

**FISCAL ANALYSIS OF THE OF THE CITY OF MARYSVILLE
AND ITS PROPOSED DEVELOPMENT**

June 18, 2018

Bill LaFayette, Ph.D.
Owner, Regionomics® LLC



1293 S. Fourth St., Columbus, OH 43206

www.regionomicsllc.com

FISCAL ANALYSIS OF THE OF THE CITY OF MARYSVILLE AND ITS PROPOSED DEVELOPMENT

Bill LaFayette, Ph.D., owner, Regionomics® LLC

June 18, 2018

INTRODUCTION

This paper consists of materials developed as part of the City of Marysville's Comprehensive Plan Update. The first section provides an economic and demographic summary, including the characteristics of the city's population, employment base, and housing stock.

The second section analyzes the City of Marysville's current and projected financial position. The key question to be answered is whether the City's revenue structure is capable of meeting the needs of the community over the long term. This question is addressed by projecting revenues and expenditures. If projected expenditures exceed projected revenues over the long term assuming even normal economic conditions, then the City's finances are in "structural imbalance," requiring an increase in revenues, a reduction in services, or both. The result of this analysis is that under its assumptions (to be discussed) no such problem exists in Marysville. The City's current revenue structure is sufficient to support its current level of services. However, the need to finance infrastructure problems can knock finances out of balance in the short term. This suggests that the City should amass excess revenues during economic expansions so that services can be maintained during economic downturns. The analysis suggests that this is occurring.

The third and final section discusses the fiscal impact of the development proposed in the Comprehensive Plan. The projections underlying this analysis were developed in collaboration with OHM Advisors and are discussed in more detail in the Plan. The conclusion of this analysis is that all development provides a net benefit to the city, including housing. In most cases, households consume more in services than they provide in revenue. This is not the case in Marysville for at least some housing types, but only because the City does not provide a credit to residents for the municipal income tax that they pay to other jurisdictions.

ECONOMIC AND DEMOGRAPHIC OVERVIEW

An analysis of the demographic and economic characteristics of Marysville and its residents is an important requirement in developing a realistic plan. This paper provides an overview of population growth, household size and composition, age, and economic characteristics of Marysville. It also profiles the current housing stock, and employment by industry in the Marysville area.

An effective plan must consider both current and potential future conditions. The *Insight 2050* report and its updates¹ predict significant growth and demographic change for central Ohio over the next 30 years. Regional population is projected to increase between 0.5 and 1 million by 2050, the senior population is expected to double, and households with children will account for less than 20 percent of total growth. The report's predictions mirror projected changes for the rest of the nation. Marysville is certain to be impacted by these changes, which will result in a dramatic decline in demand for large-lot housing and increased demand for small-lot detached homes, attached townhomes, and multi-unit developments.² To gauge the applicability of the regional projections to Marysville and to provide context, Marysville characteristics are compared to those of the 10-county Columbus Metropolitan Statistical Area (MSA).³

Demographic Characteristics

Population and Population Growth

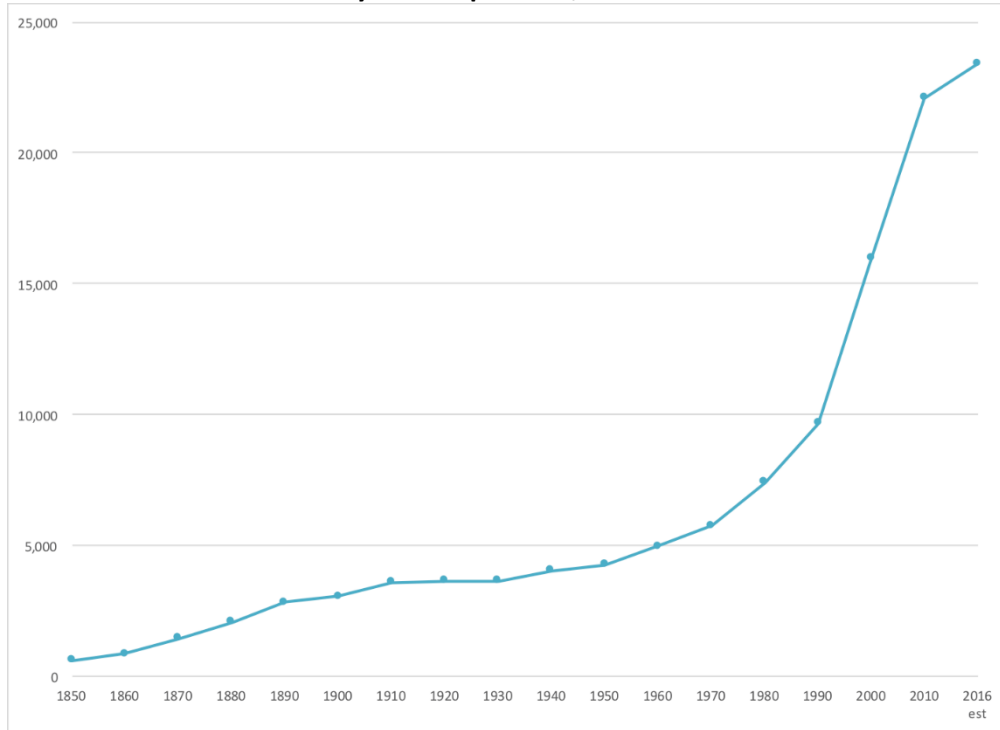
Marysville was incorporated in 1838, and became a city after the 1970 census reported a population greater than 5,000. Although the 1840 census did not report the population of small municipalities, the population of Marysville increased in all subsequent censuses as well as in the population estimates since 2010. The rate of growth has varied widely, however. Figure 1 charts the population of Marysville from 1850 through the 2016 population estimates, and shows an increase from 605 residents in 1850 to an estimated 23,406 in 2016. Figure 2 provides annual-average growth rates for both Marysville and Union County for each of these time intervals. Although Union County lost nearly 3,700 residents between 1890 and 1930, Marysville's population continued to increase. (However, the net increase between 1920 and 1930 was only four.) Annexations and development in the 1980s and 1990s pushed Marysville's growth rate far above that of Union County. The total population increase between 1990 and 2000 was nearly 6,300, or 65 percent. Growth has slowed markedly in more recent years, with the Census Bureau's 2016 population estimate implying the slowest growth rate since the 1940s.

¹ Mid-Ohio Regional Planning Commission, Columbus2020, Urban Land Institute, and Calthorpe Associates. *Insight 2050*. <http://getinsight2050.org>. 2015.

² "Housing Demand." *Insight 2050*. <http://getinsight2050.org/the-report/scenario-drivers/housing-demand/>. 2015.

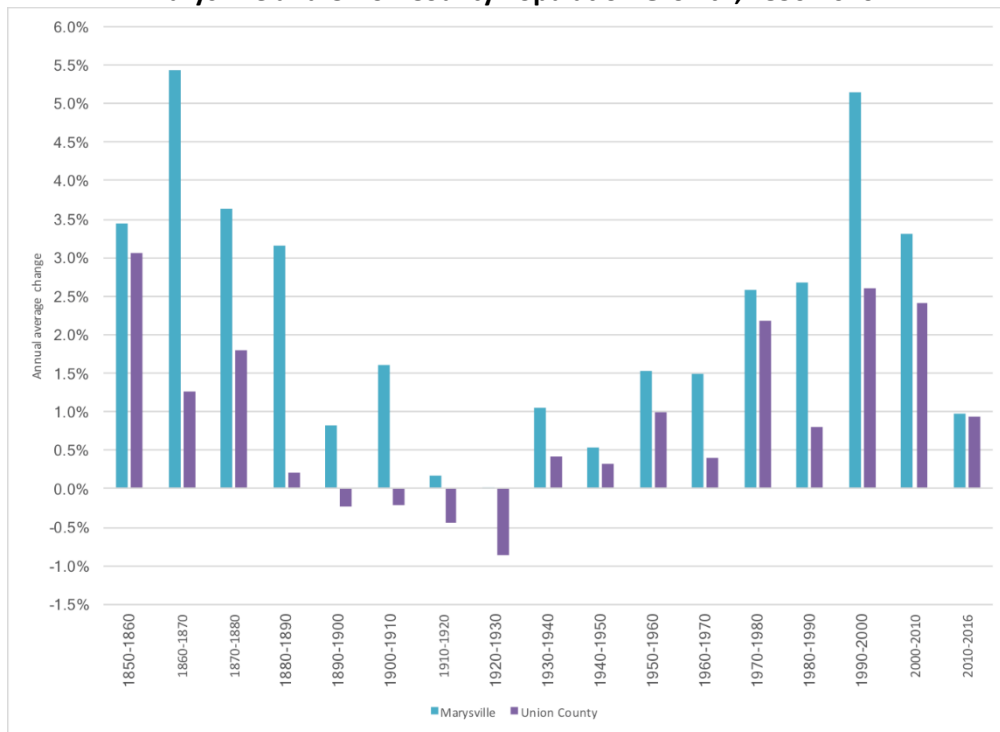
³ Delaware, Fairfield, Franklin, Hocking, Licking, Madison, Morrow, Perry, Pickaway, and Union Counties. *Insight 2050* omits Hocking, Morrow, and Perry Counties, but these counties account for less than 100,000 of the 2.041 million MSA total.

Figure 1
Marysville Population, 1850-2016



Source: U.S. Census Bureau.

Figure 2
Marysville and Union County Population Growth, 1850-2016



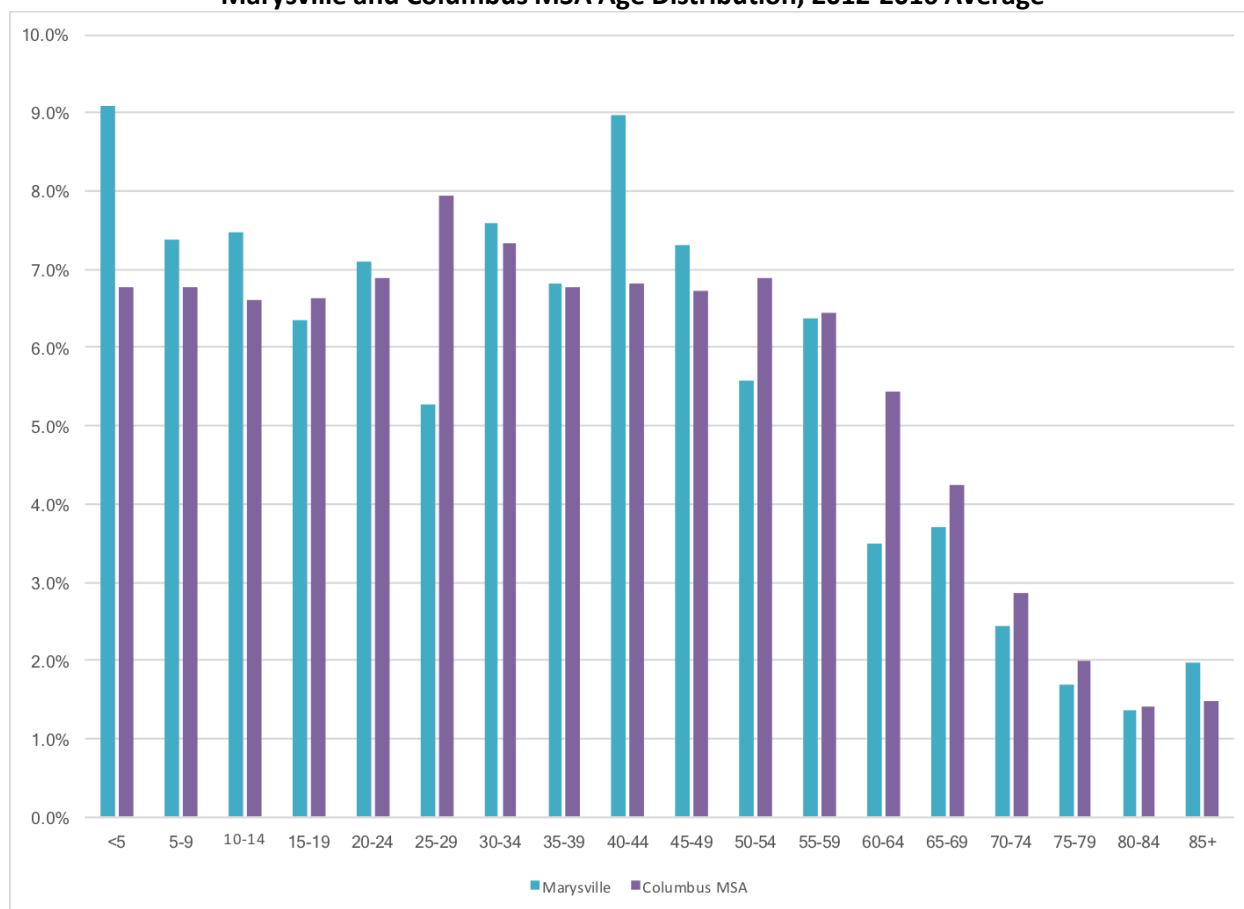
Source: U.S. Census Bureau.

Age

To arrive at a realistic evaluation of the age distribution of Marysville residents, it is necessary to eliminate the inmates of the Ohio Reformatory for Women from the census totals. These individuals do not contribute to the community economy (except by providing the need for prison employment) and likely will leave Marysville immediately upon their release. Fortunately, the prison population is reported separately in a geography called a block group, making it easy to net the inmates out of the reported Marysville total.

Figure 3 contrasts the age distribution of Marysville residents (excluding inmates) with those of the Columbus MSA. The two distributions are significantly different. The shares of children and adults in their 40s are greater than the regional average, and the share of adults in their 60s and 70s is less. Children younger than 15 represent 24 percent of Marysville's population and 20 percent of MSA population. Meanwhile, individuals aged 60 to 84 are 13 percent of the city population, but 16 percent of the regional population. The median age (half younger, half older) is not significantly different, however. For non-incarcerated Marysville residents, the median age is approximately 35.0, and it is 35.7 for Columbus MSA residents.

Figure 3
Marysville and Columbus MSA Age Distribution, 2012-2016 Average

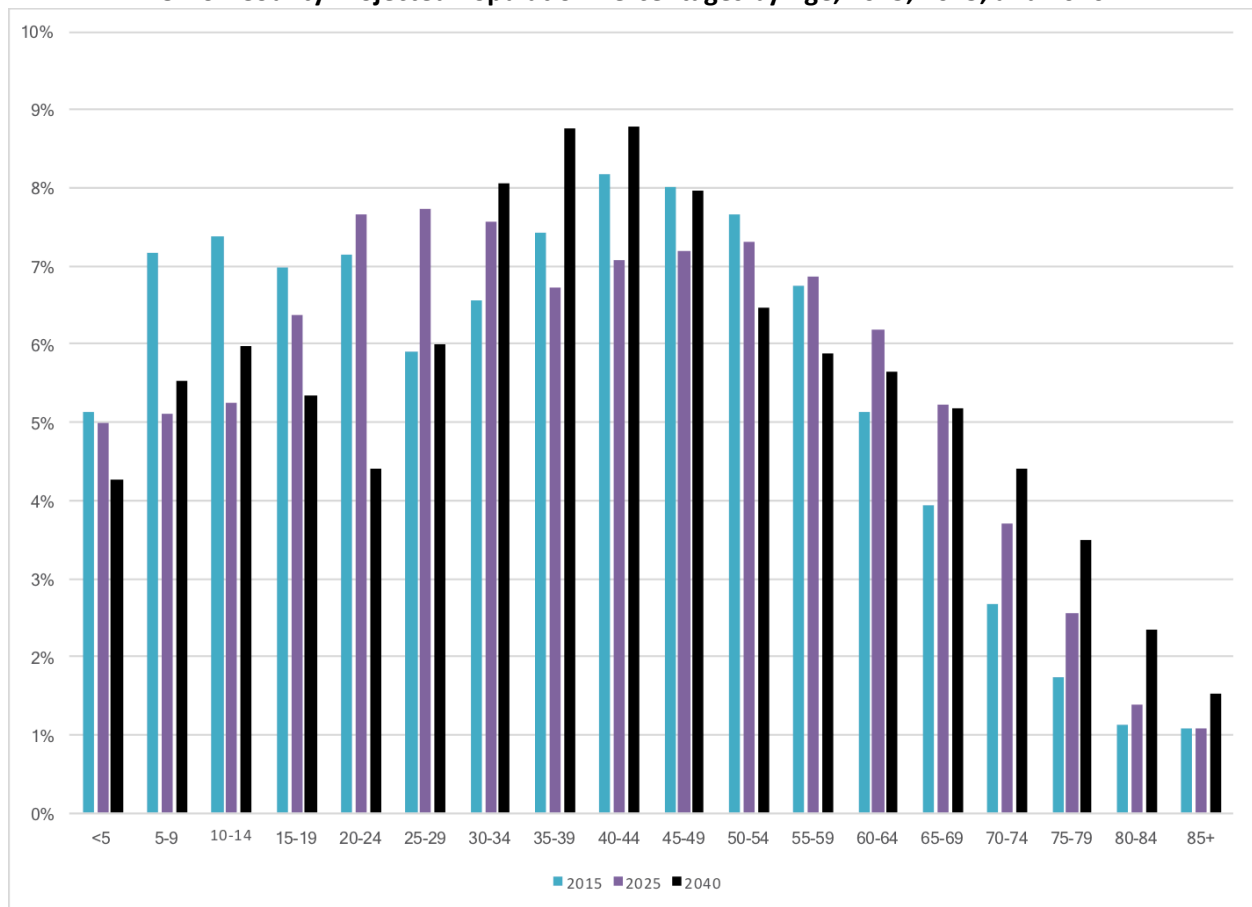


Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

No long-term population age projections are available for Marysville, but the Ohio Development Services Agency does provide these for Union County at five-year intervals through 2040. These projections cannot be adjusted for the prison population, however. The standard method to project population by age is to age the existing population, make assumptions regarding the age of movers in and movers out, and assume standard age-specific fertility rates and death rates. These procedures were applied to both the permanent and the prison population, although the prison population is unlikely to age at the same rate as the population as a whole as it turns over. Inmates account for nearly 11 percent of the Marysville population, but only 4.5 percent of the Union County population. Thus, the inability to adjust for the prison population in the Union County projections will be far less consequential than it would have been had the current population distribution of Marysville not been adjusted.

