

# Appendix A—Future Land Use Projections

## MARKET DEMAND MODEL

### Assumptions for Population Growth and Net New Development Space

Population forecasts and land use estimates have been developed for Ottawa, Paola, and Louisburg by decade (2010 – 2030). Generalized land use quantities were determined for residential, retail, industrial, and office uses. A detailed listing of the assumptions for population projections and land use quantities is included below.

#### Population Projections

(Note: Figures in the model have been rounded to the nearest 10)

**2000 Population:** Population data for 2000 is from the US Census and is certified by the State of Kansas' Division of Budget.

**2007 Population:** The Division has also certified population estimates for the period of July 1, 2007 to July 1, 2008 as follows:

Louisburg:	3,787 people
Paola:	5,369 people
Ottawa:	12,828 people

**Low Growth:** The low growth population projections for Louisburg and Paola are based on the Kansas Division of Budget figures. The estimates for Ottawa are based upon Kansas Water Office projections. The Water Office figures are also included in the *2004 Ottawa Comprehensive Plan*.

**High Growth:** The high growth scenario is based on an analysis of cities that are comparable to those within the K-68 Study Area because of their location on the edge of the development ring that surrounds the Kansas City Metropolitan Area. Comparable communities specifically include Gardner and Spring Hill, Kansas and Raymore and Grain Valley, Missouri. These communities could experience projected population growth rates of the following:

2000 – 2010:	75%
2010 – 2020:	99%
2020 – 2030:	159%

Because Ottawa is located farther from the Metro, it is assumed that the surge of growth will lag 10 years behind that of Paola and Louisburg.

**Intermediate Growth:** The intermediate growth scenario is 60% of the difference between the low and high growth scenarios.

#### Residential Development

(Note: Figures in the model have been rounded to the nearest whole number)

**Household Size:** The average is 2.5 people per household. The number of dwelling units is based upon population growth and increasing household size.

**Occupied Housing:** Analysis shows that more dwelling units are being built than occupied. As a

result, the number of dwelling units shown in the model includes the surplus. 81% of housing stock in Ottawa, Paola, and Louisburg is single-family. According to the US Census, an average of 98% of this stock was occupied. Specifically:

Louisburg:	94%
Paola:	98%
Ottawa:	98%

**Housing Density:** Based on current development patterns, housing is being built at an average of 5 dwelling units is built per acre across the three cities. This is the density used for the model. However, for reference it should be noted that city zoning regulations for single-family development are as follows:

Louisburg:	Requires 8,000 square feet per unit (5.5 units/acre) in District R-1.
Paola:	Requires 12,000 square feet per unit (3.6 units/acre) in Suburban Single-Family Conventional Districts.
Ottawa:	Requires 7,000 square feet per unit (6.2 units/acre) in District R-1.

#### Retail Development

(Note: Figures in the model have been rounded to the nearest whole number)

**Leakage:** Residents do some of their shopping outside the home city. This is called to leakage. The amount of leakage is based on information provided by Claritas and from the Urban Land Institute publication, *Dollar and Cents of Shopping Centers/The Score 2006*. If the amount of leakage could be retained in each home city, an additional amount of new retail square footage would be required. The leakage amounts per city are:

Louisburg:	173,200 square feet
Paola:	124,700 square feet
Ottawa:	121,100 square feet

For the purposes of this model, the projected retail square footage shown in the model has been reviewed overall rather than by individual categories of retail types. The amount of new retail square footage needed to address the leakage is assumed to be added by 2010.

**Per Capita Retail Square Footage:** 20 square feet per industry rule of thumb.

**Lot Coverage:** Retail buildings will occupy 23% of a lot. The balance of the property is expected to be used for surface parking, landscaping, and/or storage.

**Employment:** 2.5 employees per 1,000 square feet of built retail space per industry rule of thumb.

#### Industrial Development

(Note: Figures in the model have been rounded to the nearest 10)

**Types of Industry:** The most likely types of industry to develop in the corridor include distribution, warehousing, and some light industrial.

