JOHNSON
ECONOMICS

DOWNTOWN HOUSING
AND RESIDENTIAL MARKET ANALYSIS

PREPARED FOR
THE CITY OF MEDFORD
DECEMBER 2019

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I. INTRODUCTION

The City of Medford is seeking to expand and promote residential development in its downtown core area. The City hopes to encourage and facilitate the development of a range of residential forms in the study area at urban densities, including projects at various scales as well as repurposing of existing buildings.

In order to assist the City in advancing this goal, this analysis provides a more comprehensive understanding of the current residential inventory and market conditions, as well as market dynamics that influence residential development opportunities in the study area. The study provides a baseline assessment of the magnitude and character of current housing in the study area as well as the City as a whole.

II. EXECUTIVE SUMMARY

Within the City of Medford, vacant parcels are largely concentrated on the edges of the City's boundary with most of the vacant land located in the city's eastern areas. The study area is urban in nature and relatively built-up with only a few vacant lots. Most of the lots are concentrated in the study area's northern region. Only 9 vacant lots exist in the study area's southern half. While not vacant, a significant number of sites in the downtown study area do not have significant current structures and could represent redevelopment opportunities.

The residential markets in the City of Medford are currently tight. Sales of ownership housing in Jackson County has been on an upward trend since 2008. As of second quarter of 2019, the average time on the market for listed homes is 39 days, below the 45-60 days typically considered to reflect a market that is balanced in terms of supply and demand. Rental apartments in the Medford area have consistently reported vacancy rates below 3.0%. A vacancy rate around 5.0% typically represents a healthy supply-demand balance where rent increases keep in line with wage and income growth. Because of the undersupply of vacant units in Medford, rents have escalated more rapidly than incomes over this period. In terms of annual rent growth, the peak was at nearly 9.0% in 2016, when the vacancy rate was 0.2%. Since then, the vacancy rate has increased to 1.8% and rent growth has moderated to 3.2% per year as of mid-2019.

Achievable pricing is a key assumption in evaluating the likelihood of new housing development in the Study Area. Our analysis generated estimate pricing for attached townhomes, condominium flats, and rental apartments based on current market conditions. Townhomes in an urban context were estimated to support achievable pricing of $199 to $244 per square foot. Condominium flats were estimated to support achievable pricing in the range of $220 to $325 per square foot. Estimated achievable rents in the area under current conditions are $1.75 to $1.90 per square foot.

Our study finds that the anticipated rental residential development form in the City of Medford without some type of market intervention would likely be a three-story wood framed rental apartment project with surface parking. This finding is consistent with observed market patterns in the Medford market, with new rental apartment development limited to this development form during the last decade. More urban housing forms are unlikely to be viewed as viable in the study area without some type of intervention.

Johnson Economics developed a predictive development model for the city, which is designed to predict the magnitude and form of likely development or redevelopment activity over an assumed time frame. The model was run for a baseline scenario, reflecting current market conditions and development standards. The model run indicated that the Study Area has considerable redevelopment potential and capacity.

Several prospective interventions were identified that can substantively influence and alter the expected form, pattern, and magnitude of development activity. These can provide a substantial benefit to the project and reduce

the indicated viability "gap". The justification for these interventions was that a development form desired from a policy perspective is not otherwise viable considering achievable lease rates and construction costs, and the intervention was considered necessary.

III. Study Area Definition

This analysis has been completed for the broader City of Medford, as well as a more narrowly defined downtown study area. The study area consists of roughly 425 acres encompassing the Medford downtown area and extending north. The boundaries for the area are 10th street to the south, Oakdale Ave, Holly St, and N Central Ave to the west, E McAndrew's Rd to the north, and I-5 to the east. The study area is centrally located within Medford and is largely urban with residential, commercial and central business district areas within it.

Figure 3.1: Market Area Definitions

SOURCE: City of Medford, Bing Maps, Johnson Economics

IV. PROPERTY INVENTORY

SOURCES AND METHODOLOGY

The inventory presented here represents Johnson Economics' estimate of the total housing units within the City of Medford and the study area. Data for this inventory originated from Jackson County and the City of Medford. Tax lot data, zoning boundaries, the study area boundary, and address points formed the basis of this inventory. Tax lot parcels were sorted into housing and non-housing parcels using building code and property class information. Each parcel was then assigned a housing category also based on this information. Additionally, parcels were sorted into vacant and non-vacant categories using their improvements value and property class. Unit counts for each parcel were determined by counting the number of address points located within each parcel. Because senior care facilities do not have individual addresses for each unit, parcels with senior care facilities contained only one address point and were assigned a unit count based on the number of licensed beds approved for that facility according to the Oregon Department of Human Services. The real market value for each parcel was calculated by adding together a property's land value and improvements value. Single-family attached housing category designations were assigned on a case by case basis through visual inspection of properties listed on Zillow as "townhomes." Mixed-use housing category designations were assigned by visually inspecting all buildings in the downtown area.

Figure 4.1 summarizes the study area's housing inventory, organized by zoning. Most housing parcels in Medford are single-family detached units on land zoned Single-Family Residential – 4 Units or Single-Family Residential – 10 Units. In total, the City of Medford's boasts 35,447 housing units which combined equal to over seven Billion dollars of value.

FIGURE 4.1: EXISTING HOUSING PARCELS, CITY OF MEDFORD

Zoning	Parcels	Total RMV	Area (Acre)	Units	Vacant Parcels	Vacant Land (Acres)
Community Commercial	124	$42,458,938	32.88	568	67	56.73
Heavy Commercial	165	$127,064,050	236.04	1,087	70	58.05
Neighborhood Commercial	8	$2,492,170	4.36	49	0	0
Regional Commercial	10	$4,423,600	1.26	33	31	76.61
Service Commercial and Professional Office	241	$79,343,290	47.28	769	47	52.5
General Industrial	90	$25,867,050	99.53	95	0	0
Heavy Industrial District	3	$418,190	0.69	3	0	0
Light Industrial District	49	$12,033,970	181.57	33	0	0
Multiple-Family Residential - 15 Units	11	$8,724,960	17.06	65	7	6.04
Multiple-Family Residential - 20 Units	1,684	$541,985,870	342.29	5,701	45	35.63
Multiple-Family Residential - 30 Units	128	$201,486,808	113.09	2,564	14	18.61
Single-Family Residential - 1 Unit	721	$221,338,430	1,175.95	687	131	1002.64
Single-Family Residential - 2 Units	263	$177,334,759	348.61	265	90	97.93
Single-Family Residential - 4 Units	10,304	$3,530,223,328	3,185.10	10,919	666	774.08
Single-Family Residential - 6 Units	6,189	$1,469,393,204	1,339.65	6,291	337	276.07
Single-Family Residential - 10 Units	4,298	$936,979,138	915.80	6,318	190	228.8
Totals	**24,288**	**$7,381,567,755**	**8,041.16**	**35,447**	**1,695**	**2,683.69**

SOURCE: City of Medford, Jackson County, Google Maps, Zillow, JOHNSON ECONOMICS

Figure 4.2 summarizes the study area's housing inventory, organized by zoning. The study area is mostly made up of commercial operations, largely concentrated in the south, and single-family homes which are largely concentrated in the north. Of the 886 housing units within the study area 427 of them are located on Community Commercial zoned lands. Outside of Community Commercial most remaining units are located on land zoned for Multiple-Family Residential – 20 Units and Single-Family Residential – 10 Units.

FIGURE 4.2: EXISTING HOUSING PARCELS, STUDY AREA

Zoning	Parcels	Total RMV	Area (Acre)	Units	Vacant Parcels	Vacant Land (Acres)
Community Commercial	76	$31,541,410	18.99	427	19	4.51
Heavy Commercial	17	$3,920,530	3.21	51	3	0.96
Neighborhood Commercial	0	$0	0	0	0	0
Regional Commercial	0	$0	0	0	0	0
Service Commercial and Professional Office	7	$3,300,650	1.14	16	1	0.07
General Industrial	0	$0	0	0	0	0
Heavy Industrial District	3	$418,190	0.69	3	0	0
Light Industrial District	0	$0	0	0	0	0
Multiple-Family Residential - 15 Units	0	$0	0	0	0	0
Multiple-Family Residential - 20 Units	89	$15,997,170	12.43	191	3	0.38
Multiple-Family Residential - 30 Units	0	$0	0	0	0	0
Single-Family Residential - 1 Unit	0	$0	0	0	0	0
Single-Family Residential - 2 Units	0	$0	0	0	0	0
Single-Family Residential - 4 Units	0	$0	0	0	0	0
Single-Family Residential - 6 Units	0	$0	0	0	0	0
Single-Family Residential - 10 Units	110	$18,256,540	17.27	192	2	0.15
Totals	**302**	**$73,434,490**	**53.73**	**880**	**28**	**6.07**

SOURCE: City of Medford, Jackson County, Google Maps, Zillow, JOHNSON ECONOMICS

Figure 4.3 summarizes the housing units within the city of Medford. Roughly 63% of housing within the city consists of single-family detached units with the highest concentrations within Single-Family Residential – 4 Units and Single-Family Residential – 10 Units zoning. Only a few Mixed-Use developments with a total of 55 units exist within the city, making it the least common form of housing. Multi-Family Owned (condominium) flat developments were the second least common, with a total of 90 units across the city.

FIGURE 4.3: EXISTING HOUSING UNITS BY CATEGORY AND ZONING, CITY OF MEDFORD

Zoning	Single-Family Detached	Single-Family Attached	Multi-Family Rented	Multi-Family Owned	Mixed-Use	Mobile Home	Senior Housing	Senior Care	*Totals*
Community Commercial	68	91	284	0	55	70	0	0	**568**
Heavy Commercial	107	14	966	0	0	0	0	0	**1,087**
Neighborhood Commercial	3	4	8	0	0	34	0	0	**49**
Regional Commercial	0	32	1	0	0	0	0	0	**33**
Service Commercial and Professional Office	123	205	275	0	0	0	72	94	**769**
General Industrial	81	2	12	0	0	0	0	0	**95**
Heavy Industrial District	2	1	0	0	0	0	0	0	**3**
Light Industrial District	26	2	5	0	0	0	0	0	**33**
Multiple-Family Residential - 15 Units	7	0	58	0	0	0	0	0	**65**
Multiple-Family Residential - 20 Units	689	1,890	2,395	31	0	370	236	90	**5,701**
Multiple-Family Residential - 30 Units	21	160	1,097	43	0	0	895	348	**2,564**
Single-Family Residential - 1 Unit	627	24	19	0	0	17	0	0	**687**
Single-Family Residential - 2 Units	265	0	0	0	0	0	0	0	**265**
Single-Family Residential - 4 Units	10,342	99	71	0	0	0	246	161	**10,919**
Single-Family Residential - 6 Units	6,087	154	0	0	0	50	0	0	**6,291**
Single-Family Residential - 10 Units	3,887	1,434	214	16	0	685	0	82	**6,318**
Totals	**22,335**	**4,112**	**5,405**	**90**	**55**	**1,226**	**1,449**	**775**	**35,447**

SOURCE: City of Medford, Jackson County, Google Maps, Zillow, JOHNSON ECONOMICS

Figure 4.4 summarizes the housing units within the study area. Over 45% of the housing within the study area consists of multi-family rented units with the highest concentrations built within Community Commercial and Multi-Family Residential – 20 Units zoning. Almost all the mixed-use units within Medford are contained in the study area, with the

remaining four units only a few blocks away. The least common form of housing in the study area is mobile homes with a total of 31 units all located at the Shirleen Trailer Park.

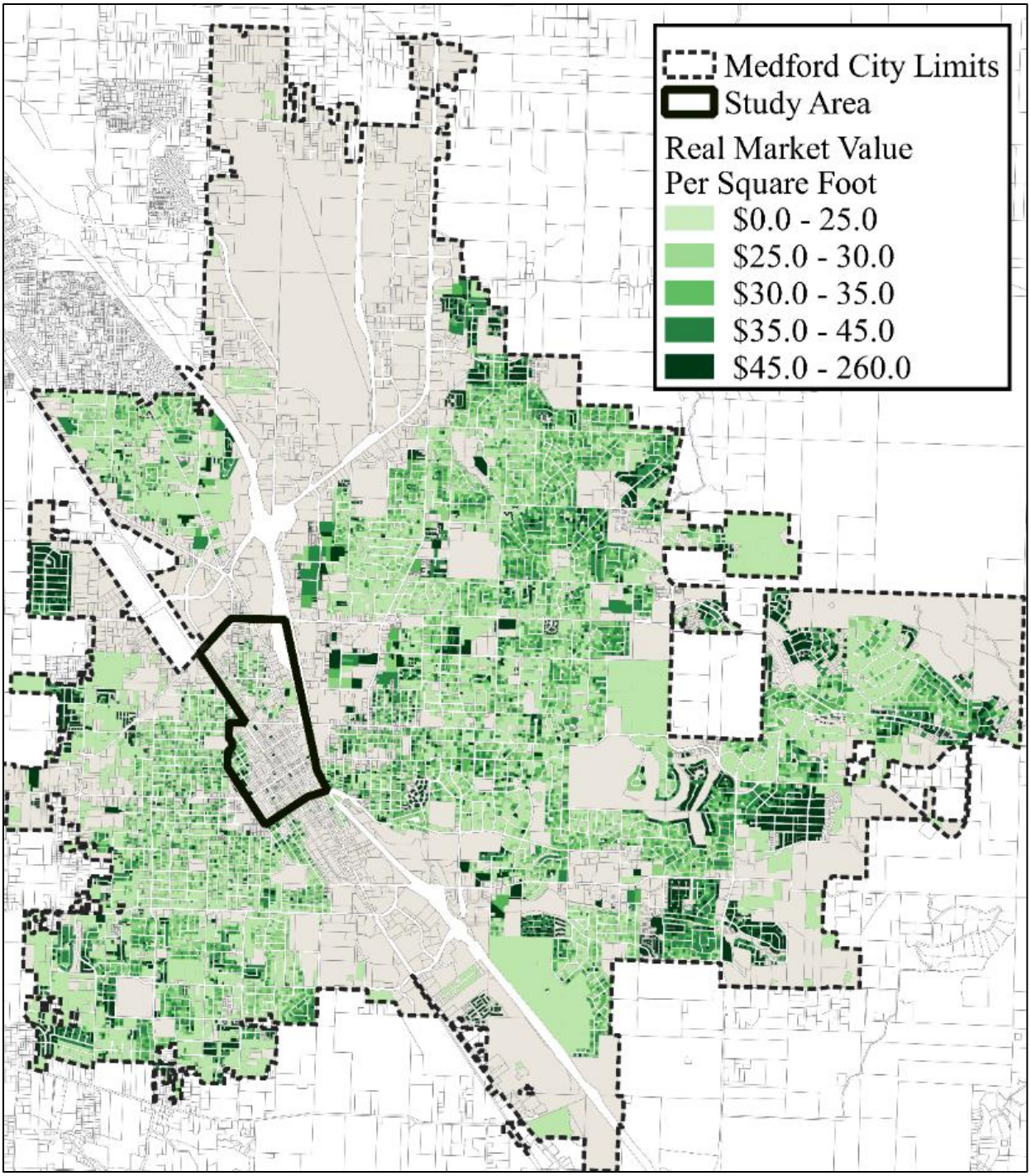
FIGURE 4.4: EXISTING HOUSING UNITS BY CATEGORY AND ZONING, STUDY AREA

Zoning	Single-Family Detached	Single-Family Attached	Multi-Family Rented	Multi-Family Owned	Mixed-Use	Mobile Home	Senior Housing	Senior Care	*Totals*
Community Commercial	36	62	247	0	51	31	0	0	**427**
Heavy Commercial	21	6	24	0	0	0	0	0	**51**
Neighborhood Commercial	0	0	0	0	0	0	0	0	**0**
Regional Commercial	0	0	0	0	0	0	0	0	**0**
Service Commercial and Professional Office	3	6	7	0	0	0	0	0	**16**
General Industrial	0	0	0	0	0	0	0	0	**0**
Heavy Industrial District	2	1	0	0	0	0	0	0	**3**
Light Industrial District	0	0	0	0	0	0	0	0	**0**
Multiple-Family Residential - 15 Units	0	0	0	0	0	0	0	0	**0**
Multiple-Family Residential - 20 Units	65	35	91	0	0	0	0	0	**191**
Multiple-Family Residential - 30 Units	0	0	0	0	0	0	0	0	**0**
Single-Family Residential - 1 Unit	0	0	0	0	0	0	0	0	**0**
Single-Family Residential - 2 Units	0	0	0	0	0	0	0	0	**0**
Single-Family Residential - 4 Units	0	0	0	0	0	0	0	0	**0**
Single-Family Residential - 6 Units	0	0	0	0	0	0	0	0	**0**
Single-Family Residential - 10 Units	103	59	30	0	0	0	0	0	**192**
Totals	**230**	**169**	**399**	**0**	**51**	**31**	**0**	**0**	**880**

SOURCE: City of Medford, Jackson County, Google, JOHNSON ECONOMICS

The following heat map displays real market value per square foot of housing parcels in the City of Medford. The median parcel in the city is valued at $29.851/sf with an upper quartile value of $39.824/sf and a lower quartile value of $23.196/sf. The highest value per square foot recorded ($259.873/sf) was a parcel belonging to one of the Charles Point apartment buildings located in southeast Medford. In general, properties in southeast Medford tended to have higher values however, this trend does not apply to all properties in the area with many in the south east still valued below $25/sf. The city does not appear to have strong spatial trends for property values, with both valuable and inexpensive properties located in all major areas within the city.

FIGURE 4.5: PARCEL REAL MARKET VALUE PER SQUARE FOOT, CITY OF MEDFORD

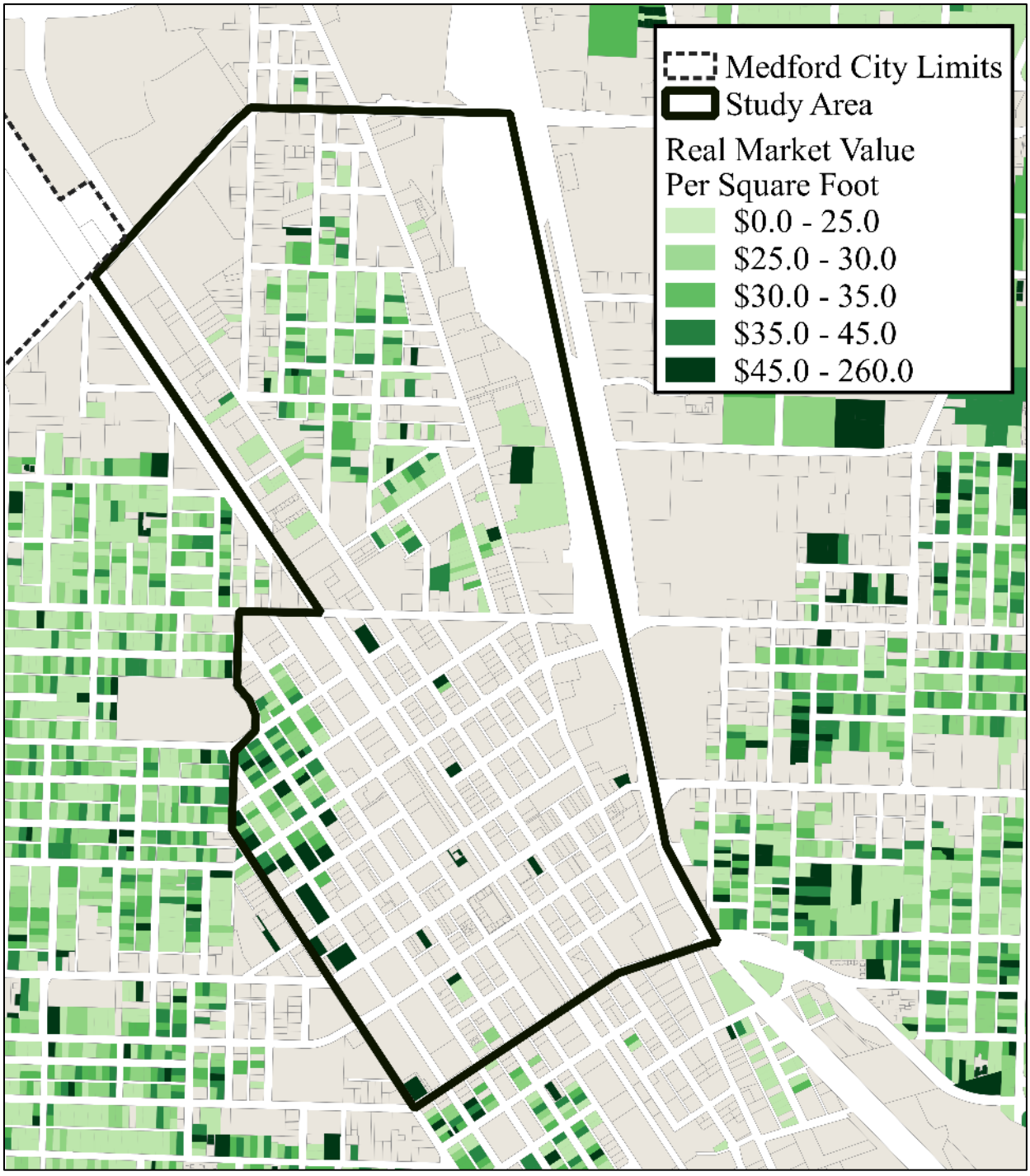


SOURCE: City of Medford, Jackson County, JOHNSON ECONOMICS

Figure 4.6 displays real market value per square foot of housing parcels in the study area which contains less than 2.5% of all housing units within the city of Medford. The northern half of the study area is predominantly single-family units with moderate densities and property values. The southern half of the study area contains a mix of single-family and multi-family units with higher densities and values. The most valuable parcels (per square foot) in the study area

tend to be in the southwestern most corner of the boundary. Parcels surrounding the study area to the west tend to be lower value properties, while parcels to the east of the study area tend to be higher value properties. There is relatively little housing in Medford's downtown core except for the mixed-use parcels. These parcels tend to have high values per square foot due to their location.

FIGURE 4.6: PARCEL REAL MARKET VALUE PER SQUARE FOOT, CITY OF MEDFORD



SOURCE: City of Medford, Jackson County, JOHNSON ECONOMICS

Within the City of Medford, vacant parcels are largely concentrated on the edges of the City's boundary with most of the vacant land located in the city's eastern areas. This is typical for growing cities to have the lion's share of their vacant property near city outskirts. Although vacant parcels are sprinkled throughout the City, relatively little of the City's center remains vacant. Most of the vacant land is undeveloped, recently incorporated rural land, and not empty urban developments. All in all, vacant housing land makes up over 2,500 acres within the City.