Projections of the Union County population by age are shown in Figure 4 for three years: 2015, 2025, and 2040 – ten years earlier than the planning horizon of *Insight 2050*. This shows the sharp decline in the percentage of children and the increase in the senior population. The share of adults in their late 30s and 40s falls and then rises.

Figure 4
Union County Projected Population Percentages by Age, 2015, 2025, and 2040



Source: 2010-2040 Population Projections for Ohio, Ohio Development Services Agency, 2013.

These trends have implications for the labor force and the need for schools, different types of housing, and senior and other public services, which are not entirely clear from the percentage trends because of

the growth of the underlying population. Accordingly, Table 1 provides numerical projections for broader age groups:

- Younger than 20, most of whom are in school.
- 20 to 24, who are participating in the labor force, but at a lower rate than older groups, and are forming households.
- 25 to 54, who are in their prime working years and in many cases raising children.
- 55 to 64, who are becoming empty nesters and beginning to retire.
- 65 to 79, younger seniors who are often still active.
- 80 and older, older seniors.

The number of children and teens decreases between 2015 and 2025, but then increases by 18 percent over the next 15 years. Although the number of young adults declines after 2025, the number in older age groups steadily increases. The number of seniors in Union County more than doubles by 2040.

Table 1
Union County Projected Population by Age, 2015, 2025, and 2040

Age group	Number			Change		
	2015	2025	2040	2015-25	2025-40	2015-40
Younger than 20	14,931	13,880	16,331	-1,050	2,451	1,401
20-24	4,004	4,896	3,404	892	-1,492	-600
25-54	24,476	27,864	35,591	3,388	7,726	11,114
55-64	6,652	8,333	8,913	1,682	580	2,261
65-79	4,685	7,347	10,111	2,662	2,764	5,426
80 and older	1,244	1,581	3,010	337	1,429	1,765

Source: 2010-2040 Population Projections for Ohio, Ohio Development Services Agency, 2013.

Because the conclusions of *Insight 2050* are based on a regional analysis, it is important to contrast the projections for the Columbus MSA with those for Union County to determine the extent to which those conclusions apply. Table 2 accomplishes this by replicating Table 1 for the MSA.

Table 2
Columbus MSA Projected Population by Age, 2015, 2025, and 2040

Age group	Number			Change		
	2015	2025	2040	2015-25	2025-40	2015-40
Younger than 20	539,890	575,898	605,711	36,008	29,814	65,822
20-24	128,189	145,092	164,041	16,903	18,948	35,851
25-54	833,181	833,185	908,651	4	75,466	75,470
55-64	240,834	258,571	284,111	17,738	25,540	43,277
65-79	184,773	261,359	296,013	76,585	34,654	111,240
80 and older	53,982	67,682	113,029	13,700	45,347	59,047

Source: 2010-2040 Population Projections for Ohio, Ohio Development Services Agency, 2013.

In contrast to Union County, the Columbus MSA population younger than 25 steadily increases. The prime working-age population remains unchanged for the first decade before increasing after 2025. This implies that housing demands in Union County may be tilted more towards families (albeit not with many children) and less toward housing for young adults than is true of the MSA. The rate of household formation may be less, but there will be greater demands on the growing Union County labor force to meet the needs of employers elsewhere in the MSA. The total senior population increases

proportionally more in Union County – 121 percent between 2015 and 2040 versus 71 percent for the region – meaning that the growth in demand for services to meet the needs of this population will be even greater than that implied by *Insight 2050*.

Living Arrangements: Households and Families

The demand for different types of housing is driven by age, income, and the ways in which people share dwelling units. Three definitions are necessary. A *dwelling unit* is a house, apartment, mobile home, a room, or group of rooms, occupied or intended to be occupied as a separate living unit. A *household* consists of one or more individuals occupying a dwelling unit; a *family household* consists of two or more individuals related by blood or marriage occupying a dwelling unit. Thus (nearly) all families are households, but by no means are all households families. Households include individuals living alone, roommates, boarders, or unmarried partners. Note that rooms rented by boarders are not considered to be dwelling units. Note too that if one unmarried partner has a child living with the couple, the individual and his or her child would be a family but not a separate household. The number of occupied dwelling units is equal by definition to the number of households.

The Ohio Reformatory is not considered a dwelling unit or dwelling units: prisons, jails, college dormitories, nursing homes, and similar facilities are considered to be group quarters. The residents of these facilities are not household members, so no adjustment for the prison is required for the analysis in this section. The inmates are excluded by definition.

Table 3 compares the distribution of household types in Marysville with those throughout the Columbus MSA. These distributions are quite similar. The largest difference is in married-couple versus other families (i.e., unmarried people with children or other family members in the home). But even this difference is not statistically significant. To say that the difference is not statistically significant means that although the estimate indicates a higher percentage for married-couple families in Marysville, the fact that this estimate is based on a sample means that it could be different from the 50.6 percent estimate, and could in fact be less than the 46.4 percent Columbus MSA percentage. The reader should avoid the temptation to assign significance to a difference when no significance exists.

Table 3
Marysville and Columbus MSA Households by Type, 2012-2016

Household type	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Total:	7,602	764,973	100.0%	100.0%
Family households:	4,879	487,810	64.2%	63.8%
Married-couple family	3,847	355,019	50.6%	46.4%
Other family:	1,032	132,791	13.6%	17.4%
Male householder, no wife present	365	35,257	4.8%	4.6%
Female householder, no husband present	667	97,534	8.8%	12.7%
Nonfamily households:	2,723	277,163	35.8%	36.2%
Householder living alone	2,190	218,964	28.8%	28.6%
Householder not living alone	533	58,199	7.0%	7.6%

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

Table 4 presents the distribution of household size for the city and region. Again, there are no marked differences between Marysville and Columbus MSA households. Marysville households are on balance only slightly larger: the median household size in Marysville is 1.8, and is 1.6 in the Columbus MSA.

Table 4
Marysville and Columbus MSA Households by Size, 2012-2016

Household size	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Total households	7,602	764,973	100.0%	100.0%
1-person household	2,190	218,964	28.8%	28.6%
2-person household	2,080	256,557	27.4%	33.5%
3-person household	1,513	122,118	19.9%	16.0%
4-person household	1,074	100,550	14.1%	13.1%
5-person household	431	43,753	5.7%	5.7%
6-person household	292	15,163	3.8%	2.0%
7-or-more person household	22	7,868	0.3%	1.0%
Median household size	1.8	1.6	---	---

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

Household Income, Labor Force Participation, and Employment

Household income is an important determinant of housing choice. Table 5 compares Marysville and Columbus MSA household income. Around 21 percent of Marysville households earn less than \$25,000 and around 28 percent earn more than \$100,000. Once again, the Marysville and MSA distributions and median incomes are not significantly different.

Table 5
Marysville and Columbus MSA Household Income, 2012-2016
In 2016 Inflation-Adjusted Dollars

Household income	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Total households	7,602	764,973	100.0%	100.0%
Less than \$10,000	419	51,747	5.5%	6.8%
\$10,000 to \$14,999	353	34,355	4.6%	4.5%
\$15,000 to \$24,999	863	72,000	11.4%	9.4%
\$25,000 to \$34,999	624	73,467	8.2%	9.6%
\$35,000 to \$49,999	963	102,228	12.7%	13.4%
\$50,000 to \$74,999	1,190	142,693	15.7%	18.7%
\$75,000 to \$99,999	1,045	98,589	13.7%	12.9%
\$100,000 to \$149,999	1,429	109,540	18.8%	14.3%
\$150,000 to \$199,999	430	42,205	5.7%	5.5%
\$200,000 or more	286	38,149	3.8%	5.0%
Median household income	\$ 62,371	\$ 57,440	---	---

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

Employment is a notable requirement for household stability and the ability to afford housing. Marysville is not large enough to be included in the Bureau of Labor Statistics (BLS) monthly labor force statistics, but these are available from the American Community Survey as an average for 2012 through 2016. They are more meaningful if they are compared to the regional and national averages. This is accomplished in Table 6. The concepts are similar to those in the BLS statistics. Individuals are included in the labor force only if they were employed in the reference week or if they were in an active job search. Only individuals in an active job search are counted as unemployed. The participation rate is the ratio of the civilian labor force to the civilian population 16 years or older – with no upper bound on age. The unemployment rate is the ratio of the number of unemployed to the civilian labor force. The population of the Ohio Reformatory is subtracted from the Marysville population, which impacts the participation rate but not the unemployment rate. Note that current unemployment rates are far lower than these 5-year averages; the current (November 2017) seasonally-adjusted unemployment rates are 3.7 percent for the Columbus MSA and 4.1 percent for the U.S. The 4.2 percent Marysville unemployment rate in Table 6 is significantly less than the MSA and U.S. averages. The Marysville participation rate is not significantly different from the regional average, but both the city and regional participation rates are significantly higher than the national rate.

Table 6
Marysville, Columbus MSA, and U.S. Labor Force, Employment, and Unemployment, 2012-2016

	Marysville	Columbus MSA	United States
Population 16 years and older	15,105	1,565,741	253,323,709
Labor force	10,530	1,059,035	160,818,740
Armed Forces	0	965	101,164
Civilian labor force	10,530	1,058,070	159,807,099
Employed	10,084	995,106	148,001,326
Unemployed	446	62,964	11,805,773
Not in labor force	4,575	507,671	93,516,610
Participation rate	69.7%	67.6%	63.5%
Unemployment rate	4.2%	6.0%	7.4%

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

Characteristics of Housing

Occupancy and Physical Characteristics

The American Community Survey offers a wide variety of data on the characteristics of housing, value and cost. Table 7 provides data on the occupancy and ownership (tenure) of dwelling units in Marysville; as before, these are compared to characteristics for the region. Each dwelling unit in multiple-unit structures is counted individually. Note that the number of occupied dwelling units equals the number of households, as it must. The Marysville vacancy rate is significantly less than the Columbus MSA average.

Table 7
Marysville and Columbus MSA Housing Occupancy and Ownership, 2012-2016

	Marysville	Columbus MSA
Total dwelling units	8,020	839,488
Less vacant dwelling units	418	74,515
Occupied dwelling units	7,602	764,973
Owner-occupied units	4,791	467,697
Renter-occupied units	2,811	297,276
Vacancy rate	5.2%	8.9%
Ownership rate	63.0%	61.1%

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

The next three tables summarize information regarding the physical characteristics of dwelling units, both occupied and unoccupied. The age of dwelling units is shown in Table 8, the number of units in the structure is in Table 9, and the number of rooms and bedrooms in dwelling units is in Table 10. The cases in which the Marysville percentage or estimate is significantly different from that of the Columbus MSA are indicated by purple shading. With regard to age, the surveys on which the totals are based were conducted between 2012 and 2016, so the total number of units built between 2013 and 2016 are greater than shown in Table 8. (A survey completed in 2012 will include no units completed later than 2012.) Table 8 shows the largest difference in the share of dwelling units completed before 1950 and those completed between 1980 and 2009. More than half of Marysville's housing stock was built between 1990 and 2009.

Table 8
Year Marysville and Columbus MSA Dwelling Units Built, 2012-2016

Year dwelling unit built	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Total dwelling units	8,020	839,488	100.0%	100.0%
Built 2014 or later	13	3,915	0.2%	0.5%
Built 2010 to 2013	220	18,240	2.7%	2.2%
Built 2000 to 2009	2,104	124,757	26.2%	14.9%
Built 1990 to 1999	2,152	140,965	26.8%	16.8%
Built 1980 to 1989	590	100,341	7.4%	12.0%
Built 1970 to 1979	940	124,028	11.7%	14.8%
Built 1960 to 1969	781	97,619	9.7%	11.6%
Built 1950 to 1959	439	88,125	5.5%	10.5%
Built 1940 to 1949	143	36,147	1.8%	4.3%
Built 1939 or earlier	638	105,351	8.0%	12.5%
Median year built	1992	1977	---	---

Purple shading: The Marysville percentage or estimate is significantly different from the regional average.

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

Table 9
Number of Dwelling Units in Marysville and Columbus MSA Structures, 2012-2016

Number of units	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Total dwelling units	8,020	839,488	100.0%	100.0%
1-unit, detached	5,010	523,203	62.5%	62.3%
1-unit, attached	285	57,843	3.6%	6.9%
2 units	310	24,631	3.9%	2.9%
3 or 4 units	720	56,690	9.0%	6.8%
5 to 9 units	736	69,533	9.2%	8.3%
10 to 19 units	269	38,773	3.4%	4.6%
20 or more units	300	47,292	3.7%	5.6%
Mobile home	381	21,401	4.8%	2.5%
Boat, RV, van, etc.	9	122	0.1%	0.0%

Purple shading: The Marysville percentage is significantly different from the regional average.

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

Table 10
Number of Rooms and Bedrooms in Marysville and Columbus MSA Dwelling Units, 2012-2016

Household size	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Total dwelling units	8,020	839,488	100.0%	100.0%
Rooms				
1 room	31	11,402	0.4%	1.4%
2 rooms	120	17,265	1.5%	2.1%
3 rooms	926	66,976	11.5%	8.0%
4 rooms	1,228	126,834	15.3%	15.1%
5 rooms	1,370	160,645	17.1%	19.1%
6 rooms	1,125	153,220	14.0%	18.3%
7 rooms	1,054	108,892	13.1%	13.0%
8 rooms	1,050	84,650	13.1%	10.1%
9 rooms or more	1,116	109,604	13.9%	13.1%
Median rooms	5.8	5.7	---	---
Bedrooms				
No bedroom	40	12,302	0.5%	1.5%
1 bedroom	1,020	81,827	12.7%	9.7%
2 bedrooms	1,996	234,053	24.9%	27.9%
3 bedrooms	2,985	332,425	37.2%	39.6%
4 bedrooms	1,786	155,525	22.3%	18.5%
5 or more bedrooms	193	23,356	2.4%	2.8%

Purple shading: The Marysville percentage is significantly different from the regional average.

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

Value and Cost

The value of housing in the market is a consideration for the ability to introduce new housing, as is the affordability of owner and renter housing; i.e., the relationship between the cost of Marysville housing

relative to the income of households. This section explores these questions. The distribution of values of owner-occupied housing is shown in Table 11. This only includes dwelling units that are occupied by owners, not vacant or rental units. These are estimates of value by the owner, which could potentially misestimate the market value. Incorrect estimates that are systematically too high or too low (“biased” estimates) are of far greater concern than are estimates that are low in some cases and high in others by about the same amount. This question has been studied extensively in the academic literature over the past 45 years. The evidence is mixed, with some studies finding that owners guess too high and others finding that they guess too low, but the bias in either direction is generally found to be small – no more than 5 to 7 percent. In any case, there is no reason to believe that the guesses of owners in Marysville are differently biased from those in other parts of the MSA, so the comparison of values between the city and the region should be valid. Although there is some difference in the shape of the two distributions, there is no significant difference in median house value.

