



TOWN OF QUEEN CREEK
LONG-TERM EMPLOYMENT LAND
SUPPLY AND DEMAND ANALYSIS
FINAL REPORT

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Economic & Fiscal Impact

Demographic Analysis

Economic Development

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EXECUTIVE SUMMARY

Applied Economics was retained by the Newell Barney family to evaluate the demand for employment land within the Town of Queen Creek as part of General Plan Amendment Case Number GP09-058. The proposed amendment includes changes to the Queen Creek General Plan on 257 acres at the northwest corner of Queen Creek Road and Meridian Road from Employment Type B (general industrial), to Medium Density Residential uses. The purpose of this analysis is to determine if the subject tract of general industrial land is needed to support reasonable levels of long-term employment growth in the Town of Queen Creek.

Growth projections for the Queen Creek MPA from the Maricopa Association of Governments indicate 2030 population reaching about 72,600, with employment at just over 35,100, for a jobs-to-population ratio of 0.48. This ratio is consistent with the goals of the Queen Creek General Plan, and is comparable to the ratios projected for Gilbert and Mesa in 2030. Roughly half of the 2030 employment would be in the industrial, office and “other” land use categories, those that will drive demand for Employment Type A and Employment Type B land. The remaining half of the 2030 employment would occupy retail and public lands. Note that any conclusions reached in this analysis do not reflect the official views of MAG, and have not been approved or reviewed by MAG.

Based on reasonable employment-per-acre and capture assumptions, the projected 2030 employment level indicates demand for about 634 acres of Employment Type A and Employment Type B lands. This would imply an average of about 70 square feet of industrial space per resident, which is very near the current average for the Southeast Valley. Based on that average rate, the Town would need about 945 acres of Type A and Type B employment lands at build-out. The build-out population of about 100,000 people, combined with the industrial density now found in Chandler (about 100 square feet per resident), shows maximum demand of about 1,350 acres of Type A and Type B Employment land. However, build-out demand could also be as low as 400 acres, ultimately depending on the competitive position of industrial land in Queen Creek and town policies.

The current general plan for the Town of Queen Creek includes some 2,633 acres of Office Services, Employment Type A and Employment Type B land, of which about 2,470 acres are available to meet future demand. That inventory is nearly four times as much land as could reasonably be expected to be absorbed through 2030, and over 1,100 acres more than could be expected to be absorbed at build-out. This apparent employment land surplus does not reflect any development potential for the approximately 1,000 acres of “Mixed Use” land recently added to the General Plan, which could compete for office users with Employment Type B lands.

Finally, the possibility that the subject property will be able to develop with anything other than extremely low density and storage type industrial uses is limited by competition in the surrounding market area. The larger Queen Creek market area has about 13,000 acres of employment lands, or approximately a 76 year supply based on absorption levels in the Southeast Valley over the past 10 years. Nearly all of this land is better-positioned for industrial development than the subject property. This also appears to be the case within the Town, as most other designated employment areas have better transportation, work force and market accessibility than the subject property.

Overall, the analysis indicates that the Town has classified more Type A and Type B Employment land than can reasonably be expected to absorb. Furthermore, having affordable housing in close proximity to employment nodes in the Town, and within the market area will be an important part of the success of industrial and other types of employment growth.

1.0 INTRODUCTION

Applied Economics was retained by the Newell Barney family to evaluate the demand for employment land within the Town of Queen Creek as part of General Plan Amendment Case Number GP09-058. The proposed amendment includes changes to the Queen Creek General Plan on 257 acres at the northwest corner of Queen Creek Road and Meridian Road from Employment Type B (general industrial), to a mix of Medium Density Residential uses. This action is desired since it is unclear when, or if, the land might develop under the general industrial classification due to large concentrations of better-positioned industrial land in Queen Creek, and even more in the area surrounding the Phoenix-Mesa Gateway Airport.

The purpose of this analysis is to determine if this tract of general industrial land is needed to support reasonable levels of long-term employment growth in the Town of Queen Creek. The analysis examines the overall supply and demand for general industrial and light industrial land in Queen Creek, referred to as “Employment Lands” or “Employment Land Use” in this report. The demand projections are made by examining projected employment growth, as well as by making comparisons to the amount of industrial space supported in more-developed areas around the Phoenix Metropolitan Area and the Southeast Valley. The report provides a summary of the metropolitan area industrial market, focusing on historical demand trends and the relationship between industrial development and population growth.

It is our understanding this study is for the client’s due diligence and other planning purposes. This report is not to be used for any prospectus, loan agreement or other financial purpose without the prior written approval of Applied Economics. This study only evaluates the employment land supply and demand balance within the Town of Queen Creek; however land use in the broader market area is discussed to put the analysis into perspective. The study does not address the market feasibility of converting the 257 acres to Medium Density Residential use.