FIGURE 4.7: VACANT LAND WITH DWELLING UNIT ZONING, CITY OF MEDFORD

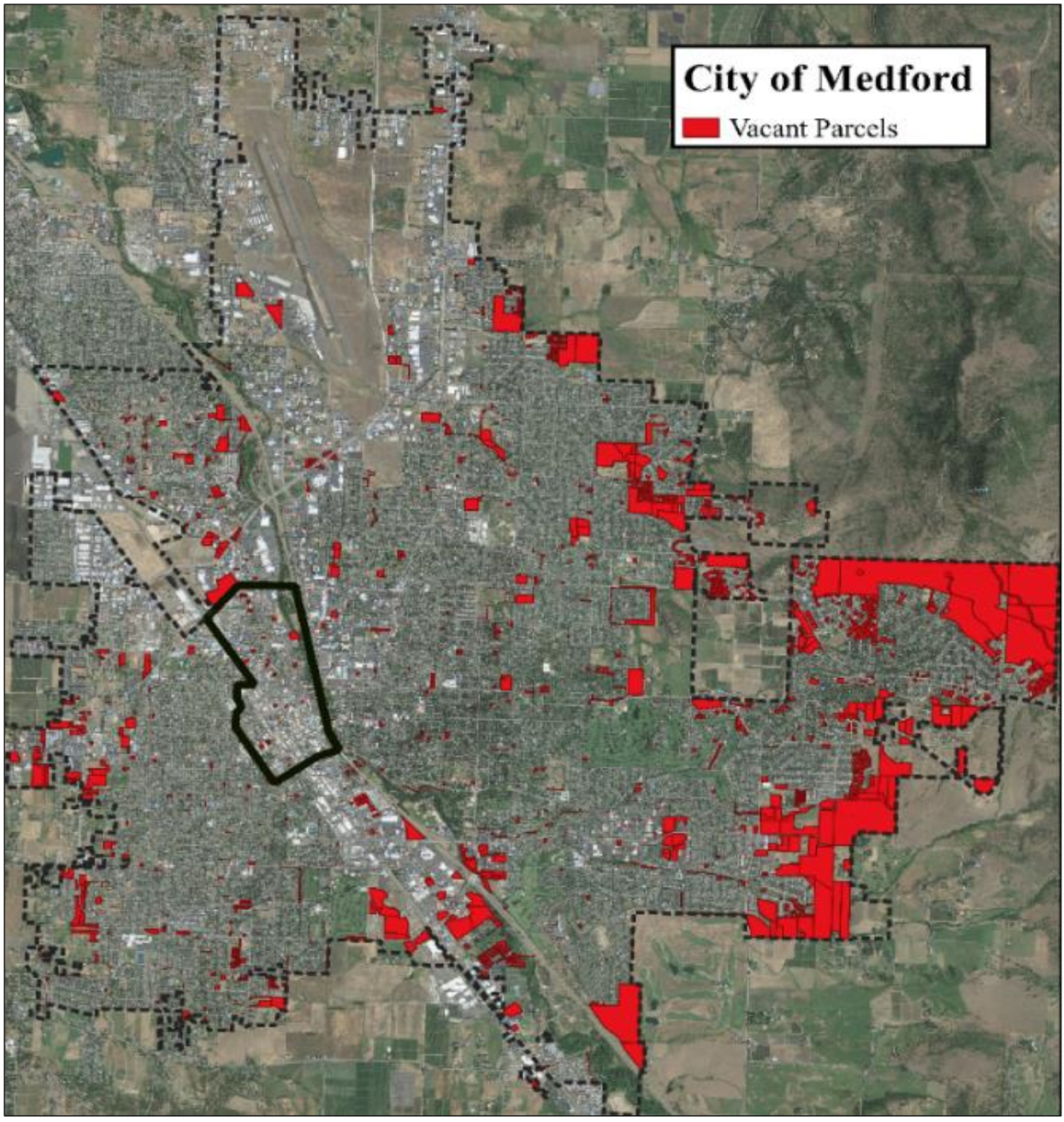
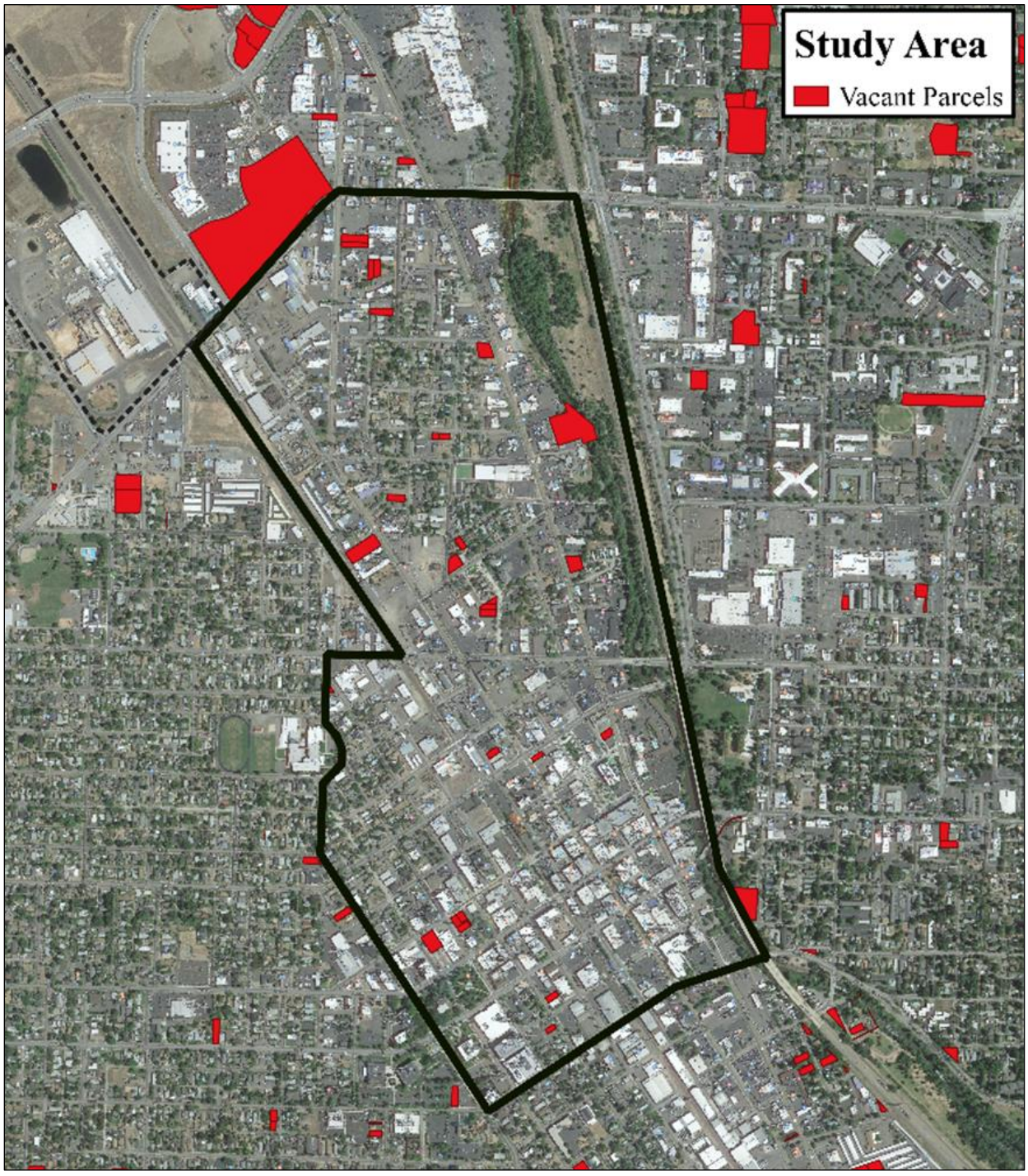


FIGURE 4.8: VACANT LAND WITH DWELLING UNIT ZONING, STUDY AREA



SOURCE: City of Medford, Jackson County, Google Maps, JOHNSON ECONOMICS

The study area is urban in nature and relatively built-up with only a few vacant lots. Most of the lots are concentrated in the study area's northern region. Only 9 vacant lots exist in the study area's southern half. The largest vacant parcel in the study area is a tucked away lot behind Wright's Auto Outlet LLC and adjacent to a Fiesta Market. The largest vacant parcel in the southern half of the study area is located at the corner of West 6th and North Ivy St.

V. RESIDENTIAL MARKET ANALYSIS

The focus of this analysis is on urban building formats that can fit within a downtown setting. In the following, we will therefore focus on townhomes, rental apartments, and condominium flats. However, because there are few recent examples of these housing formats in Medford, we will assess broader trends in the ownership and rental markets, as trends for substitute housing forms tend to follow similar trajectories.

SOCIO-ECONOMIC TRENDS

Medford is a city of 80,000 residents located in southern Oregon along Interstate 5 and near the California border. Like most cites in America, Medford's larger economic metropolitan area extends far beyond its municipal boundaries, making it the heart of the larger Jackson County economy. Major industries of employment in this economy include health care, retail, leisure and hospitality, local government, and manufacturing. Since 2012 the area has experienced consistent growth in population, employment, and wages. Although growth has slowed in recent years, the economy still exhibits healthy signs of improvement and appears poised to continue expanding.

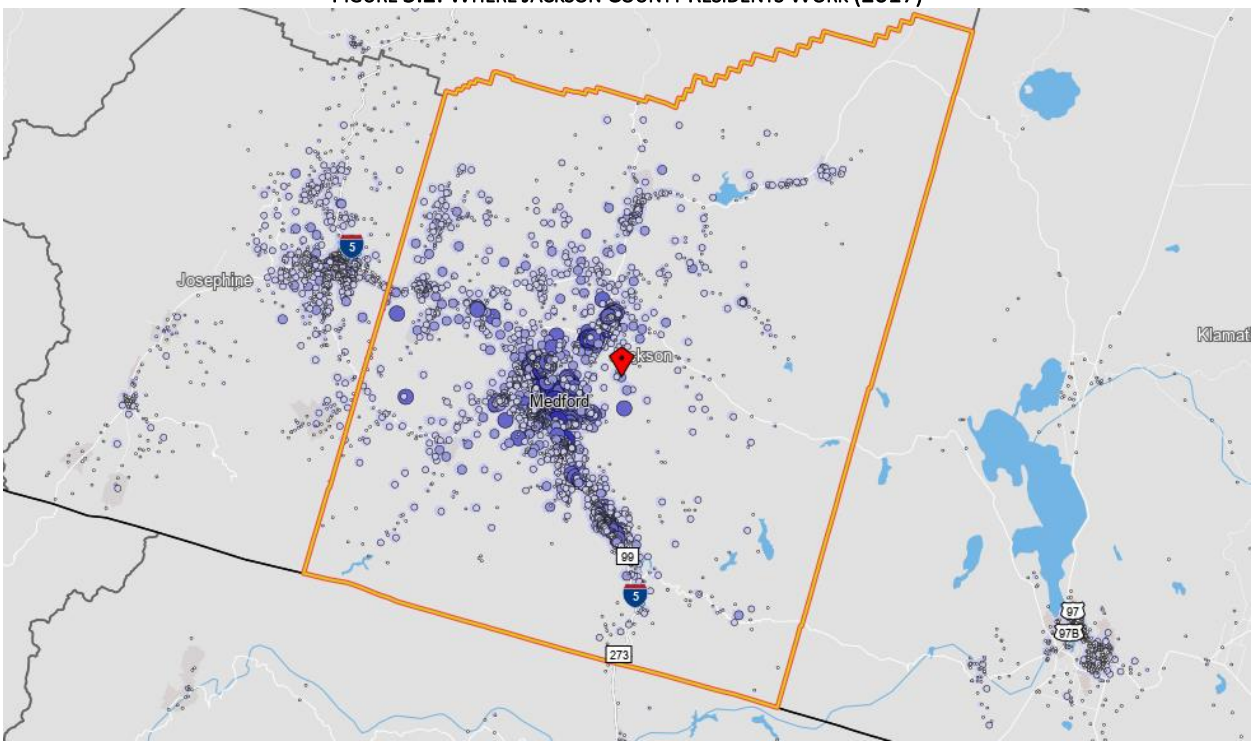
The City of Medford represents the largest employment center in its region. The Medford city limits alone contain over 51,000 jobs, representing the densest concentration of employment in the area. Medford proper makes up more than half of the 87,000 jobs in Jackson County. Roughly two thirds of these workers (63%) commute into Medford from outside of the city limits while nearly half of the workforce living in Medford (44%) commute out of the city for work. The next closest employment center is Grants Pass, 30 miles to the west and contains roughly 19,000 jobs. The closest major employment centers are Redding, California (150 miles, 50,000 jobs) and Eugene, Oregon (170 miles, 100,000 jobs).

FIGURE 5.1: MEDFORD INFLOW-OUTFLOW OF EMPLOYEES (2017)

SOURCE: U.S. Census Bureau, Johnson Economics

The following map shows where Jackson County residents work, based on Census data from 2017. Of the 79,000 employed workers who live in Jackson County, a majority (80%) also work in Jackson County. Outside of Jackson County, the next most common workplace is Grants Pass with 3.2% of Jackson County's employed workforce traveling there for work. Due to its relatively isolated location, roughly one sixth of workers travel outside of Jackson County or Grants Pass for work. Most of those workers are likely involved with nearby small towns or local agricultural operations and will travel less than the 100+ miles required to reach larger employment centers.

FIGURE 5.2: WHERE JACKSON COUNTY RESIDENTS WORK (2017)

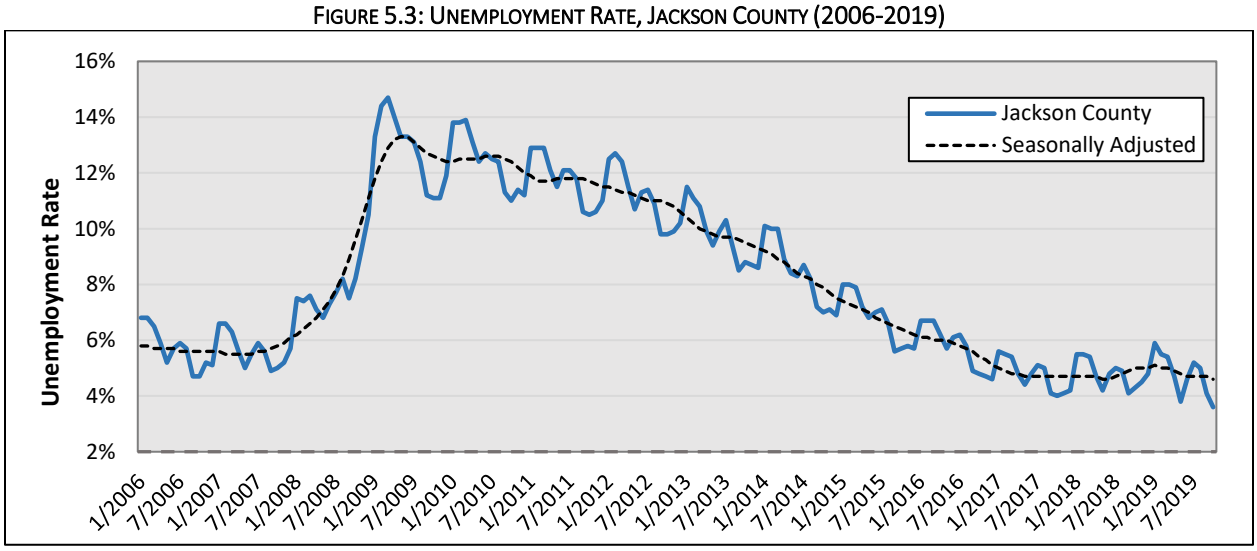


SOURCE: U.S. Census Bureau, Johnson Economics

EMPLOYMENT

Like many counties with large agriculture employment sectors, Jackson County experiences significant seasonal unemployment swings. Peak employment tends to occur in October or September of each year, while the lowest employment tends to occur in either January or February. Seasonal swings have seen spreads as large as 3%, though this number tends to get smaller when the economy is adding jobs, as it is in the current cycle. The spread between peak employment in September 2018 and the low in January 2019 is 2.3%, slightly larger than expected given the consistent job growth, however, this figure is spurred on by the lowest unemployment seen in this area in over a decade. The unemployment rate is now below the historic lows seen before the downturn and appears positioned to continue dropping.

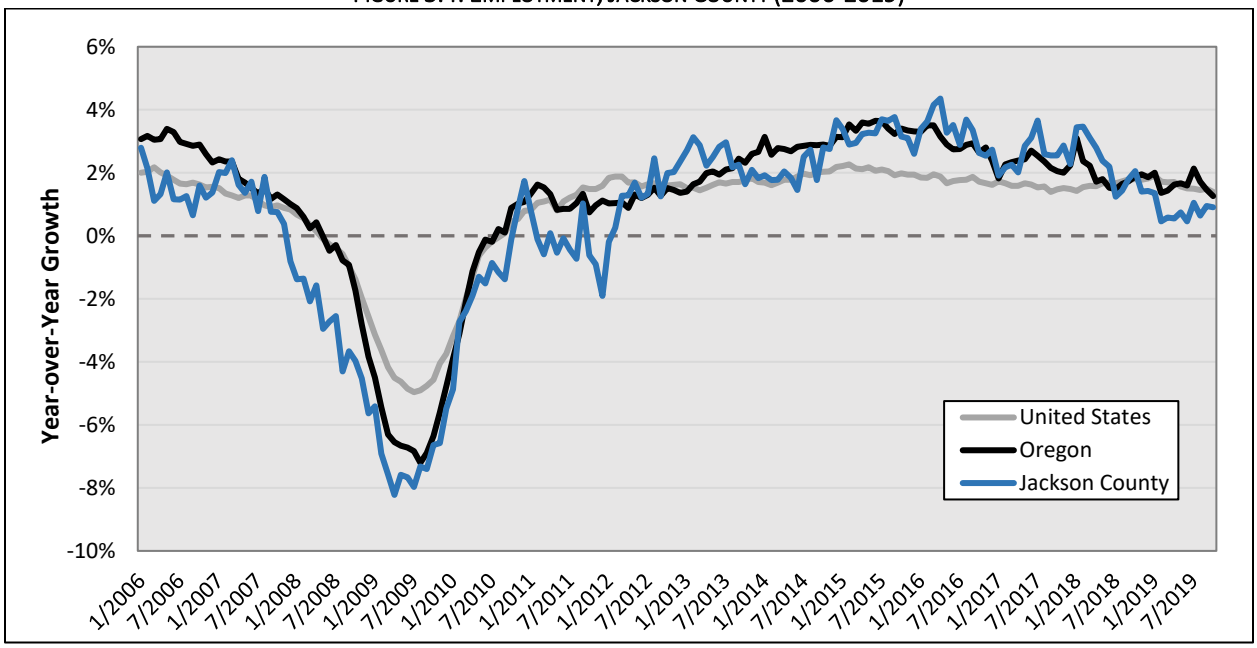
FIGURE 5.3: UNEMPLOYMENT RATE, JACKSON COUNTY (2006-2019)



SOURCE: *Oregon Labor Department*

The Great Recession caused Jackson County's year over year employment to decline faster than that of Oregon's or the United States. However, since 2012, Jackson County's employment growth has maintained pace with that of Oregon's and even exceeded the national average. Although the rate of growth has slowed in recent years, the county continues to grow and add jobs at roughly the same rate as Oregon and the United States.

FIGURE 5.4: EMPLOYMENT, JACKSON COUNTY (2006-2019)



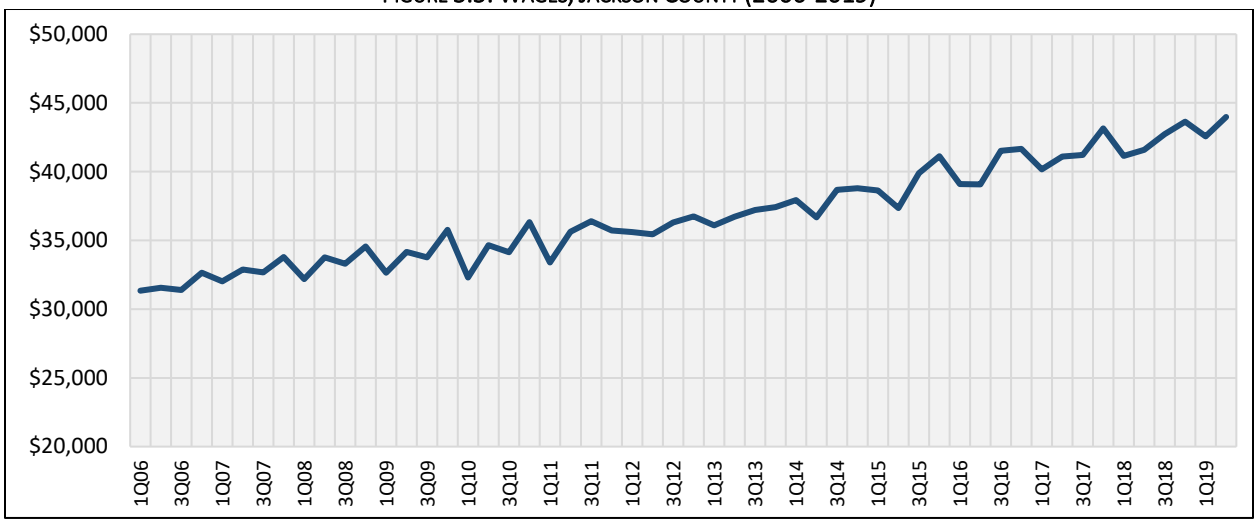
SOURCE: *Oregon Labor Department, Federal Reserve Bank of St. Louis*

WAGES AND INCOME

Earnings in Jackson County have grown at a healthy rate since the recession and averaged $43,978 as of 2Q 2019. The average annual increase in the wage level since 2009 is 2.49%, which is high in a national context, reflecting growth across the economy. Over this period, the annual wage growth never decreased over any annual period and has remained high at 2.67% and 2.08% for 2017 and 2018 respectively. This is reflective of the shrinking unemployment

rate and tight labor market, as employers are increasingly forced to raise wages to attract workers. This pattern is often more pronounced in smaller, more isolated economies where labor forces are more limited, such as Jackson County.

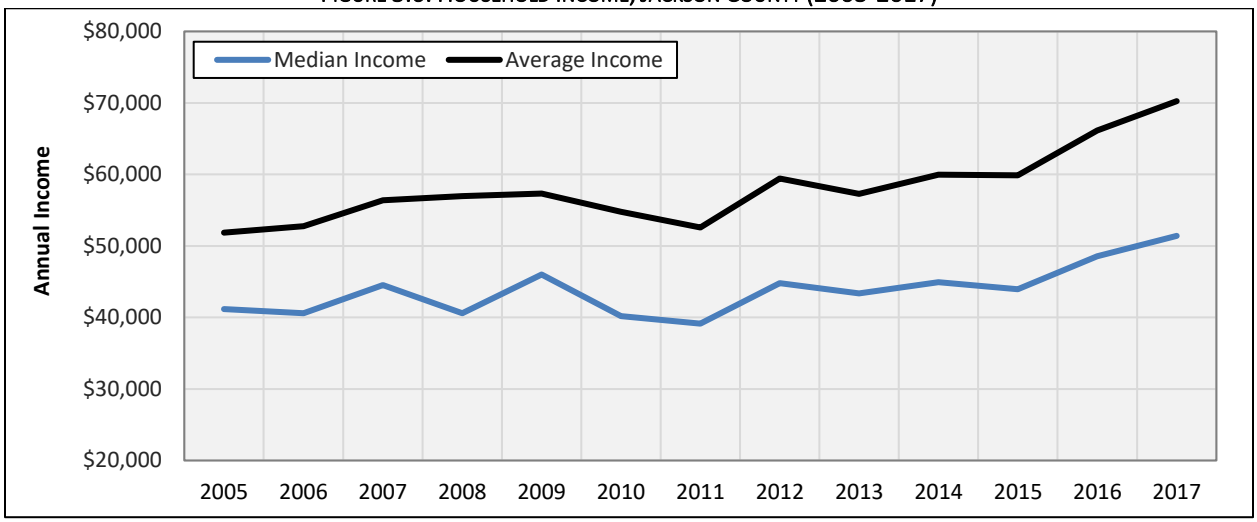
FIGURE 5.5: WAGES, JACKSON COUNTY (2006-2019)



SOURCE: *Oregon Labor Department*

Household incomes have followed an upward trend since 2011, reflecting the growth realized in the recovery, following the Great Recession. 2016 and 2017 (the most recently available data) were particularly strong years for incomes as the tightening labor market pressured employers to offer more competitive compensations. Over this same period the discrepancy between median incomes and average incomes increased. This is reflective of larger national trends towards a shrinking middle class as wealth becomes more concentrated. As of 2017, the typical household in Jackson County earned $51,409, an increase of $6,885 per year from incomes in 2007 (+15.46%).

FIGURE 5.6: HOUSEHOLD INCOME, JACKSON COUNTY (2005-2017)



SOURCE: *US Census, Bureau of Labor Statistics*

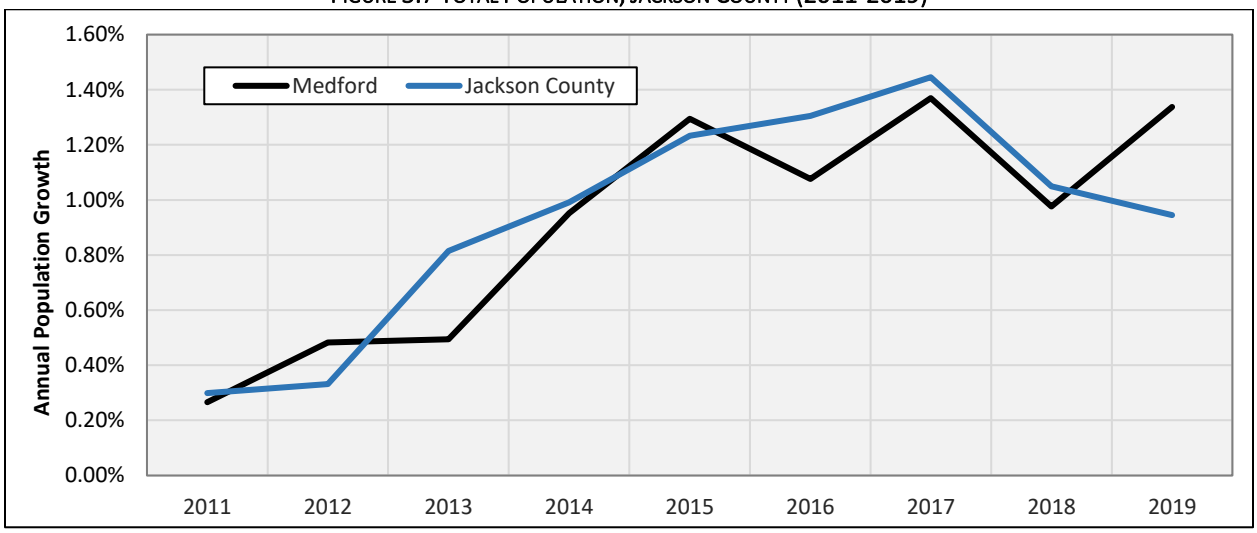
POPULATION

The following chart displays the annual population count in Medford and Jackson County from 2010 through 2019. In 2010, Medford hosted a population of 74,980 and made up 36.87% of Jackson County's total population (203,340). Over time this ratio has decreased as Jackson County's population, slightly outpaced that of Medford's. From 2010 to

2019 the population of Medford grew by an annual average rate of 0.93% while Jackson County's population grew by an average annual rate of 0.94%. As of 2019, Jackson County's population count was 221,290 and Medford's was 81,465 (36.67% of the county total). Although both areas have followed comparable rates of growth, Medford experienced greater variance in its growth than Jackson county. This is typical when comparing economies of different sizes as shocks tend to have comparatively greater impacts on smaller communities than on larger ones.