Table 11
Value of Owner-Occupied Housing in Marysville and Columbus MSA, 2012-2016
 In 2016 Inflation-Adjusted Dollars

Value of units	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Total owner-occupied units	4,791	467,697	100.0%	100.0%
Less than \$50,000	264	27,681	5.5%	5.9%
\$50,000 to \$99,999	270	79,025	5.6%	16.9%
\$100,000 to \$149,999	1,090	101,575	22.8%	21.7%
\$150,000 to \$199,999	1,773	91,994	37.0%	19.7%
\$200,000 to \$299,999	1,133	92,121	23.6%	19.7%
\$300,000 to \$499,999	242	56,094	5.1%	12.0%
\$500,000 to \$999,999	19	16,653	0.4%	3.6%
\$1,000,000 or more	0	2,554	0.0%	0.5%
Median	\$ 166,200	\$ 161,700	---	---

Purple shading: The Marysville percentage is significantly different from the regional average.

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

The American Community Survey does not ask renters to estimate the value of their dwelling unit, but it does ask them to report their rent. This is shown in Table 12. The Marysville distribution is not significantly different from the regional distribution, and the medians are identical.

Table 12
Gross Rent in Marysville and Columbus MSA, 2012-2016
 In 2016 Inflation-Adjusted Dollars

Value of units	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Occupied units paying rent	2,696	287,120	100.0%	100.0%
Less than \$500	270	28,322	10.0%	9.9%
\$500 to \$999	1,608	167,799	59.6%	58.4%
\$1,000 to \$1,499	714	72,289	26.5%	25.2%
\$1,500 to \$1,999	104	13,344	3.9%	4.6%
\$2,000 to \$2,499	0	3,679	0.0%	1.3%
\$2,500 to \$2,999	0	852	0.0%	0.3%
\$3,000 or more	0	835	0.0%	0.3%
Median	\$ 855	\$ 855	---	---

No Marysville percentages are significantly different from corresponding regional average.

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

The key question is whether these rents, and housing costs for homeowners, are affordable. Table 13 relates households' monthly gross rent to the monthly income of those households. Table 14 performs a similar calculation of selected owner costs⁴ to household income for households with a mortgage. The housing cost burden is especially serious for renters. The U.S. Department of Housing and Urban Development (HUD) defines any household paying more than 30 percent of income for housing as being cost-burdened. From Tables 13 and 14, this applies to 40 percent of Marysville renter households and 29 percent of owner households. According to HUD, cost-burdened households "may have difficulty affording necessities such as food, clothing, transportation, and medical care."⁵ Their ability to maintain stable housing is also diminished. Although the 40 percent of Marysville renters who are burdened may seem high, it is significantly less than the 51 percent national average, as well as the 46 percent in Columbus and even higher percentages in the highest-cost cities including Los Angeles (61 percent) and Miami (66 percent).

⁴ Owner costs included in the calculation are mortgages, real estate taxes, insurance, utilities, fuels, mobile home costs, and condominium and homeowner association fees.

⁵ "Rethinking Rental Cost Burdens." U.S. Department of Housing and Urban Development, Sep. 2014.
https://www.huduser.gov/portal/pdredge/pdr_edge_featd_article_092214.html.

Table 13
Gross Rent as a Percentage of Household Income (GRAPI), Marysville and Columbus MSA, 2012-2016

Value of units	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Occupied units paying rent*	2,664	280,614	100.0%	100.0%
Less than 15.0 percent	512	37,897	19.2%	13.5%
15.0 to 19.9 percent	306	40,601	11.5%	14.5%
20.0 to 24.9 percent	448	39,449	16.8%	14.1%
25.0 to 29.9 percent	332	34,220	12.5%	12.2%
30.0 to 34.9 percent	198	23,465	7.4%	8.4%
35.0 percent or more	868	104,982	32.6%	37.4%
Not computed	147	16,662	---	---

* Excluding units where GRAPI cannot be computed.

No Marysville percentages are significantly different from corresponding regional average.

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

Table 14
**Selected Monthly Owner Costs as a Percentage of Household Income (SMOCAPI),
Marysville and Columbus MSA, 2012-2016**

Value of units	Number		Percentage	
	Marysville	Columbus MSA	Marysville	Columbus MSA
Housing units with mortgage*	3,830	339,063	100.0%	100.0%
Less than 20.0 percent	1,853	159,868	48.4%	47.1%
20.0 to 24.9 percent	627	59,508	16.4%	17.6%
25.0 to 29.9 percent	236	37,529	6.2%	11.1%
30.0 to 34.9 percent	271	22,024	7.1%	6.5%
35.0 percent or more	843	60,134	22.0%	17.7%
Not computed	26	820	---	---

* Excluding units where SMOCAPI cannot be computed.

Purple shading: The Marysville percentage is significantly different from the regional average.

Source: American Community Survey Five-Year Estimates, U.S. Census Bureau.

Industry Characteristics

Just as an understanding of the existing demographic and housing landscape can be helpful in planning for residential development, an understanding of the existing industry makeup can assist in planning for commercial and industrial development. This section analyzes employment by industry in the Marysville area.

Unfortunately, no data exist regarding employment within cities; the only available geography below the county level is the ZIP code. Accordingly, this section analyzes industry employment in the 43040 ZIP code compared to Union County and the Columbus MSA. The data come from a Census Bureau database called ZIP Code Business Patterns (ZBP) and a better-known companion database called County Business Patterns (CBP). ZBP has several significant drawbacks. First, employment is provided only in total, not for individual industries. However, counts of establishments are provided for nine employment size classes. This allows a rough approximation of industry level employment: if all establishments with between five and nine employees are assumed to have the midpoint employment of seven, this can be multiplied by

the number of establishments in the size class and the results summed across size classes to obtain an estimate of employment for the industry. The estimates for all industries are then adjusted to equal the given total employment for the ZIP code. CBP does provide industry-level employment except in cases where there are few employers or one dominant employer. Union County industry sector employment counts are nearly complete, so that can be used as a benchmark as well.

However, there are three additional drawbacks that ZBP and CBP share. The first of these is that both data sets include only private-sector employment and omit government. (They omit farm employment as well; this is not an especially great problem for 43040, but it definitely is for Union County.) This is especially consequential for Marysville because of the omission of the employment of the Ohio Reformatory for Women – 504, according to the Department of Rehabilitation and Corrections. Further, data are provided only for mid-March. This is a problem because employment in several key sectors, including retail, transportation, and temporary services, is lower than average in March. Total employment is lower than average as well. Finally, the largest size class provided is for establishments with 1,000 employees or more, and no midpoint can be calculated for this size class. There are three establishments in the 43040 ZIP with 1,000 employees or more. Fortunately, these establishments are conspicuous enough that they can be identified and their employment obtained by other means. Despite these drawbacks, ZBP is the only publicly-available source for small-area employment data, and private sources are almost certainly based on ZBP.

The results of this analysis are presented in Table 15. Employment totals for the Marysville area, Union County, and the Columbus MSA are shown in the first three data columns. The right-hand columns contain “location quotients” for each industry sector. A location quotient is a measure of relative employment concentration. It is calculated as the percentage of total employment in a given industry sector in the local area divided by the percentage of total employment in that sector nationally. Thus, if an industry’s location quotient is 2.0, the industry has twice the national average employment concentration – or twice the employment that would be expected in an economy Marysville’s size. Please note, however, that the large state government employment at the prison likely gives the Marysville area a much higher government employment concentration than the county and the region. This means that the location quotients computed for the 43040 ZIP on private-sector employment are somewhat overstated relative to the larger areas. The conclusions of the analysis are still valid, however.

There are two particular areas of concentration for the Marysville area economy. The first is manufacturing. Although manufacturing is not a prominent feature of the Columbus MSA economy, it definitely is in Marysville and Union County. The second area of concentration is the professional and business services sectors: professional, scientific, and technical services; corporate managing offices; and administrative support and waste services. These are key office-using sectors, which could indicate a demand for office space. The corporate managing offices in 43040 are generally large, so they are likely to occupy their own facilities. Many of the professional services and administrative support establishments are small, however, and are likely renting office space.

One caveat applies both to manufacturing and administrative support, however: Regionomics previously did some work on the Union County economy that suggested that local manufacturers may be making greater-than-average use of temporary workers. All temporary employment is categorized in administrative support regardless of the industry in which the temporary employee is working. If a large proportion of these workers are employed in manufacturing, that will depress the manufacturing location quotient and inflate the administrative support location quotient. That does not negate the need of these establishments for office space, however.

Table 15
Marysville, Union County, and Columbus MSA Employment and Employment Concentration,
March 2015

Industry sector	Employment			Location quotient		
	43040	Union County	Columbus MSA	43040	Union County	Columbus MSA
Natural resources	0	2	129	0.00	0.06	0.12
Construction/mining	158	890	31,665	0.15	0.64	0.70
Manufacturing	5,581	6,263	64,588	3.06	2.61	0.83
Wholesale trade	270	977	36,318	0.28	0.78	0.89
Retail trade	1,915	2,150	100,258	0.78	0.66	0.95
Transportation/warehousing	559	1,116	46,082	0.77	1.17	1.48
Utilities	75	102	6,350	0.75	0.77	1.47
Information	62	68	19,041	0.12	0.10	0.83
Finance/insurance	237	357	72,301	0.25	0.28	1.75
Real estate/rental & leasing	110	123	12,817	0.34	0.29	0.92
Prof., sci., technical services	1,545	3,321	52,753	1.12	1.82	0.89
Corporate administration	1,638	1,674	34,818	3.15	2.45	1.56
Administrative/waste svcs.	2,996	4,267	63,692	1.72	1.86	0.85
Educational services*	149	169	19,791	0.26	0.22	0.81
Healthcare/social assistance	2,054	1,740	139,529	0.68	0.44	1.08
Arts/entertainmt./recreation	199	229	12,244	0.57	0.50	0.81
Accommodation/food svcs.	1,443	1,591	87,755	0.70	0.58	0.99
Other services	481	629	36,583	0.57	0.56	1.00
Unclassified establishments	1	2	88	0.26	0.40	0.54
Total	19,474	25,670	836,802	1.00	1.00	1.00

*Private education only.

Source: ZIP Code Business Patterns and County Business Patterns, U.S. Census Bureau.

FISCAL ANALYSIS OF THE CITY UNDER CURRENT CONDITIONS

Introduction

This chapter considers the soundness of the City of Marysville's current and projected financial position. Is the City's revenue structure capable of sustaining the expenditures necessary to meet the needs of the community over the long term?

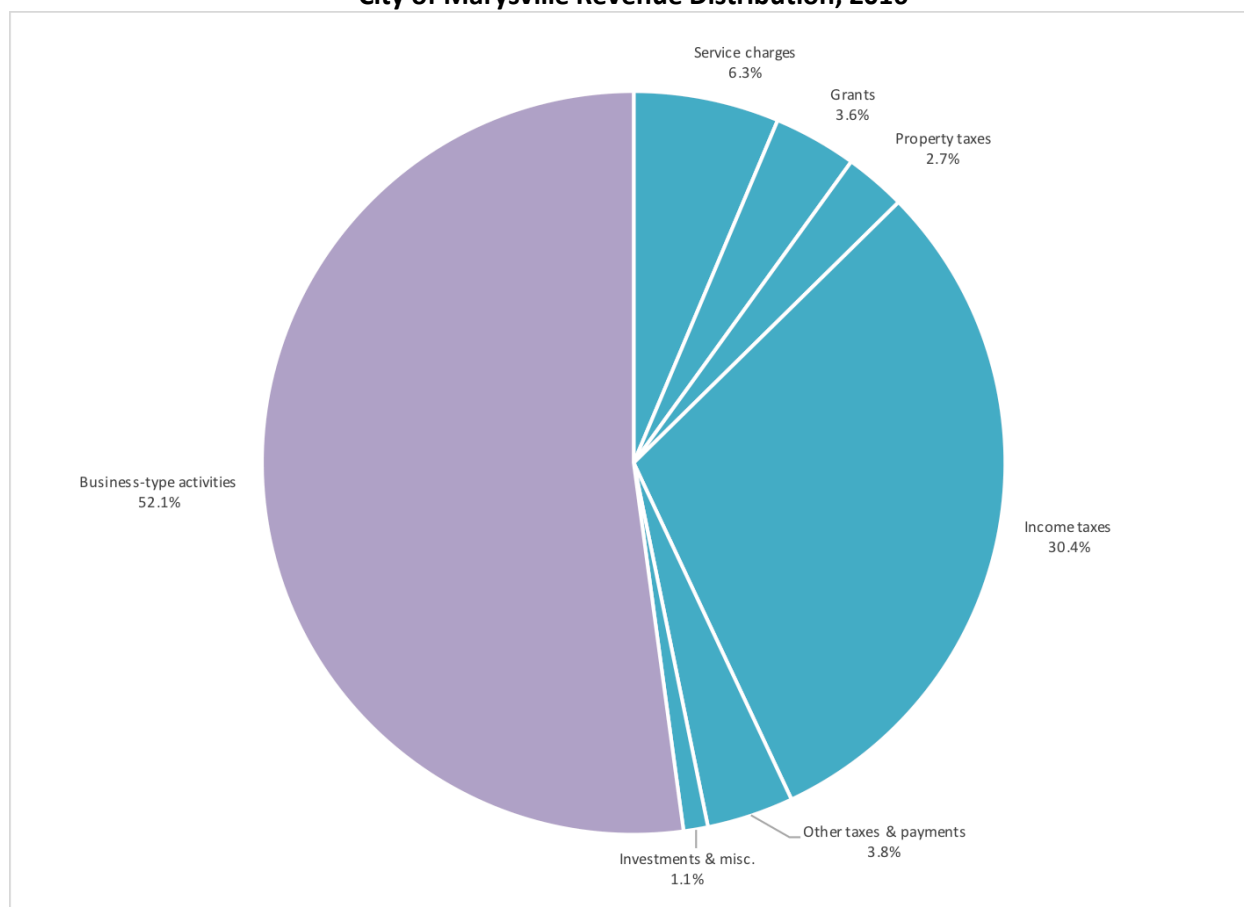
The sustainability of the financial position is addressed by projecting revenues and expenditures. If projected expenditures exceed projected revenues over the long term assuming even normal economic conditions, then the City's finances are in "structural imbalance," requiring an increase in revenues, a reduction in services, or both. The result of this analysis is that under its assumptions (to be discussed) no such problem exists in Marysville. The City's current revenue structure is sufficient to support its current level of services. However, the need to finance infrastructure can knock finances out of balance in the short term. This suggests that the City should amass excess revenues during economic expansions so that services can be maintained as infrastructure needs arise and as economic downturns occur. The analysis suggests that this is occurring.

Financial Sustainability of the City Budget

Revenue Structure

Marysville provides both general government services and trash, sewer, and water utility services. These utility services are referred to as "business-type activities" because customer fees are set to cover the cost of the service and generate a surplus that supports capital purchases. These relatively stable activities provide some degree of diversification in the City's revenue structure. According to the City's 2016 Comprehensive Annual Financial Report (CAFR), revenues totaled \$58.1 million, including \$27.8 million (47.8 percent) from general government activities and \$30.3 million (52.2 percent) from business-type activities. Figure 1 shows the breakdown of revenues in more detail. Revenues related to general government are shown in teal, and those related to Marysville utilities are in lilac.

Figure 1
City of Marysville Revenue Distribution, 2016



Source: *City of Marysville, Ohio, Comprehensive Annual Financial Report for the Year Ended December 31, 2016.*

Income Taxes. Municipal income taxes are typically the largest source of general fund revenue for Ohio municipalities, and that is the case for the government activities share of Marysville’s revenues. The \$17.7 million in income tax revenue represented 30.4 percent of total revenues and 63.5 percent of general government revenues in 2015. Income tax revenues have nearly tripled from an inflation-adjusted \$6.2 million in 1999. Part of this increase was due to an increase in the income tax rate from 1 percent to 1.5 percent in 2011. Adjusting for this rate increase, the inflation-adjusted growth over the 17-year period was 88 percent.

In Ohio, wages and salaries are taxed where they are earned, so all wages earned within the city limits by residents and non-residents are taxed. In addition, Marysville imposes taxes on residents’ wages and salaries wherever they are earned. Many municipalities provide a partial or full credit for wages earned elsewhere, but Marysville does not. Thus, a Marysville resident working in Columbus, where the tax rate is 2.5 percent, pays 2.5 percent to Columbus and 1.5 percent to Marysville – an effective tax rate of 4 percent. This provision keeps Marysville’s income tax rate at the lower end of the 1 percent to 2.5 percent range that is typical of central Ohio municipalities, but it does create a relatively high tax burden for some Marysville residents.

Property and Other Taxes. Property taxes and an assortment of other taxes and fees together provide 6.5 percent of total revenues and 13.5 percent of general government revenues. Although property

taxes in general represent a substantial share of Ohioans' overall tax burden, the bulk of these go to school districts. County governments and their agencies and public libraries also receive property tax revenues. The City of Marysville's share is less than 8.2 percent of the total residential property tax burden. The City's property tax revenues supporting general government totaled \$1.55 million in 2016, an inflation-adjusted increase of 44 percent from 1999. Additional property taxes are earmarked to fund infrastructure improvements in Tax Increment Financing (TIF) districts and are not included here.