This report is based on currently available information and estimates and assumptions about long-term future development trends. The information and observations contained in this report are based on our present knowledge of the components of development, and of the current physical and socioeconomic conditions of the affected areas. Estimates made in this analysis are based on hypothetical assumptions and the current economic structure of the region. However, even if the assumptions outlined in this report were to occur, there will usually be differences between the estimates and the actual results because events and circumstances frequently do not occur as expected. In no way will Applied Economics be held responsible or have any liability or be subject to damages as a result of this analysis. This report may be used only for the purposes that it was intended.

The balance of the report is organized into three sections. Section 2.0 examines trends and characteristics of the metropolitan Phoenix industrial market, looks at the amount of industrial space supported elsewhere, and quantifies the amount of industrial land available in Queen Creek. Next, Section 3.0 analyzes the amount of general and light industrial land that is projected to be absorbed over the next 20 years, and level of long-term demand indicated by the Town’s build-out population. Section 4.0 looks at the supply of land for employment uses in Queen Creek market area, and quantifies the supply within the Town of Queen Creek. Finally, in Section 5.0, the components of industrial supply and demand are brought together to evaluate the long term supply/demand balance for industrial land in the Town of Queen Creek.

2.0 INDUSTRIAL MARKET OVERVIEW

This section of the report examines trends and characteristics of the metropolitan Phoenix industrial market, especially as it compares to population levels in metropolitan Phoenix communities, and quantifies the amount of industrial land available in Queen Creek as indicated in the current General Plan Land Use. The industrial real estate market data used in this analysis is derived from the Kammrath and Associates 2009 Edition of The Property Book Directory of Industrial Buildings. It includes all buildings larger than 10,000 square feet in size, primarily depending upon the County Assessor's records for the building information. Since there is often a delay in putting newly developed buildings on the Assessor's tax rolls, the Kammrath and Associates database typically lags behind market construction activity. However, given the very low levels of construction occurring at this time, very little existing space would be excluded.

The Kammrath data shows the metropolitan Phoenix industrial market with a total of approximately 263.3 million square feet of space in buildings greater than 10,000 square feet, as shown in **Table 1**. Buildings under 10,000 square feet account for only about 5 percent of inventory. Industrial buildings are categorized into four types of uses by Kammrath and Associates: assembly or manufacturing, multi-tenant, office warehouse, and warehouse/distribution. As of the latest data available through 2009, assembly and manufacturing buildings totaled about 58.7 million square feet of space (22.3 percent) and multi-tenant industrial park buildings totaled 38.3 million square feet (14.5 percent). In addition, there are 27.7 million square feet of office/warehouse buildings (10.5 percent) and 138.5 million square feet of warehouse/distribution buildings (52.6 percent).

The distribution of industrial development by type and community (**Table 1**) shows that fully half (50.6 percent) of all industrial development in the metropolitan area is located in the City of Phoenix. This is mainly due to historical development patterns and high concentrations of transportation-related warehousing near the Sky Harbor Airport and in the West I-10 Corridor. The Southeast Valley, led by Tempe and Chandler comprises the majority of the remainder of the industrial development with 29.1 percent of the metropolitan area market inventory, or about 76.6 million square feet. Interestingly, Tolleson leads the pack of the remaining communities, having about the same industrial inventory as Mesa. This is fueled by over 12.0 million square feet of warehousing and distribution space along the rail line and Interstate 10. Most industrial areas flourish where there is an intersection of two or more modes of transportation.

The character of the industrial market in the Southeast Valley is different, with much higher concentrations of non-warehousing industrial development. Non-warehouse industrial space accounts for 64.9 percent of the inventory in the Southeast Valley, versus 47.4 percent of the inventory in the metropolitan area. The concentration of manufacturing space in particular is much higher in the Southeast Valley. This is partially due to the type of labor force historically found in the respective areas, but is likely also due to the fact that for many years the Southeast Valley lacked the transportation infrastructure to compete for warehousing. Completion of the Loop 202 Freeway has already been an important catalyst, as will the development of the Phoenix-Gateway Airport in the future.

Tempe and Chandler comprise about 73.4 percent of the industrial market in the Southeast Valley, totaling some 56.2 million square feet. Chandler's inventory is driven by large assembly and manufacturing facilities (comprising about 20.4 percent of the metropolitan area total versus 8.6 percent overall), while Tempe has high concentrations in Office Warehouse and Warehouse/Distribution with some 19.5 million square feet of space.

