total 11.8 million square feet. About 3.2 million square feet of this demand is forecast to be distributed in the Southwest Suburbs with between about 1.0 million to 1.8 million square feet distributed to the other subareas.
- Retail space demand related to the employment forecast is projected to total 7.3 million square feet of space. This forecast is reasonably comparable to the forecast based on projected expenditure potential or retail demand of 6.7 million square feet of space.
- By subarea, three-quarters of the demand for office space is forecast to occur in the CBD, Southwest Suburbs, Northwest Des Moines, and the Northwest Suburbs. Ankeny and East Des Moines are forecast to generate a modest amount of demand for manufacturing space of 93,000 square feet of space collectively.



CHAPTER II

THE ECONOMIC BASE AND HISTORICAL TRENDS

INTRODUCTION

This chapter presents an analysis of the economic structure of the Des Moines region. To provide a framework and an understanding of the regional economy, we analyze historical employment by economic sector in order to make a series of comparisons of employment over time to evaluate economic sectors likely to continue to grow or contract within the regional economy. This chapter also presents forecasts of future employment by county, prepared in 2011 by Iowa Department of Transportation. Also presented are the employment forecasts prepared in 2007 for the Des Moines Area MPO Horizon Year 2035 Metropolitan Transportation Plan, which covers the Des Moines MSA, counties within it, and smaller geographic areas specific to the planning area.³

For purposes of employment analysis by smaller geographic areas, we use the regional subareas designated by the MPO for its transportation planning purposes to compare subareas within the region and to geographically distribute the larger regional employment forecast to smaller areas.

STRUCTURE OF THE REGIONAL ECONOMY

Table II-1 presents the share of total employment, share of total gross wages, and share of gross metropolitan domestic product that each sector makes up of the regional economy. Not only do financial activities represent the largest source of employment, financial activities generate an even higher share of regional income and account for nearly one-half of all economic activity within the Des Moines metropolitan area.

³ Both secondary projections of employment utilize Regional Economic Models, Inc. (REMI) data.



TABLE II-1

Make-up of the Des Moines Metropolitan Area Economy: 2010¹

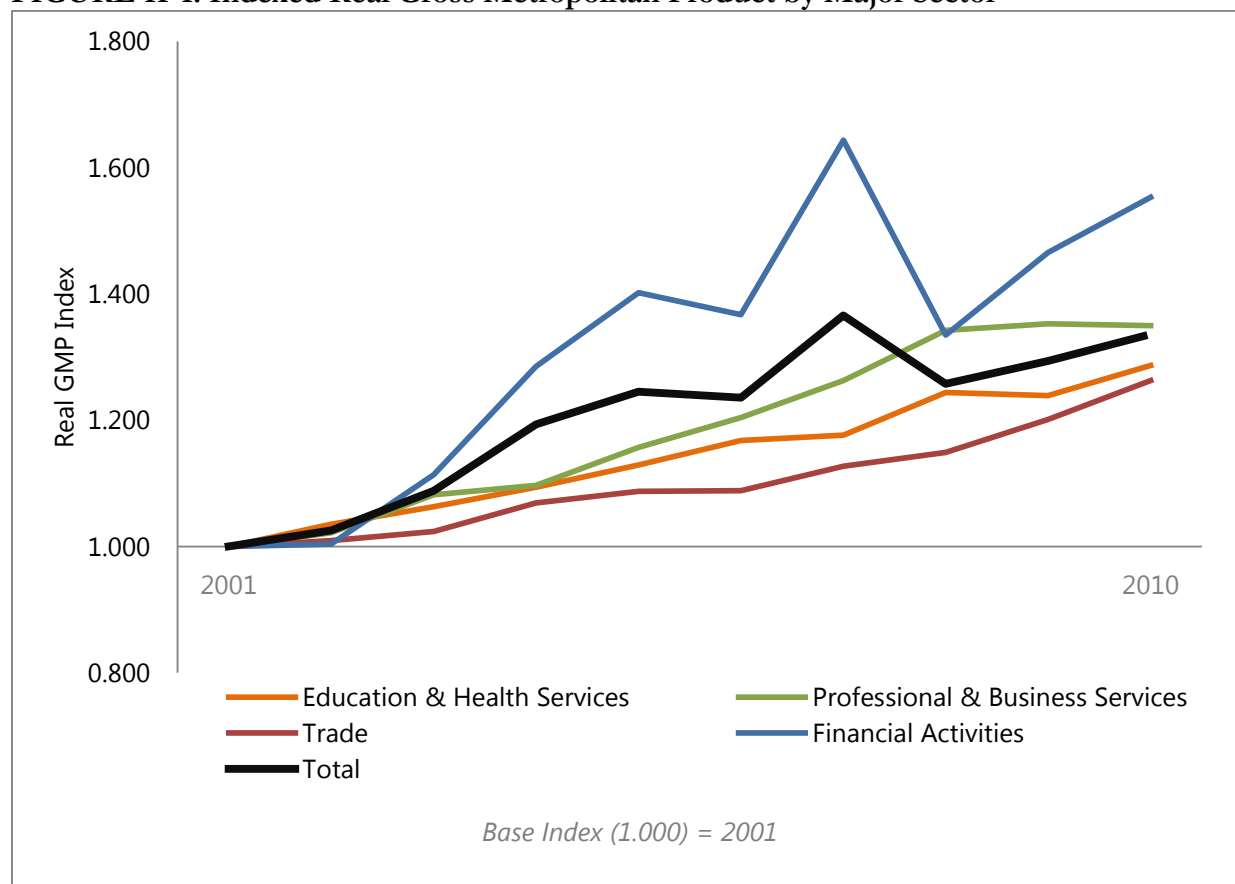
Sector	Share of Total Employment ² %	Share of Total Gross Wages %	Share of Gross Metropolitan Product ³ %
Natural Resources & Construction	4.1	4.8	3.6
Manufacturing	5.6	6.5	5.2
Wholesale Trade	5.4	7.8	7.4
Retail Trade	11.4	6.3	5.0
Transportation & Utilities	3.0	2.9	2.4
Information	2.5	3.0	4.1
Financial Activities	16.2	24.1	47.4
Professional & Business Services	11.9	12.4	7.1
Educational & Health Services	13.5	12.4	6.3
Leisure & Hospitality	8.8	3.1	2.4
Other Services	4.1	2.5	1.8
Government	13.5	14.1	7.4
Total	100.0	100.0	100.0
¹ The Des Moines-West Des Moines Metropolitan Statistical Area includes five counties (Polk, Dallas, Madison, Warren, and Guthrie). ² Non-farm employment, including full and part-time jobs. ³ Gross Metropolitan Product is the regional equivalent of Gross Domestic product, or the value of all goods and services produced.			
Sources: Iowa Department of Workforce Development; U.S. Bureau of Economic Analysis; Gruen Gruen + Associates.			

Financial activities make up the largest share of all three economic measures – employment, wages, and gross domestic product – at 16.2 percent, 24.1 percent, and 47.4 percent, respectively. Other economic sectors in addition to financial activities that exceed 10 percent of total employment include government, education and health services, professional and business services, and retail trade. Unlike financial activities, however, the share of total wages these sectors comprise is not significantly greater or lesser than the respective shares of total employment. The shares of gross metropolitan product comprised by these sectors are also far smaller, given that financial activities sectors comprise nearly half of the regional domestic output. Over the prior decade, as summarized below, regional domestic output related to financial activities grew considerably faster than other sectors of the economy, especially between 2002 and 2007, when real gross metropolitan product in the financial activities sector grew by more than 60 percent.



Figure II-1 presents an index of real gross metropolitan product⁴ over the 2001 to 2010 period (with 2001 representing the base year).

FIGURE II-1: Indexed Real Gross Metropolitan Product by Major Sector



Overall production in the regional economy is tightly linked, as would be expected given its large share of regional output, to financial activities. Over time, financial activities have increasingly represented a larger portion of the regional economic base.

REGIONAL EMPLOYMENT TRENDS

Table II-2 below summarizes average annual employment within the Des Moines MSA by economic sector over the 1990 to 2010 period. Figure II-1 shows the average annual growth rates by economic sector of employment over five-year increments between 1990 and 2010.

⁴ “Real” GMP is adjusted to constant 2005 dollars so as to remove the effects of inflation over time.



TABLE II-2

Des Moines Metropolitan Statistical Area (MSA) Average Annual Non-Farm Employment by Sector¹

Sector	1990 #	1995 #	2000 #	2005 #	2010 #	1990-2010 Change #	1990-2010 Change %	1990-2010 Average Annual Growth Rate %
Natural Resources and Construction	8.8	11.4	14.5	17.7	12.9	4.1	47	1.9
Manufacturing	20.6	23.3	21.8	20.0	17.7	(2.9)	(14)	(0.8)
Wholesale Trade	15.5	17.5	18.2	17.8	17.1	1.6	10	0.5
Retail Trade	28.8	34.1	35.5	36.9	35.9	7.1	25	1.1
Transportation and Utilities	10.3	9.9	10.8	10.0	9.5	(0.8)	(8)	(0.4)
Information	9.5	10.0	10.5	9.0	8.0	(1.5)	(16)	(0.9)
Financial Activities	30.9	34.9	41.6	47.5	51.2	20.3	66	2.6
Professional and Business Services	20.3	25.1	30.2	33.2	37.5	17.2	85	3.1
Educational and Health Services	28.9	32.8	34.5	35.7	42.4	13.5	47	1.9
Leisure and Hospitality	19.3	22.6	24.3	27.7	27.7	8.4	44	1.8
Other Services	10.5	11.3	11.4	12.0	12.8	2.3	22	1.0
Government	32.5	34.6	37.5	38.5	42.5	10.0	31	1.4
Total Non-Farm	235.7	267.6	290.7	305.9	315.1	79.4	34	1.5

¹ Employment in thousands of jobs. Parentheses denote negative number.

Sources: Iowa Department of Workforce Development, *Current Employment Statistics*; Gruen Gruen + Associates.

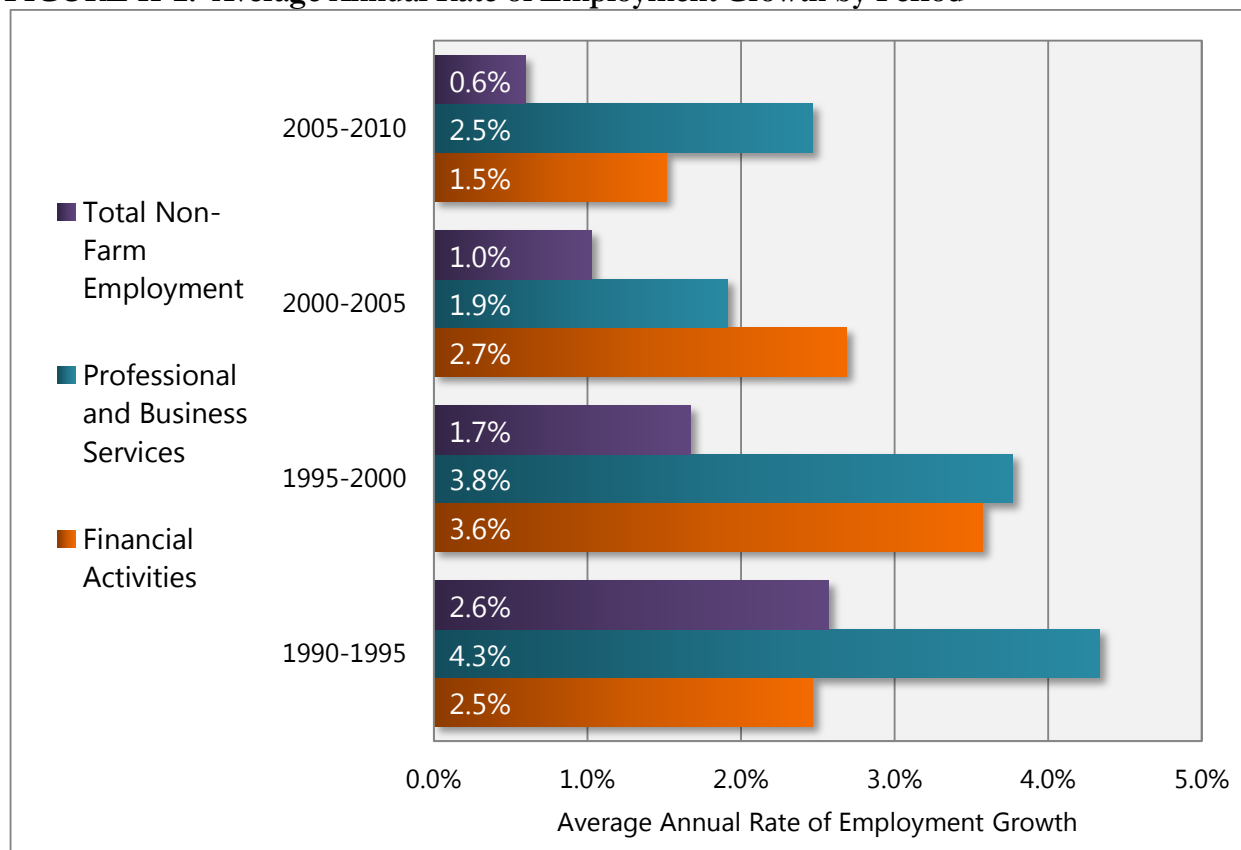
Between 1990 and 2010, total employment in the Des Moines MSA grew by 34 percent, increasing from 235,700 jobs to 315,100 jobs. The average annual growth rate over the last 20 years has been 1.5 percent. The fastest growing sectors have included professional and business activities and financial activities. The average annual growth rates associated with these two sectors have approximated nearly three percent. Employment in financial activities increased by 20,300 jobs, from 30,900 jobs in 1990 to 51,200 jobs in 2010. Professional and business services employment increased by 17,200 jobs, from 20,300 jobs in 1990 to 37,500 jobs in 2010. Together, these two sectors accounted for 47 percent of the job growth that occurred over the past 20 years.

The boom in the U.S mortgage industry in the early 2000's led to robust employment growth in these sectors in Des Moines. In 2002, Wells Fargo added 400 jobs in Des Moines to expand its home equity loan business group. The significant labor pool in financial services in Des Moines was one reason cited for the Wells Fargo expansion⁵. According to County Business Patterns data, insurance carriers increased from 160 to 189 businesses between 2000 and 2009. The number of commercial banks increased from 157 in 2000 to 213 by 2009. Collectively, insurance firms and commercial banks make up 30 percent of the number of businesses in the finance and insurance sector in Des Moines.

Other economic sectors with growth rates that exceeded the overall average growth rate include local serving sectors such as (1) natural resources and construction, (2) educational and health services, and (3) leisure and hospitality. These three sectors have experienced growth of nearly two percent annually since 1990. The increase in employment in these three sectors accounted for an increase of 26,000 jobs, or one-third of the total job growth in the region.

⁵ www.siteselection.com, Project Watch Week of January 7, 2002 "Wells Fargo Home Equity Adding 400 Jobs in Des Moines".



FIGURE II-2: Average Annual Rate of Employment Growth by Period

As summarized above in Figure II-2, employment growth was fastest during the decade of the 1990's. Total employment growth approximated 2.6 percent annually between 1990 and 1995 as professional and business activities employment rapidly increased at 4.3 percent annually. Since 1995, growth has slowed, although employment in professional and business activities and financial activities grew at a high growth rate, exceeding 3.5 percent annually. From 2005 to 2010, overall employment growth slowed substantially with the advent of the Great Recession in 2008. Total employment has only grown 0.6 percent annually over the past five years due to declines in employment in many sectors, such as construction, manufacturing, wholesale trade, transportation and utilities, and information. Financial activities and professional and business services employment has continued to increase, albeit at lower rates than in prior periods.

Table II-3 shows the percentage, or share, of total non-farm employment in the Des Moines MSA that each sector comprised in 1990 and 2010. The third column in this table shows the change, or shift, in the percentage that each sector comprised of total employment during the 20-year period.



Sector	1990 %	2010 %	Shift 1990-2010 <u>Percentage Points</u>
Natural Resources and Construction	3.7	4.1	0.4
Manufacturing	8.7	5.6	(3.1)
Wholesale Trade	6.6	5.4	(1.1)
Retail Trade	12.2	11.4	(0.8)
Transportation and Utilities	4.4	3.0	(1.4)
Information	4.0	2.5	(1.5)
Financial Activities	13.1	16.2	3.1
Professional and Business Services	8.6	11.9	3.3
Educational and Health Services	12.3	13.5	1.2
Leisure and Hospitality	8.2	8.8	0.6
Other Services	4.5	4.1	(0.4)
Government	13.8	13.5	(0.3)
Total Non-Farm	100.0	100.0	
¹ Parentheses denote negative number.			
Sources: Iowa Department of Workforce Development, <i>Current Employment Statistics</i> ; Gruen Gruen + Associates.			

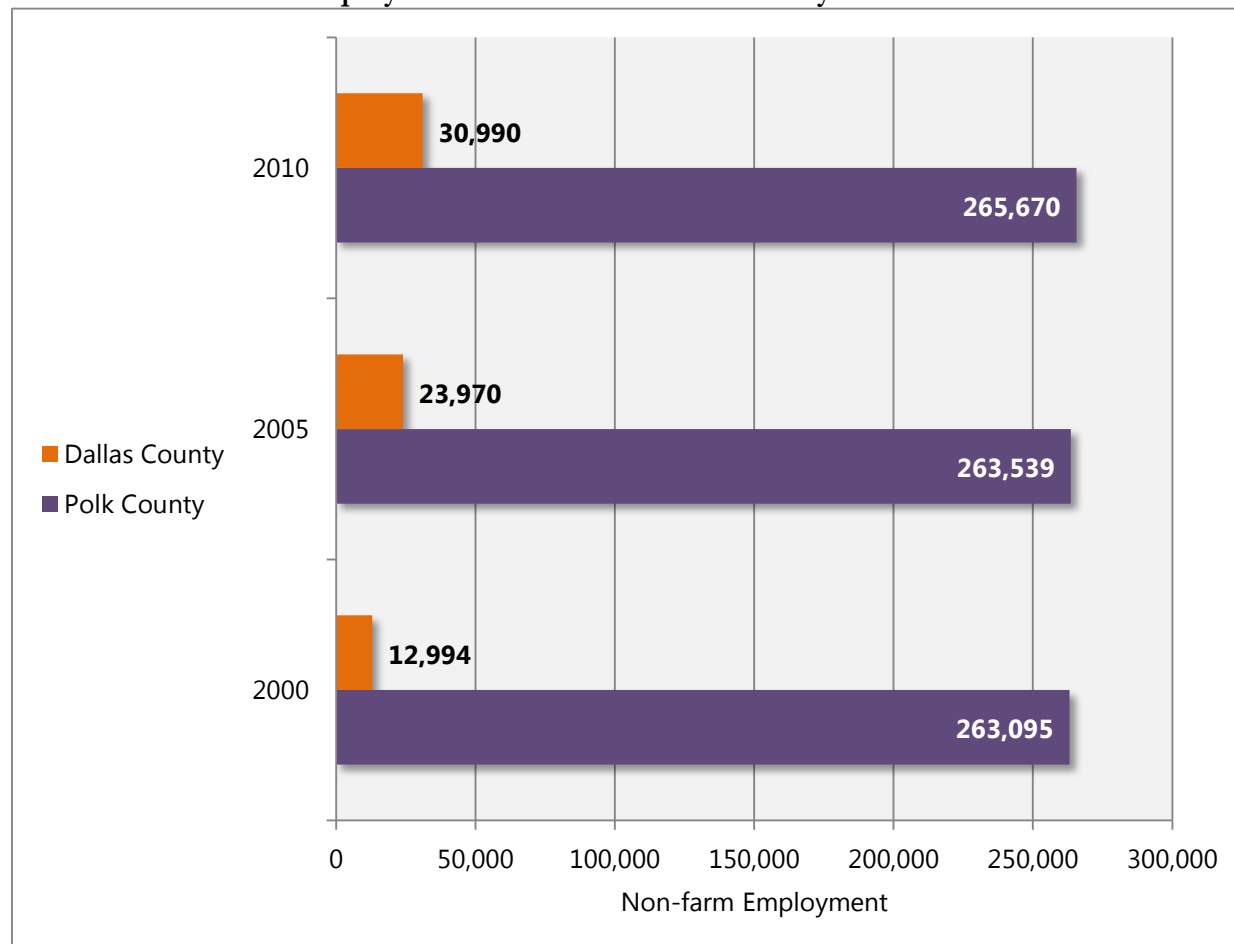
Consistent with the fast growth rates, financial activities and professional and business services employment experienced the largest gains in share of total employment. These two sectors accounted for 21.7 percent of total employment in 1990. By 2010, these two sectors comprised 28.1 percent of total employment. This large increase pushed down most other sectors' shares of total employment. Manufacturing employment experienced an absolute decrease in its total employment, resulting in the largest share decline of any sector by 3.1 percentage points to 5.6 percent of total employment. Only educational and health services and leisure and hospitality services employment slightly increased their shares of total employment to account for approximately 22 percent of total employment by 2010. The government sector continues to account for the largest share of total employment at 13.5 percent.



GEOGRAPHIC DISTRIBUTION OF EMPLOYMENT

As described in Figure II-3, Polk County comprises approximately 85 percent of the regional employment base, with 2010 non-farm employment estimated at just fewer than 266,000 jobs. The Polk County base has, however, experienced relatively limited growth over the past decade. According to the Bureau of Labor Statistics' *Quarterly Census of Employment and Wages*, Polk County added only 2,600 jobs between 2000 and 2010. The preponderance of net job gains in the region have occurred to the west in Dallas County, which accounted for approximately 75 percent of regional employment growth over the 2000 to 2010 period. The Dallas County non-farm employment base grew from approximately 13,000 jobs in 2000 to 31,000 jobs by 2010, representing an extremely high average annual growth rate of nine percent.