Other taxes include Marysville's 3 percent lodging tax on hotel and motel charges in the city, franchise fees on cable television charges, liquor permit fees, and gasoline and cigarette taxes. Together these taxes and fees raised \$2.2 million in 2016, 3.8 percent of total revenues.

The City formerly levied taxes on the tangible personal property of businesses, including inventory, machinery, and equipment. In 2005, Marysville received tangible personal property taxes of more than \$309,000 in 2016-equivalent dollars. The State phased these taxes out as a result of the 2005 tax reform act passed by the General Assembly. By 2009, most businesses were exempt from these taxes, and after 2011, the City's receipts were zero. These taxes, together with the corporation franchise tax, were replaced by the Commercial Activity Tax (CAT). The revenues from the CAT go not to local governments but to the State. The tax reform law also stipulated replacement payments to municipalities, counties, and school districts, but these too were to be phased out over time. In addition, the General Assembly enacted a standard of relative need in determining payments made beginning in November 2011.⁶ Municipalities also formerly collected taxes on individuals' high-net-worth estates, but this was repealed for individuals dying after January 1, 2013. This was a highly variable source of revenue, but averaged nearly \$306,000 annually in 2016-equivalent dollars between 1999 and 2012. Thus, the replacement of personal property taxes with the CAT and the phasing-out of the estate tax was an unambiguous financial loss to local governments.

Service Charges and Grants. Service charges include revenues from court fines and fees, transportation services, fire and emergency medical service contracts, and pool and recreation fees. These totaled \$3.7 million in 2016. The City has increasingly focused on increasing fee-for-service revenue over the years. As a result, this revenue category has increased nearly 6.5 times after inflation since 1999.

The City has also placed an increasing emphasis on pursuing grants to fund both operating and capital expenditures. The City's efforts to pursue these grants are worthwhile because grant revenues represent funding for operating and capital purchases that do not depend on the citizens and businesses of Marysville.

This category of receipts also includes State of Ohio payments from the Local Government Fund (LGF). This fund was created by the State of Ohio in the Depression year of 1934 to share proceeds from the new state sales tax with local jurisdictions. The LGF remained a stable source of funding over the decades regardless of economic conditions. Since 2011, however, the LGF has been reduced significantly in order to balance the state budget, which was severely affected by the recession and also by tax rate cuts in recent years. Marysville's LGF receipts totaled \$181,000 in 2014 – down 54 percent after inflation from 2011. It is unclear whether the State will ever return to earlier funding levels of the LGF. These cuts, along with the loss of tangible personal property and estate taxes have severely strained municipal governments across Ohio, and necessitated Marysville's 2011 income tax rate increase.

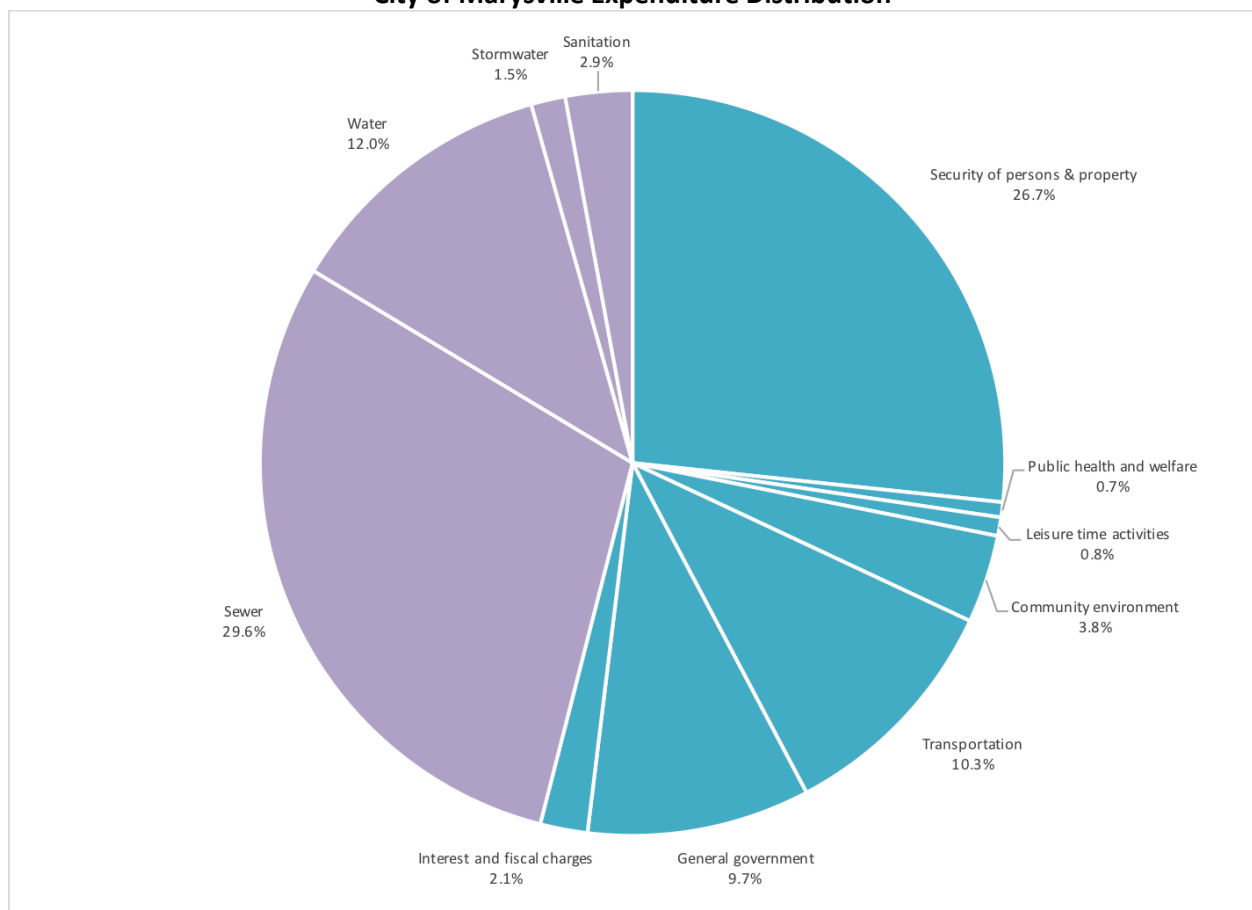
⁶ Ohio Department of Taxation, *2015 Annual Report*, p. 135.

Business-Type Activities. Revenues from the City’s utility services comprise slightly more than one-half of total revenues. Of the \$30.3 million in total revenues, \$26.9 million (89 percent) represent customer service charges. Another \$3.3 million came in payments in lieu of taxes and \$0.1 million in investment earnings.

Expenditure Structure

Expenditures totaled \$50.6 million in 2016. Figure 2 shows the structure of these expenditures. As in Figure 1, general government expenditures are colored teal, and those related to Marysville utilities are colored lilac. The following paragraphs provide details regarding these expenditure categories.

Figure 2
City of Marysville Expenditure Distribution



Security of Persons and Property. Security of persons and property includes police, fire, and municipal court expenditures. As is true for many municipalities, these are a dominant share of operational expenditures. The 2016 total of \$13.5 million represents 26.7 percent of all expenditures and 49.4 percent of governmental activities expenditures. Expenditures are up 115 percent after inflation since 1999. As is true of other categories of expenditures, personnel costs comprise the lion’s share of the total: \$10.1 million in 2016. Partially offsetting these expenditures are fines, costs, and seizures of

property, fire and emergency medical service contracts, and special-purpose grants; these revenues are included among those discussed above.

Transportation. Transportation expenditures include those for street, sidewalk, and bridge construction, repair and maintenance, snow removal, and street lighting. These expenditures totaled \$5.2 million in 2016, 10.3 percent of all expenditures and 19.1 percent of expenditures for governmental activities.

General Government. General government expenditures include those for administrative functions such as City Council, the City Manager, the Law Director, human resources, and information technology. The \$4.9 million in expenditures in 2016 accounted for 9.7 percent of all expenditures and 17.9 percent of government activities expenditures.

Community Environment. Community environment expenditures are focused on improving the attractiveness of the city. These include expenditures on parks, the neighborhood stabilization program, and the new street tree fund. These initiatives help to attract and retain residents and businesses, providing support for income tax revenue growth. They also positively impact property values: analysis has shown that 40 to 50 percent of the value of a specific property is a function not of the characteristics of the property itself but of its surroundings. Thus, these expenditures promote increases in property tax revenues over the long term. Some of these expenditures are supported by grant funding. The \$1.9 million spent in this category is 3.8 percent of total expenditures and 7.1 percent of expenditures for government activities.

Other Government Activities Expenditures. Three other categories of government activities expenditures together make up 3.6 percent of the total. These include leisure time activities, including operation and maintenance of the pool, recreation, and city events; expenditures promoting public health; and interest on borrowings.

Marysville Utilities – Business-Type Activities. Expenditures related to sewer, water, stormwater, and sanitation utilities accounted for 46 percent of total expenditures in 2016 – a total of \$23.3 million. This expenditure was more than offset in that year by the \$30.3 million in user fees and other revenues. This is by design, which is why these are referred to as “business-type activities.” Fees are intended to cover the operation of utility services and the portion of capital projects that is not covered by grant funding. Because of the variability of capital expenditures, expenditures exceed revenues in some years. The charges for services must cover not only the current year’s expenditures but also provide funding for these net loss years.

Sewer service expenditures made up 64.4 percent of total utilities expenditures and 29.6 percent of all expenditures in 2016. The \$15 million in expenditures was mostly offset by \$14.2 million in charges for these services. Water system expenditures comprised 26.1 percent of utilities expenditures and 12 percent of total expenditures. The nearly \$6.1 million in expenditures compared to \$10.3 million in charges. The \$1.47 million in sanitation expenditures in 2016 was 6.3 percent of utilities outlays and 2.9 percent of total expenditures, and was defrayed by \$1.68 million in charges. The \$752,000 in stormwater management made up the smallest share of these expenditures – 3.2 percent of utility expenditures and 1.5 percent of total 2016 expenditures. Charges for stormwater services totaled nearly \$748,000 in 2016.

Assessment of Marysville's Fiscal Sustainability

Evaluating the fiscal sustainability of Marysville essentially involves projecting revenues and expenditures forward a number of years and determining whether revenues continue to provide adequate coverage for expenditures. While it is possible that expenditures will exceed revenues in years when major capital projects are undertaken and in economic downturns, if revenue coverage becomes inadequate even in normal years and in the long term, the budget is said to be in "structural imbalance." This implies that either revenues must be increased, expenses must be cut, or the City will be forced eventually to curtail public services. The result of this analysis for Marysville is that no such problem likely exists.

Estimation Approach

The Marysville Finance Department provided complete accounting records from 1999, including 2017 forecasts and projections through 2023. The historical revenue and expenditure totals and the 2017 forecasts (but in most cases not the Department's projections for later years) were used to derive projected values through 2027. These formed the basis for the fiscal analysis. The implicit assumption of this stage of the fiscal analysis is that growth in the future continues as it has in the past, both in the rate and type of growth. This assumption will be relaxed in assessing the fiscal impact of future development proposed in the Comprehensive Plan.

Growth in income and outlays is a function of both inflationary impacts and growth in population or households. Inflation distorts the analysis so all revenues and expenditures must first be restated in constant-dollar terms. This is done using the broadest available measure of inflation, the Gross Domestic Product (GDP) Implicit Price Deflator from the U.S. Bureau of Economic Analysis. The 2017 forecasts and later years' projections (where these are used) are adjusted using the June 2017 10-year projections of the GDP Deflator from the Congressional Budget Office.

The strategy is to relate all revenues and expenses to Marysville's growth. As discussed earlier, some revenues and expenditures, such as some administrative expenditures, are fixed and do not respond to population increases. Others, such as utility revenues and recreation expenses, increase as population increases. Some revenues and expenditures, such as utility revenues, are more a function of population growth while others, such as street maintenance expenses and income tax revenues, are more a function of dwelling unit (i.e., household) growth. It might be argued that income tax revenues in particular are a function both of household and business growth, but many businesses in Marysville serve Marysville households, so it can be argued that business growth itself depends on household growth. In the cases where businesses serve a larger market, such as manufacturing and distribution companies, revenues and wealth flow into the Marysville economy from a regional, national, or international area. The citizens of Marysville ultimately benefit, income tax revenues per household increase, and the need to rely on citizens to fund expenditures decreases.

The question becomes whether to base the analysis on population or household growth. The fact that Marysville's average household size has remained remarkably stable over the past 25 years makes this question largely academic; the two growth rates are roughly the same. It can be argued that household growth is ultimately a better benchmark than population growth because a household represents a unit of consumption and because growth in dwelling units is the driver of many of these financial effects. Thus, the assessment requires both an annual estimate of the number of households from 1999 and projections to 2027.

The Census Bureau provides annual estimates of population for all cities and villages including Marysville, but these do not include estimates of households. A household count is available from the 2000 and 2010 Censuses and the Census Bureau's American Community Survey, however. The strategy to derive historical annual household estimates is to calculate the average number of people per household from the 2000 and 2010 Censuses, and the 2006-2010 and 2011-2015 averages from the American Community Survey, and use the results to derive a trend and an annual estimate of people per household. The number of people per household at these discrete points and five-year averages is interpolated to produce an annual series; the people per household for each year is divided into the annual population estimate to obtain an annual historical estimate of households.

Projections at five-year intervals are available for population but not households, and for counties but not cities. These projections for Ohio counties are available from two sources: the Ohio Development Services Agency (ODSA) and the Scripps Institute of Gerontology at Miami University. Both are based on the 2010 Census, but differ considerably largely as a result of different assumptions regarding net migration into the state and its counties. For Union County, the ODSA projections are lower than the Scripps projections: the ODSA projection of Union County's population in 2025 is 63,900, while the Scripps projection is 70,900. However, the ODSA's 2015 projection comes closest to the Census Bureau's estimate for that year: a projection of 55,990 versus a Census estimate of 54,315 and the Scripps projection of 58,530. Consequently, the ODSA projections are used for the analysis. The Union County population in 2027 is projected to total 66,182.

These Union County population projections must be translated into Marysville household projections. This is accomplished by first deriving and projecting the share of Union County population within Marysville to project the city's population and then projecting the number of people per household in Marysville to project the number of households.⁷ The share of Union County's population in Marysville is charted in Figure 3. As the figure shows, Marysville's population share is assumed to continue to drift upward as it has in recent years. In reality, however, at least two forces might affect this share over the next ten years. The urbanized area of Columbus and its suburbs might continue to spill into southeastern Union County as it has into southern Delaware County, with the result that Marysville's share of Union County's population would decrease (but Union County's population would then exceed the projection, perhaps significantly). On the other hand, larger, denser housing developments, such as the recently-announced Woodside project, could increase the Marysville percentage and perhaps reduce the number of people per household. (Note that because this analysis is based on current conditions, the Woodside project is relevant but other changes contemplated in the strategic plan are not.)

The Marysville population percentage times the Union County projected share provides the projected Marysville population. This population projection is divided by people per household to project the number of households. Historical and projected population and household totals are shown in Figure 4. Population increases from its 2016 total of 23,406 to 28,194 in 2027. Households increase from an estimated 7,776 in 2016 to a projected 9,493 in 2027.

⁷ The analysis also reflects the fact that a small and declining percentage of the total population resides in institutions and not in households. This totaled 14.5 percent of the Marysville population and 6.8 percent of the Union County population in 2010.