TABLE 1
METROPOLITAN PHOENIX INDUSTRIAL INVENTORY
BY TYPE AND COMMUNITY

Community	Manufacturing		Industrial Park		Office Warehouse		Warehouse		Total	
	Square Feet	Market Share	Square Feet	Market Share	Square Feet	Market Share	Square Feet	Market Share	Square Feet	Market Share
Avondale	116,512	0.2%	743,318	1.9%	209,657	0.8%	306,966	0.2%	1,376,453	0.5%
Buckeye	474,131	0.8%	0	0.0%	0	0.0%	1,925,541	1.4%	2,399,672	0.9%
<i>Chandler</i>	<i>11,990,953</i>	<i>20.4%</i>	<i>1,855,095</i>	<i>4.8%</i>	<i>2,860,337</i>	<i>10.3%</i>	<i>6,017,965</i>	<i>4.3%</i>	<i>22,724,350</i>	<i>8.6%</i>
County	1,388,407	2.4%	31,600	0.1%	85,637	0.3%	1,784,884	1.3%	3,290,528	1.2%
El Mirage	345,787	0.6%	0	0.0%	0	0.0%	516,045	0.4%	861,832	0.3%
Fountain Hills	0	0.0%	107,145	0.3%	92,056	0.3%	37,649	0.0%	236,850	0.1%
<i>Gilbert</i>	<i>935,528</i>	<i>1.6%</i>	<i>1,452,607</i>	<i>3.8%</i>	<i>1,221,661</i>	<i>4.4%</i>	<i>2,473,676</i>	<i>1.8%</i>	<i>6,083,472</i>	<i>2.3%</i>
Glendale	1,540,191	2.6%	1,102,699	2.9%	427,028	1.5%	6,464,758	4.7%	9,534,676	3.6%
Goodyear	2,547,816	4.3%	309,305	0.8%	44,293	0.2%	2,968,413	2.1%	5,869,827	2.2%
<i>Guadalupe</i>	<i>0</i>	<i>0.0%</i>	<i>0</i>	<i>0.0%</i>	<i>0</i>	<i>0.0%</i>	<i>107,104</i>	<i>0.1%</i>	<i>107,104</i>	<i>0.0%</i>
<i>Mesa</i>	<i>3,432,427</i>	<i>5.8%</i>	<i>3,857,124</i>	<i>10.1%</i>	<i>1,198,054</i>	<i>4.3%</i>	<i>5,607,147</i>	<i>4.0%</i>	<i>14,094,752</i>	<i>5.4%</i>
Peoria	323,339	0.6%	791,977	2.1%	531,327	1.9%	1,979,938	1.4%	3,626,581	1.4%
Phoenix	24,287,649	41.3%	15,665,878	40.9%	11,036,991	39.8%	82,136,884	59.3%	133,127,402	50.6%
<i>Queen Creek</i>	<i>0</i>	<i>0.0%</i>	<i>13,187</i>	<i>0.0%</i>	<i>16,010</i>	<i>0.1%</i>	<i>87,455</i>	<i>0.1%</i>	<i>116,652</i>	<i>0.0%</i>
Scottsdale	2,293,776	3.9%	4,912,673	12.8%	3,068,383	11.1%	908,216	0.7%	11,183,048	4.2%
Surprise	127,924	0.2%	0	0.0%	24,462	0.1%	536,171	0.4%	688,557	0.3%
<i>Tempe</i>	<i>6,946,819</i>	<i>11.8%</i>	<i>7,036,341</i>	<i>18.4%</i>	<i>6,920,640</i>	<i>25.0%</i>	<i>12,594,711</i>	<i>9.1%</i>	<i>33,498,511</i>	<i>12.7%</i>
Tolleson	2,025,240	3.4%	397,132	1.0%	0	0.0%	12,067,723	8.7%	14,490,095	5.5%
Maricopa County	58,776,499	100.0%	38,276,081	100.0%	27,736,536	100.0%	138,521,246	100.0%	263,310,362	100.0%
Percent of Total	22.3%		14.5%		10.5%		52.6%		100.0%	
<i>Southeast Valley</i>	<i>23,305,727</i>	<i>39.7%</i>	<i>14,214,354</i>	<i>37.1%</i>	<i>12,216,702</i>	<i>44.0%</i>	<i>26,888,058</i>	<i>19.4%</i>	<i>76,624,841</i>	<i>29.1%</i>
<i>Percent of Total</i>	<i>30.4%</i>		<i>18.6%</i>		<i>15.9%</i>		<i>35.1%</i>		<i>100.0%</i>	

Source: Kamrath & Associates, Directory of Industrial Buildings, 2009.

**TABLE 2
METROPOLITAN PHOENIX INDUSTRIAL INVENTORY
SQUARE FOOTAGE GROWTH AND LAND ABSORPTION: 1999-2008**

Year Built	County	Southeast Valley	
	Industrial Square Feet	Industrial Square Feet	Share of County
1999	8,500,334	2,549,650	30.0%
2000	8,276,502	1,922,039	23.2%
2001	7,473,191	1,454,258	19.5%
2002	3,268,137	887,484	27.2%
2003	2,918,813	1,101,702	37.7%
2004	3,944,902	933,042	23.7%
2005	6,696,917	2,365,103	35.3%
2006	8,855,929	1,647,982	18.6%
2007	12,373,344	2,988,563	24.2%
2008	8,208,331	2,090,819	25.5%
TOTAL	70,516,400	17,940,642	25.4%