After a year of 0.27% growth from 2010-2011, the current economic expansion came to fruition and Medford's annual population consistently grew for the next four years. By 2014-2015, Medford's annual population growth reached 1.29%. After a slight decrease in 2015-2016, the city rebounded and in 2016-2017 grew by a record 1.37% (1,090 people). Over the same time period, Jackson County has followed a similar pattern, also peaking in 2016-2017 at a rate of 1.45% (3,135 people). Given a typical household size of 2.51 in Medford and 2.42 in Jackson County (2017), this translates to an additional 433 households in Medford and 1,295 households in Jackson respectively. The largest divergence between Medford and Jackson County occurred in this most recent period (2018-2019) when Medford grew by 1.34% (1,090 people, 433 households) and Jackson County grew by 0.94% (2,090 people, 863 households). The average growth in population from 2010-2019 was 721 people per year for Medford and 1,994 people per year for Jackson County. Given average household sizes for each county, this should translate into household formation of 287 units in Medford and 824 per year in Jackson County, assuming adequate housing supply.

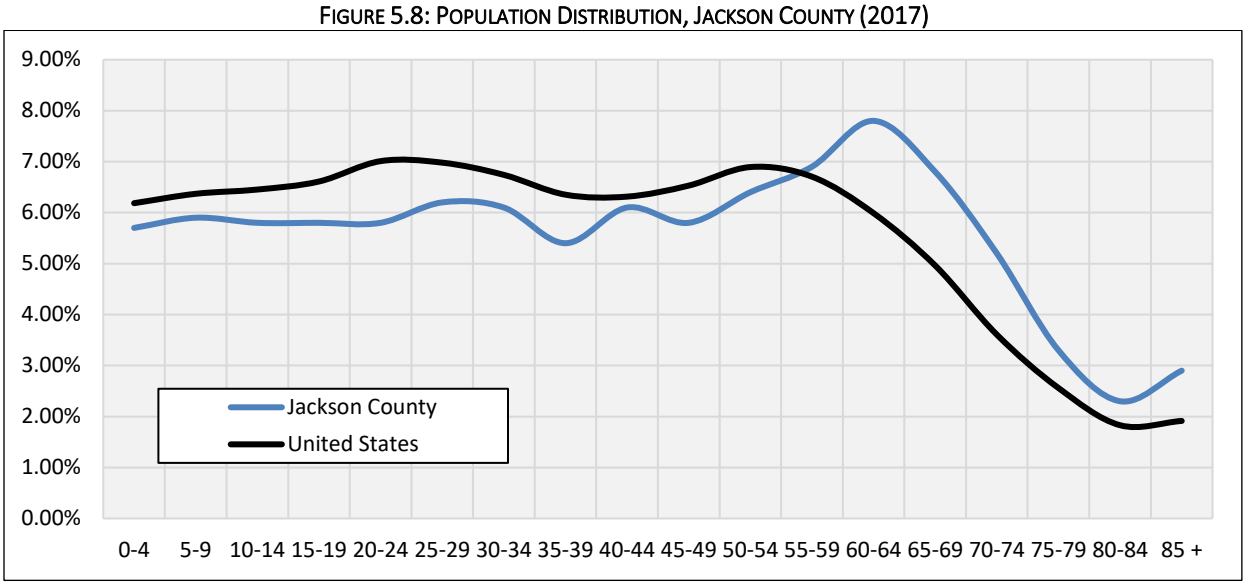
FIGURE 5.7 TOTAL POPULATION, JACKSON COUNTY (2011-2019)



SOURCE: *Portland State University Population Research Center*

The population distribution in Jackson County differs from the national distribution. The local population is older overall, with a smaller share of young and middle-aged residents. The largest divergence appears in the 60 to 64 age bracket with 7.8% of Jackson County's population fitting this category but only 6.0% of the nation. The 60 to 64 age bracket is also Jackson County's largest, sitting a full 2.23% above its average bracket size. The age bracket most underrepresented in Jackson County compared to the nation are 20 to 24-year-olds. This bracket is underrepresented by 1.21% and is the third smallest bracket in Jackson County below the age of 65.

FIGURE 5.8: POPULATION DISTRIBUTION, JACKSON COUNTY (2017)



SOURCE: *U.S. Census Bureau*

POPULATION-RELATED IMPACTS ON HOUSING DEMAND

There are several implications of the population distribution for future housing demand in Jackson County. First, with the peak concentration of millennials currently at 28 years of age nationwide, we can assume that the wave of household formation driven by millennials is behind us. Although millennials remain in their parents' homes longer than previous generations, research has shown that a large majority are moved out by this age. JOHNSON ECONOMICS estimates that roughly 75% of all millennials (defined as born in the eighties or nineties) nationwide by now have moved out from their parents, something that has boosted apartment demand over the most recent years.

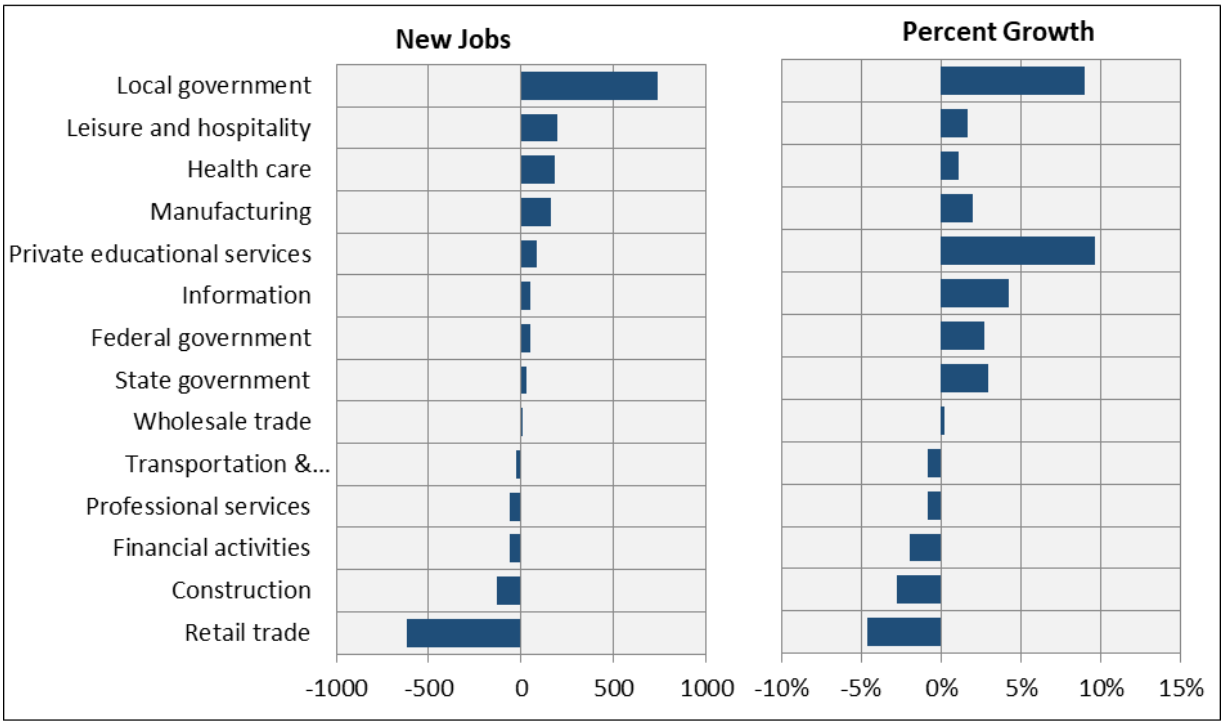
Although Jackson County suffers from a deficency of working-age adults, the city has a growing population of retired residents. As the baby boomers age and retire, the demand for large, expensive single-family homes is declining nation wide, while demand for move-down and senior options will likely increase including demand for smaller single-story homes and senior-friendly apartments. The boomer wave is still a decade away from reaching the assisted living wave in full force. As the boomers continue to move into Jackson County, we expect the demand for smaller, high-end apartments and single story homes to increase.

INDUSTRY GROWTH

Private sector job growth in Jackson County over the last year has been primarily focused in three industries, leisure & hospitality, health care, and manufacturing. Leisure & hospitality added 193 jobs, growing by 1.63%. Growth in health care (+180 jobs, +1.10%) reflects population growth and increasing demand for health care and hospitality services from aging baby boomers. The area is also experiencing growth related to demand generated outside the local household base, for instance in manufacturing (+159 jobs, +1.99%) adding similar growth as health care. The fastest growing industry over this period was private educational services which added 87 jobs, growing by 9.62%. The fastest source of job creation over the past year was local government, expanding public sector job growth substantially, driven primarily by an increase in teachers.

The greatest losses were realized in retail trade with 616 jobs lost from 2Q 2018 – 2Q 2019 (-4.59%). This follows a broader nation-wide pattern as growth in retail shifts from brick and mortar shops to online shopping. Construction also slowed down, losing 128 jobs (-2.76%).

FIGURE 5.9: EMPLOYMENT GROWTH BY INDUSTRY, JACKSON COUNTY (2018-2019)



SOURCE: *Oregon Labor Department, U.S. Census Bureau*

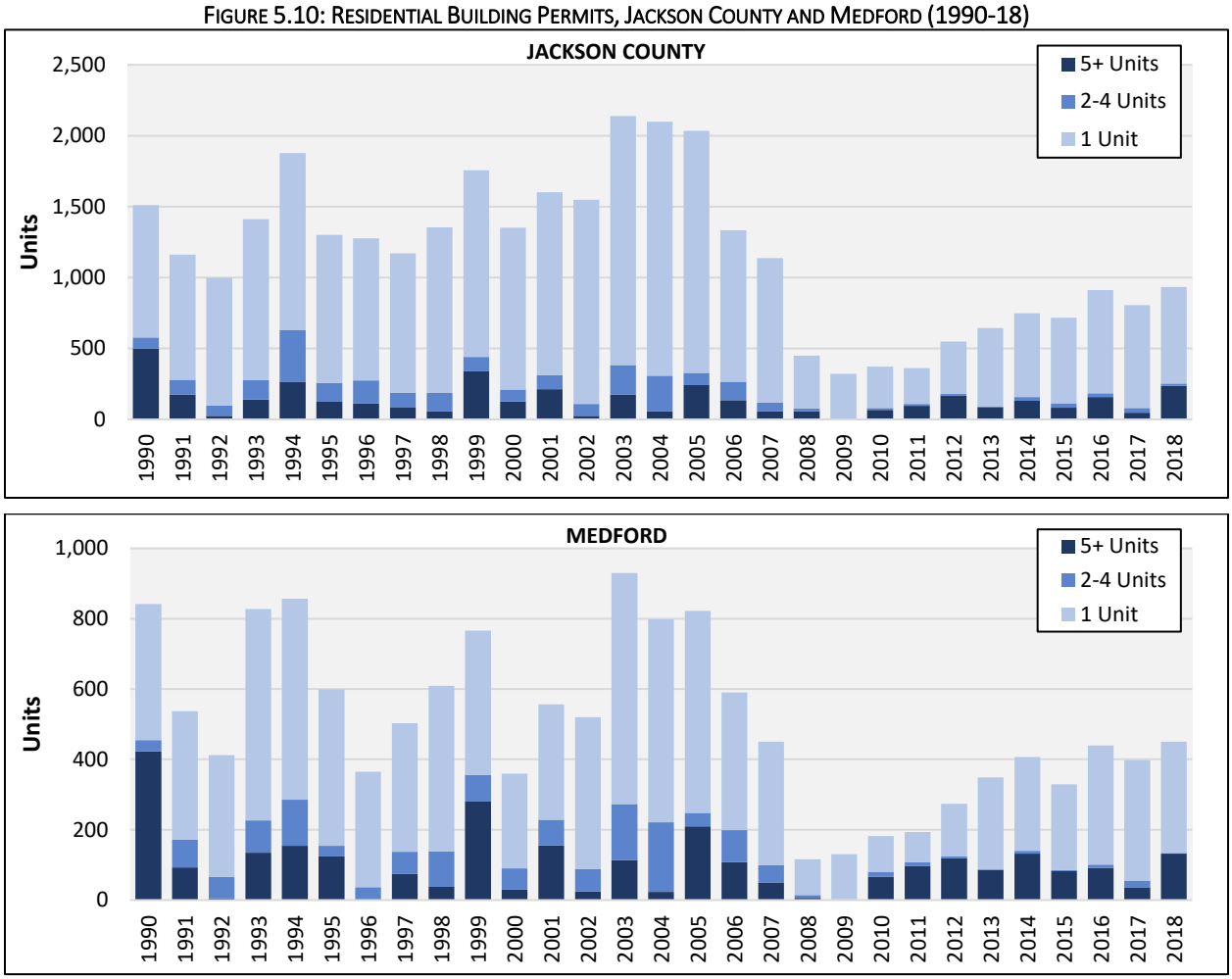
MARKET TRENDS

CONSTRUCTION ACTIVITY

Before the foreclosure crisis took hold in the late 2000s, around 2,000 housing units were built annually in Jackson County. The construction volume fell to around 300 units per year in 2009, before gradually increasing to nearly 700 units in 2018. Medford built around 800 units per year before the downturn, and bottomed around 100 units in 2008, before increasing to the current level of 450. Medford accounted for 38% of all housing construction in the county during the 2000s, in line with the City's share of the population, but has accounted for 50% so far in this decade.

Single-family homes dominate residential development in Jackson County. Roughly 1,250 multifamily units have been built in this decade, including 915 in Medford. The majority of these are in structures with more than five units. These units – virtually all rental apartments – represent 28% of all new housing units in Medford over the 2010-18 period.

FIGURE 5.10: RESIDENTIAL BUILDING PERMITS, JACKSON COUNTY AND MEDFORD (1990-18)

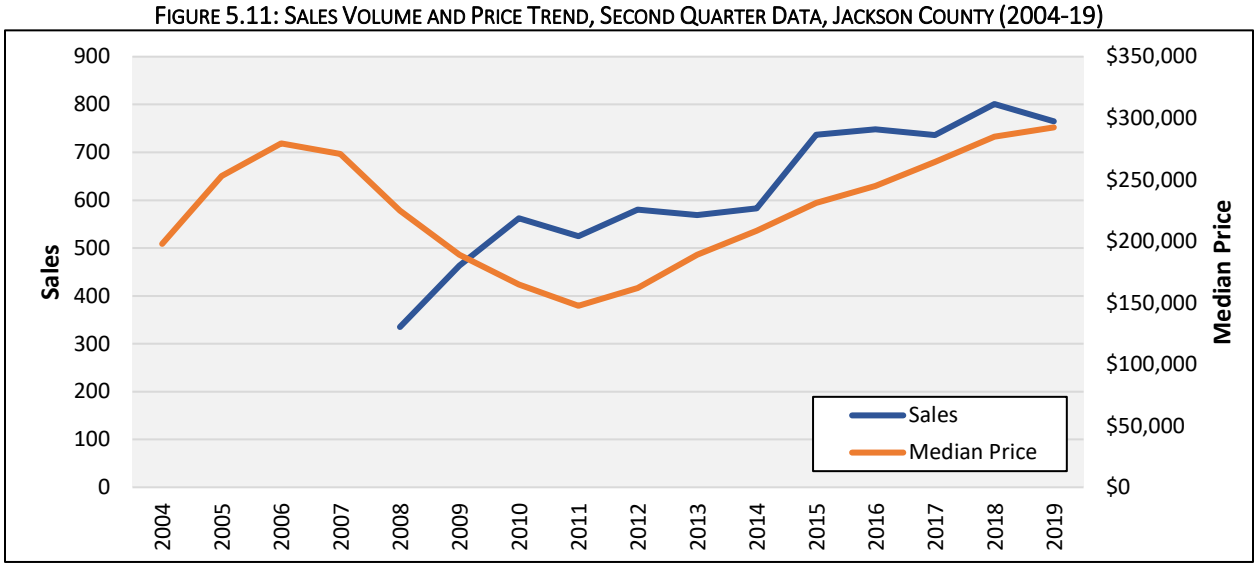


SOURCE: U.S. Census Bureau, JOHNSON ECONOMICS

OWNERSHIP MARKET TRENDS

Sales of ownership housing in Jackson County has been on an upward trend since 2008, although the growth has tapered off in recent years and might have reached a peak in 2018. The median sales price in the county fell dramatically in the wake of the foreclosure crisis but has since recovered. As of 2Q19, the current median price is $292,500, compared to a low of $147,500 in 2011 and a pre-recession high of $279,500 in 2006 (second quarter data). Annual price escalation peaked in 2015 at 10.8%, and has since moderated to 2.6%, which is equal to the average annual price increase since 2004. In comparison, general inflation averaged 2.0% per year over the period. As of 2Q19, the average time on the market for listed homes is 39 days, below the 45-60 days typically considered to reflect a market that is balanced in terms of supply and demand, but somewhat higher than in 2018.

FIGURE 5.11: SALES VOLUME AND PRICE TREND, SECOND QUARTER DATA, JACKSON COUNTY (2004-19)



SOURCE: *SOMLS, JOHNSON ECONOMICS*

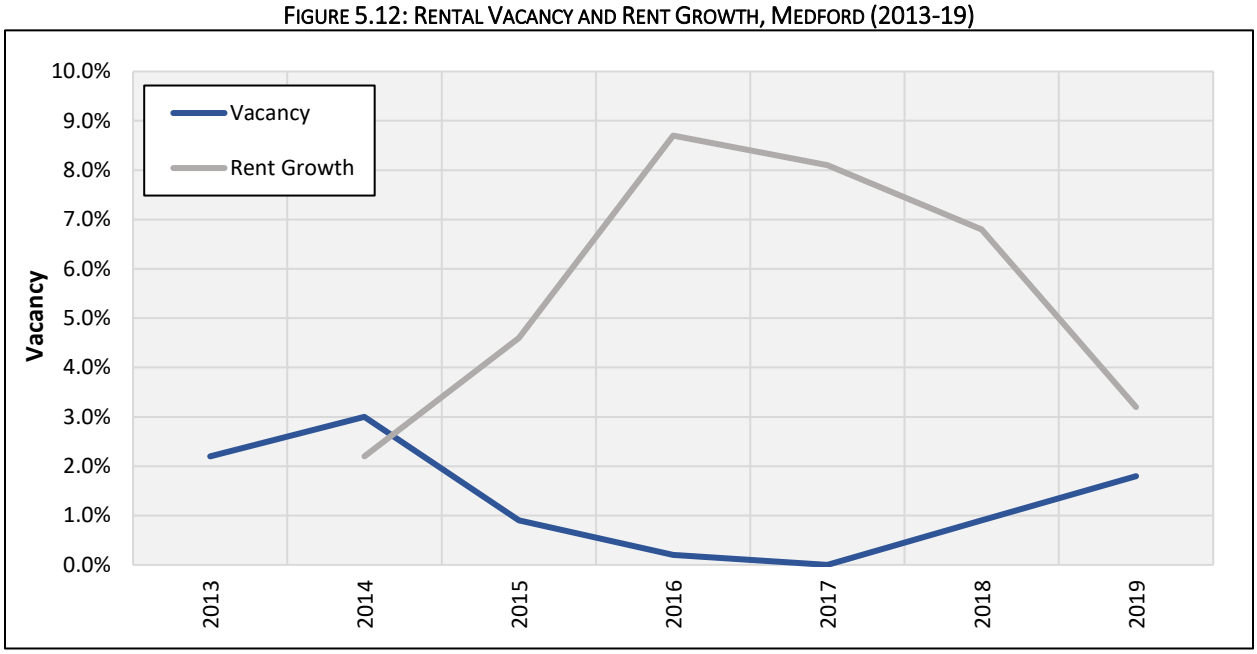
RENTAL MARKET TRENDS

Demand for rental housing has been strong in this decade nationwide. The late 2000s foreclosure crisis and ensuing recession led to more restrictive lending, which shifted housing demand from the ownership market to the rental market. Demand in this decade has also been boosted by the large millennial cohort reaching adulthood and forming their first households. High thresholds for creditworthiness and down payment, coupled with high levels of student debt, have largely relegated the millennials to the rental market. The demand has reduced vacancy and increased rents all over the nation, though increased construction has alleviated market pressures in recent years.

There is limited data on the rental market in Jackson County and Medford. However, JOHNSON ECONOMICS has conducted regular surveys of a sample of apartment properties in Medford since 2013. Over this period, the sample has consistently reflected a total vacancy rate below 3.0%. A vacancy rate around 5.0% typically represents a healthy supply-demand balance where rent increases keep in line with wage and income growth.[1] Because of the undersupply of vacant units in Medford, rents have escalated more rapidly than incomes over this period. In terms of annual rent growth, the peak was at nearly 9.0% in 2016, when the vacancy rate was 0.2%. Since then, the vacancy rate has increased to 1.8% and rent growth has moderated to 3.2% per year as of mid-2019.

1 "Vacancy Rate: A Key Figure in Selecting Markets for Property Investments." *SMART PROPERTY INVESTMENT*, 10 Mar. 2019, property-investment.net/2019/03/10/vacancy-rate/. Accessed 18 Nov. 2019.
Rosen, K. and L. Smith. 1983. The Price Adjustment Process for Rental Housing and the Natural Vacancy Rate. *American Economic Review*, 73, 779-786.

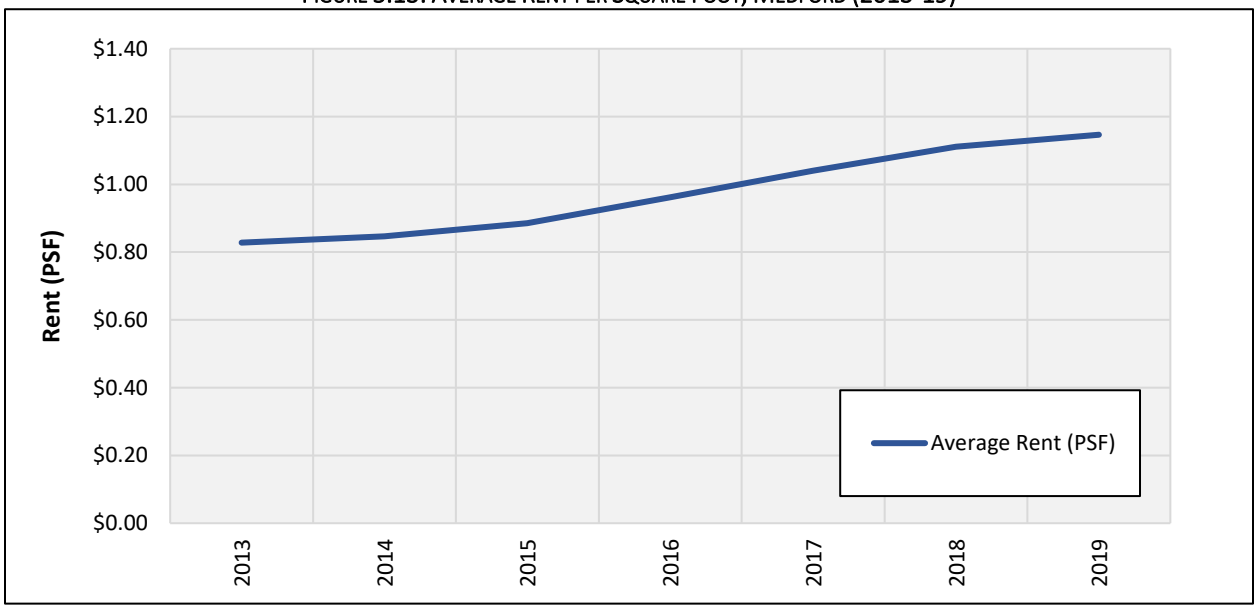
FIGURE 5.12: RENTAL VACANCY AND RENT GROWTH, MEDFORD (2013-19)



SOURCE: *JOHNSON ECONOMICS*

The apartment projects surveyed in the sample includes large properties built since the late 1980s. In aggregate, these properties currently average an asking rate of $1.15 per square foot (PSF). There is a considerable spread between the properties in terms of rent levels, depending on factors like location, age, and amenities.