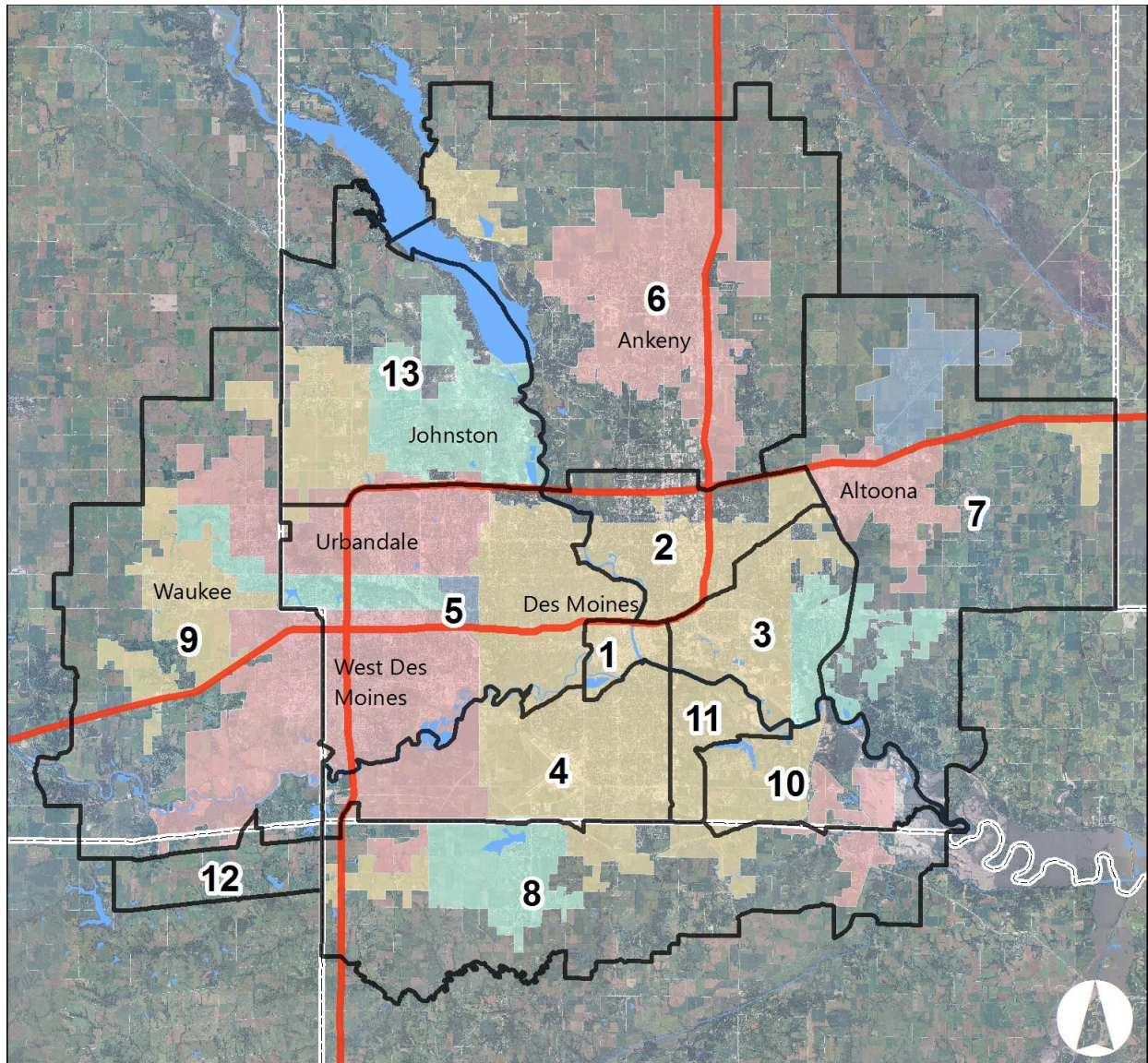
FIGURE II-3: Total Employment in Polk and Dallas County



Below, we identify the current distribution of employment within the TTP Planning Area. The geography for this summary is based on the 13 subareas created by the Des Moines Area MPO for its 2035 transportation planning projections. Map II-1 illustrates these 13 subareas.



MAP II-1: MPO Subareas



 MPO Subareas

0 2.5 5 10 Miles

Area 1 generally encompasses the Central Business District of Des Moines and the East Village, bounded to the north by I-235 and south by the Des Moines River. Areas 2 and 3 comprise the west and northeast quadrants of the City of Des Moines, in addition to some unincorporated areas of Polk County and portions of the City of Pleasant Hill. Areas 4, 10, and 11 cover the City of Des Moines south of the Des Moines River and southern portion of the City of West Des Moines, generally extending to the Polk County line.

Area 5 is geographically large, encompassing much of the inner ring of the western suburbs. It includes the northwest side of Des Moines, and portions of West Des Moines, Clive, and Urbandale. Area 5 is generally delineated by I-80/I-35 on the north and the Polk County line to the west. Area 9, also a large geographic area, includes the portion of the TTP Planning Area located in Dallas



County. As such, western portions of West Des Moines, Clive, and Urbandale are contained in Area 9. The City of Waukee is entirely located in Area 9. Likewise, Areas 8 and 12 include the portions of the TTP Planning Area contained within Warren and Madison Counties. Area 13 generally includes the northwestern suburban communities of Johnston and Grimes, and Area 6 to the north encompasses the City of Ankeny in addition surrounding unincorporated areas.

Table II-4 summarizes current employment by subarea of the TTP Planning Area.

Distribution of Current Employment Within the TTP Planning Area		
MPO Subarea	2011 Employment #	2011 Employment % of Total
1	61,969	21.0
2	20,659	7.0
3	8,848	3.0
4	23,777	8.1
5	108,353	36.7
6	24,230	8.2
7	10,073	3.4
8	3,042	1.0
9	15,258	5.2
10	643	0.2
11	1,472	0.5
12	29	0.0
13	16,643	5.6
Total	294,996	100.0
Sources: Des Moines MPO; InfoUSA; Gruen Gruen + Associates.		

Area 5 is estimated to contain 108,000 jobs or approximately 37 percent of all jobs currently located in the TTP Planning Area. Area 1 – the CBD – contains the next largest source of jobs at just under 62,000, or 21 percent of the total. Collectively, Areas 1 and 5 contain about 60 percent of all employment. The Ankeny area (Area 6) contains the third largest source of employment with approximately 24,000 jobs, or eight percent of the total. Area 9, or the Dallas County portion of the TTP Planning Area, contains over 15,000 jobs, or approximately five percent of the total.



POTENTIAL FOR GROWTH

Table II-5 presents a secondary forecast of employment for the Des Moines MSA, prepared by the State of Iowa Department of Transportation in December of 2010 using Regional Economic Models Inc.'s ("REMI") *Policy Insight Plus* model.⁶

	Forecast Employment			Forecast Growth		Forecast Avg. Annual Growth Rate
	2010	2030	2050	2010-2050		2010-2050
	#	#	#	#	% of Total	%
Dallas	36,518	46,289	53,583	17,065	10.8	0.96
Guthrie	4,845	5,490	6,181	1,336	0.8	0.61
Madison	6,403	7,750	9,014	2,611	1.7	0.86
Polk	324,272	401,495	453,739	129,467	82.2	0.84
Warren	14,661	18,375	21,752	7,091	4.5	0.99
MSA Total	386,699	479,399	544,269	157,570	100.0	0.86
¹ Employment covers all full and part-time jobs, including self-employed, agricultural and military employment. Forecasts prepared in December 2010.						
Sources: Iowa Department of Transportation; Regional Economic Models, Inc; Gruen Gruen + Associates.						

Over the 40-year period from 2010 to 2050, total employment in the Des Moines MSA is forecast to grow at an average annual rate of 0.86 percent. Approximately 82 percent of job growth over the forecast period is expected to occur in Polk County. Dallas County is forecast to comprise another 11 percent of forecast long-term growth.

Table II-6 below presents a shorter-term employment forecast for the Central Iowa Region, prepared by the Iowa Department of Workforce Development. Although representing a larger geographic area than applicable to the TIP effort, it provides a broad-level indication of expected growth patterns by industry sector.

⁶ It is important to note that the REMI model utilized includes an estimation of all jobs within the forecast region. Conversely, publicly-available data describing historical employment trends by sector (as reviewed above previously) do not include self-employed workers, agricultural and farm workers; and government employment includes only civilian employees (i.e. non-military). Thus, the absolute numbers of employment vary. The secondary projections are reviewed primarily to ascertain rates of long-term growth, and the potential geographic distribution of that growth.



TABLE II-6

Iowa Department of Workforce Development Region 11¹ Employment Projections: 2008-2018

Sector	2008 #	2018 #	2008-2018 Growth #	2008-2018 Growth % of Total	2008-2018 Average Annual Growth Rate %
Construction	19,650	23,810	4,160	7.2	1.94
Manufacturing	33,425	34,930	1,505	2.6	0.44
Wholesale Trade	20,530	21,275	745	1.3	0.36
Retail Trade	45,505	47,355	1,850	3.2	0.40
Transportation and Utilities	15,895	17,660	1,765	3.1	1.06
Information	11,290	12,800	1,510	2.6	1.26
Financial Activities	53,780	63,050	9,270	16.1	1.60
Professional and Business Services	42,820	53,935	11,115	19.3	2.33
Educational and Health Services	86,265	102,320	16,055	27.9	1.72
Leisure and Hospitality	37,085	41,535	4,450	7.7	1.14
Other Services	15,870	17,455	1,585	2.8	0.96
Government	27,540	28,215	675	1.2	0.24
Total Non-Farm²	442,430	499,950	57,520	100.0	1.23

¹ Region 11 includes the Greater Des Moines Area (Dallas, Madison, Polk and Warren Counties) in addition to surrounding rural areas of Boone, Jasper, Marion and Story Counties.

² Total includes self-employed workers (which are not classified into sectors) and natural resources/mining employment which is not presented individually.

Sources: Iowa Department of Workforce Development, Gruen Gruen + Associates.

The Iowa Department of Workforce Development forecast, albeit covering a much shorter time horizon, generally coincides with historical industry sector growth patterns of the Des Moines MSA. Financial activities (1.6 percent average annual growth rate), professional and business services (2.3 percent average annual growth rate), and educational and health services (1.72 percent average annual growth rate) are expected to generate more than 63 percent of job growth (between 1990 and 2010, these three sectors accounted for 64 percent of job growth in the Des Moines MSA). The goods-producing and trade sectors of the regional economy were forecast to experience minimal growth at less than 0.5 percent annually, with the exception being the construction sector, which is forecast to increase at an average annual growth rate of over 1.9 percent.

Table II-7 below summarizes the geographical distribution of total employment growth previously forecast for the Horizon Year 2035 Metropolitan Transportation Plan.



MPO Subarea	2005-2035 Employment Growth	
	#	% of Total
1	34,854	34.1
2	4,307	4.2
3	1,964	1.9
4	3,809	3.7
5	7,898	7.7
6	15,130	14.8
7	4,587	4.5
8	3,689	3.6
9	13,618	13.3
10	458	0.4
11	466	0.5
12	1,061	1.0
13	10,439	10.2
Total	102,280	100.0
Sources: Des Moines MPO; Gruen Gruen + Associates.		

According to the previously prepared *Horizon Year 2035 Metropolitan Transportation Plan*, the TTP Planning Area was forecast to add approximately 102,000 jobs over the 2005 to 2035 period (representing approximately a one percent average annual growth rate). Subarea 1 – the CBD of Des Moines – was forecast to capture more than one-third of all employment growth over the 30-year project period. Recent “below trend” growth patterns, however, to capture the forecast growth will require significant redevelopment and infill development supported by continuing improvement in the appeal of the CBD as a location to not only work but also to play and live.

The second largest source of employment growth was projected to be concentrated in Area 6, generally representing Ankeny and surrounding unincorporated land. Area 6 was projected to capture employment growth of approximately 15,000 jobs or 15 percent of the total.

Collectively, Areas 5, 9, and 13, the western suburbs including areas in Dallas County, are forecast to comprise almost an additional one-third of the forecast growth. This is likely to be readily achievable given the availability of ample land and the presence of a well-educated labor force near existing employment agglomerations.



CHAPTER III

DEMOGRAPHIC TRENDS AND CONDITIONS

INTRODUCTION

This chapter presents a summary of population, household, and housing unit trends and conditions for the Des Moines region and its individual counties and communities within the region. Patterns of historic population, household, and housing unit growth provide a basis or framework to forecast future demographic trends. Because The Tomorrow Plan calls for a 50-year forecast, to provide comparable historical perspective, trends over a 50 year, from 1960 to 2010 period are identified 40 years out to 2050.

REGIONAL POPULATION AND HOUSEHOLD GROWTH

Table III-1 presents population growth over a 50-year period beginning from 1960 for the greater Des Moines region.

County	1960 #	1970 #	1980 #	1990 #	2000 #	2010 #	Change 1960-2010 #	Average Annual Growth Rate %
Dallas	24,123	26,085	29,513	29,755	40,750	66,135	42,012	2.04
Madison	12,295	11,558	12,597	12,483	14,019	15,679	3,384	0.49
Polk	266,315	286,130	303,170	327,140	374,601	430,640	164,325	0.97
Warren	20,829	27,432	34,878	36,033	40,671	46,225	25,396	1.61
Total	323,562	351,205	380,158	405,411	470,041	558,679	235,117	1.10

Sources: U.S. Census Bureau; Gruen Gruen + Associates.

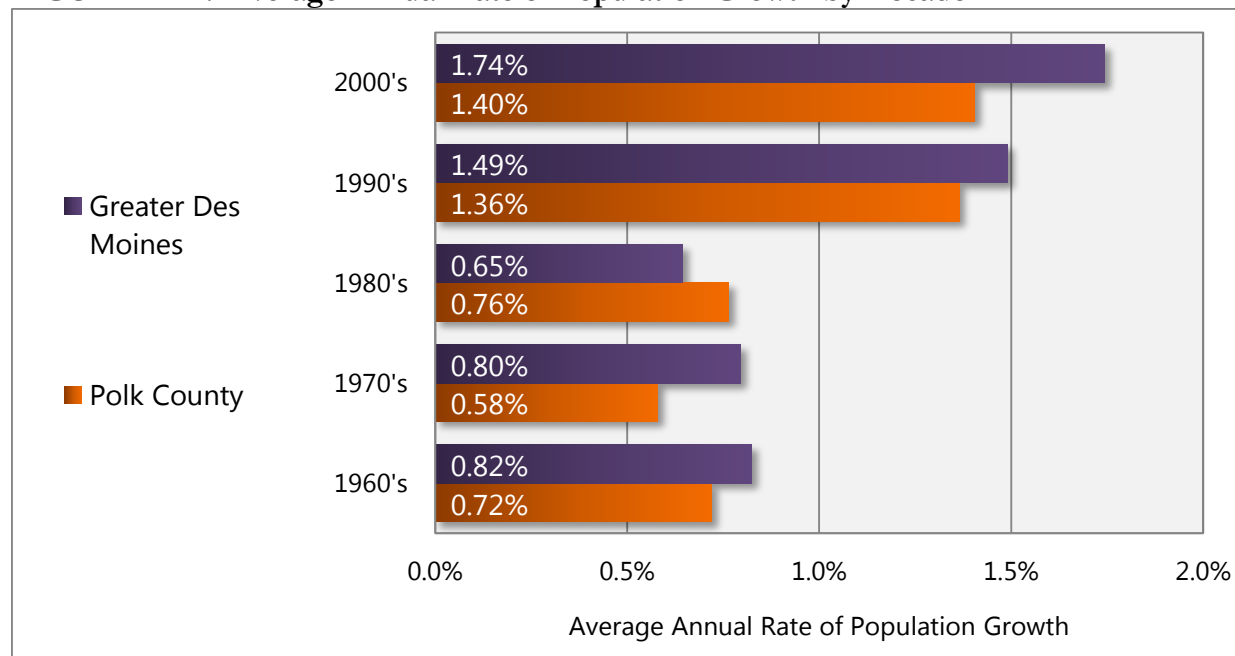
Between 1960 and 2010, the greater Des Moines region grew in population by over 235,000 people, increasing from nearly 323,600 persons to nearly 558,700 persons. On an annual average basis, the growth rate was 1.1 percent. Polk County is the largest county in terms of population though its share of the region's population has declined due to having the second slowest long term population growth rate. In 1960, Polk County comprised 82 percent of the region's population. By 2010, Polk County's share of the region's population was 75 percent. Dallas County located to the west of Polk County experienced the fastest annual long term growth of approximately two percent over the 50 year period. Dallas County's share of the population increased from 7.5 percent in 1960 to 11.8 percent of the total population in 2010 with its primary growth phase occurring since 1990. Warren County to the south of Polk County had the second fastest population growth of 1.6 percent. The population of Warren County also doubled, and its share of total population increasing from 6.4 percent in 1960 to 8.3 percent in 2010. Collectively, however, Dallas and Warren Counties'



population is only one-fourth the size of Polk County’s population. Madison County’s population has grown slowly.

Figure III-1 shows by decade the population growth rate of Polk County compared to the greater Des Moines region.

FIGURE III-1: Average Annual Rate of Population Growth by Decade



With the exception of the 1980’s , Polk County’s population has grown slower than the population growth occurring in the region as a whole. The slower rate of growth is due to the much larger population base for Polk County. The other counties comprising the region are much smaller, so the growth rates are higher. In addition, for Polk County and the greater Des Moines region, the population growth rates have increased over the decades. The 1990 and 2000 decades had the largest population growth rates of nearly 1.5 percent to 1.75 percent for the region and 1.36 to 1.40 percent for Polk County.

Table III-2 presents the number of households, household population, and average household size for the greater Des Moines region between 1990 and 2010.



TABLE III-2

Household Growth and Average Household Size in the Greater Des Moines Region: 1990-2010

	1990 #	2000 #	2010 #	Change 1990-2010 #	Average Annual Growth Rate %
Dallas County:					
Household Population	29,196	40,291	65,619	36,423	4.1
Households	11,204	15,584	25,240	14,036	4.1
<i>Average Household Size</i>	<i>2.61</i>	<i>2.59</i>	<i>2.60</i>	<i>-0.01</i>	
Madison County:					
Household Population	12,217	13,720	15,487	3,270	1.2
Households	4,715	5,326	6,025	1,310	1.2
<i>Average Household Size</i>	<i>2.59</i>	<i>2.58</i>	<i>2.57</i>	<i>-0.02</i>	
Polk County:					
Household Population	318,917	365,671	421,284	102,367	1.4
Households	129,237	149,112	170,197	40,960	1.4
<i>Average Household Size</i>	<i>2.47</i>	<i>2.45</i>	<i>2.48</i>	<i>0.01</i>	
Warren County:					
Household Population	34,770	38,956	44,483	9,713	1.2
Households	12,659	14,708	17,262	4,603	1.6
<i>Average Household Size</i>	<i>2.75</i>	<i>2.65</i>	<i>2.58</i>	<i>-0.17</i>	
Total:					
Household Population	395,100	458,638	546,873	151,773	1.6
Households	157,815	184,730	218,724	60,909	1.6
<i>Average Household Size</i>	<i>2.50</i>	<i>2.48</i>	<i>2.50</i>	<i>0.00</i>	

Sources: U.S. Census Bureau; Gruen Gruen + Associates.

The greater Des Moines region grew by nearly 61,000 households, or 1.6 percent annually between 1990 and 2010. The growth rate of the number of households for Dallas, Madison, and Polk counties has been consistent with the household population growth rate. That is, average household size has remained consistent across each of these three counties. Warren County's household population has not increased as rapidly, as its growth in the number of households resulting in an average household size declined over the 30 year period. Overall, the region's average household size has remained stable at about 2.50 persons. Polk County has the smallest average household size of 2.48 persons, while Dallas County contains the largest household size of 2.60 persons.⁷

⁷ The make-up of housing, which in the far western suburbs and Dallas County, in general, is comprised by (1) a higher proportion of owner occupied single family units and (2) thus more family households. Although 2010 Census data is not yet released that would validate this assumption, it was the case for 2000: the proportion of family households was 72% in Dallas County and 65% in Polk County; and owner occupied units comprised 76% of housing in Dallas County and only 69% in Polk County.



Table III-3 shows the growth in housing units for the greater Des Moines region between 1960 and 2010. The number of housing units is greater than the number of households because it accounts for vacant housing units while the number of households measures occupied housing units.

County	1960 #	1970 #	1980 #	1990 #	2000 #	2010 #	Change 1960-2010 #	Average Annual Growth Rate %
Dallas	8,403	9,146	11,555	11,812	16,529	27,260	18,857	2.4
Madison	4,406	4,245	4,967	4,995	5,661	6,554	2,148	0.8
Polk	89,084	98,336	122,136	135,979	156,447	182,262	93,178	1.4
Warren	6,645	8,425	12,177	13,157	15,289	18,371	11,726	2.1
Total	108,538	120,152	150,835	165,943	193,926	234,447	125,909	1.6

Sources: U.S. Census Bureau; Gruen Gruen + Associates.