Figure 3
Historical and Projected Percentage of Union County Population in Marysville

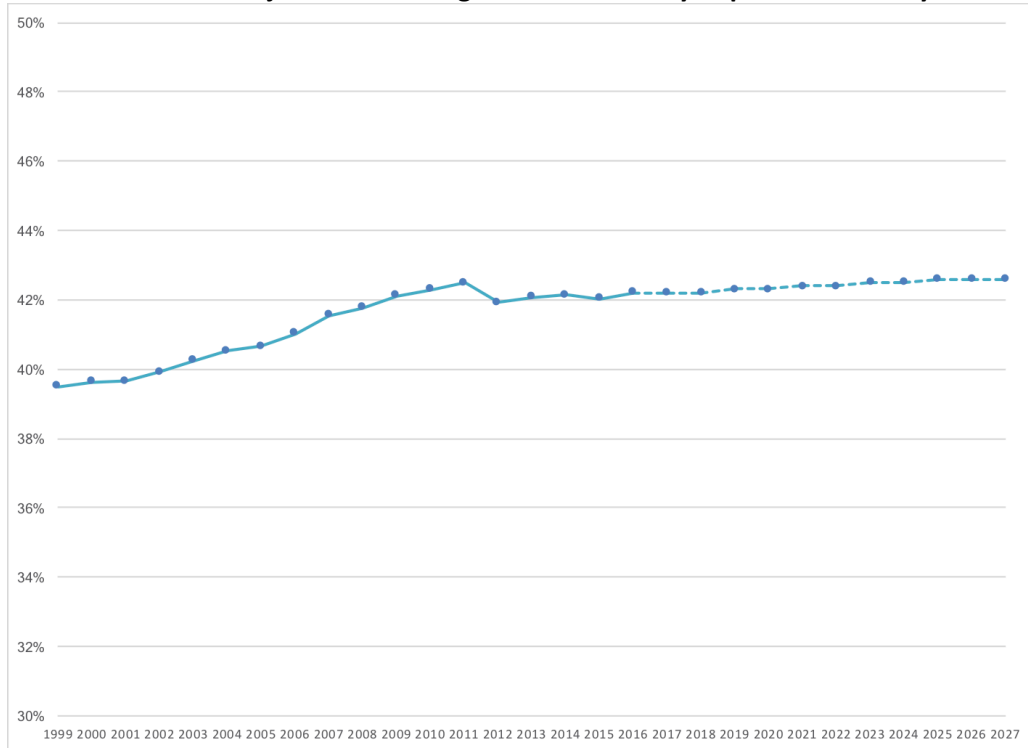
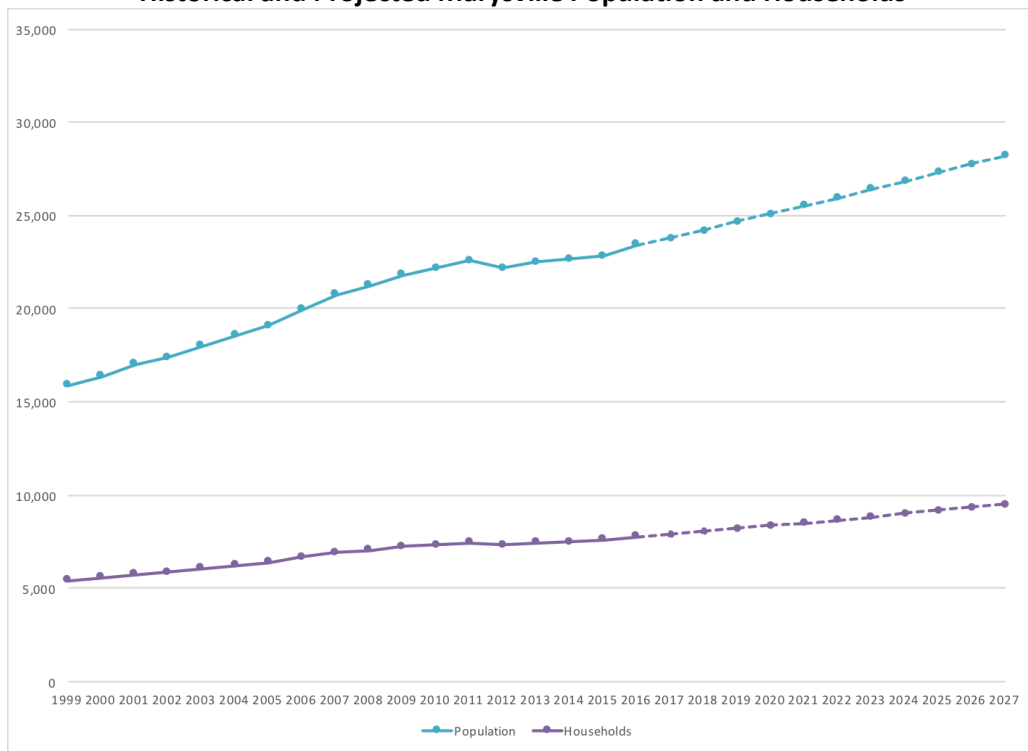


Figure 4
Historical and Projected Marysville Population and Households



Note: Dashed lines indicate Regionomics projections.

Fiscal Sustainability Calculations

As stated above, the sustainability assessment is based on inflation-adjusted revenues and expenditures per household. If projected expenditures remain greater than revenues over the long term, then the budget is in structural imbalance. Revenues and expenditures are grouped by function, but not necessarily by fund. Expenditures are evaluated on a net basis, with related revenues offsetting the expenditures. For example, fines and court costs offset court expenditures, utility revenues offset utility expenditures, and grant funding offsets the expenditures that it supports. Relating these revenues to their associated expenditures affects the absolute position of the revenue and expenditure lines but not their relative position. In other words, the difference between projected revenues and projected expenditures is the same as it would be if all revenues had been grouped together and expenditure had been considered on a gross basis.

The evaluation of operating expenditures is straightforward, but the evaluation of capital expenditures is less so. The relevant spending is not the purchase of the capital asset itself but the principal and interest payments and/or grant or TIF revenues that support the purchase. Principal and interest payments are highly variable from year to year, which would make the trend analysis of annual expenditures unreliable. Accordingly, principal and interest expenditures together with capital grants and TIF revenues are analyzed as a five-year moving average. A particular year's expenditure is the average of the current year, the previous two years, and the following two years.

Trends are developed for each of the 24 aggregated revenue and expenditure category by ordinary least squares regression, including all previous years and the 2017 Finance Department forecasts. The projections generally come from these regression trends rather than the projections of the Finance Department, except in cases where those projections indicate a major increase or decrease in the amount within the next three to four years.

Figure 5 shows the analysis of operating revenues and expenditures, while the analysis including the financing of capital assets are shown in Figure 6. The per-household amounts are multiplied by the household estimates to derive totals (in 2016-equivalent constant dollars). The operating estimates show that the revenues exceed expenditures in all years. Note that because the financing expenditures are five-year moving averages, Figure 6 begins in 2001 rather than 1999. (Financing expenditures are projected through 2029.) It is worth noting that the only negative impact of the 2007-2009 recession was an 11.8 percent inflation-adjusted decline in revenues in 2009 and flat revenues in 2010. Again, this only represents the City's operating position.

One reason for the rather muted impact of the worst economic downturn since the 1930s might well be the degree to which Marysville relies on taxes from residents, who are employed throughout the region in a wide variety of occupations and industries. The number of jobs within Union County declined by a larger-than-average 9.4 percent between 2008 and 2010, but the decline throughout the Columbus MSA was only 5 percent from its 2007 peak through 2010. A partial or full income tax credit for Marysville residents would doubtless have led to a much larger impact on the City's revenues.

Figure 6 demonstrates the reason why maintaining a positive operating position is necessary. Large street and wastewater capital expenditures resulted in substantial increases in debt service and an excess of net expenditures between 2004 and 2015. This is a temporary situation and does not indicate a structural imbalance. Under the assumption that population, housing, and business growth continues

in its current patterns, the projected position is highly favorable. This assumes that large unanticipated capital needs do not create the need for significant borrowing, but the positive underlying position will help the City to support these needs without detrimental effects on services and residents' quality of life.

Figure 5
Structural Balance Analysis – Operating Revenues and Net Expenditures

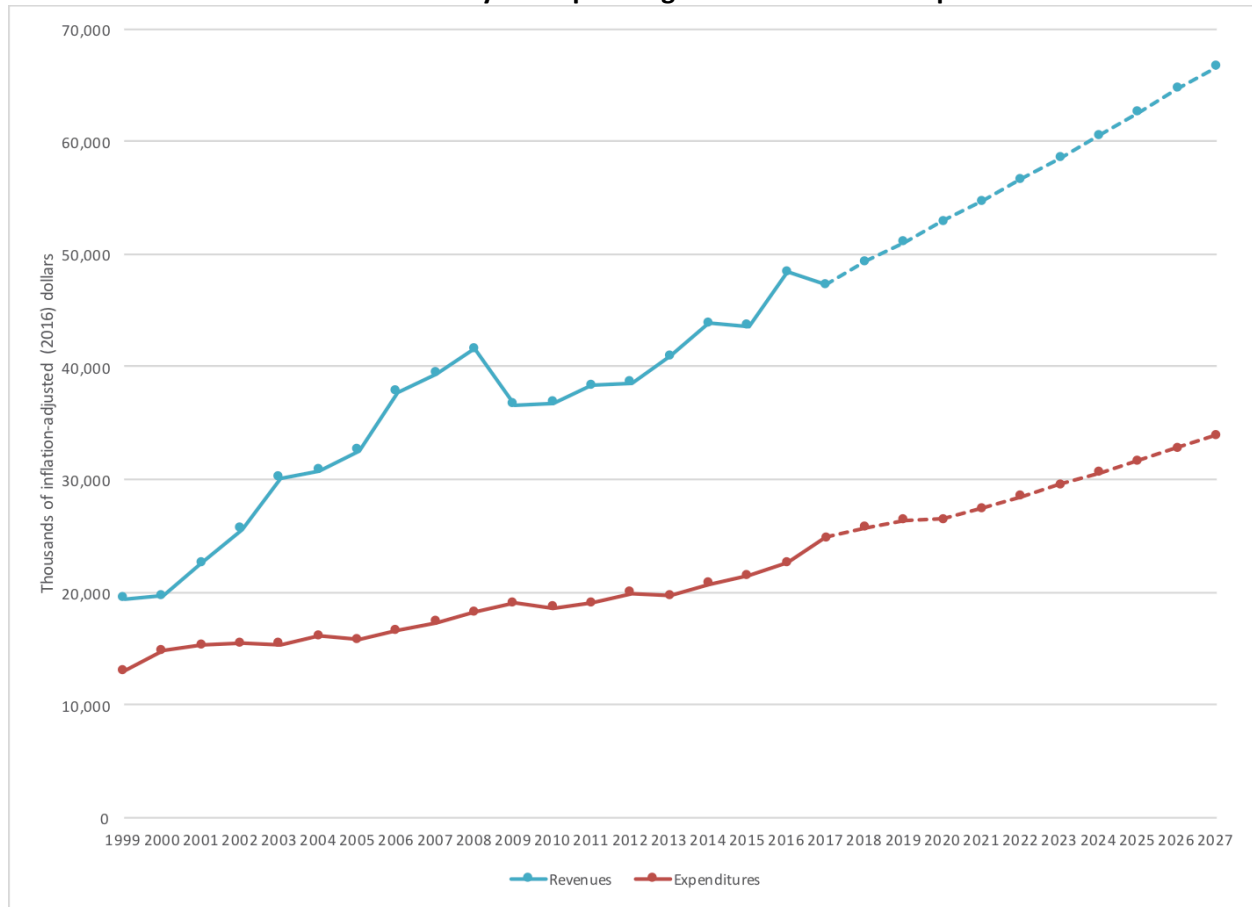
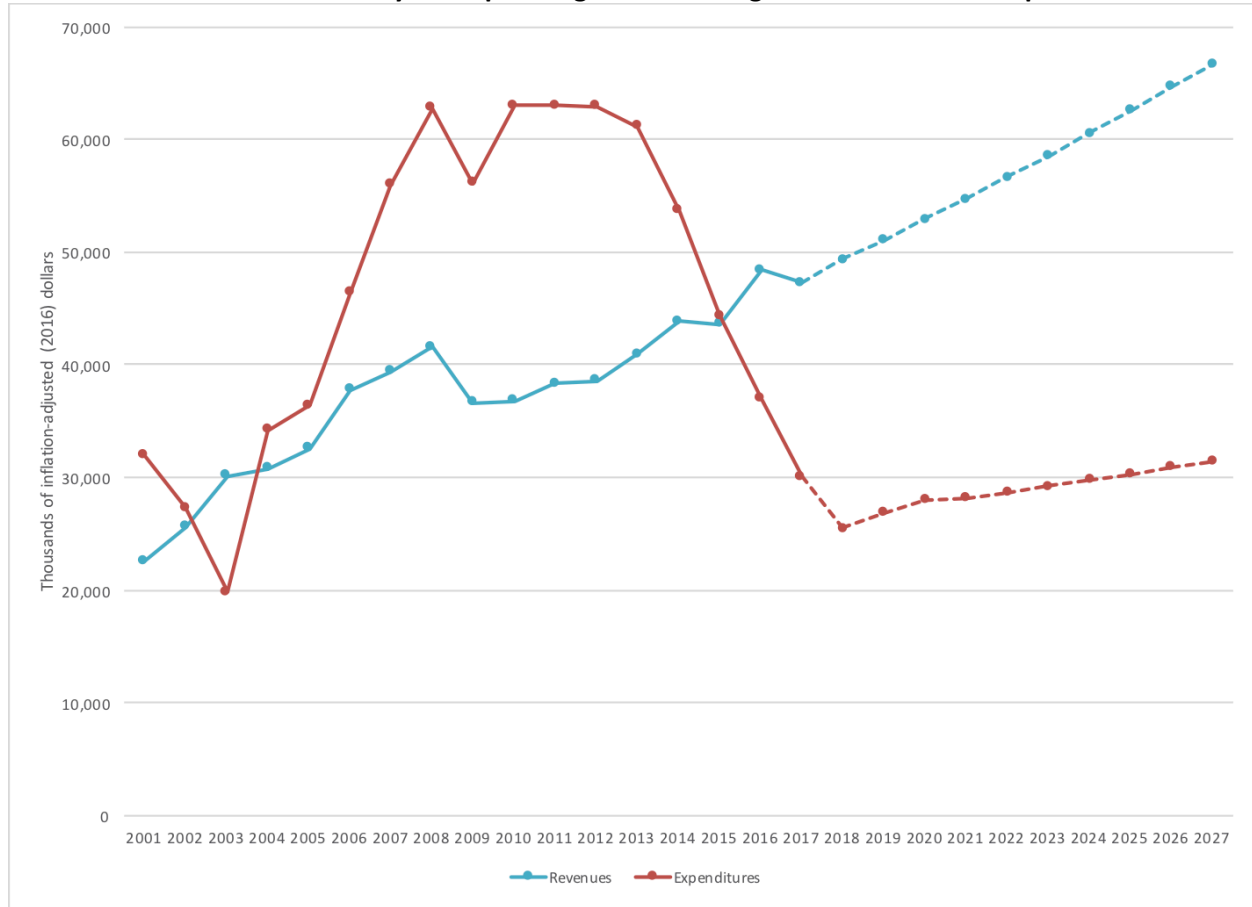


Figure 6
Structural Balance Analysis – Operating and Financing Revenues and Net Expenditures



THE FINANCIAL IMPACT OF PROPOSED DEVELOPMENT

The preceding analysis was based on the assumption that Marysville population and employment growth continues on its current trend. But the development proposed in this plan represents a break in that trend. This acknowledges that the changes in the growth rate and type and size of households predicted in the *Insight 2050* study will impact Marysville. The question is whether the development coming out of those changes will be positive or negative for the City's fiscal position. This requires a different type of analysis from that in the previous section – one focused on revenues and expenditures that will increase as population increases. Some revenues and many expenditures are fixed, meaning that they do not increase as the levels of population and development increase. Examples are income and property tax revenues, salaries for supervisory staff, expenditures for building maintenance, and principal and interest payments on already-existing debt. On the other hand, grant revenues, wages of hourly staff, maintenance costs of roadways, and expenditures on routine supplies do increase with more homes, businesses, and residents. These are called variable revenues and expenses. As population increases variable net revenues, the burden of fixed expenses is spread out among more people.

At least conceptually, fixed revenues and costs will not increase with development, but this is not to say that these amounts will never change. As the lane miles of city streets increase, the maintenance department may eventually need additional vehicles. As staff hours increase, additional supervisors may need to be hired. As population increases, additional grant funding may be attracted. But these impacts do not necessarily occur, and unlike impacts such as income tax revenues and the additional hours of support staff, they do not occur in a predictable, regular way. Limiting the analysis to impacts that are directly traceable and related to development and population growth measures the extent to which the type of development is able to sustain fixed costs. The conclusion of this analysis is that different types of development have decidedly different impacts on the coverage of fixed costs.

The Plan considers single-unit residential, multiple-unit residential, industrial, neighborhood retail, medical office, and general office. It is assumed that the detached houses (a total of 2,000 to 2,400) will be constructed in new developments, while the 1,400 to 1,500 units in multiple-unit structures will largely be infill. Because the homeownership rate in Marysville is a relatively high 63 percent, it is assumed that a portion of these units will be condominiums owned by their occupants. The ownership of these units is irrelevant from a planning standpoint, but it does matter from the standpoint of fiscal analysis because condo residents generally have higher incomes – and thus generate higher taxes – than apartment dwellers. These units will be an attractive option for empty-nesters wanting to downsize and remain in Marysville.