FIGURE 5.13: AVERAGE RENT PER SQUARE FOOT, MEDFORD (2013-19)



SOURCE: *JOHNSON ECONOMICS*

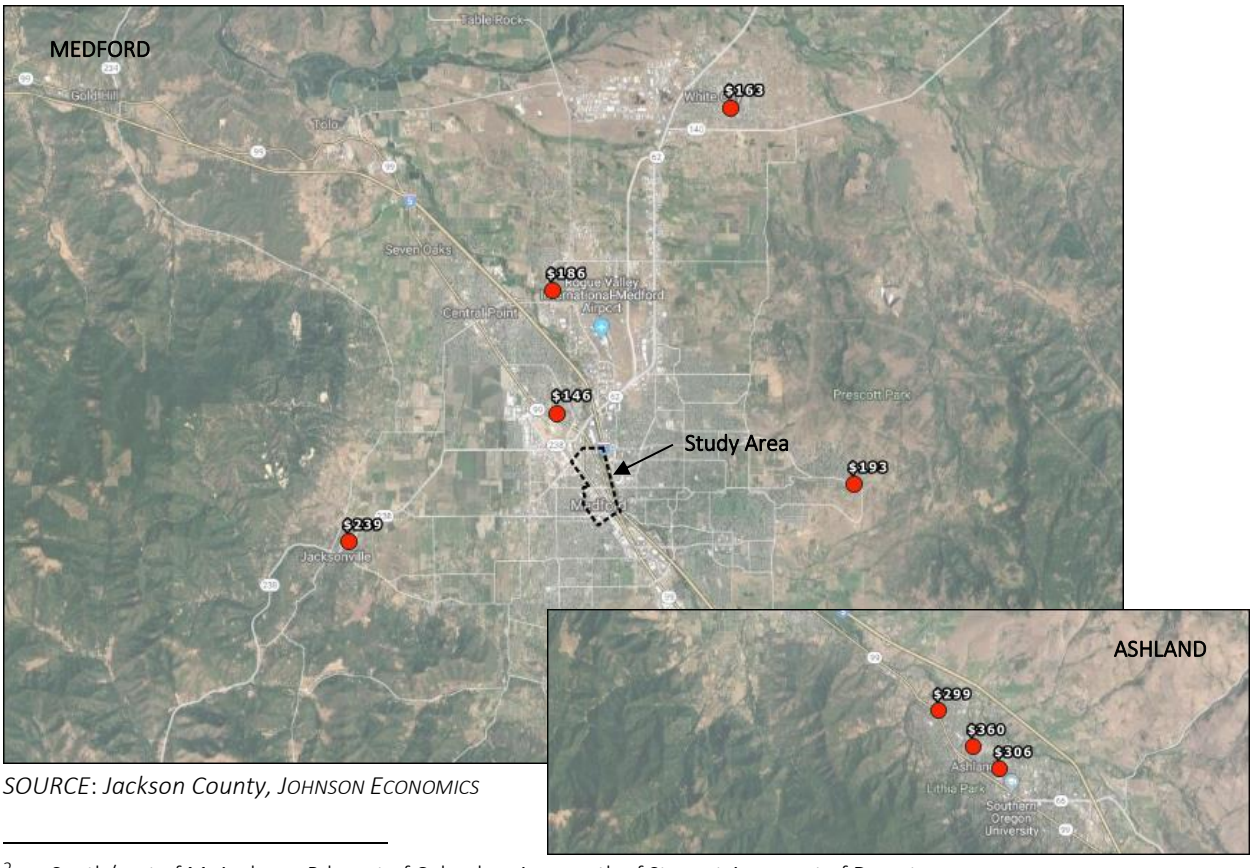
ACHIEVABLE PRICING

FOR-SALE TOWNHOMES

Medford has not seen any construction of townhomes of an urban format over the recent past. Estimates of achievable pricing for this housing form thus need to draw on reference points from other markets and from other housing formats in the city. For this analysis, we surveyed recent sales transactions (last three years) of new suburban attached homes (two and three stories) in and around Medford, as well as new urban townhomes in Ashland. The sales prices are adjusted to reflect the price differentials between the areas where these properties are located and Medford Central West[2], as calculated from single-family detached sales. For the suburban homes, we also apply an adjustment to reflect the premium we would expect for a townhome of urban format in the Study Area compared to a suburban attached home in the Central West submarket. Based on premiums observed in other cities in the Pacific Northwest, we assume that this premium is 10%.[3]

The following map displays the average per-square-foot sales price for the surveyed developments, adjusted to reflect current pricing (using county median sales price trend) and normalized to reflect a 1,400-square-foot unit. The highest prices are in Central Ashland ($360) while the lowest are in Northwest Medford ($146).

FIGURE 5.14: CURRENT ATTACHED HOME PRICING PER SQUARE FOOT



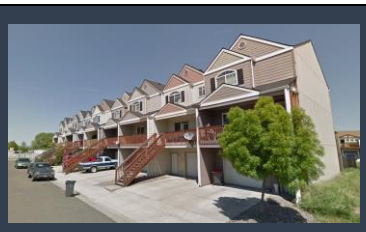
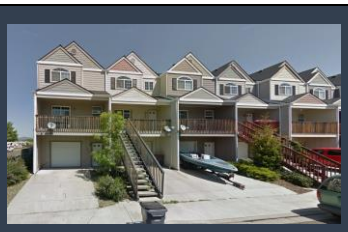
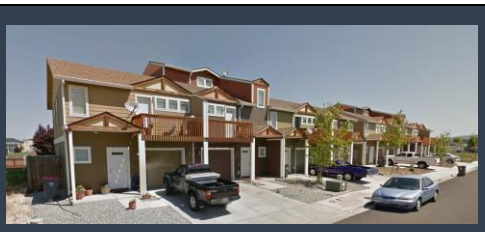
SOURCE: *Jackson County, JOHNSON ECONOMICS*

2 South/east of McAndrews Rd; east of Columbus Ave; north of Stewart Ave; west of Downtown.

3 Premiums for urban downtown townhomes relative to suburban attached homes tend to vary with the vitality/size of the downtown areas and the number of high-income households in the city. For instance, the premium appears to be around 20% in Ashland and Eugene, 35% in Hood River, and 15% in Troutdale.

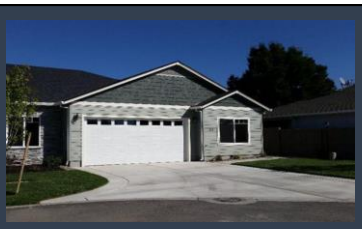
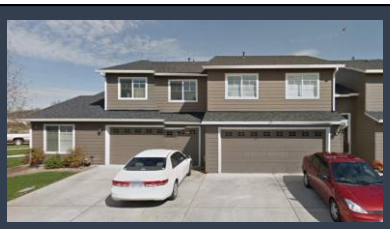
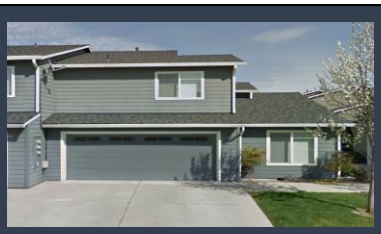
The surveyed properties are profiled over the next pages, followed by an analysis of achievable pricing for urban townhomes in the Study Area.

FIGURE 5.15: SURVEYED FOR-SALE ATTACHED HOME PROPERTIES

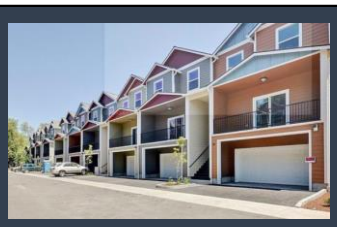
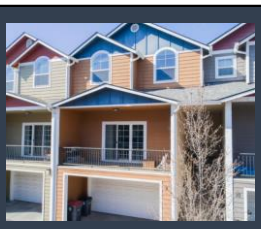
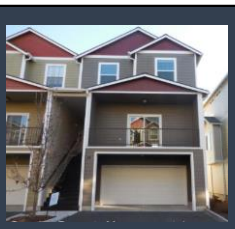
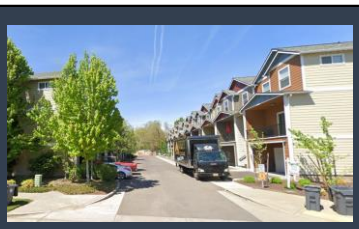
1) 3402-3415 Sharon Way, White City, OR

Year built:	2018	Sale year:	2019	Normalized current value:	$163
Bed/bath:	2B/2b, 2B/2.5b	Sale price:	$184,900 - $209,900	Submarket differential:	36.2%
Square feet:	952-1,390	Price/SF:	$149 - $203	Indicated Central West price:	**$222**

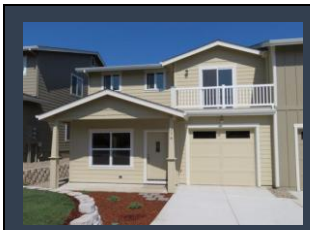
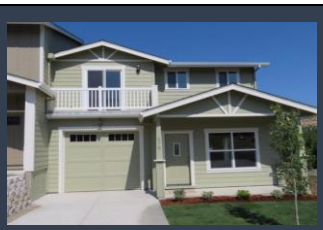
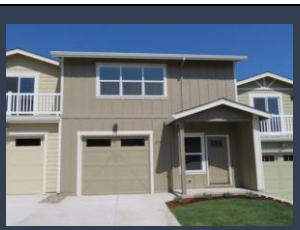
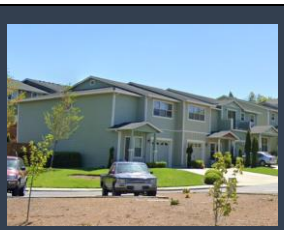
2) 386-404 Live Oak Rd, Central Point, OR

Year built:	2016	Sale year:	2016-2017	Normalized current value:	$186
Bed/bath:	2B/1.5b, 2B/2b, 3B/2b	Sale price:	$217,400-$238,500	Submarket differential:	17.2%
Square feet:	1,318-1,456	Price/SF:	$151-$181	Indicated Central West price:	**$218**

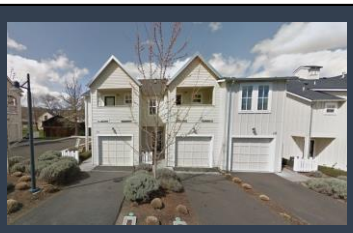
3) 411-419 Berrydale Ave, Medford, OR

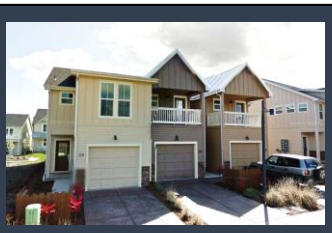
Year built:	2016	Sale year:	2017	Normalized current value:	$146
Bed/bath:	3B/2.5b, 3B/3b	Sale price:	$187,900-$193,000	Submarket differential:	32.9%
Square feet:	1,475-1,497	Price/SF:	$127 - $129	Indicated Central West price:	**$194**

4) 270-278 Dunthorpe Dr, Medford, OR

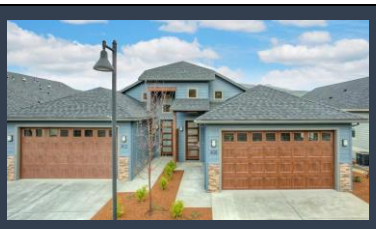
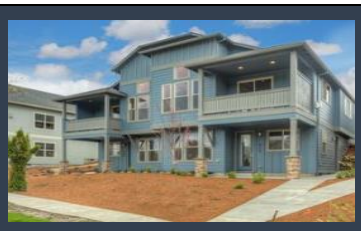
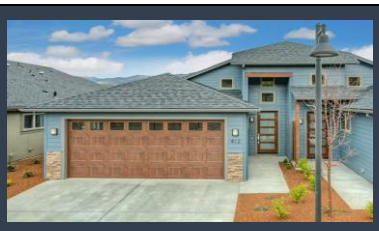
Year built:	2016	Sale year:	2017-2018	Normalized current value:	$193
Bed/bath:	3B/2.5b	Sale price:	$260,000-$330,000	Submarket differential:	-4.7%
Square feet:	1,711-2,207	Price/SF:	$147- $150	Indicated Central West price:	**$184**





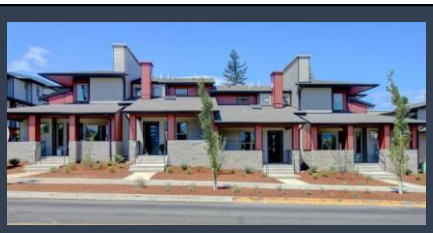
5) 351-515 G St, Jacksonville, OR

Year built:	2015	Sale year:	2016	Normalized current value:	$239
Bed/bath:	2B/2.5b, 3B/2.5b	Sale price:	$270,000-$300,000	Submarket differential:	-24.3%
Square feet:	1,415-1,525	Price/SF:	$191-$199	Indicated Central West price:	**$181**

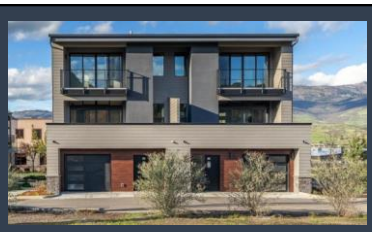
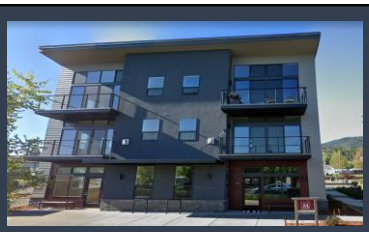
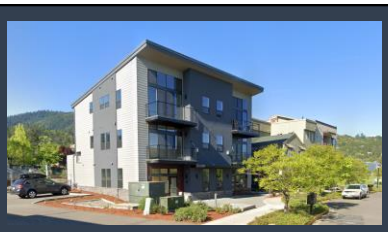
6) 408-416 Lindsay Ln, Ashland, OR

Year built:	2015	Sale year:	2016	Normalized current value:	$299
Bed/bath:	3B/2.5b	Sale price:	$385,000-$392,000	Submarket differential:	-30.8%
Square feet:	1717	Price/SF:	$224-$229	Indicated Central West price:	**$207**



7) 23 S Mountain Avenue, Ashland, OR

Year built:	2019	Sale year:	2019 (for sale)	Normalized current value:	$306
Bed/bath:	3B/2b	Sale price:	$383,595-$450,000	Submarket differential:	-29.6%
Square feet:	1,196-1,300	Price/SF:	$298-$376	Indicated Central West price:	**$215**

8) 164-172 Clear Creek Dr 101 Ashland, OR

Year built:	2019	Sale year:	2019	Normalized current value:	$360
Bed/bath:	2B/3b	Sale price:	$716,450-$765,135	Submarket differential:	-32.3%
Square feet:	2950	Price/SF:	$243-$259	Indicated Central West price:	**$244**

SOURCE: Jackson County, Zillow, Google Maps, listing agents, JOHNSON ECONOMICS

The following table summarizes the pricing indicated by the surveyed properties to be achievable for attached homes around 1,400 square feet in the Central Medford West submarket, after adjusting for price differentials between the locations. One of the properties (#8) represents an urban townhome format in an urban location. We therefore do not adjust the pricing indicated by this property. Another property (#7) represents a semi-urban format and location, and we therefore apply a 5% upward adjustment in order to estimate pricing for a fully urban townhome. For the remaining properties, which have a suburban profile, we apply a 10% urban premium. These adjustments yield estimated achievable pricing of $199 to $244 per square foot in the Study Area. We regard this range to be appropriate for townhomes with profiles ranging from the mid-market to the high-end.

FIGURE 5.16: ACHIEVABLE PRICING, URBAN TOWNHOMES, STUDY AREA

COMPARABLE	INDICATED PRICE, CENTRAL WEST	URBAN PREMIUM	INDICATED PRICE, STUDY AREA
1) 3402-3415 Sharon Way, White City, OR	$222	10%	$244
2) 386-404 Live Oak Rd, Central Point, OR	$218	10%	$240
3) 411-419 Berrydale Ave, Medford, OR	$194	10%	$213
4) 270-278 Dunthorpe Dr, Medford, OR	$184	10%	$202
5) 351-515 G St, Jacksonville, OR	$181	10%	$199
6) 408-416 Lindsay Ln, Ashland, OR	$207	10%	$228
7) 23 S Mountain Avenue, Ashland, OR	$215	5%	$226
8) 164-172 Clear Creek Dr 101 Ashland, OR	$244	0%	$244
Achievable townhome pricing, Study Area			**$199-244**

SOURCE: *JOHNSON ECONOMICS*

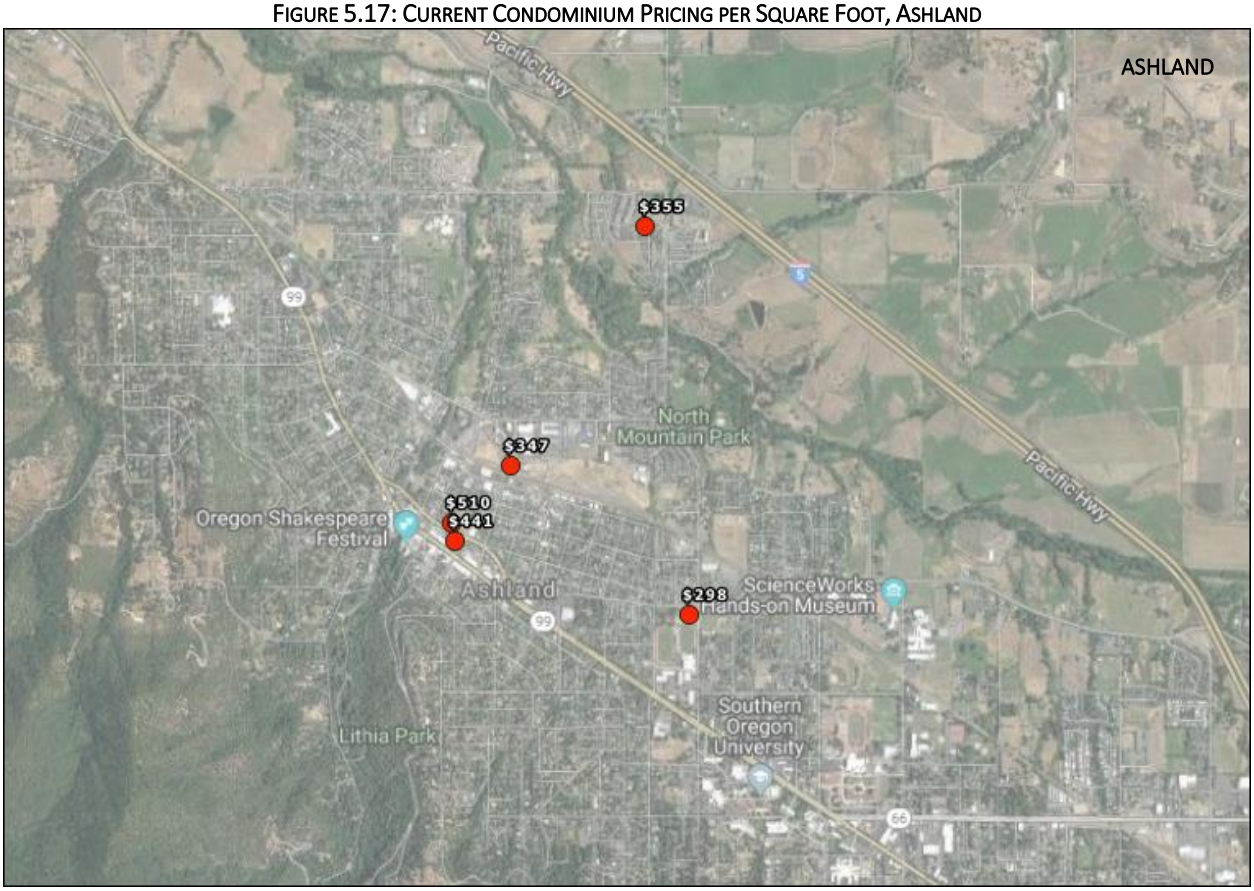
CONDOMINIUM FLATS

According to our analysis of taxlot records in Medford, there are approximately 90 stacked flat format condominium units in the city.

In order to assess achievable pricing for new condominiums in the Study Area, we analyzed sales transactions in Ashland, which has a handful of condominium properties of recent vintage. Following the same approach as with the townhomes, we adjust the prices to current levels and normalize them to reflect 1,400-square-foot units, before adjusting for the price differentials between the locations of each property and Central Medford West, as reflected in single-family home sales. Finally, we apply an urban premium to properties located in suburban or semi-urban areas.

The following map displays the average per-square-foot sales price for the surveyed condominium projects in Ashland, adjusted to reflect current, normalized pricing for a 1,400-square-foot unit. Plaza West in Downtown represents the highest rate ($510), while Phillip's Corner east of Downtown represents the lowest rate ($298). It should be mentioned that both Plaza West and Meadowbrook Park Condominiums ended up renting out some of their units due to slow sales. This suggests that there is very limited market depth at the indicated price levels in these locations.

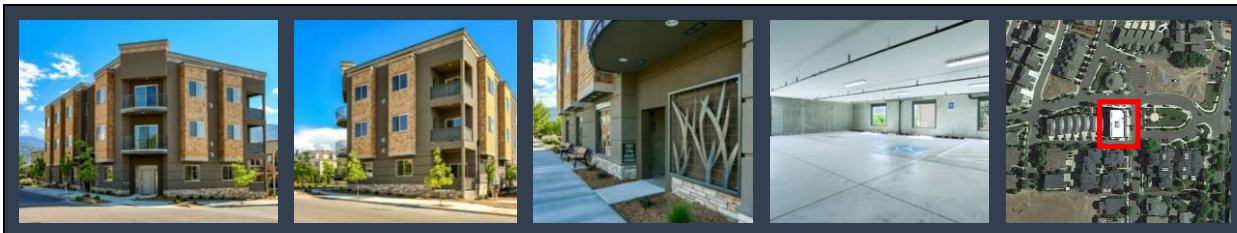
FIGURE 5.17: CURRENT CONDOMINIUM PRICING PER SQUARE FOOT, ASHLAND



SOURCE: *Jackson County, JOHNSON ECONOMICS*

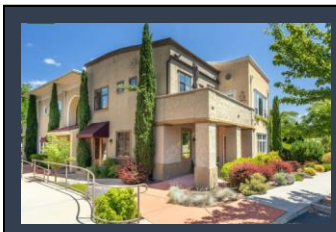
The surveyed properties are profiled below and on the next page, followed by an analysis of achievable pricing for in the Study Area.

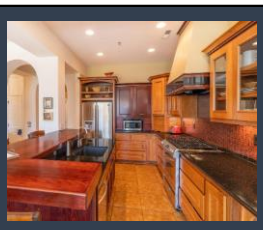
FIGURE 5.18: SURVEYED CONDOMINIUM PROPERTIES



1) Meadowbrook Park Condominiums, 572-596 Fair Oaks Ave, Ashland, OR

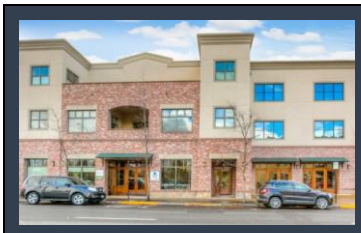
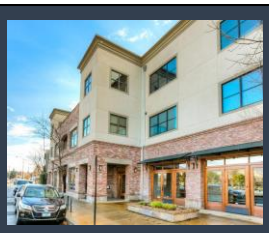
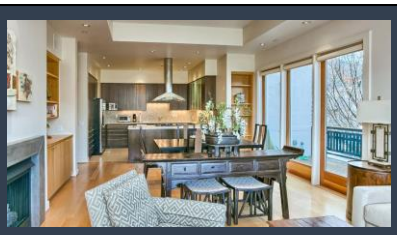
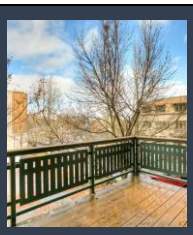
Year built:	2016	Sale year:	2017	Normalized current value:	$355
Bed/bath:	2B/2b	Sale price:	407,000	Submarket differential:	-28.2%
Square feet:	936-1,131	Price/SF:	360	Indicated Study Area price:	**$255**



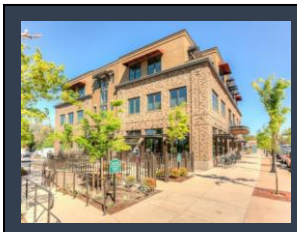
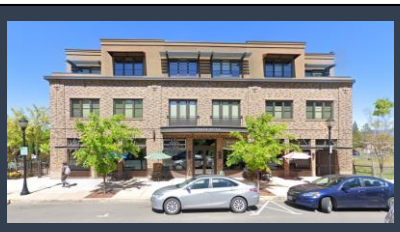
2) 184 Clear Creek Dr, Ashland, OR

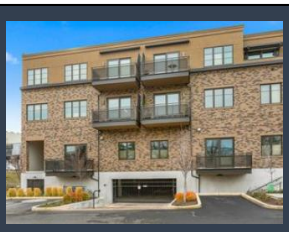
Year built:	2007	Sale year:	2017, 2019 (for sale)	Normalized current value:	$347
Bed/bath:	2B/2b	Sale price:	$365,000-409,000	Submarket differential:	-32.3%
Square feet:	1,523	Price/SF:	$240-269	Indicated Study Area price:	**$235**

3) 180 Lithia Way, Ashland, OR

Year built:	2006	Sale year:	2017	Normalized current value:	$441
Bed/bath:	1B/1.5b	Sale price:	407,500	Submarket differential:	-36.3%
Square feet:	1,106	Price/SF:	368	Indicated Study Area price:	**$281**

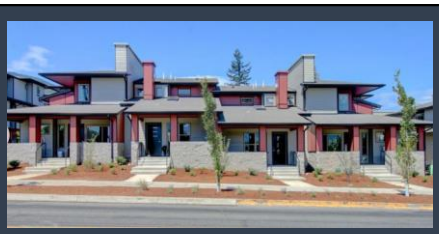





4) Plaza West, 175 Lithia Way, Ashland, OR

Year built:	2014	Sale year:	2017-19	Normalized current value:	$510
Bed/bath:	1B/1.5b, 2B/2b	Sale price:	$599,900-$745,000	Submarket differential:	-36.3%
Square feet:	1,258-1,448	Price/SF:	$427-592	Indicated Study Area price:	**$325**





5) Phillip's Corner, 61 S Mountain Avenue, Ashland, OR

Year built:	2019	Sale year:	2019 (for sale)	Normalized current value:	$298
Bed/bath:	2B/1b	Sale price:	326,240	Submarket differential:	-29.6%
Square feet:	856	Price/SF:	$381	Indicated Study Area price:	**$210**

SOURCE: Jackson County, Zillow, Google Maps, listing agents, JOHNSON ECONOMICS

Figure 5.19 summarizes the pricing indicated by the surveyed properties to be achievable in the Central Medford West submarket. Two of the properties are in a downtown setting, and therefore do not need any adjustment to reflect achievable pricing for urban locations. However, we apply a 5% premium to Phillip's Corner and 184 Clear Creek Drive, which are located outside but close to Downtown, and a 7.5% premium to Meadowbrook Park, which represents a suburban high-density location.

The adjusted estimates indicate achievable pricing in the range of $220 to $325 per square foot. The low-end is represented by Phillip's Corner, which holds a basic standard in terms of design and features (e.g., no elevator). The high-end is represented by Plaza West, which is a luxury property with a ground-floor coffee shop. The spread between the high- and low-end is 48%, which is not unusual for markets with vital downtowns and relatively large high-income segments. However, we would expect a narrower spread in Medford. Considering the slow sales at Plaza West, we regard $220 to $300 to be a more appropriate pricing band for urban condominiums in the Study Area.