Year Built	County	Southeast Valley	
	Industrial Land Acres	Industrial Land Acres	Share of County
1999	821.5	242.1	29.5%
2000	871.1	162.1	18.6%
2001	471.6	120.0	25.4%
2002	289.0	76.8	26.6%
2003	225.7	97.5	43.2%
2004	384.2	154.5	40.2%
2005	803.9	184.8	23.0%
2006	742.0	146.2	19.7%
2007	967.2	282.4	29.2%
2008	641.7	199.5	31.1%
TOTAL	6,217.9	1,666.0	26.8%

Year Built	County	Southeast Valley	
	Industrial F.A.R.*	Industrial F.A.R.*	Percent of County Rate
1999	0.24	0.24	101.8%
2000	0.22	0.27	124.8%
2001	0.36	0.28	76.5%
2002	0.26	0.27	102.2%
2003	0.30	0.26	87.4%
2004	0.24	0.14	58.8%
2005	0.19	0.29	153.6%
2006	0.27	0.26	94.5%
2007	0.29	0.24	82.7%
2008	0.29	0.24	81.9%
TOTAL	0.26	0.25	95.0%

Sources:

Kammrath & Associates, Directory of Industrial Buildings, 2009.

Applied Economics, 2009.

* F.A.R. = Floor Area Ratio

Over the last decade from 1999 through 2008 (last full year of data) about 70.5 million square feet of space was added to the industrial market in Maricopa County as shown in **Table 2**. Of this, about 17.9 million square feet was located in the Southeast Valley, representing a market capture rate of 25.4 percent. These levels of industrial development resulted in the absorption of about 6,200 acres across the metropolitan area, or about 600 acres per year. The Southeast Valley total of about 1,666 acres translates into about 0.26 square miles per year. Floor area ratios (the ratio of building area to net land area) have varied from year-to-year due to different mixes of industrial product, but consistently remain near an average of 0.25.

Another useful way to examine the industrial market is to look at the ratio of industrial building area to household population. As shown in Table 3, these ratios vary widely, but are a good way to characterize the levels of industrial development that are found in specific types and sizes of communities. The overall 2008 ratio of industrial building area to population is 67.2 square feet per person, based on 263.3 million square feet of space and 3.9 million people. These averages have changed little over the past decade. The Southeast Valley exhibits a very slightly higher rate with 69.5 square feet per person.

TABLE 3
METROPOLITAN PHOENIX INDUSTRIAL INVENTORY
SQUARE FEET PER PERSON DENSITY

Community	Industrial Square Feet	2008 Municipal* Population	Industrial Square Feet per Person
Avondale	1,376,453	76,476	18.00
Buckeye	2,399,672	45,294	52.98
Cave Creek	0	5,132	0.00
<i>Chandler</i>	<i>22,724,350</i>	<i>242,613</i>	<i>93.67</i>
County	3,290,528	283,979	11.59
El Mirage	861,832	33,602	25.65
Fountain Hills	236,850	25,745	9.20
<i>Gilbert</i>	<i>6,083,472</i>	<i>213,720</i>	<i>28.46</i>
Glendale	9,534,676	244,472	39.00
Goodyear	5,869,827	55,618	105.54
<i>Guadalupe</i>	<i>107,104</i>	<i>5,960</i>	<i>17.97</i>
<i>Mesa</i>	<i>14,094,752</i>	<i>453,714</i>	<i>31.07</i>
Peoria	3,626,581	152,695	23.75
Phoenix	133,127,402	1,532,193	86.89
<i>Queen Creek</i>	<i>116,652</i>	<i>22,922</i>	<i>5.09</i>
Scottsdale	11,183,048	240,041	46.59
Surprise	688,557	108,259	6.36
<i>Tempe</i>	<i>33,498,511</i>	<i>163,738</i>	<i>204.59</i>
Tolleson	14,490,095	6,826	2,122.78
Youngtown	0	5,989	0.00
Maricopa County	263,310,362	3,918,988	67.19
<i>Southeast Valley</i>	<i>76,624,841</i>	<i>1,102,667</i>	<i>69.49</i>
<i>Share of County</i>	<i>29.1%</i>	<i>28.1%</i>	

Sources:

Kammrath & Associates, Directory of Industrial Buildings, 2009.

Maricopa Association of Governments, 2008.

Applied Economics, 2009.

* Resident population in households.

As expected, Tempe and Chandler top the charts in terms of industrial building area per capita with 204.6 and 93.7 square feet per person, respectively. They are both well above the county average of 67.2 square feet per capita, and the City of Phoenix average of 86.9 square feet per capita. None of the other communities in the Southeast Valley approach these concentrations, with Mesa being the next highest at 31.1 square feet per capita. Overall, it appears that communities could use a range of 70 to 100 square feet of space per person as a reasonable level of industrial development to expect in the long term, barring radical changes in transportation accessibility.