Projection of Income and Property Value

It is assumed that industrial development will total 10.3 million square feet over the next 20 years. Net neighborhood retail development will total around 175,000 square feet, composed of new development net of new retail that occupies existing space. Medical office and general office will total 125,000 and 250,000 square feet, respectively. These totals assume employment growth averaging 1 percent per year, with the amount of general office in particular reflecting the increasing trend toward telecommuting and virtual offices. All residential and commercial development is assumed to follow a smooth trend from 2018 through 2037 with the number of new residential units and the square footage of new commercial development increasing approximately 1 percent per year. Because this is a long-run

analysis, no adjustments are made for pending projects or for economic cycles, which will cause fluctuations in the pace of development from year to year.

The projection of costs is based on population and employment. Relying on population rather than the number of households allows resident costs to reflect the smaller size of condo owner and renter households compared to the size of households occupying detached owner units. The average size of Marysville owner households in 2012-2016 was 2.82 and renter households averaged 2.19, according to the American Community Survey. This is the assumed size of households in 2018; condo households are assumed to be equal in size to renter households. Consistent with *Insight 2050* and other studies that predict decreasing household size in coming years, average household size of all three types is assumed to decline by 0.25 percent per year. Appendix Tables A-1, A-2, and A-3 provide the number of new and total units, household size, and population for single-unit houses, condos, and apartments, respectively.

Projections of household income and dwelling value are required to estimate income and property tax revenue. It is assumed that the income of the households occupying the detached homes is \$91,500, or 10 percent greater than the median income of Marysville homeowners as reported in the Census Bureau's American Community Survey. The house value of these homeowners can be inferred by relating value to income. According to the 2011 American Housing Survey from the Census Bureau, the home value of owner households in the Columbus MSA was on average 2.2 times household income. This implies a home value of \$203,600. The value of each condo unit is assumed to be \$175,000; applying the same 2.2 ratio implies household income of \$79,500. Apartment rental is assumed to be \$1,250 per month, the approximate rate of newer properties in the area. According to the American Community Survey, the share of total income spent on rent by Marysville renter households averages 26 percent, implying annual income of \$57,700. Applying the 2.2 ratio to income suggests a value per unit of \$127,000.⁸ Values of existing properties depreciate over time: owned properties depreciate 1 percent per year; rental properties depreciate 1.5 percent per year.

The employment, wages and salaries, and property values for industrial, retail, medical office, and general office properties are needed in order to estimate taxes for those developments. The strategy is to estimate employment on the basis of square footage using benchmarks developed by Regionomics, and calculate income from those estimates using average Union County wages for the specific industry or industries.⁹ Increased efficiencies will decrease the employment per square foot over time. This decline is assumed to be 0.5 percent per year for industrial properties and 0.25 percent per year for all other types. Land and building values per acre and square foot are derived from analysis of County Auditor records for comparable properties. Existing property values depreciate 2 percent per year. Appendix Tables A-7 through A-10 reveal the resulting property values for each of the four property types.

⁸ The 2.2 ratio applies to owners, not renters; there is no comparable ratio for renters. Applying the ratio to apartments may understate their value: renters may be renting in order to attain a higher housing value than they would be able to purchase.

⁹ Apartment complexes are commercial developments and generate income taxes in the front office as well as in the rental units. Employee taxes are minor compared to the residents' taxes, however. Regionomics' analysis finds that employment in apartment complexes averages only 2.25 per 100,000 square feet at an average wage of \$43,075.

Projection of Revenues, Costs, and Net Fiscal Impact

The final step in the analysis is to use the household population and income, wages, and property values derived above to estimate the net revenue impacts on the Marysville budget. As discussed in the introduction to this chapter, the analysis is based on variable revenues and costs and excludes the fixed costs that do not change predictably as population or employment increase. Because these costs are fixed, it is incorrect to include them in the analysis. Doing so asserts that these costs are increasing over time as if their changes were directly population or employment-dependent, which they are not. The resulting net revenue is the degree to which the particular development type helps or hinders the ability to cover fixed costs, capital expenditures, and infrastructure needs. An illustration of how the results can be applied concludes the chapter.

Estimation of the primary general revenues, income and property taxes and franchise fees, is straightforward given the projection of population, income, and property value. The business-type utility revenues are based on usage and parcel coverage as discussed below. Identifying the variable cost impacts involves classifying each individual account within a given cost category as fixed or variable and summing the variable costs to derive a total variable cost per resident and employee (net of variable revenues where appropriate). The resulting per-capita cost is averaged over as many years as possible and the result applied to the population or employment of each residential or commercial property type over the 20-year projection period.

Because Marysville offers no credit for residents' income taxes, these taxes are calculated by multiplying all residential income and business wages by the 1.5 percent municipal income tax rate. Because only wage income is taxable, non-wage income must be deducted from total income. According to the Internal Revenue Service's Statistics of Income, wage income at the income level of the owners of detached homes is on average 75.2 percent of total income. For both condo owners and renters, the average is 77.5 percent. These percentages are multiplied by assumed total income and income taxes are figured on the remainder. Cable TV franchise fees are calculated on a per-household rather than a per-capita basis.

Property taxes are derived by multiplying the property value by the effective tax rate. Ohio law specifies two different classes of property which are typically charged different rates. Type I property is residential and agricultural; Type II property is commercial, including larger rental apartment buildings. The law limits the increase in property taxes that would be earned solely from property value increases. This makes the actual tax rate (the effective rate) different from the stated rate. Also, taxes are assessed on only 35 percent of the estimated market value of all properties. The effective property tax rates are calculated by obtaining the allocation of taxes by entity for a sample of Type I and Type II properties in Marysville from the Union County Auditor's website, summing the taxes across the categories paid to Marysville, and dividing the result by the market value. This approach reflects both the effective rate modifications and the 35 percent assessment rate. The result is a municipal property tax rate of 0.1418 percent for Type I property and 0.1575 percent for Type II property. Industrial and office properties are assumed to receive a 10-year, 75 percent property tax abatement on the value of improvements. Retail properties receive no abatement.

General government expenditures per capita are estimated for the principal categories that have a substantial variable component: street maintenance and repair, police, fire, courts, parks and recreation, and engineering and the Maintenance and Operation Center. The detached homes are a special case with regard to streets because their development, unlike that of the other property types,

requires the development of a substantial number of new streets. OHM estimates that the development of the projected number of new houses will require 34 lane miles of new streets (17 miles of two-lane streets). Thus, this development is charged for the maintenance and repair of these new streets as well as that of the existing street network. This is accomplished by calculating a variable cost per lane mile and pro-rating this marginal street maintenance cost among the new houses. If the city were responsible for the cost of these new streets and the utility lines, then the debt service related to their cost would have to be included as well. This would substantially increase the cost of this development category. Marysville leadership indicates, however, that they expect to require the developer to bear these costs. If this is not the case – or if the city’s property taxes are diverted by a Tax Increment Financing (TIF) arrangement – then the marginal impact on the budget will be more negative than that calculated here.

Other expenditures are calculated on a per-capita basis. The per-capita rates are generally constant over time (implicitly producing values that are adjusted for inflation). The inflation-adjusted rate for fire and EMS services has had a steady upward trend over a number of years because the aging population has required a larger number of EMS runs. The trend is continued on per-capita totals for the first 10 years and one-half the trend is applied to the totals during the second 10 years. Commercial development has the same per-capita impact on street maintenance as does residential development, but these development categories are charged 30 percent of the full per-capita rate on the assumption that employees use a reduced level of safety and recreation services.

The city provides water, wastewater, sanitation, and stormwater services to residential customers and each of these except sanitation to commercial customers. Revenues and costs are calculated on the basis of direct billing for these services. The Public Service Department reported the average monthly household utility bill, which was expressed on a per-capita basis to reflect the difference in owner and condo/renter household size. Typical billings for sanitation and wastewater for different types of commercial properties were converted to a per-square-foot basis in order to calculate the revenues from each type of development. Stormwater charges are assessed on the basis of the square footage of impervious surfaces (roof and pavement), where one Equivalent Residential Unit (ERU) is equal to 2,700 square feet. The roof coverage and pavement area were collected for a large number of commercial properties in each development category and the average ratio of pavement to roof was calculated to apply to the square footage of building so that ERUs could be calculated for each of the development types. Variable expenses were calculated for each category of service and the percentage of variable expenses to service charges to estimate variable expenses.

Figure 7 shows the net impact on net government revenues of each of the three residential property types. Note that the development of detached houses is far less favorable for the City’s fiscal position than the developments of multi-unit structures because of the higher infrastructure maintenance costs. An important point is that even in the case of apartments, the positive net impact does not imply that the more development of these structures occurs, the better off the City will be. Uncontrolled development will tax the government’s ability to provide services to all residents and will necessitate large amounts of capital spending that could quickly result in an adverse impact. Also, the pace of development is obviously limited by market demand.

Figure 7
Marginal Impact of Residential Property Types on General Government Net Revenue

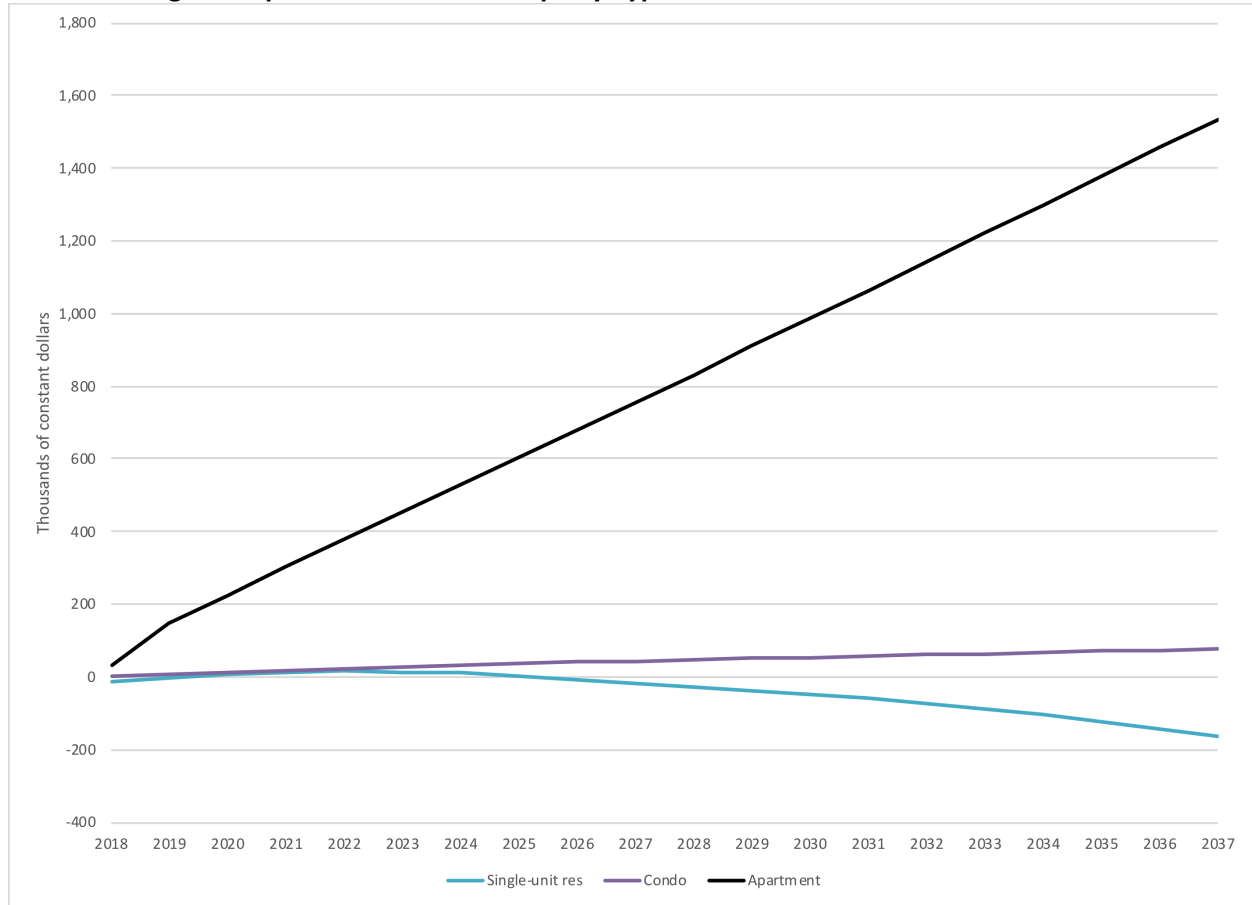


Figure 8 graphs the impact of industrial development and Figure 9 shows the impact of the other three property types. The industrial is shown separately because it is so much larger than the other impacts in part because of its large scale. The industrial impact rises to more than \$6 million (in 2018-equivalent dollars) after 20 years. But each of these property types provides a net marginal benefit to the City budget.

Figure 8
Marginal Impact of Industrial Development on General Government Net Revenue

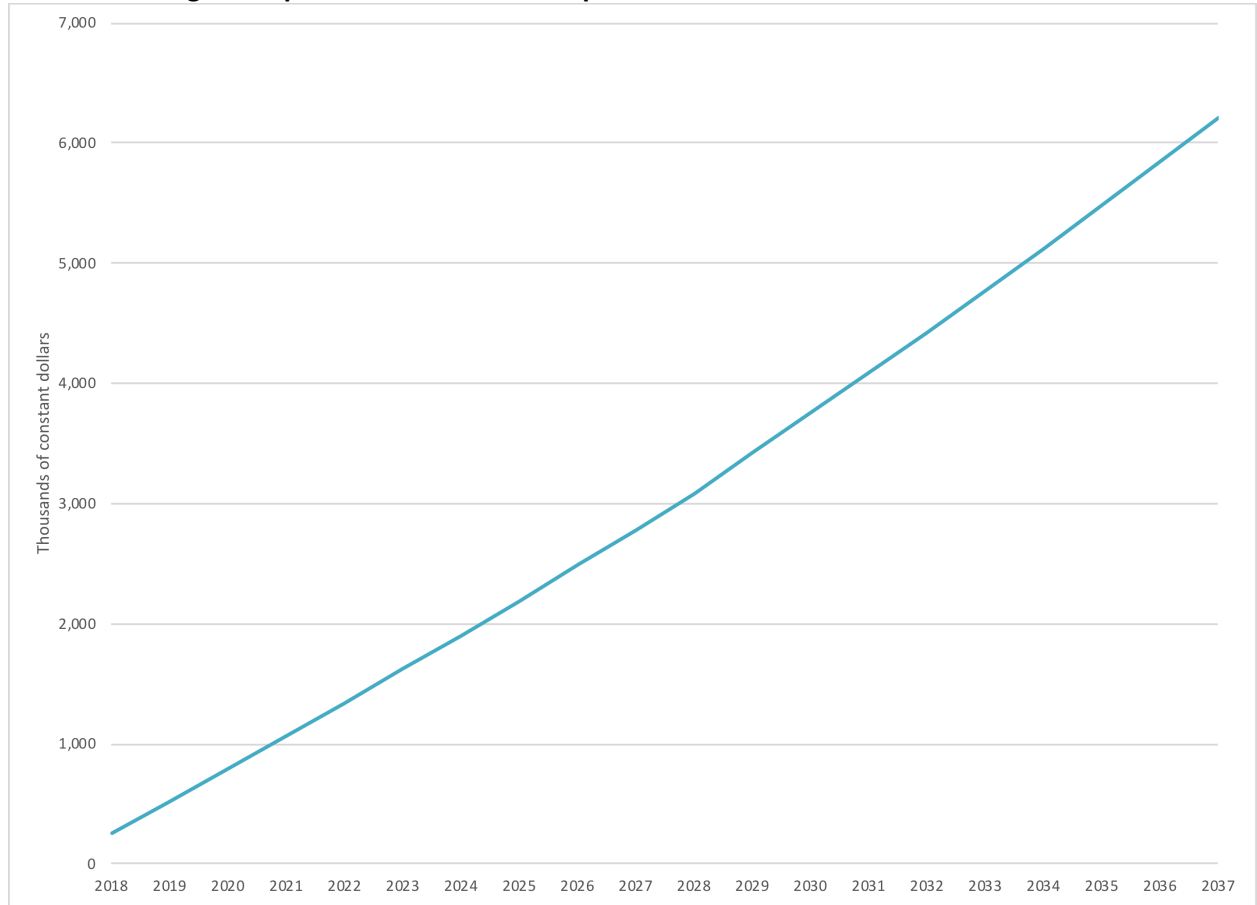
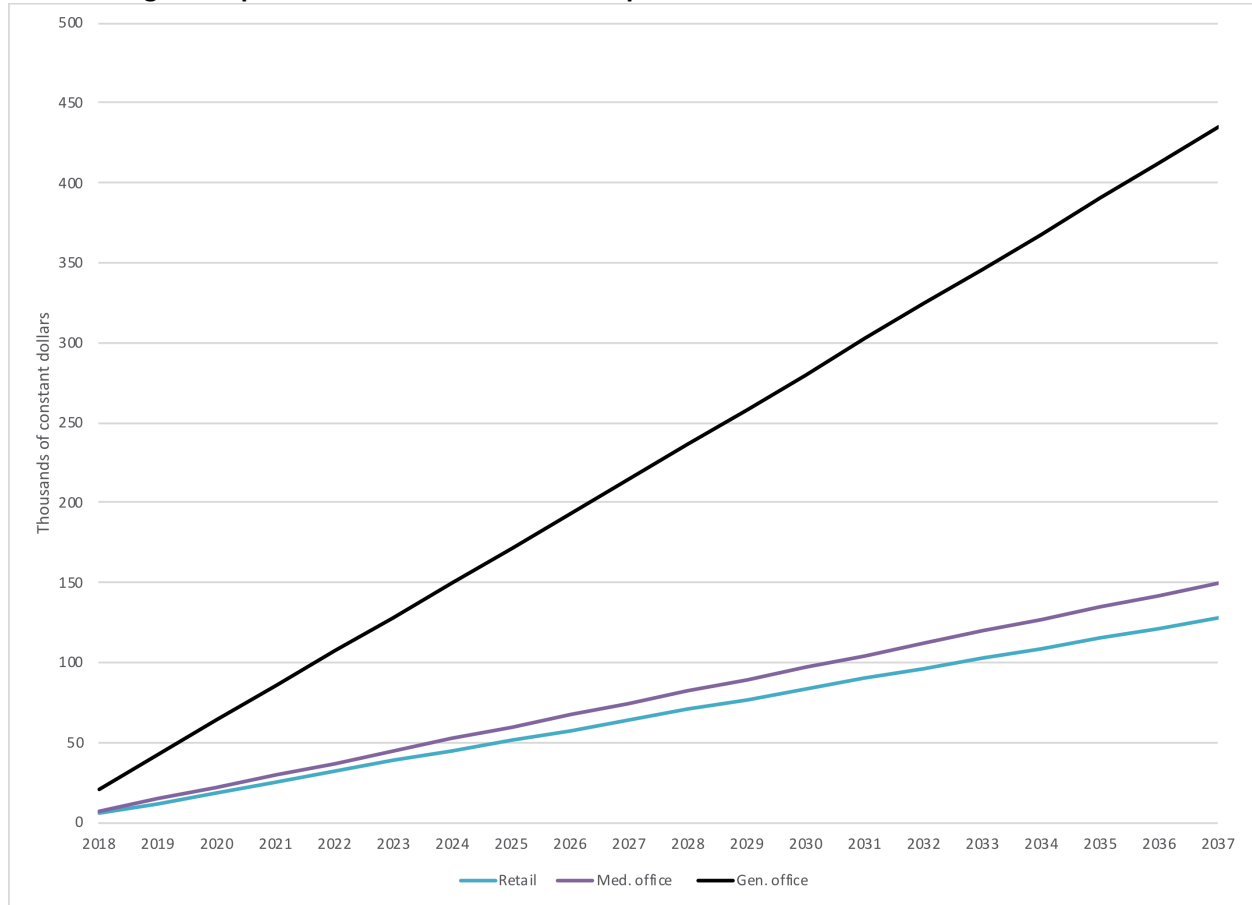