FIGURE 5.19: ACHIEVABLE PRICING, URBAN CONDOMINIUMS, STUDY AREA

COMPARABLE	INDICATED PRICE, CENTRAL WEST	URBAN PREMIUM	INDICATED PRICE, STUDY AREA
1) Meadowbrook Park Condominiums, 572-596 Fair Oaks Ave,	$255	7.5%	$274
2) 184 Clear Creek Dr, Ashland, OR	$235	5.0%	$247
3) 180 Lithia Way, Ashland, OR	$281		$281
4) Plaza West, 175 Lithia Way, Ashland, OR	$325		$325
5) Phillip's Corner, 61 S Mountain Avenue, Ashland, OR	$210	5.0%	$220
Indicated achievable condominium pricing, Study Area			$220-325
Conluded achievable condominium pricing, Study Area *			**$220-300**

* Considering slow sales as Plaza West and less upscale downtown profile in Medford.
SOURCE: *JOHNSON ECONOMICS*

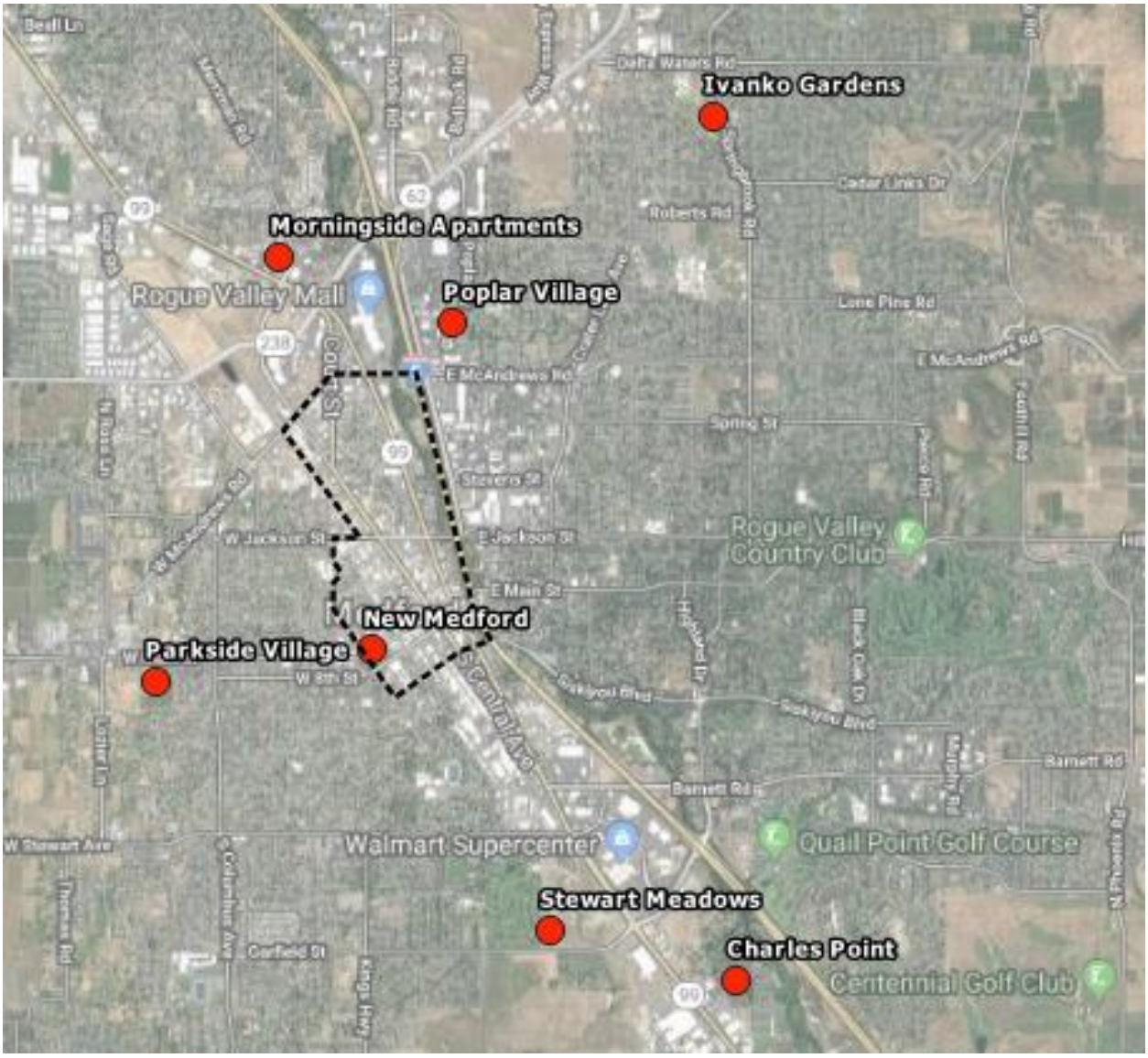
RENTAL APARTMENTS AND RENTAL TOWNHOMES

The rental supply in Medford is primarily of a suburban profile, largely consisting of multi-building properties with two- or three-story walk-up structures. There are no examples of newer apartments of a true urban format in Medford or Jackson County, though there is one suburban property with a modern, semi-urban profile under construction south of Downtown. The closest fully urban properties are in Eugene, which is a very different market due to its large student population.

In order to assess achievable rents for new apartments and townhomes in the Study Area, we will follow a similar approach as for ownership units, first establishing achievable pricing for new suburban properties in Central Medford, and then applying an urban premium based on observations from other markets. We will also survey one urban property of older vintage with recently renovated units in Medford and apply a vintage premium in order to arrive at pricing for a new project.

The surveyed properties are profiled over the next few pages, followed by an analysis of achievable pricing for in the Study Area.

FIGURE 5.20: SURVEYED RENTAL PROPERTIES MAP



SOURCE: *Google Maps, JOHNSON ECONOMICS*

FIGURE 5.21: SURVEYED RENTAL PROPERTIES

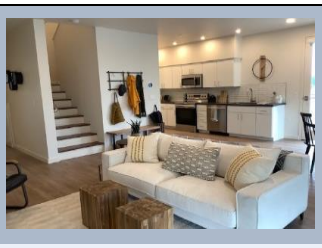


1) The New Medford, 406 W Main St, Medford, OR

Type:	Urban apartments
Year built:	1912 (ren. 1991 & 2019)
Total units:	74

Type	SF	Units	Vacant	Rent	Avg. Rent/SF
1B/1b	800	66	1	$1,035	$1.29
1B/1b (renovated)	800	8	0	$1,095	$1.37

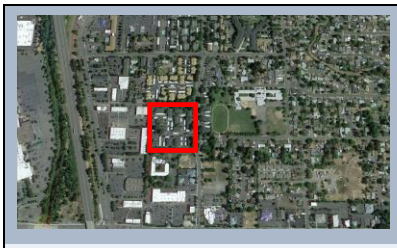
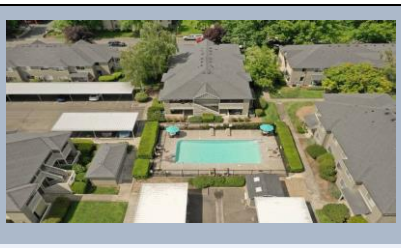
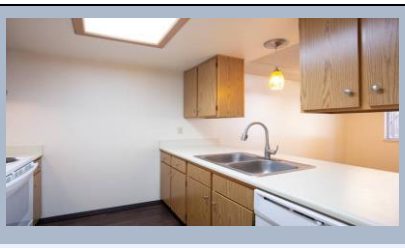




2) Stewart Meadows Ph 1a, 1582 Myers Ln, Medford, OR

Type:	Apartments & Townhomes
Year built:	2019 (U.C.)
Total units:	48

Type	SF	Units	Unleased	Rent	Avg. Rent/SF
1B/1b	772	16	0	$1,075	$1.39
2B/2.5b TH	1,369	32	27	$1,695	$1.24

3) Poplar Village, 1471 Poplar Drive, Medford, OR

Type:	Walk-up apartments
Year built:	1988
Total units:	136

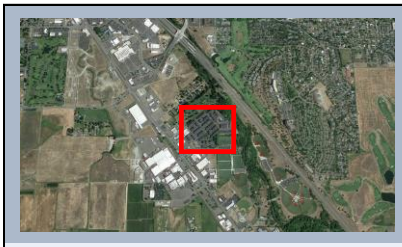
Type	SF	Units	Vacant	Rent	Avg. Rent/SF
2B/1b	928	17	1	$1,281	$1.38
2B/1.5b	928	119	3	$1,347	$1.45



4) Parkside Village, 1820 W 8th Street, Medford, OR

Type:	Walk-up apartments
Year built:	2006
Total units:	60

Type	SF	Units	Vacant	Rent	Avg. Rent/SF
1B/1b	707	12	0	$895	$1.27
2B/2b	959	36	0	$995	$1.04
3B/2b	1,200	12	0	$1,050	$0.88

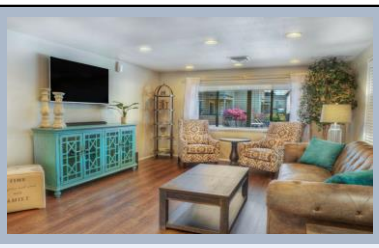


5) Charles Point, 171 Lowry Lane, Medford, OR

Type:	Walk-up apartments
Year built:	2006-15
Total units:	600

Type	SF	Units	Vacant	Rent	Avg. Rent/SF
1B/1b	750	1	0	$980	$1.31
2B/1b	778	280	0	$1,035	$1.33
2B/2.5b TH	1,275	60	0	$1,165	$0.91
3B/2.5b TH	1,275	60	0	$1,235	$0.97



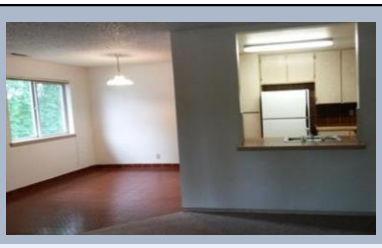


6) Morningside, 2001 Table Rock Road, Medford, OR

Type:	Walk-up apartments
Year built:	1990
Total units:	108

Type	SF	Units	Vacant	Rent	Avg. Rent/SF
1B/1b	808	40	0	$913	$1.13
2B/2b	976	68	1	$1,050	$1.08





7) Ivanko Gardens, 2379 Bell Court, Medford, OR

Type:	Walk-up apartments
Year built:	1993
Total units:	108

Type	SF	Units	Vacant	Rent	Avg. Rent/SF
1B/1b	808	44	1	$950	$1.18
2B/2b	1,127	64	2	$1,050	$0.93

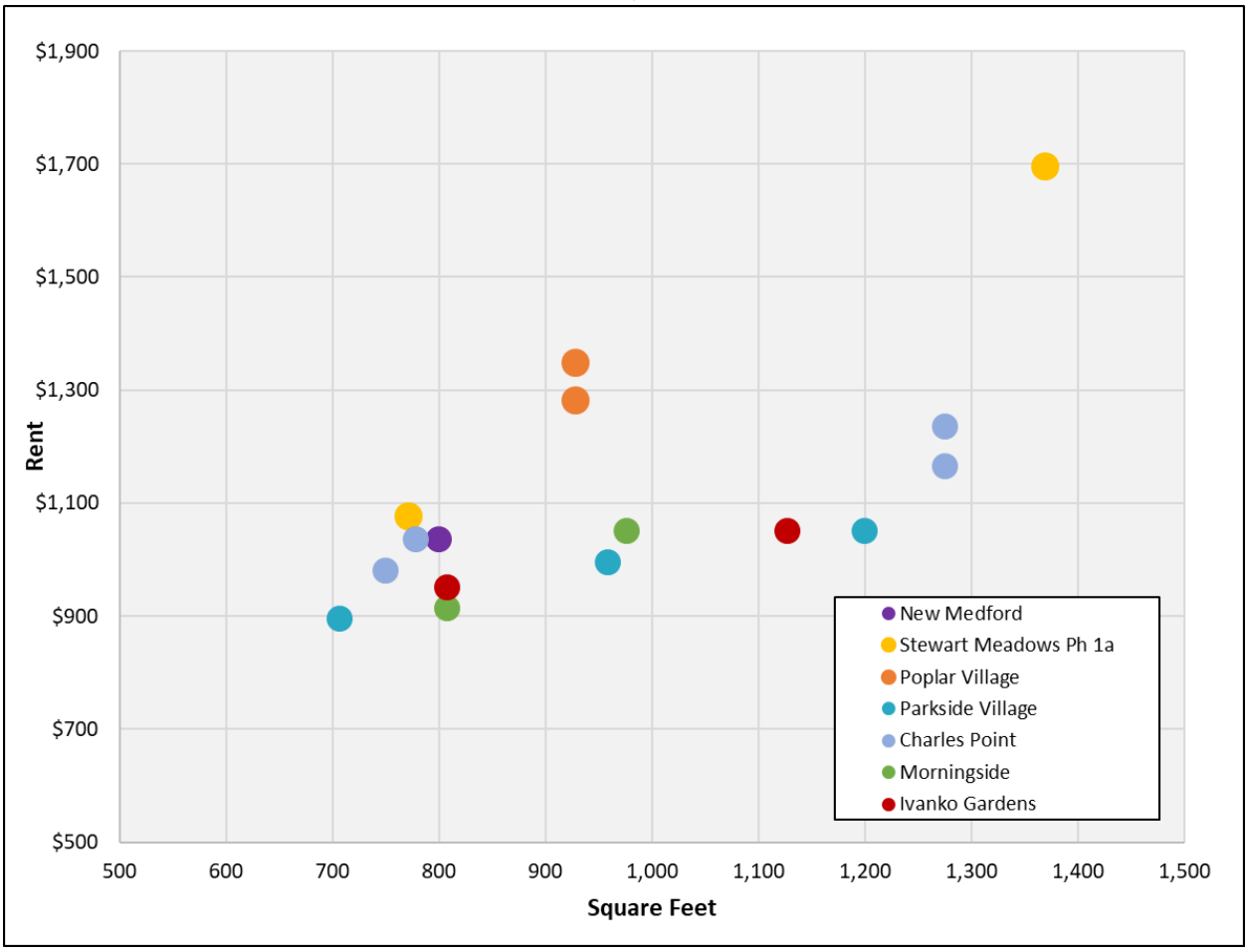
SOURCE: Property Management, Apartments.com, JOHNSON ECONOMICS

Seven rental properties were selected for survey in the city of Medford. These projects are largely concentrated near the urban core, however, only one is in downtown. The projects vary in age from brand new (Stewart Meadows) to 31 years (Poplar Village) and constitute the newest projects in closest proximity to downtown. Amenities were similar across projects with most offering basic kitchen appliances and communal amenities such as a pool, clubhouse or both.

The following scatter plot displays observed rent levels as a function of square footage. The new Stewart Meadows Phase 1a townhome units have the highest rents among the rental apartments and townhome properties. Adjusted for unit size, the Poplar Village apartments have the highest rent per square foot despite their age and location outside of downtown. Poplar's success is likely due to market forces rather than the physical nature of the property. The

Medford market appears to be supply constrained with an average vacancy rate of 3.17% across the surveyed properties.

FIGURE 5.22: RENTS BY UNIT SIZE, SURVEYED RENTAL PROPERTIES

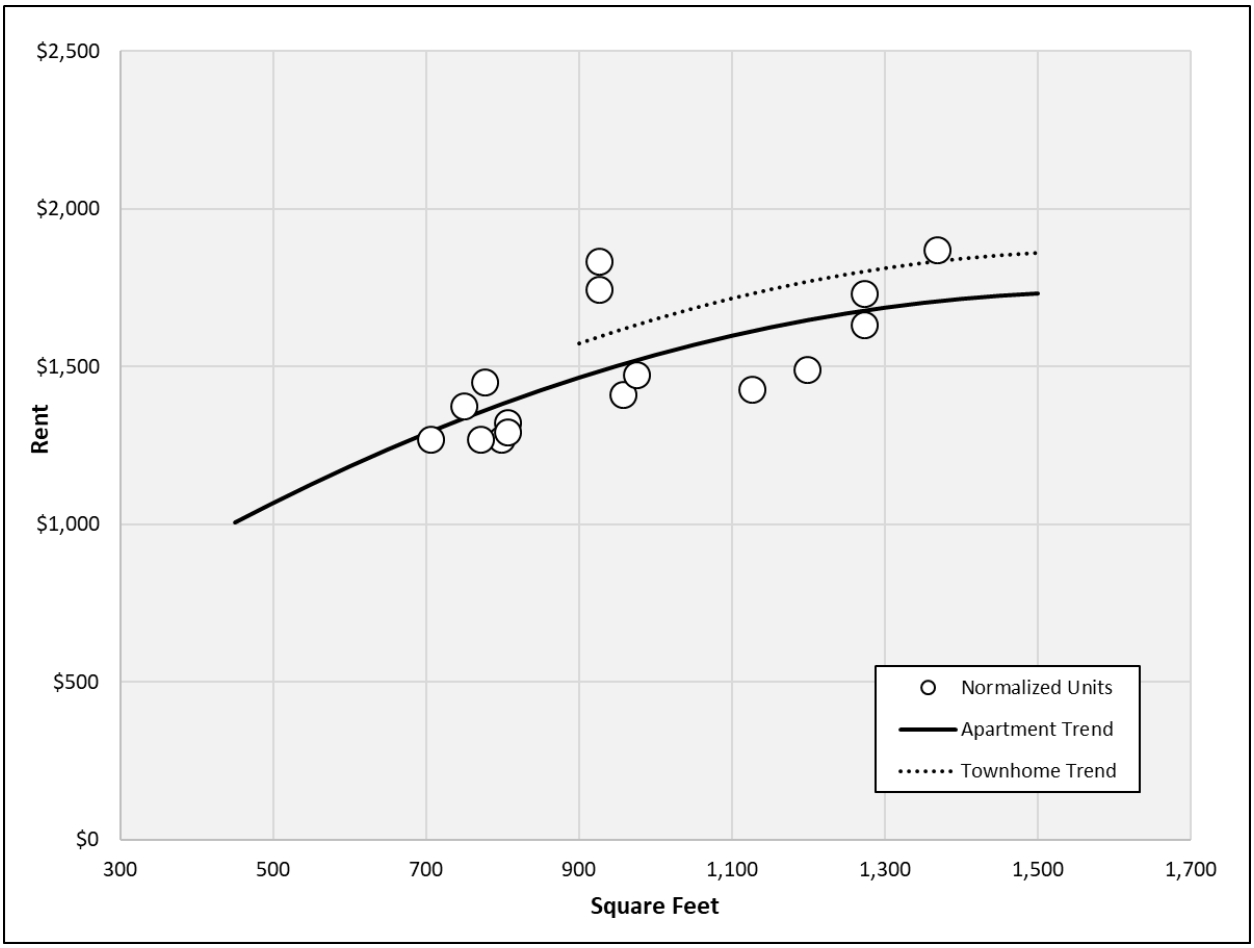


SOURCE: *CoStar, Craigslist, property management,* JOHNSON ECONOMICS

Using the surveyed rental units, Johnson Economics generated estimates of achievable rent levels for new apartments with modern amenities in downtown Medford through a process of normalization. This process involved applying premiums or discounts to each apartment project due to age, location, type of unit, and occupancy. The new normalized rent levels thus control for these factors and can be used to estimate benchmarks and trends. The following graph (Figure 5.23) plots surveyed units' normalized rent levels and includes trendlines of estimate of achievable rent levels as a factor of area.

Figure 5.24 provides examples of estimated achievable rent levels for various unit types and sizes in the Study Area. For regular apartment units, the estimates range from around $1,000 ($2.49 PSF) to around $1,300 ($1.30 PSF) per month. We have also included an estimate for townhome units with private ground-floor entrances and reserved parking, which in Medford typically capture premiums of around 7.5% per month relative to an apartment unit of equal size. With the following hypothetical unit mix, the rents translate into a project average of $1.83 per square foot. The rent levels assume 12-month contracts with utilities billed separately.

FIGURE 5.23: NORMALIZED RENTS BY UNIT SIZE, SURVEYED RENTAL PROPERTIES



SOURCE: *JOHNSON ECONOMICS*

FIGURE 5.24: ACHIEVABLE APARTMENT RENTS, MEDFORD (3Q19)

Unit Type	Units	Unit Mix	Size (SF)	High Rent	Low Rent	High Rent/SF	Low Rent/SF
0B/1b	30	26%	400	$941	$875	$2.35	$2.19
0B/1b	10	9%	500	$1,068	$993	$2.14	$1.99
1B/1b	30	26%	600	$1,184	$1,101	$1.97	$1.83
1B/1b	10	9%	700	$1,289	$1,198	$1.84	$1.71
2B/1b	25	22%	800	$1,383	$1,286	$1.73	$1.61
2B/2b	10	9%	1,000	$1,538	$1,430	$1.54	$1.43
Total/Avg.	***115***	***100%***	***626***	***$1,193***	***$1,110***	***$1.91***	***$1.77***

SOURCE: *JOHNSON ECONOMICS*

VI. MARKET DEPTH ANALYSIS

In this section, we analyze the depth of the market for rental apartments within the defined market area. We provide estimates of market depth in the existing apartment population as well as demand growth over the coming five years. We then reconcile our demand estimates with the identified supply pipeline to project absorption for the City of Medford.

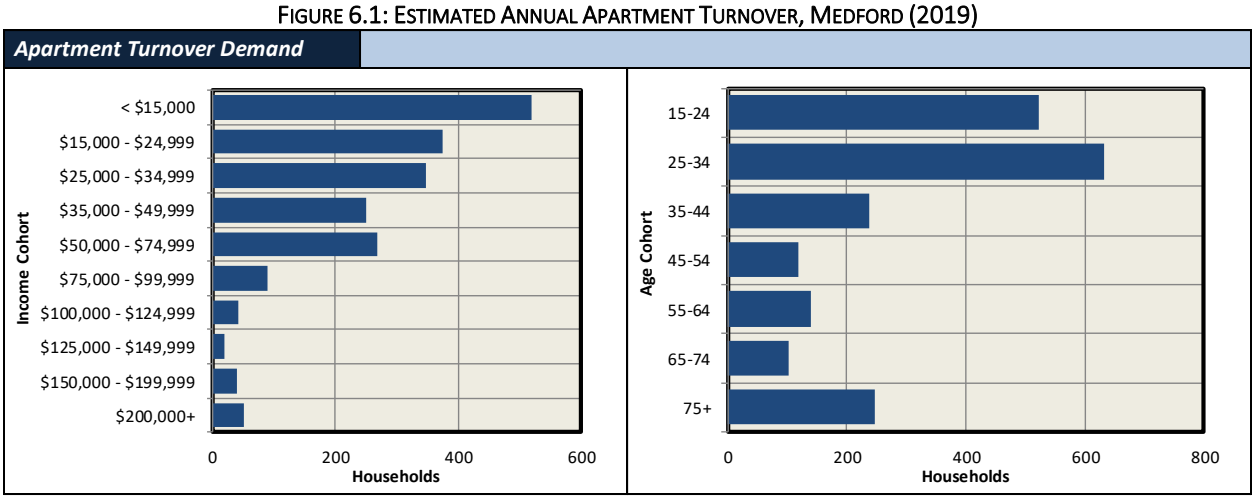
CURRENT MARKET DEPTH

The existing apartment inventory in Medford totals 5,369 units, according to county and city data analyzed by Johnson Economics. According to the most recent survey by Johnson Economics, the current occupancy rate in this area is 98.2%, indicating there are approximately 5,272 apartment households in the City of Medford. We segment these renters by age and income based on Nielsen Claritas' segmentation of the total household base (presented in the Socio-Economic Trends section). This is done in a model that uses microdata from the U.S. Census Bureau to establish local propensity rates for apartment tenure in each age-income segment. The same dataset is used to establish historical, segment-specific turnover rates.

According to our model, turnover among existing apartment households in Medford represents an estimated 2,013 lease transactions annually. Turnover demand tends to benefit new projects disproportionately, as these have more visible marketing and more up-to-date units.

Young and low-income households are expected to dominate turnover in the market, due to the market's current demographic profile and the relatively high turnover rates in these segments. We expect support for a new apartment development in the study area to come primarily from households with incomes above $35,000. Our model indicates roughly 619 annual turnover transactions within this segment. The following chart provides a demographic profile of turnover, based on the outputs from our segmentation model.