3.0 FUTURE EMPLOYMENT LAND DEMAND

In this section, projected population and employment growth in Queen Creek are used to estimate the aggregate demand for employment land. The calculation of demand is performed using two different methods, both employing socioeconomic projection data from the Maricopa Association of Governments. The first uses projections of employment by land use, while the second uses household population and the relationship between population and industrial development discussed in the previous section of the report. However, before delving into the projected demand for Queen Creek, the section begins with a look at the greater Queen Creek industrial market area.

3.1 Socioeconomic Projections

The analysis of demand for employment land in Queen Creek is based on projected population and employment levels for the Queen Creek Municipal Planning Area (MPA) from the Maricopa Association of Governments (MAG) 2007 Socioeconomic Projections series. These projections include population in households and employment by land use, among other variables, for 2010, 2020 and 2030. The MPA is the unit of geography used by MAG to define the eventual boundaries of each community. The Queen Creek MPA is slightly larger than the Town's incorporated area but includes all the property that is expected to be annexed into the community in the future. MAG's projections take into account regional growth levels, the pattern of development, land availability, and the factors influencing sub-area competitiveness. Any conclusions reached in this analysis do not reflect the official views of MAG, and have not been approved or reviewed by MAG.

The MAG projections show the Queen Creek MPA growing from about 19,600 people in 2005, to nearly 72,600 by 2030, as shown in **Table 4**. While the 2010 projection will likely be significantly too high due to the recession and collapse of the housing market, we have every reason to believe that Queen Creek can still achieve the indicated level of growth in the long term. Employment forecasts for the same period project total employment in 2030 at over 35,000 jobs, or about 0.48 jobs per person (based on the population in households). This rate would rank Queen Creek just below the projected 2030 metropolitan area ratio of about 0.56 jobs per person, and is logical when compared to what is projected for Gilbert (0.54) and Mesa (0.53). It would require employment growth of 775 percent over 2005 levels, compared to 269 percent growth for population during the same period.

The projected distribution of employment in the Queen Creek MPA shows greater overall concentrations of industrial employment, office and retail development, and lower concentrations in "other" and public employment. In all, the industrial, office and other categories, each of which could be located in part on Type A or Type B employment lands, represent just over half the projected growth in employment in the MPA (about 16,100 jobs). The balance of the employment growth (nearly 15,000 jobs) would be in the Public and Retail land use categories that would not be expected to have a significant presence on planned Type A and Type B employment lands.

TABLE 4
SOCIOECONOMIC ESTIMATES AND PROJECTIONS
QUEEN CREEK MPA

	2005	2010	2020	2030
Population in Households	19,639	34,259	55,227	72,594
Employment	4,021	9,652	22,213	35,145
Employment/Population Ratio	0.20	0.28	0.40	0.48
Industrial Employment	404	908	3,560	6,284
Share of Total	10.0%	9.4%	16.0%	17.9%
Growth		504	2,652	2,724
Office Employment	63	451	3,330	7,000
Share of Total	1.6%	4.7%	15.0%	19.9%
Growth		388	2,879	3,670
Other Employment	1,736	3,147	4,502	5,068
Share of Total	43.2%	32.6%	20.3%	14.4%
Growth		1,411	1,355	566
Public Employment	873	2,098	3,502	4,828
Share of Total	21.7%	21.7%	15.8%	13.7%
Growth		1,225	1,404	1,326
Retail Employment	945	3,048	7,319	11,965
Share of Total	23.5%	31.6%	32.9%	34.0%
Growth		2,103	4,271	4,646

Source: Maricopa Association of Governments, 2007.

3.2 Employment Land Demand Projections

Population and employment projections from MAG for the Queen Creek MPA can be used to estimate the aggregate demand for Type A and Type B employment land using two different methods. The first uses projections of employment by land use, while the second uses household population, and the relationship between population and industrial development. For the first method using the employment projections, some or all of employment growth in three of MAG's five land use categories is allocated to Type A and Type B employment lands, and then translated into absorbed acres using average employment per acre rates by land use category, as summarized in **Table 5**.

Employment-per-acre rates for the land demand calculations were based on observed conditions, and assumptions developed by MAG as part of creating the employment projections. Employment per acre for industrial was based on a floor-area-ratio of 0.25, as shown in the industrial market overview, and an average density of 700 square feet per employee, which likely over states the required amount of space due to the mix of industrial uses in the Southeast Valley. The implied rate was reduced by 15 percent to account for the difference between net parcel acreage and the total land area shown in the general plan. This is necessary to account for all forms of right-of-way, open space and other required uses such as fire stations. This results in a final rate of 13 employees per acre for the industrial employment category.