Figure 9
Marginal Impact of Retail and Office Development on General Government Net Revenue



A series of tables in the Appendix (Tables A-11 through A-17) provides details on the marginal net revenue calculations, including both the general government net revenues graphed in Figures 7, 8, and 9 and the business-type net revenues. To save space, only five years are presented: 2018 (the first year of the planning horizon), 2023, 2028, 2033, and 2037 (the final year). An important insight from the three residential development tables is that the condo and apartment development provides a positive marginal impact to the budget only because of the lack of income tax credit. If Marysville did not require residents to pay income taxes regardless of where their wages and salaries are earned, all three housing categories would have a substantially negative impact on the general government budget, even including the net positive impact of the business-type activities. A second point is that property taxes are zero in the first year. This is because property taxes begin in the year after the property is placed in service. Finally, the net cost of the Municipal Court is negative (i.e., it has a positive impact on the budget). The Court is not in reality a profit center; the calculated negative cost is an effect of the fact that all revenue from fines and court fees is credited to the Court. These fines are intended to defray operating expenses of both the Court and the Police Department, so in fact the net cost of the Court is understated and the net cost of the Police Department is overstated by an equal amount.

Application of the Impacts

As has been repeatedly emphasized in the previous sections, the development impacts represent the marginal contribution of development to the funds available for the coverage of fixed costs, the purchase of capital goods, and the development of infrastructure. This section will provide an example of how those findings might be applied. The City will soon replace its outmoded water plant with a new facility. To what extent is the cost of this new facility applicable to the new development covered by the net revenues from that development?

The new plant is projected to cost \$62 million. The City currently has cash reserves in the three water enterprise funds of around \$24 million, \$12 million of which will be drawn to finance the project. The remaining \$50 million will be 30-year bonds at a rate of 5.25 percent. The bonds will be issued in April 2018. Debt service in the first year will be \$2,484,916 and \$3,313,223 thereafter.

The net marginal utility revenues should at least cover the share of the total debt service attributable to the new development. This share is the proportion of total utility revenues (current and additional) that the new development will generate. The 2018 budget for these revenues (excluding those that are set aside for other purposes) is \$18,871,043. The residential, industrial, retail, and office utility revenues are estimated to be \$429,248. Total revenues including the new development are \$19,300,290; revenues from the new development are 2.2 percent of this total. This implies that the utility revenues less the marginal expenses of the new development need to cover 2.2 percent of the debt service, or \$153,273, in the first year.

Table 16 shows the calculation of coverage of the debt service for the first five years. The percentage that the new development must cover increases as development continues. Because the analysis is conducted in inflation-adjusted dollars, the total utility revenues are constant over time and the debt service is expressed in 2018-equivalent dollars using the Congressional Budget Office's projected Gross Domestic Product Implicit Price Deflator. Because the debt service is constant in current-dollar terms, it declines in inflation-adjusted terms. By 2021, the \$1.735 million in business-type revenue of the new development represents 8.4 percent of the \$20.606 million total revenues. The net marginal business-type revenues (service charges less variable expenses) from the new developments are \$1.128 million. This is the amount to cover fixed costs, including the water plant debt service. The share of debt service that must be covered is 8.4 percent of \$3.122 million, or \$580,200. Thus, the water plant obligation is completely covered, and \$547,900 remains to cover other fixed costs and add to reserves. Note that the excess revenues in previous years provided the reserve balances that allow the City to self-finance nearly 20 percent of the cost of the project. Without these reserves, debt service would have been greater and more difficult to cover. Finally, the greater efficiencies that the new water plant will provide may decrease both fixed and variable expenses and make the excess even greater than is shown here.

Table 16
Coverage of the Marysville Water Plant Debt Service
All dollar amounts adjusted for inflation

	2018	2019	2020	2021
1. Total debt service	2,484,916	3,248,258	3,184,566	3,122,123
2. Total business-type revenues – existing	18,871,043	18,871,043	18,871,043	18,871,043
3. Total business-type revenue – new development	429,248	861,068	1,296,639	1,734,792
4. Business-type revenue – new and existing (2 + 3)	19,300,290	19,732,110	20,167,682	20,605,834
5. Share of debt service to cover (3 ÷ 4)	2.2%	4.4%	6.4%	8.4%
6. Amount of debt service to cover (1 × 4)	153,273	300,735	443,082	580,200
7. Net marginal business-type revenue – new development	279,026	559,813	843,070	1,128,098
8. Excess for other purposes (6 – 5)	125,753	259,078	399,988	547,897

Appendix Table A-1
Detached Houses: Number of Units, Household Size, and Population, 2018-2037

Year	New units	Total units	Household size	New population	Total population
2018	101	101	2.82	285	285
2019	102	203	2.81	287	571
2020	103	306	2.80	288	860
2021	104	410	2.79	290	1,150
2022	105	515	2.78	292	1,442
2023	106	621	2.77	294	1,736
2024	107	728	2.76	295	2,031
2025	108	836	2.75	297	2,328
2026	109	945	2.74	299	2,627
2027	110	1,055	2.73	300	2,927
2028	111	1,166	2.72	302	3,229
2029	112	1,278	2.71	304	3,532
2030	113	1,391	2.70	305	3,837
2031	114	1,505	2.69	307	4,144
2032	115	1,620	2.68	308	4,452
2033	116	1,736	2.67	310	4,762
2034	117	1,853	2.66	311	5,073
2035	118	1,971	2.65	313	5,386
2036	119	2,090	2.64	314	5,700
2037	120	2,210	2.63	316	6,016

Appendix Table A-2
Condominiums: Number of Units, Household Size, and Population, 2018-2037

Year	New units	Total units	Household size	New population	Total population
2018	17	17	2.19	37	37
2019	17	34	2.18	37	74
2020	17	51	2.17	37	111
2021	17	68	2.16	37	148
2022	17	85	2.15	37	184
2023	17	102	2.14	36	221
2024	17	119	2.13	36	257
2025	17	136	2.12	36	293
2026	17	153	2.11	36	329
2027	17	170	2.10	36	365
2028	18	188	2.09	38	402
2029	18	206	2.08	37	440
2030	18	224	2.07	37	477
2031	18	242	2.06	37	514
2032	18	260	2.05	37	551
2033	18	278	2.04	37	588
2034	18	296	2.03	37	624
2035	18	314	2.02	36	661
2036	18	332	2.01	36	697
2037	18	350	2.00	36	733

Appendix Table A-3
Apartments: Number of Units, Household Size, and Population, 2018-2037

Year	New units	Total units	Household size	New population	Total population
2018	50	50	2.19	110	110
2019	50	100	2.18	109	219
2020	51	151	2.17	111	329
2021	51	202	2.16	110	439
2022	52	254	2.15	112	551
2023	52	306	2.14	111	662
2024	53	359	2.13	113	775
2025	53	412	2.12	112	888
2026	54	466	2.11	114	1,002
2027	54	520	2.10	113	1,115
2028	55	575	2.09	115	1,230
2029	55	630	2.08	114	1,344
2030	56	686	2.07	116	1,460
2031	56	742	2.06	115	1,576
2032	57	799	2.05	117	1,692
2033	57	856	2.04	116	1,809
2034	58	914	2.03	118	1,927
2035	58	972	2.02	117	2,044
2036	59	1,031	2.01	119	2,162
2037	59	1,090	2.00	118	2,280

Appendix Table A-4
Detached Houses: Income and Value, 2018-2037

Year	New income	Total income	New value	Total value
2018	9,346,732	9,346,732	20,563,600	20,563,600
2019	9,439,274	18,786,006	20,767,200	41,127,200
2020	9,531,816	28,317,821	20,970,800	61,690,800
2021	9,624,358	37,942,179	21,174,400	82,254,400
2022	9,716,900	47,659,079	21,378,000	102,818,000
2023	9,809,441	57,468,520	21,581,600	123,381,600
2024	9,901,983	67,370,503	21,785,200	143,945,200
2025	9,994,525	77,365,028	21,988,800	164,508,800
2026	10,087,067	87,452,096	22,192,400	185,072,400
2027	10,179,609	97,631,705	22,396,000	205,636,000
2028	10,272,151	107,903,855	22,599,600	226,199,600
2029	10,364,693	118,268,548	22,803,200	246,763,200
2030	10,457,235	128,725,783	23,006,800	267,326,800
2031	10,549,777	139,275,560	23,210,400	287,890,400
2032	10,642,319	149,917,878	23,414,000	308,454,000
2033	10,734,860	160,652,738	23,617,600	329,017,600
2034	10,827,402	171,480,141	23,821,200	349,581,200
2035	10,919,944	182,400,085	24,024,800	370,144,800
2036	11,012,486	193,412,571	24,228,400	390,708,400
2037	11,105,028	204,517,599	24,432,000	411,272,000

Appendix Table A-5
Condominiums: Income and Value, 2018-2037

Year	New income	Total income	New value	Total value
2018	1,351,500	1,351,500	2,975,000	2,975,000
2019	1,351,500	2,703,000	2,975,000	5,920,545
2020	1,351,500	4,054,500	2,975,000	8,836,925
2021	1,351,500	5,406,000	2,975,000	11,724,431
2022	1,351,500	6,757,500	2,975,000	14,583,348
2023	1,351,500	8,109,000	2,975,000	17,413,958
2024	1,351,500	9,460,500	2,975,000	20,216,543
2025	1,351,500	10,812,000	2,975,000	22,991,379
2026	1,351,500	12,163,500	2,975,000	25,738,741
2027	1,351,500	13,515,000	2,975,000	28,458,902
2028	1,431,000	14,946,000	3,150,000	31,327,131
2029	1,431,000	16,377,000	3,150,000	34,166,961
2030	1,431,000	17,808,000	3,150,000	36,978,675
2031	1,431,000	19,239,000	3,150,000	39,762,549
2032	1,431,000	20,670,000	3,150,000	42,518,861
2033	1,431,000	22,101,000	3,150,000	45,247,882
2034	1,431,000	23,532,000	3,150,000	47,949,883
2035	1,431,000	24,963,000	3,150,000	50,625,132
2036	1,431,000	26,394,000	3,150,000	53,273,893
2037	1,431,000	27,825,000	3,150,000	55,896,428

Appendix Table A-6
Apartments: Income and Value, 2018-2037

Year	New income	Total income	New value	Total value
2018	6,318,150	6,318,150	6,350,000	6,350,000
2019	6,289,300	12,607,450	6,350,000	12,606,158
2020	6,385,659	18,993,109	6,477,000	18,896,860
2021	6,356,232	25,349,341	6,477,000	25,094,596
2022	6,450,860	31,800,201	6,604,000	31,327,740
2023	6,420,856	38,221,057	6,604,000	37,468,768
2024	6,513,753	44,734,810	6,731,000	43,646,043
2025	6,483,172	51,217,982	6,731,000	49,732,027
2026	6,574,338	57,792,320	6,858,000	55,855,071
2027	6,543,180	64,335,500	6,858,000	61,887,627
2028	6,632,615	70,968,115	6,985,000	67,958,031
2029	6,600,880	77,568,995	6,985,000	73,938,725
2030	6,688,584	84,257,579	7,112,000	79,958,035
2031	6,656,272	90,913,851	7,112,000	85,888,389
2032	6,742,245	97,656,096	7,239,000	91,858,102
2033	6,709,356	104,365,452	7,239,000	97,739,594
2034	6,793,598	111,159,050	7,366,000	103,661,166
2035	6,760,132	117,919,182	7,366,000	109,495,228
2036	6,842,643	124,761,825	7,493,000	115,370,072
2037	6,808,600	131,570,425	7,493,000	121,158,095

Appendix Table A-7
Industrial: Development, Employment, Wages, and Value, 2018-2037

Year	New square feet	Total square feet	Empl. per 1,000 sq.ft.	Total employment	Total wage	Total value
2018	467,800	467,800	1.64	285	19,656,671	15,027,377
2019	472,478	940,278	1.63	576	39,708,450	29,929,851
2020	477,203	1,417,481	1.62	873	60,161,801	44,711,576
2021	481,975	1,899,456	1.62	1,176	81,023,265	59,376,627
2022	486,795	2,386,251	1.61	1,484	102,299,508	73,929,031
2023	491,663	2,877,914	1.60	1,799	123,997,279	88,372,739
2024	496,580	3,374,494	1.59	2,120	146,123,451	102,711,661
2025	501,546	3,876,040	1.58	2,448	168,684,987	116,949,629
2026	506,561	4,382,601	1.58	2,782	191,688,930	131,090,403
2027	511,627	4,894,228	1.57	3,122	215,142,503	145,137,737
2028	516,743	5,410,971	1.56	3,469	239,052,971	159,095,280
2029	521,910	5,932,881	1.55	3,823	263,427,733	172,966,644
2030	527,129	6,460,010	1.54	4,183	288,274,327	186,755,403
2031	532,400	6,992,410	1.54	4,551	313,600,381	200,465,066
2032	537,724	7,530,134	1.53	4,925	339,413,663	214,099,105
2033	543,101	8,073,235	1.52	5,307	365,722,036	227,660,928
2034	548,532	8,621,767	1.51	5,696	392,533,508	241,153,909
2035	554,017	9,175,784	1.51	6,093	419,856,185	254,581,358
2036	559,557	9,735,341	1.50	6,497	447,698,316	267,946,557
2037	565,153	10,300,494	1.49	6,908	476,068,301	281,252,754

Appendix Table A-8
Neighborhood Retail: Development, Employment, Wages, and Value, 2018-2037