FIGURE 6.1: ESTIMATED ANNUAL APARTMENT TURNOVER, MEDFORD (2019)



SOURCE: Nielsen Claritas and JOHNSON ECONOMICS

DEMAND GROWTH (2019-2029)

JOHNSON ECONOMICS has developed a housing demand model that translates estimates of market-area household growth into demand for housing of different forms. Our model begins with household growth estimates stratified by age and income, as these are the variables that best predict housing preferences. Our household growth estimates are based on projections by Nielsen Claritas/Environics, which produces age/income-specific household projections for custom areas down to the census block group level. We adjust these estimates when we have specific knowledge

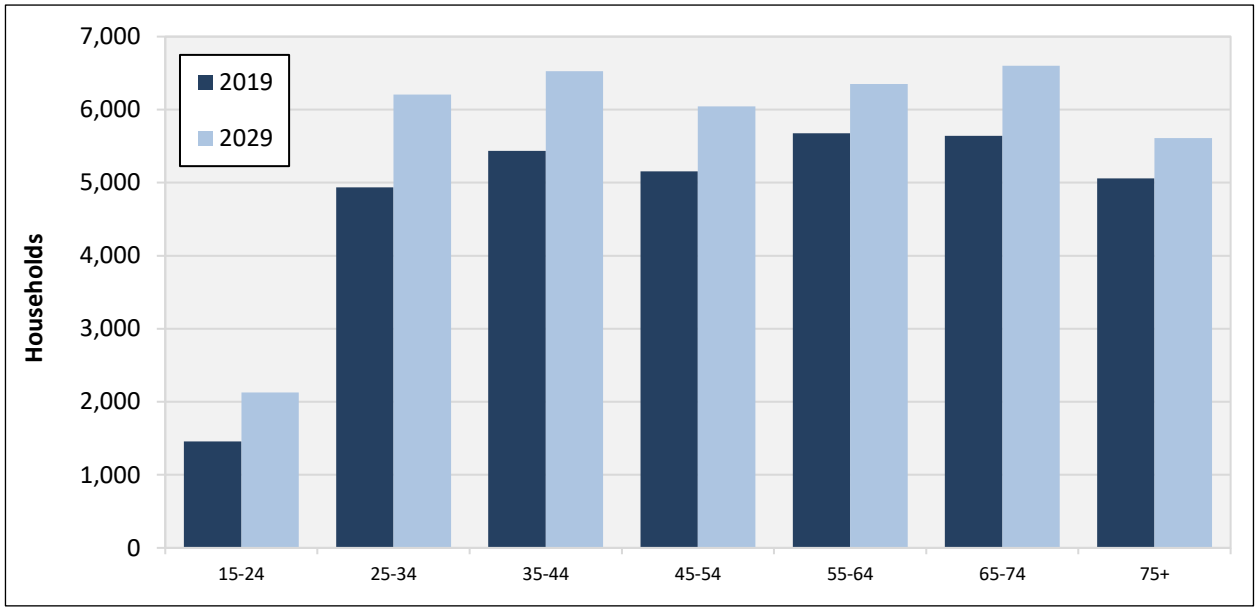
of local conditions pertaining to employment and housing, and based on our county-wide and regional projections, which are informed by population projections from Portland State University's NERC program. The goal is for the projections to reflect underlying demand (preferences) rather than expected realized household growth, which is constrained by supply. Local, segment-specific propensity rates calculated from census microdata are used to allocate the new growth to different types of housing.

Total Housing Demand

Over the coming ten years, our baseline forecast is for a demand increase of 6,112 housing units, or roughly 611 units per year. This represents annual growth of 1.70%, which is much higher than the average annual growth of households seen since 2000 (1.11%). A higher growth rate is justified by the current economic prospects of the Medford area and Jackson County, as discussed in the Socio-Economic Trends section. The 2000-2019 period included a severe housing market collapse and – in more recent years – a shortage of new housing, both of which are factors that contributed to reducing realized growth over the period.

The following chart displays the anticipated distribution of housing demand across age segments over the coming five years. The projections indicate relatively even growth concentrations among age segments with slightly higher growth among older segments.

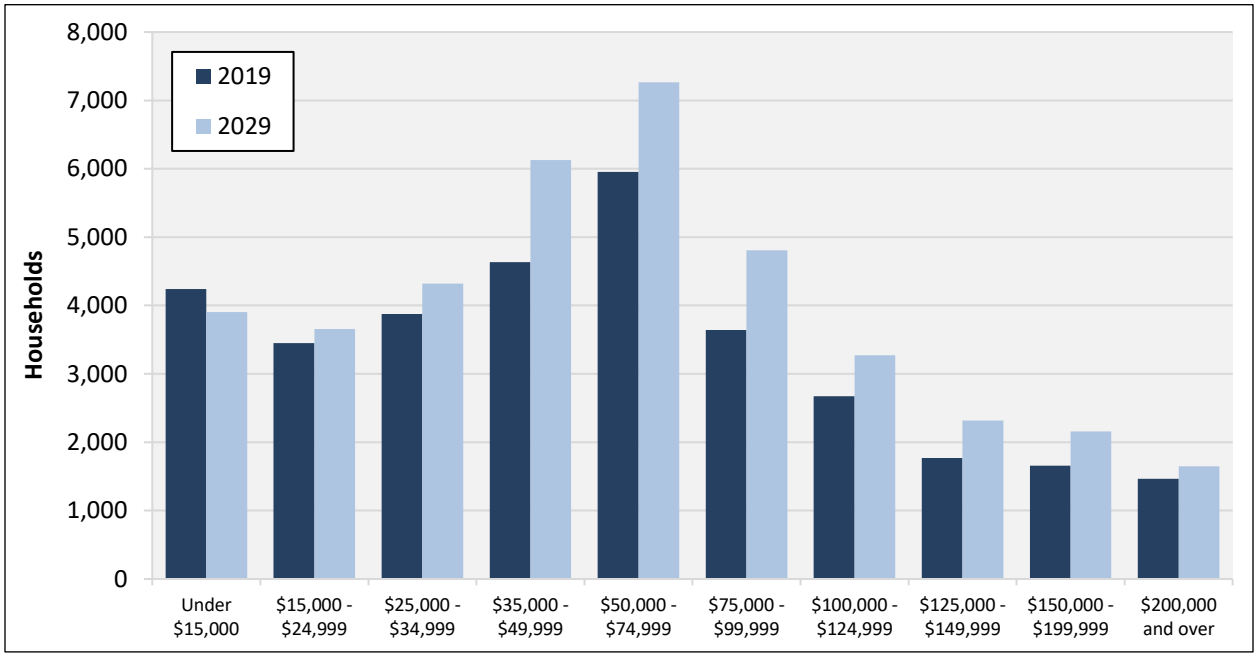
Figure 6.2: Projected Distribution of Medford Households by Age (2019 and 2029)



SOURCE: Nielsen Claritas, Johnson Economics

With respect to income, the demand growth is anticipated to be distributed widely across segments with incomes above $25,000 per year. The strongest numeric growth is expected between $35,000 and $100,000. Among the younger cohorts, which dominate apartment demand, we expect a decline among the lowest-income households and relatively strong growth among low-to-middle-income households.

FIGURE 6.3: PROJECTED DISTRIBUTION OF MEDFORD HOUSEHOLDS BY INCOME (2019 AND 2029)

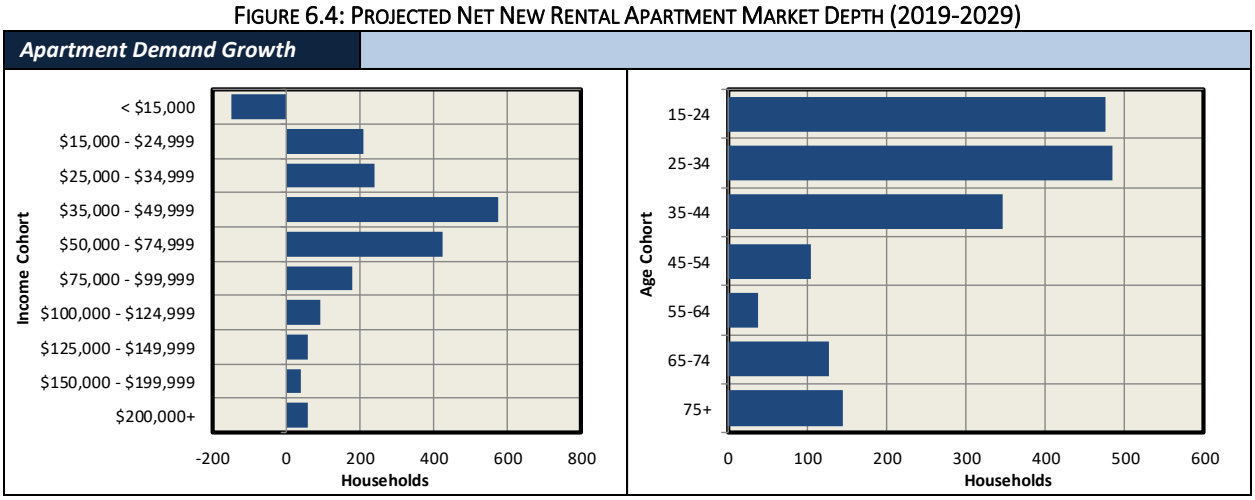


SOURCE: Nielsen Claritas, JOHNSON ECONOMICS

FORECAST OF DEMAND GROWTH FOR RENTAL APARTMENTS

Our forecast model indicates that half of the net new households in Medford will be renters. This rate is estimated based on existing, segment-specific tenure splits in the market area. Roughly 52% of the net new demand for rental housing is expected to be for rental apartments. Over the ten-year forecast period, our baseline estimate for net-new rental apartment demand in the market area is approximately 1,724 units, or 172 units annually. The growth is expected to be distributed widely across age and income segments, but with a concentration among young adults and seniors. Most the net new apartment households are anticipated to have annual incomes above $35,000.

FIGURE 6.4: PROJECTED NET NEW RENTAL APARTMENT MARKET DEPTH (2019-2029)

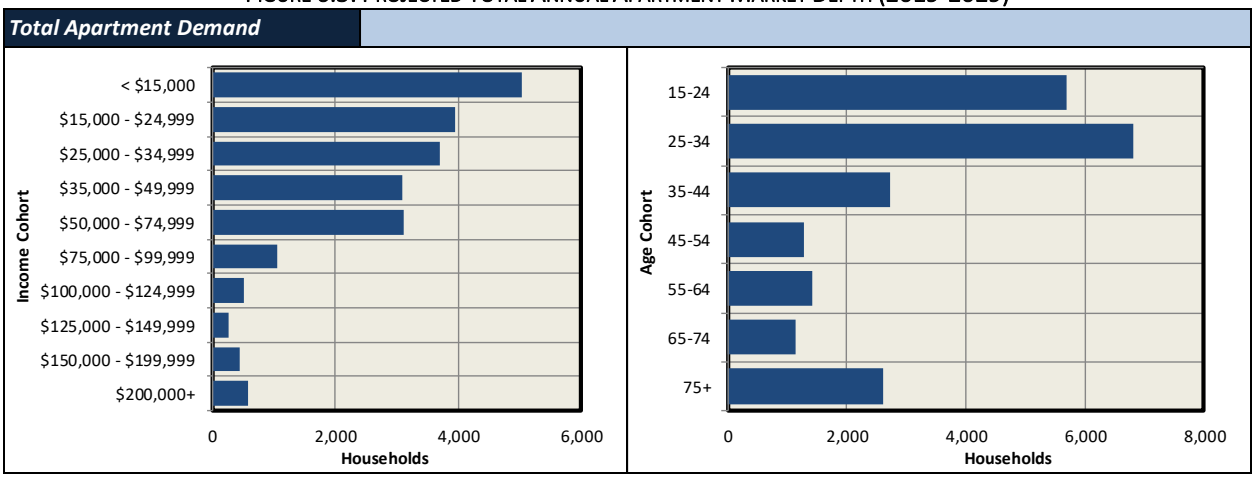


SOURCE: Nielsen Claritas and JOHNSON ECONOMICS

Forecast of Total Apartment Demand

Combining our estimates of turnover demand and demand growth, we arrive at the following profile of total annual demand within the study area. The estimates indicate roughly 2,013 lease transactions per year, dominated by young, low- and middle-income renters. We expect approximately 761 transactions annually involving households with incomes above $35,000, of which 520 are expected to earn less than $75,000.

Figure 6.5: Projected Total Annual Apartment Market Depth (2019-2029)



SOURCE: Nielsen Claritas and Johnson Economics

Pent-Up Apartment Demand

The Medford market exhibits clear signs of pent-up apartment demand. This is a regional phenomenon, caused by a limited supply of new housing paired with strong economic growth. The lack of new multi-family housing supply over the most recent years has only caused this pent-up demand to grow. Lack of multi-family supply has likely forced many individuals to rent or buy single-family homes rather than rent apartments.

Pent-up demand is an elusive concept, and notoriously difficult to measure quantitatively, as it is a matter of preferences, financial ability, and trade-offs. A young individual might prefer a single-family home, but might also consider an apartment unit, or remain in their parents' household, depending on current home prices and rent levels. In the context of apartment absorption, the most interesting question is how many individuals (or potential households) currently have the preference and financial ability to rent a unit but are held back because of a lack of available units that meet their requirements. Within Medford, pent-up apartment demand is indicated by the current high occupancy rates observed in our competitive survey (98.2%).

Currently, Johnson Economics estimates there to be roughly 500 households of pent-up demand in the City of Medford. Apartments are the most realistic option for most of these, though a large number are presumably without the financial ability to lease a market-rate unit in the current market. However, we would expect some of these potential households (we would assume 100 households) to have the financial means to participate in the apartment market once appropriate supply becomes available. Though few will lease a new unit directly, these households will help in the absorption of new units by buoying market occupancy rates, as they backfill older units vacated by more affluent renters moving into the new units.

Demand for Urban Product

Although it is difficult to estimate the likelihood of a particular demographic's interest of living in an urban environment, the presence of children in a household is often an indication of urban disinterest. Most renters with

children prefer to live away from the city and in a sub-urban environment. Roughly 40% of the renter households in Medford appear to be families with children. Of the remaining 60% of renter households, one third of these households typically prefer an urban product and two-thirds typically prefer a sub-urban product. Of the 2,013 annual lease transactions roughly 426 are households with incomes above $50,000 (the demographic most likely willing to pay a premium for an upscale urban product). Thus, of these 426 leases, roughly 85 are likely interested in an urban product. In addition to the existing renters signing new leases, roughly twenty new renters interested in urban products will also enter the market every year. In total, JOHNSON ECONOMICS estimates an average of 105 renters will be interested in signing a lease for an upscale urban product annually.

In addition to renters interested in upscale urban apartments we would also expect current pent-up demand to quickly absorb new small studios, a form of unit currently absent from the Medford market. Studio units smaller than 450 square feet may fill a price niche missing in this market and create opportunities for would-be renters currently priced out of the market. JOHNSON ECONOMICS estimates that 30 units sized at 400 square feet could quickly be absorbed once brought to market. Based on these findings, we present figure 6.6 as an optimal unit mix for a hypothetical new apartment development in downtown Medford.

FIGURE 6.6: ACHIEVABLE APARTMENT RENTS, DOWNTOWN MEDFORD (3Q19)

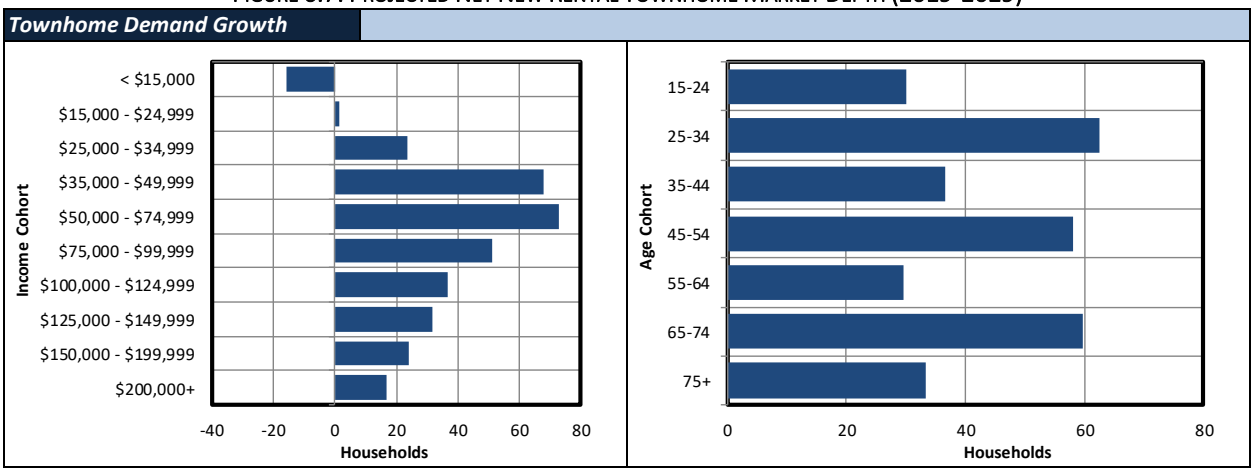
Unit Type	Units	Unit Mix	Size (SF)	Rent	Rent/SF
0B/1b	30	26%	400	$941	$2.35
0B/1b	10	9%	500	$1,068	$2.14
1B/1b	30	26%	600	$1,184	$1.97
1B/1b	10	9%	700	$1,289	$1.84
2B/1b	25	22%	800	$1,383	$1.73
2B/2b	10	9%	1,000	$1,538	$1.54
Total/Avg.	***115***	***100%***	***626***	***$1,193***	***$1.91***

SOURCE: JOHNSON ECONOMICS

FORECAST OF DEMAND GROWTH FOR RENTAL TOWNHOMES

The existing townhome inventory in Medford totals 2,008 units, according to county and city data analyzed by JOHNSON ECONOMICS. Of these, we estimate 1,353 to be rentals. According to our model, turnover among existing rental townhome households in Medford represents an estimated 370 lease transactions annually. Over the ten-year forecast period, our baseline estimate for net-new rental apartment demand in the market area is approximately 310 units, or 31 units annually. The growth is expected to be distributed widely across age and income segments with no strong age concentrations. Most of the net new townhome households are anticipated to have annual incomes above $50,000.

FIGURE 6.7: PROJECTED NET NEW RENTAL TOWNHOME MARKET DEPTH (2019-2029)

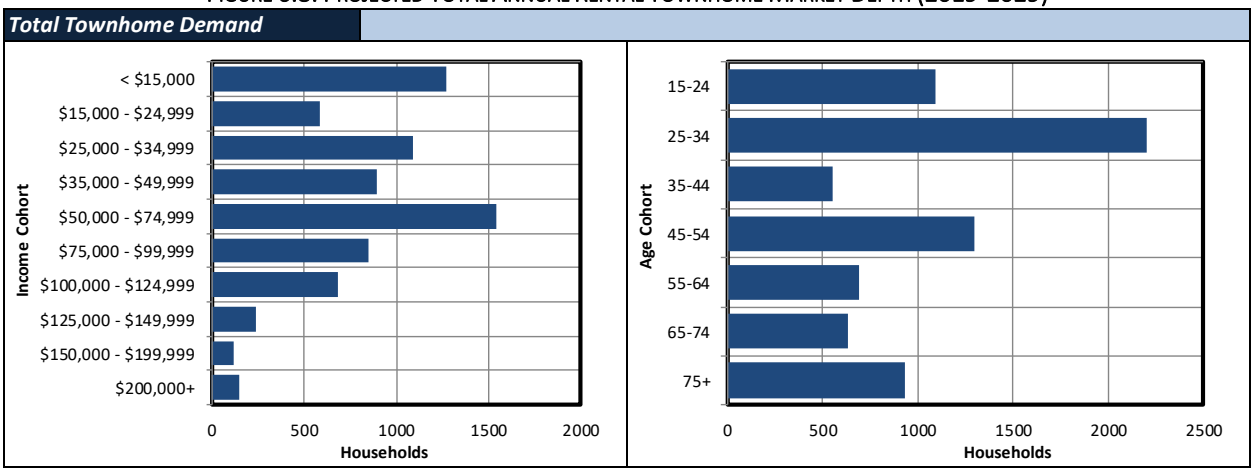


SOURCE: Nielsen Claritas and JOHNSON ECONOMICS

FORECAST OF TOTAL RENTAL TOWNHOME DEMAND

Combining our estimates of turnover demand and demand growth, we arrive at the following profile of total annual demand within the market area. The estimates indicate 30 to 40-year-olds and middle to upper class households are expected to make up the majority of turnover in the market, due to the market's current demographic profile and the relatively high turnover rates in these segments. We expect support for a new apartment project in the study area to come primarily from households with incomes above $35,000. Our model indicates roughly 224 annual turnover transactions within this segment. The following chart provides a demographic profile of total demand, based on the outputs from our segmentation model.

FIGURE 6.8: PROJECTED TOTAL ANNUAL RENTAL TOWNHOME MARKET DEPTH (2019-2029)



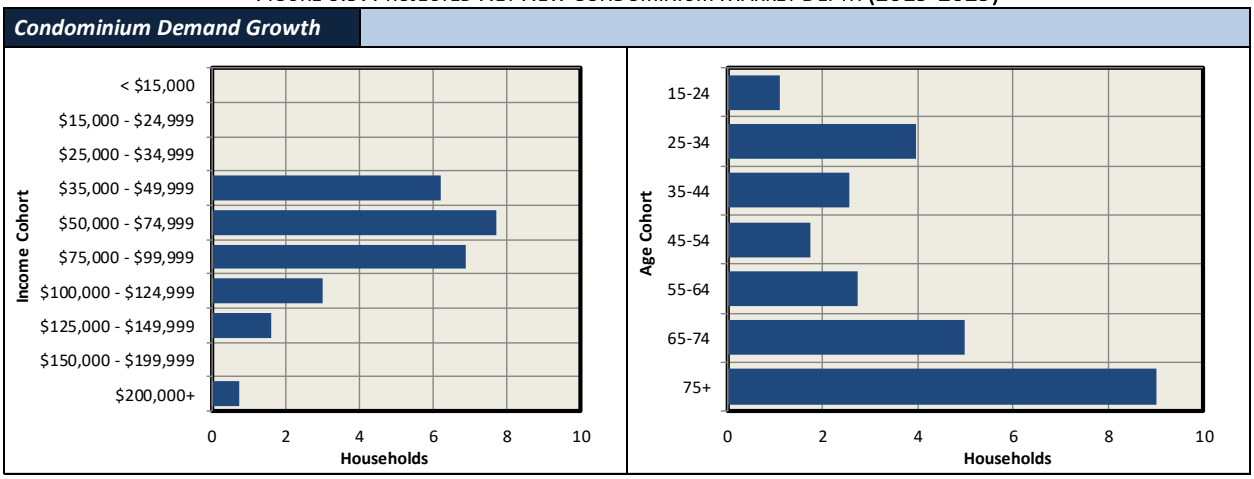
SOURCE: Nielsen Claritas and JOHNSON ECONOMICS

Forecast of Demand Growth for Condominiums

The existing condominium inventory in Medford is estimated at approximately 90 units. Of these, we understand that all of the units are renter occupied and thus function as apartments. To clarify, the term "condominium" in this case refer to condominium flats meaning one unit stacked on top of another similar to apartments, however, unlike apartments each unit is individually owned. The model indicates demand for 26 condominium units over the next ten years. Historically, demand for condominium units has largely gone unrealized in Medford. This is most likely due to stricter lending practices, especially for younger people, put in place following the Great Recession.

Senior and young adult households are expected to make up the majority of new demand for condominiums. We expect support for a new condominium project in the study area to come primarily from senior households with incomes above $50,000. The following chart provides a demographic profile of net new demand, based on the outputs from our segmentation model.

Figure 6.9: Projected Net New Condominium Market Depth (2019-2029)



SOURCE: Nielsen Claritas and Johnson Economics

VII. HIGHEST AND BEST USE DETERMINATION

When evaluating the likely form of development, a preliminary step is the determination of the highest and best use of prospective development parcels. The highest and best use of a site is defined by four criteria: legally permissible, physically possible, financially feasible, and maximally productive.

To the right is an overview of four different rental residential development prototypes: a high-rise tower, a podium project, a five-story surface parked building, and a garden apartment complex with surface parking. The prototypes represent generic projects and are used for explanatory purposes. The financial characteristics of actual development projects would likely vary from the prototypes and would be a function of their specific design characteristics, finish quality, and other factors influencing cost and yield.

Of these four prototypes, only the garden apartment form has been completed in the Medford area in the last decade without significant public subsidy. These are modeled using simplified pro formas, which are designed to yield supportable residual property budgets associated with the development of each of the programs under the assumptions used. Assumed development costs were based on recent experience and reviewed by local architects and developers in the Portland metro area.

The development economics of each of the land use types reflects a relationship between achievable pricing, development form, and indicated residual property budgets. The construction types vary in cost as well as yield, with construction types with high yields in terms of density typically being costlier to construct on a per square foot basis. In markets in which pricing is adequate to support higher density development forms, these forms will be able to outbid lower intensity development solutions for land. The prototype that is both entitled by the zoning and supports the highest residual property budget representing the "highest and best use" of the property.

For this analysis we assumed achievable pricing of $1.75 per square foot. The analysis assumed a 6.00% capitalization rate, and a targeted return on cost of 6.90%.

The targeted return on cost includes an expected profit of 15% for the developer, reflecting his construction and marketing risk. The resulting supportable residual property budgets are reflected in the bottom two rows, with only the garden apartment format supporting any budget for land acquisition.