The growth in housing units between 1960 and 2010 mirrored the pattern of the growth in households. Total housing units grew by 1.6 percent annually from 1960 to 2010, increasing by nearly 126,000 units overall from 108,500 units to 234,400 units. Although Polk County contains the majority of housing units in the region, the growth of housing units in Polk County has been slower than that of Dallas and Warren Counties. These two counties experienced housing unit growth of over two percent annually; consequently the amount of housing stock in the two counties tripled over the 50 year period to collectively comprise about 20 percent of the region's housing units.

The creation of new housing occurred most rapidly over the prior decade of the 2000s, during which the regional housing supply increased by approximately 49,000 units at an annual rate of 2.4 percent. The housing stock of Dallas County and the western suburbs of Des Moines grew considerably. The number of units in Dallas County grew at an annual rate of 5.1 percent, with an average of nearly 1,110 units added each year.

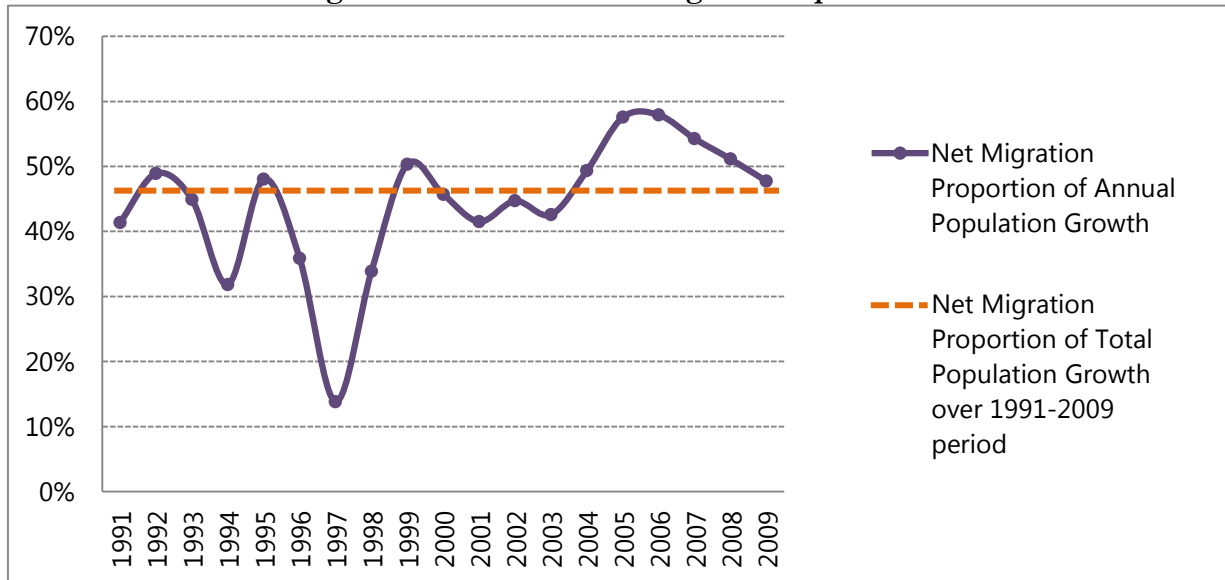
The addition to the supply of housing units has increased faster than the increase in population over the 50-year period from 1960 to 2010. For the period 1990 to 2010, the number of households formed increased by 60,909, while the supply of housing units increased by 68,504. The supply of housing stock exceeds the amount of occupied housing by seven percent. By not reducing supply, below an equilibrium level with demand through the planning or regulatory process, and, therefore, causing prices to increase, a competitive housing market in the greater Des Moines region has been created.



COMPONENTS OF HISTORICAL POPULATION GROWTH

As summarized below in Figure III-2, positive net migration to the Greater Des Moines region represented approximately 46 percent of all population growth throughout the prior decades of the 1990s and 2000s.

FIGURE III-2: Net Migration Contribution to Regional Population Growth



According to the Census Bureau's Population Estimates Division, from July of 2004 through July of 2008, positive net migration to Greater Des Moines accounted for more than 55 percent of growth, with average annual net migration approximating 5,800 persons. Net migration peaked in 2006 at 6,400 persons, or 58 percent of annual population growth.

The rate of natural population increase (i.e., births minus deaths) remained positive and relatively stable over the prior decades, generally ranging from 7-to-9 per 1,000 people.

Table III-4 below summarizes the components of population growth by county for the Greater Des Moines region from 1990 through 2009.



TABLE III-4

Components of Population Growth by County: 1990-2009

County	Estimated Population Growth 1990-2009 #	Net Domestic and International Migration		Natural Increase ¹	
		#	%	#	%
Dallas	32,195	25,068	77.9	7,127	22.1
Madison	2,926	2,449	83.7	477	16.3
Polk	102,299	34,125	33.4	68,174	66.6
Warren	9,242	6,019	65.1	3,223	34.9
Total	146,662	67,662	46.1	79,000	53.9

¹ Relationship between births and deaths. A positive natural increase indicates more births than deaths.
Sources: U.S. Census Bureau, *Population Estimates Division*; Gruen Gruen + Associates.

Positive net migration has especially driven historical population growth in Dallas County, accounting for nearly 84 percent of all growth that occurred throughout the 1990 to 2009 period. This has been driven by the job growth in Dallas County reviewed in Chapter II.

Unlike other portions of the region, growth in Polk County has been primarily stimulated by a consistent natural increase in the population (especially during the early 2000s, when the rate of natural increase was considerably higher than other parts of the region). In Polk County, birth and death rates were relatively stable leading to a consistently high rate of natural increase (at over eight persons per thousand). In Dallas County, an increase in birth rates also occurred after 2004. The birth rate in Dallas County increased from approximately 13 births per 1,000 people in 2004 to nearly 17 births per 1,000 people in 2008. Over this same period, birth rates in each of the other three counties remained essentially stable or declined.

Growth Supported by Intra-State Immigration

Table III-5 below summarizes migration patterns by geography during the most recent period for which county-to-county data is available.



TABLE III-5

Geographic Source of Net Migration to the Greater Des Moines Region¹

	2005 %	2006 %	2007 %	2008 %	2009 %	Total 2005-2009 %
State of Iowa	66.2	74.8	71.7	83.7	93.5	77.0
Another State / Foreign	33.8	25.2	28.3	16.3	6.5	23.0

¹ Population migration estimates by geography are based on the total number of exemptions claimed on federal income tax returns. The estimates are not exact, as they under represent some segments of the population such as the elderly and the poor (which may not have income to claim), but are reported to cover 95 to 98 percent of the individual income tax filing population.

Sources: Internal Revenue Service, *Statistics of Income Division*; Gruen Gruen + Associates.

Although positive net migration has accounted for half of historical growth, it does not relate to people and households throughout the Midwest and nation moving to Des Moines. It is within the State of Iowa from which largest sources of positive net migration are originating. Over the 2005 to 2009 period, according to Internal Revenue Service migration data, approximately three-quarters, or 77 percent, of net migration to the Greater Des Moines region originated from within the State of Iowa. Over the longer period of 1960 to 2010, Des Moines' share of the State's population has increased from 11.7 percent in 1960 to 18.4 percent in 2010, further evidencing the pattern of urbanization.

TTP PLANNING AREA POPULATION AND HOUSEHOLD GROWTH

Table III-6 presents the population and household growth trends for the smaller TTP Planning Area between 1990 and 2010. The population in the TTP Planning Area comprises approximately 86 percent of the region's population and households.



TABLE III-6

The Tomorrow Plan Planning Area Population and Households¹

	1990 #	2000 #	2010 #	Average Annual Growth Rate %
Population	341,172	398,196	479,298	1.7
Households	134,083	158,015	188,711	1.7
Housing Units	141,082	165,814	202,033	1.8
Housing Vacancy	4.9%	4.7%	6.6%	

¹ Based on block-level data from each decennial census.

Sources: U.S. Census Bureau, *1990 Census*, *2000 Census*, *2010 Census*; Gruen Gruen + Associates.

The TTP Planning Area currently contains a population of approximately 479,000, a total of 188,700 households, and 202,000 housing units. Since 1990, the population of the TTP Planning Area has increased by approximately 138,000, or 41 percent. This equates to an average annual growth rate of 1.7 percent. The number of households increased by 54,600, or 41 percent, between 1990 and 2010. The number of housing units increased at a slightly higher rate of 1.8 percent annually. The housing vacancy rate increased to 6.6 percent in 2010, from only 4.7 percent in 2000.

Table III-7 presents the population and household growth trends for the communities within the smaller TTP Planning Area between 1990 and 2010.



TABLE III-7

**Population and Household Growth by Community
Within the Des Moines TTP Planning Boundary¹**

Community	POPULATION				HOUSEHOLDS			
	1990 #	2000 #	2010 #	<i>Average. Annual Growth Rate 1990- 2010 %</i>	1990 #	2000 #	2010 #	<i>Average. Annual Growth Rate 1990- 2010 %</i>
Altoona	7,191	10,345	14,541	3.6	2,480	3,850	5,459	4.0
Ankeny	18,583	27,117	45,582	4.6	6,858	10,339	17,433	4.8
Bondurant	1,584	1,846	3,860	4.6	530	659	1,362	4.8
Carlisle	3,236	3,497	3,876	0.9	1,219	1,338	1,474	1.0
Clive	7,462	12,855	15,447	3.7	2,839	4,752	5,754	3.6
Cumming	133	162	351	5.0	44	65	128	5.5
Des Moines	193,187	198,682	203,433	0.3	78,587	80,504	81,369	0.2
Grimes	2,653	5,098	8,246	5.8	980	1,887	3,115	6.0
Johnston	4,702	8,649	17,278	6.7	1,823	3,216	6,369	6.5
Mitchellville	1,646	1,715	2,254	1.6	559	650	651	0.8
Norwalk	5,725	6,884	8,945	2.3	1,908	2,344	3,261	2.7
Pleasant Hill	3,676	5,070	8,785	4.5	1,322	1,900	3,395	4.8
Polk City	1,908	2,344	3,418	3.0	604	826	1,232	3.6
Urbandale	23,500	29,072	39,463	2.6	8,995	11,484	15,596	2.8
Waukee	2,512	5,126	13,790	8.9	971	1,927	5,154	8.7
West Des Moines	31,695	46,403	56,609	2.9	12,918	19,826	24,311	3.2
Windsor Heights	5,190	4,805	4,860	-0.3	2,267	2,163	2,167	-0.2
TOTAL²	314,583	369,670	450,738	1.8	124,904	147,730	178,230	1.8

¹ Note that incorporated boundaries may have changed over time, and therefore some growth may be attributed to annexations.

² Total does not include unincorporated portions of the TTP planning area.

Sources: U.S. Census Bureau, 1990 Census, 2000 Census, 2010 Census; Gruen Gruen + Associates.

The TTP Planning Area has grown slightly faster than the greater Des Moines region (1.8 percent for TTP versus 1.6 percent for the region). The City of Des Moines remains the largest community in the region, accounting for 45 percent of the population and 46 percent of households. The growth within the City of Des Moines over the past 20 years has been slow, at less than one-half percent; thus, just eight percent of the increase in total population is attributable to the population increase within Des Moines. West Des Moines and Ankeny grew by nearly 52,000 persons from 1990 to 2010, accounting for 40 percent of total population growth. Urbandale comprised another 10 percent of the population growth, increasing by nearly 16,000 persons.

Household growth in the TTP Planning Area has been consistent with population growth. The total numbers of households in the TTP Planning Area increased by over 53,000 from 1990 to 2010. West Des Moines and Ankeny accounted for approximately 41 percent of this additional growth with the addition of 11,393 households and 10,575 households respectively. Urbandale accounted



for another 12 percent of the additional household growth with the addition of approximately 6,600 households.

Most communities experienced more rapid household growth than population growth, resulting in lower average household sizes. The exception is the City of Des Moines, which had more rapid population growth than household growth; its average household size increased from 2.45 in 1990 to 2.5 in 2010. Cities such as Ankeny, Clive, and Johnston have larger average household sizes of 2.61, 2.68, and 2.71, respectively.

Approximately 61 percent of all housing units added over the prior two decades were located in four communities: West Des Moines, Ankeny, Urbandale, and Des Moines. Table III-8 presents the number of housing units by community in 1990 and 2010.



TABLE III-8**Housing Units Added by Community Within the Des Moines TTP Planning Boundary¹**

Community	Housing Units 1990 #	Housing Units 2010 #	Units Added 1990-2010 #	Proportion of Total Units Added 1990-2010 %
Altoona	2,582	5,702	3,120	5.2
Ankeny	6,994	18,339	11,345	19.0
Bondurant	549	1,422	873	1.5
Carlisle	1,229	1,524	295	0.5
Clive	2,927	6,077	3,150	5.3
Cumming	56	136	80	0.1
Des Moines	83,289	88,729	5,440	9.1
Grimes	1,005	3,272	2,267	3.8
Johnston	1,881	6,618	4,737	7.9
Mitchellville	591	693	102	0.2
Norwalk	1,914	3,450	1,536	2.6
Pleasant Hill	1,323	3,587	2,264	3.8
Polk City	620	1,276	656	1.1
Urbandale	9,296	16,319	7,023	11.7
Waukee	1,008	5,378	4,370	7.3
West Des Moines	13,666	26,219	12,553	21.0
Windsor Heights	2,30	2,289	-13	0.0
TOTAL²	131,232	191,030	59,798	100.0
¹ Note that incorporated boundaries may have changed over time, and therefore some growth may be attributed to annexations.				
² Total does not include unincorporated portions of the TTP planning area.				
Sources: U.S. Census Bureau, <i>1990 Census</i> , <i>2010 Census</i> ; Gruen Gruen + Associates.				

Growth to the west and north of the City of Des Moines in the cities of Ankeny and West Des Moines has added nearly 24,000 housing units over the 20 year period, more than double the number of units added in the City of Des Moines.



CHAPTER IV

LABOR FORCE AND HOUSING

RELATIONSHIP BETWEEN JOBS AND HOUSING

The relationship between the number of jobs and the amount of housing available indicates how well an area or region is providing sources of employment that enable a high proportion of the resident labor force to work near their place of employment and enjoy a relatively short commute. Interrelated factors - including the level and kind of economic development, land use policy, and the amount and type of residential development - influence the extent to which a region or area can house jobs. The quality and quantity of the labor force and housing, in turn, bear on the prospects for economic development. The specific characteristics of the labor pool, such as educational level, skill mix, and income range, influence the kinds of businesses that can successfully operate in a region.

A region is generally considered to have a sustainable jobs-housing balance if the ratio of jobs to housing units is 1.5.⁸ While jobs to housing relationships will vary given differences among communities in labor force, social, and economic characteristics, transportation linkages, geographical constraints, and political factors, the generally accepted ratio for a balanced relationship between jobs and housing tends to fall within 1.3-to-1.7-jobs-per-housing unit.⁹ Areas with significantly higher jobs-to-housing ratios do not have an adequate amount of housing supply to meet the needs of the local work force. Such areas must import a higher proportion of labor which, all else being equal, tends to generate greater levels of congestion that result from patterns of in-commuting. Increasing jobs-to-housing ratios also tend to put upward pressure on housing costs, as less housing supply is available than typically needed to accommodate typical demands generated by the local employment base.

Table IV-1 summarizes the jobs-to-housing ratio for the Des Moines MSA from 1990 to 2010. Overall, the region has maintained an appropriate balance of jobs and housing over the past two decades.

⁸ See, for example, “Jobs-Housing Balances and Regional Mobility”, Robert Cervero, Institute of Urban and Regional Development University of California at Berkeley, *APA Journal*, spring 1989, pp.136-150.

⁹The August 2008 *Urban Land* “Mixing It Up” article indicates the ideal jobs-housing ratio is generally between 1.2 and 1.4 jobs per housing unit and that sites or communities with an integrated set of land uses minimize traffic generation and increase “capture internal rates” for services, retail, restaurants and other uses. (“Mixing It Up,” *Urban Land*, Walters, Jerry, Ewing, Reid. August 2008, p. 126).



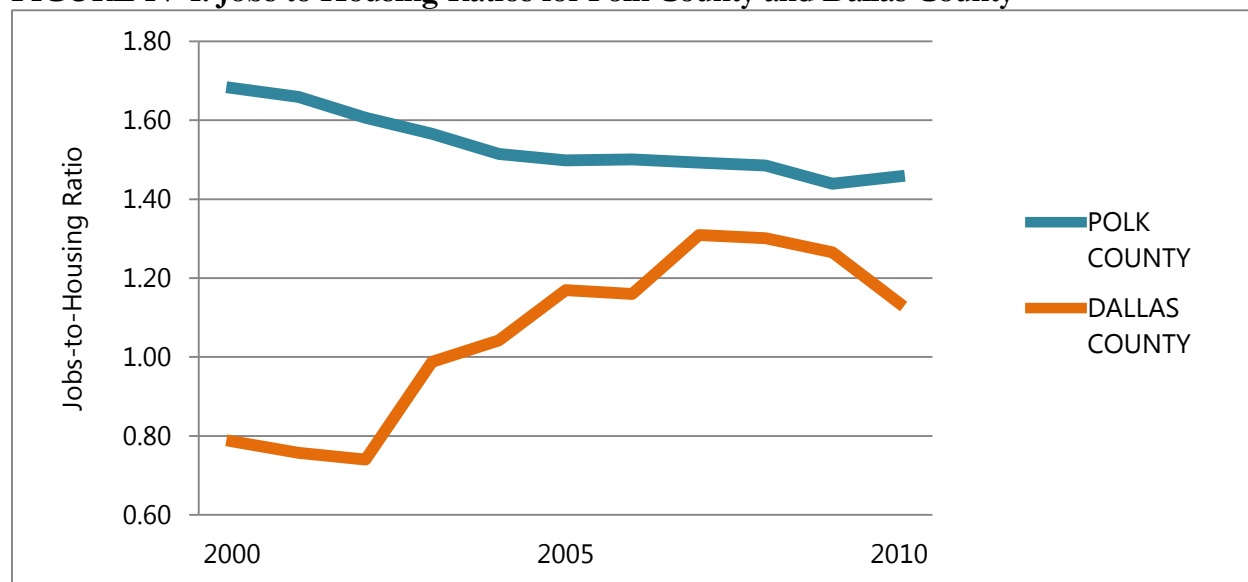
	1990 #	1995 #	2000 #	2005 #	2010 #	Change 1990-2010 #
Jobs	235,700	267,600	290,700	305,900	315,100	79,400
Housing Units	171,100	184,700	199,400	225,200	240,200	69,100
<i>Jobs-Housing Ratio</i>	<i>1.38</i>	<i>1.45</i>	<i>1.46</i>	<i>1.36</i>	<i>1.31</i>	<i>-0.07</i>

Sources: U.S. Census Bureau; Iowa Department of Workforce Development;
Gruen Gruen + Associates.

Between 1990 and 2000, the region added 65,000 jobs and approximately 28,000 housing units. This equated to approximately 2.3 additional jobs for each additional housing unit supplied. Accordingly, during the 1990s, the regional jobs-to-housing balance increased slightly from 1.38 in 1990 to 1.46 in 2000. The opposite occurred between 2000 and 2010, a decade during which considerably more housing units than jobs were added within the region. From 2000 to 2010, 24,000 jobs were added while approximately 41,000 housing units were added, producing a jobs-housing ratio of 1.31.

Consistent with employment growth patterns reviewed previously in Chapter II, the trajectory of the jobs-to-housing balance in both Dallas and Polk counties has differed over the past 10 years.

FIGURE IV-1: Jobs to Housing Ratios for Polk County and Dallas County



The jobs-housing balance in Polk County consistently declined between 2000 and 2010, decreasing from approximately 1.7 jobs per housing unit in 2000 to approximately 1.45 jobs per housing unit by 2010. The jobs-housing balance in Dallas County increased significantly during the early 2000s. Between 2002 and 2007, the jobs-to-housing ratio increased from 0.75 to 1.3. Similar longer-term patterns are evident at a smaller geographic level. As summarized below in Table IV-2, the major western suburban communities of West Des Moines and Urbandale have experienced rising jobs-to-housing levels, while the City of Des Moines' jobs-housing balance has declined over time.