Year	New square feet	Total square feet	Empl. per 1,000 sq.ft.	Total employment	Total wage	Total value
2018	7,950	7,950	2.72	21.6	556,165	976,817
2019	8,030	15,980	2.71	43.4	1,115,132	1,951,648
2020	8,110	24,090	2.71	65.2	1,676,869	2,924,608
2021	8,191	32,281	2.70	87.1	2,241,415	3,895,929
2022	8,273	40,554	2.69	109.2	2,808,806	4,865,842
2023	8,356	48,910	2.69	131.4	3,379,082	5,834,572
2024	8,440	57,350	2.68	153.7	3,952,277	6,802,342
2025	8,524	65,874	2.67	176.1	4,528,359	7,769,249
2026	8,609	74,483	2.67	198.6	5,107,365	8,735,509
2027	8,695	83,178	2.66	221.2	5,689,330	9,701,337
2028	8,782	91,960	2.65	243.9	6,274,289	10,666,944
2029	8,870	100,830	2.65	266.8	6,862,276	11,632,537
2030	8,959	109,789	2.64	289.8	7,453,327	12,598,320
2031	9,049	118,838	2.63	312.9	8,047,474	13,564,495
2032	9,139	127,977	2.63	336.1	8,644,683	14,531,137
2033	9,230	137,207	2.62	359.5	9,244,987	15,498,443
2034	9,322	146,529	2.61	382.9	9,848,420	16,466,607
2035	9,415	155,944	2.61	406.5	10,455,012	17,435,820
2036	9,509	165,453	2.60	430.2	11,064,796	18,406,270
2037	9,604	175,057	2.59	454.0	11,677,803	19,378,142

Appendix Table A-9
Medical Office: Development, Employment, Wages, and Value, 2018-2037

Year	New square feet	Total square feet	Empl. per 1,000 sq.ft.	Total employment	Total wage	Total value
2018	5,700	5,700	2.00	11.4	584,706	566,694
2019	5,757	11,457	2.00	22.9	1,172,321	1,130,546
2020	5,815	17,272	1.99	34.4	1,762,914	1,691,738
2021	5,873	23,145	1.99	45.9	2,356,452	2,250,348
2022	5,932	29,077	1.98	57.6	2,953,003	2,806,552
2023	5,991	35,068	1.98	69.3	3,552,534	3,360,426
2024	6,051	41,119	1.97	81.0	4,155,111	3,912,140
2025	6,112	47,231	1.97	92.8	4,760,803	4,461,864
2026	6,173	53,404	1.96	104.7	5,369,573	5,009,665
2027	6,235	59,639	1.96	116.6	5,981,487	5,555,708
2028	6,297	65,936	1.95	128.6	6,596,512	6,100,055
2029	6,360	72,296	1.95	140.7	7,214,711	6,642,868
2030	6,424	78,720	1.94	152.8	7,836,148	7,184,305
2031	6,488	85,208	1.94	165.0	8,460,788	7,724,422
2032	6,553	91,761	1.93	177.2	9,088,694	8,263,374
2033	6,619	98,380	1.93	189.5	9,719,929	8,801,312
2034	6,685	105,065	1.92	201.9	10,354,455	9,338,287
2035	6,752	111,817	1.92	214.3	10,992,334	9,874,447
2036	6,820	118,637	1.91	226.8	11,633,627	10,409,938
2037	6,888	125,525	1.91	239.4	12,278,296	10,944,804

Appendix Table A-10
General Office: Development, Employment, Wages, and Value, 2018-2037

Year	New square feet	Total square feet	Empl. per 1,000 sq.ft.	Total employment	Total wage	Total value
2018	11,350	11,350	2.10	23.8	1,611,115	1,128,417
2019	11,464	22,814	2.09	47.8	3,230,316	2,251,225
2020	11,579	34,393	2.09	71.9	4,857,653	3,368,686
2021	11,695	46,088	2.08	96.1	6,493,177	4,481,056
2022	11,812	57,900	2.08	120.4	8,136,935	5,588,589
2023	11,930	69,830	2.07	144.8	9,788,975	6,691,530
2024	12,049	81,879	2.07	169.4	11,449,344	7,790,124
2025	12,169	94,048	2.06	194.1	13,118,088	8,884,610
2026	12,291	106,339	2.06	218.9	14,795,391	9,975,322
2027	12,414	118,753	2.05	243.8	16,481,297	11,062,489
2028	12,538	131,291	2.05	268.9	18,175,847	12,146,336
2029	12,663	143,954	2.04	294.1	19,879,083	13,227,084
2030	12,790	156,744	2.04	319.4	21,591,183	14,305,050
2031	12,918	169,662	2.03	344.9	23,312,186	15,380,446
2032	13,047	182,709	2.03	370.5	25,042,129	16,453,480
2033	13,177	195,886	2.02	396.2	26,781,051	17,524,358
2034	13,309	209,195	2.02	422.1	28,529,123	18,593,378
2035	13,442	222,637	2.01	448.1	30,286,380	19,660,738
2036	13,576	236,213	2.01	474.2	32,052,856	20,726,630
2037	13,712	249,925	2.00	500.5	33,828,718	21,791,343

Appendix Table A-11
Net Revenues, Single-Unit Residential Development

	2018	2023	2028	2033	2037
General government					
Revenues					
Income tax	105,410	648,114	1,216,909	1,811,796	2,306,492
Property tax	0	145,757	291,514	437,271	553,877
Cable TV franchise fees	2,692	2,826	2,959	3,092	3,199
Government revenues	108,102	796,697	1,511,382	2,252,160	2,863,568
Expenses					
Streets-marginal	13,472	82,834	155,531	231,563	294,789
Streets-ongoing	12,867	78,405	145,863	215,128	271,765
Police	39,271	239,293	445,176	656,573	829,431
Fire	45,884	328,926	694,535	1,092,033	1,447,942
Courts	-7,608	-46,361	-86,249	-127,206	-160,695
Parks & recreation	6,729	41,003	76,281	112,504	142,123
Engineering/MOC	9,550	58,190	108,256	159,662	201,697
Government expenses	120,164	782,290	1,539,393	2,340,258	3,027,051
Net government revenues	-12,062	14,406	-28,010	-88,098	-163,483
Business-type activities					
Revenues					
Water	61,003	371,713	691,526	1,019,907	1,288,419
Wastewater	60,597	369,242	686,929	1,013,126	1,279,854
Sanitation	27,512	167,642	311,876	459,975	581,074
Stormwater	4,906	29,893	55,613	82,021	103,615
Business-type revenues	154,018	938,490	1,745,944	2,575,029	3,252,962
Expenses					
Water	18,854	114,884	213,728	315,219	398,208
Wastewater	16,750	102,061	189,873	280,036	353,762
Sanitation	24,960	152,090	282,945	417,305	527,170
Stormwater	1,356	8,263	15,372	22,671	28,640
Business-type expenses	61,919	377,299	701,917	1,035,232	1,307,780
Net business-type revenue	92,098	561,191	1,044,027	1,539,797	1,945,182
Net revenues	80,036	575,597	1,016,016	1,451,699	1,781,699

Appendix Table A-12
Net Revenues, Multiple-Unit Condominium Development

	2018	2023	2028	2033	2037
General government					
Revenues					
Income tax	15,718	94,308	173,823	257,036	323,607
Property tax	0	20,674	40,344	60,276	75,522
Cable TV franchise fees	453	2,719	5,012	7,411	9,330
Government revenues	16,171	117,701	219,179	324,723	408,459
Expenses					
Streets-ongoing	1,682	9,976	18,173	26,549	33,103
Police	5,133	30,448	55,465	81,028	101,032
Fire	5,998	41,853	86,533	134,768	176,371
Courts	-995	-5,899	-10,746	-15,698	-19,574
Parks & recreation	880	5,217	9,504	13,884	17,312
Engineering/MOC	1,248	7,404	13,488	19,704	24,568
Government expenses	13,946	89,000	172,417	260,235	332,812
Net government revenues	2,225	28,701	46,762	64,488	75,647
Business-type activities					
Revenues					
Water	7,974	47,297	86,158	125,867	156,940
Wastewater	7,921	46,983	85,585	125,030	155,897
Sanitation	3,596	21,331	38,857	56,766	70,780
Stormwater	641	3,804	6,929	10,122	12,621
Business-type revenues	20,132	119,415	217,529	317,785	396,238
Expenses					
Water	2,464	14,618	26,629	38,901	48,505
Wastewater	2,189	12,986	23,656	34,559	43,091
Sanitation	3,263	19,352	35,252	51,500	64,214
Stormwater	177	1,051	1,915	2,798	3,489
Business-type expenses	8,094	48,008	87,453	127,758	159,298
Net business-type revenue	12,039	71,407	130,077	190,027	236,939
Net revenues	14,264	100,108	176,838	254,515	312,586

Appendix Table A-13
Net Revenues, Multiple-Unit Rental Development

	2018	2023	2028	2033	2037
General government					
Revenues					
Income tax	73,481	668,363	1,254,930	1,868,403	2,378,554
Property tax	0	44,411	87,733	130,220	163,551
Cable TV franchise fees	1,333	8,157	15,328	22,819	29,057
Government revenues	74,813	720,931	1,357,991	2,021,442	2,571,163
Expenses					
Streets-ongoing	4,947	29,926	55,565	81,714	103,014
Police	15,098	91,333	169,585	249,392	314,401
Fire	17,640	125,544	264,577	414,796	548,851
Courts	-2,925	-17,695	-32,856	-48,318	-60,913
Parks & recreation	2,587	15,650	29,059	42,733	53,873
Engineering/MOC	3,671	22,210	41,239	60,646	76,454
Government expenses	41,018	266,967	527,169	800,963	1,035,681
Net government revenues	33,795	453,964	830,822	1,220,479	1,535,482
Business-type activities					
Revenues					
Water	23,453	141,875	263,430	387,400	488,383
Wastewater	23,297	140,932	261,679	384,824	485,136
Sanitation	10,577	63,985	118,806	174,716	220,259
Stormwater	1,886	11,410	21,185	31,155	39,276
Business-type revenues	59,213	358,201	665,101	978,095	1,233,055
Expenses					
Water	7,248	43,849	81,418	119,732	150,943
Wastewater	6,439	38,955	72,330	106,369	134,096
Sanitation	9,596	58,050	107,785	158,509	199,827
Stormwater	521	3,154	5,856	8,611	10,856
Business-type expenses	23,805	144,007	267,389	393,221	495,722
Net business-type revenue	35,408	214,194	397,712	584,874	737,333
Net revenues	69,203	668,159	1,228,534	1,805,353	2,272,815

Appendix Table A-14
Net Revenues, Industrial Development

	2018	2023	2028	2033	2037
General government					
Revenues					
Income tax	294,850	1,859,959	3,585,795	5,485,831	7,141,025
Property tax – land	0	7,981	16,369	25,185	32,560
Property tax – building	0	108,458	212,224	312,022	389,457
Less abatement	0	-84,563	-173,440	-182,287	-189,688
Government revenues	294,850	1,891,835	3,640,947	5,640,751	7,373,353
Expenses					
Streets-ongoing	12,886	81,289	156,717	239,757	312,098
Police	11,799	74,429	143,490	219,523	285,758
Fire	13,786	102,308	223,865	365,117	498,849
Courts	-2,286	-14,420	-27,800	-42,531	-55,363
Parks & recreation	2,022	12,753	24,587	37,615	48,965
Engineering/MOC	2,869	18,099	34,893	53,382	69,489
Government expenses	41,076	274,458	555,752	872,865	1,159,795
Net government revenues	253,774	1,617,376	3,085,195	4,767,886	6,213,559
Business-type activities					
Revenues					
Water	51,702	318,074	598,033	892,273	1,138,435
Wastewater	85,178	524,019	985,245	1,469,998	1,875,544
Stormwater	13,492	83,005	156,063	232,848	297,086
Business-type revenues	150,373	925,097	1,739,342	2,595,119	3,311,065
Expenses					
Water	15,979	98,306	184,832	275,772	351,853
Wastewater	23,544	144,843	272,330	406,319	518,416
Stormwater	3,729	22,943	43,137	64,361	82,117
Business-type expenses	43,253	266,092	500,299	746,452	952,385
Net business-type revenue	107,120	659,005	1,239,042	1,848,666	2,358,680
Net revenues	360,894	2,276,382	4,324,238	6,616,552	8,572,238

Appendix Table A-15
Net Revenues, Neighborhood Retail Development

	2018	2023	2028	2033	2037
General government					
Revenues					
Income tax	8,342	50,686	94,114	138,675	175,167
Property tax – land	0	3,007	6,168	9,490	12,269
Property tax – building	0	4,657	9,112	13,397	16,721
Less abatement	0	0	0	0	0
Government revenues	8,342	58,350	109,394	161,561	204,157
Expenses					
Streets-ongoing	977	5,935	11,021	16,239	20,512
Police	894	5,434	10,091	14,868	18,781
Fire	1,045	7,470	15,743	24,729	32,786
Courts	-173	-1,053	-1,955	-2,881	-3,639
Parks & recreation	153	931	1,729	2,548	3,218
Engineering/MOC	218	1,322	2,454	3,616	4,567
Government expenses	3,114	20,040	39,082	59,119	76,225
Net government revenues	5,229	38,310	70,312	102,442	127,932
Business-type activities					
Revenues					
Water	14,761	90,813	170,745	254,757	325,034
Wastewater	24,740	152,205	286,174	426,980	544,766
Stormwater	569	3,499	6,579	9,816	12,524
Business-type revenues	40,070	246,517	463,498	691,552	882,324
Expenses					
Water	4,562	28,067	52,772	78,737	100,457
Wastewater	6,838	42,071	79,101	118,021	150,578
Stormwater	157	967	1,818	2,713	3,462
Business-type expenses	11,558	71,105	133,691	199,471	254,497
Net business-type revenue	28,512	175,412	329,807	492,081	627,827
Net revenues	33,741	213,722	400,119	594,524	755,759

Appendix Table A-16
Net Revenues, Medical Office Development

	2018	2023	2028	2033	2037
General government					
Revenues					
Income tax	8,771	53,288	98,948	145,799	184,174
Property tax – land	0	1,067	2,188	3,366	4,352
Property tax – building	0	3,354	6,563	9,649	12,044
Less abatement	0	-2,615	-5,363	-8,252	-10,669
Government revenues	8,771	55,093	102,335	150,562	189,901
Expenses					
Streets-ongoing	515	3,129	5,810	8,561	10,815
Police	472	2,865	5,320	7,839	9,902
Fire	551	3,938	8,300	13,038	17,286
Courts	-91	-555	-1,031	-1,519	-1,918
Parks & recreation	81	491	912	1,343	1,697
Engineering/MOC	115	697	1,294	1,906	2,408
Government expenses	1,642	10,565	20,605	31,169	40,189
Net government revenues	7,129	44,529	81,730	119,393	149,712
Business-type activities					
Revenues					
Water	630	3,876	7,287	10,873	13,873
Wastewater	493	3,036	5,708	8,517	10,867
Stormwater	380	2,335	4,391	6,551	8,359
Business-type revenues	1,503	9,247	17,386	25,941	33,099
Expenses					
Water	195	1,198	2,252	3,361	4,288
Wastewater	136	839	1,578	2,354	3,004
Stormwater	105	645	1,214	1,811	2,310
Business-type expenses	436	2,682	5,044	7,525	9,602
Net business-type revenue	1,067	6,564	12,343	18,416	23,497
Net revenues	8,196	51,093	94,073	137,809	173,209

Appendix Table A-17
Net Revenues, General Office Development

	2018	2023	2028	2033	2037
General government					
Revenues					
Income tax	24,167	146,835	272,638	401,716	507,431
Property tax – land	0	2,124	4,356	6,702	8,665
Property tax – building	0	6,678	13,067	19,212	23,980
Less abatement	0	-5,207	-10,679	-16,431	-21,242
Government revenues	24,167	150,430	279,382	411,199	518,833
Expenses					
Streets-ongoing	1,077	6,542	12,148	17,899	22,609
Police	986	5,990	11,123	16,388	20,701
Fire	1,152	8,234	17,353	27,258	36,138
Courts	-191	-1,161	-2,155	-3,175	-4,011
Parks & recreation	169	1,026	1,906	2,808	3,547
Engineering/MOC	240	1,457	2,705	3,985	5,034
Government expenses	3,432	22,089	43,079	65,164	84,019
Net government revenues	20,734	128,340	236,303	346,036	434,814
Business-type activities					
Revenues					
Water	2,096	12,898	24,250	36,181	46,162
Wastewater	1,642	10,103	18,995	28,340	36,158
Stormwater	201	1,236	2,324	3,468	4,425
Business-type revenues	3,939	24,237	45,569	67,989	86,745
Expenses					
Water	648	3,986	7,495	11,182	14,267
Wastewater	454	2,792	5,250	7,833	9,994
Stormwater	56	342	643	959	1,223
Business-type expenses	1,157	7,121	13,388	19,974	25,485
Net business-type revenue	2,782	17,116	32,181	48,015	61,260
Net revenues	23,516	145,457	268,484	394,050	496,074