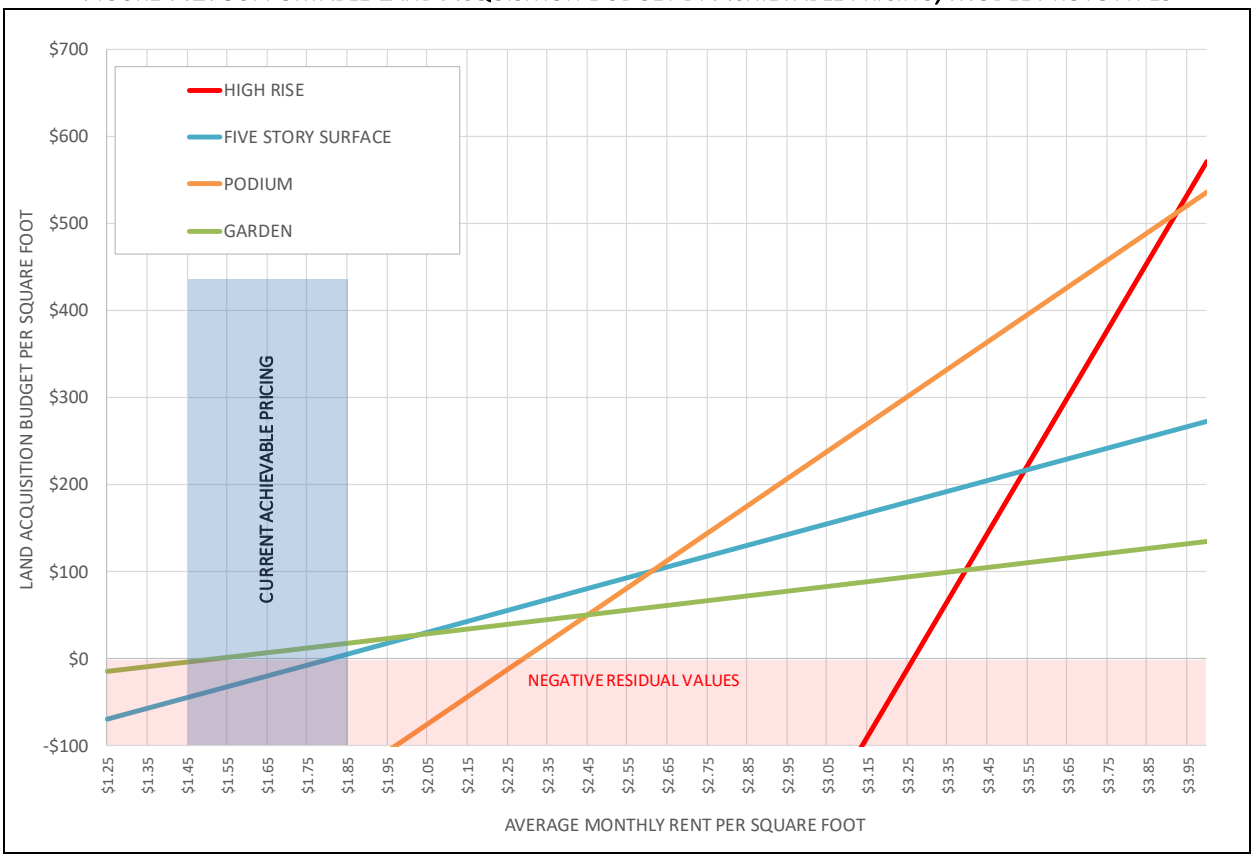
FIGURE 7.1: SELECTED RESIDENTIAL PROTOTYPES

		Residential High Rise	Type V/ Podium	Five Story Surface Pkg.	3-story wood w/surf 30+
PROGRAM	**Property Assumptions**				
	Site Size (SF)	40,000	40,000	40,000	40,000
	Density	400	170	70	30
	Unit Count	400	156	64	27
	Ave Unit Size	725	750	725	750
	Efficiency Ratio	85%	85%	85%	100%
	Building Square Feet	341,176	137,647	54,588	20,250
	Stories	8	4	5	3
	Bldg Footprint	42,647	34,412	10,918	6,750
	FAR (Excluding Parking)	8.53	3.44	1.36	0.51
	Parking Ratio/Unit	1.0	1.0	1.0	1.0
	Total Parking Spaces	400	156	64	27
	Parking Spaces - Surface	-	-	92	27
	Parking Spaces - Structure	400	156	-	-
	Structured Parking %	100%	100%	0%	0%
	Cost Assumptions				
	Construction Cost/SF	*$260*	*$195*	*$180*	*$175*
	Parking Cost/Space	*$50,000*	*$30,000*	*$21,000*	*$0*
FINANCIAL ASSUMPTIONS	**Income Assumptions**				
	Achievable Pricing/PSF	*$1.85*	*$1.85*	*$1.85*	*$1.85*
	Parking Charges/Surface	$50	$50	$50	$50
	Parking Charges/Structure	$100	$100	$100	$100
	Expenses				
	Vacancy/Collection Loss	5.0%	5.0%	5.0%	5.0%
	Operating Expenses	*32%*	*32%*	*32%*	*32%*
	Reserve & Replacement	*3.0%*	*3.0%*	*3.0%*	*3.0%*
	Valuation				
	Capitalization Rate	6.00%	6.00%	6.00%	6.00%
SUPPORTABLE RESIDUAL PROPERTY BUDGET	**Cost**				
	Cost/Construct w/o prkg.	$88,705,882	$26,841,176	$9,825,882	$3,543,750
	Additional Parking Costs	$20,000,000	$4,680,000	$0	$0
	Estimated Project Cost	$108,705,882	$31,521,176	$9,825,882	$3,543,750
	Income				
	Annual Base Income	$6,438,000	$2,597,400	$1,030,080	$449,550
	Annual Parking	$480,000	$187,200	$55,200	$16,200
	Gross Annual Income	$6,918,000	$2,784,600	$1,085,280	$465,750
	Less: Vacancy & CL	$345,900	$139,230	$54,264	$23,288
	Effective Gross Income	$6,572,100	$2,645,370	$1,031,016	$442,463
	Less Expenses:				
	Operating Expenses	$2,103,072	$846,518	$329,925	$141,588
	Reserve & Replacement	$197,163	$79,361	$30,930	$13,274
	Annual NOI	$4,271,865	$1,719,491	$670,160	$287,601
	Maximum Property Budget				
	Indicated Return on Cost	3.93%	5.46%	6.82%	8.12%
	Target Return on Cost	6.90%	6.90%	6.90%	6.90%
	Residual Property Budget	($46,794,795)	($6,601,024)	($113,413)	$624,375
	RPB/SF	**($1,169.87)**	**($165.03)**	**($2.84)**	**$15.61**
	RPB/Unit	**($116,987)**	**($42,314)**	**($1,772)**	**$23,125**

It is important to recognize that residual property budget reflects the maximum supportable acquisition price for a site, and that the actual market clearing price would typically be lower than the residual property budget assuming a competitive market and multiple alternative sites. In other words, the budget reflects the maximum amount that a developer could pay for a site and still make a profit. If a site can be acquired for a lower amount that allows for the same program, the lower value would represent the market clearing price.

The following graph shows the relationship between achievable pricing and indicated residual land values for the four prototypes evaluated:

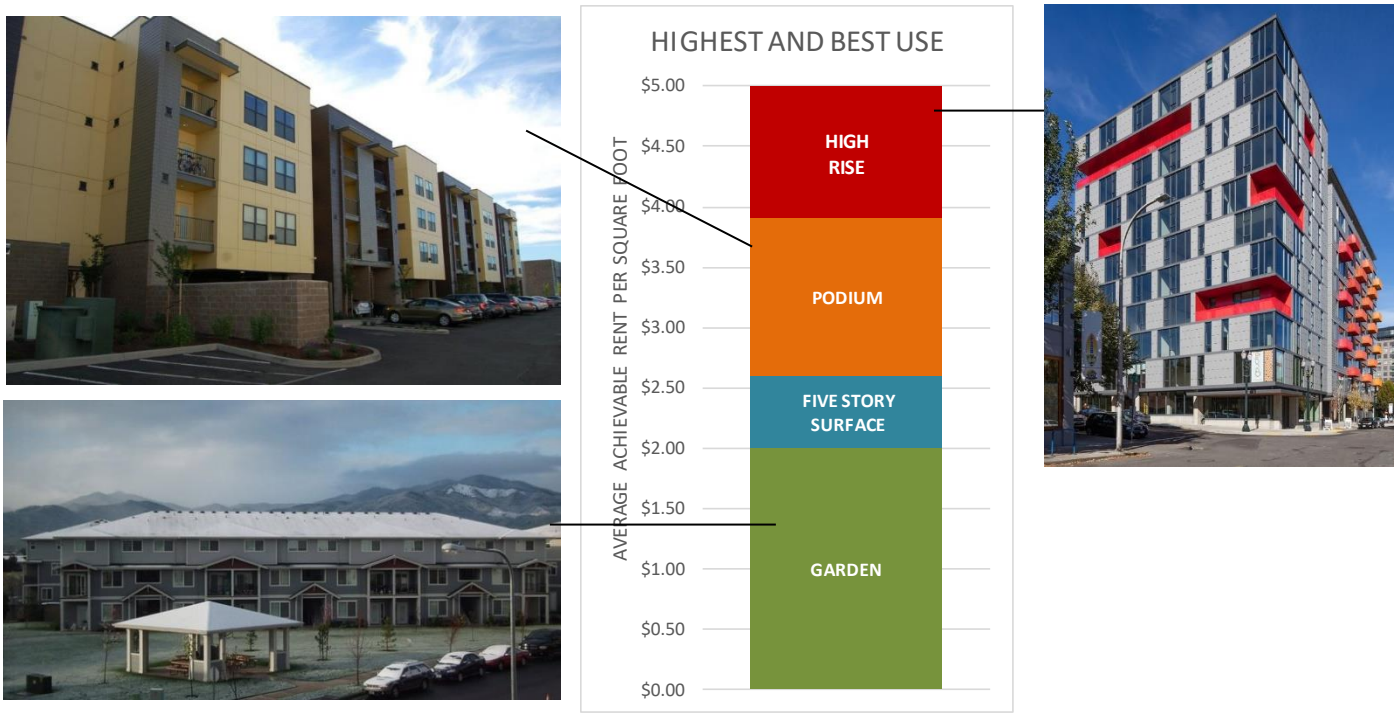
FIGURE 7.2: SUPPORTABLE LAND ACQUISITION BUDGET BY ACHIEVABLE PRICING, MODEL PROTOTYPES



SOURCE: JOHNSON ECONOMICS

As achievable pricing increases along the horizontal axis, supportable land acquisition budgets increase commensurately. The entitled development prototype that supports the highest residual land value is considered the highest and best use. The blue shaded area represents our opinion of an expected range of achievable pricing per unit on a per square foot basis in the City of Medford ($1.45 to $1.85 per square foot). Considering current achievable pricing in the City of Medford, wood-framed garden apartments currently represent the highest and best use for rental residential uses in almost all locations.

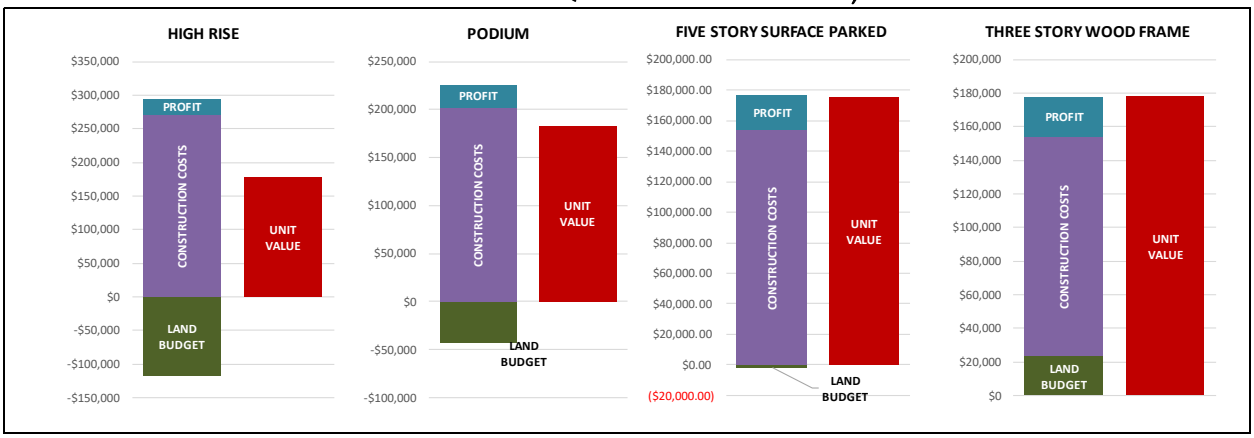
FIGURE 7.3: HIGHEST AND BEST USE BY ACHIEVABLE PRICING, MODEL PROTOTYPES



Developers approach land acquisition using a residual approach. From a developer's perspective, market and financing variables are assumed to be largely outside of his control, as is the cost of construction. The developer will assess his ability to pay for acquisition of a site based on what the program is worth at completion, and then deducting development costs and the profit necessary to justify the risk inherent in development. As shown in the graphic to the right, the value of the project (shown as income) must be balanced by the development costs. To the extent that overall costs (including profit) are greater than the value of the property, than the project is not viable. What we are referring to in this report as land acquisition budget is equivalent to the cost of land or ability to pay portion of the graphic. As noted previously, the ability to pay reflects a maximum amount that still allows for the remainder of anticipated costs and the required profit margin. To the extent that property can be purchased at a lower price than supported by the program, then the profit margin will be higher.

This same relationship can be summarized on a per unit basis for the four development types outlined earlier. As shown in the following charts, only the three-story wood frame development supports a positive residual land budget under an assumed achievable rent level of $1.75 per square foot.

FIGURE 7.4: SUPPORTABLE LAND ACQUISITION BUDGET BY TYPE, PER UNIT SUMMARY



The high-rise and podium configurations have development costs and profit requirements that exceed the estimated project value at completion. As a result, the budget available for land acquisition is negative, and this program would not be viable unless the land was given and additional subsidy equivalent to the residual land budget was available.

Based on the preceding analysis, our finding is that the anticipated rental residential development form in the City of Medford would be a three-story wood framed rental apartment project with surface parking. This finding is consistent with observed market patterns in the Medford market, with new rental apartment development limited to this development form during the last decade, except for The Concord which received significant subsidies.

VIII. PREDICTIVE DEVELOPMENT MODELING

Johnson Economics has developed a predictive development model, which is designed to estimate the marginal impact of changes in the development environment on the expected magnitude and character of development. The primary approach used to predict likely development patterns is the relationship between the supportable residual land value for prospective uses and the current value of the property (including land as well as improvements, if any). The underlying assumption is that when the value of a property for new development is high relative to the current value of the property, it will be more likely to see development or redevelopment over a defined time-period.

The model is designed to generate an estimated ratio between the current value of a parcel and the underlying value of the parcel under potential development scenarios. This ratio is used as the primary indicator of the likelihood of development or redevelopment. Within the model, we use Real Market Value (RMV) from the assessors' office as a proxy for the value of the site. While we understand that this is an imperfect measure, it is readily available at the parcel level and any inherent bias is expected to be largely consistent. The residual land value is determined using a series of simplified pro formas that represent potential development forms. The resulting ratio between current and residual value has proven to be a strong predictor of the likelihood of development or redevelopment at the parcel level.

The model solves for a development solution that represents the highest and best use at the parcel level under the assumptions used, as well as outputting an associated residual property value. The highest and best use of each parcel is defined as the allowable land use program that yields the greatest return to the existing property, and the residual property value reflects the maximum acquisition value supported by that program under the assumptions used. This approach is the same as outlined in the previous chapter, although the model uses a larger number of prototypical development forms.

The model currently incorporates a total of 19 prototypical residential programs which cover a range of land use types, development forms, and tenure options. An entitlement screen narrows the allowed use types to reflect existing zoning. In the model, this is done using a matrix that evaluates whether the theoretical programs are allowable under the range of zoning codes in the study area.

The probability of development/redevelopment activity is predicted by the model at the parcel level based on the ratio generated by dividing the current value (RMV) by the indicated residual land value. A shift in assumptions that increases the value of the property under a new development scenario, such as higher achievable pricing or less restrictive entitlements, will increase the denominator in this ratio as well as the likeliness of development or redevelopment. Sites with relatively high current values resulting from significant physical improvements will have a relatively high numerator and will be significantly less likely to redevelop.

The model evaluates the likelihood of development at the parcel level, although the results should be expressed publicly only in aggregated geographies. What the model solves for is probabilities to redevelop as well as anticipated development forms, and the results reflect the expected value of development/redevelopment activity. The model will not indicate that a specific parcel will or won't redevelop, it will change the probability of that occurrence as well as the likely form of development.

GENERAL MODEL OVERVIEW

PARCEL LEVEL DATA

Database at parcel level, including parcel reference number, site square footage, current improvements (units/sf), total real market value, and zoning.

Zoning reflects the current Medford designations allowing residential development.

The site square footage would reflect net developable, deducting for issues such as slope and wetlands.

PROTOTYPE SCREENING

This section screens the development prototypes to be considered based on entitlements (zoning) and geography.

The entitlement screen matrix matches all development form prototypes with all zoning designations, with a binary code that either allows or disallows the prototype

The parcels are sorted by pricing bins, geographic areas with discrete assumptions regarding achievable pricing.

RESIDUAL LAND VALUE CALCULATIONS

Market and cost variables required include achievable pricing psf for all land use types, capitalization rates, and construction costs.

Market assumptions are set by submarkets for ownership and rental residential uses.

The typologies developed are necessarily simplified, and cover a range of use types that are envisioned in the study area.

REDEVELOPMENT MODULE

Residual land value is established parcel, based on which allowed prototype yields the highest indicated residual land value.

Parcels are categorized into RMV/Residual bins, and a probability of redevelopment is applied to the parcels.

Assumed annual rates of develoment/redevelopmeare applied, based on the RMV/Residual bin and geographic code.

OUTPUT

The model's output includes an estimate of predicted development/redevelopment activity, as well as predominant development forms by zoning classification

While the model runs at the parcel level, the output is based on probabililties of development, and the data should be evaluated at an aggregate level.

The following outline summarizes the data feeding into the model, as well as the general function of the model.

DATA

Parcel Database

Assumptions

- Achievable Pricing by use type
- Capitalization Rates
- Threshold rates of return (targeted returns by development community)
- Construction Cost Estimates
- Assumed conversion rate by RMV/Residual ratio

Entitlement screening matrix

PARCEL LEVEL DATA

- Parcel ID
- Site size (SF)
- RMV/SF
- Achievable Pricing
- Zoning

PROTOTYPE SCREENING

- Screen by zoning designation and entitlement screen

RESIDUAL LAND VALUE CALCULATIONS

- Run residual land value calculations for allowed prototypes
- Determine highest and best use based on greatest residual land value.

REDEVELOPMENT MODULE

- Categorize parcels into bins based on RMV/Residual ratio and geographic code
- Apply redevelopment probabilities
- Predict expected development yield at parcel level

OUTPUT

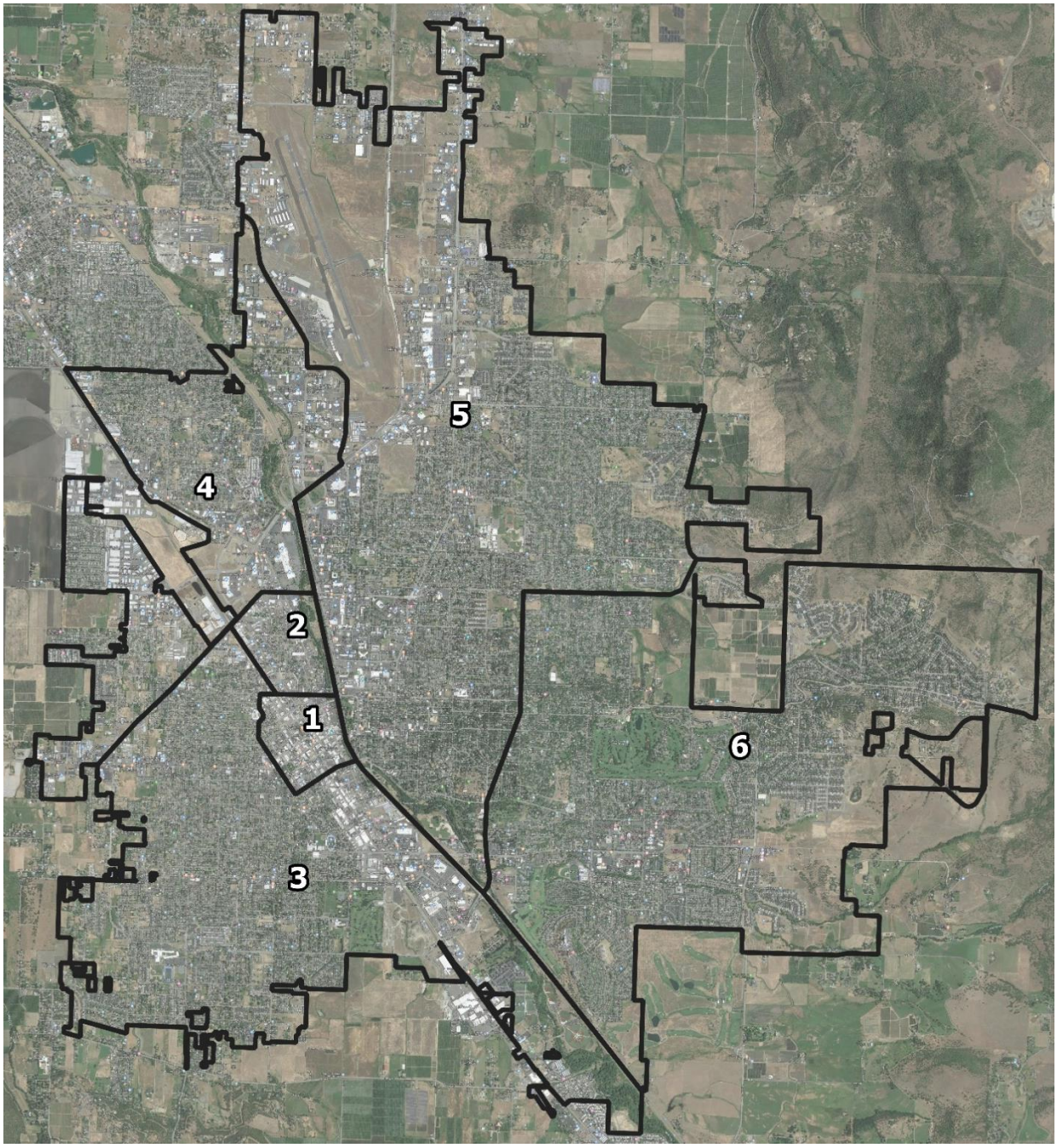
- Expected value of predicted development activity and yield
- Net incremental supportable development capacity

Key inputs in the "production" model are those that impact revenues, costs, return parameters and site entitlements. The production component of the model can be broken up into three primary categories that are determinative of final development form: achievable pricing, cost to develop, and threshold returns.

Model Output

Our predictive development model was run for a baseline scenario, reflecting current market conditions and development standards. For the purposes of our analysis, the City of Medford was broken into six rough pricing bands, within which achievable pricing for new residential units was assumed to be consistent. The downtown Medford study area was broken into two major pricing schemes, north and south of West Jackson. The remainder of the City of Medford was also modeled, with four additional submarkets identified. The following map outlines the boundaries of these pricing submarkets:

FIGURE 8.1: RESIDENTIAL SUBMARKETS



SOURCE: Johnson Economics LLC

The modeling framework utilized a series of residential development prototypes, which are outlined in the following tables.

FIGURE 8.2: RESIDENTIAL DEVELOPMENT PROTOTYPES TESTED

RENTAL RESIDENTIAL

	Rental_5_over_2	Rental Type V w/podium	Five Story Surface Parking	Rental 3-story wood w/surf	Rental_ Tri-Plex	Rental_Four-Plex	Rental Duplex	Rental Skinny Homes
Property Assumptions								
Site Size (SF)	40,000	40,000	57,525	40,000	40,000	40,000	40,000	40,000
Density	210	170	70	35	26	30	16	16
Unit Count	192	156	92	32	23	27	14	14
Ave Unit Size	750	750	725	750	950	750	1,350	1,450
Efficiency Ratio	85%	85%	85%	100%	100%	100%	100%	100%
Building Square Feet	169,412	137,647	78,471	24,000	21,850	20,250	18,900	20,300
FAR	4.24	3.44	1.36	0.60	0.55	0.51	0.47	0.51
Parking Ratio/Unit	1.00	1.00	1.00	1.50	1.25	1.25	1.00	1.00
Total Parking Spaces	192	156	92	48	29	34	14	14
Parking Spaces - Surface	-	-	92	48	29	27	-	-
Parking Spaces - Structure	192	156	-	-	-	-	14	14
Structured Parking %	100%	100%	0%	0%	0%	0%	100%	100%
Cost Assumptions								
Construction Cost/SF	*$195*	*$195*	*$180*	*$175*	*$180*	*$180*	*$180*	*$185*
Structured Parking Cost/Space	*$35,000*	*$30,000*	*$21,000*	*$0*	*$2,500*	*$2,500*	*$20,000*	*$20,000*
Total Construction Cost/SF	*$235*	*$229*	*$180*	*$175*	*$180*	*$180*	*$195*	*$199*

OWNERSHIP RESIDENTIAL

	Condo_5_over_2	Condo Type V w/podium	Condo 3-story wood w/surf	Owner_Middle_Housing_TypeV	Cottage Clusters	For-Sale Duplexes	Single Family_10	Single Family_6	Single Family_4	Single Family_2	Single Family_1
Property Assumptions											
Site Size (SF)	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Density	210	170	35	20	18	15	10	6	4	2	1
Unit Count	192	156	32	18	16	13	9	6	4	2	1
Ave Unit Size	775	775	800	1,250	1,050	1,350	1,650	1,750	1,850	2,500	3,500
Efficiency Ratio	83%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Building Square Feet	179,277	145,663	25,600	22,500	16,800	17,550	14,850	10,500	7,400	5,000	3,500
FAR	4.48	3.64	0.64	0.56	0.42	0.44	0.37	0.26	0.19	0.13	0.09
Parking Ratio/Unit	1.25	1.50	1.75	1.50	1.00	1.50	1.50	1.50	1.50	1.50	2.00
Total Parking Spaces	240	234	56	27	16	20	14	9	6	3	2
Parking Spaces - Surface	-	-	56	14	16	10	14	9	6	3	2
Parking Spaces - Structure	240	234	-	14	-	10	-	-	-	-	-
Structured Parking %	100%	100%	0%	50%	0%	50%	0%	0%	0%	0%	0%
Cost Assumptions											
Construction Cost/SF	*$215*	*$215*	*$193*	*$180*	*$180*	*$180*	*$180*	*$180*	*$180*	*$180*	*$180*
Parking Cost/Space	*$35,000*	*$30,000*	*$0*	*$25,000*	*$2,500*	*$25,000*	*$25,000*	*$25,000*	*$25,000*	*$25,000*	*$25,000*
Total Construction Cost/SF	*$261*	*$263*	*$193*	*$195*	*$180*	*$194*	*$180*	*$180*	*$180*	*$180*	*$180*

Each of the prototypes provided includes assumptions with respect to density, average unit sizes, parking ratios, and parking solutions. While representative of generally used forms, actual project would be expected to vary in terms of any of these assumptions. This may reflect variance in site characteristics, targeted markets, design, and developer preferences. The construction cost numbers are based on recent experience but are also subject to significant variability. A 10% premium in construction cost was assumed for ownership product reflecting an assumption of higher finish standards. Prototypes with structured parking solutions had significantly higher costs.