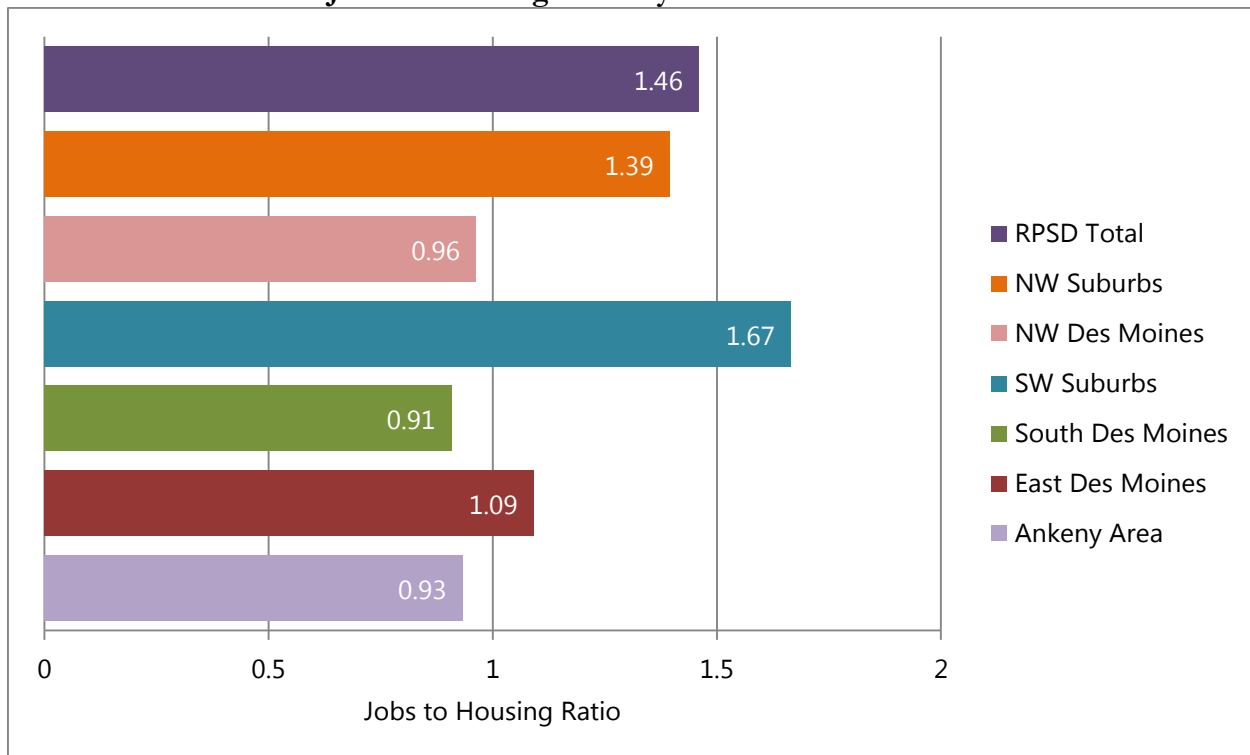
Community	1990 Jobs-Housing Ratio	2010 Jobs-Housing Ratio
Altoona	0.8	1.3
Ankeny	1.3	1.0
Clive	2.0	2.4
Des Moines	1.8	1.6
Johnston	2.1	1.6
Pleasant Hill	0.6	0.9
Urbandale	0.9	1.4
Waukee	0.5	0.5
West Des Moines	1.7	1.8
Sources: U.S. Census Bureau, 1990 Transportation Planning Package, 2010 Census; InfoUSA; Gruen Gruen + Associates.		

Ankeny, for example, has evolved as primarily a bedroom community that has seen a decline in its jobs-to-housing balance over time. Altoona, although still smaller in absolute terms when compared to other portions of the TTP Planning Area, has experienced an increase over time in the relationship between jobs and housing. Clive is the most employment-intensive community within the TTP Planning Area, and has seen its jobs-housing balance increase by approximately 20 percent over the past two decades.

Figure IV-2 below summarizes the current jobs-to-housing ratio for each of the TTP Planning Area subareas.



FIGURE IV-2: Current Jobs to Housing Ratio by TTP Subarea¹



¹ Based on estimates of housing units from the 2010 Census, and current 2011 estimates of employment. Subarea 3 (the CBD) is not depicted on the chart but includes a jobs-to-housing ratio of 12.4.

The current jobs-to-housing ratio for the TTP Planning Area approximates 1.5. With the exception of the Des Moines Central Business District, the current jobs-housing balance in each of the subareas ranges from approximately 0.9 to 1.7. The jobs-housing balance in the Central Business District approximates 12 jobs per housing unit.



LABOR FORCE CHARACTERISTICS AND TRENDS

Table IV-3 summarizes the occupational make-up of resident workers from 2000 to 2009.

Occupation	2000		2005-2009 ¹	
	#	%	#	%
Management, Business and Financial Operations	33,002	16.4	40,566	17.4
Professional and Related	40,671	20.3	50,433	21.6
Services ²	27,182	13.5	32,654	14.0
Sales and Related	24,729	12.3	30,292	13.0
Office and Administrative Support	37,712	18.8	39,638	17.0
Farming, Fishing and Forestry	393	0.2	369	0.2
Construction, Extraction and Maintenance	14,973	7.5	16,176	6.9
Production, Transportation and Material Moving	22,129	11.0	23,276	10.0
Total	200,791	100.0	233,404	100.0
¹ Estimates based on the 5-year (2005-2009) American Community.				
² Non-professional services, generally including protective service, healthcare support, food service, personal care and building service-related occupations.				
Sources: U.S. Census Bureau; Gruen Gruen + Associates.				

Consistent with the educational attainment and housing data described below, an increasing proportion of the labor force is in “white collar” occupations such as executive, managerial, and professional occupations. The the lowest proportion of residents is in crafts, or operators, transportation or laborer-type jobs, typically “blue collar” occupations. The labor force occupations and the jobs by industry sector mesh reasonably well. Two-thirds of the employment base is in the finance, insurance, and real estate and services sector, and over 80 percent of the resident labor force is in non-production, craft, laborer, or operator type jobs.

The collective labor shed served by employers located in the TTP Planning Area extends beyond its boundary. The TTP Planning Area contains approximately 60,000 more jobs than resident labor force members. As summarized below in Table IV-4, a relatively large share (approximately 20 percent) of labor is imported.



Sector	Resident Workers ¹ 2009 #	Jobs 2009 #	Export (Import) of Workers 2009 #
Construction and Natural Resources	9,100	10,700	(1,600)
Manufacturing	15,600	17,300	(1,700)
Wholesale Trade	11,700	15,900	(4,200)
Retail Trade	26,500	34,700	(8,200)
Transportation and Utilities	7,600	9,700	(2,100)
Information	7,700	9,400	(1,700)
Financial Activities	37,500	46,500	(9,000)
Professional and Business Services	26,500	35,400	(8,900)
Educational and Health Services	49,500	59,200	(9,700)
Leisure and Hospitality	21,700	26,600	(4,900)
Other Services	8,400	10,500	(2,100)
Government	9,100	11,700	(2,600)
Total	230,900	287,600	(56,800)
¹ Employed resident workers.			
Sources: U.S. Census Bureau, <i>Longitudinal-Employer Household Dynamics</i> ; Gruen Gruen + Associates.			

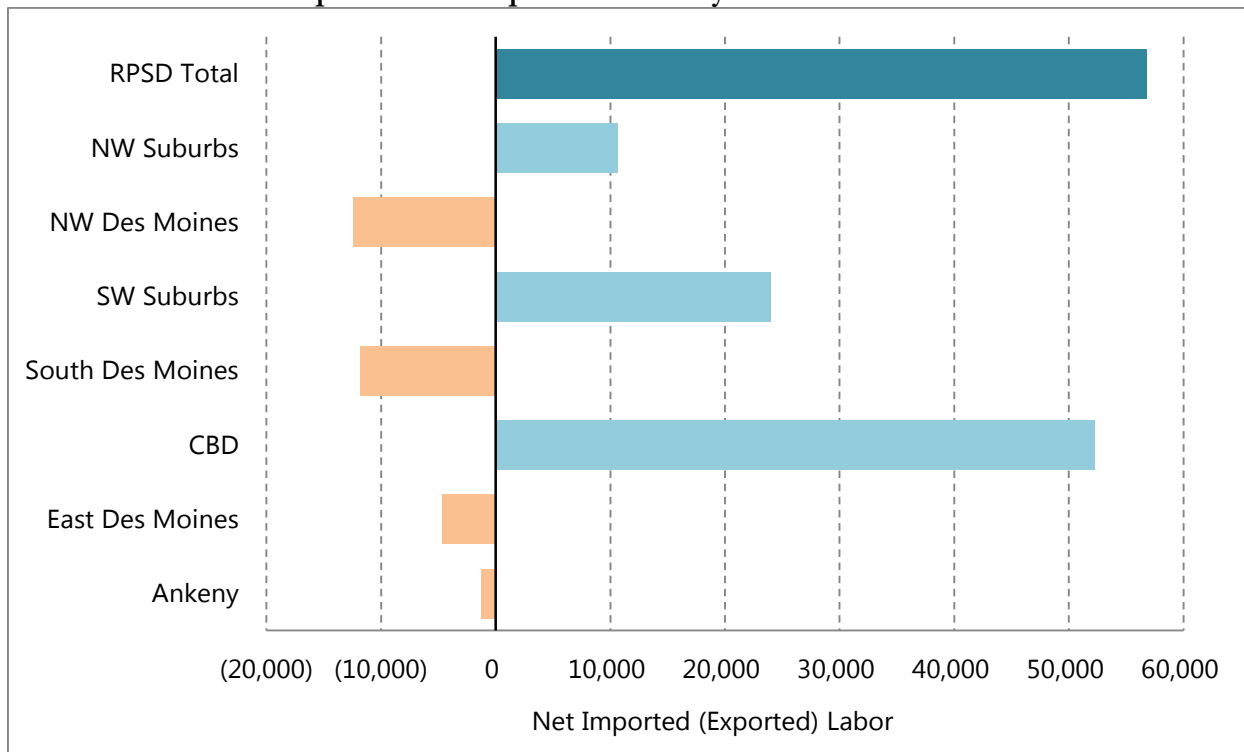
In 2009, no industry sector contained a larger resident workforce than employment base. Accordingly, all sectors of the TTP Planning Area employment base import labor from the surrounding areas outside the TTP Planning Area. The sectors that rely most heavily on imported labor include: (1) trade (wholesale and retail); (2) professional and business services; and, (3) government.

Within the TTP Planning Area, clear patterns of labor transfer exist. Three subareas – the Central Business District, Southwest Suburbs, and Northwest Suburbs – import labor. In other words, the number of non-resident workers that commute into each area for employment is greater than the number of resident workers that leave. For example, the Southwest Suburbs import approximately 25,000 workers. To a lesser extent, the Northwest Suburbs exhibit a similar pattern. The Des Moines Central Business District, with a limited household base, imports the greatest amount of labor, at just over 50,000 workers. This is not surprising or unusual given that the Des Moines Central Business District and Southwest Suburbs are the two largest employment centers in the region.



Other subareas of the TTP Planning Area export labor, especially Northwest Des Moines and South Des Moines. The Ankeny Area and East Des Moines export a much smaller amount of labor, suggesting a more stable balance between employment opportunities and housing.

FIGURE IV-3: Net Imported and Exported Labor by TTP Subarea



Given the patterns of labor transfer within the TTP Planning Area, both internally and externally, some subareas currently exhibit a greater propensity for resident workers to hold jobs closer to where they live. Table IV-5 below summarizes the proportion of employed residents that both live and work in the same geographic subarea. It also illustrates – for those that are not employed in their subarea of residence – where these workers presently commute for employment.



TABLE IV-5

**Proportion of Residents who Work in Their
Subarea of Residence and Top Commute Destinations¹**

Subarea	Proportion of resident workers who are employed in their subarea of residence %	Largest commute destination of resident workers Subarea (%)	Second largest commute destination of resident workers Subarea (%)
Ankeny Area	21.7	CBD (14.8)	SW Suburbs (13.9)
East Des Moines	24.1	CBD (15.9)	SW Suburbs (13.8)
Des Moines CBD	28.5	SW Suburbs (16.3)	NW Des Moines (11.8)
South Des Moines	15.9	CBD (19.8)	SW Suburbs (18.2)
SW Suburbs	34.0	CBD (17.3)	NW Suburbs (12.1)
NW Des Moines	14.3	SW Suburbs (19.6)	CBD (19.2)
NW Suburbs	24.6	SW Suburbs (22.6)	CBD (15.6)

¹ The figures presented in this table represent the proportion of the resident workforce of each subarea that is either (a) employed *within* their subarea of residence or (b) is employed *outside* their subarea of residence (second and third columns). Thus, the figures can be interpreted as follows: Approximately 22 percent of Ankeny's labor force is employed within Ankeny; an additional 15 percent of Ankeny's labor force is employed within the CBD; and another 14 percent is employed in the Southwest Suburbs.

Sources: U.S. Census Bureau, *Longitudinal-Employer Household Dynamics*;
Gruen Gruen + Associates.

The Southwest Suburbs include the largest proportion of resident workers employed within its subarea at 34 percent. The Des Moines Central Business District includes the second highest proportion at approximately 29 percent. Approximately 20 to 25 percent of workers residing in the Ankeny Area, East Des Moines, and the Northwest Suburbs are employed in their respective subarea of residence. South Des Moines and Northwest Des Moines each contain a smaller share of resident workers that are employed near their residence. Not surprisingly, the Central Business District and Southwest Suburbs are the two primary commute destinations of resident workers not employed in their subareas of residence. Discussions with City of Des Moines representatives indicate that large employers have located or remained in the Des Moines Central Business District because meaningful proportions of their workforce are attracted from other areas of the City, including increasingly the south and east sides of the City.

Commutation Patterns

Table IV-6 presents the commute time of the labor force in the TTP Planning Area from 1990 to 2009.



Commute Time	1990 %	2000 %	2005-2009 ¹ %	Shift Percentage Points
Less than 15 minutes	37.90	36.40	34.40	-3.50
15 to 24 minutes	43.80	42.70	42.30	-1.50
25 to 34 minutes	13.70	15.00	17.10	3.40
35 minutes or more	4.60	5.90	6.20	1.60
Total	100.0	100.0	100.0	na
¹ Estimates based on the 5-year (2005-2009) American Community.				
Sources: U.S. Census Bureau; Gruen Gruen + Associates.				

Commute times have remained relatively stable over the past 20 years in the TTP Planning Area, although they have lengthened slightly. The preponderance of resident workers – 77 percent – spend fewer than 25 minutes commuting to work. In 1990, approximately 82 percent of resident workers had a commute of less than 25 minutes. As job attracting agglomerations have formed to the north and west outside the City of Des Moines, the proportion of the resident labor force commuting further away has slightly increased.

Educational Attainment of Labor Force

Table IV-7 presents educational attainment levels for residents in the TTP Planning Area from 1990 to 2009.

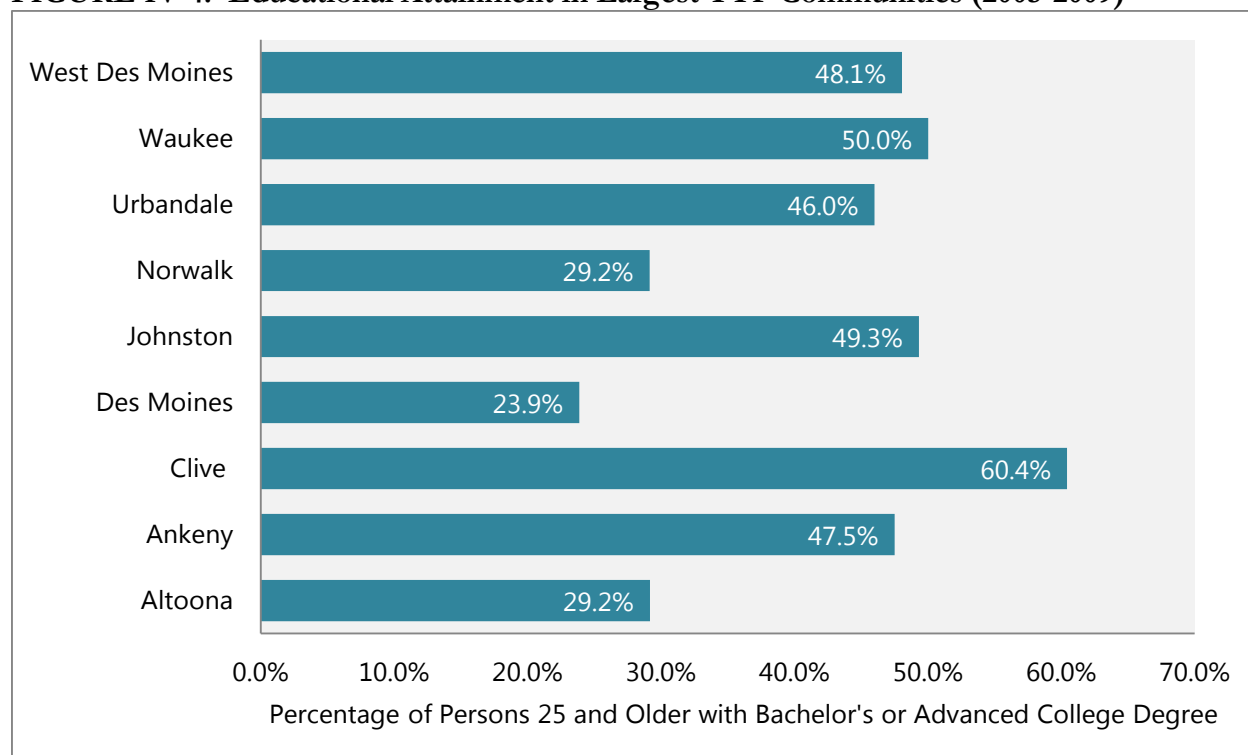
	1990 %	2000 %	2005-2009 ¹ %	Shift Percentage Points
Less than High School	14.2	11.3	8.7	-5.5
High School Graduate or Higher	61.4	57.9	56.4	-5.0
Bachelor's Degree	16.9	21.9	25.1	+8.2
Advanced Degree	7.4	8.9	9.8	+2.4
Total	100.0	100.0	100.0	
¹ Estimates based on the 5-year (2005-2009) American Community.				
Sources: U.S. Census Bureau; Gruen Gruen + Associates.				

The proportion of residents by educational level shows that the proportion of high school graduates and less than high school graduates has declined as the proportion of residents with bachelor's and advanced college degrees has increased over the nearly 20-year period. More than 90 percent of the TTP Planning Area population now has a high school degree. By 2009, over one-third of the



population had a college degree.¹⁰ Figure IV-4 shows that Clive, Waukee, Johnston, West Des Moines, and Urbandale have a higher proportion of college degreed residents than for the TTP Planning Area as a whole. These five communities have over 45 percent of residents with bachelor’s level or higher degrees.

FIGURE IV-4: Educational Attainment in Largest TTP Communities (2005-2009)



Housing Values and Affordability

Table IV-8 shows median home values by community from 1990 to 2009.

¹⁰ By comparison, only 24 percent of Iowa residents (aged 25 and older) possess a bachelor’s or advanced college degree. Approximately 27 percent of all U.S. residents possess a bachelor’s or advanced degree.



TABLE IV-8

Median Value of Owner-Occupied Housing Units by Community¹

Community	1990 \$	2000 \$	2005-2009 ² \$	Average Annual Growth Rate %
Altoona	62,500	113,300	156,800	5.6
Ankeny	70,200	123,600	171,500	5.4
Bondurant	54,900	92,400	150,900	6.1
Carlisle	58,500	92,600	132,200	4.9
Clive	104,500	177,700	230,500	4.8
Cumming	46,900	69,200	221,700	9.6
Des Moines	49,000	79,900	115,200	5.2
Grimes	60,300	108,000	154,800	5.7
Johnston	96,000	187,400	238,700	5.5
Mitchellville	54,100	93,800	127,300	5.2
Norwalk	59,900	105,500	155,800	5.8
Pleasant Hill	67,600	117,300	170,900	5.6
Polk City	56,400	109,800	158,600	6.3
Urbandale	86,500	131,100	184,600	4.6
Waukee	65,900	120,000	189,000	6.4
West Des Moines	90,100	137,800	181,200	4.2
Windsor Heights	77,500	120,900	164,900	4.5

¹ Values presented in nominal dollars (i.e. unadjusted for inflation).

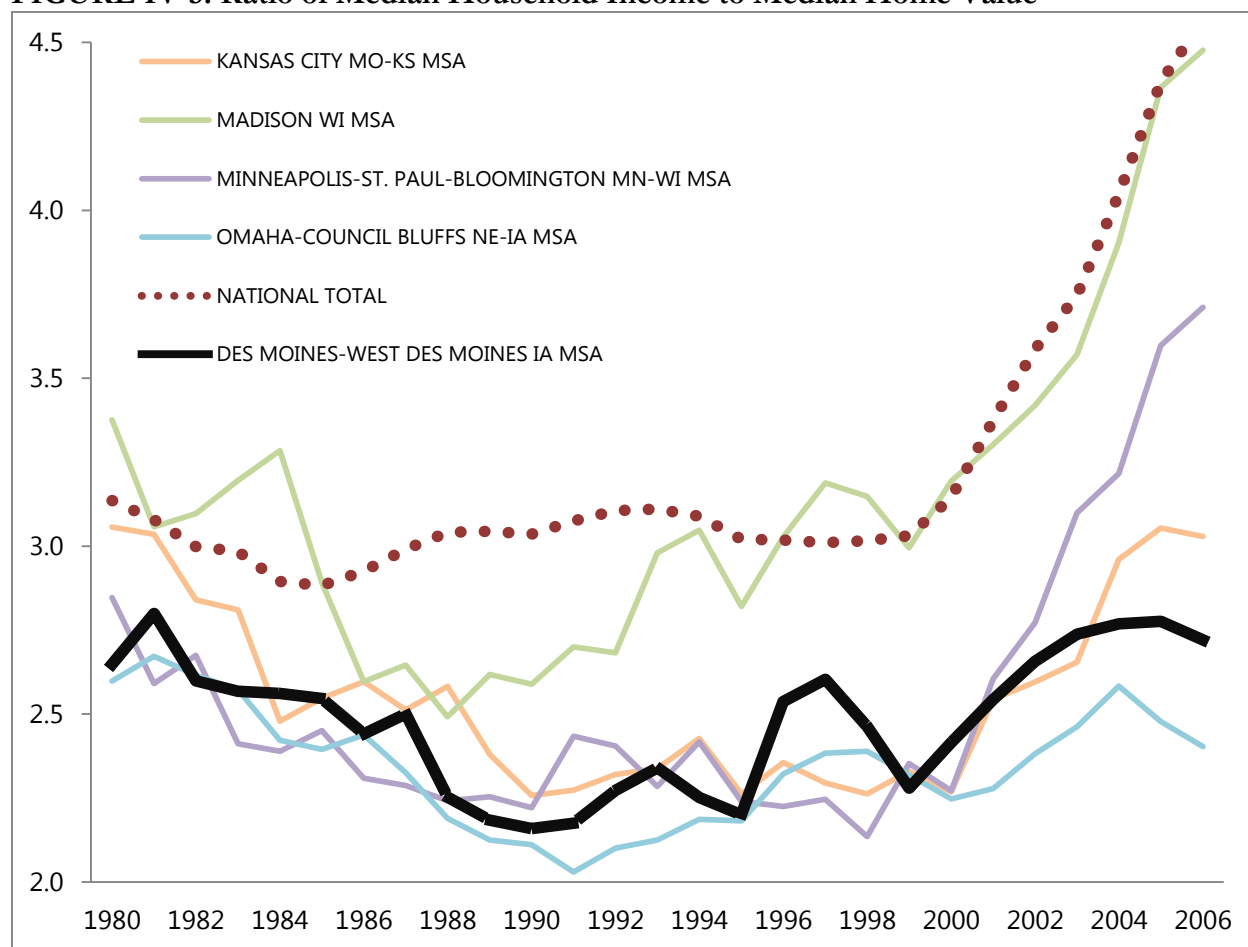
² Estimates based on the 5-year (2005-2009) American Community. Represents the median of ACS survey responses collected over the entire period, and thus cannot be specified for any one point in time. Average annual growth rate assumes the median value applies to 2007 (the midpoint of the survey period).