**Building Size:** Typical distribution and warehousing buildings tend to be more than 100,000 square

feet in size. For the purpose of comparison, large distribution centers such as Wal-Mart and American Eagle in Ottawa exceed 1 million square feet. The South Suburban Business Park located at 247<sup>th</sup> Street and US 69 Highway in Louisburg is anticipated to be 300,000 square feet on 41 acres.

**Lot Coverage:** Industrial buildings will occupy 23% of the lot. The balance of the property is expected to be used for surface parking, landscaping, and/or storage.

**Employment:** 1 employment per 1,000 square feet of built warehousing and industrial space per industry rule of thumb.

**Office Development**

(Note: Figures in the model have been rounded to the nearest whole number)

**Office Types and Building Size:** Class A office space is generally defined as a new office building of three or more stories and 15,000+ square foot floor plates that are of steel/concrete construction with numerous amenities. Non-Class A space will generally be less than 3 stories with about 8,000 – 10,000 square feet or less. For purposes of comparison, Johnson County records show the City of Edgerton with a total of 818 square feet of office and Overland Park with more than 21 million square feet of office development.

**Lot Coverage:** Office buildings will occupy 23% of the lot. The balance of the property is expected to be used for surface parking, landscaping, and/or storage.

**Employment:** 4 employees per 1,000 square feet of built office space per industry rule of thumb.

Paola: Net New Development within the City's 1-3-5-Mile Market Area															
Low Growth Scenario															
Paola															
Year	Population			Residential			Retail			Industrial			Office		
	Projected	Gross Acres	Dwelling Units	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees			
2000	5,011														
2010	5,500	38	190	1	13,024	33	5	50,094	50	2	20,038	80			
2020	6,300	56	280	10	98,184	245	5	50,094	50	1	10,019	40			
2030	7,100	59	295	6	59,111	148	5	50,094	50	1	10,019	40			
Subtotal		153	765	17	170,320	426	15	150,282	150	4	40,075	160			

  

Intermediate Growth Scenario															
Paola															
Year	Population			Residential			Retail			Industrial			Office		
	Projected	Gross Acres	Dwelling Units	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees			
2000	5,011														
2010	7,500	177	885	2	17,032	43	5	50,094	50	2	20,038	80			
2020	13,000	396	1,980	22	222,417	556	5	50,094	50	2	20,038	80			
2030	30,000	1,217	6,085	40	401,754	1,004	8	80,150	80	2	20,038	80			
Subtotal		1,790	8,950	64	641,203	1,603	18	180,338	180	6	60,113	240			

  

High Growth Scenario															
Paola															
Year	Population			Residential			Retail			Industrial			Office		
	Projected	Gross Acres	Dwelling Units	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees			
2000	5,011														
2010	8,800	269	1,345	2	20,038	50	5	50,094	50	2	20,038	80			
2020	17,500	624	3,120	30	300,564	751	5	50,094	50	2	20,038	80			
2030	45,300	1,990	9,950	62	621,166	1,553	10	100,188	100	2	20,038	80			
Subtotal		2,883	14,415	94	941,767	2,354	20	200,376	200	6	60,113	240			

Ottawa: Net New Development within the City's 1-3-5-Mile Market Area															
Low Growth Scenario															
Ottawa															
Year	Population			Residential			Retail			Industrial			Office		
	Projected	Gross Acres	Dwelling Units	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees			
2000	11,921														
2010	13,200	92	460	2	15,028	38	15	150,282	150	0	0	0			
2020	14,800	115	575	13	130,244	326	140	1,402,632	1,403	1	10,019	40			
2030	16,500	120	600	9	85,160	213	145	1,452,726	1,453	1	10,019	40			
Subtotal		327	1,635	23	230,432	576	300	3,005,640	3,006	2	20,038	80			

  