**TABLE 5
INDUSTRIAL LAND DEMAND IN QUEEN CREEK
BASED ON PROJECTED EMPLOYMENT GROWTH**

	2005	2010	2020	2030	Total
Total Employment	4,021	9,652	22,213	35,145	
Industrial Employment	404	908	3,560	6,284	
Growth		504	2,652	2,724	5,880
Office Employment	63	451	3,330	7,000	
Growth		388	2,879	3,670	6,937
Other Employment	1,736	3,147	4,502	5,068	
Growth		1,411	1,355	566	3,332
Public Employment	873	2,098	3,502	4,828	
Growth		1,225	1,404	1,326	3,955
Retail Employment	945	3,048	7,319	11,965	
Growth		2,103	4,271	4,646	11,020
Employment per Acre					
Industrial (1)		13	13	13	
Office (2)		46	46	46	
Other (3)		22	22	22	
Employment* Land Demand (Acres)					
Industrial		38	201	206	445
Office (75% in Employment Areas)		6	47	59	112
Other (50% in Employment Areas)		32	31	13	76
Total		77	278	278	634

Sources: Maricopa Association of Governments, 2007; Applied Economics, 2009.

(1) 0.85 gross-to-net land ratio, FAR of 0.25, 700 square feet per employee.

(2) 0.85 gross-to-net land ratio, FAR of 0.375, 300 square feet per employee.

(3) 0.80 gross-to-net land ratio, FAR of 0.25, 400 square feet per employee.

* Includes Type A (general industrial) and Type B (light industrial) lands.

In the case of office employment, a FAR of 0.375 was used to reflect a mix of one-story and two-story office buildings with an average ground floor coverage of 0.25. Combined with an average of 300 square foot per employee and a gross-to-net ratio of 0.85, this resulted in an estimate of about 46 employees per gross acre. Finally, for other development a FAR of 0.25, an average of 400 square feet per employee and a gross-to-net ratio of 0.85 yielded an estimate of about 22 employees per gross acre of land. The lower ratio of net-to-gross acreage for other employment is a result of the various types of employment that fall into that category including construction employment, agriculture, mining and tourism.

Employment-per-acre assumptions were applied to 100 percent of the industrial employment growth, 75 percent of office employment growth and 50 percent of other employment growth to determine the total demand for Type A and Type B employment land in Queen Creek. The balance of employment growth in the second two categories is assumed to occur on commercial and public lands, or within residential areas in the case of construction and work-at-home employment in the “other” category. This approach widens the realm of employment that could potentially locate in Type A and Type B employment areas, acknowledging the generality of the definition of land use and the trend toward more mixed-use development.

The results show the implied level of employment land absorbed from employment growth in the three land use categories analyzed totaling about 634 acres through 2030. About two-thirds of this demand would come from growth in industrial employment, while about one-third of the demand would come from growth in other employment categories.

This level of absorption also turns out to well in the range of what would be implied by the future levels of population in Queen Creek. MAG population projections show the Queen Creek MPA household population reaching about 72,600 persons by 2030 as shown in **Table 6**. Build-out population estimates from the Queen Creek General Plan indicate a total population of about 90,000 people, so the Town would be at about 80 percent of build-out in 2030. The market overview showed the industrial square feet per capita ranging between 20 and 100 in most of the more developed communities in the metropolitan area. Assuming that Queen Creek achieves the Southeast Valley average rate of 70 square feet per person, the 2030 population would imply total demand for about 686 acres, very similar to the amount of demand indicated by the employment projections from MAG. This includes an adjustment to account for the fact that industrial employment will account for about two-thirds of total demand for (Type A and Type B) employment land uses.

**TABLE 6
INDUSTRIAL LAND DEMAND IN QUEEN CREEK
BASED ON PROJECTED BUILDOUT POPULATION**

	2005	2010	2020	2030	Build-out
Population in Households	19,639	34,259	55,227	72,594	100,000
Industrial Square Feet					
Industrial Square Feet per Capita:					
30	589,170	1,027,770	1,656,810	2,177,820	3,000,000
40	785,560	1,370,360	2,209,080	2,903,760	4,000,000
50	981,950	1,712,950	2,761,350	3,629,700	5,000,000
60	1,178,340	2,055,540	3,313,620	4,355,640	6,000,000
70	1,374,730	2,398,130	3,865,890	5,081,580	7,000,000
80	1,571,120	2,740,720	4,418,160	5,807,520	8,000,000
90	1,767,510	3,083,310	4,970,430	6,533,460	9,000,000
100	1,963,900	3,425,900	5,522,700	7,259,400	10,000,000
Employment* Land Demand (Acres)					
Employment Square Feet per Capita: (1)					
45	79.6	138.8	223.7	294.1	405.1
60	106.1	185.1	298.3	392.1	540.2
75	132.6	231.3	372.9	490.2	675.2
90	159.1	277.6	447.5	588.2	810.2
105	185.6	323.8	522.1	686.2	945.3
120	212.2	370.1	596.6	784.2	1,080.3
135	238.7	416.4	671.2	882.3	1,215.4
150	265.2	462.6	745.8	980.3	1,350.4

Sources: Maricopa Association of Governments, 2007; Applied Economics, 2009.