Sources: U.S. Census Bureau; Gruen Gruen + Associates.

The highest median home values prevail in the western suburbs including the communities of Clive, Johnston, Waukee, and West Des Moines. Median values of owner-occupied units are estimated to exceed \$200,000 in Johnston, Clive, and Cumming. As noted earlier, Johnston and Clive also exhibit two of the highest jobs-to-housing ratios in the region. Median home values have grown fastest in Cumming, at nearly 10 percent annually since 1990. The City of Des Moines has the lowest home values over the 20 year period, although median values in this community have increased at an average annual rate of five percent.

By maintaining a relatively stable jobs-housing balance and moderate rate of income and employment growth, the Des Moines region has established an affordable housing market. Figure IV-5 below illustrates the relationship between household income and housing costs in the region.



FIGURE IV-5: Ratio of Median Household Income to Median Home Value

In the early 2000s when housing costs escalated dramatically nationwide – and also in some Midwest metro areas such as Minneapolis – the ratio of median income to housing value in Des Moines increased only minimally. Not once in the past 30 years have median home prices in Des Moines escalated above 300 percent of annual median household incomes.

Today, according to the 2010 American Community Survey, the majority of households that own housing in Greater Des Moines spend less than 20 percent of their annual income on housing costs. Table IV-9 summarizes housing costs as a percentage of income.



TABLE IV-9

Housing Costs as a Percentage of Household Income in the Des Moines MSA: 1990-2010

<i>% of Income</i>	Owner Occupied ¹		Renter Occupied ²	
	1990 %	2010 %	1990 %	2010 %
Less than 20.0	58.7	50.6	34.2	28.7
20.0 to 24.9	17.7	14.8	16.7	12.7
25.0 to 29.9	9.6	10.8	12.5	12.7
30.0 to 34.9	4.9	6.7	8.6	12.2
35.0 or more	9.1	17.1	28.0	33.7
¹ Owner costs include debt (where applicable), real estate taxes, insurance, and utilities.				
² Renter costs represent gross rent (contract rent plus utility expenses).				
Sources: U.S. Census Bureau, 1990 Census, 2010 American Community Survey; Gruen Gruen + Associates.				

More than three-quarters, or approximately 76 percent, of Des Moines households that own housing spend less than 30 percent of their annual income on housing. By comparison, only 69 percent of owner occupied households in the United States spend less than 30 percent of their annual household income on housing. Similarly, rental housing in Greater Des Moines is more affordable. In 2010, approximately one-third of renter households in Des Moines spent 35 percent or more of their income on rent and utilities. Nearly 44 percent of renter households nationwide spent 35 percent or more of their income on rent and utilities.



CHAPTER V

ANALYSIS OF RETAIL SALES TRENDS

PURPOSE

The analysis of retail sales trends provides a framework for assessing the relative strengths, weaknesses, and shifts within the retailing base of the Des Moines region, given the population, housing, and employment trends described in the prior chapters. The analysis identifies which areas in the region are capturing or leaking more sales dollars than would be expected from local expenditure potential alone.

TAXABLE RETAIL SALES BY CATEGORY

Table V-1 presents changes in Des Moines taxable retail sales by community from 1998 through 2010.

TABLE V-1								
Annual Retail Sales by Community for the Des Moines Region (in 2011 \$000's)								
City	1998 \$	2000 \$	2002 \$	2004 \$	2006 \$	2008 \$	2010 \$	Annual Growth %
Des Moines	5,442,794	5,381,528	4,737,063	4,155,854	3,922,942	3,644,226	3,232,262	-4.3
West Des Moines	971,562	1,124,754	1,089,440	1,087,895	1,407,100	1,467,710	1,543,074	3.9
Ankeny	306,449	363,219	420,353	494,427	576,034	591,116	647,007	6.4
Urbandale	355,635	387,532	490,327	536,990	570,979	588,812	615,091	4.7
Clive	250,855	306,145	333,834	365,746	377,008	392,593	405,284	4.1
Johnston	66,461	101,137	109,267	131,683	141,337	182,832	159,461	7.6
Altoona	119,378	125,119	202,091	250,032	365,488	358,836	396,546	10.5
Grimes	33,624	65,734	122,983	135,949	196,723	136,391	119,057	11.1
Pleasant Hill	14,887	18,918	26,972	29,530	31,488	38,819	42,798	9.2
Windsor Heights	8,067	18,825	19,657	21,555	26,932	27,583	32,717	12.4
Other ¹	74,715	71,658	87,423	65,104	70,239	74,468	62,033	-1.5
<i>Total</i>	<i>7,644,427</i>	<i>7,964,571</i>	<i>7,639,410</i>	<i>7,274,766</i>	<i>7,686,271</i>	<i>7,503,386</i>	<i>7,255,329</i>	<i>-0.4</i>
¹ Includes communities of Bondurant, Runnells, Mitchellville, Elkhart, Alleman, and Carlisle.								
Sources: Iowa Retail Sales & Use Tax Report, Annual Fiscal Year, Iowa Department of Revenue, Tax Research and Fiscal Analysis Section; Gruen Gruen + Associates.								

Adjusted for inflation and reported in 2011 dollars, for even years between 1998 and 2010, taxable retail sales in Des Moines decreased at a 0.4 percent annual rate of growth to approximately \$7.3 billion dollars. The communities with the fastest growth rates of retail sales, each exceeding 10



percent annually, include Windsor Heights, Grimes, and Altoona. Retail sales in these three communities more than tripled over the 12 year period. The relatively small base of retail sales in these three communities, however, pushes up growth rates. Altoona experienced sales growth of approximately 12 percent annually, far in excess of its 3.5 percent annual population growth due to the addition of Bass Pro Shops in 2009. The next fastest growth occurred in Johnston, Ankeny, and Pleasant Hill, each exceeding five percent annually. Retail sales in these three communities more than doubled over the 12 year period. Sales in West Des Moines grew slightly faster, at three percent annually as compared to two percent annual population growth. Retail sales in West Des Moines grew by nearly four percent annually from 1998 to 2010. This faster retail sales growth is due to the presence of two major regional malls in West Des Moines. The only community to experience a decline in retail sales was the City of Des Moines. Retail sales declined by just over four percent annually; at a far faster rate than the population growth, which remained relatively stable. This decline in the Des Moines retail sales base corresponds with significant retail space growth outside the City of Des Moines during the 2000s decade.

Table V-2 presents the proportion of retail sales each community comprises of total sales within the Des Moines region from 1998 to 2010.

City	1998 %	2000 %	2002 %	2004 %	2006 %	2008 %	2010 %
Des Moines	71.2	67.6	62.0	57.1	51.0	48.6	44.6
West Des Moines	12.7	14.1	14.3	15.0	18.3	19.6	21.3
Ankeny	4.0	4.6	5.5	6.8	7.5	7.9	8.9
Urbandale	4.7	4.9	6.4	7.4	7.4	7.8	8.5
Clive	3.3	3.8	4.4	5.0	4.9	5.2	5.6
Johnston	0.9	1.3	1.4	1.8	1.8	2.4	2.2
Altoona	1.6	1.6	2.6	3.4	4.8	4.8	5.5
Grimes	0.4	0.8	1.6	1.9	2.6	1.8	1.6
Pleasant Hill	0.2	0.2	0.4	0.4	0.4	0.5	0.6
Windsor Heights	0.1	0.2	0.3	0.3	0.4	0.4	0.5
Other ¹	1.0	0.9	1.1	0.9	0.9	1.0	0.9
<i>Total</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
¹ Includes communities of Bondurant, Runnells, Mitchellville, Elkhart, Alleman, and Carlisle.							
Sources: Iowa Retail Sales & Use Tax Report, Annual Fiscal Year, Iowa Department of Revenue, Tax Research and Fiscal Analysis Section; Gruen Gruen + Associates.							

In 1998, the City of Des Moines accounted for the majority of retail sales in the region at approximately 71 percent. The next largest city source of retail sales was West Des Moines at



approximately 13 percent of retail sales. None of the other communities individually comprised more than five percent of total retail sales in the region. With the growth in population outside of the City of Des Moines since 1998, retail space and sales have grown proportionately more outside the City of Des Moines. As areas outside of the City of Des Moines have developed retail space, the proportion of the region's retail sales captured by the City of Des Moines declined to less than 50 percent by 2010. The City of West Des Moines' proportion of the region's total sales has climbed from nearly 13 percent in 1998 to almost 20 percent in 2010. Consistent with the rapid growth in the smaller communities, their respective shares increased as well, although none of the other communities besides Des Moines and West Des Moines make up individually more than 10 percent of the region's sales. Collectively, however, Ankeny and Urbandale have grown from eight percent of the region's sales to over 17 percent of sales in 2010. Nonetheless, the City of Des Moines and City of West Des Moines comprise approximately two-thirds of the region's retail sales base.

PER CAPITA RETAIL SALES

To further evaluate the relative strength and dynamics of retail sales, Table V-3 adjusts sales by the growth in population for municipalities in the region, by presenting estimated per capita sales to show the shift of locations of retail sales. Communities in the other category are not presented because, individually, each such municipality makes up a very small share of retail sales in the region.

City	2000 \$	2002 \$	2004 \$	2006 \$	2008 \$	2010 \$
Des Moines	27,086	23,846	21,469	20,130	18,439	15,889
West Des Moines	24,239	21,661	20,944	26,083	26,444	27,258
Ankeny	13,395	14,239	14,308	14,897	14,158	14,194
Urbandale	13,330	15,335	15,552	15,356	15,313	15,587
Clive	23,815	24,451	26,919	26,714	25,861	26,237
Johnston	11,694	10,674	10,610	9,776	11,735	9,229
Altoona	12,095	18,377	20,770	27,180	25,511	27,271
Grimes	12,894	23,165	23,379	28,253	16,202	14,438
Pleasant Hill	3,731	4,751	4,874	4,320	4,740	4,872
Windsor Heights	3,918	4,168	4,689	5,924	6,030	6,732
Sources: Iowa Retail Sales & Use Tax Report, Annual Fiscal Year, Iowa Department of Revenue, Tax Research and Fiscal Analysis Section; U.S. Census Bureau; Gruen Gruen + Associates.						



In 2000, Des Moines and West Des Moines had the two highest per capita retail sales bases at \$27,086 and \$24,239, respectively. Clive had the third highest per capita retail sales at \$23,815.¹¹ Communities whose retail sales growth outpaced population growth had increasing per capita sales. Conversely, communities whose retail sales growth was slower than population growth had declining per capita sales. Des Moines had slow population growth and declining retail sales over the 10 year period, so the per capita sales decreased by approximately 40 percent from \$27,086 in 2000 to \$15,889 in 2010. Conversely, West Des Moines experienced faster increasing retail sales than resident population growth. Altoona, which had per capita sales of \$12,095 in 2000, more than doubled its per capita sales to \$27,271 by 2010 with the opening of the 146,000-square-foot Bass Pro Shops in 2009. Altoona's per capita sales are currently the second highest in the region after West Des Moines. Retail sales in Ankeny have kept pace with population growth, so the per capita sales level has remained relatively level. Urbandale and Grimes have experienced faster retail sales growth than population growth, resulting in increasing per capita sales levels. As shown in Table VI-6 in Chapter VI, between 2007 and 2011, approximately 84 percent of the increase in retail space in the Des Moines region was in the Western Suburbs and Northeast Des Moines. This is consistent with the increasing per capita sales in the Western Suburbs of West Des Moines, Clive, Urbandale, Windsor Heights, and Grimes. Other than Des Moines, Johnston is the only western suburb community to have declining per capita sales. This is due to the proximity and strength of retail agglomerations outside of Johnston, such as Merle Hay Mall and Jordan Creek Mall serving the western suburbs. Most of the space growth in Northeast Des Moines was due to the previously mentioned opening of Bass Pro Shops in Altoona.

ESTIMATED LEAKAGE AND SALES SURPLUS

Estimating potential demand for retail goods and services requires estimating the population or households and income of the residents, workers, and visitors of the relevant market area. In this section, we present an analysis directed at obtaining an understanding of the relationship between potential purchasing power, or retail demand, and the level of expenditures for retail goods and services available within the TTP Planning Area and individual communities. To do so, we unrealistically assume the market area is comprised of residents of the TTP Planning Area or individual communities as a whole. An actual market area does not tend to conform to municipal boundaries but rather is the geographic area from which the customers or a shopping center or shopping agglomeration are drawn. Market areas are dynamic and tend to change as a function of the type and supply of other competitive retail centers or shopping areas. The travel time people are willing to accept also varies as a function of both the size and quality of the shopping agglomeration, its accessibility, and the relative uniqueness of its tenancies. Uniqueness, attraction, and accessibility are not measured in the abstract but are relative to competition.

Leakage refers to the condition of not all internally-generated demand being satisfied in the market area. Some potential demand within a market area is lost to retailers outside the market area as some local income is spent outside the local market area. Net surplus refers to the sales' excess, or the situation in which sales in the market area made to customers such as visitors and employees living outside the market area exceeds the amount of sales lost through leakage.

¹¹ Clive's sales per capita are comparatively high, in part, because of its' well-established agglomeration of automotive dealerships along Highway 6.



To estimate potential retail sales surplus or leakage and to identify which areas in the region generate higher sales than would be expected to occur given the estimated expenditure potential of their residents, we compare potential demand to actual sales. We have not included in the estimate of expenditure potential sales dollars originating from individuals that work in each city, but reside outside the city. Whatever dollars non-resident and visitors do expend in each city are currently included in the taxable sales data presented above.

Table V-4 presents, for each city, current population, income, and retail demand estimates. Estimating potential demand or retail expenditure potential also requires the identification of the proportion of income spent on retail goods and services. Based on the review of the results of the U.S. Department of Labor *Consumer Expenditure Survey*, a national survey, which estimates the percentage of household income spent on various goods and services, and an analysis of taxable sales for the State of Iowa and personal income for the State of Iowa, we estimate that approximately 27 percent of per capita income of the region's residents is expended on retail goods and services. We used this rate of expenditure potential and applied it to the total income for each city to estimate retail expenditure potential, or retail demand.

City	Population #	Per Capita Income ² \$	Total Income \$	Potential Purchasing Power for Retail Goods & Services ³ \$
Des Moines	203,433	24,357	4,955,017,581	1,337,854,700
West Des Moines	56,609	37,301	2,111,572,309	570,124,500
Ankeny	45,582	31,460	1,434,009,720	387,182,600
Urbandale	39,463	37,632	1,485,071,616	400,969,300
Clive	15,447	45,887	708,816,489	191,380,500
Johnston	17,278	38,624	667,345,472	180,183,300
Altoona	14,541	28,581	415,596,321	112,211,000
Grimes	8,246	29,843	246,085,378	66,443,100
Pleasant Hill	8,785	28,201	247,745,785	66,891,400
Windsor Heights	4,860	33,717	163,864,620	44,243,400
¹ Figures are rounded.				
² 2009 per capita income.				
³ Assumes 27 percent of total per capita income is expended on retail goods and services.				
Sources: U.S. Census Bureau, Census 2010 and 2005-2009 American Community Survey; Gruen Gruen + Associates.				

Total income ranges from nearly \$5 billion dollars in the City of Des Moines, \$2.1 billion dollars in the City of West Des Moines, \$1.4 billion to \$1.5 billion dollars in Ankeny and Urbandale, to nearly \$164 million dollars in Windsor Heights. Potential retail expenditure or purchasing power, using a 27 percent expenditure rate results in approximately \$1.3 billion dollars in the City of Des Moines,



\$570 million dollars in the City of West Des Moines to approximately \$400 million dollars in Ankeny and Urbandale to as low as \$44 million dollars in Windsor Heights.

Table V-5 compares the potential purchasing power to the actual retail sales by city.

City	Potential Purchasing Power for Retail Goods & Services ³ \$	Actual Retail Sales \$	Estimated Leakage or Surplus of Sales \$
Des Moines	1,337,854,800	3,232,262,000	1,894,407,200
West Des Moines	570,124,500	1,543,074,000	972,949,500
Ankeny	387,182,600	647,007,000	259,824,400
Urbandale	400,969,300	615,091,000	214,121,700
Clive	191,380,500	405,284,000	213,903,500
Johnston	180,183,300	159,461,000	-20,722,300
Altoona	112,211,000	396,546,000	284,335,000
Grimes	66,443,100	119,057,000	52,613,900
Pleasant Hill	66,891,400	42,798,000	-24,093,400
Windsor Heights	44,243,400	32,717,000	-11,526,400
Sources: Iowa Retail Sales & Use Tax Report, Annual Fiscal Year, Iowa Department of Revenue, Tax Research and Fiscal Analysis Section; U.S. Census Bureau, Census 2010 and 2005-2009 American Community Survey; Gruen Gruen + Associates			

Altoona attracts the highest proportion of its sales base above what its internal expenditure potential could probably support. The City of West Des Moines has the next highest percentage of net sales surplus. Sales within West Des Moines are approximately 63 percent higher than expenditure potential of residents alone would support. The City of Des Moines, with its large employment base and visitor attractions, also attracts more sales than would be expected from internal purchasing power of residents alone. Approximately 58 percent of the City of Des Moines retail sales base is higher than what the spending power of its resident base is estimated to support. Clive generates an estimated sales surplus of approximately 52 percent of its retail sales base. Ankeny and Urbandale also generate sales surplus at rates of 40 percent and 35 percent, respectively.



RETAIL SPACE SUPPLY

The next section of this chapter presents a summary of the primary retail space inventory within the TTP Planning Area. The subsequent section presents a comparison between the primary estimated current supply within the TTP Planning Area and the potential future overall retail expenditure or retail demand of residents in 2020 and 2050.

Table V-6 summarizes the regional shopping mall inventory.

Regional Shopping Mall Inventory			
Mall	Size # Square Feet	2000 Vacancy Rate %	2011 Vacancy Rate %
Merle Hay	1,163,000	8.0	6.5
Southridge	891,000	1.8	20.8
Valley West	910,000	0.3	8.0
Jordan Creek	979,000	Not Yet Built	2.0
Total	3,943,000	3.9	9.0
Sources: Frandson & Associates; CB Richard Ellis/Hubbell Commercial; Gruen Gruen + Associates.			

The newest mall is the Jordan Creek Mall in West Des Moines. Built in 2004, the Jordan Creek Mall has been a “recruiting tool” for office space users seeking to recruit and retain a talented labor force, and other retailers have been attracted to locate near the mall. Valley West Mall is also located in West Des Moines. While the vacancy rate of the Valley West Mall has increased, interviews suggest the Valley West Mall will remain viable over the long run.

Merle Hay Mall, located in the Northwest Des Moines submarket, has been affected by the opening of Jordan Creek Mall and by the changes in the demographic make-up of its trade area. It has renovated some of the property, converted interior space to have exterior entrances, has reduced the number of stores (and, therefore, reduced the amount of in-line shop vacancies), and also attracted new tenants such as Shoe Carnival. The mall is now anchored by Target, Sears, and Yonkers.

The Southridge Mall in the southeast side of Des Moines had been affected by demographic and consumer shopping pattern shifts prior to the opening of the Jordan Creek Mall. The opening of Jordan Creek Mall and the completion of the Highway 5 bypass, which links the south side of Des Moines to the Jordan Creek area, accelerated the competitive impacts to the Southridge Mall. J.C. Penny has announced it will close its anchor store and, therefore, the vacancy rate of an already high nearly 21 percent will increase further. The Des Moines Area Community college recently signed a lease to take space to create a new “learning center”. Interviews suggest the area around Southridge Mall will need to be planned to adapt obsolete and excess retail uses to alternative uses.

Table V-7 summarizes the inventory of neighborhood, community center, and power center space in the Greater Des Moines market for 2007 and 2011.