Intermediate Growth Scenario															
Ottawa															
Year	Population			Residential			Retail			Industrial			Office		
	Projected	Gross Acres	Dwelling Units	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees			
2000	11,921														
2010	13,200	92	460	2	15,028	38	18	180,338	180	1	10,019	40			
2020	19,800	473	2,365	23	230,432	576	248	2,484,662	2,485	2	20,038	80			
2030	34,300	908	4,540	35	345,649	864	214	2,144,023	2,144	2	20,038	80			
Subtotal		1,473	7,365	59	591,109	1,478	480	4,809,024	4,809	5	50,094	200			

  

High Growth Scenario															
Ottawa															
Year	Population			Residential			Retail			Industrial			Office		
	Projected	Gross Acres	Dwelling Units	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees			
2000	11,921														
2010	13,200	120	600	2	15,028	38	20	200,376	200	1	10,019	40			
2020	23,100	711	3,555	30	300,564	751	270	2,705,076	2,705	2	20,038	80			
2030	46,100	1,433	7,165	52	515,968	1,290	310	3,105,828	3,106	2	20,038	80			
Subtotal		2,264	11,320	83	831,560	2,079	600	6,011,280	6,011	5	50,094	200			

Louisburg: Net New Development within the City's 1-3-5-Mile Market Area															
Low Growth Scenario															
Louisburg															
Year	Population			Residential			Retail			Industrial			Office		
	Projected	Gross Acres	Dwelling Units	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees			
2000	2,576														
2010	3,800	89	445	2	20,038	50	5	50,094	50	0	0	0			
2020	4,200	26	130	14	140,263	351	15	150,282	150	1	10,019	40			
2030	4,500	26	130	8	80,150	200	25	250,470	250	4	40,075	160			
Subtotal		141	705	24	240,451	601	45	450,846	451	5	50,094	200			

  

Intermediate Growth Scenario															
Louisburg															
Year	Population			Residential			Retail			Industrial			Office		
	Projected	Gross Acres	Dwelling Units	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees			
2000	2,576														
2010	4,200	118	590	2	21,039	53	5	50,094	50	1	10,019	40			
2020	7,100	203	1,015	20	196,368	491	24	240,451	240	3	30,056	120			
2030	15,800	624	3,120	24	243,457	609	140	1,402,632	1,403	7	70,132	281			
Subtotal		945	4,725	46	460,865	1,152	169	1,693,177	1,693	11	110,207	441			

  

High Growth Scenario															
Louisburg															
Year	Population			Residential			Retail			Industrial			Office		
	Projected	Gross Acres	Dwelling Units	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees	Gross Acres	Sq. Ft. of Building	Employees			
2000	2,576														
2010	4,500	138	690	2	21,039	53	5	50,094	50	1	10,019	40			
2020	9,000	321	1,605	23	226,425	566	30	300,564	301	4	40,075	160			
2030	23,300	1,023	5,115	36	363,682	909	270	2,705,076	2,705	9	90,169	361			
Subtotal		1,482	7,410	61	611,147	1,528	305	3,055,734	3,056	14	140,263	561			

## INTERMEDIATE GROWTH PROJECTION

### Considerations related to Economic and Market Factors

Since the early 1990's economies have been booming nationally and locally. Earnings, per capita income, population, and employment, particularly in the service and construction sectors, have increased at a robust rate. Then beginning in late 2006/early 2007 the economy started showing signs of slowing. Gas and other energy prices have increased significantly; construction costs have gone up; the housing market is in decline; and unemployment has increased. Underlying issues face the nation and the world, including an ever increasing demand for energy and goods, an uncertain financial system, climate and environmental issues, and aging infrastructure. It is possible that the surging growth that is coming outward from the Kansas City metropolitan area may continue. It is also possible that the underlying issues and current economic and market trends will continue into the future, slowing down economic development in the outlying portions of the metropolitan area. The intermediate scenario assumes that the future lies somewhere in between.