The following table includes a brief description of some of the development forms.

FIGURE 8.3: DESCRIPTION OF SELECTED PROTOTYPES

5 over 2	This is a construction type with wood frame construction over a two-story parking garage. This construction type is quite popular in the Puget Sound region but requires a relatively high achievable rent level to be viable.	
Type V w/Podium	This is also a wood frame structure over a single story podium. Parking is typically provided in the podium, as well as any ground floor commercial. Surface parking is often used with this form to achieve desired ratios.	
Five Story Wood w/Surface	This construction form maximizes what is possible with wood frame construction while using surface parking. This keeps down costs but these larger buildings require internal corridors and elevators that reduce efficiency. The prototype provides surface parking.	
3-Story Wood	This is the predominant development for rental residential units in the Medford area. Units are typically directly accessed and parking is surface. This product works at more modes achievable price points.	
Cottage Clusters	This development form typically includes small detached "cottages", with a shared common area and typically shared parking lot. These have been done in only limited numbers, but have proven popular with seniors and price sensitive buyers.	

The prototypes also include several multi-family plexes, as well as a range of single-family detached options at alternative development densities.

The model was run for the City of Medford as well as the Study Area. Achievable pricing for rental as well as for-sale residential product was assumed for the six residential submarkets outlined previously.

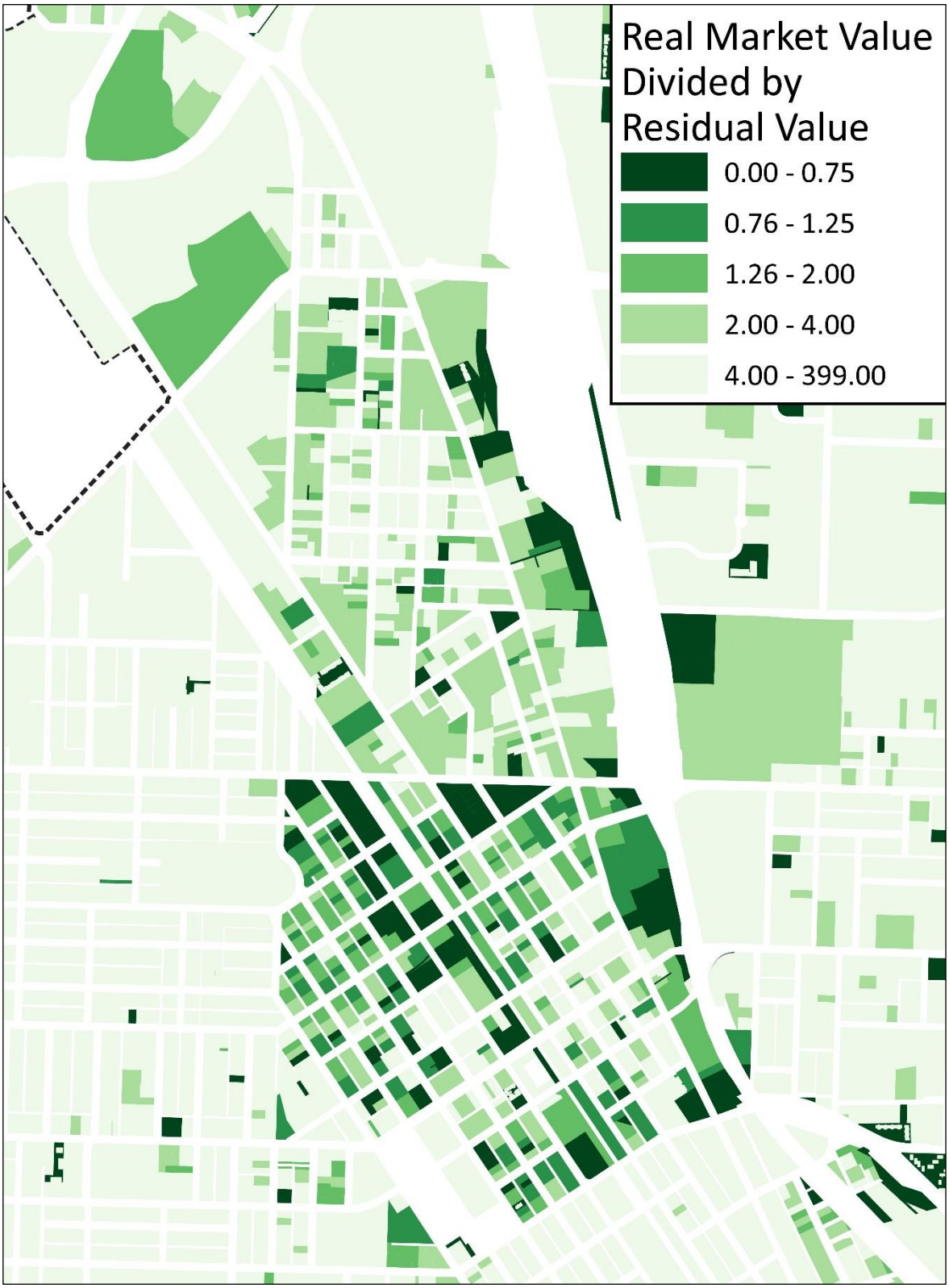
FIGURE 8.4: SUMMARY OF SUBMARKETS AND ASSUMED PRICING

Submarket	# of Parcels	Area/ Acres	Average RMV/SF	Residential Rent/SF	Sales Price/SF
Study Area South	488	118	$58.56	$1.85	$260
Study Area North	487	149	$21.24	$1.65	$231
Southwest	8,653	3,139	$17.46	$1.55	$216
Northwest	4,093	1,977	$16.56	$1.45	$216
Northeast	10,053	6,010	$14.48	$1.60	$225
Southeast	7,727	5,279	$13.74	$1.65	$232
Total	100,661	16,672	$15.43		

When run through the model using these assumptions, the predicted development output is approximately 9,500 units over a twenty-year horizon. The distribution of units is predicted based on the ratio of current Real Market Value (RMV) of the parcel divided by the indicated residual land value of the site under the highest and best use prototype.

The following maps summarize the distribution of parcels based on this ratio in the study area:

FIGURE 8.5: CURRENT REAL MARKET VALUE/RESIDUAL LAND VALUE – STUDY AREA



SOURCE: Johnson Economics LLC

As shown, much of the study area is viewed as having considerable redevelopment potential and capacity. A number of these sites are currently surface parking lots or yard space. While often opportunity sites, these may also be integral to a larger economic unit such as a retail space and have value beyond what is reflected in the site's RMV. The model does not distinguish between for-profit and not-for-profit institutions. It thus assumes that properties with a high residual relative to its real market value are likely to redevelop even if the property's ownership is not a profit maximizing actor.

The following table summarizes the breakdown of predicted residential units by submarket as well as the predominant development form anticipated by the model.

FIGURE 8.6: SUMMARY OF PREDICTED OUTPUT AND PREDOMINANT DEVELOPMENT FORM

	Predicted Output	
Submarket	**Units**	**Predominant Form**
Study Area South	750	Rental 3-story wood w/surf
Study Area North	346	Rental 3-story wood w/surf
Southwest	676	Single Family_6
Northwest	774	Single Family_10
Northeast	2,279	Rental 3-story wood w/surf
Southeast	4,747	Single Family_4
Total	9,572	

The predicted residential yield is below projected demand levels. This would indicate a consistently tight market that should allow for price escalation beyond the rate of inflation. This in turn would be expected to trigger additional development as yields would improve. The following table summarizes predicted residential construction investment, unit yield, average rents, and average home prices for new construction.

FIGURE 8.7: SUMMARY OF PREDICTED RESIDENTIAL DEVELOPMENT YIELD

LINE	Predicted Development Yield: Construction Investment	Residential Units	Average Rent	Average Price
STUDY AREA SOUTH				
New Construction	$98,762,035	750	$1,388	$0
Rehab/Renovation	$231,508,267			
Overall Total	$330,270,302			
STUDY AREA NORTH				
New Construction	$46,333,057	346	$1,254	$0
Rehab/Renovation	$108,472,410			
Overall Total	$154,805,467			
SOUTHWEST				
New Construction	$313,922,001	676	N/A	$377,944
Rehab/Renovation	$1,891,518,798			
Overall Total	$2,205,440,800			
NORTHWEST				
New Construction	$285,265,738	774	N/A	$363,169
Rehab/Renovation	$1,128,831,791			
Overall Total	$1,414,097,529			
NORTHEAST				
New Construction	$978,488,114	2,279	$705	$454,597
Rehab/Renovation	$3,001,888,213			
Overall Total	$3,980,376,327			
SOUTHEAST				
New Construction	$1,554,680,240	4,747	$1,238	$469,480
Rehab/Renovation	$2,476,449,843			
Overall Total	$4,031,130,084			
OVERALL SUMMARY				
New Construction	$3,277,451,186	9,572	$1,102	$448,470
Rehab/Renovation	$8,838,669,323			
Overall Total	$12,116,120,509			

SOURCE: Johnson Economics

IX. MARKET INTERVENTION TOOLS

While the modeling framework is based on market responses to key variables, there are interventions that can substantively influence these variables and subsequently alter the expected form, pattern, and magnitude of development activity. Approaches can be categorized as incentive-based or regulatory in nature. Incentive-based approaches are typically voluntary and offer various 'carrots' to developers to encourage them to build desired development forms. Regulatory approaches are not voluntary, and often 'require' developers to deliver desired outcomes.

A risk in a regulatory approach that requires a developer to deliver a product that is not financially viable is that the requirement results in no development activity. This is commonly seen in areas with minimum density standards that are higher than what is supportable by the market. This is reflected in the predictive modeling structure through a very low or negative residual land value in these cases. When zoning requirements do not allow for a viable development solution, then no development should be assumed. There have been many examples in which there is a mismatch between zoning requirements and market realities, with the result being no marginal development activity.

There are a range of potential actions that the City of Medford can consider that could increase the viability of a new project that supports policy objectives but is not viable under current market conditions. These can provide a substantial benefit to the project and reduce the indicated viability "gap". The justification for these interventions was that the development form was not otherwise viable considering achievable lease rates and construction costs, and the intervention was considered necessary to achieve a development form consistent with public policy objectives.

The following matrix outlines a series of market interventions that have a substantive impact on the viability of residential development forms.

COST REDUCTION		These tools reduce development costs and equity requirements
	Grants	The availability of grants directly reduces the cost of development, and offset equity requirements.
	Public Infrastructure	The provision of public infrastructure can reduce costs by reducing required off-site improvement costs.
	Land Write Downs	This reflects a reduction in acquisition cost to offset any identified "viability gap".
	Fee and/or SDC Waivers	Some local governments reduce or waive fees in support of public policy objectives.
	Pre-Development Funding	Jurisdictions may provide funding for pre-development studies, including engineering, architectural, and market work. This supports a developer in the due diligence period.
	Infrastructure Reimbursement	Infrastructure improvements required as part of a development can be reimbursed, either partially or fully. This can include considering some required improvements to be creditable against SDCs.
	Parking District	The City of Medford has a parking district, which reduces or eliminates on-site parking requirements in an area. This can reduce costs and increase viability as parking in structured formats typically does not pay for itself. Parking fees are typically charged, and often a contribution to the district is required for new development.

REVENUE ENHANCEMENT		These tools can improve interim cash flows and improve viability
	Tax Abatement	Property tax abatements are a commonly used tool to assist projects, including programs such as the Vertical Housing Tax Credit in the State of Oregon. A typical program would abate property taxes for qualified improvements for a ten-year period. This impacts the Net Operating Income (NOI) of the project during the abatement period.
	Financing of Fees and Charges	Many jurisdictions offer financing of fees and charges such as SDCs. This reduces the front-end equity requirement.
CAPITAL STACK		
	Subordinated Debt	Subordinated debt is secured by the property but provides first position to the primary lender. In the private development market this is often referred to as mezzanine debt and carries a higher interest rate to reflect greater risk.
	Private Activity Bonds	Private activity bonds (PAB) are tax-exempt bonds issued by or on behalf of a local or state government for the purpose of providing special financing benefits for qualified projects. These bonds are municipal bonds which are used to attract private investment for projects that have some public benefit; however, there are strict rules as to which projects qualify. Qualified projects that may be financed by private activity bonds include affordable rental housing, mortgage provision for first-time lower-income borrowers, etc. This type of bond results in reduced financing costs because of the exception of federal tax.
	New Market Tax Credits	The New Market Tax Credits (NMTC) provides tax credit incentives to investors for equity investments in certified Community Development Entities, which invest in low-income communities. The credit equals 396% of the investment, paid out as 5% in each of the first three years and 6% in the final 4 years.
OTHER INTERVENTIONS		
	Local Improvement District	Also referred to as a special assessment district or benefit assessment district. These are mechanisms for property owners with common concerns to collectively assess themselves for purely local improvements. This can be effective in increasing viability as the benefit from the funds raised often exceeds the revenue lost when the additional taxes are capitalized into a sale.
	Low Income Housing Tax Credits	The Low-Income Housing Tax Credit (LIHTC) program is federally funded and administered in Oregon by OHCS. The credit is either 9% or 4% of the qualified investment, for a period of ten years. To receive these credits the project must limit rents below what is deemed affordable for households at 60% of area Median Family Income (MFI), with the more generous 9% credits allocated in a competitive process that favors projects with a higher level of affordability. The rent limits are in place for ten years.
	Historic Preservation Tax Credit	The owner of a rental/income-producing property listed by the National Park Service's Register of National Historical Places may be eligible for a 20% investment tax credit for rehabilitation, with a 10% credit for rehabilitation of non-historic, nonresidential buildings built before 1936.

Financial Modeling of Interventions

The viability of a specific development type can be quantified using a pro forma analysis based on a range of assumptions. These include anticipated construction costs (direct costs), soft costs (indirect costs), achievable pricing (rents/sales prices), operational costs, financing terms, and return parameters. The approach is similar to what was outlined in Sections VII and VIII but with significantly more detail.

Johnson Economics has prepared a financial model which evaluates the financial characteristics and viability of prospective real estate development programs. The financial model is designed to accommodate a wide range of potential use types and mixed-use scenarios. In addition, the model can evaluate combinations of market interventions identified previously.

The model assesses the viability of a development program from a developer's perspective. The development program is modeled based on a set of assumptions and viability is assessed based on an assumed rate of return necessary to justify the investment. In cases in which public intervention is warranted, the evaluation will indicate that a project has a "viability gap". This "gap" reflects the extent to which a project does not meet return requirements and is expressed in our model as a current dollar figure. The model can be run using a range and combination of interventions to address the identified "gap".

The following is a summary of a hypothetical development program run through the model. In this case, the project has 150 market-rate rental residential units with an average rent per square foot of $1.83. The project has an estimated value at stabilization of $26.7 million, and a development cost of $26.5 million. The return on cost for the project (Net Operating Income (NOI) divided by development cost is projected at 5.87%. This is below the assumed targeted return of 6.70%, yielding an indicated "viability gap" of $3.3 million.

Project Name: **MEDFORD HYPOTHETICAL ONE**

Project Description: **Mixed-Use Development Program**

Date: **December 10, 2019**

SUMMARY OF PROJECT AND RETURNS

AREA SUMMARY:	
Site Size (SF):	108,900
Building Size (SF):	110,000
FAR (Excluding Parking):	1.01
Building Efficiency:	86%
Saleable and Leasable Area (SF):	95,000

INCOME COMPONENT SUMMARY:	Leasable SF	Average Rent/SF	Income
Residential: For Rent	90,000	$22.00	$1,980,000
Residential: Affordable	0	$0.00	$0
Retail/Commercial (NNN)	5,000	$20.00	$100,000
Office (NNN)	0	$22.00	$0
Live/Work	0	$22.00	$0
Parking			$157,500
Operating Expenses		29.3%	($654,800)
Vacancy/Collection		5.2%	($116,875)
TOTAL	95,000	$15.43	**$1,465,825**

COST SUMMARY:	Per SF		Total
Property Acquisition	$15		$1,633,000
Hard Costs	$167		$18,359,750
Soft Costs	$59		$6,534,846
TOTAL	$241		**$26,527,596**
Income Properties	$241		$26,527,596
Ownership Residential	$0		$0
Less LIHTC Sale Proceeds			$0
Net Income Properties Cost			$26,527,596

EQUITY ASSUMPTIONS:		
Total Development Costs		**$26,527,596**
(-) Permanent Loan		($18,281,350)
Net Permanent Loan Equity Required	**31.1%**	**$8,246,246**

PERMANENT FINANCING ASSUMPTIONS:	DCR	LTV	LTC
Interest Rate	5.50%	5.50%	5.50%
Term (Years)	30	30	30
Debt-Coverage Ratio	**1.25**		
Loan Limitations		**75%**	**75%**
Stabilized NOI (Year 3)	$1,556,992	$1,556,992	
CAP Rate		5.83%	
Supportable Mortgage	**$18,281,350**	**$20,033,811**	**$19,895,697**
Annual Debt Service	**$1,245,594**	**$1,364,997**	**$1,355,587**

MEASURES OF RETURN, INCOME COMPONENTS:	
Indicated Value @ Stablization	$26,711,748
Value/Net Cost	101%
Return on Cost (ROC)	5.87%

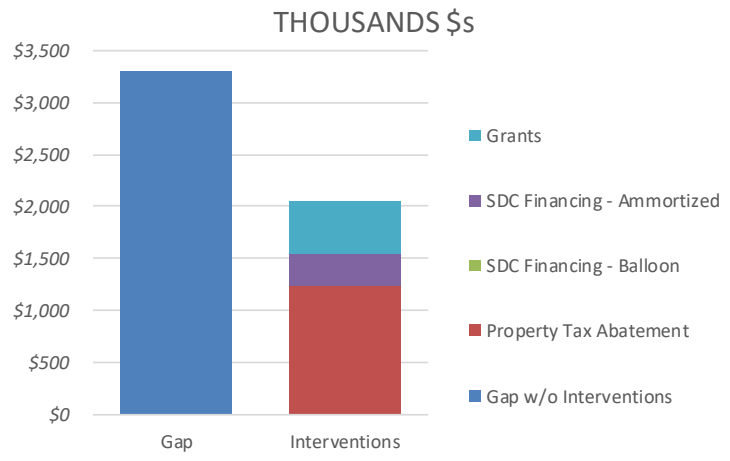
ESTIMATION OF VIABILITY GAP	
Targeted Return on Cost/Income (ROC)	6.70%
Calculated Gap/Income Components	$3,299,989
Return on Cost/Ownership	N/A
Targeted Return on Cost/Ownership	18.00%
Calculated Gap/Ownership Residential	$0
Overall Indicated Viability Gap	**$3,299,989**
Indicated Residual Value Per Square Foot	**($15)**
Net Present Value of Abatement	$1,244,123
Net Present Value of Financed SDCs	$303,308
Grants	$500,000
Remaining Viability Gap	**$1,252,558**

In this instance we included an assumption of a series of prospective interventions, including a ten-year property tax abatement, financing of SDCs and a $500,000 grant. The net result was a reduction in the "viability gap" to $1.3 million. The following table and graph are generated by the model and shows the estimated marginal value of the interventions assumed and their impact on the program's viability:

Project Name:	**MEDFORD HYPOTHETICAL ONE**
Project Description:	**Mixed-Use Development Program**
Date:	**Tuesday, December 10, 2019**

PROJECT SNAPSHOT

Indicated GAP Without Intervention		**$3,299,989**
Estimated Marginal Value of Interventions		
Property Tax Abatement		$1,244,123
SDC Financing - Balloon		$0
SDC Financing - Ammortized		$303,308
Grants		$500,000
Total Current Value of Interventions		$2,047,431
Gap after Interventions		$1,252,558
Measures of Return	**w/o Intervention**	**w/Intervention**
GAP	$3,299,989	$1,252,558
Return on Cost	5.87%	5.83%
Value/Net Cost	101%	107%
IRR - 10 yr.	8.65%	12.80%
IRR - 4 yr.	-5.91%	1.56%
Cash on Cash	3.63%	4.44%



A more detailed description of the model and how to use it is included as an Appendix to this report.

APPENDIX – MODEL DOCUMENTATION

Assumptions

The assumptions sheet includes many of the program assumptions, as well as income and financing terms. Cells highlighted in green are external inputs into the model. The program table summarizes the physical program, including unit counts and square footage of retail, office, live/work, and flex space. Many details of the residential program are contained in the ResProgramDetails sheet, which feeds into the assumption sheet tab.

Total square footage numbers are typically derived from architectural plans, and the difference between gross and net square footage is a function of the efficiency of the building. If architectural plans are not available, gross square footage can be estimated based on typical efficiency ratios.

For projects with interior corridors, a for-rent efficiency ratio of 80% to 85% is typical for rental apartments, with a slightly lower efficiency ratio for condominiums. The efficiency ratio of office space can vary significantly but is often estimated at 90% as many common areas are passed through to the tenants through load factors. The model allows for designating surface and structured parking spaces by use type.

The income assumptions for residential components are linked to the ResProgramDetails sheet, while rent assumptions for retail, office, and flex space are input directly. All rent assumptions are stated as triple net (exclusive of pass throughs such as property taxes, utilities, insurance, and janitorial). Parking charges are stated as monthly rates, while any assumed income for for-sale parking is assumed to be reflected in the unit sales price.

The financial assumptions on this sheet reflect financing terms, capitalization rates, and threshold rates of return. While these are all subject to change over time, they would not likely change much between scenarios. The cell highlighted in red is a calculation in the baseline spreadsheet, but an assumption can be hard punched in this cell if desired. This is the case for all cells with this color.

The sheet also includes a schedule of fees and system development charges. If fees or charges are waived or reduced, the change is input in this table.

Any interventions modeled are input into this sheet. The financing of SDCs is indicated by either a "Yes" or "No" in cell M52, as well as assumptions with respect to the % of fees financed, interest rate, and timing of the final payment year. The use of the Vertical Housing Development Zone (VHDZ) is also indicated on this sheet, as well as any grants provided for the project. If Low-Income Housing Tax Credits (LIHTC) are assumed, a determination of whether they are 4% or 9% credits is included. The model does allow for the use of up to two subordinated loans in addition to the first position loan and any financed SDCs.

ResProgramDetails

This sheet provides for the input of detailed residential program mix, including rental residential, affordable rental, and ownership residential. Unit mix, size, and assumed average rents, and sales prices can be input in the green cells. In addition, for affordable rental units, the % MFI of individual units can also be set. This establishes the allowable average monthly rent based on the most current OHCS matrix, which is input to the right of the summary table. Only the green highlighted cells need to be updated as the remainder can be calculated based on those rents.

Costs

The costs worksheet summarizes assumed construction costs, broken out by component. These assumptions a highly variable and should ideally be provided by a contractor or developer based on similar project experience. While the worksheet contains some limited detail, our experience is that construction estimates are provided in a wide range of formats. Reconciling the final construction cost from this table with the developer's provided cost estimates should

be done to the extent possible. The construction loan calcs button, in cells O31 and O32, initiates an iterative series of calculations to estimate construction interest. This is done to prevent a circular reference problem.

LoanDetails

This sheet largely pulls information from the assumption sheet and summarizes the sources of funds for the income and for-sale components of the project.

Summary

The Summary tab provides a general overview of the project's indicated financial performance based on the assumptions provided. This sheet provides an estimation of the "viability gap" for the project, with and without any assumption with respect to VHDZ or grants. The "gap" is estimated based on the indicated returns relative to the targeted returns.

Summary_Charts

This tab provides a "sources and uses" summary for the income and for-sale components, as well as a summary of indicated returns. In addition, it provides graphs of projected pre-tax cash flow under a ten-year or four-year hold scenario. The general cost and value by component are also summarized at the bottom of the table. This is useful in understanding the relative performance of components of the project.

Cash Flows

The Cash Flow-10yr and Cash Flow-4yr tabs project summary level cash flows at an annual basis over the two periods. These are necessary to calculate internal rates of return (IRR). The two time periods are used to reflect the different perspective of a merchant builder (developer who builds to sell) and longer-term holder of the asset.

PropertyTaxes

This tab allows for a summary of the estimated property tax revenues associated with the project and compares that revenue stream to a baseline assumption. This tab requires assumptions with respect to current Real Market Value (RMV), as well as the millage rates for a range of service providers. The tab also summarizes estimated property tax increments that would accrue to an urban renewal district, if the project is within a district.