TABLE V-7

Greater Des Moines Retail Space Inventory (Neighborhood, Community and Power Centers)

Year	Des Moines CBD ¹ # Square Feet	Western Suburbs ² # Square Feet	Northeast Des Moines ³ # Square Feet	Other Des Moines ⁴ # Square Feet	Ankeny # Square Feet	Total # Square Feet
2007	98,000	7,528,533	2,027,821	1,729,466	1,729,466	14,396,035
2011	112,000	8,455,418	2,402,637	1,886,088	1,886,088	15,936,593
Change	14,000	926,885	374,816	68,235	156,622	1,540,558
¹ Includes the Western portion of the Central Business District and the East Village, extending west to Martin Luther King Jr. Parkway and east to East 14 th Street. ² Includes in addition to West Des Moines, Clive, Urbandale, Windsor Heights, Johnston Grimes, Waukee and some unincorporated areas of Polk, Dallas and Warren counties. ³ Includes the northeast side of the City of Des Moines, Pleasant Hill, Altoona, and unincorporated Saylor and Delaware Townships. ⁴ Includes the south (south of the Des Moines River) and northwest portions of the City of Des Moines (north of the River, west of 2 nd Avenue), Norwalk, and unincorporated portions of Polk and Warren County.						
Sources: Frandson & Associates; CB Richard Ellis/Hubbell Commercial; Gruen Gruen + Associates.						

The overall supply of retail inventory has increased by 1.5 million square feet to 15.9 million square feet. The Western Suburbs, primarily West Des Moines, have experienced 60 percent of the recent retail growth, and at 8.5 million square feet of space, account for 53 percent of the total inventory. The Jordan Creek regional mall has formed a major retail agglomeration with freestanding major retailers and other retail developments adjoining the mall. Retail space is distributed relatively evenly among the other submarkets, although interviews suggest that Ankeny is the healthiest retailing location outside of the Jordan Creek agglomeration; retailing has followed the housing growth that has occurred in Ankeny.

The interviews and retail market data suggest that, at least in the near to medium term, limited additional retail development will occur due to high vacancy rates and reduced rents in the neighborhood and community center inventory (25 percent overall, and ranging from 37 percent in South Des Moines to 15 percent in Northwest Des Moines) and no expansion plans announced by major retailers.

Assuming no real per capita income growth, Table V-8 below summarizes the increase in retail sales and supportable retail space inventory associated with potential long-term population growth within the TTP Planning Area. The total household income within the TTP Planning Area is estimated based on total population and per capita income.



TABLE V-8

**Estimated Additional Supportable Expenditure Potential
and Retail Space Demand for the TTP Planning Area: 2010-2050¹**

	2010	2020	2050	Growth 2010-2050
Total Population	479,298	552,827	745,413	
Total Income (\$000s) ²	\$15,826,800	\$18,254,700	\$24,519,600	
Retail Expenditure (\$000s) ³	\$4,273,200	\$4,928,800	\$6,620,300	
Additional Retail Expenditure (\$000s)	-----	\$655,600	\$1,691,500	\$2,347,100
Additional Supportable Retail Space in Square Feet ⁴	-----	1,873,000	4,833,000	6,706,000

¹ Figures are rounded.

² Based on estimated 2010 per capita income of \$33,021. Assumes no real income growth.

³ Assumes 27 percent of total income is expended on retail goods and services.

⁴ Assumes \$350 per square foot sales productivity.

Source: U.S. Census Bureau, Census 2010; Bureau of Labor Statistics, *Consumer Expenditure Survey* 2010;
Gruen Gruen + Associates.

At just over 745,000 persons in 2050, the TTP Planning Area would include total income of approximately \$24.5 billion. Total retail expenditure potential, at 27 percent of income, is projected to grow to \$6.6 billion. This suggests that, over the next 40 years, retail expenditure potential within the TTP Planning Area will increase by approximately \$2.3 billion. Based on a typical retail space productivity benchmark of \$350 in sales per square foot, an additional 6.7 million square feet of retail space could be supported.



CHAPTER VI

IDENTIFICATION OF RELEVANT MARKET AREAS AND DEVELOPMENT TRENDS FOR OFFICE AND INDUSTRIAL SPACE

INTRODUCTION

In order to augment and refine the employment projections presented above into a forecast by economic sector and relevant geographic subarea, and to further develop a framework for strategic economic development planning, GG+A has conducted field research and reviewed land use/real estate data on the inventory of office and industrial property in relevant geographic market areas within the region. We also have completed interviews with leading real estate brokers/developers active in the Greater Des Moines market and representatives of communities within the TTP Planning Area. The results of the interviews reflect both historical and contemporary factors that have influenced the current state of location patterns and development activity in the greater Des Moines region. These insights will be useful in formulating strategies for targeting the kinds of beneficial economic activities that mesh best with the assets and priorities of the communities within the TTP Planning Area and for identifying likely future growth patterns.

THE PRIMARY MARKET AREAS WITHIN THE GREATER DES MOINES REGION

Distinct market areas, or geographic submarkets, are indicated by areas within which users pay similar prices for similar types of buildings and in which land prices are comparable. Distinct market areas are also indicated by the geographic boundaries within which similar types of businesses will consider alternative locations for their facilities. Based on the results of the interviews, review of the locations and types of office, and industrial developments and brokerage firm reports on rents for varying types of building space, the following summarizes the relevant geographic markets by type of land use and describes the key characteristics and historical development trends.

OFFICE MARKET DEFINITION

The two primary office submarkets are the Des Moines Central Business District and West Des Moines, which in the inventory data below in Table VI-1 is presented as part of the Western Suburbs submarket. Interviews indicate the vast majority of the office space in the Western Suburbs is located within West Des Moines.



TABLE VI-1

Greater Des Moines Office Space Inventory

Year	Des Moines CBD ¹ # Square Feet	Western Suburbs ² # Square Feet	Other Des Moines ³ # Square Feet	Ankeny # Square Feet	Total # Square Feet
2000	11,051,029	8,130,759	1,600,979	218,209	21,000,976
2011	12,867,225	13,209,819	1,755,984	432,801	28,265,829
Change	1,816,196	5,079,060	155,005	214,592	7,264,853

¹Includes the Western portion of the Central Business District and the East Village, extending west to Martin Luther King Jr. Parkway and east to East 14th Street.

²Includes in addition to West Des Moines, Clive, Urbandale, Windsor Heights, Johnston, Grimes, Waukee and some unincorporated areas of Polk, Dallas and Warren counties.

³Includes Northwest Des Moines and Western Saylor Township, Northeast Des Moines extending south to the Des Moines River, Pleasant Hill, Altoona, Eastern Saylor Township and Delaware Township and Southwest Des Moines, south of Des Moines River and some unincorporated areas of Polk and Warren counties.

Sources: Frandson & Associates; CB Richard Ellis/Hubbell Commercial; Gruen Gruen + Associates.

In 2000, the Greater Des Moines office space inventory consisted of approximately 21.0 million square feet, of which 11.1 million square feet, or 53 percent of the total inventory was located in the Des Moines Central Business District and 8.1 million square feet, or 39 percent, was located in the Western Suburbs (primarily West Des Moines).

From 2000 through 2011, the total office space inventory of Greater Des Moines increased by 35 percent, or from 7.3 million square feet to 28.3 million square feet of space. The addition of 5.1 million square feet of space in the Western Suburbs accounted for 70 percent of the total increase in office space supply.¹² As a result, the inventory of the Western Suburbs is now greater than the inventory in the Des Moines Central Business District. On an absolute basis, growth in other Des Moines submarkets and Ankeny has been relatively insignificant, with 155,000 square feet added in the other Des Moines submarkets and 215,000 square feet added in Ankeny (nearly a 98 percent increase off a low base of space in Ankeny).

Office Space Absorption and Vacancy Rates

Table VI-2 summarizes office space absorption and vacancy rates in the Greater Des Moines office space market for the 2000-2011 period.

¹² According to the City of West Des Moines Development Services Department, a total of 4.8 million square feet of office space was constructed in the community between 2000 and 2011. Thus, the preponderance of growth in the Western Suburbs has occurred in West Des Moines.



TABLE VI-2

Greater Des Moines Office Space Absorption and Vacancy Rates

Year	Des Moines CBD ¹ # Square Feet	Western Suburbs ² # Square Feet	Other Des Moines ³ # Square Feet	Ankeny # Square Feet	Total # Square Feet
2000	10,510,000	7,708,000	1,508,000	181,000	19,906,000
2011	11,143,000	11,836,000	1,586,000	387,000	24,952,000
Absorption	633,000	4,128,000	78,000	206,000	5,046,000
	Vacancy Rate %	Vacancy Rate %	Vacancy Rate %	Vacancy Rate %	Vacancy Rate %
2000	5.2	4.9	5.8	17.0	5.2
2011	10.4	13.4	9.7	10.6	11.7
Change	5.2	8.5	3.9	-6.4	6.5
¹ Includes the Western portion of the Central Business District and the East Village, extending west to Martin Luther King Jr. Parkway and east to East 14 th Street. ² Includes in addition to West Des Moines, Clive, Urbandale, Windsor Heights, Johnston, Grimes, Waukee and some unincorporated areas of Polk, Dallas and Warren counties. ³ Includes Northwest Des Moines and Western Saylor Township, Northeast Des Moines extending south to the Des Moines River, Pleasant Hill, Altoona, Eastern Saylor Township and Delaware Township and Southwest Des Moines, south of Des Moines River and some unincorporated areas of Polk and Warren counties. Sources: Frandson & Associates; CB Richard Ellis/Hubbell Commercial; Gruen Gruen + Associates.					

While the office space inventory increased by 7.3 million square feet of space from 2000 through 2011, the increase in the amount of occupied space within the Greater Des Moines office market was less at over 5.0 million square feet of space, which cause an increase in the vacancy rate. The Western Suburbs accounted for nearly 82 percent of the total absorption at 4.1 million square feet of space. The Des Moines Central Business District experienced space absorption of only 633,000 square feet, while the absorption attributable to the other submarkets was relatively insignificant (78,000 square feet in the Other Des Moines submarkets and 206,000 square feet of space in the Ankeny submarket).

In 2000, the vacancy rate was low for the two primary submarkets of the Des Moines Central Business District (5.2 percent vacancy rate) and the Western Suburbs (4.9 percent). The vacancy rate was also low for the Other Des Moines submarkets at 5.8 percent. The vacancy rate has increased from 5.2 percent for the overall office market to nearly 12 percent in 2011. The current vacancy rate equates to 3.3 million square feet of space.

However, according to CB Richard Ellis/Hubbell Commercial, Wellmark Blue Cross has recently occupied 600,000 square feet of newly constructed space in the Central Business District, while Aviva also moved to 66,000 square feet of newly leased space in the Central Business District (Aviva has also recently occupied 345,000 square feet in West Des Moines). These and other large users, and the spillover activity and demands they help generate, would be difficult to replace were they to relocate or downsize their office presence in the Central Business District.

Sources of Demand, Advantages and Disadvantages, and Capacity Conditions

The interviews and review of real estate market data indicate that the finance and insurance sectors are major sources of demand for office space. Several major space users such as Wells Fargo and Aviva have operations in both the Central Business District and West Des Moines. Demand originates primarily from existing businesses already within the market. New entities from outside



the region rarely enter the office market. While large office space users in the finance and insurance sectors like Principal Financial, Nationwide, Wellmark, and Wells Fargo have served as a critical base to the office market, these sectors have been impacted by the Great Recession, the bursting of the housing bubble, and new regulatory conditions. Interviews suggest some major users in these sectors are uncertain about how much office space they may need in the future given the volatile and uncertain market and regulatory conditions they face and, therefore, are not currently making long term commitments concerning leased space that has come up for renewal.

For some firms that are not already committed to the Central Business District, West Des Moines has become a preferred office location due to more convenient, “free” on-site parking, ease of access, and a newer and broader amenity package (especially the one offered by the Jordan Creek Mall). Our interviews indicate that West Des Moines presents a cost advantage compared to office space in the Central Business District due to parking costs associated with Central Business District (overall occupancy costs are reported to be approximately \$3 per square foot lower in West Des Moines than in the Central Business District).

Because executive and higher end housing has been built in Ankeny, a relatively small amount of office space has been developed to appeal to decision makers of smaller firms that prefer to work close to their residences.

The interviews and analysis of the office inventory data suggest limited potential speculative multi-tenant office space development will occur in the near to medium term due to low rents and the excess supply of office space relative to demand. The interviews suggest, however, that the two existing primary submarkets (West Des Moines and the Des Moines Central Business District) are likely to remain the dominant submarkets into the foreseeable future.

While locations near airports have stimulated demand for office space in other regions, the interviews and review of supply data indicate this has not been the case for the Des Moines International Airport. A business park near the airport has experienced little development over the past decade. Interviews suggest this may relate to the relatively limited airline competition and enplanement volumes and limited scale of professional and technical service industries that export their services outside the region.

INDUSTRIAL MARKET DEFINITION AND MAKE-UP OF SUBMARKETS

The interviews and review of inventory data presented in Table VI-3 indicate that many industrial space users will consider alternatives available in both the Western Suburbs, frequently referred to as the “Northwest Quadrant,” and the northeast side of the City of Des Moines frequently referred to as the “Northeast Quadrant”. The bulk of industrial space in the Northwest Quadrant centers around the I-35/I-80 transportation links in Urbandale and the north side of West Des Moines. The Northwest Quadrant tends to have newer, higher-quality product, including flex-type and showroom plus warehouse space, while the Northeast Quadrant tends to include older, “down and dirty” warehousing and heavier industrial uses. The periphery of the Central Business District was an original location for significant industrial space, but over time some of this inventory has been removed or converted to alternative uses, including residential uses.



TABLE VI-3

Greater Des Moines Industrial Space Inventory

Year	Des Moines CBD ¹ # Square Feet	Western Suburbs ² # Square Feet	Northeast Des Moines ³ # Square Feet	Other Des Moines ⁴ # Square Feet	Ankeny # Square Feet	Total # Square Feet
2000	4,181,981	11,714,783	16,073,739	6,568,718	4,166,145	42,705,366
2011	2,990,411	14,933,875	18,870,867	7,144,144	4,802,958	48,742,255
Change	-1,191,570	3,219,092	2,797,128	575,426	636,813	6,036,889
¹ Includes the Western portion of the Central Business District and the East Village, extending west to Martin Luther King Jr. Parkway and east to East 14 th Street. ² Includes in addition to West Des Moines, Clive, Urbandale, Windsor Heights, Johnston Grimes, Waukee and some unincorporated areas of Polk, Dallas and Warren counties. ³ Includes the northeast side of the City of Des Moines, Pleasant Hill, Altoona, and unincorporated Saylor and Delaware Townships. ⁴ Includes the south (south of the Des Moines River) and northwest portions of the City of Des Moines (north of the River, west of 2 nd Avenue), Norwalk, and unincorporated portions of Polk and Warren County.						
Sources: Frandson & Associates; CB Richard Ellis/Hubbell Commercial; Gruen Gruen + Associates.						

The total industrial market comprises 48.7 million square feet of space. Since 2000, the industrial space inventory has increased by 6.0 million square feet of space or about 14 percent. The largest increase of 3.2 million square feet of space occurred in the Western Suburbs, which have about 14.9 million square feet of space, or about 31 percent of the inventory (compared to 27 percent of the total inventory in 2000). About 77 percent of the warehouse and manufacturing space developed in the Western Suburbs has been built since 1970. The Northeast Des Moines submarket contains 18.9 million square feet of space, or 39 percent of the total inventory (compared to 38 percent in 2000). About 52 percent of the warehouse and manufacturing space developed in the Northeast Des Moines submarket has been constructed since 1970. As would be expected, industrial space inventory has declined in the Central Business District to almost 3.0 million square feet (from 4.2 million square feet of space), or six percent of the total inventory. Industrial space in the Other Des Moines submarkets of 7.1 million square feet, or about 15 percent of the total inventory, increased by 575,000 square feet, while the Ankeny submarket increased by 637,000 square feet to 4.8 million square feet of space.

Table VI-4 summarizes the absorption and vacancy rates for the Greater Des Moines industrial market. As in the case of the office market, absorption of 4.2 million square feet is less than the amount of space constructed over the 2000-2011 period.



TABLE VI-4

Greater Des Moines Industrial Space Absorption and Vacancy Rates

Year	Des Moines CBD ¹ # Square Feet	Western Suburbs ² # Square Feet	Northeast Des Moines ³ # Square Feet	Other Des Moines ⁴ # Square Feet	Ankeny # Square Feet	Total # Square Feet
2000	3,800,528	11,043,358	15,347,266	6,001,543	3,704,845	39,897,540
2011	2,110,155	13,591,160	17,268,357	6,536,321	4,605,326	44,111,319
Absorption	-1,690,374	2,547,802	1,921,091	534,778	900,481	4,213,778
	Vacancy Rate %	Vacancy Rate %	Vacancy Rate %	Vacancy Rate %	Vacancy Rate %	Vacancy Rate %
2000	5.7	9.1	4.5	8.6	11.1	6.6
2011	9.0	29.4	8.5	8.5	4.1	9.5
Change	3.3	20.3	4.0	-0.1	-7.0	2.9

¹ Includes the Western portion of the Central Business District and the East Village, extending west to Martin Luther King Jr. Parkway and east to East 14th Street.

² Includes in addition to West Des Moines, Clive, Urbandale, Windsor Heights, Johnston Grimes, Waukee and some unincorporated areas of Polk, Dallas and Warren counties.

³ Includes the northeast side of the City of Des Moines, Pleasant Hill, Altoona, and unincorporated Saylor and Delaware Townships.

⁴ Includes the south (south of the Des Moines River) and northwest portions of the City of Des Moines (north of the River, west of 2nd Avenue), Norwalk, and unincorporated portions of Polk and Warren County.

Sources: Frandson & Associates; CB Richard Ellis/Hubbell Commercial; Gruen Gruen + Associates.

The highest absorption occurred in the Western Suburbs at 2.5 million square feet, while the Northeast Des Moines submarket absorbed 1.9 million square feet. More space was absorbed in the Ankeny submarket (900,000 square feet) than constructed (637,000 square feet), which explains the reduction in vacancy rates from 11.1 percent in 2000 to 4.1 percent in 2011. The amount of absorption in the Other Des Moines submarkets was comparable to the amount of construction, so that the vacancy rate remained stable (at 8.5 percent in 2011).

The overall vacancy rate increased from 6.6 percent in 2000 to 9.5 percent in 2011. The Western Suburbs - in which new space has recently been built - has a high vacancy rate of 29.4 percent (up from 9.1 percent in 2000). The vacancy rate in the Northeast Des Moines market - in which less construction has occurred - has a vacancy rate of 8.5 percent, up from 4.5 percent in 2000. The interviews indicate limited large blocks of space are available in the Northeast Des Moines submarket. If a user requires more than 75,000 square feet, it will find more options in Urbandale in the Northwest Quadrant than in the Northeast Quadrant.

Sources of Demand, Advantages and Disadvantages, and Capacity Conditions

The interviews indicate that the Northwest Quadrant and Northeast Quadrants have differing rental rates consistent with their differing ages and type of industrial space. Rents for space in the Northeast Quadrant tend to range from \$2.50 to \$2.95 per square foot triple net¹³ while rents for space in the Northwest Quadrant tend to range from \$3.50 to \$4.50 per square foot triple net. The

¹³ Triple net rent refers to the tenant paying all operating expenses, insurance expenses and property taxes of the property.



Northwest Quadrant includes users related to home building and residential sectors, including suppliers and distributors of building materials, furniture, carpet and tile, etc. Access to transportation links, sources of labor, and relatively inexpensive land and building space are the primary advantages of the primary industrial submarkets.

Most users of industrial space originate from within the Des Moines market, with users serving to the agricultural sector representing an important component of the market. For example, located in the market are John Deere, Caterpillar, and Firestone Agricultural Tire Company, which, in 2004, opened an 850,000-square-foot distribution center on about 75 acres of land purchased for about \$35,000 per acre eight years ago. The site is located in Polk County's newly created economic development area off Interstate 35 near NE 66th Avenue in the Northeast Quadrant.

Rail access is not an important factor in industrial location decisions, nor is the airport a major advantage for industrial space users. While a UPS hub is located by the airport, a former printing company property converted to multi-tenant industrial space (i.e., multiple tenants) has not performed well. Air cargo related uses are generally not an important source of demand for industrial space. These findings reflect that much of the industrial space is used by businesses serving local and regional demands as opposed to exporting their goods and services outside of the region.

While the primary well-established industrial submarkets are likely to remain viable and the dominant locations for at least the near and medium term, interviews suggest Ankeny could emerge over the long run as a third major source of supply (at the northeast side of I-80 and I-35). According to the Community Development Director of Ankeny, such growth could be accommodated in locations with superior access to I-35 and I-80. To date, Ankeny has primarily attracted light industrial users that include a combination of office, administrative, assembly, and warehousing operations. The scale and type of industrial uses potentially attracted in the future are likely to be similar in nature. Ample land is also available by the airport, although, as noted above, the presence of the airport has not yet served as a catalyst for major office or industrial development.



CHAPTER VII

BASELINE PROJECTION OF EMPLOYMENT WITHIN THE TOMORROW PLAN (TTP) PLANNING AREA

INTRODUCTION

The estimate of potential future nonresidential building space and land use demands, and population and household growth within the TTP Planning Area is based on our employment projection by economic sector presented in Chapter VII. Although “jobs” in totality can be useful when considering commutation patterns and travel demands, generalization of the employment base to this level does not permit an accurate understanding of potential future commercial and industrial land use needs. This chapter presents projections of employment by both economic sector and geography.

Employment Projection Methodology

Components of the baseline employment projections are based upon analysis of several data sources, including:

1. Regional Economic Models, Inc. (REMI) forecast for the Des Moines MSA provided by the Iowa Department of Transportation;
2. Historical employment trends, by sector, from the Iowa Workforce Development Department; and,
3. InfoUSA employer and business database.

The projection methodology generally relies on two underlying components: a sectoral component and a localization component. The sectoral elements reflect patterns of industry sector shifts over the longer term within the regional economy. The localization component more specifically addresses the spatial distribution of the employment base across industry sectors and subareas of the region.