#### Current conditions:

##### Gasoline

- Retail gas prices have more than doubled since 2004.
- Gas prices peaked at over \$4.00 per gallon in early part of June 2008 and have declined significantly since then.
- Energy Information Administration (EIA) projects that the gasoline market will remain tight because of sluggish production.
- Global demand for oil/gasoline is expected to continue to increase.
- Fossil fuel burning vehicles contribute to environmental issues of air pollution and climate change.



##### Transit

- Transit is minimal in Miami and Franklin Counties.
- Transit is available for limited groups, such as senior adults and disabled individuals.

##### Home heating

- EIA projects a 15% in home heating costs over last year (2007-2008). The increase is attributable to higher prices for energy across the board and predictions of a colder winter.

##### Construction costs

- Producer prices for construction have grown 45% since 2003 compared to consumer prices which have increased 19% over the same time period.
- Cost of construction for highways and streets have increased by about 76% since December 2003, 60% for other heavy construction, 33% for single unit residential and 43% for non-residential buildings.

##### Financing

- Residential financing has fallen off significantly since 2007.
- The rates of home loan default, foreclosure and property abandonment has increased since 2007.
- There is a significant surplus of single-family houses on the market.
- Commercial finance markets are tightening and financing becoming more difficult to obtain.

##### Employment

- The number of service firms comprises the largest sector in Miami County and continues to grow.
- 91% of the firms' in Miami County had fewer than 20 employees.
- Unemployment is up nationally.
- On the Kansas side, the bright spot was an unemployment rate of 4.8 percent, significantly lower than the national average of 6.1 percent.

##### Economic Development Incentives Policies

- Competition may be fierce between metropolitan communities. The variety, ease and amount of economic incentive offered by a city will affect that city's ability to attract development. Economic incentives include financial assistance with construction of both public infrastructure and private development.



- **Ottawa:** Ottawa is southwest of and further out from the metro area than any of the fourteen cities. The City of Ottawa is closest in population and area to Gardner, Grain Valley and Harrisonville. Harrisonville is the closest comparable city to Ottawa as both Harrisonville and Ottawa have an average annual population growth since 2000 of about 1%. Harrisonville and Ottawa also are similar given their proximity to the two intermodal facilities under development at the former Richards Gebaur site in Missouri and at the Gardner, Kansas site, and their locations along major U.S. highways. Depending on the rate of development of the two intermodal facilities, either city may serve as a role model for the other.

Gardner will be the model for the future growth in Ottawa. Gardner is currently on the edge of the metropolitan growth wave and is located north just up I-35 and the railroad tracks from Ottawa. The U.S. Bureau of Labor Statistics indicates that the area has a strong pull for development of distribution centers. Gardner is the future site of a new intermodal logistics center. Assuming growth from the metropolitan area and particularly the growth in distribution centers stays strong and continues to proceed down I-35 and the railroad tracks, Gardner may be the best example of what can happen for Ottawa in the future.

**Potential Growth:** It is assumed that growth is radiating outward from the center of the metropolitan area. For the purposes of determining the rate and the volume of growth that might be expected if the surge of growth continued, population data was analyzed for each of the fourteen cities. Growth rates were derived from U.S. Census population data for the decades 1900 through 2000, annual certified population from 2000 through 2007 for the cities in Kansas, and from Mid-America Research Council (MARC) estimates of population for the cities in Missouri for the same time period. Population growth was estimated for each of the remaining years through 2010 for each city, and then population growth rates were derived. The two decades with the greatest growth rate for each city were identified; of particular interest were those cities where population growth rates were approximately 80% to as high as 300%. The cities with the greatest growth rates were plotted on a map, and these cities were: Gardner, Spring Hill, Raymore and Grain Valley. These cities are about equidistant from the center of the metro and identified as the edge of the growth wave. It was then assumed that Louisburg would be the next city to experience the growth wave followed by Paola and Ottawa in the next wave a decade later.