(1) Based on other types of employment comprising one-third of demand, a 0.85 gross-to-net land ratio and an average FAR of 0.3

The range of projected long term and build-out employment land demand in Queen Creek is relatively great, especially given the uncertainty of economy and housing market, and the fact that the per-capita rates vary significantly by community. Using the average for Southeast Valley of 70 square feet per person as a goal for Queen Creek seems aggressive given it's current position (with 5 square feet per person), but it also seems reasonable to preserve enough land to be able to respond to opportunities should they arise, and provide the potential for a healthy jobs-to-population ratio in the future. So, if we assume a build-out population for the Town of 100,000 people, and we assume that Queen Creek rises to the rate of industrial development Chandler has now (with 100 square feet of industrial space per person), there could eventually be demand for up to about 1,400 acres of Type A and Type B employment land in the Town of Queen Creek, or demand could be as low as 400 acres based on industrial space per person densities similar to what currently exists in Mesa.

4.0 SUPPLY OF EMPLOYMENT LAND

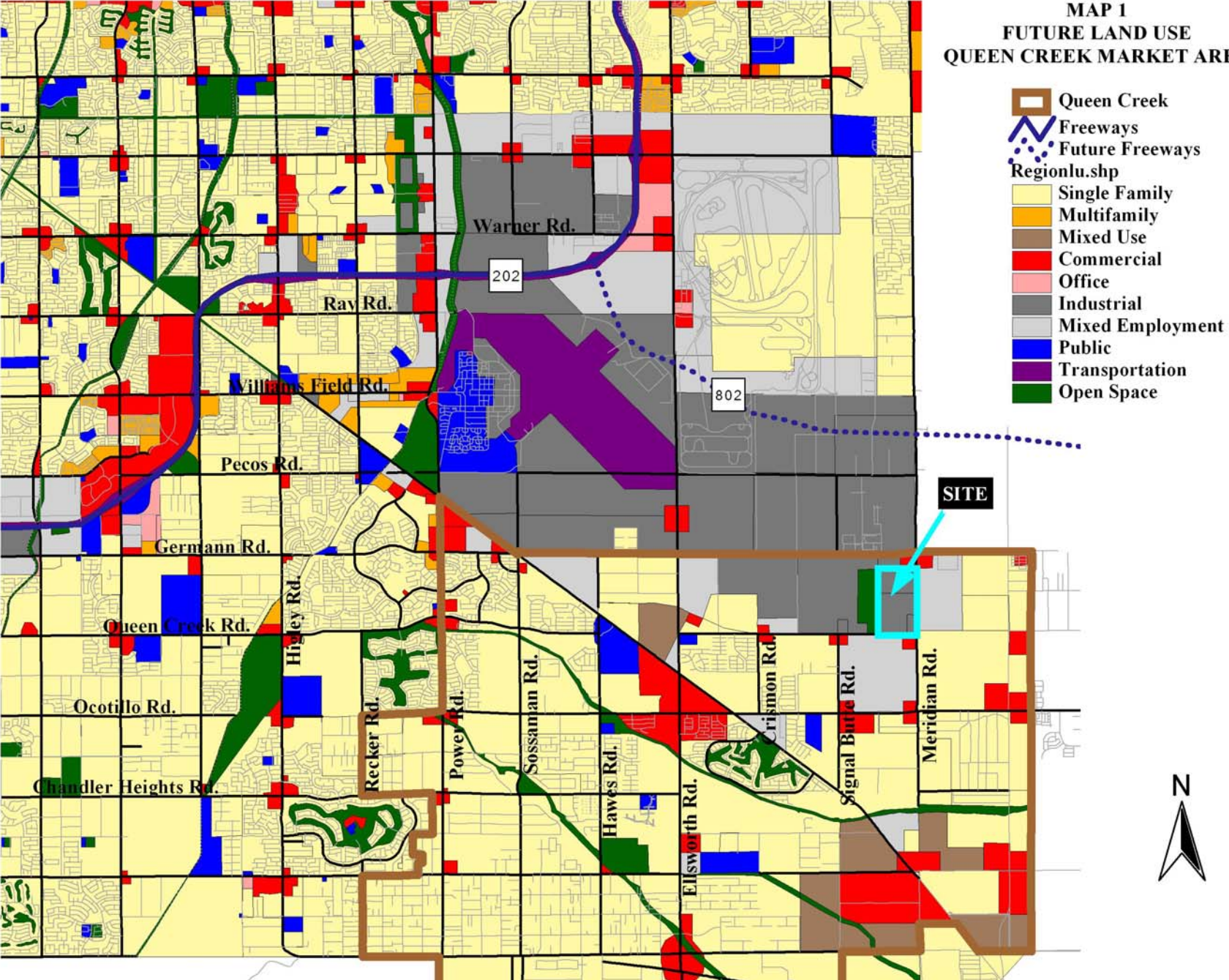
Section 4.0 begins by providing an understanding of how the employment land use in the Town of Queen Creek relates to, and competes with, employment land in the regional market area. Then it provides estimates of the total and vacant Type A and Type B employment land use in the Queen Creek MPA.