The employment projections rely on a “top-down” control variable that represents the projected long-term rate of average annual employment growth for the larger region. This control variable was derived from the Iowa’s Department of Transportation REMI model for the Des Moines MSA (reviewed in Chapter II). It is a secondary forecast of how rapidly employment within the region is expected to grow over the next four decades. The projections also rely on an InfoUSA employer and business database provided by the Des Moines Area Metropolitan Planning Organization. This database was used to establish the base year employment conditions by sector and geography within the TTP Planning Area.

The baseline employment projections are predicated on two key underlying assumptions:

1. The composition of the employment base will continue to experience the same patterns of structural change that have occurred in the past; and,



2. The current locational concentration of industries within the region will remain similar over time.

Appendix A describes in more detail the methodology used to develop the employment projections for the baseline, status quo scenario.

PROJECTED EMPLOYMENT BY ECONOMIC SECTOR: 2011-2050

Table VII-1 presents the current, pre-survey base year TTP Planning Area employment by industry sector. It also presents a short- (2020) and long-term (2050) forecast of employment by industry sector.

Industry Sector	2011 #	2020 #	2050 #	Total Growth #	Projected Growth Rate %
Natural Resources and Construction	21,754	25,416	33,332	11,578	1.10
Manufacturing	18,431	17,441	15,947	-2,484	-0.37
Wholesale Trade	11,047	11,332	11,825	778	0.17
Retail Trade	34,941	37,909	43,563	8,622	0.57
Transportation and Utilities	9,564	9,368	9,055	-509	-0.14
Information	7,310	6,886	6,251	-1,059	-0.40
Financial Activities	39,961	47,341	63,679	23,718	1.20
Professional and Business Services	29,209	36,421	53,845	24,636	1.58
Educational and Health Services	58,499	67,857	87,840	29,341	1.05
Leisure and Hospitality	29,983	33,260	39,744	9,761	0.73
Other Services	13,564	14,568	16,447	2,883	0.50
Government	20,744	22,794	26,784	6,040	0.66
Total Non-Farm	295,007	330,592	408,312	113,305	0.84
Sources: REMI, Inc.; Gruen Gruen + Associates.					

Total non-farm employment is forecast to grow annually by 0.84 percent, increasing by 113,305 jobs between 2011 and 2050. Total jobs are forecast to increase from the current level of 295,000 to just over 408,000 jobs by 2050. Over the next nine years, a total of over 35,000 jobs are forecast to be added. Consistent with historical growth rates and shifts, professional and business services and financial activities are projected to grow the fastest, exceeding one percent annual job growth. Over 48,000 jobs, or 43 percent, of the net job increase is projected to occur in these two sectors.



Employment in the natural resources and construction sectors and educational and health services sectors are also forecast to grow more rapidly than total jobs, also increasing at just over one percent annually in both sectors. Over 11,000 jobs are forecast to be added in the natural resources and construction sector, or 10 percent of net job growth. Over 29,000 jobs, or 26 percent, of the net job growth is forecast to be added in the educational and health services sector.

Given the baseline methodology, sectors projected to decline include manufacturing, transportation and utilities, and information. However, these three sectors are projected to decrease by only 4,000 jobs over the 39 year period.

Table VII-2 presents the share that each industry sector is forecast to comprise of total employment in both the shorter term and longer term.

Industry Sector	2011 %	2020 %	2050 %	Shift in Proportion %
Natural Resources and Construction	7.37	7.69	8.16	0.79
Manufacturing	6.25	5.28	3.91	-2.34
Wholesale Trade	3.74	3.43	2.90	-0.85
Retail Trade	11.84	11.47	10.67	-1.18
Transportation and Utilities	3.24	2.83	2.22	-1.02
Information	2.48	2.08	1.53	-0.95
Financial Activities	13.55	14.32	15.60	2.05
Professional and Business Services	9.90	11.02	13.19	3.29
Educational and Health Services	19.83	20.53	21.51	1.68
Leisure and Hospitality	10.16	10.06	9.73	-0.43
Other Services	4.60	4.41	4.03	-0.57
Government	7.03	6.89	6.56	-0.47
Total Non-Farm	100.00	100.00	100.00	0.00

Sources: REMI, Inc.; Gruen Gruen + Associates.

Consistent with the growth rates that exceed the total employment growth rate, sectors forecast to experience the largest shifts in their proportions of total employment include professional and business services, financial activities, educational and health services, and natural resources and construction. In 2011, these four sectors make up just over 50 percent of the total jobs in the TTP planning area. By 2020, these sectors are forecast to account for nearly 54 percent of total jobs and, in 2050, 58 percent of total jobs. All remaining sectors are projected to decline in their



proportionate shares - even sectors projected to have positive annual growth because the average growth rate for each sector is lower than the total employment growth rate.

PROJECTED EMPLOYMENT BY SUBAREA

The process of localizing the regional employment projections involved aggregating current employment into sub-regional zones, or “subareas.” Clear agglomeration patterns exist across the subareas. Relative to total industry sector employment within the region, subareas that comprise more than 20 percent of jobs include the following:¹⁴

East Des Moines	CBD	South Des Moines	SW Suburbs	NW Des Moines	NW Suburbs
Wholesale Trade	Government	Construction	Retail Trade	Education & Healthcare	Wholesale Trade
Manufacturing	Financial Activities		Financial Activities		Construction
Transportation	Information		Prof. & Bus. Services		
Leisure & Hosp	Prof. & Bus. Services		Leisure & Hosp		
	Education & Healthcare		Information		

The CBD and Southwest Suburbs comprise the vast majority (more than 60 percent) of financial and professional services-related activity and jobs. With two regional shopping malls, the Southwest Suburbs also include the largest agglomeration of retail activity. East Des Moines has been and continues to be a preferred heavy industrial location, containing roughly one-third of all jobs in the manufacturing, wholesale trade, and transportation and warehousing sectors. The Northwest Suburbs also comprise a strong share of lighter industrial activity traditionally associated with the wholesale trade and construction sectors. Including two major medical centers (Mercy and Broadlawns) and Drake University,¹⁵ the Northwest Des Moines subarea contains the largest concentration of employment in educational and healthcare services.

Table VII-3 shows the current existing share that each subarea makes up of employment by economic sector.

¹⁴ The Ankeny subarea does not contain any sectors comprising more than 20 percent of regional employment.

¹⁵ According to InfoUSA, these three institutions employ more than 8,000 people.



TABLE VII-3

Current Distribution of TTP Planning Area Employment by Sector and Subarea

	Ankeny Area 1 %	East Des Moines 2 %	Des Moines CBD 3 %	South Des Moines 4 %	SW Suburbs 5 %	NW Des Moines 6 %	NW Suburbs 7 %
Industry Sector							
Natural Resources and Construction	7.6	17.8	5.6	21.9	18.7	5.8	22.5
Manufacturing	16.3	35.3	4.5	8.2	14.8	4.7	16.2
Wholesale Trade	9.7	36.6	6.0	8.7	10.8	3.8	24.5
Retail Trade	11.0	12.9	3.9	7.8	37.8	12.3	14.3
Transportation and Utilities	6.0	27.2	7.9	10.6	32.9	3.4	12.0
Information	2.5	3.0	34.1	7.3	24.5	11.4	17.1
Financial Activities	2.7	3.5	40.3	3.9	33.1	3.9	12.7
Professional and Business Services	4.5	9.0	23.3	14.9	29.2	7.9	11.2
Educational and Health Services	6.5	10.1	20.4	5.9	18.4	27.7	11.0
Leisure and Hospitality	7.0	21.8	12.5	9.3	26.0	10.4	13.1
Other Services	8.4	15.9	10.5	19.8	18.5	13.4	13.5
Government	4.2	6.7	63.4	5.5	5.1	5.8	9.3
<i>Total</i>	<i>7.0</i>	<i>14.2</i>	<i>20.5</i>	<i>9.3</i>	<i>23.7</i>	<i>11.6</i>	<i>13.7</i>

Sources: InfoUSA; Gruen Gruen + Associates.

The Southwest Suburbs and the Des Moines Central Business District make up the largest shares of the existing employment base at 22.4 percent and 20.5 percent, respectively. East Des Moines and the Northwest Suburbs make up the third and fourth largest shares of the TTP Planning Area at approximately 13 to 14 percent each. Northwest Des Moines, South Des Moines, and the Ankeny Area make up the smallest shares of existing employment at approximately 12 percent or less for each subarea.

Table VII-4 presents the projected employment growth by subarea between 2011 and 2050. Note the employment shown is the forecast *net new job growth* between 2011 and 2050.

Period	Subarea							Total TTP #
	Ankeny Area 1 #	East Des Moines 2 #	Des Moines CBD 3 #	South Des Moines 4 #	SW Suburbs 5 #	NW Des Moines 6 #	NW Suburbs 7 #	
2011-2020	1,980	3,589	8,510	3,458	8,926	4,532	4,592	35,585
2020-2050	4,296	7,829	18,639	7,626	19,579	9,728	10,021	77,720
Total 2011-2050	6,276	11,418	27,149	11,084	28,505	14,260	14,613	113,305

Source: Gruen Gruen + Associates

Over the 39 year projection period, more than 113,000 jobs are forecast to be added in the TTP Planning Area. Approximately 31 percent, or nearly 36,000 additional jobs, are forecast to be added by 2020. An additional 78,000 jobs are forecast to be added between 2020 and 2050.

The Southwest Suburbs (including West Des Moines) and the Des Moines Central Business District are forecast to capture a significant share of the employment growth. The two subareas are forecast to gain approximately 55,000 jobs, or 49 percent, of the total job growth. The remainder of forecast employment growth is relatively evenly distributed, with East Des Moines, South Des Moines, Northwest Des Moines, and the Northwest Suburbs each projected to add between 11,000 and 15,000 jobs over the 2011 to 2050 period. The Ankeny Area is projected to add the smallest number and share of jobs by 2050.

Table VII-5 presents the forecast additional employment by economic sector and subarea between 2011 and 2050.



TABLE VII-5

Total Projected Additional Employment by Economic Sector and Subarea: 2011-2050

Industry Sector	Subarea							Total #
	Ankeny Area 1 #	East Des Moines 2 #	Des Moines CBD 3 #	South Des Moines 4 #	SW Suburbs 5 #	NW Des Moines 6 #	NW Suburbs 7 #	
Natural Resources and Construction	881	2,066	648	2,540	2,167	673	2,604	11,578
Manufacturing	-406	-877	-111	-203	-368	-117	-402	-2,484
Wholesale Trade	75	285	46	67	84	30	191	778
Retail Trade	949	1,109	334	674	3,257	1,065	1,234	8,622
Transportation and Utilities	-31	-138	-40	-54	-167	-17	-61	-509
Information	-27	-31	-362	-78	-260	-121	-181	-1,059
Financial Activities	632	824	9,568	929	7,844	919	3,001	23,718
Professional and Business Services	1,115	2,217	5,740	3,676	7,185	1,945	2,759	24,636
Educational and Health Services	1,908	2,969	5,979	1,724	5,386	8,135	3,239	29,341
Leisure and Hospitality	685	2,129	1,215	907	2,534	1,013	1,278	9,761
Other Services	242	460	303	570	535	385	388	2,883
Government	252	405	3,828	330	309	352	564	6,040
Total	6,276	11,418	27,149	11,084	28,505	14,260	14,613	113,305

Source: Gruen Gruen + Associates

Of the 113,300 new jobs forecast to be added between 2011 and 2050, approximately 29,000 are forecast to be added in the educational and health services sector. The baseline projections assume that, given existing patterns of agglomeration, the Northwest Des Moines, the Des Moines Central Business District, and Southwest Suburbs will capture approximately two-thirds of future healthcare and education-related employment growth. The Central Business District, under the status quo baseline projection, is forecast to remain a significant attractor of jobs in the financial activities and professional and business services sectors. This assumption relates to the investment in infrastructure improvements, public amenities, and other municipal assistance to encourage the attraction, retention, and expansion of businesses in these sectors. Financial activities employment in the Central Business District and the Southwest Suburbs is forecast to grow by approximately 17,000 jobs. Professional and business services employment growth is forecast to be somewhat more evenly distributed (given many such activities are local-serving), although the Central Business District and Southwest Suburbs can be expected to represent approximately 50 percent of employment growth in this sector, with approximately 13,000 additional jobs. Job growth in the natural resources and construction sector is forecast to range from approximately 2,000 to 2,600 jobs in the East Des Moines, South Des Moines, Southwest Suburbs, and Northwest suburbs. A significant portion (nearly 40 percent) of the retail trade job growth, or more than 3,200 jobs, is forecast to be concentrated in the Southwest Suburbs. In the government sector, nearly two-thirds of job growth, or 3,800 jobs, are forecast to be concentrated in the Des Moines Central Business District, which reflects its position as the State Capitol.



CHAPTER VIII

BASELINE PROJECTION OF POPULATION AND HOUSEHOLDS FOR THE TOMORROW PLAN (TTP) PLANNING AREA

POPULATION AND HOUSEHOLD PROJECTION METHODOLOGY AND BACKGROUND

Similar to the baseline projections of employment, the population and household projections also rely upon a control variable derived from REMI's regional forecast of population. This control represents the forecast average annual rate of population growth for the Greater Des Moines Region. Because, as summarized below in Table VIII-1, the TTP Planning Area has historically grown slightly faster than the larger area, we apply an adjustment factor premised on the assumption that past settlement patterns will continue.

TABLE VIII-1		
Historical Population Growth and Future Growth Rate Control		
	Greater Des Moines ¹	TTP Planning Area
Historical Average Annual Rate of Population Growth: 1990-2010	1.62%	1.71%
Study Area Growth Adjustment Factor: 2010-2050	N/A	1.055
Projected Average Annual Rate of Population Growth: 2010-2020 (short-term)	1.36% ²	1.43%
2010-2050 (long-term)	1.05% ²	1.10%
¹ Dallas, Madison, Polk and Warren counties.		
² REMI forecast.		
Sources: U.S. Census Bureau; REMI, Inc.; Gruen Gruen + Associates.		

The underlying control for total population growth within the TTP Planning Area is a 1.1 percent average annual growth rate over the 2010 to 2050 long-term projection period. Over time, the TTP Planning Area jobs-to-housing balance is projected to decline. This is supported by population age-cohort dynamics that are expected to shift over the projection period. REMI forecasts that population growth in older age-groups (65+) will account for 40 percent of total growth over the next four decades in the Greater Des Moines Region. Accordingly, as summarized in Table VIII-2, the distribution of the population is expected to shift strongly in favor of older-age residents.



	2010 %	2050 %	Shift 2010-2050 Pct Points
Ages 0-19	28.4	27.5	-0.9
Ages 20-34	21.3	18.5	-2.8
Ages 35-49	21.4	18.3	-3.1
Ages 50-64	17.8	15.0	-2.8
Ages 65-79	7.7	13.3	5.5
Ages 80+	3.4	7.5	4.1

Sources: REMI, Inc.; Gruen Gruen + Associates.

Between 2010 and 2050, the largest shifts in the proportion of the population by age will be in the 65 to 79 age cohort and the 80+ age cohort. These older-age groups will shift upward by 5.5 percentage points and 4.1 percentage points, respectively. Collectively, these two older-age groups will increase from 11.1 percent of the population in 2010 to 20.8 percent by 2050. The largest age group, however, those individuals 19 years of age or less, will still remain a significant percentage of the population at over one-quarter of the population, only slightly declining in the proportion of total population between 2010 and 2050. The working age population (those generally between the ages of 20 to 64 years) will decrease downward in proportion, shifting from 60 percent in 2010 to 52 percent by 2050. This will cause the labor force to grow at a slower pace.

Although population growth is expected to outpace employment growth (as it has over the past 20 years), the future balance between jobs and working households may remain relatively stable. For example, when the Bureau of Labor Statistics' national projections of labor force participation rates by age cohort are applied to the REMI population forecast, the average annual growth rates of employment and labor force are in relative balance.¹⁶ This suggests that future housing needs can be expected to be driven by aging and associated lifestyle changes, in addition to employment growth.

TTP Planning Area Population and Household Control Totals

The total TTP Planning Area population is projected to grow by approximately 266,000 between 2010 and 2050, from 479,000 in 2010 to 745,000 by 2050. The baseline projection assumes a stable average household size – of 2.5 persons – and a housing vacancy rate of five percent.¹⁷

Table VIII-3 presents for the TTP Planning Area, forecast population, households, and housing units between 2010 and 2050.

¹⁶ Using the 2018 BLS labor force participation rates suggests the TTP Planning Area labor force will grow at 0.78 percent annually. As reviewed in Chapter VII, employment is projected to grow at 0.84 percent annually.

¹⁷ This vacancy rate is lower than the currently estimated vacancy rate of approximately 6.6 percent. It however aligns closely with historical levels and reflects the assumption that over time, the excess housing supply due to the more rapid construction of housing in the last decade will be absorbed before delivery of additional units will be induced by employment and household growth.



	2010 #	2020 #	2050 #	Total Growth #	Annual Growth Rate %
Population	479,298	552,827	745,413	266,115	1.1
Households	188,711	221,131	298,165	109,454	1.1
Housing Units	202,033	232,769	313,858	111,825	1.1
Sources: U.S. Census Bureau; REMI, Inc.; Gruen Gruen + Associates.					

Based on population growth of 266,000 persons between 2010 and 2050, an additional 109,500 households and 112,000 housing units are forecast to be added over the 40 year period. This represents a 55 percent increase in the population and household base and housing stock. By 2020, the population is forecast to grow by approximately 73,000 persons, resulting in 32,400 new households and 30,700 new housing units.

Localizing the Population and Household Projections

The share of future housing and household growth within the TTP Planning Area is assigned to each subarea based on:

1. Past and potential future relationship between employment growth and housing demand; and,
2. Forecast employment growth.

GG+A considered present jobs-to-housing ratios and historical rates of job growth relative to housing stock increases for each subarea to develop a future “units demanded per additional job” metric. Appendix A describes in more detail how the baseline household and housing unit growth projections were allocated to each subarea.

PROJECTED POPULATION AND HOUSEHOLD GROWTH BY SUBAREA

Table VIII-4 presents the forecast population, households, and housing units by subarea between 2010 and 2050.



TABLE VIII-4

Population, Household and Housing Unit Projections by Subarea: 2010-2050

	Ankeny Area 1 #	East Des Moines 2 #	Des Moines CBD 3 #	South Des Moines 4 #	SW Suburbs 5 #	NW Des Moines 6 #	Northwest Suburbs 7 #	TTP Total #
Population:								
2010	55,488	96,430	7,435	73,333	95,772	78,815	72,025	479,298
2020	66,625	109,169	8,975	84,625	115,308	83,825	84,300	552,827
2050	92,496	145,740	12,116	115,909	163,322	98,333	117,496	745,413
<i>Growth 2010-2050</i>	<i>37,008</i>	<i>49,310</i>	<i>4,681</i>	<i>42,576</i>	<i>67,550</i>	<i>19,518</i>	<i>45,471</i>	<i>266,115</i>
Households:								
2010	21,091	35,724	4,118	28,197	39,286	32,537	27,758	188,711
2020	26,325	40,485	5,250	32,819	48,795	34,519	32,937	221,131
2050	38,761	51,798	7,940	43,801	71,391	39,229	45,245	298,165
<i>Growth 2010-2050</i>	<i>17,670</i>	<i>16,074</i>	<i>3,822</i>	<i>15,604</i>	<i>32,105</i>	<i>6,692</i>	<i>17,487</i>	<i>109,454</i>
Housing Units:								
2010	22,102	38,259	4,877	30,259	42,000	35,530	29,006	202,033
2020	27,064	42,773	5,950	34,641	51,015	37,409	33,916	232,769
2050	40,155	54,682	8,782	46,201	74,800	42,367	46,871	313,858
<i>Growth 2010-2050</i>	<i>18,053</i>	<i>16,423</i>	<i>3,905</i>	<i>15,942</i>	<i>32,800</i>	<i>6,837</i>	<i>17,865</i>	<i>111,825</i>

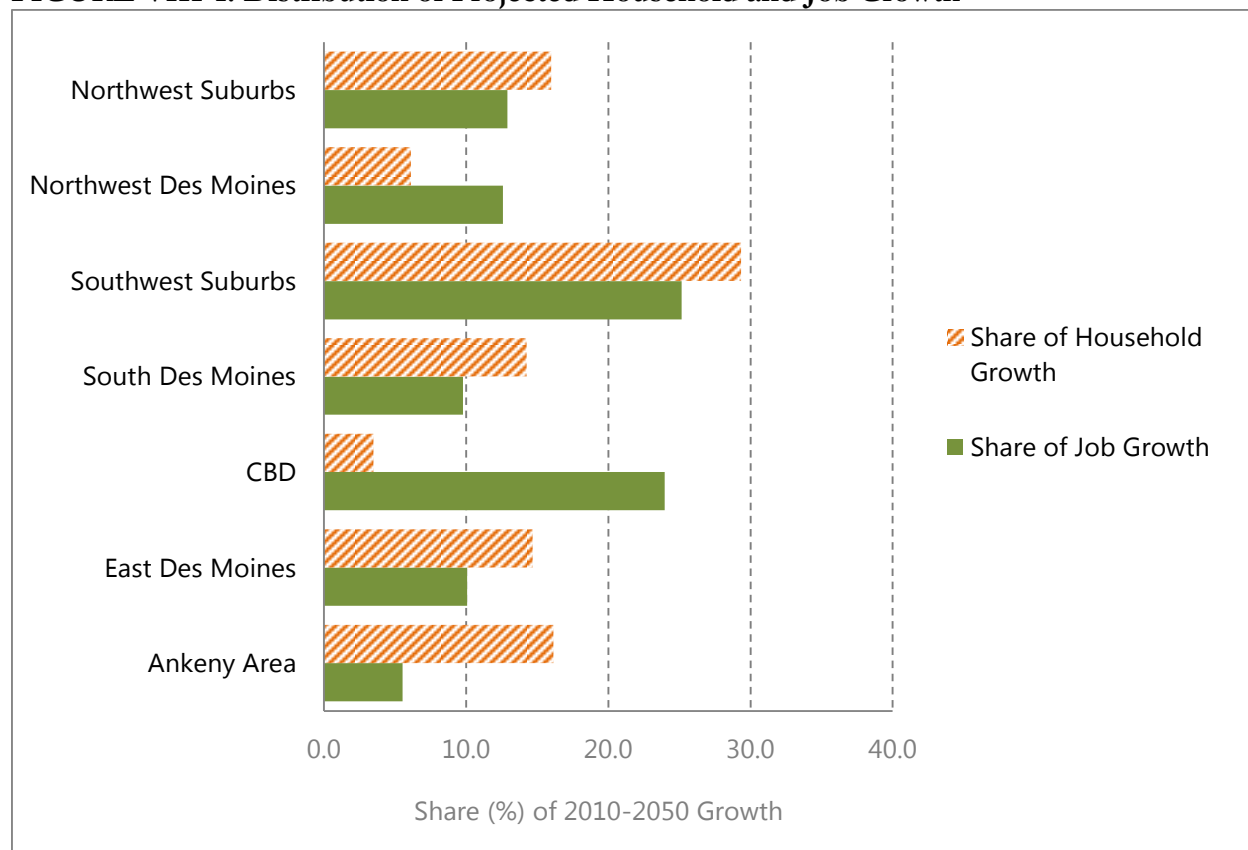
Source: Gruen Gruen + Associates.

While the Southwest Suburbs are projected to gain a significant share of the job growth, under the baseline scenario, they are also expected to gain the largest share of population and household growth; the Southwest Suburbs are projected to capture 29 percent of household growth. The Ankeny Area and Northwest Suburbs are each projected to capture approximately 16 percent of household growth.

Figure VIII-1 below illustrates the projected distribution of household growth, by subarea, relative to job growth.



FIGURE VIII-1: Distribution of Projected Household and Job Growth



The Des Moines Central Business District and Northwest Des Moines subareas are projected to capture a proportionately smaller share of future household growth than job growth. South Des Moines and East Des Moines, including large portions of the City of Des Moines, are each projected to capture approximately 14 percent of regional household growth. The City of Des Moines recently annexed in substantial portions of land that would support South Des Moines and, to a lesser extent, East Des Moines, being future residential growth areas. Infill development in the largely built-out Northwest Des Moines will likely experience higher employment growth than household growth.



CHAPTER IX

ESTIMATE OF BUILDING SPACE NEEDED TO ACCOMMODATE FUTURE EMPLOYMENT GROWTH

INTRODUCTION

The need for efficient workspace generates demand for building space. GG+A's baseline projections of employment by economic sector provide the basis for the estimates summarized in this chapter of additional non-residential building space required within the planning area over the 2011 to 2050 period. As described in Appendix B, GG+A's SPACEWALK™ model was utilized to convert projections of employment growth into estimates of future demand for office, manufacturing, warehouse/flex, and retail space.

PROJECTION OF ADDITIONAL JOBS BY TYPE OF SPACE

Table IX-1 presents the projected employment growth by subarea and type of space.

Type of Space	Ankeny Area 1 #	East Des Moines 2 #	CBD 3 #	South Des Moines 4 #	SW Suburbs 5 #	NW Des Moines 6 #	NW Suburbs 7 #	Total TTP #
Office	2,716	4,719	20,635	5,286	16,921	7,089	7,568	64,934
Manufacturing	-393	-848	-102	-167	-337	-107	-365	-2,319
Warehouse/Flex	550	1,098	970	984	1,863	900	1,026	7,392
Retail ¹	1,539	2,555	1,306	1,603	5,317	1,994	2,322	16,635
Other ²	1,863	3,894	4,340	3,378	4,741	4,385	4,062	26,663
Total	6,276	11,418	27,149	11,084	28,505	14,260	14,613	113,305
¹ Includes hospitality-related activities (restaurants, hotels, etc).								
² Primarily includes workers that can be expected to occupy institutional-type land uses (schools, hospitals, etc) but also includes those which typically do not require physical building space (such as construction workers).								
Source: Gruen Gruen + Associates.								

Of the more than 113,000 additional jobs forecast to be added over the next 39 years, more than 57 percent, or nearly 65,000, are estimated to occupy office space. As addressed previously in Chapter VII, the Des Moines Central Business District and Southwest Suburbs are projected to capture the bulk of employment growth most closely associated with the consumption of office space. Approximately three-quarters of employment growth in the Central Business District will generate office space needs.



The second largest classification of projected job growth falls under the “other” category; in other words, jobs that are not likely to require one of the traditional commercial or industrial space types (or any building space at all). This relates to the baseline employment projection, in which a considerable share of future growth is expected to be attributed to education, healthcare, and construction. Naturally, large shares of such workers often occupy institutional-type facilities (schools, hospitals, etc.) or, in the case of construction employment, generate no space needs (as labor is migratory and in the field). Job growth in the “other” land use category is projected to occur rather uniformly across all of the regional subareas.

Retail space and land uses are forecast to comprise the third largest source of growth, with just over 16,600 added jobs over the 2011 to 2050 projection period. Note that the term retail in this sense is intended to be all-inclusive of jobs associated with not only retail sales and trade, but also hospitality-related activity (e.g., restaurants, hotels) and service providers that commonly occupy shopping center space.

Approximately 7,400 added jobs are projected to generate demand for warehouse, distribution, and flex-type space. East Des Moines and the Western Suburbs are collectively projected to capture more than 54 percent of warehouse/flex jobs. Employment in manufacturing space is projected to decline by about 2,300 jobs.

PROJECTION OF NET ADDITIONAL BUILDING SPACE DEMAND

The projections of net space demand summarized below in Table IX-2 are predicated on three factors:

1. Employment densities;
2. Current excess building space supply; and,
3. Stabilized, or frictional, vacancy rates.

Employment densities, or worker to space ratios, tend to change due to shifts in how workspaces are designed and operate, and as firms becoming increasingly efficient in their use of their real estate facilities. The baseline space demand projections are based on the following employment densities (number of square feet per job):

	<u>Today</u>	<u>2050</u>
<i>Office</i>	250	215
<i>Manufacturing</i>	750	850
<i>Warehouse/Flex</i>	1,250	1,350
<i>Retail</i>	500	500

Given the long-term nature of the baseline projections, it is appropriate to build-in employment density shifts over time. Although such data does not exist specifically for the RSPD Planning Area, a number of factors suggest general trajectories in the amount of space utilized per worker will continue in the long-term.

Changing workspace trends, especially for office uses, are driving companies to reduce the amount of space required per employee. Globalization and information technology shifts have required firms to become increasingly productive and cost efficient in order to succeed. Both private and



public office space users have focused on lower occupancy costs by reducing densities, investing in technology, and changing interior office space layouts. More recently and especially moving into the future, office space users are considering workgroup stations and mobility strategies that allow for an increasing proportion of labor to share office spaces (splitting time between the office and home or the “field”). Consider that, in 1985, the average office space density in the United States approximated 400 square feet per worker; today, the average density is estimated at just less than 250 square feet per worker. By 2020, according to Jones Lang LaSalle, the average office space density is expected to decline to around 150 square feet per worker.¹⁸

Industrial employment densities, however, are on the rise. Industrial firms are increasingly replacing labor with capital in order to remain competitive. This means, all else being equal, that a larger share of physical building space must be devoted to machinery and equipment and the finished goods or inputs associated with the process of production, assembly, or distribution. For example, while employment in the economic sectors traditionally associated with the use of industrial space (manufacturing, wholesale trade, and transportation and warehousing) declined by approximately 6,500, or 13 percent, during the past decade, the amount of occupied industrial space in Des Moines grew by about 5 million square feet, or 13 percent. By raising the amount of space per industrial worker assumption, we are implicitly accounting for industrial space needs that are more likely to result from growth in the volume of goods moved and stored and changes in the production process (rather than direct labor increases).

As discussed in Chapter VI, the existing building space supply includes a relatively high – for Des Moines standards - proportion of vacant space. Thus, in the short-term, growth is unlikely to generate a need for additional space as the space supply overhang must first be corrected. To partially account for this condition, the projections include a five percent frictional vacancy factor.

TABLE IX-2

Net Additional Space Demand by Subarea and Type of Space: 2011-2050

Type of Space	Ankeny Area 1 #	East Des Moines 2 #	CBD 3 #	South Des Moines 4 #	SW Suburbs 5 #	NW Des Moines 6 #	NW Suburbs 7 #	Total TTP #
Office	387,000	691,000	2,019,000	823,000	2,204,000	1,004,000	905,000	8,033,000
Manufacturing	35,000	58,000	-45,000	-68,000	-30,000	-11,000	-33,000	-94,000
Warehouse/Flex	1,031,000	1,517,000	1,062,000	1,711,000	3,165,000	1,486,000	1,797,000	11,769,000
Retail	742,000	1,197,000	651,000	476,000	2,268,000	958,000	1,006,000	7,298,000
Total ²	2,195,000	3,463,000	3,687,000	2,942,000	7,607,000	3,437,000	3,675,000	27,006,000
¹ Figures are rounded to nearest thousand square feet. Net space demand accounts for a five percent (5%) frictional vacancy rate and currently vacant space. ² Does not include other types of building space (e.g. civic, institutional uses). Source: Gruen Gruen + Associates.								

¹⁸ “What’s Next? Real Estate in the New Economy,” Urban Land Institute, pp 52.



For the entire TTP Planning Area, net additional office space demand totals just over 8 million square feet over the 2011 to 2050 period. This equates to average annual demand of approximately 206,000 square feet. Declining office space employment densities can be expected to reduce the growth in long-term office space demand. For example, if office space employment densities did not decline over the long-term but instead remained stable at 250 square feet per worker, net additional office space demand for the region would be closer to 14 million square feet over the same projection period.

Net office space demand in the Central Business District is projected to total just over 2 million square feet, while net office space demand in the Southwest Suburbs totals approximately 2.2 million square feet. No other subarea is projected to capture one-half the net office space demand as either of these subareas. Net office space demand in the Northwest Suburbs and Northwest Des Moines subareas is collectively projected at 1.9 million square feet.

Net additional demand for warehouse/flex space is projected to total 11.8 million square feet. About 3.2 million square feet of this demand is forecast to be distributed in the Southwest Suburbs with between about 1.0 million to 1.8 million square feet distributed to the other subareas.

Net retail space demand within the TTP Planning Area is projected to total just under 7.3 million square feet of space over the 2011 to 2050 period. Given the existing agglomerative characteristics of the Southwest Suburbs, this area is projected to capture the largest proportion of retail space growth at just over 2.2 million square feet.



APPENDIX A

DETAILED EMPLOYMENT, POPULATION AND HOUSEHOLD PROJECTION METHODOLOGY

EMPLOYMENT

Developing the Sectoral Components of the Projection

To develop a regional projection of employment by sector, we rely extensively upon historical patterns of growth within the regional employment base. Given the exogenous forecast rate of overall employment growth (from REMI), we quantify future sectoral shifts by indexing historical industry sector growth rates to the overall historical rate. The uncontrolled future growth rates by sector (UFG_s) are thus expressed as follows:

$$UFG_s = \left(\frac{HG_s}{HG_t} \right) \times FG_t$$

Where:

HG_s = Historic average annual rate of industry sector growth

HG_t = Historic average annual rate of total growth

FG_t = Future average annual rate of total growth

The uncontrolled future growth rates by sector are used to decompose the total growth in employment over the projection period. After controlling for the overall rate of employment growth (from REMI), future employment by industry sector (F_EMP_s) is expressed as follows:

$$F_EMP_s = \frac{C_EMP_s \times (1 + UFG_s)^y}{\sum_{s=1}^{12} C_EMP_s \times (1 + UFG_s)^y} \times (C_EMP_t \times (1 + FG_t)^y)$$

Where:

C_EMP_s = Current employment by industry sector

UFG_s = Uncontrolled future average annual growth rate by industry sector

C_EMP_t = Current total employment

FG_t = Future average annual rate of total growth (control variable)

y = projection period, in years

The projection methodology effectively assumes that the composition of the regional employment base will continue to experience the same patterns of structural change that occurred over the prior two decades. The methodology also reflects the assumption that - for the baseline projection - such shifts will occur at the same scale. For example, consider Industry A which grew twice as fast as Industry B during the 1990-2011 period. The projection methodology assumes that Industry A will continue to grow twice as rapidly as Industry B. However, the actual rates of growth for each A and B will be conditioned upon the overall rate of expansion for the entire employment base.



Localizing the Projections

To localize the regional projections, GG+A created a sector by sub-geography matrix. This formed the basis of the localization process, in which a constant share was assumed.

	Area 1	Area 2	Area 3	→
Sector A	A1%	A2%	A3%	
Sector B	B1%	B2%	B3%	
Sector C	C1%	C2%	C3%	
↓				

The matrix was created based on an InfoUSA database for 2011. If, for example, Area 2 presently comprised 15 percent of Sector B’s total employment, it was assumed that this variable (B2%) would remain constant over the projection period. Implicit in applying constant shares to the matrix is the assumption that current locational preferences of industries will remain similar over time. The lack of historical employment data by sector at such refined levels of geography limits the ability to quantitatively project future locational shifts.¹⁹

The localization process for the baseline employment projections does not explicitly consider land, infrastructure, environmental and political or regulatory constraints on potential employment growth.

POPULATION AND HOUSEHOLDS

To allocate the baseline projection of TTP Planning Area population, households, and housing units, GG+A considered historical patterns of growth and, more specifically, the past relationship between changes in housing stock and local employment. This was done to develop a housing allocation factor for each subarea.

$$Allocation\ Factor = \frac{(F_EMP_GRWTH_{sub} \times UPJ_{sub})}{\sum_{sub=1}^7 F_EMP_GRWTH_{sub} \times UPJ_{sub}}$$

Where:

F_EMP_GRWTH = Future employment growth

UPJ = Units added per additional job

sub, rpsd = Subarea, and TTP Planning Area, respectively

The “units added per additional job” variables by subarea were developed in part based on a review of historical housing and job data at the community level. Because, however, such long-term data is not available at a small geographic scale consistent some of the projection subareas, qualitative adjustments were also made based on interviews with representatives of major TTP communities.

¹⁹ GG+A did obtain and aggregate historical geo-referenced employment data by industry sector from the U.S. Census Bureau’s Center for Economic Studies (for 2002 and 2009, the largest time horizon currently available). We also reviewed employment trends at a community level, based on prior Census of Transportation Planning Packages. However, the data covers such a comparatively short period of time and was not used to extrapolate shifts in employment by geography within the TTP Planning Area.



The resulting factors applied to the baseline projection of total housing units and households within the TTP Planning Area were as follows:

Housing/Household Allocation Factors (%)

<i>Ankeny Area</i>	<i>16.1</i>
<i>East Des Moines</i>	<i>14.7</i>
<i>Des Moines CBD</i>	<i>3.5</i>
<i>South Des Moines</i>	<i>14.3</i>
<i>Southwest Suburbs</i>	<i>29.3</i>
<i>Northwest Des Moines</i>	<i>6.1</i>
<i>Northwest Suburbs</i>	<i>16.0</i>

This process was utilized for the baseline projections in order to reflect the conditions that: (1) population is expected to grow more rapidly than employment in the TTP Planning Area (as reviewed previously); and (2) employment-intensive and housing-intensive subareas are likely to remain so, absent strong shifts in locational preferences and land use policy.

The population projection methodology also considered trends in household formation to allocate regional growth to each subarea. Change in average household size, between 1990 and 2010, is used as a proxy for these characteristics. It is assumed that, for the baseline projections, subareas that experienced a decrease or increase in average household size during the prior two decades will continue to experience lesser or greater population growth relative to household growth. The average household size variables used to translate future households into resident population are summarized below.

<i><u>Subarea</u></i>	<i><u>1990</u></i>	<i><u>2010</u></i>	<i><u>2050</u></i>
<i>Ankeny Area</i>	<i>2.77</i>	<i>2.63</i>	<i>2.38</i>
<i>East Des Moines</i>	<i>2.66</i>	<i>2.70</i>	<i>2.81</i>
<i>CBD</i>	<i>1.96</i>	<i>1.81</i>	<i>1.51</i>
<i>South Des Moines</i>	<i>2.63</i>	<i>2.59</i>	<i>2.52</i>
<i>Southwest Suburbs</i>	<i>2.48</i>	<i>2.42</i>	<i>2.32</i>
<i>Northwest Des Moines</i>	<i>2.39</i>	<i>2.42</i>	<i>2.51</i>
<i>Northwest Suburbs</i>	<i>2.61</i>	<i>2.59</i>	<i>2.60</i>



APPENDIX B

SPACEWALK MODEL USED TO FORECAST BUILDING SPACE DEMANDS

GG+A's Spacewalk™ model converts employment growth by economic sector into an estimate of relevant demand for different kinds of space. Firms within a specific economic sector do not use the same type of space for all their workers. Therefore, the GG+A Spacewalk™ model allocates employment within various economic sectors to occupational categories that correspond to the types of space most likely to be used. For example, while most manufacturing firms primarily demand industrial space, managers of manufacturing companies also use office space while products are typically stored in warehouse/ distribution space. The amount of space primarily depends upon the number of added workers and the associated employment densities (number of square feet of space per employee).

A basic input into the model is an estimate of the percentage and amount of space the employees of a specific firm type utilize. These basic inputs are based on the percentage of the employees that are in various kinds of occupations. That is, it is necessary to estimate the occupational makeup of an industry in order to tie employment to space. We made this estimate, shown on Table B-1, based on 2007-2009 *American Community Survey* sample data (Public Use Microdata Sample) for the Central Iowa region.

We made judgments concerning the type of space by employees of differing occupational make-ups within the economic sectors and employment densities for office space. We used GG+A's Spacewalk™ model to carry out a series of calculations to relate employment densities by occupation within economic sectors to employment forecasts to produce estimates of office space demand and industrial space demand for the TIP Planning Area.



TABLE B-1

Industry by Occupation Matrix for Central Iowa

<i>Industry Sector</i>	<i>Occupational Classification</i>										
	Management	Business & Financial	Professional & Related	Services	Sales & Related	Office & Administrative Support	Farming, Forestry & Fishing	Construction & Extraction	Installation, Maintenance & Repair	Production	Transportation & Materials Moving
Construction & Natural Resources	16.8%	1.3%	3.0%	0.7%	0.8%	5.0%	7.8%	55.5%	3.8%	1.4%	3.7%
Manufacturing	11.8%	3.7%	10.0%	1.7%	4.5%	8.6%	0.3%	1.5%	4.2%	43.5%	10.1%
Wholesale Trade	8.5%	6.4%	4.0%	0.5%	36.6%	17.3%	0.3%	1.8%	4.1%	4.0%	16.5%
Retail Trade	3.3%	1.3%	5.3%	4.9%	52.0%	17.4%	0.1%	0.4%	4.2%	2.3%	8.7%
Transportation & Warehousing	7.1%	3.5%	3.6%	2.5%	1.6%	26.4%	0.0%	2.5%	5.0%	3.3%	44.5%
Information	10.7%	5.5%	28.6%	3.0%	14.0%	26.1%	0.0%	0.0%	7.4%	2.0%	2.7%
Finance & Insurance	14.0%	25.2%	14.3%	1.1%	12.3%	31.7%	0.0%	0.0%	0.4%	0.9%	0.2%
Real Estate	21.2%	4.5%	3.0%	13.4%	38.1%	9.1%	0.0%	0.9%	4.1%	0.4%	5.3%
Professional, Scientific & Technical Services	12.5%	11.2%	43.4%	2.6%	5.2%	21.6%	0.0%	0.6%	1.6%	0.8%	0.6%
Management of Companies / Enterprises	0.0%	0.0%	14.7%	0.0%	0.0%	85.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Administrative Support & Waste Management	6.8%	5.9%	5.0%	33.2%	6.5%	22.9%	1.5%	1.4%	2.5%	4.7%	9.6%
Educational Services	7.1%	1.1%	63.8%	13.2%	1.4%	9.3%	0.2%	0.2%	0.9%	1.4%	1.5%
Health Care & Social Assistance	6.3%	0.8%	40.3%	34.6%	0.3%	12.8%	0.0%	0.4%	0.3%	2.9%	1.3%
Arts, Entertainment & Recreation	5.0%	2.5%	17.4%	52.6%	6.6%	7.5%	0.0%	1.5%	2.3%	0.4%	4.2%
Accommodation & Food Services	8.6%	1.2%	0.0%	74.7%	8.1%	4.2%	0.0%	0.0%	0.3%	0.6%	2.2%
Other (Personal) Services	7.9%	2.9%	20.7%	34.0%	3.9%	11.0%	0.3%	0.0%	11.7%	3.7%	3.7%
Government / Public Administration	12.0%	9.3%	23.1%	25.2%	0.0%	24.5%	0.5%	1.6%	2.7%	0.7%	0.4%

Sources: U.S. Census Bureau, 2007-2009 *American Community Survey, Public Use Microdata Sample*; Gruen Gruen + Associates.

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