4.1 Market Area Land Use

While this analysis focuses on the long-term supply/demand balance in the Town of Queen Creek, it is important to understand the broader market area in which the parcel in question will be competing. This will affect not only land use, but also timing. **Map 1** shows a generalized composite of future land use plans in the southeast corner of Maricopa County. As illustrated by the picture, the subject property is on the outer fringe of a huge future employment node that contains some 20 square miles of industrial and mixed-use employment land. That would translate into about 13,000 acres of employment lands, or approximately a 76 year supply based on absorption levels in the Southeast Valley over the past 10 years.

Furthermore, it could be difficult to sustain the current level of industrial growth in the Southeast Valley since the amount of land for residential development is becoming limited, constraining labor force access in close proximity to employment nodes. Improved transportation accessibility and continued new residential development in Pinal County can likely provide the required labor force access. However, having affordable housing in close proximity to employment nodes will be an important part of the market area's success, both now and in the future. The lack of affordable housing in close proximity to employment is a big part of what drives the extreme "reverse" flow of workers from the East Valley into the Scottsdale Airpark / Perimeter Center area.

**MAP 1
FUTURE LAND USE
QUEEN CREEK MARKET AREA**



4.2 Queen Creek Employment Land Inventory

Estimates of the total acres of Type A and Type B Employment land use in the Town of Queen Creek were derived from the Queen Creek General Plan, as adopted May 21, 2008. The total number of acres in each employment land use category was obtained from the General Plan report. The employment areas on the map were digitized into our Geographic Information System (GIS). The amount of developed land within each area was determined by examining aerial photography, and locating known industrial buildings and employers.

Within the Queen Creek MPA there about 2,600 acres of Office/Services, and Employment Type A and Employment Type B land. Our research shows that about 165 of these acres are currently developed leaving a minimum supply of 2,468 acres. We term this the “minimum supply” since it does not include the new part of the Queen Creek MPA in Pinal County that contains another 3,630 acres of “employment” land because the area was not included in MAG’s 2007 Socioeconomic Projections that were used to quantify demand. Also the Arizona State Land Department has asked municipalities in the proximity of Superstition Vistas to hold off on including state lands in planning activities until the planning efforts by the department are farther along. As a result, Queen Creek is currently not considering that 3,600 acres in its planning projections. Furthermore, it also does not include the approximately 1,000 acres of mixed use land that was added to the General Plan in 2008, some of which could compete with Employment Type A areas for office employers.

**TABLE 7
TOWN OF QUEEN CREEK GENERAL PLAN
TOTAL AND AVAILABLE EMPLOYMENT LAND**

Land Use *	Total Planned Acres	Developed Acres	Vacant Acres
Office Services	89	5	84
Employment - Type A	1,232	78	1,154
Employment - Type B	1,312	82	1,230
Total	2,633	165	2,468

Sources: Town of Queen Creek General Plan, Updated 9/2/2008.
Applied Economics, 2009.

* Excludes 1,008 acres of mixed use land use. Also excludes the 3,630 acres in the new "Employment" area in Pinal County that was not included in MAG's land use database at the time of their projections.

5.0 EMPLOYMENT LAND SUPPLY AND DEMAND

This section brings together the estimates of supply and demand for Type A and Type B Employment Land in the Town of Queen Creek to examine the balance. As shown in Table 8, the minimum supply of 2,468 Employment Land acres is over three-times larger than the 600 to 700 acres likely to be demanded over the next 20 years. It is also over 1,100 acres more than could be absorbed at build-out, even if the Town of Queen Creek were to develop the same industrial base on a per-capita basis that is now found in Chandler.

**TABLE 8
QUEEN CREEK MPA
SUPPLY/DEMAND BALANCE FOR EMPLOYMENT LAND USES**

	Acres
Minimum Vacant Employment Land (MPA)	2,468
Employment Land Demand Through 2030	686
Maximum Employment Land Demand at Build-out	1,350
Surplus (Deficit) in 2030	1,782
Surplus (Deficit) at Maximum Build-out	1,118

Source: Applied Economics, 2009.

We believe that this analysis confirms the assertion that the Town has classified more land in these types of employment areas than can reasonably be expected to ever be absorbed. The analysis indicates generally how much land could be considered for conversion to other uses, but not which land or to which uses. However, we would note that the pattern of future land use in the Queen Creek regional market area contains a massive amount of better-positioned industrial land than the property that is the subject of the proposed general plan amendment. This also appears to be the case within the Town itself, as most other designated employment areas have better transportation, work force and customer accessibility than the subject property.

Under its current land use designation, this property may not develop for decades, whereas residential development would likely occur much earlier. It will be important to incorporate a schedule reflecting this timing difference into the fiscal analysis. This approach would weigh any potential fiscal impact differences between the land use alternatives against the benefits of earlier increased property values, retail sales and dedicated infrastructure improvements.